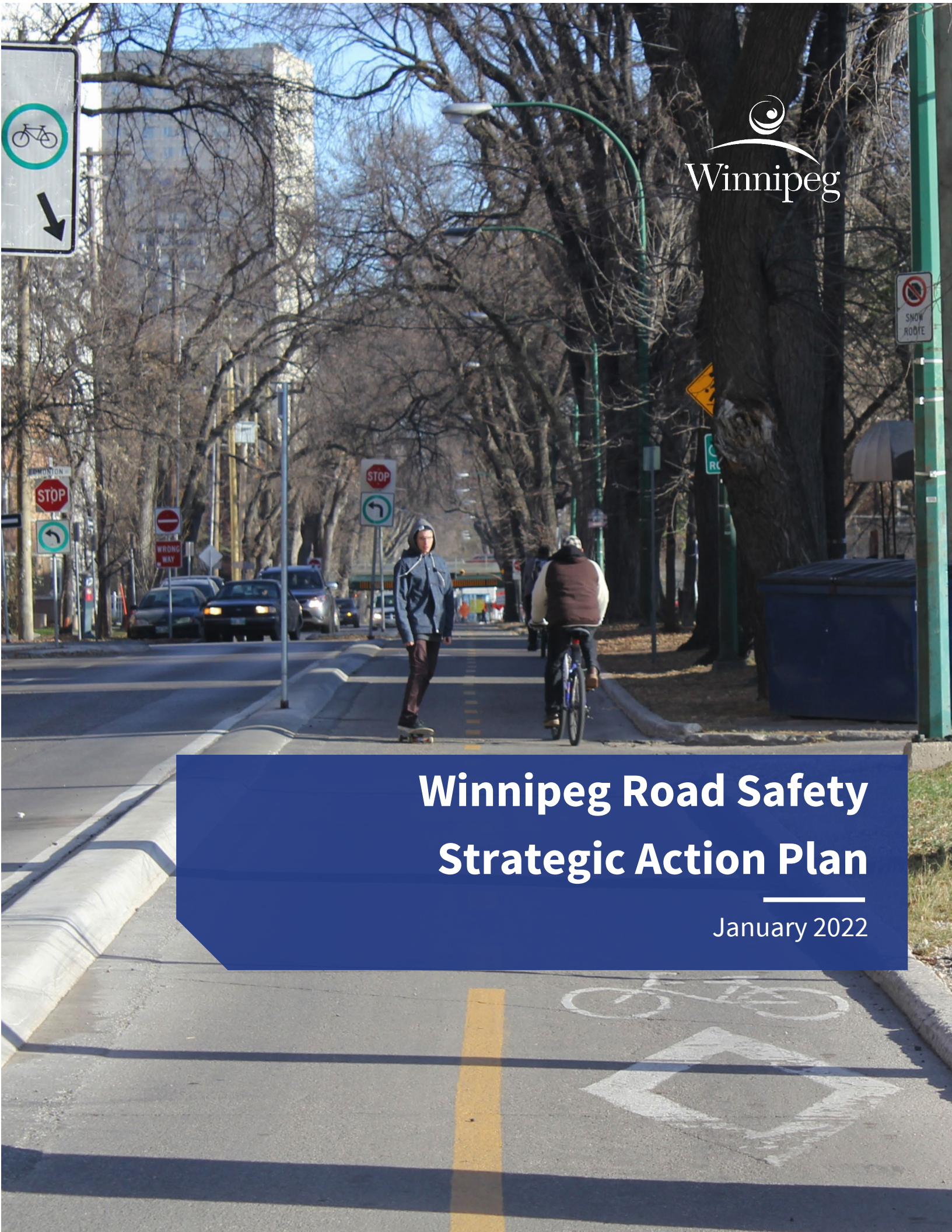


Winnipeg Road Safety Strategic Action Plan

January 2022

Winnipeg Road Safety Strategic Action Plan

Prepared by

MORR TRANSPORTATION CONSULTING

In association with

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Table of contents

ACKNOWLEDGMENTS ..... **I**

LIST OF FIGURES ..... **V**

LIST OF TABLES ..... **VI**

EXECUTIVE SUMMARY **1**

1. SETTING THE STAGE **2**

1.1 Vision Zero and the Safe System approach 2

1.2 Planning process 3

1.3 Policy framework 4

1.4 Benefits of a road safety strategic action plan 6

1.5 Engagement process 7

1.6 Report overview 8

2. IDENTIFYING THE ISSUES **9**

2.1 Data-driven decision making 9

2.2 The magnitude of the road safety problem 10

2.3 Road safety in Winnipeg 11

2.4 Engaging the community 15

3. STRATEGIC FRAMEWORK **16**

3.1 Vision 16

3.2 Goal 16

3.3 Focus areas 17

4. DEVELOPING SAFER STREETS **25**

4.1 Engaging the community 25

4.2 Actions for improved safety at signalized intersections 26

4.3 Actions for improved pedestrian safety 29

4.4 Actions for improved cyclist safety 31

4.5 Actions for reduced speeds 33

4.6 Actions for improving safety culture 34

5. IMPLEMENTATION AND MONITORING 37

5.1 Institutionalizing road safety in Winnipeg 37

5.2 Collaboration opportunities 39

5.3 Resources and funding options 40

5.4 Communication strategy 41

5.5 Evaluation and monitoring 42

5.6 Strategic action prioritization 43

5.7 Strategic actions 44

List of figures

Figure 1: Planning process 3
Figure 2: Engagement process 7
Figure 3: Report overview 8
Figure 4: Frequency of fatal and major injury collisions by intersecting roadway class (2012-2018) 12
Figure 5: Proportion of fatal and major injury collisions by hour-of-day (2012-2018) 13
Figure 6: Proportion of fatal and major injury collisions by month (2012-2018) 14
Figure 7: Proportion of fatal and major injury collisions by season and age (2012-2018) 14
Figure 8: Engaging the community 15
Figure 9: Focus areas 17
Figure 10: Frequency of fatal and major injury collisions by traffic control and intersecting roadway class (2012-2018) 18
Figure 11: Proportion of pedestrian fatalities and major injuries by age group (2012-2018) 19
Figure 12: Location of pedestrian injury collisions (2012-2018) 20
Figure 13: Proportion of cyclist fatalities and injuries by age group (2012-2018) 21
Figure 14: Location of cyclist injury collisions (2012-2018) 22
Figure 15: Fatal and major injury collisions by posted speed limit (2012-2018) 23

List of tables

Table 1: Annual collision trends by collision severity (2012-2018)..... 11

Table 2: Transportation mode of victim who was fatally or majorly injured in a collision (2012-2018). 12

Table 3: Prioritization mechanism of the strategic actions..... 43

Executive summary

Between 2012 and 2018, 98 people were killed and 1,113 suffered major injuries – many with far-reaching implications – as a result of collisions on Winnipeg streets. And while the annual proportion of road-related fatalities remained approximately constant over this time period, the number of major injuries trended upwards.

The Winnipeg Public Service worked with the Manitoba Provincial Government on the *Manitoba Road Safety Plan 2017-2020*, which was released publicly in September 2017 and has provided the focused strategic direction for road safety in Winnipeg since its release. Although the Manitoba Road Safety Plan provides strategic direction and a mechanism for stakeholder coordination, the City of Winnipeg identified the importance of developing a Road Safety Strategic Action Plan specific to Winnipeg's needs and operating context to be able to achieve the long-term vision of *Towards Zero*.

Founded on the Safe System approach, this Road Safety Strategic Action Plan sets the direction and pace of Winnipeg's road safety investments over the next five years in a coordinated and focused manner. It features targeted and proven initiatives that will help the City meet its road safety goal, addressing five key focus areas: intersections, pedestrians, cyclists, speed, and safety culture.

This plan consists of 67 actions intended to help Winnipeg reach its goal of achieving a 20 percent reduction in fatal and serious injury collisions over the next five years (2022 – 2026), with a long- term vision of *a transportation system that allows people of all ages and abilities to safely move around without experiencing death or serious injury*.

This plan is the result of a two-year process that included strong data-driven analysis and a comprehensive and robust engagement process wherein thousands of Winnipeggers provided input about road safety and how they want to City to reduce fatalities and serious injuries on the road.

Implementing the plan will require a minimum initial investment of $22M over the next five years, the commitment of the City and partner agencies, and the approval of increased and dedicated resources, both human and financial – all of which can, together, help Winnipeg reverse the current upward trend of serious injury collisions, reduce the number of road-related fatalities, and improve the quality of life for all.

1. Setting the stage

1.1 Vision Zero and the Safe System approach

Vision Zero is an aspirational concept where no human loss of life is acceptable because of transportation mobility. This vision is motivated by the widely shared value of protecting the health and safety of everyone using our transportation system.

The Safe System sets the approach for achieving Vision Zero. It recognizes that Vision Zero can only be achieved by taking a systems approach and integrating efforts amongst a multidisciplinary team of stakeholders (road designers, vehicle manufacturers, policy makers, enforcement agencies, families, workplaces, schools, and others) and that road safety is a shared responsibility.

The Safe System approach recognizes that people make mistakes when using the road transportation system, and their bodies are fragile, meaning that they can only withstand so much force before they fail. As a result, road infrastructure must be planned and designed to forgive users' mistakes, hence, preventing severe harm to road users as a result of collisions.

The Safe System approach is built upon five pillars:

1. Safe roads and roadsides
2. Safe speeds
3. Safe vehicles
4. Safe road users
5. Post-collision care and response

The Safe System approach was first introduced in Sweden, Norway, and the United Kingdom, which each now have some of the lowest road-related fatality rates in the world.

1.2 Planning process

The goal of this project was to develop a sustainable Road Safety Strategic Action Plan (RSSAP) that is based upon the Safe System approach and is multidisciplinary in nature, encompassing the engineering, enforcement, education, emergency services, evaluation, engagement, and equity dimensions of road safety.

Development evolved over a three-phase process with check-in points with community stakeholders and the public. The plan was also guided by a technical working group and stakeholder advisory committee.

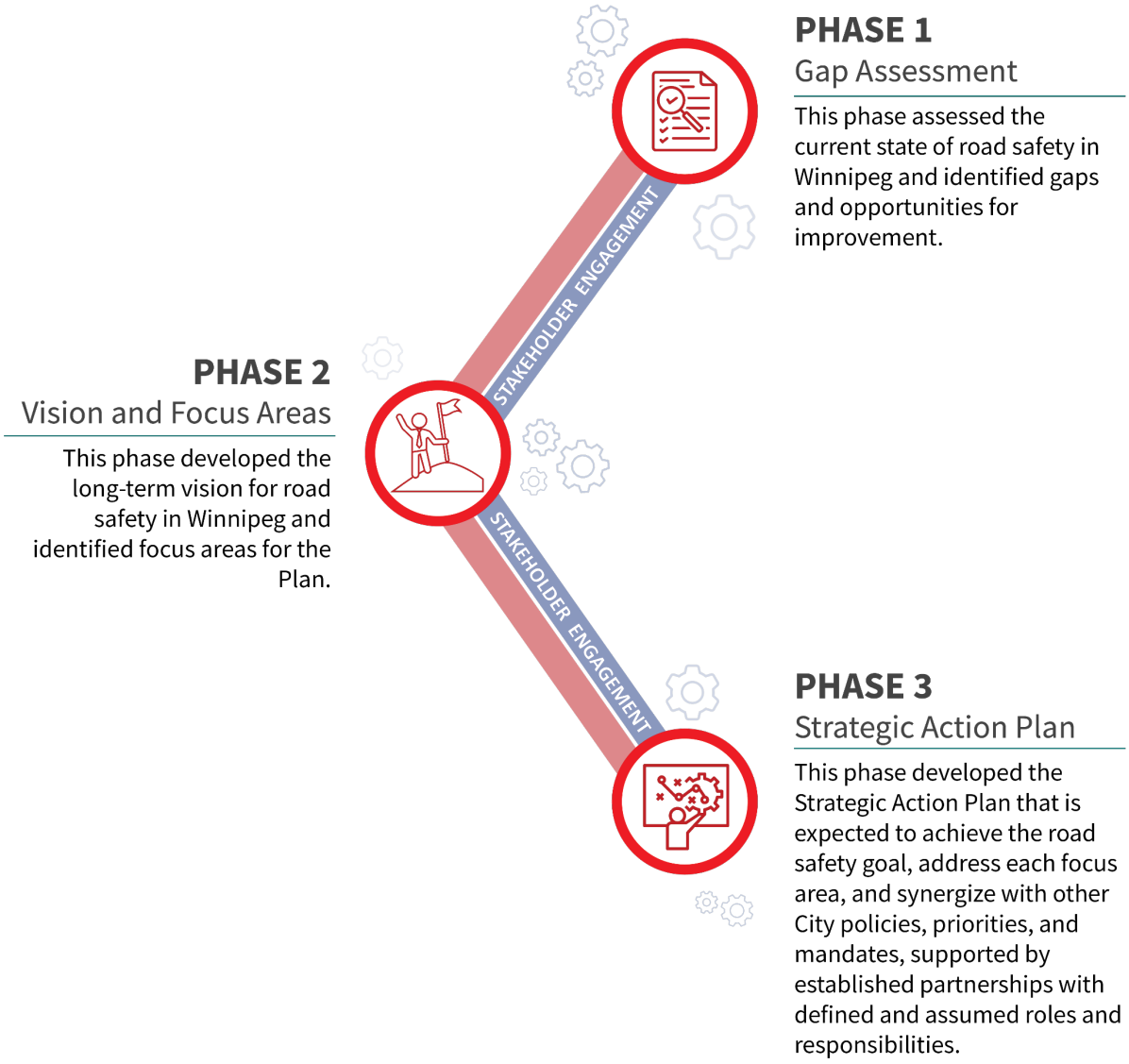
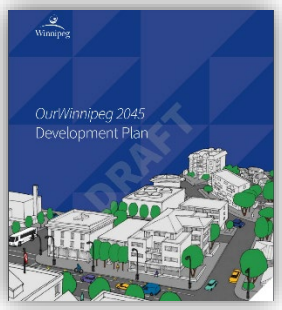


Figure 1: Planning process

1.3 Policy framework

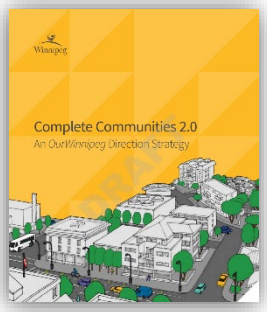
The Road Safety Strategic Action Plan is linked to and informed by many key planning documents that influence transportation movements within the City. It is shaped by direction from OurWinnipeg, the Complete Communities Direction Strategy, and the Transportation Master Plan.



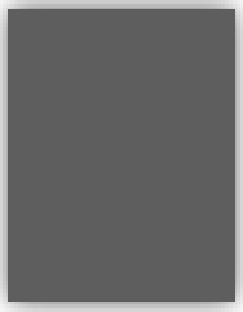
OurWinnipeg 2045 (subject to third Council reading) is the City's foundational planning document intended to guide 25 years of growth and development as per the City of Winnipeg Charter. OurWinnipeg 2045 places emphasis on the following six sustainable development goals:

- Leadership and good governance
- Environmental resilience
- Economic prosperity
- Good health and well-being
- Social equity
- City building

The RSSAP is fully aligned with OurWinnipeg 2045 on all sustainable development goals through actions that fit within 24 of its policies.



Complete Communities 2.0 (subject to third Council reading) is a direction strategy developed to support OurWinnipeg 2045. The document is a citywide secondary plan that guides growth, development, and land use in the city, and whose primary focus is to describe Winnipeg's physical characteristics and introduce an Urban Structure that creates a framework for the city's future physical growth and development. Complete Communities 2.0 identifies the need to improve accommodation of cyclists and pedestrians, particularly on specified corridors. Site selection for implementing pedestrian and cyclist-focused actions in the RSSAP should consider safety data, while also seeking to align with corridors identified in Complete Communities 2.0, where possible. Pedestrian and cyclist safety improvements on these Corridors could contribute to achieving the City's land use goals.



Transportation Master Plan 2050 is an update to the 2011 Transportation Master Plan (TMP). This plan is currently under development; when completed and approved by Council it will present an actionable long-term strategy to guide the planning, development, renewal, and maintenance of a multi-modal transportation system in a manner that is consistent with projected needs and aligned with the City's growth and the overall vision for a sustainable Winnipeg and region. The RSSAP was developed concurrent to the TMP2050 to inform the road safety components of the transportation master plan.

1.4 Benefits of a road safety strategic action plan

Road safety is an issue of great importance locally, nationally, and internationally. Motor vehicle collisions are a leading cause of death and disability in many jurisdictions, resulting in significant economic costs, pain and suffering, and life-altering consequences.

A road safety strategic action plan can play a critical role in addressing road-related injury risks and associated approaches to reduce those risks and offers a foundation for consensus and focus. It defines key emphasis areas and strategies that impact the local transportation system and provides a way forward to save lives in the community.

Having a strategy to guide every aspect of the process can assist with the following:

- Clarification and increased transparency of priorities and projects related to traffic safety
- Proper alignment of actions from different projects and programs for a common goal
- Improved identification of resource needs and resulting time savings from proper alignment of available resources with various projects, as well as better collaboration opportunities resulting from these alignments
- Improved collaboration between various stakeholders who are working towards the common goal of improving road safety
- Increased holistic approach to traffic safety through implementation of projects that address the 7Es of road safety for this project: engineering, enforcement, education, engagement, evaluation, emergency services, and equity
- Improved system performance and agency accountability

1.5 Engagement process

Working collaboratively with the City of Winnipeg's Office of Public Engagement and departmental communications staff, the project team developed a comprehensive, multi-faceted, and equitable strategy to engage with the public and stakeholders. The program was designed to assess general awareness of road safety issues, people's perception of safety, and opinions on key road safety issues. An important component of the engagement strategy involved engaging directly with organizations and groups with an interest in road safety to gain a better understanding of their roles and responsibilities, as well as their perceptions of local road safety issues. Broader public engagement captured feedback from Winnipeggers through a telephone public opinion survey, online survey, virtual events, and in-person pop-up events. A project website, informational video, and print and social media campaign supported the project communications.

The RSSAP also benefited from a diverse, inclusive, and multidisciplinary Stakeholder Advisory Committee (SAC). Representatives from all primary perspectives, relevant organizations, and road user groups were identified and invited to participate in the SAC. The role of the SAC was to provide advice to the consultant team and decision-makers responsible for the development of the RSSAP. The SAC served both as a sounding board to the Technical Working Group and consultant team and a means of informing the City of key community perspectives related to road safety. The SAC promoted an understanding of range of perspectives of road users and provided a forum to hear from diverse communities to constructively identify and develop recommendations relating to road safety.



Figure 2: Engagement process

1.6 Report overview

The Road Safety Strategic Action Plan is organized into five sections.

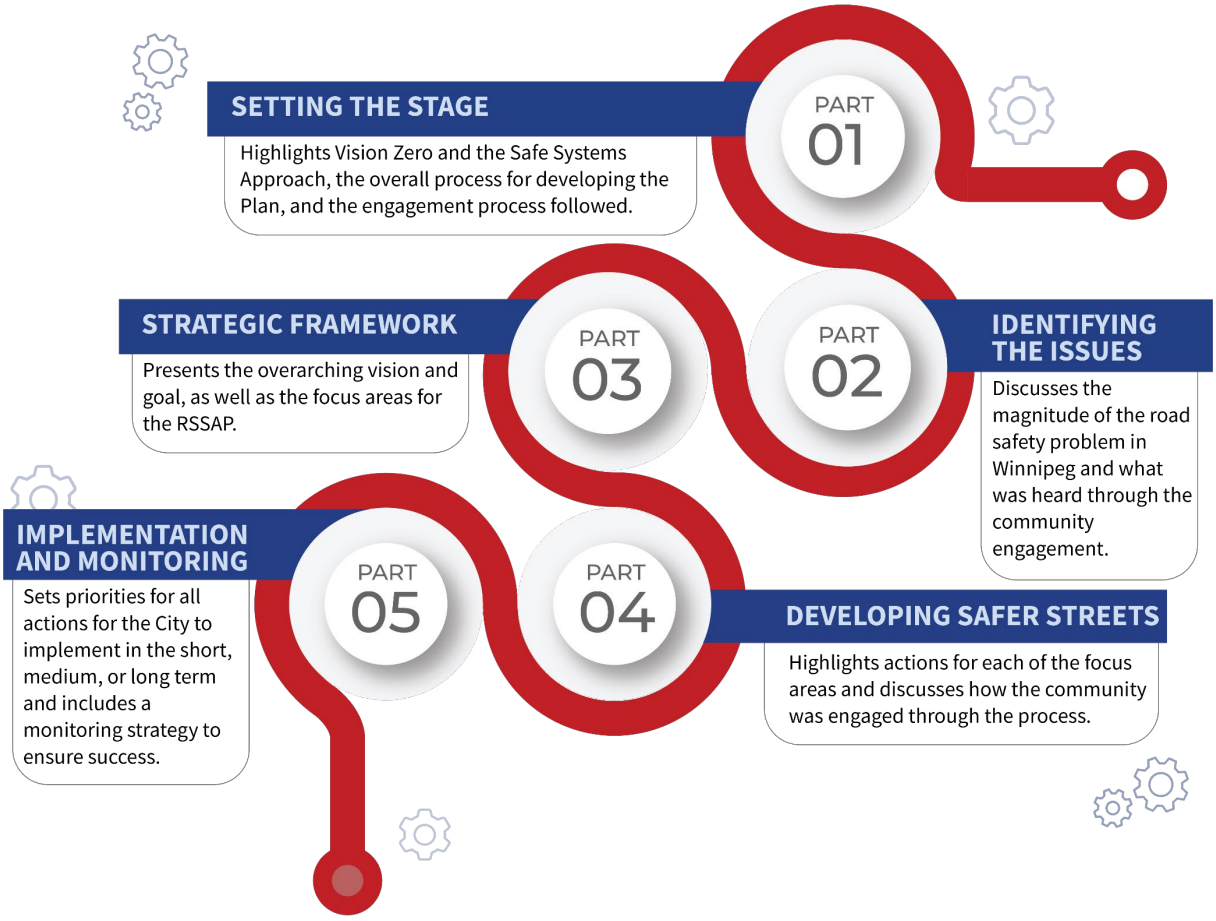


Figure 3: Report overview

2. Identifying the issues

2.1 Data-driven decision making

A key element of the Safe System approach is the importance of evidence-based decision making, which allows for justified decisions in the complex reality of road safety interventions. Road safety decisions must rely on objective, scientifically based evidence in all stages of the policy making process, which includes collecting data, extracting facts from the data, and utilizing those facts to make inferences that influence decision-making.

While high quality data is the most essential aspect of the data-driven approach to decision making, data alone is of little value without the capability to analyze it and convert it into information. Information can be misused if the correct interpretation is not applied and is of little value if it is not used to produce new knowledge, and a collection of knowledge is only useful if the appropriate relationships are understood toward action.

This type of data-driven, evidence-based approach permeates each of the five pillars of the Safe System: roads, speeds, vehicles, road users, and post-collision care and response.

To identify issues, the project team undertook a comprehensive analysis of road-related collisions (for the period between 2012 and 2018), as well as a robust public engagement process that included online and in-person opportunities for the public to provide input and feedback. These opportunities began to highlight areas of concern and potential opportunities for road safety improvements.

The combination of feedback and technical analysis was instrumental to characterizing road safety issues and assessing data gaps (e.g., lack of slip and fall injuries, lack of data on pedestrian and cyclist volumes) for safer roads.

2.2 The magnitude of the road safety problem

Road-related collisions are a leading cause of death worldwide, resulting in nearly 1.3 million preventable deaths and approximately 50 million injuries each year[1]. For people between the ages of 5-29, road-related collisions continue to be the leading cause of death worldwide, reflecting a situation which has remained largely unchanged for the past 20 years.

While most of the deaths in low-income countries are among vulnerable road users (pedestrians, cyclists, and motorcyclists), high-income countries have, despite modernization, observed an increase in the relative proportion of vulnerable road users involved in road related fatalities.

In economic terms, the cost of road-related collisions has been estimated by the World Health Organization (WHO) at approximately one percent of gross domestic product (GDP) in low-income countries, 1.5 percent in middle income countries and two percent in high-income countries.

In Canada, approximately 2,000 people die and 165,000 are injured in road-related collisions each year, resulting in annual societal costs of approximately $37 billion (2.2 percent of Canada's GDP)[2]. In general, while the number of road-related fatalities and serious injuries has decreased in recent years, the relative proportion of vulnerable road users involved in these types of collisions has increased.

In Manitoba, there are approximately 87 people killed and 11,000 injured in road-related collisions each year[3]. Despite a significant decrease in these types of collisions over the last two decades, the personal and societal costs are significant, costing Manitobans over $2 billion per year (approximately three percent of Manitoba's GDP).

In Winnipeg, as the number of road-related collisions has fluctuated over the last 20 years, fatal collisions have trended downwards while the number of injury collisions has risen.

Every year in Canada...



2000 Deaths



165K Injuries



$37B in Losses

For people between the ages of 5-29, road related collisions continue to be the leading cause of death worldwide.

Every year in Manitoba...



87 Deaths



11K Injuries



$2B in Losses

[1] World Health Organization (2021), Global Plan for the Decade of Action for Road Safety 2021-2030

[2] CCMTA (2016), Canada's Road Safety Strategy 2025.

[3] MPI (n.d.) Road to Zero: Manitoba Road Safety Plan 2017-2020.

2.3 Road safety in Winnipeg

Between 2012 and 2018, there were 93 fatal and 1,013 major injury collisions, resulting in 98 fatalities and 1,113 major injuries on Winnipeg streets. During this period, the frequency of fatal collisions remained at an average of about 13 fatal collisions per year, accounting for less than one percent of all injury collisions in Winnipeg, while major injury collisions occurred at an average of 145 collisions per year, accounting for approximately two percent of all injury collisions. Despite these proportions, collisions resulting in injury, whether minimal, minor, major, or fatal, accounted for an average of 25 percent of all annual collisions.

Table 1: Annual collision trends by collision severity (2012-2018)

Year	Total Collisions	Collision Severity			
		Fatal	Major Injury	Total Injury[1]	Property Damage Only (PDO)
2012	24,462	19	122	6,326	18,136
2013	27,088	10	106	6,651	20,437
2014	26,401	11	107	6,903	19,498
2015	26,321	13	149	7,037	19,284
2016	27,863	19	176	7,243	20,620
2017	31,946	9	167	7,421	24,525
2018	31,300	12	186	7,309	23,991
TOTAL	195,381	93	1,013	48,890	146,491

[1] Total injury includes all types of injuries as per the MPI collision database
(i.e., minimal – no hospital, minor – treated/released, major – admitted, fatal, and injured – unspecified)
Data Source: Manitoba Public Insurance

The transportation mode most frequently involved in both fatal and major injury collisions was the passenger vehicle. This was followed by pedestrians, who accounted for between 13 and 55 percent of fatalities resulting from collisions between pedestrians and motor vehicles, depending on the year, with a total average of approximately 33 percent of all road-related fatalities in Winnipeg. Comparatively, major injuries involving pedestrians have accounted for between seven and 12 percent, depending on the year, with an average of about 10 percent of road-related major injuries per year, over the same period. The third most frequent transportation mode involved in collisions over the analysis period were motorcyclists, who accounted for between five and 11 percent of major injuries, depending on the year, with an average of seven percent of road-related major injuries per year over the same time. While cyclists were involved in more fatalities than motorcyclists, more



Pedestrians account for 13 percent to 55 percent of fatalities every year resulting from collisions of motor vehicles.

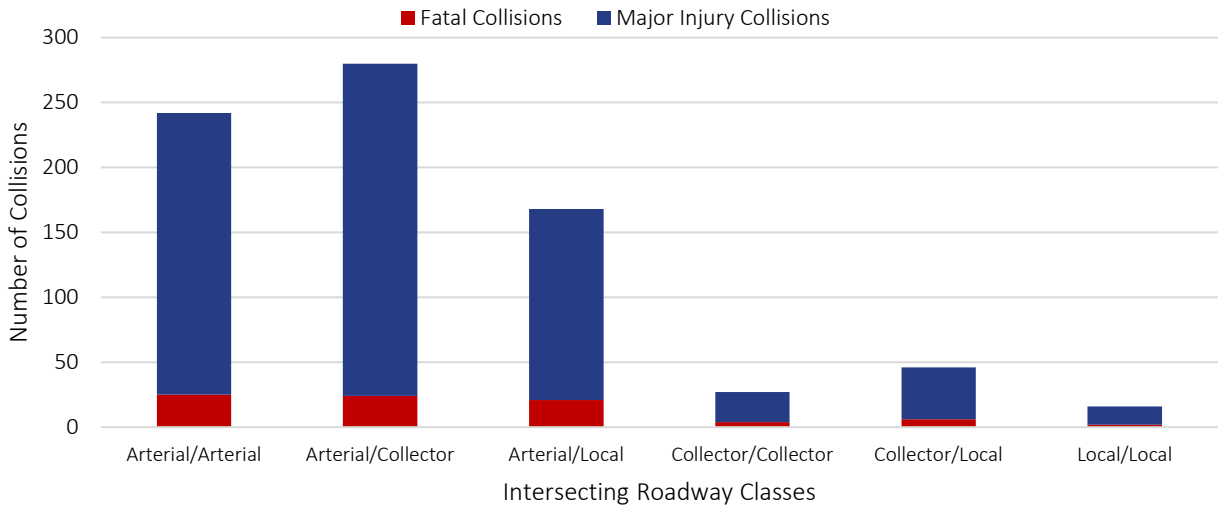
motorcyclists were involved in major injuries over the same time period than cyclists.

Table 2: Transportation mode of victim who was fatally or majorly injured in a collision (2012-2018)

Mode	Fatalities	Major Injuries
Pedestrian	32	113
Bicycle	12	44
Motorcycle	6	78
Passenger Vehicle	47	865
Bus	0	5
Truck	0	5
Heavy Vehicle	1	3
TOTAL	98	1,113

Data Source: Manitoba Public Insurance

There were 468 fatal and major injury collisions occurring on undivided roads in Winnipeg, representing 42 percent of all fatal and major injury collisions. Comparatively, divided roads accounted for 38 percent of all fatal and major injury collisions (the road category for the remaining collisions is unknown). Most fatal and major injury collisions took place at the intersection of arterial and collect or streets (36 percent), followed by intersections involving arterial streets only (31 percent). Collisions involving intersections with local streets accounted for 29 percent of all fatal and major injury collisions (this includes 21 percent between arterial and local streets, six percent between collector and local streets, and two percent between two local streets). Most fatal and major injury collisions took place on arterials (89 percent) with over 40 percent occurring on 60 km/h (posted speed limit) arterial roadways, almost 30 percent on 50 km/h arterial roadways, and nine percent on 80 km/h arterial roadways. Only nine percent of fatal and major injury collisions took place on collectors and two percent on local streets.

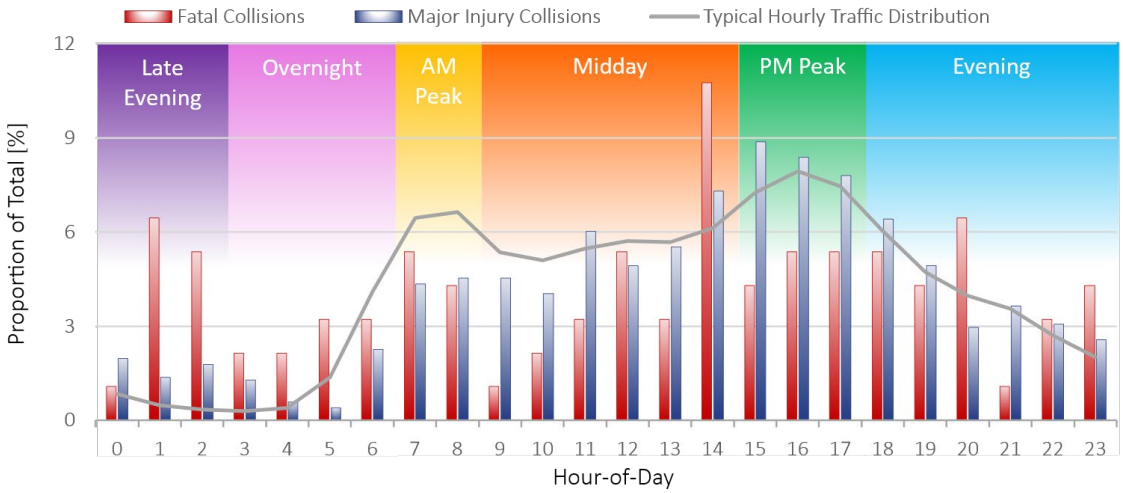


Data Source: City of Winnipeg

Figure 4: Frequency of fatal and major injury collisions by intersecting roadway class (2012-2018)

The temporal distribution of collisions compared to traffic volume data was found to be as follows:

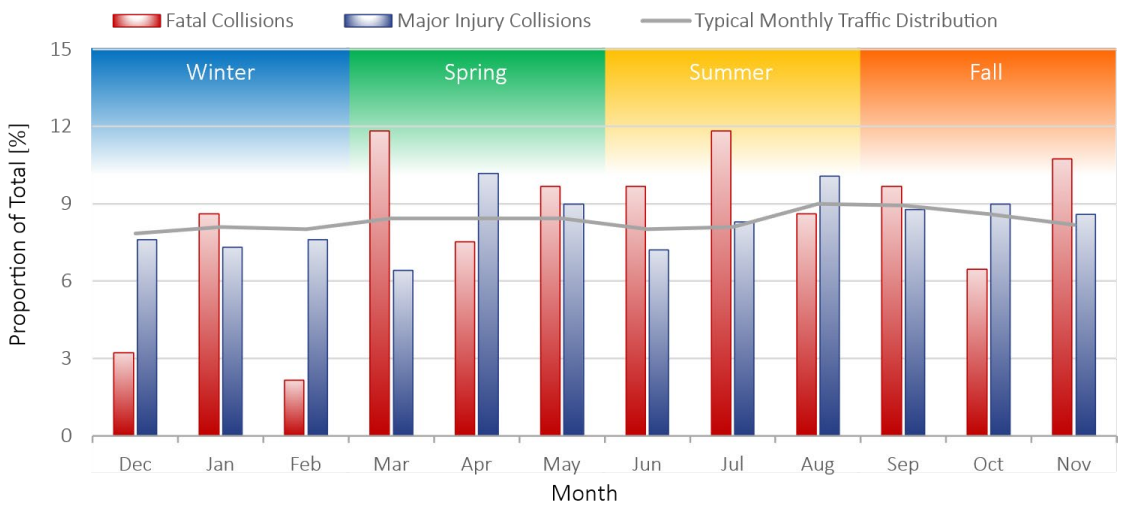
- The morning peak period (7:00 a.m. to 9:00 a.m.) and the afternoon peak period (3:00 p.m. to 5:00 p.m.) accounted for 37 percent of all fatal and major injury collisions between 2012 and 2018 while also accounting for approximately 45 percent of total daily traffic. Similarly, the hours between midnight and 3:00 a.m. accounted for seven percent of total fatal and major injury collisions while also accounting for approximately two percent of total daily traffic, indicating that there may be an over-representation on collisions relative to traffic during these hours.



Data Source: Manitoba Public Insurance

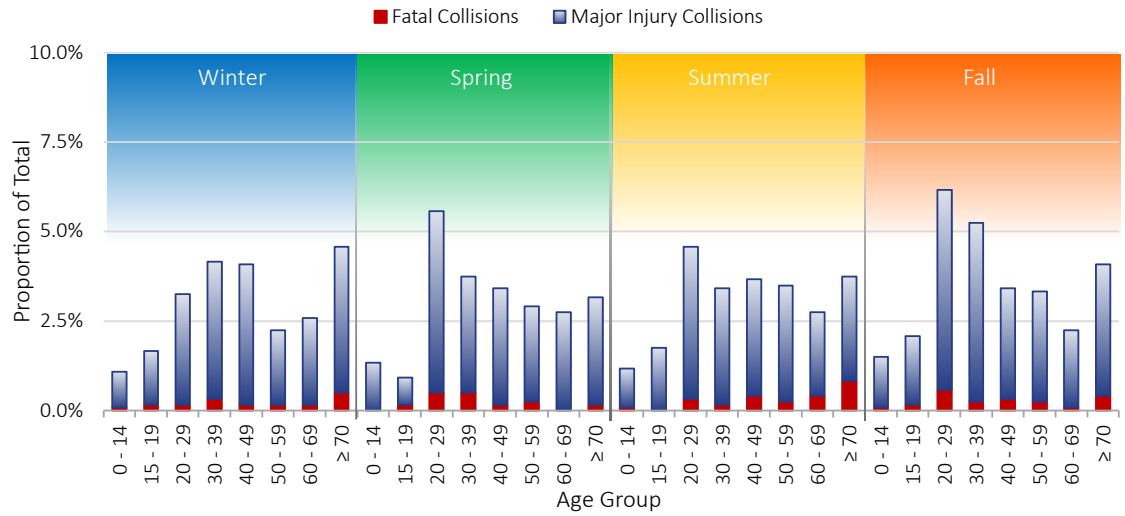
Figure 5: Proportion of fatal and major injury collisions by hour-of-day (2012-2018)

- March and May were over-represented with respect to fatal collisions relative to traffic volume, and April was over-represented with respect to major injuries. June and July were over-represented with respect to fatal collisions relative to traffic volume, and August was over-represented with respect to major injuries. September and November were over-represented with respect to fatal collisions relative to traffic volume. In addition, fatal and major injury collisions involving people between the ages of 20 and 29 are highest in the spring (31 percent) and fall (34 percent) seasons. People over 60 years of age (age groups 60-69 and ≥70) account for a larger proportion of fatal collisions in summer than any other season at nearly 50 percent of fatal collisions involving these age groups.



Data Source: Manitoba Public Insurance

Figure 6: Proportion of fatal and major injury collisions by month (2012-2018)



Data Source: Manitoba Public Insurance

Figure 7: Proportion of fatal and major injury collisions by season and age (2012-2018)

2.4 Engaging the community

After hearing from the public on what matters most when it comes to road safety in Winnipeg, careful analysis of what was heard led to the identification of the following road safety perceptions and concerns.

Overarching



- Many serious injuries and deaths from road-related collisions are preventable.
- Reaching your destination safely and reaching your destination quickly are the highest priorities when travelling.
- Driver training has the biggest influence on road safety followed by road design.
- Roads are modestly safe for drivers and pedestrians, and quite unsafe for bicyclists.
- The most concerning behaviours that pose road safety risks include drivers who disobey traffic controls, drive too fast for conditions, or are impaired or distracted while driving. Similarly, distraction and disobeying traffic controls pose the major risks for pedestrians and cyclists.

Engineering



- There is a need for more bike paths with integrated or protected bike lanes and better connections.
- Work is needed to address gaps in the active transportation network which in turn will help to prevent conflicts between cyclists and pedestrians on sidewalks.
- Improvements are needed to road and sidewalk maintenance, both surface conditions and snow removal.
- Improved signage and signals are required to attract the attention of all.
- There is some interest and support for overall road speed reduction.

Education



- Two-way education about sharing the road is needed for all road users.
- There is a need for developing a culture of respect between all road users.
- Education is needed at many ages and stages of life.
- Education is needed to improve safety for pedestrians.

Enforcement



- More enforcement is needed for drivers who do not comply to rules at crosswalks, signals, and stop signs.
- Enforcement in speed zones in and around school zones is very important.
- Enforcement of dangerous and aggressive driving behaviour is necessary.

Figure 8: Engaging the community

3. Strategic framework

In November 2020, a workshop was held with the SAC to develop the Winnipeg road safety vision and goal statements and identify road safety focus areas for the RSSAP.

3.1 Vision

The vision is a high-level, long-range ideal which provides the framework for the RSSAP and its detailed, short-term goal. The vision defines the organization's long-term view and articulates where the organization would like to be following RSSAP implementation. The visioning workshop for the RSSAP, as well as input received from the public, helped shape the vision for the RSSAP.

A transportation system that allows people of all ages and abilities to safely move around without experiencing death or serious injury

3.2 Goal

A short-term goal will help measure the progress of the RSSAP implementation to ensure continued improvements. Goals are typically chosen to be challenging but far from impossible. Well-chosen goals result in the team being able to show progress towards the vision, which encourages further safety efforts. Winnipeg's RSSAP's goal is SMART: specific, measurable, action-oriented, reasonable, and time-bound.

20 percent reduction in fatal and serious injury collisions over the next five years (2022 – 2026)

3.3 Focus areas

Focus areas are high-priority areas with the best opportunities to improve safety. The selection of focus areas is critical to achieving the RSSAP goal and the number of focus areas needs to be limited to ensure that enough resources are allocated to them to effectively improve safety. Analysis of Winnipeg's collision data was the main factor – but not the only factor – in the selection of focus areas. Consideration was also given to public perception and attitudes, equity issues, and stakeholder's knowledge of specific safety concerns. Five focus areas emerged from the analysis and community engagement: signalized intersections, pedestrians, cyclists, speed, and road safety culture. Strategic actions were developed to address key trends resulting from the collision analysis, as well as important concerns from the stakeholders.

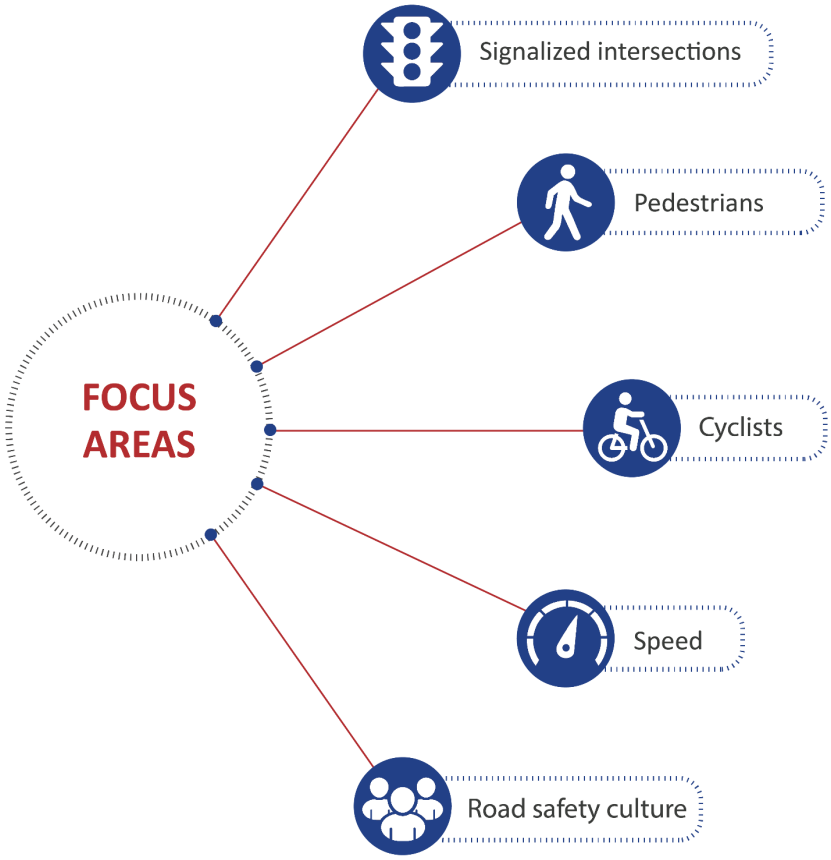
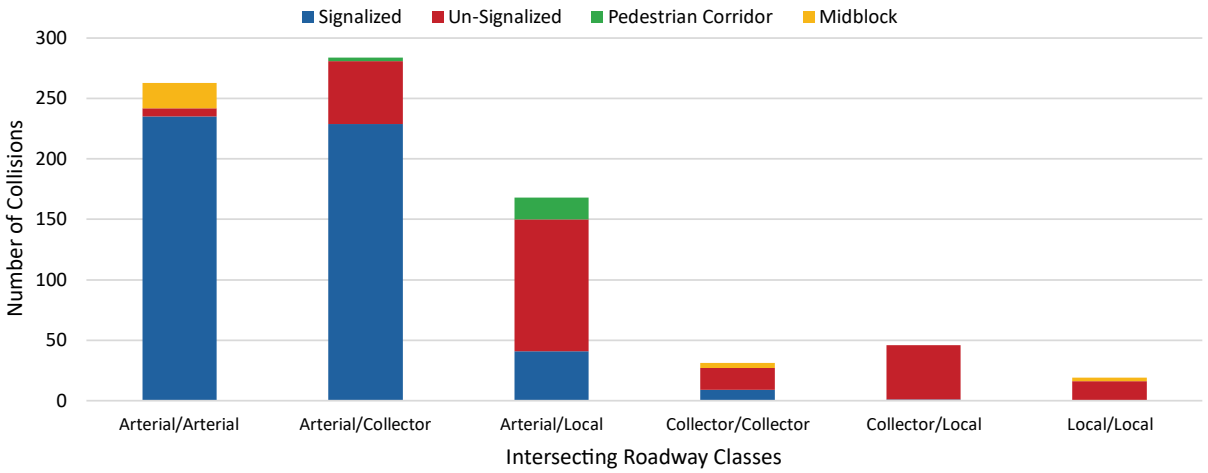


Figure 9: Focus areas

3.3.1 Signalized intersections

Between 2012 and 2018, there were 93 fatal and 1,013 major injury collisions, resulting in 98 fatalities and 1,113 major injuries on Winnipeg streets.

A majority of fatal and major injury collisions at arterial/arterial and arterial/collector intersections occurred at signalized intersections, where the multiple points of potential conflict result in opportunities for collisions.



Data Source: City of Winnipeg

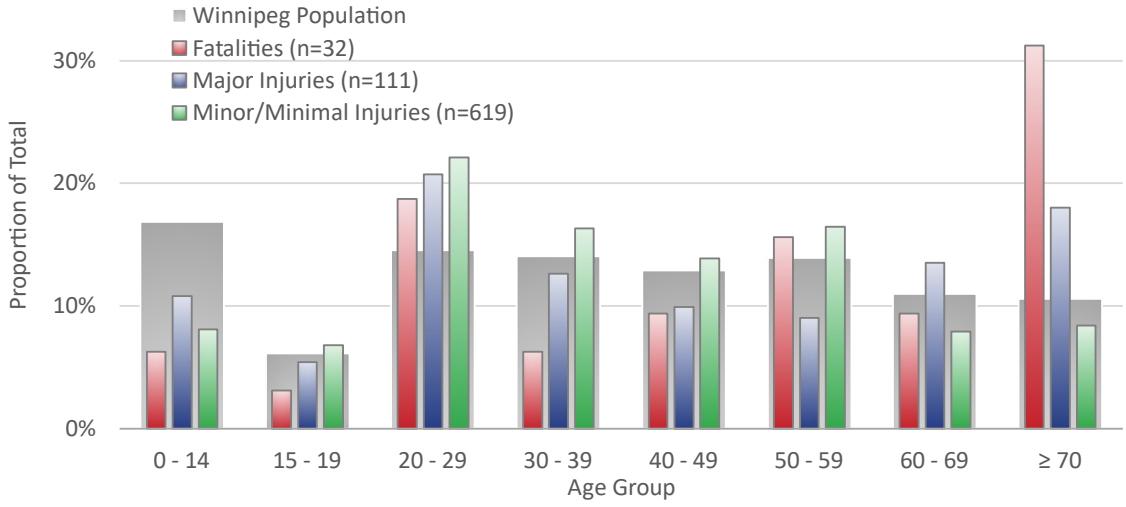
Figure 10: Frequency of fatal and major injury collisions by traffic control and intersecting roadway class (2012-2018)

3.3.2 PEDESTRIANS

Pedestrians accounted for between 13 percent and 55 percent of fatalities resulting from collisions with motor vehicles between 2012 and 2018, with a total average of approximately 33 percent of all road-related fatalities in Winnipeg. Comparatively, major injuries involving pedestrians accounted for between seven and 12 percent, with an average of about 10 percent of road-related major injuries per year, over the same period. Because walking is one of the most vulnerable modes of transportation, it is important to focus on the equity implications of pedestrian safety.

The following findings resulted from the collision analysis (information on the number of pedestrian injuries caused by slips and falls is not readily available).

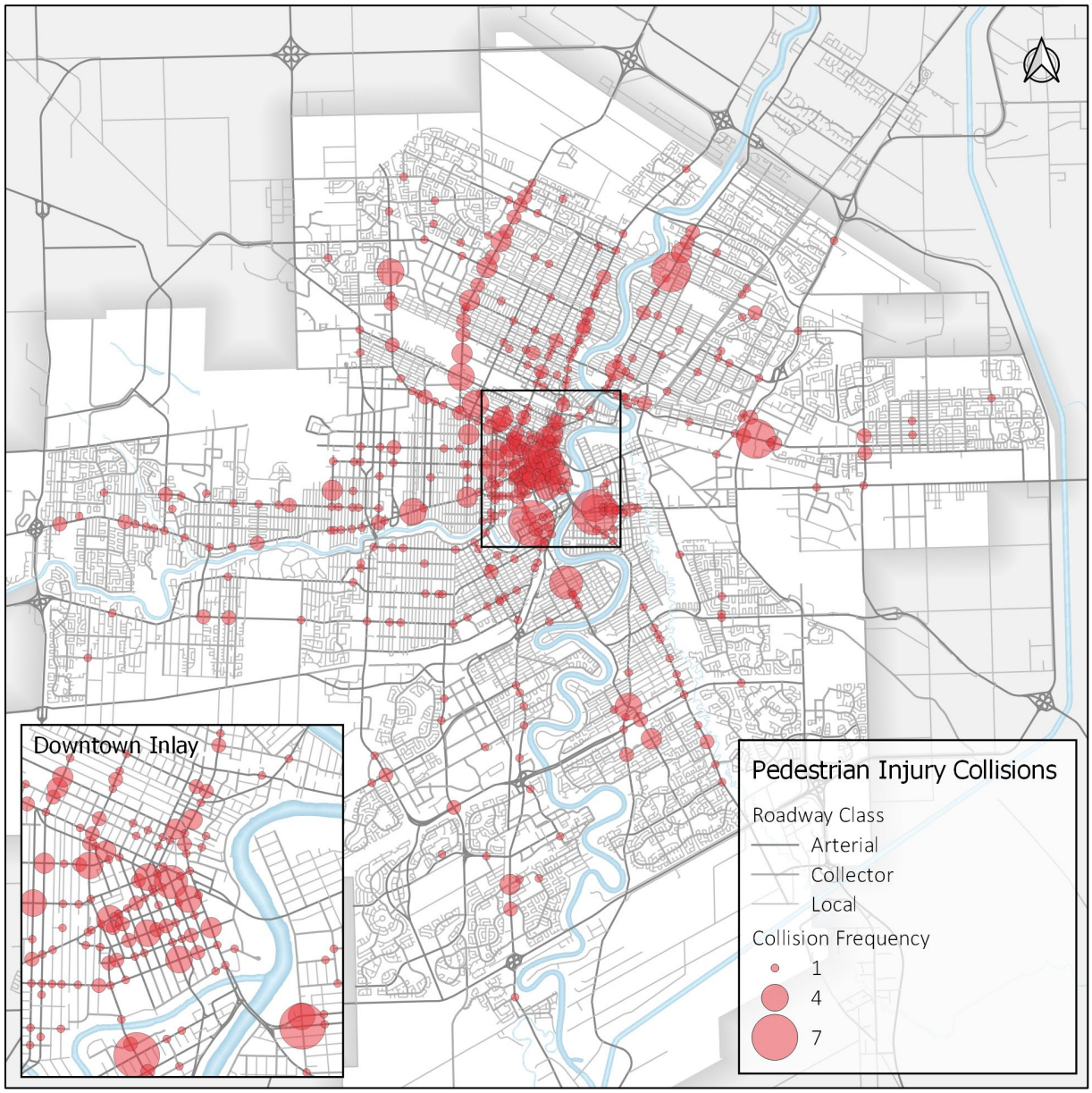
- Older pedestrians (over 70 years of age) are over-represented in fatal and major injury collisions compared to their proportional representation by age group. People over 70 years of age account for 11 percent of Winnipeg's population but pedestrians in this age group represented 31 percent of fatalities and 18 percent of major injuries involving pedestrians.
- Pedestrians between 20 and 29 years of age are over-represented in fatal (19 percent) and major injury (21 percent) collisions compared to their proportional representation by age group (15 percent).
- About six percent of pedestrian fatalities and major injuries involved young children (under 14 year of age). Comparatively, this age group accounts for 17 percent of Winnipeg's population.
- Almost 60 percent of the fatalities and major injuries involving pedestrians occurred in winter (29 percent) and fall (29 percent). Most of the fatalities and major injuries involving pedestrians over 70 years of age occurred in winter (37 percent). Most of the fatalities and major injuries involving pedestrians between 20 and 29 years of age occurred in spring (34 percent) and fall (30 percent).



Data Source: City of Winnipeg

Figure 11: Proportion of pedestrian fatalities and major injuries by age group (2012-2018)

- Most fatalities and major injuries involving pedestrians took place at intersections (31 percent); where 23 percent occurred when the pedestrian had the right of way and eight percent took place when the pedestrian did not have the right of way or there was no traffic control. About 16 percent of the pedestrians were killed or sustained major injuries at midblock locations when they were either walking along the road, getting on or off a vehicle, walking between intersections, running into the road, or other.
- Most pedestrian injury collisions (including fatal, major, minor, or minimal injury) took place in the downtown area and principally involved arterial roadways.



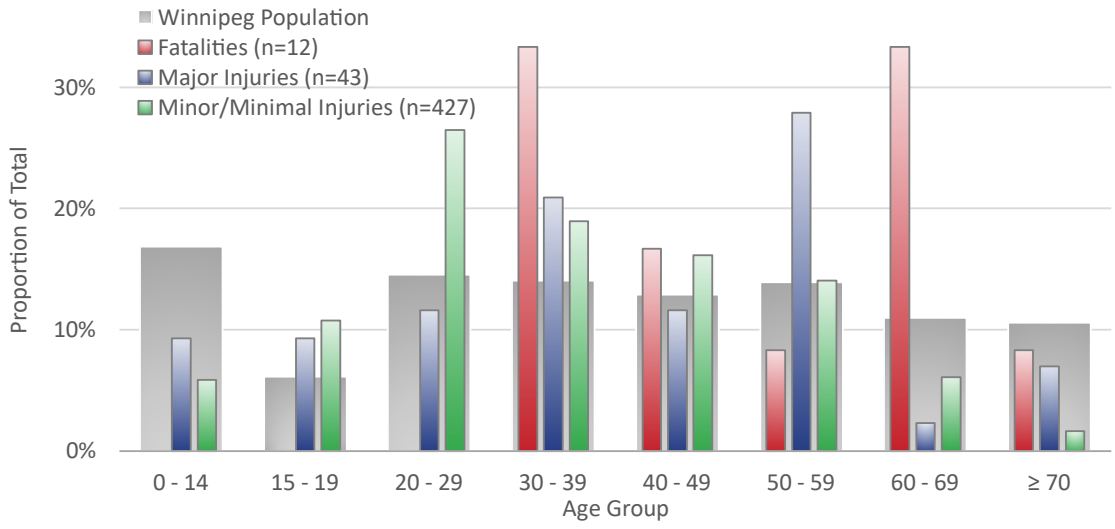
Data Source: City of Winnipeg

Figure 12: Location of pedestrian injury collisions (2012-2018)
Note: Injury collisions includes all collisions resulting in a fatal, major, minor, or minimal injury.

3.3.3 CYCLISTS

Cyclists accounted for between zero and 27 percent of fatalities resulting from collisions with motor vehicles between 2012 and 2018, with an average of approximately 12 percent of all road-related fatalities per year. Comparatively, major injuries involving cyclists accounted for between two and six percent, with an average of about 4 percent of road-related major injuries per year, over the same time period.

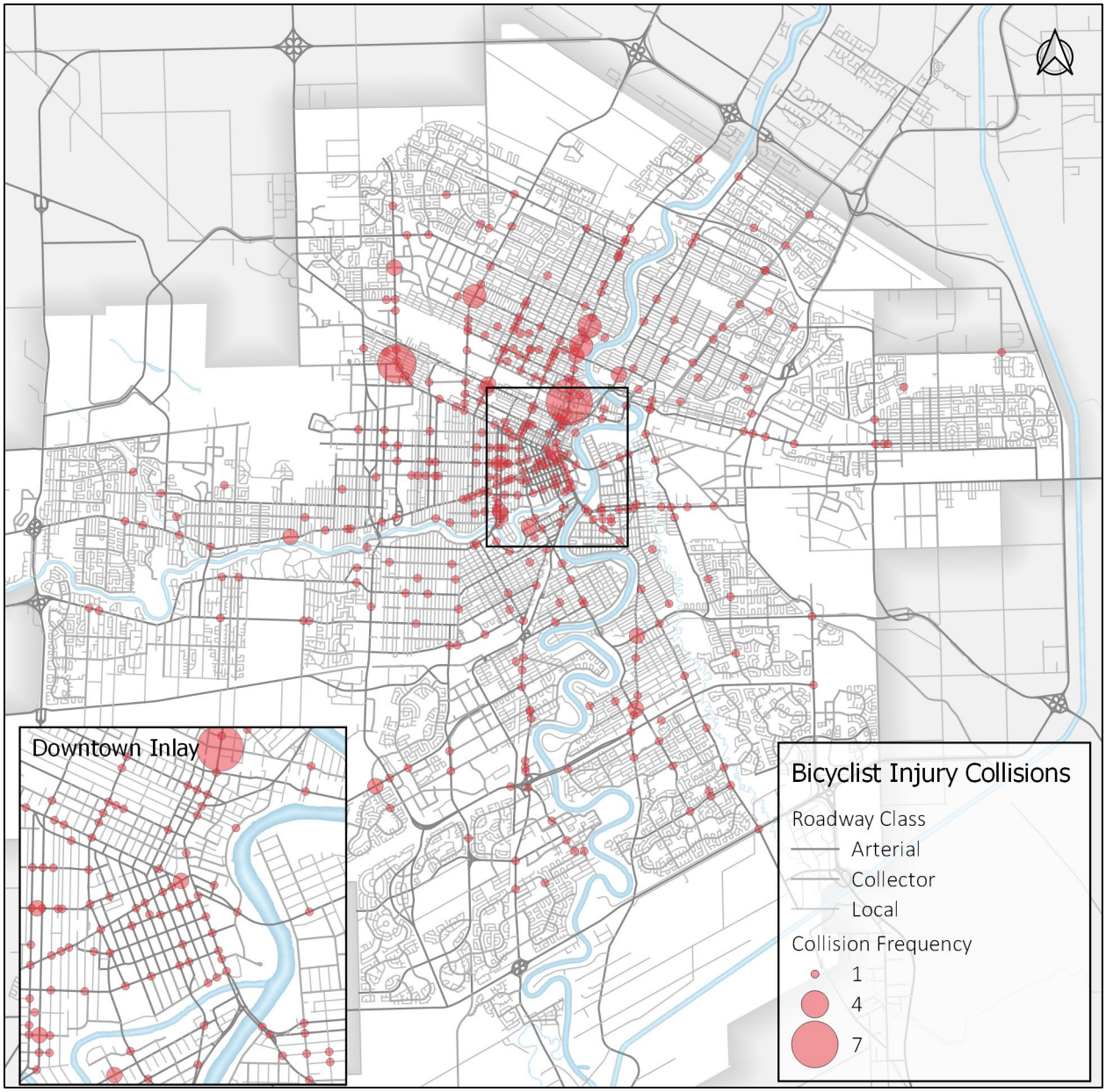
- Older cyclists (between 60 and 69 years of age) are over-represented in fatalities compared to their proportional representation by age group, and adults between ages 30 and 39 are over-represented in fatalities and major injuries. People between 60 and 69 years of age represent 11 percent of Winnipeg's population but cyclists in this age group represented 33 percent of fatalities involving cyclists.
- People between the ages 30 and 39 account for 14 percent of Winnipeg's population but cyclists in this age group represented 33 percent of fatalities and 21 percent of major injuries involving cyclists.
- People between the ages 50 and 59 account for 14 percent of Winnipeg's population but cyclists in this age group represented 28 percent of major injuries involving cyclists.
- Most of the fatalities and major injuries involving cyclists took place in summer (42 percent). However, at a more disaggregated level, May and September alone accounted for 37 percent of all fatalities and major injuries involving cyclists. Those between the ages of 30 and 59 accounted for nearly all these fatalities and major injuries.



Data Source: City of Winnipeg

Figure 13: Proportion of cyclist fatalities and injuries by age group (2012-2018)

Most injury collisions involving cyclists (including fatal, major, minor, or minimal injury) took place in the Downtown area and north Winnipeg, and principally involved arterial roadways.



Data Source: City of Winnipeg

Figure 14: Location of cyclist injury collisions (2012-2018)

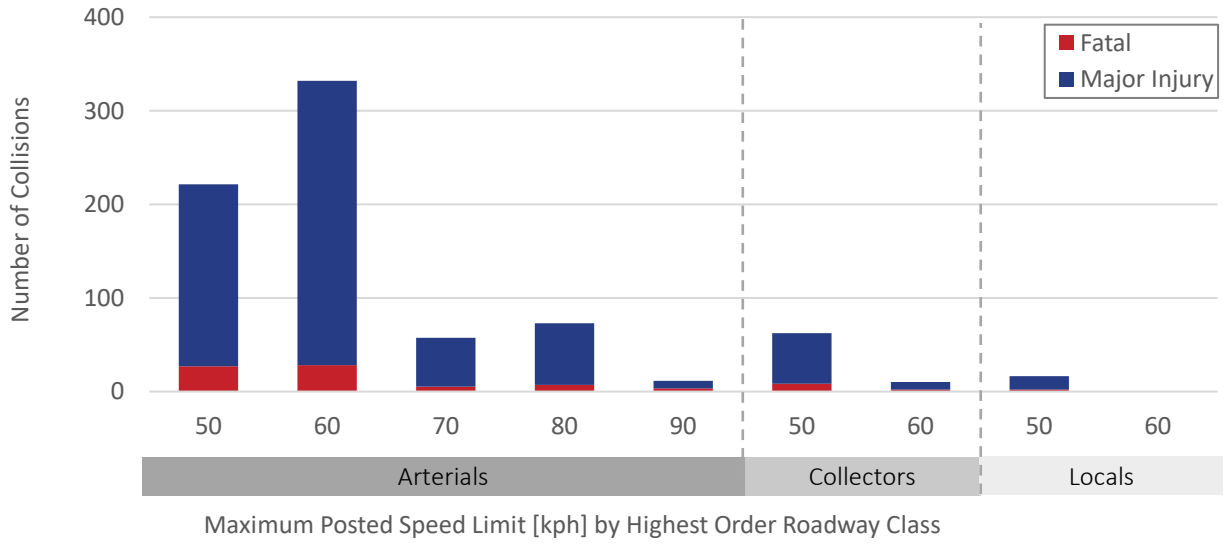
Note: Injury collisions includes all collisions resulting in a fatal, major, minor, or minimal injury.

3.3.4 SPEED

Travel speed is a critical variable within a Safe System. Speed has been found to have a very large effect on road safety, being a risk factor for all types of collisions (from small fender-benders to fatalities), particularly when vulnerable road users are involved.

Reduction of operating speed decreases the impact of collisions on affected road users. Operating speeds are regulated by speed limits within the transportation system. In the Safe System approach, speed limits are based on aiding collision avoidance and reducing the speed at which impacts occur, to ensure that the body's limit for physical trauma is not reached. To ensure this materializes, appropriate speed limits must be established to reduce operating speeds according to the features of the road, the function it serves, and the physical tolerance of road users present.

In Winnipeg, most fatal and major injury collisions between 2012 and 2018 took place on arterial roads (89 percent) with over 40 percent occurring on arterials with posted speed limit of 60 km/h, almost 30 percent on arterials with 50 km/h speed limit, and nine percent on those with 80 km/h. Only nine percent of fatal and major injury collisions took place on collector streets and two percent on local streets.



Data Source: City of Winnipeg

Figure 15: Fatal and major injury collisions by posted speed limit (2012-2018)

3.3.5 Road safety culture

To achieve a reduction in road-related fatalities and serious injuries, it is necessary to create a road safety culture that prioritizes safety, encourages safe road user behavior, and facilitates cooperation among stakeholders. Creating a positive safety culture is fundamental to achieving the vision and goal of this Plan.

To improve road safety, it is important to focus on those factors that contribute most to motor vehicle collisions, including driver behaviour, which is most often identified as a contributing factor in motor vehicle collisions.

A total of 1,310 contributing factors were reported for all fatal and major injury collisions between 2012 and 2018 in Winnipeg. Driver action was reported as a contributing factor in 82 percent of the collisions and human condition was reported in 12 percent of the collisions. *Driver Action* refers to behaviours such as following too closely, turning improperly, exceeding speed limit, passing improperly, fail to yield right-of-way, careless driving, disobeying traffic control devices, and others. *Human Condition* refers to situations such as loss of consciousness, extreme fatigue, defective eyesight, ability impaired by alcohol, ability impaired by drugs, distraction, and others.

Within the Safe System approach, road safety is a shared responsibility; implementing a positive road safety culture requires collaboration among a diverse group of stakeholders to ensure all road users are safe. These stakeholders include elected officials, civil servants, law enforcement personnel, healthcare providers, educators, the public, and others.

Road safety culture is the shared belief system and associated actions of those who plan, design, operate, maintain, and use the transportation system, and which influences road safety.

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Within the Safe system approach, road safety is a shared responsibility, hence implementing a positive road safety culture also requires collaborative engagement among a diverse group of stakeholders to ensure all road users are safe.

4. Developing safer streets

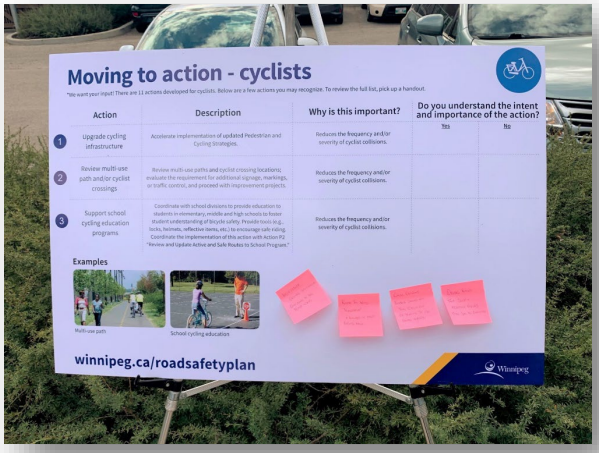
4.1 Engaging the community

Through a comprehensive round of engagement, the public was invited to review the actions in each focus area and provide input to ensure their safety concerns had been properly addressed relative to the safety issues that had been identified at the start of the project. This round of engagement collected feedback through a virtual Stakeholder Advisory Committee Workshop, pop-up events, and an online survey.

Overall, most respondents agreed that the actions presented in the RSSAP addressed their concerns for signalized intersections, pedestrian safety, cyclist safety, and speed; and nearly half agreed that there was an opportunity to enhance the road safety culture focus area.

All input was carefully reviewed, and the final list of actions was adjusted accordingly to ensure it reflected this final round of input.





4.2 Actions for improved safety at signalized intersections

The Road Safety Strategic Action Plan identifies the following 15 actions in this focus area.

Action #	Action	Description
I01	Review No Right-Turn on Red (NRTOR) policies and implement NRTOR at selected locations	Review and update practices related to no right-turn on red (NRTOR). Implement NRTOR at selected locations, such as those with high right-turn conflicts with vulnerable road users, high right-turn collisions, and limited visibility.
I02	Review pedestrian crossing timing plans and implement improvements at select locations	Review pedestrian signal timing plans and determine if the pedestrian crossing time is adequate for the demographics in the area. Review the location, direction, and operation of push buttons at signalized intersections.
I03	Review protected left turn phasing policy and implement protected phasing at select locations	Review current policies for left-turn phasing and implement protected left-turns at intersections when alignment, turning vehicle demand, and/or pedestrian volumes require temporal separation. Collision history should also form part of the site review
I04	Review signal visibility and implement improvements at select locations	Review and increase signal visibility for all road users by removing obstructions and adding additional signal heads, advance warning signs, and reflective tape where applicable. This action may be related to lines of sight or conspicuity.
I05	Review locations that encourage high-speed right-turn movements and implement improvements at select locations	Assess the need for right-turn channels versus simple right turns whenever possible and retrofit existing locations at intersections with right turn channels that encourage high speed right-turn movements. Simple right turns and smart channels are a preferred tool to ensure decreased speeds. The implementation of simple rights and smart channels should be supported by appropriate signs, pavement marking, and road user education.
I06	Review advanced warning flashers policy and install treatment at select locations	Review policy for installing advanced warning flashers at signalized intersections. Install advanced warning flashers to warn drivers to prepare to stop at an upcoming traffic signal.
I07	Review access management policy	Review the current access management policy to rationalize accesses on corridors that are a priority based on safety data to reduce the number of conflict areas. Following this review, create updates if required and ensure alignment with by-law. Effective access management provides systematic control of the location, spacing, design, and operation of entrances and intersections to maximize the safety and efficiency of arterial road operations.

Action #	Action	Description
I08	Update Safety Performance Functions (SPFs) and network screening	Develop new and recalibrate safety performance functions (SPFs); update the initial (arterial) street network screening. Bring in a practice of re-calibration of SPFs on a five-year basis. Use network screening for strategy/ focus areas (such as pedestrian collisions) as part of a systemic approach, to identify statistical overrepresentation of collision types, and to identify locations and opportunities to undertake diagnosis.
I09	Create policy for road safety audits (RSAs) and in-service road safety reviews (ISRSRs) as a component of capital projects	Create a mandate or parameters to undertake road safety audits (RSAs) and in-service road safety reviews (ISRSRs) as a part of capital projects. Introduce protocols for inclusion of road safety audits or in-service road safety reviews on capital projects where appropriate
I10	Create a policy for in-service road safety reviews as part of network safety performance review	Create a mandate or parameters to undertake road safety audits and in-service road safety reviews based on the safety performance of intersections/corridors. Have the Technical Guidelines and Practices reflect a more rigorous approach to road safety diagnosis that is not organized around outcomes and is not limited to the current topics in the guidelines.
I11	Conduct road safety audits and in-service road safety reviews	Implement a practice to conduct a formal audit of proposed road designs or existing facilities from a safety standpoint to identify potential problems and suggest measures that could improve safety. Reviewing the proposed design (or existing facility)holistically to see how different design elements blend together to create a safe roadway corridor for all road users. For existing facilities, conduct reviews at locations with the potential for improvement, based on SPFS and network screening results.
I12	Develop guidelines and install overhead / advanced intersection signage	Develop City guideline for installing overhead/advanced intersection signage, crossing road information, or large overhead signage, especially in advance of large intersections with complex operations, to allow the drivers to get into appropriate lanes prior to approaching the intersection. Review retro reflectivity requirements in Technical Guideline and Practice related to sign sheeting. Ensure font sizes are consistent with national standards. Install overhead lane designation signs for large intersections with multiple lanes to provide guidance for drivers to avoid driver confusion
I13	Install or extend raised medians	Once access management policy is implemented, install, or extend raised medians in accordance with the review of the access management policy to restrict driveways due to operational or safety concerns. Extended medians also can provide additional crossing protection for pedestrians at bus stop locations. Also review the minimum curb height standards

Action #	Action	Description
I14	Enhance pavement markings	Evaluate various pavement marking and pathway construction materials to enhance visibility and durability, including around pedestrian crossing locations and corridors, bicycle lanes, shared facilities, and facility transitions. Consult with members of the accessibility community.
I15	Review and update roundabout installation policy	Review and update existing policy to determine the requirement of roundabouts at new or existing intersections. Ensure the needs of pedestrians are considered in this action.

4.3 Actions for improved pedestrian safety

The Road Safety Strategic Action Plan identifies the following 14 actions in this focus area.

Action #	Action	Description
P01	Prioritize pedestrian safety improvements in areas with high levels of vulnerable pedestrians	Prioritize pedestrian crossing studies and the installation of pedestrian safety measures such as crosswalks, sidewalks, and traffic calming measures, at locations with high volumes of children, older adults, and other more vulnerable types of pedestrians, (e.g., around schools, playgrounds, senior centres, retirement homes, neighbourhood greenways, within geographic areas of high poverty, etc.).
P02	Review and update Safe Routes to School program	Review and update current program related to active and safe routes to school and school travel plans. Accelerate and expand this program and include funding for recommended improvements.
P03	Develop Leading Pedestrian Interval (LPI) policy and implement LPI at selected locations	Leading pedestrian intervals (LPIs) provide a head start for pedestrians to begin crossing the intersection before the signal turns green for vehicles. Develop policy for prioritization of LPI treatment and implement LPIs at warranted locations. Ensure LPI implementation is compatible with other policies that are applied at signalized intersections. Ensure that Accessible Pedestrian Signal (APS) is installed in conjunction with LPI installation, and if that is not possible, ensure that the minimum walking time is still accommodated in the portion of the walk phase that is accompanied by corresponding flow of vehicular traffic. Coordinate the implementation of this action with Action I2 “Review pedestrian crossing timing plans and implement improvements at select locations”.
P04	Install curb bump outs	Starting in the Downtown core, determine feasible locations where curb bump outs would assist pedestrians in crossing intersections. Consider traversable treatments on bump outs to limit impacts to cyclists.
P05	Develop and implement a pedestrian traffic monitoring program	Leveraging advanced technologies in active transportation traffic monitoring, and following guidance from TAC’s Traffic Monitoring Guide, a traffic monitoring program for pedestrian traffic volumes should be developed to support safety analysis and subsequent decisions regarding pedestrian activity. Pedestrian activity should be monitored within the transit network and on various facility types.
P06	Calibrate TAC’s Pedestrian Crossing Control Guide (PCCG)	Conduct a robust evaluation of the safety performance of existing pedestrian facilities based on roadway characteristics and socioeconomic characteristics. The results of this evaluation should be used to calibrate TAC Pedestrian Crossing Control Guide (PCCG) to align with Winnipeg’s unique characteristics of traffic volume, speed, and cross section.

Action #	Action	Description
P07	Review existing pedestrian crossing controls for appropriateness of treatment type	Review existing pedestrian crossing control to ensure they align with new policy based on TAC's Pedestrian Crossing Control Guide calibrated for Winnipeg conditions. Conduct assessment of existing pedestrian crossing control across the city and determine locations that may require upgrades. Once these locations are identified, an implementation plan should be developed to ensure continual and timely implementation of upgrades. To the extent possible, strive to upgrade locations based not only on the 'recommended' components of each treatment type identified in the PCCG, but also include 'desirable' components identified for each treatment type.
P08	Install pedestrian refuge islands	Update internal guidelines to match TAC's Pedestrian Crossing Control Guide calibrated for Winnipeg conditions to include criteria for pedestrian refuge islands. Pedestrian refuge islands create safer pedestrian crossing locations.
P09	Review connectivity and accessibility of transit and pedestrian facilities	Review the existing pedestrian network to determine any gaps in the network and provide pedestrian linkages and direct walking routes to Winnipeg's transit facilities. Review bus stop locations to ensure that pedestrians can easily navigate the transit network within the existing pedestrian network.
P10	Review potential for pedestrian scramble signals	Evaluate the feasibility of pedestrian scramble operation at signalized intersections with high pedestrian volumes.
P11	Review policy on installation of breakaway devices	Review policy for the installation of breakaway devices, ensuring particular attention is directed at installation practices in areas with high pedestrian volumes.
P12	Review policy for playground zones	Review internal technical guideline on playground zones. Develop additional criteria for designating playground zones and develop guidance on installing signage and other safety measures.
P13	Formalize pedestrian infrastructure maintenance requirements	Develop a monitoring and maintenance program for pedestrian infrastructure, and update snow clearing policies.
P14	Enhance pedestrian pavements markings	Use zebra crosswalk markings in the downtown and develop policy for where to use them in other high pedestrian volume or high pedestrian collision locations

4.4 Actions for improved cyclist safety

The Road Safety Strategic Action Plan identifies the following 11 actions in this focus area.

Action #	Action	Description
C01	Upgrade catch basins along cycling routes	Upgrade catch basins from horizontal gates to diagonal gates to prevent bike tires from becoming caught in the catch basin starting along cycling routes and expanding throughout the road network. Ensure catch basins are not broken or raised.
C02	Upgrade cycling infrastructure	Accelerate implementation of the updated Pedestrian and Cycling Strategies.
C03	Review multi-use path and/or cyclist crossings	Review multi-use paths and cyclist crossing locations; evaluate the requirement for additional signage, markings, lighting, or traffic control, and proceed with improvement projects.
C04	Develop cycling traffic monitoring program	Leveraging advanced technologies in active transportation traffic monitoring, and following guidance from TAC's Traffic Monitoring Guide, a traffic monitoring program for bicycle traffic should be developed to support safety analysis and subsequent decisions regarding cycling activity.
C05	Support school cycling education programs	Coordinate with school divisions to provide education to students in elementary, middle, and high schools to foster student understanding of bicycle safety. Provide tools (e.g., locks, helmets, reflective items, etc.) to encourage safe riding. Coordinate the implementation of this action with Action P2 "Review and update Active and Safe Routes to School Program"
C06	Formalize cycling infrastructure maintenance requirements	Develop a monitoring and maintenance program for cycling infrastructure, and update snow clearing policies.
C07	Develop cyclist signal phasing strategy	Develop a strategy to identify where to install bicycle signal heads and their characteristics as well as criteria for installing leading bike intervals and fully protected phases for cyclists.
C08	Develop and implement cycling facility design guide	Develop and implement cycling facility design guide specific for Winnipeg conditions that includes geometric design, pavement markings, and signage.
C09	Conduct cyclist conflict studies	Conduct cyclist conflict studies and other safety performance evaluation of existing cycling facilities to inform site specific changes and future design practices. Capture findings in the new cycling facility design guide.

Action #	Action	Description
C10	Collaborate with Province on Highway Traffic Act (HTA)	Collaborate with the Province on bicycling-related issues pertaining to the Highway Traffic Act, such as but not limited to, passing distance and right of way at crossings.
C11	Monitor and mitigate safety impacts of micromobility devices	Monitor the safety implications of micromobility devices, including e-bikes, scooters, and skateboards on all road users. Collaborate with the Province regarding regulating the use of these devices on City right of way.

4.5 Actions for reduced speeds

The Road Safety Strategic Action Plan identifies the following six actions in this focus area.

Action #	Action	Description
S01	Implement 30 km/h neighbourhood greenways	Neighbourhood greenways are a bicycle facility type where motorists and cyclists share the roadway. While the majority of Winnipeg's greenways are currently designated 50 km/h, best practice is to have greenways operate with 30 km/h speed limits. A pilot program to trial these reduced speeds is currently in progress on four existing greenways. Further progress on this action is dependent on the outcomes of the pilot program.
S02	Review speed limits	Review speed limits to ensure they are safe and appropriate. The science on speed is clear: lower vehicle speeds result in reduced collision frequency and severity. Lower speed limits, supported by appropriate road design and operations, would improve safety and livability. One of the first steps for this action will be to carry out the Council-directed review of residential speed limits, which includes trialing 30 km/h and 40 km/h speed limits on residential streets, public engagement, and hiring a consultant to report on lowering the 50 km/h default speed limit in Winnipeg. Reviewing speed limits on some arterial streets is also a priority as the majority of fatal and major injury collisions occur on arterials streets.
S03	Promote data-driven speed enforcement	Engage in strategic collaboration with Winnipeg Police Service regarding data (e.g., speed data, enforcement data) sharing to inform enforcement programs
S04	Implement traffic calming measures	Continue to implement the current traffic calming policy approved in May 2020 and finalize second stream of this policy for neighbourhood-wide studies. Proactively implement traffic calming measures as part of new residential developments where appropriate. Coordinate this action with Action Item S2 "Review speed limits".
S05	Develop and implement speed management policy	Develop a speed management policy for arterial streets and implement it in the context of the default speed limit and other relevant actions.
S06	Review and update policy for implementing school areas and 30 km/h reduced speed school zones	Review current policies for implementing school areas and reduced speed school zones. Refine installation criteria to consider additional factors, such as roadway attributes, school layout, and surrounding land use. Review requirements for traffic control devices and other safety measures around schools. Coordinate with Action Items S1, S2, S4 and S5

4.6 Actions for improving safety culture

The Road Safety Strategic Action Plan identifies the following 21 actions in this focus area.

Action #	Action	Description
R01	Conduct public perceptions surveys	Conduct recurring surveys to gain insight to the public's perception of safety in Winnipeg. This provides an understanding as to whether people feel safe on the roads, which complements other safety performance measures, like collisions.
R02	Develop road safety promotional plan	Contribute to building road safety culture by implementing targeted communications to educate the public on safe use of transportation infrastructure, Vision Zero, how to navigate changes to the network and more.
R03	Create road safety committee	Create a Road Safety Committee to keep the RSSAP plan moving; continue with the implementation of programs; discuss the data trends including best practices and lessons learned from other jurisdictions; adapt actions and schedules as needed. Regularly hold RSSAP meetings to discuss current plans, new plans, new trends in data, lessons learned, potential or current barriers, and others.
R04	Improve quality of safety data	Collaborate with Manitoba Public Insurance to improve the consistency and quality of collision data to allow for more accurate analysis. For example, the location coding of collisions needs improvement. Efforts should be made to address the under-reporting of cyclist collisions, and to obtain data on pedestrian slips and falls.
R05	Create evaluation plans for selected countermeasures	Conduct post-installation evaluation of the safety impact of selected safety countermeasures or other policies that impact road users. Prioritize evaluation of treatments where CMFs and other past research are not available. Share the results with the Road Safety Committee for future actions and programs.
R06	Establish a fatal collision review committee	Establish a multidisciplinary, multi-departmental committee to review fatal collisions with the goal of providing collision information to key stakeholders in a timely manor. Such a committee could be very valuable in raising awareness of fatal collisions with senior management outside of the Winnipeg Police Service and broadening understanding of contributing factors to fatal collisions beyond what is available in collision reports.
R07	Establish a fatal and serious injury collision review committee	Establish a review committee for serious injury collisions that occur in Winnipeg. Similar to the Fatal Collision Review Committee but review periodically throughout the year to review collisions and report to senior management of the committee's findings and recommendations for improvement and broadens the understanding of contributing factors that cause serious injury collisions.

Action #	Action	Description
R08	Partner on education programs to reduce distracted road use	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to ensure distracted driving campaigns feature and target all road users.
R09	Coordinate with Winnipeg Committee for Safety	Coordinate with Winnipeg Committee for Safety to engage the public to participate in the institutionalization of road safety within their community. The Winnipeg Safety Committee can provide their input on safety priorities and recommendations for improvements within a given area. This committee of volunteer citizen members is mandated to support, assist, stimulate, and mobilize the community on matters related to safety.
R10	Integrate road safety education into internal professional development	Create a learning culture in the City supported by learning programs and training opportunities for City employees to enhance their road safety knowledge. Invite universities and professionals who work for and with the City to expand on road safety. Provide tools for employees within the City to be able to access road safety resources.
R11	Participate in speed reduction driver education campaigns	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to implement messaging that warns against the dangers of speeding.
R12	Create a road safety branch	Create a Road Safety Branch within the Transportation Division with new staff specifically assigned to implement the actions of the Road Safety Strategic Action Plan (RSSAP) and coordinate with the Road Safety Committee established as part of Action Item R3 to monitor the results and lessons learned from other jurisdictions on implementation of different Vision Zero and/or Road Safety Strategic Plans and determine/update best practices as they become available.
R13	Implement annual road safety reporting	Develop annual road safety reporting that tracks progress with respect to the state of road safety in Winnipeg and progress on the Road Safety Strategic Action Plan.
R14	Integrate road safety into engineering asset management prioritization	Use network screening results and other metrics to support capital funding business cases for safety projects. Incorporate safety metrics into the process that identifies and prioritizes future road renewal projects.
R15	Develop research partnerships	Develop research partnerships with post-secondary institutions in Manitoba on Winnipeg-specific road safety issues.
R16	Expand use of surrogate safety data	Expand the City's use of proactive, surrogate road safety measures, like conflicts, to inform road safety programs and resource allocation.

Action #	Action	Description
R17	Update guideline for traffic impact assessments	Update traffic impact assessment guidelines for new developments, with explicit consideration of road safety in the analysis and recommendation process.
R18	Conduct a safety and equity analysis	Conduct a safety and equity analysis to assess the relationship between high collision neighbourhoods, geographic areas of high poverty, other available demographic information, and the frequency of 311 traffic safety requests.
R19	Recommend expanding the capacity of the commercial vehicle safety inspection program	Expand the capacity of the Winnipeg Police Service's commercial vehicle safety inspection program by exploring partnerships, approaches, and training opportunities. Recommend expanding the capacity of the commercial vehicle safety inspection
R20	Promote stronger car seat education programming	Coordinate with Manitoba Public Insurance and Winnipeg Police Service to ensure important messages about car seat regulations, proper use, and compliance are publicized.
R21	Partner on aggressive driving education and enforcement campaigns	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to implement messaging on aggressive driving.

5. Implementation and monitoring

5.1 Institutionalizing road safety in Winnipeg

Successfully implementing the RSSAP will require the commitment of the City and partner agencies and the approval of increased and dedicated resources, both human and financial.

First and foremost, the City must establish a foundation that will enable the implementation and its monitoring (in terms of process performance and impact performance).

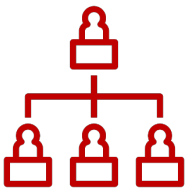
This foundation consists of at least the following activities:

- Creating a Road Safety Committee and Road Safety Branch
- Integrating road safety in Winnipeg
- Developing a prioritized list of ongoing and future strategic actions based on the RSSAP and available resources



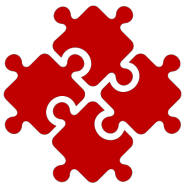
Road Safety Committee: This committee is responsible for guiding the RSSAP and keeping the plan moving ahead. The Road Safety Committee will regularly hold meetings to discuss plans and priorities, trends in data, lessons learned, potential or current barriers, and adapt actions and schedules as needed. The Road Safety Committee should initially include a small group of representatives from key City of Winnipeg departments including Winnipeg Police Service, and Manitoba Public Insurance, at minimum, and be expanded over time to include additional stakeholders. The mandate of the committee includes:

- Implementing the strategic actions of the RSSAP
- Securing approvals for funding
- Measuring effectiveness (process performance and impact performance) of existing and new actions
- Adjusting the overall action plan to meet goals and/or adjusting the goals
- Encouraging additional partners to join the Road Safety Committee and commit to full participation/contribution
- Consulting with other road safety stakeholders
- Researching emerging safety technologies and advancements in road safety
- Being the voice of Vision Zero and the road safety culture in the City



Road Safety Branch: The creation of a Road Safety branch within the Transportation division is necessary to guarantee a 'guardian' of road safety within the City. An essential function of this branch should be to coordinate with the Road Safety Committee to monitor the results of implementation and lessons learned from other jurisdictions and identify best practices as they become available.

The Road Safety branch should be initially staffed by at least two engineer positions (one senior position, ideally certified as a Road Safety Professional Level 2, and one junior position), as well as a public education lead. Once the branch is created, a staffing audit should be completed to determine appropriate staffing levels. This may also require new staffing positions outside of the Road Safety branch (e.g., Traffic Management or Transportation Facilities Planning), as the responsibility to implement many of the actions is assigned to other branches.



Integration of road safety in Winnipeg: In order for road safety culture to grow among Winnipeggers, it must first be cultivated within the City itself, and – from there – within partner and key stakeholder agencies. Road safety must be integrated into the decision-making process throughout the City and agencies involved with the transportation system. Developing a road safety culture means creating a social climate in which road safety is highly valued and rigorously pursued – where fatalities and serious injuries resulting from collisions are not acceptable. The implementation of the RSSAP will support institutionalization changes in road safety culture through several initiatives. Institutionalization of safety will lead to key achievements, including:

- Interaction, collaboration, and close liaison among safety partners
- Use of data-driven goals and focus area objectives and strategies
- The incorporation of safety into existing and future plans and programs
- A workforce of highly trained practitioners in road safety among all participating agencies
- The provision of funding sources allocated to the delivery of safety investments.

5.2 Collaboration opportunities

The RSSAP is a living document for guiding the safety management process in Winnipeg. For the RSSAP to positively impact road safety, regular meetings with road safety partners are needed. At these meetings, decisions will be made concerning budgets, priorities, and goals. These meetings can provide an opportunity to evaluate progress and, when needed, further collaborate and support each other so that all partners deliver on their commitments.

The Road Safety Committee should engage stakeholders that have expressed interest in the development, implementation, and/or monitoring of selected actions within this RSSAP.



5.3 Resources and funding options

It is difficult to predict the relationship between the level of funding for safety improvements and the associated reduction in collisions. However, the RSSAP has set an ambitious goal and to achieve it, implementing as many strategic actions as possible from the proposed list will likely be required to meet the goal.

Implementing the RSSAP will require the commitment of City and partner agencies and the approval of increased and dedicated resources. Magnitude of cost, in terms of low, medium, or high, were identified for all actions in the RSSAP. Where possible, opinions of cost were developed for planning purposes, however, some actions require further scoping. It is anticipated that the implementation of RSSAP will require an investment of $22M over the next five years. While this cost can be used for planning purposes, more refinement is required for budgeting purposes.

In terms of human resources, several actions are anticipated to be implemented using existing staff resources. In some cases, consultants or additional employees will be required to implement certain actions. Initial staffing requirements for the Road Safety Branch are discussed in Section 5.1.



5.4 Communication strategy

Many aspects of the RSSAP depend on communications and outreach. Coordination of all programs, including communications, education, and enforcement, will make existing individual efforts more effective. Using a common brand and emphasizing they are all being delivered to help improve road safety in Winnipeg will add to that effectiveness.

The Road Safety Committee will provide the platform to engage all partners in this effort. This would allow for optimizing the use of resources in terms of which focus areas and which demographics are targeted and tight coordination with the province and adjoining jurisdictions on timing and messaging to get the maximum impact. This would also allow for better measurement and evaluation.



5.5 Evaluation and monitoring

Monitoring and evaluation will be critical to the plan's success. The Road Safety Committee will be monitoring progress towards the plan's goal as well as its degree of success and will report on progress with an annual report. Implementing Action R13 - Implement Annual Road Safety Reporting – is a short-term priority.

Good safety evaluations require several years of data after an action has been implemented to accurately determine, statistically, if a change has occurred. Therefore, it will be several years (likely four or five) before truly accurate evaluations of the RSSAP's overall effects can be stated. Although changes in data trends will take a longer period to be determined, some early signs of success can be observed as a result of the implementation of the RSSAP. These could include public and stakeholder engagement in the RSSAP, positive media and public feedback, increased budget and resources, and smooth execution of actions.



5.6 Strategic action prioritization

Actions were prioritized to determine how to best divide the work over the next five years. The factors that influenced the ranking in the prioritization of actions include:

- Time frame envisioned to initiate implementation
- Road safety benefits
- Type of planned projects and strategies (i.e., ongoing, expanded, new)
- Resources (budget and staff availability)

One of the first activities to be undertaken by the Road Safety Committee is to refine the prioritization of actions, using the prioritization in the RSSAP as the starting point and applying an equity lens.

Table 3: Prioritization mechanism of the strategic actions

Priority Category	Description	Example	Time Frame to Initiate Implementation
1	Action items with highest priority (e.g., focused on "Data and Analysis" and "Policy Development" type of actions) as well as those actions with higher safety benefits and lower implementation costs (i.e., “low hanging fruit”)	Review protected left-turn phasing policy and implement protected phasing at select locations (Action item I3; Focus area: Signalized Intersections)	Short-term (less than two years)
2	Action items with a follow up to an action in Category 1, or of lower priority compared to the actions in Category 1 (e.g., focused on "Policy Development & Implementation" type of actions). This category also includes actions with lower safety benefits and higher implementation costs compared to the ones in Category 1	Develop road safety promotional plan (Action item R2; Focus area: Road Safety Culture)	Medium-term (two to three years)
3	Action items with a follow up to an action in Category 1 or 2, or of lower priority compared to the ones in Category 2 (e.g., focused on "Implementation" type of actions). This category also includes actions with lower safety benefits and higher implementation costs compared to the actions in Category 1 and 2	Develop cycling traffic monitoring program (Action item C4; Focus area: Cyclists)	Long-term (four to five years)

5.7 Strategic actions

The 67 actions that form part of this Road Safety Strategic Action Plan are shown here, ranked by implementation timeline: short-term – less than two years for initiation; medium term – two to three years; and long term – four to five years. The implementation of many actions will be an ongoing effort.

In some instances, road safety benefits are indicated in terms of an associated collision modification factor (CMF). A CMF is a multiplicative factor used to compute the expected number of collisions after implementing a given action at a specific site. For instance, an action item with CMF value of 0.8 for a specific collision type indicates an expected 20 percent reduction in the given collision type after implementation of the subject action.

Actions marked with an asterisk require further scoping to develop an opinion of cost. Implementing these actions is not captured in the $22M estimated cost presented in Section 5.3

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
C02*	Upgrade cycling infrastructure	Cyclists	Accelerate implementation of the updated Pedestrian and Cycling Strategies.	Upgrade and/or install cycling infrastructure will enhance the safety and mobility of cyclists within the City.	High	Active Transportation		Short term
C10	Collaborate with Province on Highway Traffic Act (HTA)	Cyclists	Collaborate with the Province on bicycling-related issues pertaining to the Highway Traffic Act, such as but not limited to, passing distance and right of way at crossings.	The collaboration with the Province is aiming to address the cycling-related issues pertaining to the HTA and create a safer environment for cycling activities.	Low	Traffic Management	Active Transportation; Road Safety	Short term
C11	Monitor and mitigate safety impacts of micromobility devices	Cyclists	Monitor the safety implications of micromobility devices, including e-bikes, scooters, and skateboards on all road users. Collaborate with the Province regarding regulating the use of these devices on City right of way.	The program is aiming to monitor the safety implications of micromobility devices and create collaboration opportunities with the Province to regulate and improve the safety of such devices.	Low	Road Safety	Traffic Management; Active Transportation	Short term
I03	Review protected left turn phasing policy and implement protected phasing at select locations	Signalized Intersections	Review current policies for left-turn phasing and implement protected left-turns at intersections when alignment, turning vehicle demand, and/or pedestrian volumes require temporal separation. Collision history should also form part of the site review.	Extensive range of CMFs are available in CMFclearinghouse, depending on the collision severity, type, the existing signal phasing, etc. For example, the CMF for changing from permitted or permitted-protected to protected is 0.01.	Low	Traffic Management	Traffic Signals	Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
I08	Update Safety Performance Functions (SPFs) and network screening	Signalized Intersections	Develop new and recalibrate safety performance functions (SPFs); update the initial (arterial) street network screening. Bring in a practice of re-calibration of SPFs on a five-year basis. Use network screening for strategy/ focus areas (such as pedestrian collisions) as part of a systemic approach, to identify statistical overrepresentation of collision types, and to identify locations and opportunities to undertake diagnosis.	The results of SPFs and network screening are used to guide in the selection of sites with the highest potential for safety improvements for further diagnosis and selection of treatments to be considered in future projects. This effort helps improve the understanding of the state of practice in road safety, and consequently, improve the safety performance of the road component of a transportation network.	Low	Road Safety	Transportation Systems Planning; Active Transportation; Traffic Signals	Short term
I09	Create policy for road safety audits (RSAs) and in-service road safety reviews (ISRSRs) as a component of capital projects	Signalized Intersections	Create a mandate or parameters to undertake road safety audits (RSAs) and in-service road safety reviews (ISRSRs) as a part of capital projects. Introduce protocols for inclusion of road safety audits or in-service road safety reviews on capital projects where appropriate.	Introduction of the RSA and ISRSR as part of the capital project will ensure the safety of all road users are being considered explicitly for new construction, expansion, renovation, or replacement project for an existing facility or facilities.	Low	Road Safety	Active Transportation; Traffic Signals	Short term
I10	Create a policy for in-service road safety reviews as part of network safety performance review	Signalized Intersections	Create a mandate or parameters to undertake road safety audits and in-service road safety reviews based on the safety performance of intersections/corridors. Have the Technical Guidelines and Practices reflect a more rigorous approach to road safety diagnosis that is not organized around outcomes and is not limited to the current topics in the guidelines.	Creation of the policy for ISRSR will play an essential role in systematic improvement of safety in the City's roadway network.	Low	Road Safety	Active Transportation; Traffic Signals	Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
I14	Enhance pavement markings	Signalized Intersections	Evaluate various pavement marking and pathway construction materials to enhance visibility and durability, including around pedestrian crossing locations and corridors, bicycle lanes, shared facilities, and facility transitions. Consult with members of the accessibility community.	Enhanced pavement markings can boost pedestrian and driver safety and enhance night-time visibility. The available CMFs have low score in the CMFClearinghouse.	Low	Traffic Signals	Traffic Management	Short term
P03	Develop Leading Pedestrian Interval (LPI) policy and implement LPI at selected locations	Pedestrians	Leading pedestrian intervals (LPIs) provide a head start for pedestrians to begin crossing the intersection before the signal turns green for vehicles. Develop policy for prioritization of LPI treatment and implement LPIs at warranted locations. Ensure LPI implementation is compatible with other policies that are applied at signalized intersections. Ensure that Accessible Pedestrian Signal (APS) is installed in conjunction with LPI installation, and if that is not possible, ensure that the minimum walking time is still accommodated in the portion of the walk phase that is accompanied by corresponding flow of vehicular traffic. Coordinate the implementation of this action with Action I2 “Review pedestrian crossing timing plans and implement improvements at select locations”.	An enriched source of evidence in terms of safety improvements, with multiple CMFs in CMFClearinghouse. Example: CMF = 0.413 for vehicle / pedestrian collisions and all collision types.	Low	Traffic Signals	Traffic Management; Active Transportation	Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
P06	Calibrate TAC's Pedestrian Crossing Control Guide (PCCG)	Pedestrians	Conduct a robust evaluation of the safety performance of existing pedestrian facilities based on roadway characteristics and socioeconomic characteristics. The results of this evaluation should be used to calibrate TAC Pedestrian Crossing Control Guide (PCCG) to align with Winnipeg's unique characteristics of traffic volume, speed, and cross section.	Create a holistic perspective to pedestrian crossing control by incorporating both numeric criteria and qualitative engineering judgement into a systematic approach to supporting decisions, implementation, monitoring and evaluation. This approach provides the flexibility needed to address unique local conditions for Winnipeg.	Low	Traffic Management	Active Transportation	Short term
P10	Review potential for pedestrian scramble signals	Pedestrians	Evaluate the feasibility of pedestrian scramble operation at signalized intersections with high pedestrian volumes.	Improve the safety and mobility of pedestrians at signalized intersections with high pedestrian volumes CMF = 0.49 (for vehicle/pedestrian collisions and all collision severities).	Low	Traffic Management	Traffic Signals; Active Transportation	Short term
P11	Review policy on installation of breakaway devices	Pedestrians	Review policy for the installation of breakaway devices, ensuring particular attention is directed at installation practices in areas with high pedestrian volumes.	The breakaway devices will break or yield upon impact, and therefore minimize the severity of the impact. For drivers and occupants of the vehicle however it is important to consider the potential harm to pedestrians in the vicinities of each breakaway devices.	Low	Transportation Facilities Planning	Traffic Management; Street Lighting; Engineering; Active Transportation; Traffic Signals	Short term
P12	Review policy for playground zones	Pedestrians	Review internal technical guideline on playground zones. Develop additional criteria for designating playground zones and develop guidance on installing signage and other safety measures.	Review and update of the current policy will provide the tools and resources to practitioners and City staff for implementation in the vicinity of playground zones.	Low	Traffic Management	Active Transportation	Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
R03	Create road safety committee	Road Safety Culture	Create a Road Safety Committee to keep the RSSAP plan moving; continue with the implementation of programs; discuss the data trends including best practices and lessons learned from other jurisdictions; adapt actions and schedules as needed. Regularly hold RSSAP meetings to discuss current plans, new plans, new trends in data, lessons learned, potential or current barriers, and others.	Development of this committee would be an essential step in guiding the RSSAP, delivering the action items, and for the management and success of the RSSAP.	Low	Road Safety		Short term
R04*	Improve quality of safety data	Road Safety Culture	Collaborate with Manitoba Public Insurance to improve the consistency and quality of collision data to allow for more accurate analysis. For example, the location coding of collisions needs improvement. Efforts should be made to address the under-reporting of cyclist collisions, and to obtain data on pedestrian slips and falls.	RSSAP is a data-driven effort, and the consistency and quality of collision data will assist the City in identification of locations which can benefit the most from implementation of the action items.	Medium	Road Safety	Transportation Systems Planning; Active Transportation	Short term
R10	Integrate road safety education into internal professional development	Road Safety Culture	Create a learning culture in the City supported by learning programs and training opportunities for City employees to enhance their road safety knowledge. Invite universities and professionals who work for and with the City to expand on road safety. Provide tools for employees within the City to be able to access road safety resources.	Enhanced knowledge among City employees on the topics related to road safety.	Low	Road Safety		Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
R12	Create a road safety branch	Road Safety Culture	Create a Road Safety Branch within the Transportation Division with new staff specifically assigned to implement the actions of the Road Safety Strategic Action Plan (RSSAP) and coordinate with the Road Safety Committee established as part of Action Item R3 to monitor the results and lessons learned from other jurisdictions on implementation of different Vision Zero and/or Road Safety Strategic Plans and determine/update best practices as they become available.	A dedicated and informed team of professionals to support the realization of the RSSAP.	High	Transportation Division Management		Short term
R13	Implement annual road safety reporting	Road Safety Culture	Develop annual road safety reporting that tracks progress with respect to the state of road safety in Winnipeg and progress on the Road Safety Strategic Action Plan.	The annual road safety report is intended to keep track of the progress made in the City in terms of implementation of the strategic action items.	Low	Road Safety	Transportation Systems Planning	Short term
R17	Update guideline for traffic impact assessments	Road Safety Culture	Update traffic impact assessment guidelines for new developments, with explicit consideration of road safety in the analysis and recommendation process.	The guideline can include evaluation and identification of potential safety and/or operations issues associated with the following, as applicable: pedestrian and cyclist activities; traffic conflicts; sight distance; access management, etc.	Low	Traffic Assessment	Road Safety; Traffic Management	Short term
R21	Partner on aggressive driving education and enforcement campaigns	Road Safety Culture	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to implement messaging on aggressive driving.	Increase public awareness of aggressive driving, in combination with police enforcement to improve safety of all road users.	Low			Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
S01	Implement 30 km/h neighbourhood greenways	Speed	Neighbourhood greenways are a bicycle facility type where motorists and cyclists share the roadway. While the majority of Winnipeg's greenways are currently designated 50 km/h, best practice is to have greenways operate with 30 km/h speed limits. A pilot program to trial these reduced speeds is currently in progress on four existing greenways. Further progress on this action is dependent on the outcomes of the pilot program.	CMF = 0.74 (Lower posted speed limit from 50 km/h to 40 km/h) for all collision types and severities	Medium	Active Transportation	Transportation Facilities Planning; Active Transportation	Short term
S02	Review speed limits	Speed	Review speed limits to ensure they are safe and appropriate. The science on speed is clear: lower vehicle speeds result in reduced collision frequency and severity. Lower speed limits, supported by appropriate road design and operations, would improve safety and livability. One of the first steps for this action will be to carry out the Council-directed review of residential speed limits, which includes trialing 30 km/h and 40 km/h speed limits on residential streets, public engagement, and hiring a consultant to report on lowering the 50 km/h default speed limit in Winnipeg. Reviewing speed limits on some arterial streets is also a priority as the majority of fatal and major injury collisions occur on arterials streets.	Several CMFs in the CMFClearinghouse to capture the safety effect of speed limits. For example, CMF = 0.74 (Lower posted speed limit from 50 km/h to 40 km/h) for all collision types and severities in urban residential areas.	Medium	Traffic Management	Road Safety; Active Transportation	Short term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
S03	Promote data-driven speed enforcement	Speed	Engage in strategic collaboration with Winnipeg Police Service regarding data (e.g., speed data, enforcement data) sharing to inform enforcement programs.	Coordinated efforts with the WPS to carry out speed enforcements at key locations based on the engineering studies.Positive effects of automated speed enforcement shown in CMFs.For example, CMF = 0.46 to implement automated speed enforcement cameras for all collision types and severities.	Low	Road Safety	Traffic Management; Transportation Systems Planning	Short term
S04	Implement traffic calming measures	Speed	Continue to implement the current traffic calming policy approved in May 2020 and finalize second stream of this policy for neighbourhood-wide studies. Proactively implement traffic calming measures as part of new residential developments where appropriate. Coordinate this action with Action Item S2 “Review speed limits”.	CMF = 0.68 (Traffic calming) for all collision types and severities.	High	Traffic Management	Transportation Facilities Planning; Road Safety	Short term
C01	Upgrade catch basins along cycling routes	Cyclists	Upgrade catch basins from horizontal gates to diagonal gates to prevent bike tires from becoming caught in the catch basin starting along cycling routes and expanding throughout the road network. Ensure catch basins are not broken or raised.	Diagonal gates of catch basins will prevent bike tires from becoming caught in the catch basin and improve the safety and mobility of cyclists.	Low	Active Transportation	Engineering; Streets Maintenance	Medium term
P01	Prioritize pedestrian safety improvements in areas with high levels of vulnerable pedestrians	Pedestrians	Prioritize pedestrian crossing studies and the installation of pedestrian safety measures such as crosswalks, sidewalks, and traffic calming measures, at locations with high volumes of children, older adults, and other more vulnerable types of pedestrians,	Allocate resources to improve safety within areas with high level of vulnerable pedestrians.	High	Traffic Management	Active Transportation; Road Safety	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			(e.g., around schools, playgrounds, senior centres, retirement homes, neighbourhood greenways, within geographic areas of high poverty).					
P02	Review and update Active and Safe Routes to School program	Pedestrians	Review and update current program related to active and safe routes to school and school travel plans. Accelerate and expand this program and include funding for recommended improvements.	CMF = 0.861 (after implementation of Safe Routes to School Program (vehicle/pedestrian collision types).	Medium	Active Transportation	Traffic Management; Road Safety	Medium term
P14	Enhance pedestrian pavements markings	Pedestrians	Use zebra crosswalk markings in the downtown and develop policy for where to use them in other high pedestrian volume or high pedestrian collision locations.	Enhanced pavement markings can boost pedestrian and driver safety and enhance night-time visibility. The available CMFs have low score in the CMFClearinghouse.	Medium	Traffic Signals	Traffic Management; Active Transportation	Medium term
R02	Develop road safety promotional plan	Road Safety Culture	Contribute to building road safety culture by implementing targeted communications to educate the public on safe use of transportation infrastructure, Vision Zero, how to navigate changes to the network and more.	To motivate the general public to adopt safer behaviour as a matter of habit or, in general, to increase awareness of safety problems.	Low	Road Safety	Corporate Communications	Medium term
C03	Review multi-use path and/or cyclist crossings	Cyclists	Review multi-use paths and cyclist crossing locations; evaluate the requirement for additional signage, markings, lighting, or traffic control, and proceed with improvement projects.	Additional signage, markings, or traffic control devices can improve the safety of all road users, including pedestrian and cyclists at crossing locations.	Medium	Traffic Management	Active Transportation; Traffic Signals	Medium term
C06*	Formalize cycling infrastructure maintenance requirements	Cyclists	Develop a monitoring and maintenance program for cycling infrastructure, and update snow clearing policies.	The program is aiming to provide policies and directions for the maintenance and monitoring of cycling facilities, which will	Medium	Streets Maintenance	Active Transportation	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
				ultimately improve the users' safety, accessibility, and security.				
C07	Develop cyclist signal phasing strategy	Cyclists	Develop a strategy to identify where to install bicycle signal heads and their characteristics as well as criteria for installing leading bike intervals and fully protected phases for cyclists.	The leading bicycle interval is implemented at intersections with bicycle signals to give the cyclist a few seconds head start before the vehicular traffic moving in the same direction has a green light. This allows cyclists to move into the intersection and provide motorists better visibility to the cyclists before making any turning movement.	Low	Traffic Signals	Traffic Management; Active Transportation	Medium term
C09	Conduct cyclist conflict studies	Cyclists	Conduct cyclist conflict studies and other safety performance evaluation of existing cycling facilities to inform site specific changes and future design practices. Capture findings in the new cycling facility design guide.	Traffic conflict studies can assist in identification of near-misses at specific locations and provide insights to select countermeasures to address the potential safety issues.	Low	Road Safety	Traffic Management; Active Transportation; Transportation Facilities Planning; Traffic Signals	Medium term
I01	Review No Right-Turn on Red (NRTOR) policies and implement NRTOR at selected locations	Signalized Intersections	Review and update practices related to no right-turn on red (NRTOR). Implement NRTOR at selected locations, such as those with high right-turn conflicts with vulnerable road users, high right-turn collisions, and limited visibility.	CMF for permitting RTOR is 1.69 +/- 0.1 for pedestrian and cyclist collisions. CMF for all collisions after prohibiting RTOR is 0.98 for each approach where NRTOR is installed (Source: MTO's Safety Analyst).	Low	Traffic Management	Active Transportation	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
I02	Review pedestrian crossing timing plans and implement improvements at select locations	Signalized Intersections	Review pedestrian signal timing plans and determine if the pedestrian crossing time is adequate for the demographics in the area. Review the location, direction, and operation of push buttons at signalized intersections.	CMF value of 0.5 vehicle/pedestrian collision type.	Low	Traffic Signals	Active Transportation	Medium term
I07	Review access management policy	Signalized Intersections	Review the current access management policy to rationalize accesses on corridors that are a priority based on safety data to reduce the number of conflict areas. Following this review, create updates if required and ensure alignment with by-law. Effective access management provides systematic control of the location, spacing, design, and operation of entrances and intersections to maximize the safety and efficiency of arterial road operations.	Reduction in the number of conflicts within intersection functional areas and along corridors. there are several CMFs from studies for different access management changes - one of interest for example would be "Le, T. Q., Gross, F., Harmon, T, & Eccles, K. "Safety Evaluation of Corner Clearance at Signalized Intersections." Report No. 18-03676, Federal Highway Administration, Washington, D.C. (February 2018)." Examples: CMF = 0.82 (Estimated CMFs for limited approach corner clearance for all collision types).	Low	Traffic Assessment	Traffic Signals	Medium term
I11	Conduct road safety audits and in-service road safety reviews	Signalized Intersections	Implement a practice to conduct a formal audit of proposed road designs or existing facilities from a safety standpoint to identify potential problems and suggest measures that could improve safety. Reviewing the proposed design (or existing facility) holistically to see how different design elements blend together to create a safe roadway corridor for	Conducting ISRSRs will assist the City to identify cost-effective countermeasures that would improve road safety and operations for all road users.	Medium	Road Safety	Active Transportation	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			all road users. For existing facilities, conduct reviews at locations with the potential for improvement, based on SPFS and network screening results.					
I15	Review and update roundabout installation policy	Signalized Intersections	Review and update existing policy to determine the requirement of roundabouts at new or existing intersections. Ensure the needs of pedestrians are considered in this action.	Roundabouts have several benefits over traditional intersections, including lower entering speeds and fewer points of conflict between vehicles, which reduces the potential for fatal and serious injury collisionsMultiple CMFs for roundabout. Example: CMF = 0.59 (Conversion of intersection into high-speed roundabout; all collision types and severities) CMF = 0.623 (Conversion of intersection to roundabout; all collision types and severities).	Low	Traffic Management	Transportation Facilities Planning	Medium term
P07*	Review existing pedestrian crossing controls for appropriateness of treatment type	Pedestrians	Review existing pedestrian crossing control to ensure they align with new policy based on TAC's Pedestrian Crossing Control Guide calibrated for Winnipeg conditions. Conduct assessment of existing pedestrian crossing control across the city and determine locations that may require upgrades. Once these locations are identified, an implementation plan should be developed to ensure continual and timely implementation of upgrades. To the extent possible, strive to upgrade locations based not only on the 'recommended' components of each treatment	Improve pedestrian safety at controlled crossings. The safety benefits will be estimated based on the specific treatment, selected for a given intersection or mid block crossing.	High	Traffic Management	Active Transportation	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			type identified in the PCCG, but also include 'desirable' components identified for each treatment type.					
P08	Install pedestrian refuge islands	Pedestrians	Update internal guidelines to match TAC's Pedestrian Crossing Control Guide calibrated for Winnipeg conditions to include criteria for pedestrian refuge islands. Pedestrian refuge islands create safer pedestrian crossing locations.	CMF = 0.54	High	Road Safety	Transportation Facilities Planning; Traffic Management; Active Transportation	Medium term
P09*	Review connectivity and accessibility of transit and pedestrian facilities	Pedestrians	Review the existing pedestrian network to determine any gaps in the network and provide pedestrian linkages and direct walking routes to Winnipeg's transit facilities. Review bus stop locations to ensure that pedestrians can easily navigate the transit network within the existing pedestrian network.	Connectivity of pedestrian and transit facilities, in combination with other urban design strategies, have a potential to improve traffic safety. In the absence of connected facilities, pedestrians are exposed to additional conflicts, which may result in collisions with motor vehicles.	High	Transit	Active Transportation; Traffic Management; Road Safety	Medium term
R06	Establish a fatal collision review committee	Road Safety Culture	Establish a multidisciplinary, multi-departmental committee to review fatal collisions with the goal of providing collision information to key stakeholders in a timely manor. Such a committee could be very valuable in raising awareness of fatal collisions with senior management outside of the Winnipeg Police Service and broadening understanding of contributing factors to fatal	Raise awareness of fatal collisions with senior management outside of the Winnipeg Police Service and broadening understanding of contributing factors to fatal collisions beyond what is available in collision reports.	Low	Road Safety		Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			collisions beyond what is available in collision reports.					
R07	Establish a fatal and serious injury collision review committee	Road Safety Culture	Establish a review committee for serious injury collisions that occur in Winnipeg. Similar to the Fatal Collision Review Committee but review periodically throughout the year to review collisions and report to senior management of the committee's findings and recommendations for improvement and broadens the understanding of contributing factors that cause serious injury collisions.	Create a better understanding of contributing factors that cause serious injury collisions.	Low	Road Safety		Medium term
R09	Coordinate with Winnipeg Committee for Safety	Road Safety Culture	Coordinate with Winnipeg Committee for Safety to engage the public to participate in the institutionalization of road safety within their community. The Winnipeg Safety Committee can provide their input on safety priorities and recommendations for improvements within a given area. This committee of volunteer citizen members is mandated to support, assist, stimulate, and mobilize the community on matters related to safety.	A great support to institutionalization of safety in the city.	Low	Road Safety	Office of Public Engagement	Medium term
R14	Integrate road safety into engineering asset management prioritization	Road Safety Culture	Use network screening results and other metrics to support capital funding business cases for safety projects. Incorporate safety metrics into the process that	Incorporating safety performance measures into asset management can assist transportation agencies in managing their aging assets efficiently and improve system-wide safety.	Low	Road Safety	Engineering; Transportation Systems Planning	Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			identifies and prioritizes future road renewal projects.					
R15	Develop research partnerships	Road Safety Culture	Develop research partnerships with post-secondary institutions in Manitoba on Winnipeg-specific road safety issues.	Create a better understanding of the underlying safety issues and utilize the expertise of researchers to develop effective countermeasures.	Low	Road Safety		Medium term
R16	Expand use of surrogate safety data	Road Safety Culture	Expand the City's use of proactive, surrogate road safety measures, like conflicts, to inform road safety programs and resource allocation.	The use of surrogate safety data can assist in identification of near-misses at specific locations and provide insights to select countermeasures to address the potential safety issues.	Low	Road Safety		Medium term
R18	Conduct a safety and equity analysis	Road Safety Culture	Conduct a safety and equity analysis to assess the relationship between high collision neighbourhoods, geographic areas of high poverty, other available demographic information, and the frequency of 311 traffic safety requests.	The analysis can focus on better understanding how different populations may experience transportation safety and create processes to ensure equity and gender perspectives are considered when developing programs aimed at improving road safety.	Low	Road Safety	Transportation Systems Planning	Medium term
R19	Recommend expanding the capacity of the commercial vehicle safety inspection program	Road Safety Culture	Expand the capacity of the Winnipeg Police Service's commercial vehicle safety inspection program by exploring partnerships, approaches, and training opportunities. Recommend expanding the capacity of the commercial vehicle safety inspection.	This initiative is intended to be a one-stop approach to improve the capacity of the commercial vehicle safety inspection program, aiming to meet the emissions and safety inspection requirements.	Low	Road Safety		Medium term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
S05	Develop and implement speed management policy	Speed	Develop a speed management policy for arterial streets and implement it in the context of the default speed limit and other relevant actions.	The development of the policy and its implementation can address concerns of undesirable speeds at a specific location, along a corridor, or within a road network.	High	Traffic Management	Road Safety	Medium term
S06*	Review and update policy for implementing school areas and 30 km/h reduced speed school zones	Speed	Review current policies for implementing school areas and reduced speed school zones. Refine installation criteria to consider additional factors, such as roadway attributes, school layout, and surrounding land use. Review requirements for traffic control devices and other safety measures around schools. Coordinate with Action Items S1, S2, S4 and S5.	Review and update of the current policy will provide the tools and resources to practitioners and City staff for implementation in the vicinity of school zones.	Medium	Traffic Management	Road Safety; Active Transportation	Medium term
C04	Develop cycling traffic monitoring program	Cyclists	Leveraging advanced technologies in active transportation traffic monitoring, and following guidance from TAC's Traffic Monitoring Guide, a traffic monitoring program for bicycle traffic should be developed to support safety analysis and subsequent decisions regarding cycling activity.	The program can create a better understanding of the cyclist activities, the observed safety issues, and assist the City in development of cycling network and other appropriate countermeasures.	Low	Transportation Systems Planning	Active Transportation	Long term
C05	Support school cycling education programs	Cyclists	Coordinate with school divisions to provide education to students in elementary, middle and high schools to foster student understanding of bicycle safety. Provide tools (e.g., locks, helmets, reflective items, etc.) to encourage safe riding. Coordinate the implementation of this action with Action P2 "Review and update	Education on cycling program aiming to improve the safety of cyclists.	Low	Active Transportation	Road Safety	Long term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
			Active and Safe Routes to School Program".					
C08	Develop and implement cycling facility design guide	Cyclists	Develop and implement cycling facility design guide specific for Winnipeg conditions that includes geometric design, pavement markings, and signage.	The guide can provide specific directions for selection and implementation of the cycling facilities. Special attention should be given to properly engineering and designing bicycle facilities to create a safe and comfortable cycling environment.	Low	Facility Planning	Traffic Management; Active Transportation	Long term
I04	Review signal visibility and implement improvements at select locations	Signalized Intersections	Review and increase signal visibility for all road users by removing obstructions and adding additional signal heads, advance warning signs, and reflective tape where applicable. This action may be related to lines of sight or conspicuity.	CMF=0.93 for all collision types and severities (improve visibility of signal head) CMF=0.902 for fatal and injury collisions (Improve signal visibility, including signal lens size upgrade, installation of new back-plates, addition of reflective tapes to existing back-plates, and installation of additional signal heads).	Low	Traffic Signals	Traffic Management	Long term
I05*	Review locations that encourage high-speed right-turn movements and implement improvements at select locations	Signalized Intersections	Assess the need for right-turn channels versus simple right turns whenever possible and retrofit existing locations at intersections with right turn channels that encourage high speed right-turn movements. Simple right turns and smart channels are a preferred tool to ensure decreased speeds. The implementation of simple rights and smart channels should be supported by appropriate signs, pavement marking, and road user education.	CMFs for smart channels: CMF= 0.558 for all collision types and severities CMF= 0.564 for fatal and injury collisions and all collision types No CMF found for pedestrian collisions which is the primary purpose of smart channels.	High	Transportation Facilities Planning	Traffic Management; Engineering; Active Transportation	Long term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
I06	Review advanced warning flashers policy and install treatment at select locations	Signalized Intersections	Review policy for installing advanced warning flashers at signalized intersections. Install advanced warning flashers to warn drivers to prepare to stop at an upcoming traffic signal.	There are no specific CMFs for installation of flashers in isolation. CMFClearinghouse provide CMFs for installation of intersection conflict warning system (ICWS) with a combination of overhead and advanced post mounted signs (various messages) and flashers. CMF = 0.704 for all collision types and severities.	Medium	Traffic Management	Traffic Signals	Long term
I12	Develop guidelines and install overhead / advanced intersection signage	Signalized Intersections	Develop City guideline for installing overhead/advanced intersection signage, crossing road information, or large overhead signage, especially in advance of large intersections with complex operations, to allow the drivers to get into appropriate lanes prior to approaching the intersection. Review retro reflectivity requirements in Technical Guideline and Practice related to sign sheeting. Ensure font sizes are consistent with national standards. Install overhead lane designation signs for large intersections with multiple lanes to provide guidance for drivers to avoid driver confusion.	CMF value of 0.984 for advance street name signs (all collision types and severities).	Medium	Traffic Management		Long term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
I13	Install or extend raised medians	Signalized Intersections	Once access management policy is implemented, install or extend raised medians in accordance with the review of the access management policy to restrict driveways due to operational or safety concerns. Extended medians also can provide additional crossing protection for pedestrians at bus stop locations. Also review the minimum curb height standards.	CMF = 0.29 to install raised median (all collision types and severities) CMF = 0.61 to provide a raised median (injury collisions and all collision types) CMF = 0.54 to install raised median with marked crosswalk (vehicle/pedestrian collisions) CMF = 0.685 to install raised median with or without marked crosswalk (vehicle/pedestrian collisions) Refer to CMFClearinghouse for additional CMFs for different collision types and severities.	High	Transportation Facilities Planning	Traffic Management; Active Transportation	Long term
P04	Install curb bump outs	Pedestrians	Starting in the Downtown core, determine feasible locations where curb bump outs would assist pedestrians in crossing intersections. Consider traversable treatments on bump outs to limit impacts to cyclists.	Potential reduction in pedestrian and cyclist collisions where improvements have been made.	High	Transportation Facilities Planning	Traffic Management; Active Transportation	Long term
P05	Develop and implement a pedestrian traffic monitoring program	Pedestrians	Leveraging advanced technologies in active transportation traffic monitoring, and following guidance from TAC's Traffic Monitoring Guide, a traffic monitoring program for pedestrian traffic volumes should be developed to support safety analysis and subsequent decisions regarding pedestrian activity. Pedestrian activity should be monitored within the transit network and on various facility types.	The program can create a better understanding of the pedestrian activities, the observed safety issues, and assist the City in development of appropriate countermeasures.	Medium	Transportation Systems Planning	Active Transportation	Long term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
P13*	Formalize pedestrian infrastructure maintenance requirements	Pedestrians	Develop a monitoring and maintenance program for pedestrian infrastructure, and update snow clearing policies.	The program is aiming to provide policies and directions for the maintenance and monitoring of pedestrian facilities, including sidewalks, which will ultimately improve the users' safety, accessibility, and security.	Medium	Streets Maintenance	Active Transportation	Long term
R01	Conduct public perceptions surveys	Road Safety Culture	Conduct recurring surveys in order to gain insight to the public's perception of safety in Winnipeg. This provides an understanding as to whether people feel safe on the roads, which complements other safety performance measures, like collisions.	Gain insight to the public's perception of safety in Winnipeg.	Low	Road Safety	Office of Public Engagement; Corporate Communications	Long term
R05	Create evaluation plans for selected countermeasures	Road Safety Culture	Conduct post-installation evaluation of the safety impact of selected safety countermeasures or other policies that impact road users. Prioritize evaluation of treatments where CMFs and other past research are not available. Share the results with the Road Safety Committee for future actions and programs.	The evaluation plan is intended to assess the effectiveness of the implemented actions, which can help the City in future assessments.	High	Road Safety	Transportation Systems Planning	Long term
R08	Partner on education programs to reduce distracted road use	Road Safety Culture	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to ensure distracted driving campaigns feature and target all road users.	Increase public awareness on distracted driving and walking.	Low	Road Safety	Corporate Communications	Long term

#	Action	Focus Area	Description	Road Safety Benefits	Cost	Responsibility - Lead	Responsibility - Support	Timeline
R11	Participate in speed reduction driver education campaigns	Road Safety Culture	Formalize participation in existing and future campaign development, coordinating with Manitoba Public Insurance and Winnipeg Police Service to implement messaging that warns against the dangers of speeding.	Increase public awareness on distracted driving and speeding	Low	Road Safety	Corporate Communications	Long term
R20	Promote stronger car seat education programming	Road Safety Culture	Coordinate with Manitoba Public Insurance and Winnipeg Police Service to ensure important messages about car seat regulations, proper use, and compliance are publicized.	Increase public awareness on the regulations and importance of proper use of car seats.	Low	Road Safety		Long term

** These actions require further scoping to develop an opinion of cost. Implementing these actions is not captured in the $22M estimated cost presented in Section 5.3*