

RESIDENTIAL SPEED LIMIT REVIEW

Background Information

- Official Community Plan
- Transportation Master Plan
- Speed Limit Review



AUTHORIZATION

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1. INTRODUCTION

Since 2013, the Administration has been working closely with residents, community associations, and Councillors to complete 75 Neighbourhood Traffic Reviews (NTRs). The most common concern raised by residents is speeding on neighbourhood streets, followed by concerns for pedestrian safety.

This report presents the findings and recommendations of the technical review for revising speed limits on residential streets, in school and playground zones, in areas with a high concentration of seniors, and on streets designated as a neighbourhood bikeway.

This review considers the appropriate speed limit for streets with residential land uses, including the following street classifications:

- **Local streets** make up most of streets in residential neighbourhoods. They usually have lower volumes of traffic and their main function is for access to residences.
- **Collector streets** have higher volumes of traffic and provide access to schools, parks, and community centres, and often have bus routes. Some examples include Richardson Road, Assiniboine Drive, Kingsmere Boulevard, and Stensrud Road. Figure 1 shows a map of the collector streets in the city.
- **Arterial Streets** are typically around the boundary of a neighbourhood and connect to other neighbourhoods, have higher volumes of traffic, and sometimes have more than one travel lane in each direction. Some examples include segments of Diefenbaker Drive, Spadina Crescent, and Taylor Street. Figure 2 shows a map of the arterial streets in Saskatoon.

Figure 1: Map of Collector Streets in Saskatoon

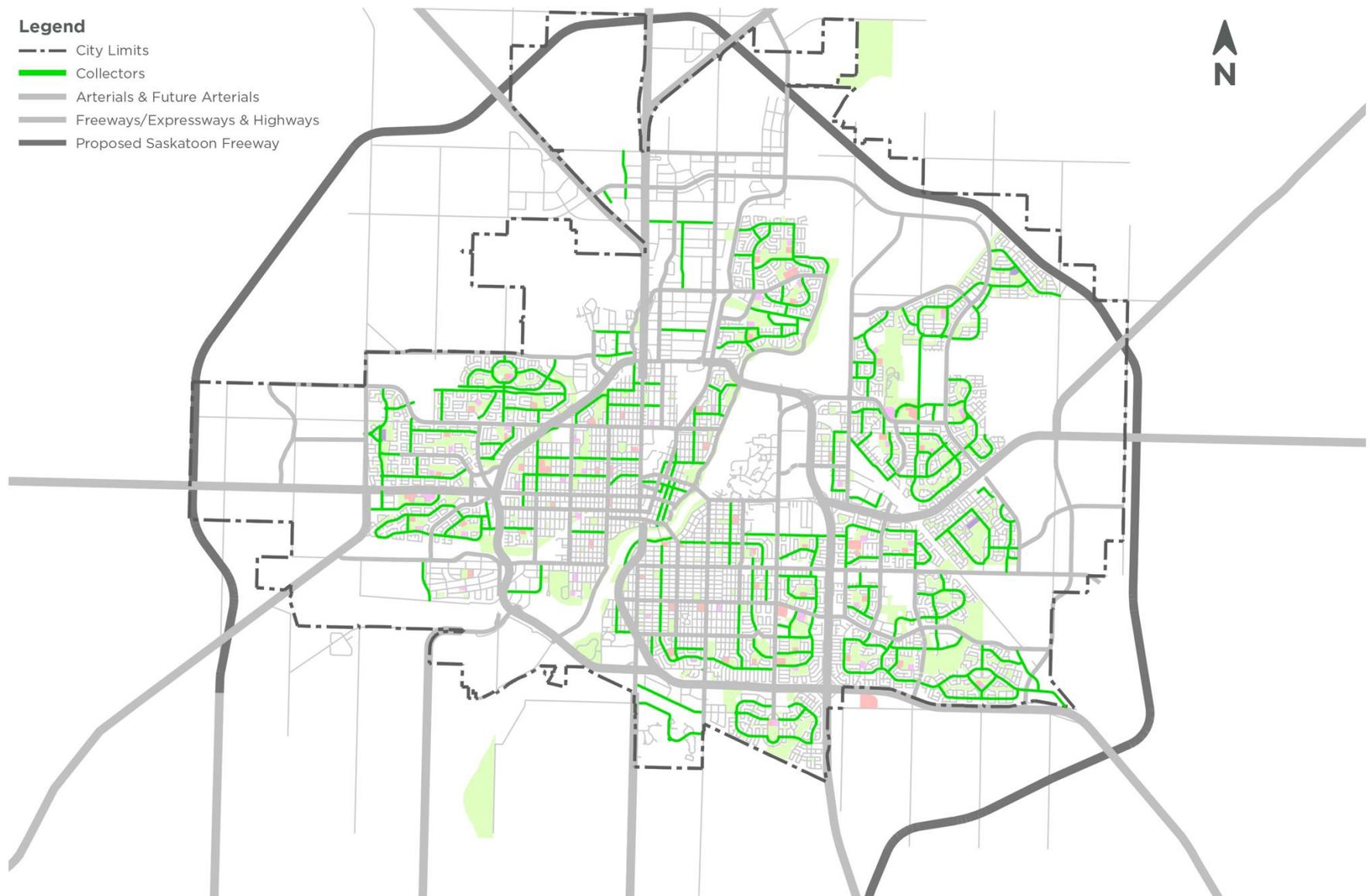
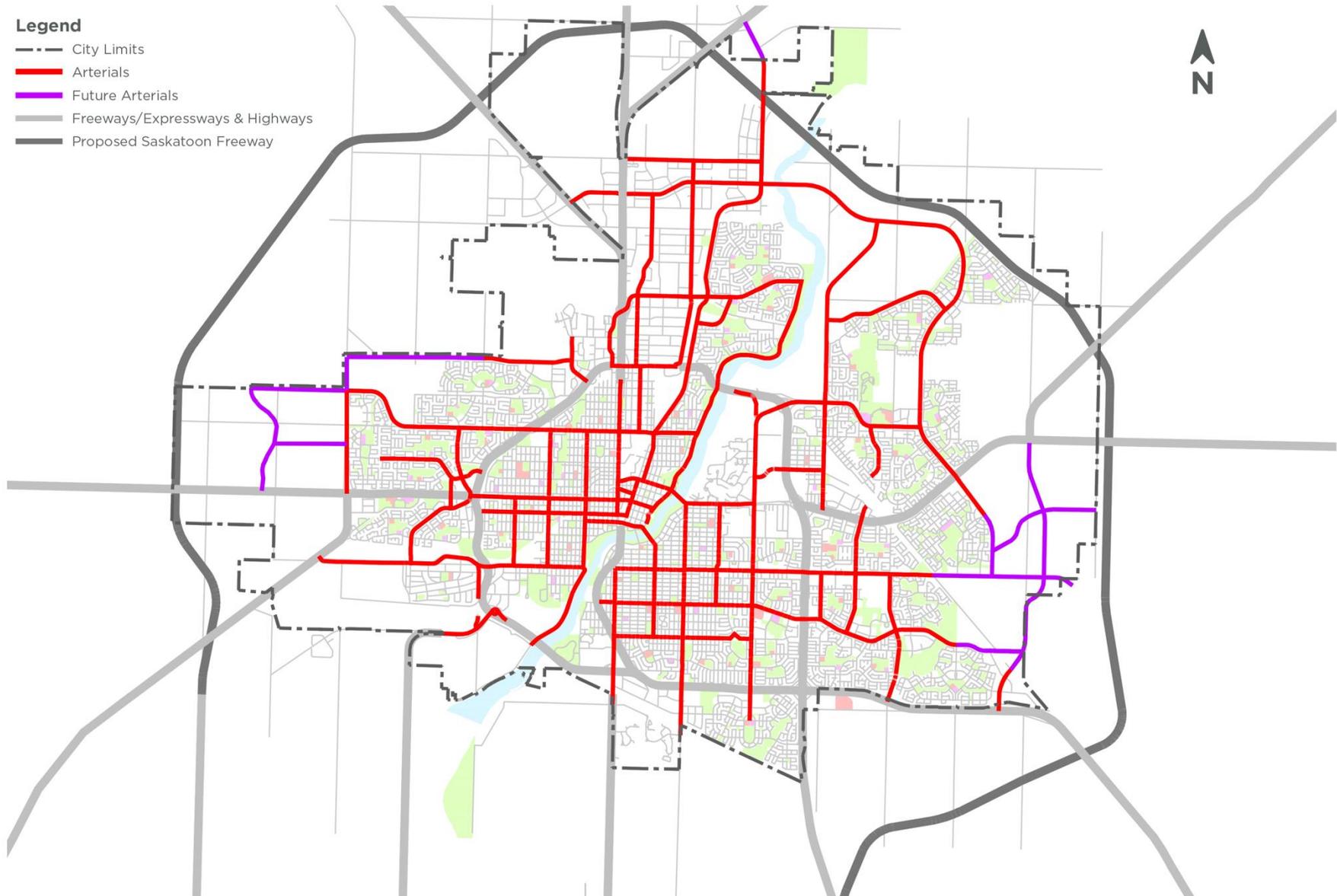


Figure 2: Map of Arterial Streets in Saskatoon



2. EXISTING SPEED LIMITS

2.1. STREETS WITH RESIDENCES

The speed limits are currently governed by Bylaw No. 7200, The Traffic Bylaw, which states that the speed limit is 50 km/h, with exceptions specifically listed in Schedule 4 of the bylaw.

The speed limit for the majority of streets in residential areas is 50 km/h with the exception of the Montgomery Place neighbourhood which has a posted speed limit of 40 km/h since there are no curbs or sidewalks.

2.2. SCHOOL AREAS AND ZONES

The City does not currently use school areas (i.e. school signs only with no associated speed limit reduction).

Council Policy C07-015, Reduced Speed Zones for Schools (April 7, 2003) guides the City's current practice for the creation of school zones. Highlights of the policy include:

- A speed limit of 30 km/h is installed at all elementary and high schools,
- Reduced speed limit is in effect from 8 a.m. to 5 p.m., Monday to Friday from September 1 to June 30, and
- End of school zone is marked with a sign indicating maximum speed.

The following guidelines were used to determine the size and location of the existing school zones:

- The school zone should be considered on the street along the school frontage, and if required, on the flankage based on an engineering review and study of pedestrian activity.
- The school zone should be centered at the location(s) where children cross a roadway. This would include major crossing points on the street along the school frontage and major crossing points along the side of the school.
- Extension of the school zone should include up to the school property lines. The only case a school zone can extend past school property lines is to include an important crosswalk.
- The school zone should not include park space or residential housing. These areas are often far from the school site which leads to driver's noncompliance to the speed limit.
- The beginning and ending points of the school zone are selected with appropriate consideration for the location of traffic control devices that may affect the implementation of the school speed limit zone.
- A school zone may be installed where there is a roundabout, a signalized or stop-controlled intersection (if there are concerns related to sight distance), and in other situations determined by an engineering study.
- In general, the length of a school zone should not be less than 200 metres.

2.3. PLAYGROUND AREAS AND ZONES

Playground areas (i.e. awareness signs only) are installed based on requests and an engineering review of the conditions for the playground. Playground area signs raise driver awareness of the proximity of a playground; however, the speed limit is not reduced.

There is no existing policy regarding playground zones in the City of Saskatoon.

2.4. AREAS OF HIGH CONCENTRATION OF SENIORS

Saskatoon has not established reduced speed zones in areas with a high concentration of seniors. The speed limit on the streets in these areas is 50 km/h unless otherwise noted in the Traffic Bylaw.

2.5. NEIGHBOURHOOD BIKEWAYS

Saskatoon has not established reduced speed limits for streets designated as neighbourhood bikeways. The speed limit on these streets is 50 km/h unless otherwise noted in the Traffic Bylaw.

Currently, the only designated bikeway in Saskatoon is 23rd Street West (i.e. Blairmore Bikeway). Neighbourhood bikeways along 14th Street, Dudley Street, and 31st Street have been approved in principle and as Saskatoon's all ages and abilities (AAA) cycling network expands, more streets may be designated as neighbourhood bikeways in the future.

3. SPEED DATA

Approximately 650 speed studies have occurred in direct response to concerns related to vehicle speeds in neighbourhoods since 2014. The speed study locations are shown in Figure 3.

The Administration uses the 85th percentile vehicle speed to verify whether a speeding issue exists. According to Council Policy C07-029 – Traffic Calming Policy, if the 85th percentile speed is greater than the speed limit plus 10% (i.e. 55 km/h on a residential street), then the street is eligible for traffic calming. Table 1 and Table 2 show a summary of speed data collected as part of the Neighbourhood Traffic Review program.

Table 1: 85th Percentile Operating Speed Data Summary during Regular Hours (2014-2020)

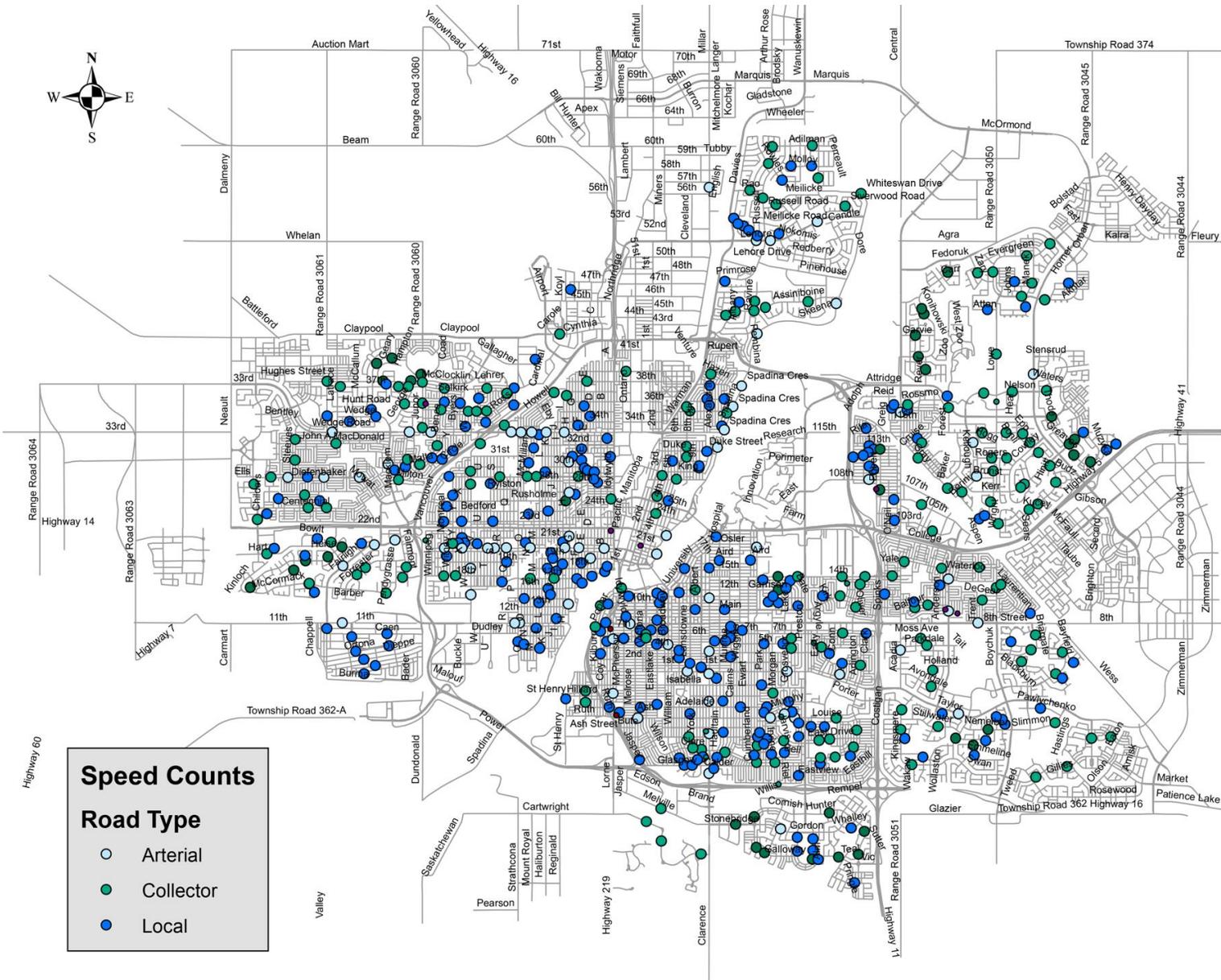
Road Type	Road Width	Average Speed (km/h)	Number of Studies
Arterial	≤11m	51	3
	12m to 13m	54	36
	14m to 16m	58	15
	≥17m	57	28
Collector	≤11m	53	22
	12m to 13m	52	148
	14m to 16m	56	71
	≥17m	50	1
Local	≤11m	42	148
	12m to 13m	47	94
	14m to 16m	46	6
	≥17m	52	6

*Temporary traffic calming installations may still be under evaluation and subject to modification if found to be ineffective.

Table 2: 85th Percentile Operating Speed Data Summary during School Hours (2014-2020)

Road Type	Road Width	Average Speed (km/h)	Number of Studies
Arterial	≤11m	NA	0
	12m to 13m	38	6
	14m to 16m	NA	0
	≥17m	44	5
Collector	≤11m	35	4
	12m to 13m	40	19
	14m to 16m	39	11
	≥17m	NA	0
Local	≤11m	36	17
	12m to 13m	39	11
	14m to 16m	NA	0
	≥17m	33	2

Figure 3: Locations of Speed Studies Completed (2014-2020)



4. COLLISION DATA

The Saskatchewan Government Insurance (SGI) provides collision data to the City of Saskatoon once per year. Their collision records include collisions resulting in property damage of \$5,000 or more, and police-reported collisions, as per the guidelines set in Saskatchewan's *The Traffic Safety Act*. The most recently available five-year collision data (2015 to 2019) was provided by SGI.

During Neighbourhood Traffic Review meetings with residents, Transportation staff often hear concerns regarding near misses and close calls. These types of interactions between road users are not captured by collision records.

4.1. COLLISION HISTORY - CITY-WIDE

In Saskatoon, between 2015 and 2019, there have been 38,049 collisions shown in Table 3, 27 collisions resulting in fatality(ies) shown in Figure 4 by road user type, and 199 collisions resulting in severe injury(ies) illustrated in Figure 5 by road user type.

Severe injuries include:

- an injury that prevents the injured person from walking, driving or normally continuing the activities the person was capable of performing before the injury occurred, including: severe lacerations, broken or distorted limbs, abdominal injuries, unable to leave the collision scene without assistance; or,
- an injury from which the victim enters a state of unconsciousness at or when taken from the collision scene.

People walking, riding bikes, or motorcyclists are considered vulnerable road users because they are at increased risk for injury or death in a vehicle collision due to lack of protection or minimal protection and the weight difference between themselves and motor vehicles.

Table 3: Total Vehicle Collisions in Saskatoon (2015 to 2019)

Type	2015	2016	2017	2018	2019
Vehicle Driver and Passenger Total Collisions	7,728	7,350	7,697	7,160	7,119
Motorcyclist Total Collisions	58	40	30	25	30
Cyclist Total Collisions	70	77	55	64	84
Pedestrian Total Collisions	88	99	105	80	90
Total Collisions	7,944	7,566	7,887	7,329	7,323

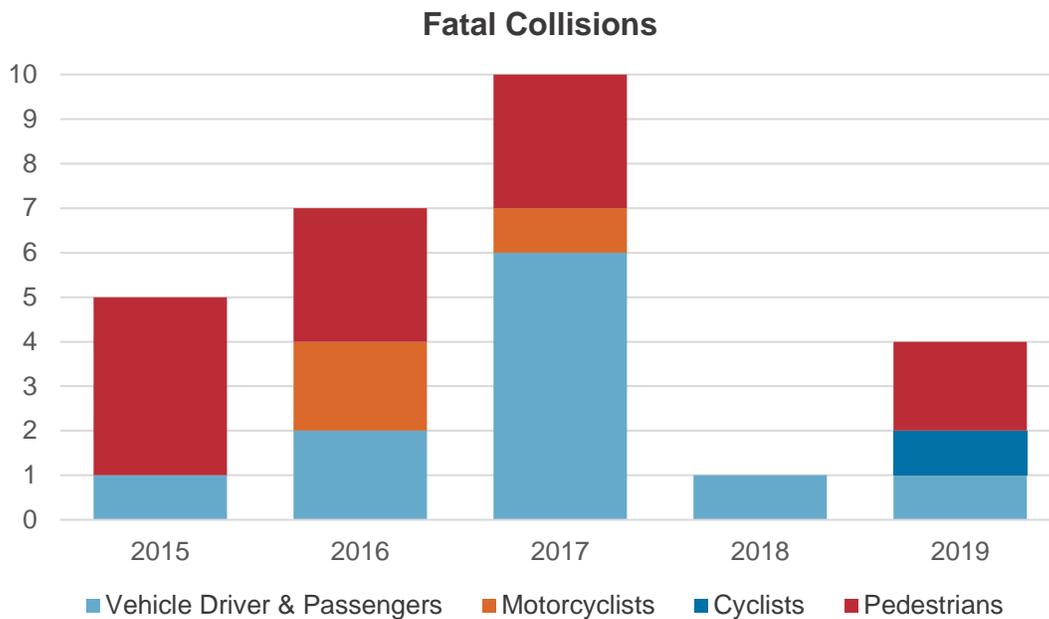


Figure 4: Vehicle Fatal Collisions in Saskatoon (2015 to 2019)

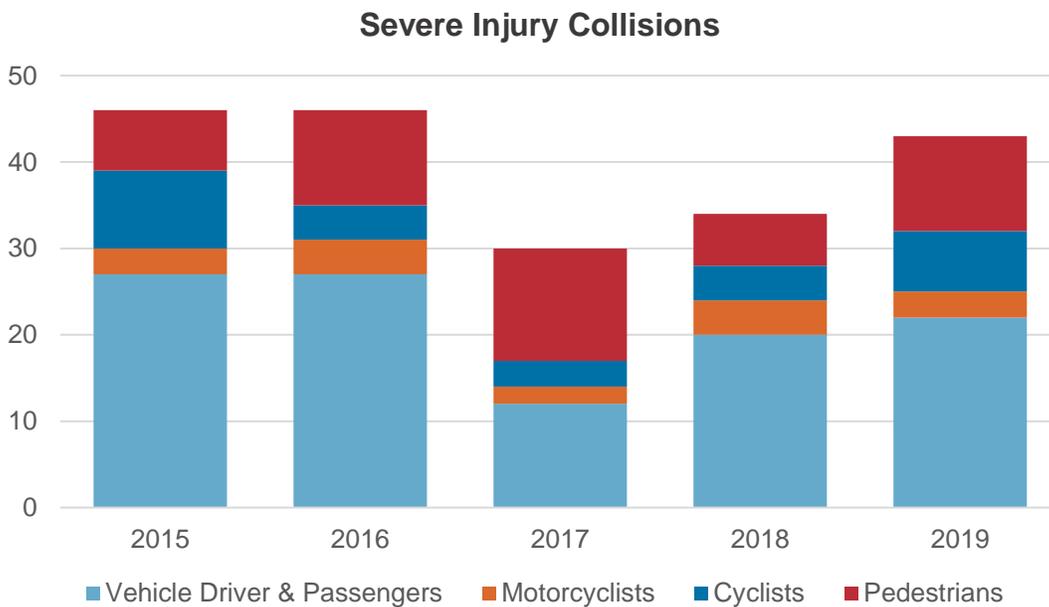


Figure 5: Vehicle Severe Injury Collisions in Saskatoon (2015 to 2019)

As shown in Figure 4 and Figure 5, collisions resulting in severe injuries and fatalities affect all road users and are trending up. Note that the collisions shown in these figures may have resulted in one or more fatalities and/or severe injuries.

4.2. COLLISION HISTORY - BY STREET CLASSIFICATION

In Saskatoon, between 2015 and 2019, as shown in Figure 6, 51% of collisions occurred on arterial streets, 14% of collisions occurred on collector streets, 17% of collisions occurred on local streets, and 18% of collisions occurred on other types of streets (highways, expressways, ramps, etc.).

Total Collisions by Street Classification

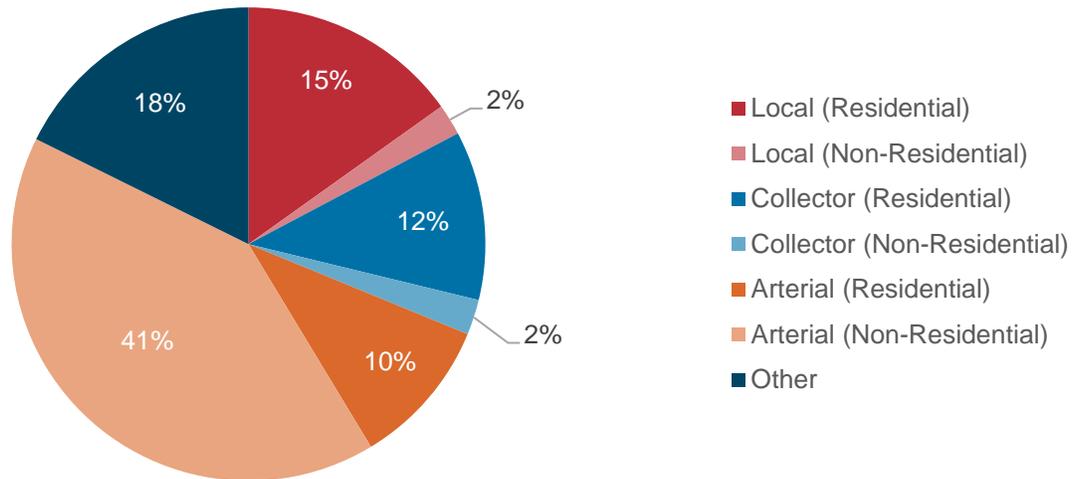


Figure 6: Vehicle Collisions in Saskatoon by Street Classification (2015 to 2019)

As shown in Figure 7, collisions resulting in fatality(ies) occurred on arterial streets (52%), collector streets (7%), local streets (15%), and other types of streets (26%).

Fatal Collisions by Street Classification

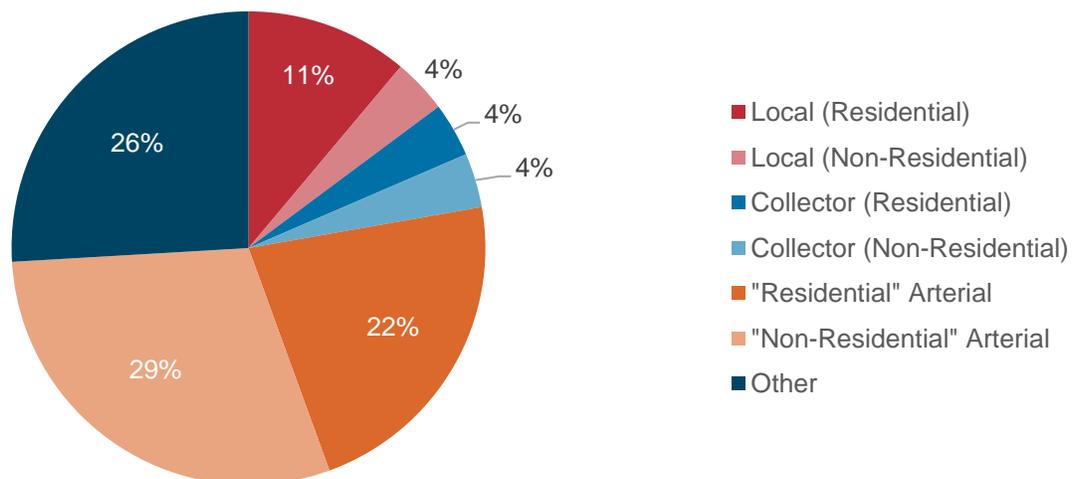


Figure 7: Vehicle Fatal Collisions in Saskatoon by Street Classification (2015 to 2019)

As shown in Figure 8, collisions resulting in severe injury(ies) occurred on arterial streets (65%), collector streets (15%), local streets (7%), and other types of streets (14%). Due to rounding, numbers in this figure do not add up to 100%.

Severe Injury Collisions by Street Classification

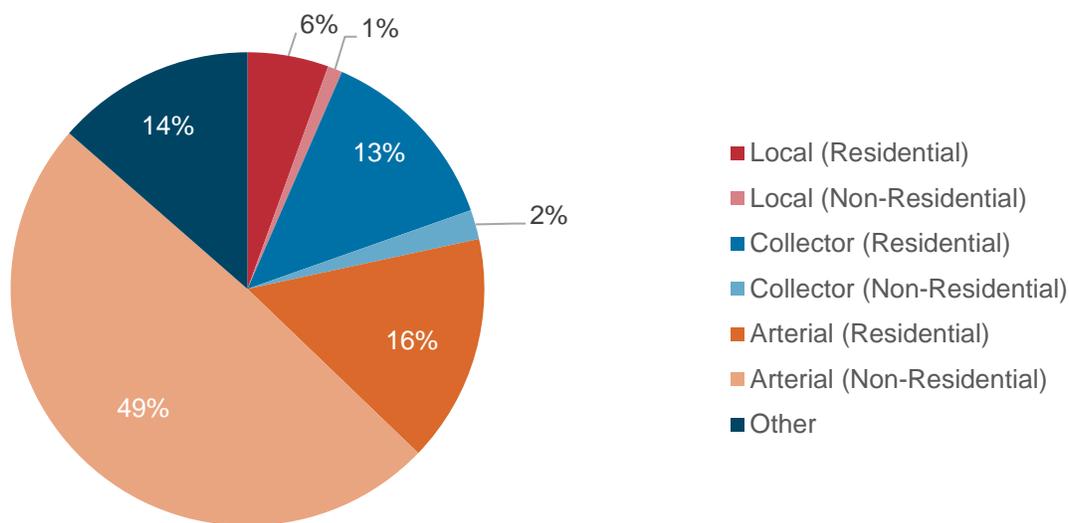


Figure 8: Vehicle Severe Injury Collisions in Saskatoon by Street Classification (2015 to 2019)

As showed in the figures above:

- 37% of the total vehicle collisions occurred on streets with adjacent residential land uses,
- 37% of collisions resulting in fatality(ies) occurred on streets with adjacent residential land uses, and
- 35% of collisions resulting in severe injury(ies) occurred on streets with adjacent residential land uses.

4.3. COLLISION HISTORY - STREETS WITH RESIDENTIAL LAND USES

Collision data specific to Saskatoon streets with residential land uses was also reviewed. Total collisions are shown in Figure 9; collisions resulting in fatality(ies) are shown in Figure 10; and collisions resulting in death(s) or severe injury(ies) are shown in Figure 11.

Between 2015 and 2019, there were 14,020 vehicle collisions; 10 collisions which resulted in fatality(ies); and 68 collisions which resulted in severe injury(ies) on streets with adjacent residential land uses.

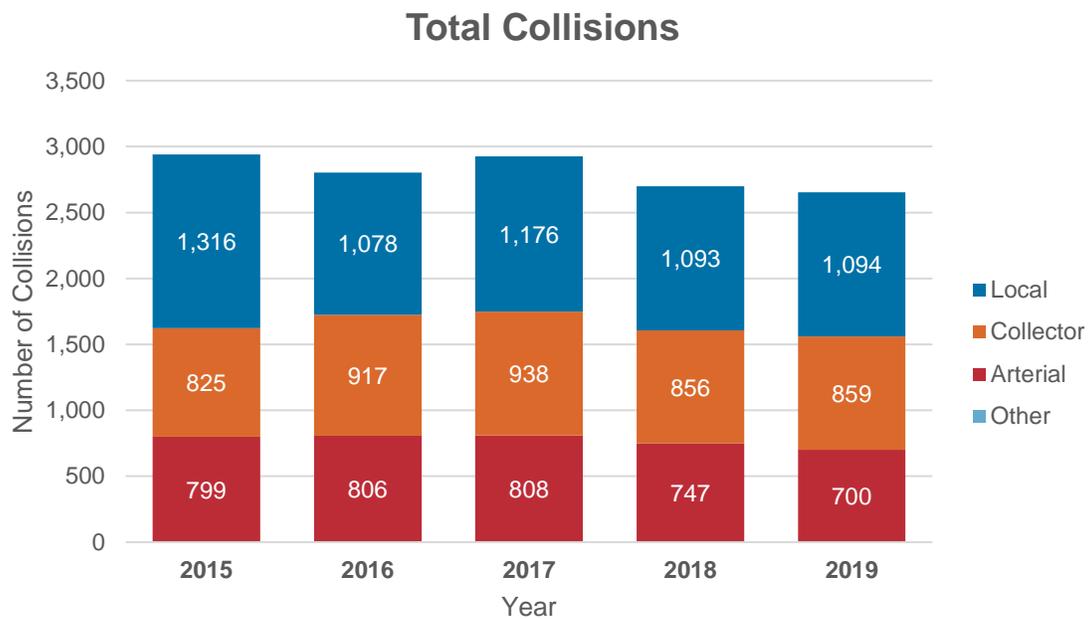


Figure 9: Total Vehicle Collisions for Streets with Residences in Saskatoon (2015 to 2019)

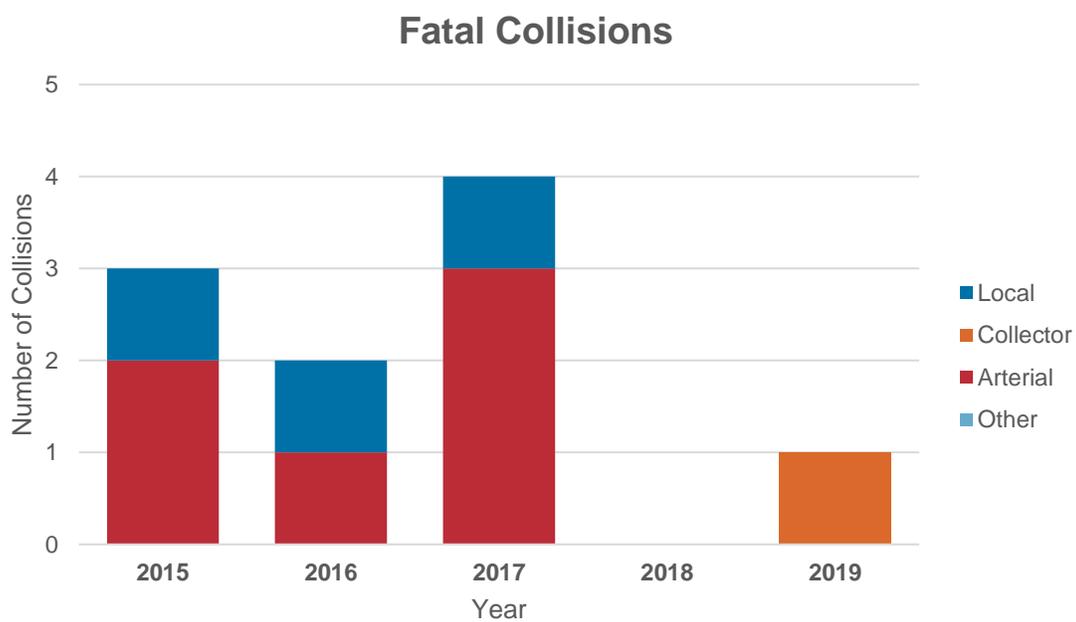


Figure 10: Vehicle Fatal Collisions for Streets with Residences in Saskatoon (2015 to 2019)

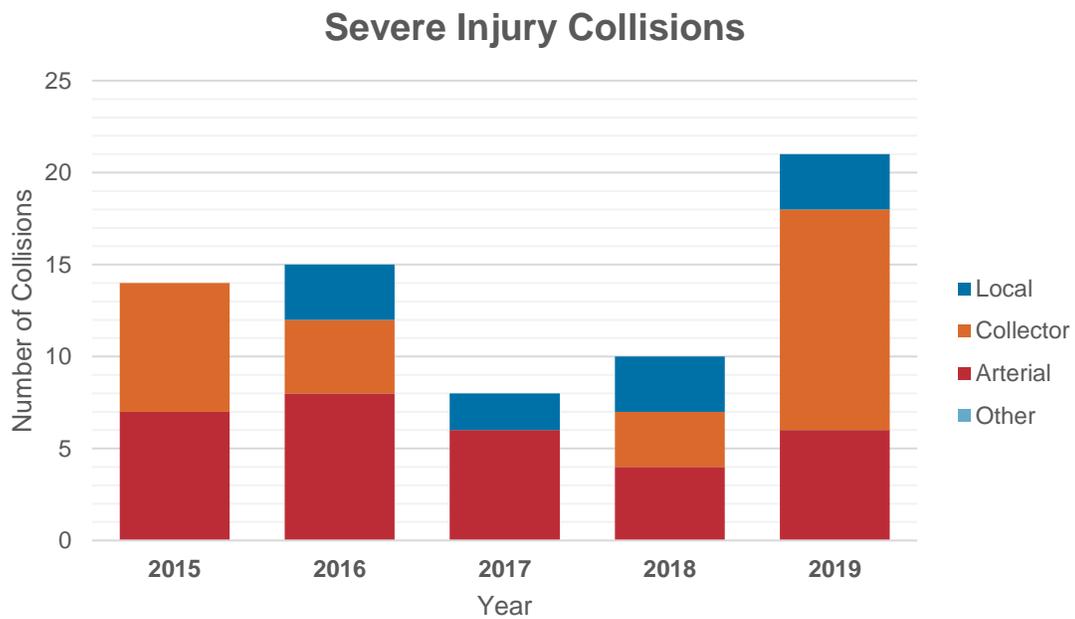
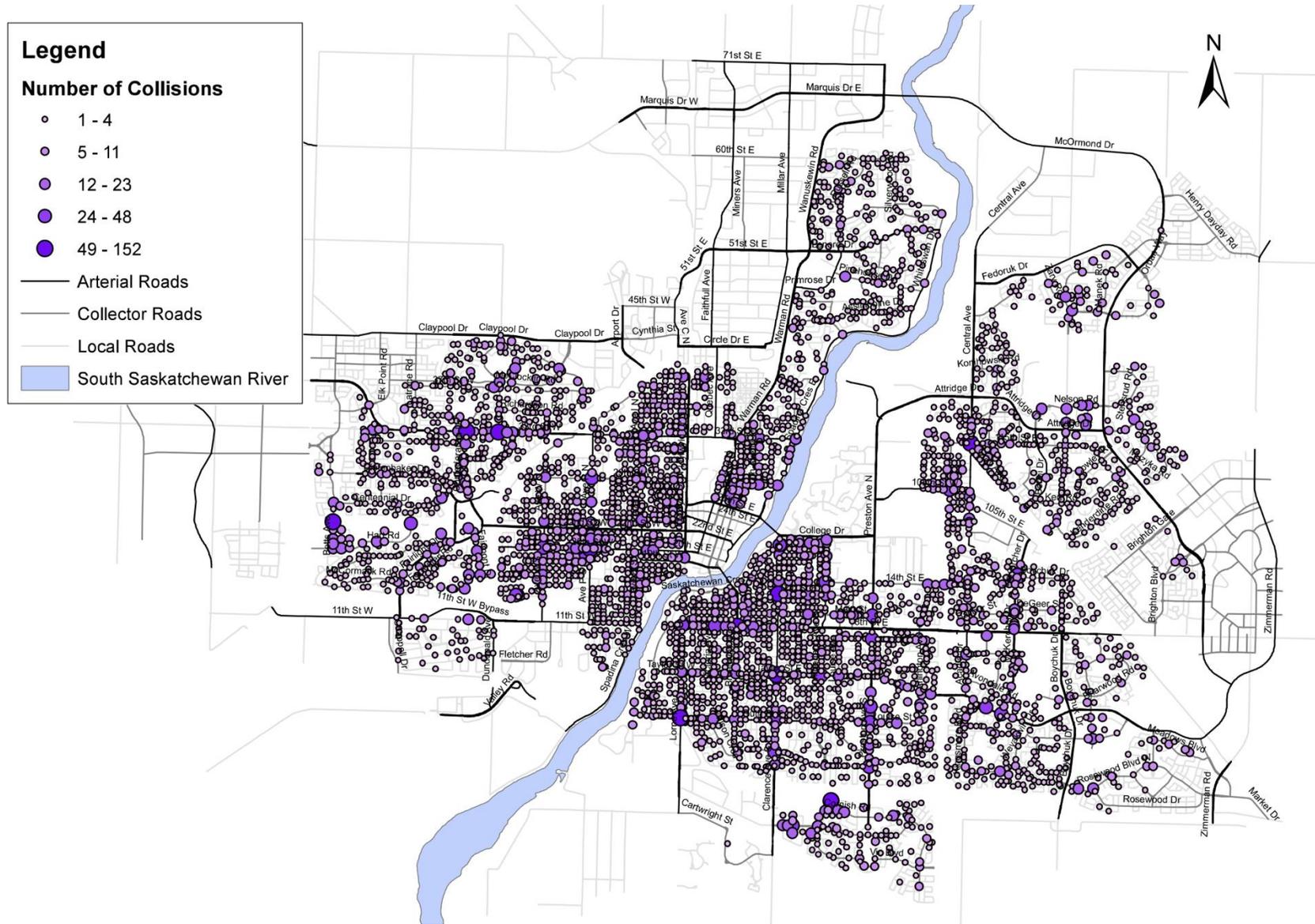


Figure 11: Vehicle Severe Injury Collisions for Streets with Residences in Saskatoon (2015 to 2019)

A map of the locations for the total vehicle collisions on Saskatoon streets with residences is included in Figure 12. A map of the locations for vehicle collisions that resulted in fatality(ies) or severe injury(ies) is shown in Figure 13.

Figure 12: Map of Total Collisions for Streets with Residential Land Uses (2015-2019)



4.4. SASKATCHEWAN HEALTH AUTHORITY COLLISION DATA

The Saskatchewan Health Authority (SHA) has collision information from hospital records. The hospital records may capture collisions that are not reported to SGI or Saskatoon Police Service. The Saskatoon Health Region reported this collision information in May 2016 as part of their Community Views, Unintentional Injury report. Highlights of their report include:

- Motor vehicle traffic collisions are the leading cause of injury-related death for Canadians under the age of 25 years. In 2010, Saskatchewan had the highest age standardized mortality rates from motor vehicle collisions in Canada, double the national average.
- Equity is a major concern in motor vehicle injuries. In 2012, the difference in rates of motor vehicle injury hospitalizations between those living in the lowest and highest income levels was greatest in Saskatchewan compared to any other province in Canada.
- Low socio-economic status is associated with child pedestrian injury rates. Increased speeds of traffic, more streets to cross on the way to school and walking unaccompanied to school have been cited as contributing factors to higher injury rates among children living in lower socio-economic areas.
- Pedestrian injury hospitalization rates vary by age group. Between 2008 and 2013, 15 to 24 years old males and females 65 years and older had the highest hospitalization rates for pedestrian injuries.

5. LITERATURE REVIEW

5.1. RELATIONSHIP BETWEEN SPEED AND TRAFFIC SAFETY

5.1.1. Stopping Distance

Speed affects the stopping sight distance of a driver. According to the Transportation Association of Canada (TAC) (2017), the stopping sight distance is defined as the required distance for a driver to see an object and bring the vehicle to a complete stop without crashing into the object.

Figure 14 shows the total stopping distance which includes a driver’s reaction time and braking distance on dry roadways (National Association of City Transportation Officials, 2020).

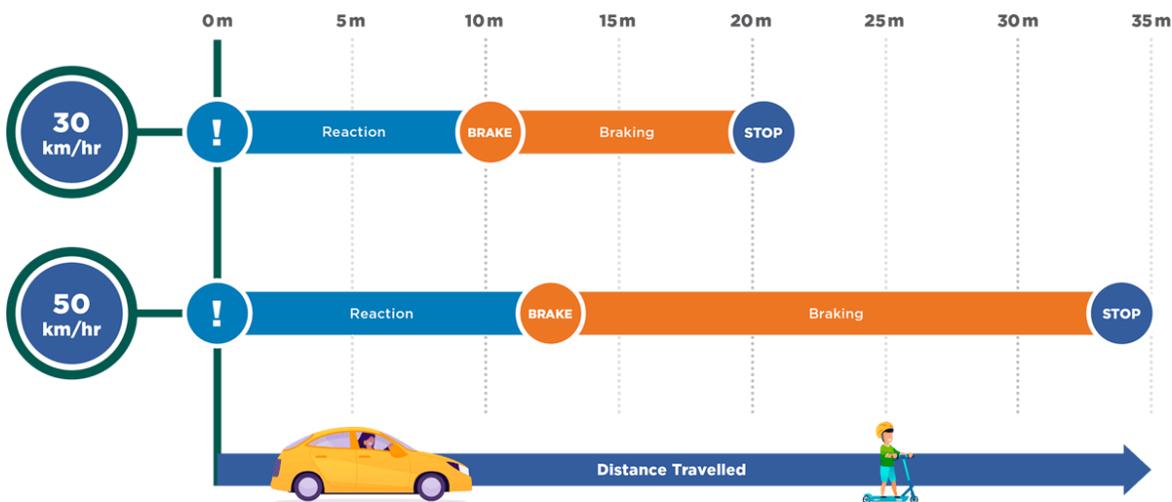


Figure 14: Driver Reaction Time and Stopping Sight Distance

Drivers travelling at higher speeds travel farther before they can react. Vehicles travelling at higher speeds take longer to come to a complete stop. Vehicles travelling on wet or snow/ice covered streets require longer braking distances.

Table 4 shows the calculated minimum stopping sight distance on level and wet roadways for automobiles. The table shows the required stopping sight distance at different vehicle speeds and indicates that speed increases stopping sight distance; as speeds increase, a driver has less time to stop and avoid a collision.

Table 4: Stopping Sight Distance

Vehicle Speed (km/h)	Stopping Sight Distance (m)
30	31.2
40	46.2
50	63.5

5.1.2. Visual Field

Increasing speed also narrows the visual field and limits the perception of surrounding activity. According to the United States Federal Highway Administration's Guidelines for the Visual Impact Assessment of Highway Projects, Figure 15 shows how the field of vision for a driver moving along a highway is affected by speed. This indicates that the driver's viewshed decreases as speed increases.

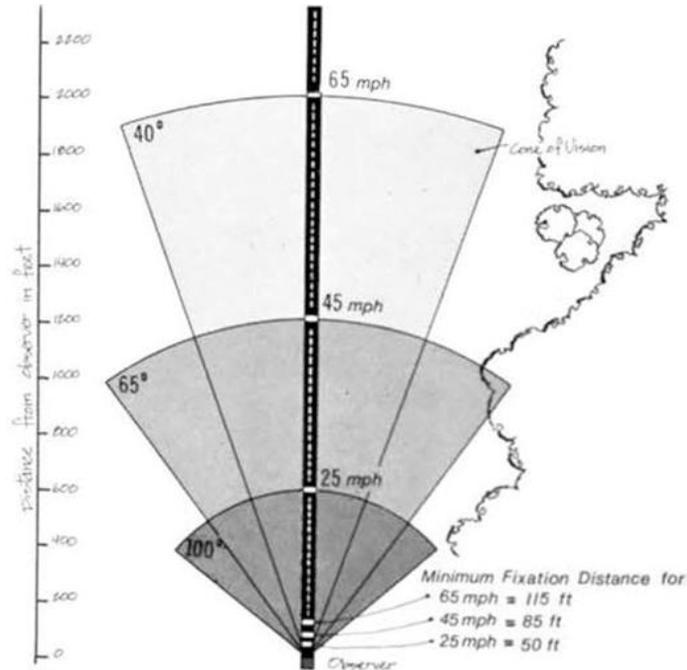


Figure 15: Dynamic Viewsheds and Speed (Source: U.S. Bureau of Land Management, 2008)

Drivers travelling at higher speeds have a narrower field of vision. For example, one study found that drivers travelling at 40 km/h are more able to notice what is happening around them than drivers travelling at 70 km/h whose focus is more on what is right in front of them (National Association of City Transportation Officials, 2020), as illustrated in Figure 16.

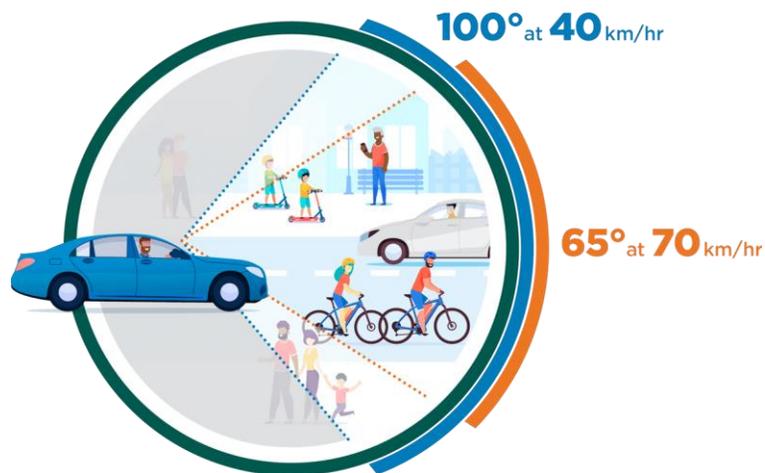


Figure 16: Field of Vision by Speed

Slower speeds reduce stopping sight distance, promote visibility, and increase awareness of potential conflicts (TAC, 2017).

5.1.3. Road User Risk

There is a direct relationship between vehicle speed and a vulnerable road user's survivability and the severity of injury when involved in a collision as shown in Figure 17 below. As shown by the graph, the vulnerable road user risk of death drops significantly at 40 km/h and the vulnerable road user risk of severe injury drops significantly at 30 km/h.

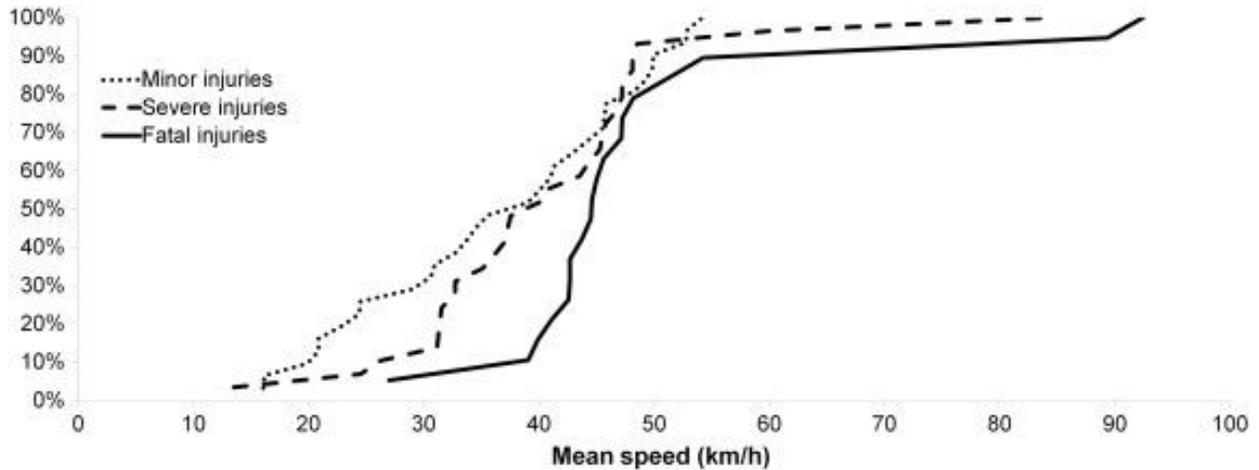


Figure 17: Vulnerable Road User Survival Rate
(Vulnerable road user risk of severe injury or death vs mean speed)

A study by Jurewicz et. al. (2016) shows that as vehicles travel faster, the risk of death to pedestrians and cyclists involved in a vehicle collision rises dramatically, as shown in Figure 18.

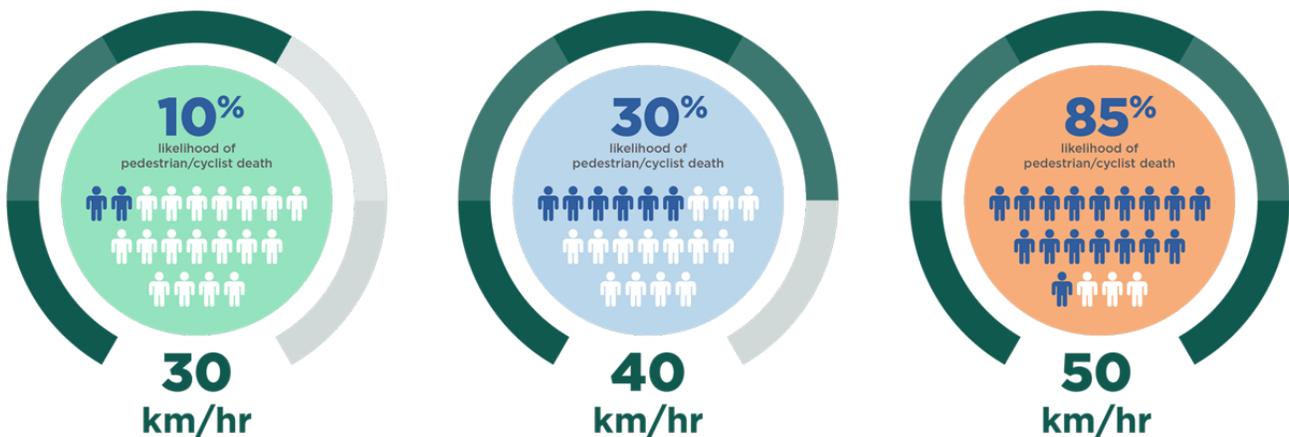


Figure 18: Likelihood of Pedestrian/Cyclist Death

The dramatic increase in risk of death or serious injury at faster speeds is also true for those in a vehicle, particular for head-on collisions or side-impact collisions when a vehicle turns in front of another, as illustrated in Figure 19.

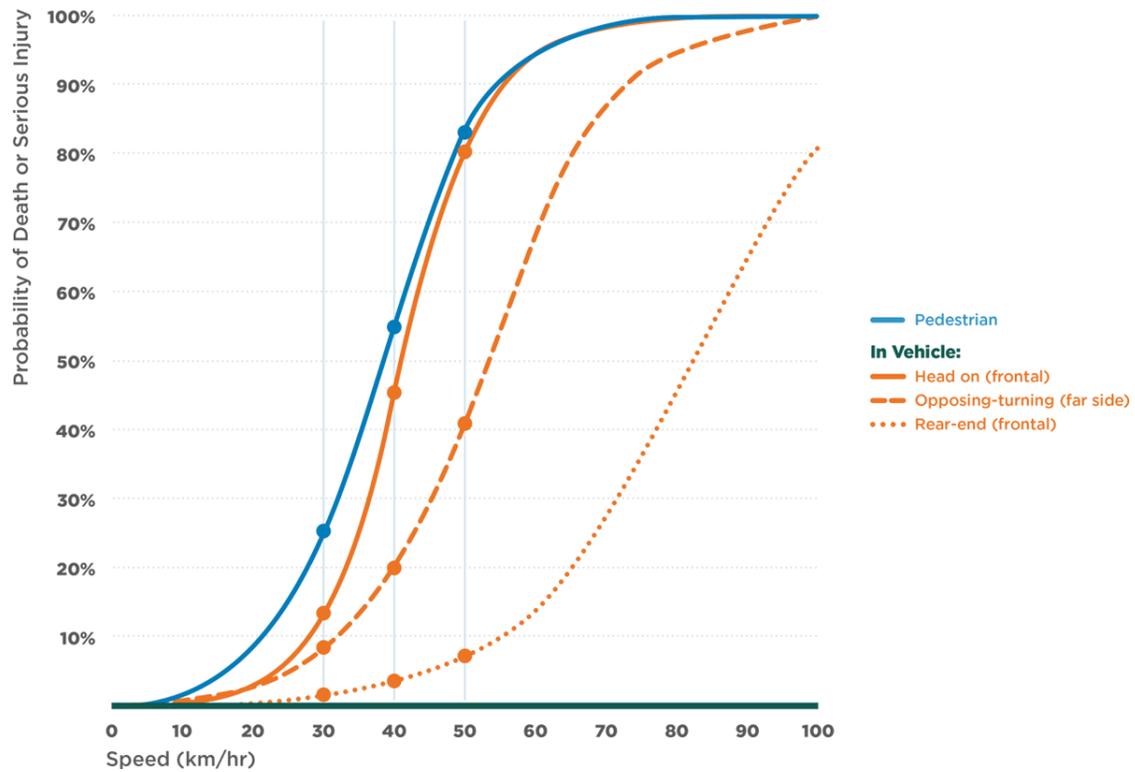


Figure 19: Probability of Death or Serious Injury (Source: Jurewicz et. al., 2016)

5.2. ESTABLISHING SPEED LIMITS

The Federal Highways Administration's (FHWA) Methods and Practices for Setting Speed Limits: An Informational Report outlines the various methods currently in practice for setting speed limits, including the Road Risk Method traditionally used in Canada and the Safe Systems Approach, which is gaining momentum across the globe. The findings from the report are summarized below.

- The most recent and statistically robust research on speed and collision occurrence generally indicates that, **all other factors being equal, increased speeds increase collision occurrence.**
- **Lowering the speed limit will reduce collision risk and raising the speed limit will increase collision risk.**
- The principal challenge in an injury minimization approach to setting speed limits is to manage collision energy so that no user is exposed to impact forces capable of causing death or serious injury. **Driver expectancies result in operating speeds that are higher than the target speeds of an injury minimization approach.**
- Whether the safety gains/losses associated with the change in the speed limit is worthwhile must be examined in the context of maintaining reasonable mobility and other system objectives. In addition, the policy context must be considered because the relationship between travel speed and speed limits indicates that **the percentage of violators increases when speed limits are lowered and decreases when speed limits are increased.**

City Limits – Setting Safe Speed Limits on Urban Streets, published in 2020 by the National Association of City Transportation Officials (NACTO) indicates:

- The United States trend toward larger, more dangerous vehicles is only growing. Larger vehicles are more lethal than small ones for two main reasons: they are heavier, which increases the force of the impact when combined with speed; and they have a taller frame, which increases the likelihood that, if struck, a person (especially a child) will be pulled under the vehicle rather than pushed onto the hood.
- A growing body of research shows that drivers base their decisions at least partially on the speed limit. When they see higher posted limits, and see the resulting increased speed of their peers, they drive faster too, which results in an increased speed of the street overall.

5.2.1. Road Risk Method

Canadian municipalities traditionally use the Road Risk Method to set speed limits. With the Road Risk Method, the speed limit is determined by the risks associated with the physical design of the road and the expected traffic conditions. The rationale for this method is to set the speed limit according to the function or classification of the street. Speed limit adjustments may be made based on various road and roadside design features which could reduce or introduce safety risk.

A national guidebook, Canadian Guidelines for Establishing Speed limits, was published in November 2009 by the Transportation Association of Canada (TAC). This document provides an evaluation tool to assess appropriate speed limits based primarily on the classification, function, and physical characteristics of a roadway.

5.2.2. Safe System Approach

With a Safe Systems approach, speed limits are set according to the collision types that are likely to occur, the impact forces that would result from these collision types, and the human body's tolerance to withstand these forces. The premise of the Safe Systems approach is that it is unethical to create a situation where fatalities are a likely outcome of a collision in order to reduce delay, fuel consumption, or other societal objectives.

The Safe Systems approach recognizes that system designers (i.e. transportation engineers), road users (i.e. all modes) and system operators (i.e. roadways and operations, traffic signal specialists, police, transit operators) must work together on safety. It is a shared responsibility with everyone focused on safety. The concepts of the Safe System approach listed by the Institute of Transportation of Engineers (ITE) (2020) are:

- Human beings can make mistakes that lead to road collisions.
- The human body by nature has a limited ability to sustain collision forces.
- It is a shared responsibility among stakeholders (road users, road managers, vehicle manufacturers, etc.) to take appropriate actions to ensure that road collisions do not lead to severe injuries or fatalities.
- All parts of the system must be strengthened so that if one part fails, road users are still protected.
- A proactive approach should be taken to making the mobility system safe, rather than waiting for events to occur and reacting.
- No death or serious injury should be accepted in the mobility system, and lack of safety should not be a trade-off for faster mobility.
- It is critical that the key risk factors that contribute significantly to collisions are identified and understood.

5.3. SCHOOL AND PLAYGROUND AREAS AND ZONES

A national guidebook, School and Playground Areas and Zones: Guidelines for Application and Implementation, was published in October 2006 by the Transportation Association of Canada (TAC).

This document outlines best practices and includes the following descriptions:

- Area – A section of roadway adjacent to a school or playground that is denoted by school area or playground area signage; area signage is intended only to create awareness.
- Zone – A section of roadway adjacent to a school or playground that is denoted by school area or playground area signage with a reduced speed limit sign.

The TAC guideline provides the following guidance on signing for school zones and playground zones:

- In addition to the appropriate area warning sign, all school zones and playground zones are to be marked with:
 - A sign denoting:
 - Reduced speed limit
 - Effective times and applicable days
 - A sign denoting the end of the zone:
 - For local roads in residential areas only, an “End School Zone” or “End Playground Zone” sign may be provided. This should be considered where there is a greater risk of vehicles accelerating to an unsafe speed at the end of the zone.
 - Alternatively, a maximum speed sign reinstating the original speed limit may be used (City of Saskatoon current practice)
- Length of School Zones and Playground Zones:
 - The length of a school zone or playground zone should generally be no less than 100 metres in an urban environment.
- Guidelines for adjacent School Zones and Playground Zones:
 - Schools and playgrounds are frequently located adjacent to one another. If a school zone and a playground zone are necessary for adjacent sections of the same roadway, a single zone should be provided.
 - In general, it is suggested that a playground zone be installed to provide coverage over a longer period of the school day as well as on non-school days.
 - For playgrounds where the utilization and access are closely tied to the school operation, a school zone can be considered to cover both the school and the playground.
 - Where two schools are located adjacent to one another and both require school zones, then it is suggested that a single zone be provided.

The TAC guideline outlines the following for school areas and zones:

- School areas can be considered for roadways near elementary and middle schools, where there is a possibility of children entering the roadway.
- School areas are generally discouraged for high schools due to the student’s ability to understand traffic and to control their own movements.
- School zones are not required for preschools since younger children are typically accompanied by an adult.
- School zones are generally discouraged along “walk-to-school routes” away from the school vicinity, and on roadways where any of the following conditions exist:
 - School is located on an arterial road or freeway,
 - School grounds are fully fenced,
 - School is located an appreciable distance (e.g. greater than 50 metres) from an intersecting roadway,
 - The candidate roadway does not have a school entrance, and
 - The length of the school frontage is minimal (e.g. less than 50 metres).
- School zones or areas are unnecessary at post-secondary institutions.

5.4. AREAS WITH A HIGH CONCENTRATION OF SENIORS

There are no published standards or national guidelines for creating reduced speed zones in areas with a high concentration of seniors.

According to Canadian Council of Motor Transport Administrators (CCMTA) (2013), older pedestrians are more vulnerable due to the following reasons:

- Limited vision and hearing,
- Slower reaction time and decision making,
- Lower levels of attention,
- Reduced walking speed, and
- Greater injury severity due in part to their greater physical fragility.

Figure 20 was based on a report by Tefft (2011) which found that risks of severe injury or death are higher for older pedestrians.

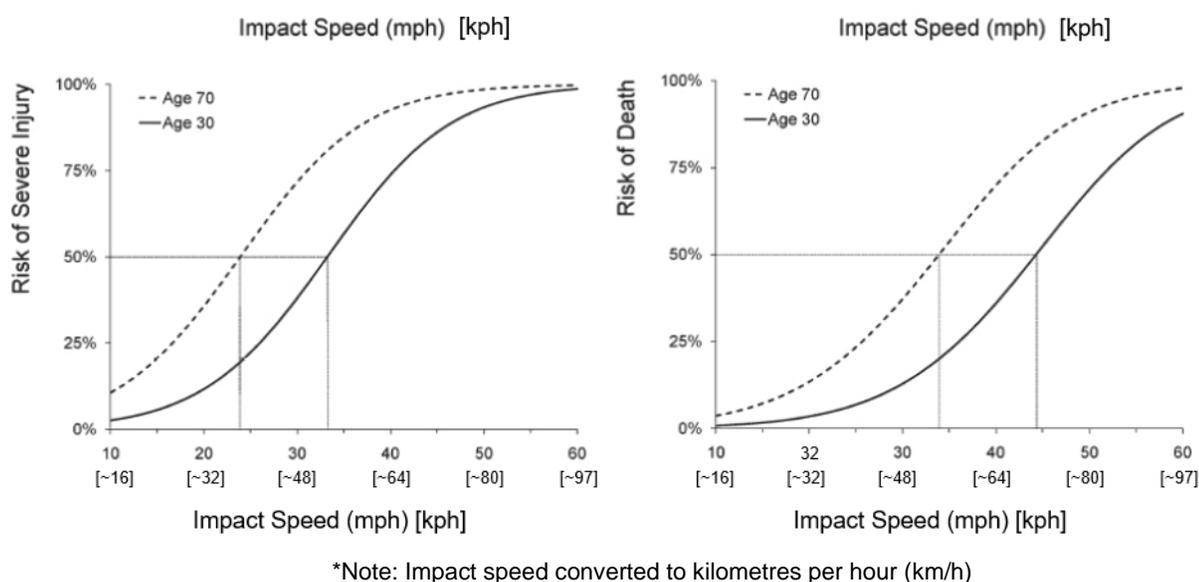


Figure 20. Average risk of severe injury (left) and death (right) for pedestrians age 30 vs. 70

5.5. NEIGHBOURHOOD BIKEWAYS

A neighbourhood bikeway is a type of all ages and abilities (AAA) cycling facility. It is a facility that is a shared roadway on streets with low traffic volumes and speeds, uses traffic calming measures to reduce traffic volumes and speeds, and where on-street parking is generally not impacted. Design treatments can include intersection treatments, signage, pavement markings, and traffic calming to reduce vehicular speeds. A bikeway significantly differs from a protected bike lane. Protected bike lanes physically separate cyclists from vehicles and pedestrians using a variety of treatment options. Physical separation is required when traffic speeds and volumes cannot be reduced to meet neighbourhood bikeway thresholds.

NACTO's Designing for All Ages & Abilities: Contextual Guidance for High-Comfort Bicycle Facilities indicates that:

- Motor vehicle speed and volume increase stress on bicyclists.
- Most people are not comfortable riding a bicycle immediately next to motor vehicles driving at speeds over 25 mph (40 km/h).
- When vehicular volumes and speeds are low, most people feel more comfortable bicycling in the shared roadway as they are able to maintain steady paths and riding speeds with limited pressure to move over for passing motor vehicles. However, as motor vehicle volume increases past 1,000 to 2,000 vehicles per day (or roughly 50 vehicles in the peak direction per peak hour), most people biking will only feel comfortable if vehicle speeds are kept below 20 mph (32 km/h).

According to TAC's Geometric Design Guide for Canadian Roads, unseparated bikeways such as neighbourhood bikeways provide suitable conditions for bicyclists where motor vehicle speeds are 30 km/h or less and where motor vehicle volumes are less than 2,500 vehicles per day.

6. JURISDICTIONAL REVIEW

Municipality	Residential Speed Limits		Playgrounds and School Areas and Zones		Senior 'Reduced Speed' Zones		Reduced Speeds for Neighbourhood Bikeways	
	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion
Calgary	Speed limit is 50 km/h	<ul style="list-style-type: none"> The Administration completed a thorough review of various options to reduce operating speeds in neighbourhoods through changes in the speed limit on streets. In February 2021, Council voted to reduce the speed limit on residential and some collector streets in neighbourhoods from 50 km/h to 40 km/h. Implementation will be through a bylaw change for the default speed limit and signage for all streets with speed limits higher than 40 km/h. 	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones (schools included in playground zones) 7:30 am to 9 pm 7 days a week, year-round 	Consolidated school zones and playground zones into a single zone with fixed hours	Does not use Senior 'Reduced Speed' Zones	<p>In the past, "Elderly Pedestrian Crossing" signs have been installed throughout the City in locations with a larger elderly population or by request.</p> <p>Recently, "Elderly Pedestrian Crossing" signs have not been installed and have been replaced by standard pedestrian crosswalk signage when life cycled.</p>	No response received	
Edmonton	<ul style="list-style-type: none"> Speed limit is 50 km/h for majority Speed limit will be 40 km/h in summer of 2021 	<ul style="list-style-type: none"> In the summer of 2021: <ul style="list-style-type: none"> Default speed limit is being reduced from 50 km/h to 40 km/h; this will primarily affect residential streets The speed limit within high pedestrian areas and the main street portions of Whyte Avenue and Jasper Avenue will also be reduced to 40 km/h A Public Hearing for the applicable bylaws was held on November 4, 2020. Following the Public Hearing, City Council passed the second and third readings of Charter Bylaw 19282, which reduces the city-wide default speed limit from 50 km/h to 40 km/h. 	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones (schools included in playground zones) 7:30 am to 9 pm every day 	In 2018, the City of Edmonton evolved all Edmonton school zones into playground zones	Does not use Senior 'Reduced Speed' Zones		No response received	
Halifax	<ul style="list-style-type: none"> Speed limit is 50 km/h Speed limit is 40 km/h in three neighbourhoods 	<ul style="list-style-type: none"> The province considers speed limit reductions from municipalities on a neighbourhood-by-neighbourhood basis where streets have similar characteristics and a representative sample of streets are shown to meet specified criteria. In November 2020, speed limits were reduced from 50 km/h to 40 km/h in three neighbourhoods. 	<ul style="list-style-type: none"> Speed limit of 30 km/h in school zones No playground zones 	<ul style="list-style-type: none"> If the speed limit is 50 km/h, motorists must slow to a maximum of 30 km/h when children are present. If the posted limit is higher than 50 km/h, motorists must slow to a maximum of 50 km/h in school zones when children are present. During school hours, motorists must lower their speed and assume children are present. On weekends, evenings and holidays, motorists may drive the speed limit unless there are children near the school zone. 	Does not use Senior 'Reduced Speed' Zones		No response received	

Municipality	Residential Speed Limits		Playgrounds and School Areas and Zones		Senior 'Reduced Speed' Zones		Reduced Speeds for Neighbourhood Bikeways	
	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion
Hamilton	Speed limit is 50 km/h and 40 km/h	<ul style="list-style-type: none"> Speed limit is being reduced from 50 km/h to 40 km/h across 45 neighbourhoods (started in 2020, expected to take three years). New signs will be posted on both sides of the roadway creating a 'gateway' feature as people enter and exit residential neighbourhoods. Delivered through the Vision Zero implementation strategy, general public engagement was not undertaken. 	<ul style="list-style-type: none"> Speed limit of 30 km/h and 40 km/h in playground zones and school zones, choice of speed limit used is dependent on the posted speed limit for the street outside of the zone. All day, every day 	School zones are being reduced to 30 km/h (started in 2020, expected to take three years) over the next three years	Does not use Senior 'Reduced Speed' Zones	<p>The following will/may be implemented if there is a large population of seniors in a certain area:</p> <ul style="list-style-type: none"> "Seniors" tab with a Pedestrians Ahead sign if there is a large population of seniors in a certain area Extend walk/flushing-don't-walk times to accommodate seniors <p>The City of Hamilton does not change speed limits or install traffic calming measures specifically for that purpose.</p>	Does not currently have bike boulevards	Preparing a study of priority streets for bike boulevards
Lethbridge	Speed limit is 50 km/h	The default posted speed limit for most neighbourhoods is 50 km/h. There are a couple roads posted at 30 km/h. One road in Downtown is proposed to be 40 km/h.	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones 8:30 am to one hour after sunset, year-round Speed limit of 30 km/h in school zones 7:30 am to 4:30 pm 		Does not use Senior 'Reduced Speed' Zones		Has two bike boulevards with a 30 km/h speed limit	
Martensville	Speed limit is 40 km/h	Not currently investigating a further reduction to the residential speed limit.	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones All day, every day Speed limit of 30 km/h in school zones 8:00 am to 5:00 pm each weekday between September 1 and June 30 		Does not use Senior 'Reduced Speed' Zones		Not considering reduced speeds for neighbourhood bikeways	
Mississauga	Speed limit is 50 km/h, 40 km/h, and 30 km/h	<ul style="list-style-type: none"> In fall 2019, the City began lowering speeds to 40 km/h in 11 different neighbourhoods. In 2021, the City will expand this to reduce speed limits in all 150 neighbourhoods. New signs will be installed at the entrances and exits to all neighbourhoods which will indicate when the neighbourhood area speed limits are in effect. 30 km/h roadways were designed and constructed for this speed. 	<ul style="list-style-type: none"> Speed limit of 40 km/h in school zones 7:45 am to 5:00 pm each weekday between Sept 1 and June 30 No playground zones 	<ul style="list-style-type: none"> Speed limits in school zones will be lowered to 30 km/h. For schools located on most major roads, the speed limit will remain 40 km/h. Community safety zones will be established in all school zones. <ul style="list-style-type: none"> These are implemented where public safety is of special concern or where public safety concerns are evident. These should only be established when traffic enforcement is possible, and increased enforcement is both expected and reasonable. Many set fines, such as speeding and traffic signal related offences, are doubled within community safety zones. 	Does not use Senior 'Reduced Speed' Zones		No response received	

Municipality	Residential Speed Limits		Playgrounds and School Areas and Zones		Senior 'Reduced Speed' Zones		Reduced Speeds for Neighbourhood Bikeways	
	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion
Okotoks	Speed limit is 40 km/h	Lowered default speed limit to 40 km/h in 2015. There are some areas with a 30 km/h speed limit (e.g. areas with no sidewalks).	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones 7:00 am to one hour after sunset Speed limit of 30 km/h in school zones 7:30 am to 5:00 pm on school days 		Does not use Senior 'Reduced Speed' Zones	The following have been implemented at locations known to have a higher percentage of seniors: <ul style="list-style-type: none"> Lengthened crossing times at signals Flashing beacons 	Not considering reduced speeds for neighbourhood bikeways	
Prince Albert	Speed limit is 40 km/h	Not currently investigating a further reduction to the residential speed limit.	<ul style="list-style-type: none"> Speed limit of 30 km/h in school zones 8:00 am to 5:00 pm on school days No playground zones 		Does not use Senior 'Reduced Speed' Zones	Traffic calming installed in areas where there is a concentration of seniors would have to meet the requirements under the Traffic Calming Policy	Not considering reduced speeds for neighbourhood bikeways	
Red Deer	Speed limit is 50 km/h	Not currently investigating a reduced residential speed limit.	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones 8 am to 9 pm each day Speed limit of 30 km/h in school zones 8 am to 4:30 pm each school day 	Combined zones are converted to playground zones.	Does not use Senior 'Reduced Speed' Zones	Requests for crosswalks adjacent to or within a block of a seniors building are usually received not requests for Senior 'Reduced Speed' Zones.	Not considering reduced speeds for neighbourhood bikeways	
Regina	Speed limit is 50 km/h	Not currently investigating a reduced residential speed limit.	<ul style="list-style-type: none"> Speed limit is 30 km/h in playground zones and school zones 7:00 am to 7:00 pm every day 	<ul style="list-style-type: none"> Changes to school zones in September 2019 Changes to playground zones in 2020 	Does not use Senior 'Reduced Speed' Zones		Not considering reduced speeds for neighbourhood bikeways	Has been discussed in the past but physical traffic calming measures or separating cycling lanes altogether is preferred
St. Albert	Speed limit is 50 km/h	<ul style="list-style-type: none"> Reducing neighbourhood speeds (on collector and local streets) from 50 km/h to 40 km/h in May 2021. Considering the following: <ul style="list-style-type: none"> Increasing five arterial roadway speeds from 50 km/h to 60 km/h. Increasing roadway speed on one street from 60 km/h to 70 km/h. 	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones 8:30 am to one hour after sunset each day Speed limit of 30 km/h in school zones 8:30 am to one hour after sunset each school day 	<ul style="list-style-type: none"> Considering the following: <ul style="list-style-type: none"> Changing current elementary and junior high school zones to playground zones Establishing a time of day for playground zones as 8 am to 8pm Removing three existing playground zones (where no equipment exists) Removing six existing short 30 km/h sections that are not associated with a playground or school zone 	Does not use Senior 'Reduced Speed' Zones		Not considering reduced speeds for neighbourhood bikeways	

Municipality	Residential Speed Limits		Playgrounds and School Areas and Zones		Senior 'Reduced Speed' Zones		Reduced Speeds for Neighbourhood Bikeways	
	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion
Toronto	Speed limit is 50 km/h, 40 km/h, and 30 km/h	<ul style="list-style-type: none"> In the Vision Zero 2.0 – Road Safety Plan Update report to City Council, staff outlined the plans to reduce speed limits on all local roads that have posted speed limits of 40 km/h or higher to 30 km/hr, with local roads in non-residential areas being an exception. 2020-2021 Implementation: <ul style="list-style-type: none"> Major arterials from 60 km/h to 50 km/h Minor arterials from 60 km/h to 50 km/h Collectors from 50 km/h to 40 km/h 2021-2026+ Implementation: <ul style="list-style-type: none"> Locals from 50 km/h or 40 km/h to 30 km/h 	Speed limit of 30 km/h or 40 km/h	<ul style="list-style-type: none"> A School Safety Zone is a designated stretch of roadway which includes school safety zone signs and a variety of measures such as watch your speed signs, improved pavement markings, flashing beacons, among other possible improvements. A Community Safety Zone (CSZ) is a designated stretch of roadway, recognized under provincial legislation, marked with community safety zone signs allowing the doubling of fines associated with speeding and, through the applicable sections of Bill 65, Safer School Zones Act, 2017, the use of an automated speed enforcement system. The implementation of 181 CSZs at schools is expected to be completed by the end of 2020. 	Has Senior Safety Zones	<ul style="list-style-type: none"> A Senior Safety Zone is a designated stretch of roadway which includes senior safety zone signs and a variety of measures such as increased crossing times, improved pavement markings, among other possible improvements. Currently staff are focusing on improving existing Senior Safety Zones prior to identifying additional locations for 2020. The improvements in these areas include: <ul style="list-style-type: none"> Implementing enhanced pavement markings and signage to raise awareness of the older adult population; Analysis of pedestrian crossing times at traffic signals to ensure that the lower speed of older adults crossing is accounted for in signal timings; and Conducting In-Service Road Safety Reviews to identify potential short term and long-term improvements including identification of interim or permanent road design improvements. 	Developing 'Quiet Street' cycling routes with a universal 30 km/h speed limit	<ul style="list-style-type: none"> Toronto is developing a number of "Quiet Street" cycling routes, where signs, pavement markings, and traffic calming are used to create comfortable cycling routes on quieter residential streets. Traffic calming is a key part of developing cycling routes which have sections where motor vehicles share the road with cyclists. A universal 30 km/h speed limit is planned for all of Toronto's "Quiet Street" type cycling routes.
Vancouver	<ul style="list-style-type: none"> Speed limit is 50 km/h Speed limit is 30 km/h in pilot neighbourhoods 	<ul style="list-style-type: none"> As of March 2021, the City of Vancouver has piloted its first 30 km/h slow zone (reduced from 50 km/h) in the Grandview-Woodland area Staff will be reporting back to Council in the fall with data results and public feedback, in hopes of informing other slow zones in the City and potential amendments to the provincial Motor Vehicle Act 	<ul style="list-style-type: none"> Speed limit of 30 km/h in playground zones and school zones Dawn until dusk 	School zones and playground zones will be changed to 24 hours per day, 7 days a week rather than restricted to dawn until dusk, hoping to have the signs changed by next spring	Does not use Senior 'Reduced Speed' Zones		Posts 30 km/h speed limits on designated bikeways	All designated residential bikeways are signed at 30 km/h and many have additional traffic calming (e.g. speed humps, curb bulges) and traffic diversion (e.g. restricted motor vehicle access) measures
Warman	Speed limit is 40 km/h	Not currently investigating a reduced residential speed limit.	<ul style="list-style-type: none"> Speed limit is 30 km/h in playground zones and school zones 8:00 am to 5:00 pm between Sept 1 and June 30 		Does not use Senior 'Reduced Speed' Zones	Have not considered any special needs for areas with high concentration of seniors	Not considering reduced speeds for neighbourhood bikeways	

Municipality	Residential Speed Limits		Playgrounds and School Areas and Zones		Senior 'Reduced Speed' Zones		Reduced Speeds for Neighbourhood Bikeways	
	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion	Current Practice	Discussion
Winnipeg	Speed limit is 50 km/h	<ul style="list-style-type: none"> • Pilot streets for speed limit reduction, one local and collector street in each ward (signing all cross-streets for now), some will be 30 km/h, some will be 40 km/h. A report will be presented in summer 2021. • Petition province to allow for gateway signage for a neighbourhood with speed limit reduction. • At the City's Executive Policy Committee (EPC) meeting in January, City Councillors voted against an idea to hold a plebiscite. 	<ul style="list-style-type: none"> • Speed limit of 30 km/h in school zones • 7:00 am to 5:30 pm each weekday between September 1 and June 30 • No playground zones 		Does not use Senior 'Reduced Speed' Zones		30 km/h speed limit pilot project to begin in 2021 for five of their 11 neighbourhood greenways / bike boulevards	

7. EFFECTIVENESS OF SPEED LIMIT REDUCTIONS

7.1. STREET DESIGN

Streets should be planned and designed to effectively support the movement of people of all ages and levels of mobility by providing appropriate and accessible facilities that support pedestrians, cyclists, transit users, and motor vehicles while integrating the street environment with existing and future land uses.

The City updated its design standards in 2020 to incorporate traffic calming principles as part of the concept plan of a neighbourhood. The most recent developments to be constructed with traffic calming devices are the Evergreen, Aspen Ridge, Rosewood, and Kensington neighbourhoods which included curb extensions, roundabouts, and narrow street lanes as integral street design elements.

The data collected during the neighbourhood traffic reviews for these neighbourhoods included speed data.

- [Evergreen Neighbourhood Traffic Review](#) showed that operating speeds in the Evergreen neighbourhood ranged from 37 km/h to 54 km/h,
- Rosewood and Lakewood Suburban Centre Neighbourhood Traffic Review showed that operating speeds in the Rosewood neighbourhood ranged from 48 km/h to 55 km/h, and
- [Pacific Heights and Kensington Neighbourhood Traffic Review](#) showed that operating speeds in the Kensington neighbourhood ranged from 28 km/h to 59 km/h.

These results indicate that the street design and traffic calming measures have been effective at keeping operating speeds within 5 km/h of the speed limit for most streets, and often well below the speed limit.

Despite the inherent traffic calming measures constructed in the neighbourhoods, many concerns regarding speeds were raised by the residents of these neighbourhoods for several streets. Residents requested lower speed limits and additional traffic calming measures such as speed display boards or speed humps.

7.2. MONTGOMERY NEIGHBOURHOOD

At its meeting held on May 24, 2016, City Council approved the Montgomery Place Neighbourhood Traffic Review, stating it be adopted as the framework for future traffic improvements in the area and that the speed limit on all local roads within the Montgomery Place neighbourhood be reduced from 50 km/h to 40 km/h.

Schedule No. 4 Maximum Speeds in Bylaw 7200, The Traffic Bylaw, was amended to reflect these changes and approved on June 27, 2016. 40 km/h speed signs were installed throughout the neighbourhood by September 1, 2016.

Speed data was collected after the speed limit change, and the results are summarized in Table 5.

Table 5: Montgomery Place Operating Speeds Before and After Speed Limit Reduction

Location	Location of Speed Study	Date of Speed Study	Before Speed (km/h)	Date of Speed Study	After Speed (km/h)	Difference (km/h)
Elevator Road	11 th Street to Caen Street	Oct 2015	50.4	May 2017	50.9	+0.5
Ortona Street	Haida Avenue to Crescent Boulevard	Sept 2015	46.4	May 2017	47.1	+0.7
Crescent Boulevard	Caen Street to Merritt Street	Oct 2015	50.2	May 2017	46.2	-4.0
Caen Street (regular hours)	Lancaster Boulevard to Crerar Drive	Sept 2015	49.1	Sep 2017	44.2	-4.9
Caen Street (school hours)	Lancaster Boulevard to Crerar Drive	Sept 2015	39.7	Sep 2017	38.3	-1.4

Based on the follow-up results from the speed limit reduction in the Montgomery Place neighbourhood, which was implemented with sign changes only, it is evident that signage changes can be effective on some streets but may not be effective across an entire neighbourhood.

7.3. OTHER JURISDICTIONS

7.3.1. Calgary

The City of Calgary consolidated school zones and playground zones into a single zone with fixed hours in 2016. The speed limit is 30 km/h in playground zones (schools included in playground zones). Playground zones are in effect from 7:30 am to 9:00 pm, 7 days a week, year-round.

The key findings of the evaluation, The Review of School and Playground Zone Harmonization in Calgary (September 2017), are summarized below:

- The mean traffic speed in playground zones decreased from 36 km/h to 30 km/h.
- The number of collisions involving pedestrians within the new playground zones decreased by 33%, with a 70% decrease between 5:30 p.m. and 9:00 p.m.
- The collision rate decreased from 0.049 to 0.011 collisions per million vehicle kilometers of travel per year.
- 58% of respondents knew the exact start time of school and playground zone, whereas 73% knew the end time. More than 80% of the respondents find it easier to remember the zone times with single zone type that is consistent throughout the year.

7.3.2. Edmonton

The City of Edmonton lowered the speed limit from 50 km/h to 40 km/h within six pilot residential communities in 2010. According to the Speed Limit Reduction on Residential Roads: A Pilot Project Report, the results of the speed and traffic analysis indicated the operating speeds were reduced after the implementation of the new residential speed limit of 40 km/h in the pilot project communities. The

operating speeds were consistently lower regardless of temporal factors like time of day and day of week.

The operating speed was found to vary with community development and the type of roadway network. Higher operating speeds were observed in newer (1970s/80s) communities, followed by grid-based communities and older (1950s/60s) communities. There were reductions in operating speed in all communities, regardless of network type. The largest reduction in operating speed was observed in newer communities, (11% reduction), compared to a 6% reduction in older communities and a 4% reduction in grid-based communities. However, newer communities still had the highest recorded speeds in the “After” period when compared to the older and grid-based neighbourhood designs.

Two random telephone surveys were completed to investigate the community perceptions of traffic safety within the six pilot communities. Based on the survey results, there was a significant decrease in speeding and concerns accompanied by a significant increase in safety. Overall, the multi-variate analysis has demonstrated that the pilot project was successful in improving the residents’ perceptions of traffic safety in their community.

7.3.3. Okotoks

The Town of Okotoks lowered the speed limit to 40 km/h in 2015. There has been a 31% reduction in total vehicle collisions, as a result of the speed limit reduction.

7.3.4. Portland

Residential speed limit reduction from 40 km/h (25 mph) to 32 km/h (20 mph) was completed in 2019.

Analysis indicates the 32 km/h (20 mph) speed limit reduced driving speeds. The reductions in speed are noteworthy due to the link to collision severity for vulnerable road users. Studies have found that even small reductions in speed can have large safety benefits, especially for pedestrians.

7.3.5. Seattle

Seattle reduced the speed limit on local streets to 20 mph (~30 km/h) and collector streets to 25 mph (~40 km/h) in a 2016 city-wide initiative.

There was a 22% reduction in collisions, 18% reduction in injury collisions, and a 54% reduction in the most dangerous speeders, who were driving over 40 mph (~60 km/h).

7.3.6. Toronto

The City of Toronto reduced speed limits in residential areas from 40 km/h to 30 km/h in 2015 and 2016 through a blanket approach.

There was a 28% decrease in the pedestrian motor vehicle collisions incident rate, and a 67% decrease in major and fatal injuries on streets with speed limit reductions.

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