



VISION ZERO

KAMLOOPS ROAD SAFETY STRATEGY



Table of Contents

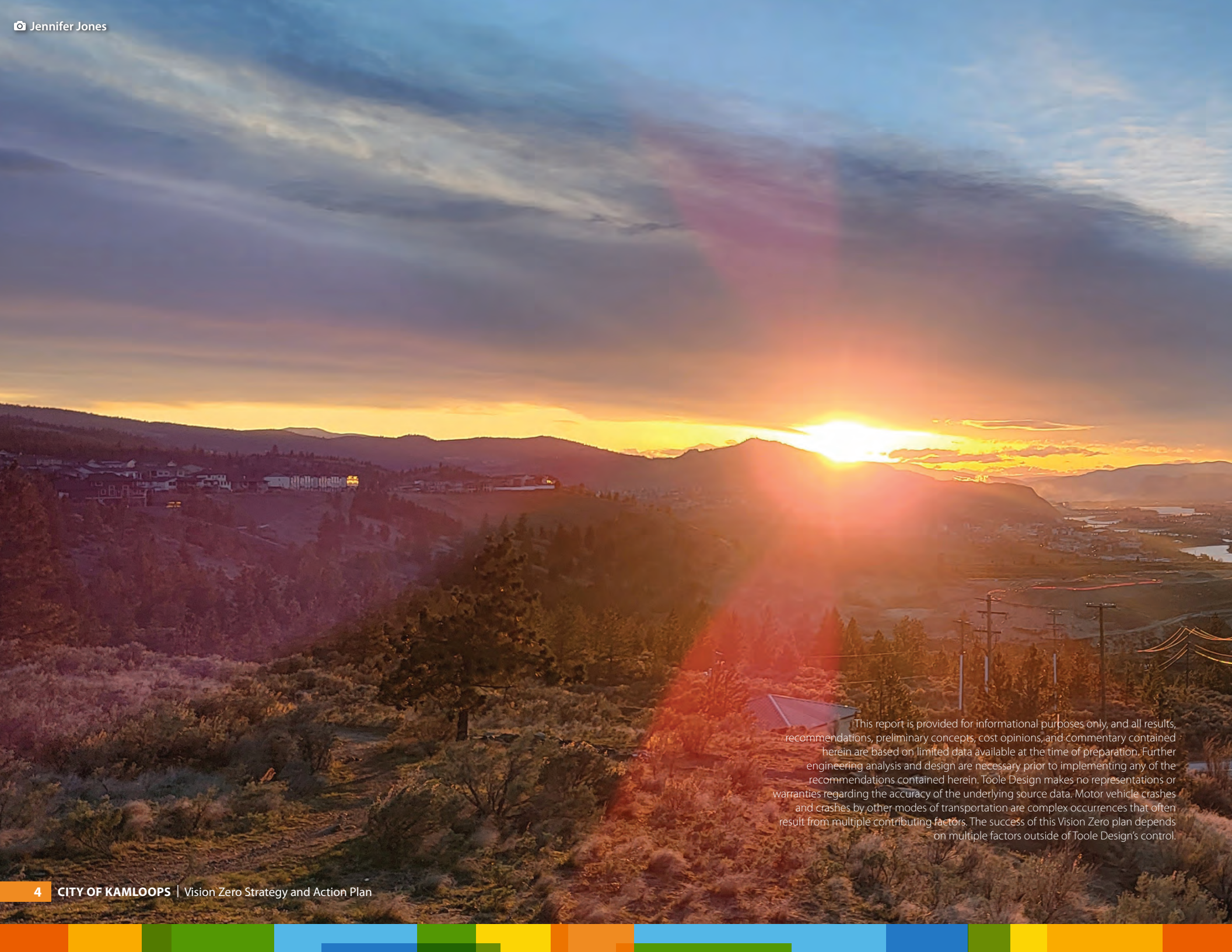
Kamloops is located within the ancestral lands of the Tk'emlúps te Secwépemc peoples. Tk'emlúps, which means “where the rivers meet”, has been an important centre of trade routes for centuries. The Secwépemc developed a unique culture that was totally self-sufficient pre-European contact through the seasonal use of natural resources.¹ As we face the challenges of climate change together, we have the opportunity to learn from traditional ecological knowledge to understand local climate impacts and foster sustainable ways of living that have long been practised on these lands.

¹“Our Land”, Tk'emlúps te Secwépemc, accessed March 22, 2021, <https://tkemlups.ca/profile/history/our-land/>



EXECUTIVE SUMMARY	5
The Vision Zero Approach.....	6
Vision Zero Strategy	8
Vision Zero Goal	8
Vision Zero Keystone.....	8
Vision Zero Action Plan.....	8
Leading The Change.....	10
Vision Zero Targets.....	10
Community Outcomes.....	10
Project Outcomes.....	11
CONCLUSION.....	11
A VISION OF KAMLOOPS' FUTURE.....	13
What Is Vision Zero?.....	14
Where Does Vision Zero Come From?	14
How Is Vision Zero Supported By Kamloops' Policy?	15
Why Vision Zero?	18
Safe System Approach	18
Humans & Safety.....	20
Effective Actions To Reduce Safety Risks	23
Why Do We Need to Increase Our Efforts to Save Lives in Kamloops?	25
Analyzing Kamloops Crash Data (2015 – 2019)	25
The Lived Experiences Of Kamloopians	31
The Kamloops High-Injury Network	33
VISION ZERO STRATEGY	35
VisionZero Goal.....	35
Vision Zero Keystone.....	35
VISION ZERO ACTION PLAN	37
Summary, Status, Link to Evidence and Actions	40
EMPHASIS AREA 1: Evidence-Based Safety Decisions	41
1.1 Hire A Road Safety Engineer	42
1.2 Perform In-Service Road Safety Reviews and Road Safety Audits ..	43
1.3 Support Near-Miss Reporting By The Community.....	44
1.4 Complete Post-Crash Reviews of Fatal and Serious Injury Crashes	45
1.5 Establish Multimodal Traffic Volume and Speed Data Program ...	46
1.6 Expand And Enhance Crash Data Sources	47
1.7 Prepare Vision Zero Annual Reports	48

Emphasis Area 2: Safety And Livability	49
2.1 Accelerate And Enhance The Active Transportation Network	50
2.2 Create Speed Management Program and Traffic Calming Policy ..	51
2.3 Deploy Traffic and Speed Enforcement to High-Injury/High-Risk Locations	53
2.4 Require Transportation Safety Reviews For Land Development Applications	55
Emphasis Area 3: Equitable Safety	56
3.1 Create Accessible Streets For People With Disabilities	57
3.2 Develop And Implement Safe Routes To School	58
3.3 Track And Seek Input From Equity-Seeking Communities	59
EMPHASIS AREA 4: Safety by Design.....	60
4.1 Implement Safety Upgrades Along The High-Injury Network.....	61
4.2 Implement Safety Upgrades Along The High-Injury Network.....	62
4.3 Create Safe Intersections And Corridors	76
4.4 Implement More Modern Roundabouts	78
4.5 Prioritize Maintenance Activities To Improve Safety	79
4.6 Review And Address Lighting Deficiencies	80
4.7 Support Safety Improvements On Provincial Roads	81
EMPHASIS AREA 5: Creating a Safety Culture	70
5.1 Collaborate With Partners To Reduce Impaired Driving.....	71
5.2 Collaborate With Partners To Reduce Distracted Driving.....	72
5.3 Encourage City Staff and Partners To Model Safe Travel Behaviour	73
5.4 Coordinate Transportation Safety Events With Partners In The Community	74
5.5 Support Children And Youth Education About Transportation Safety	75
5.6 Support Partners In Delivering Motorcycle Operator Training Programs	76
Summary Of Strategies.....	77
LEADING THE CHANGE	79
Measuring Performance.....	80
Vision Zero Targets.....	80
Community Outcomes	81
Project Outcomes.....	82
CONCLUSION	83
VISION ZERO SUCCESS STORIES.....	85
Success Story: Strathcona County	86
Success Story: Edmonton	90
Success Story: Other BC Municipalities.....	93



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EXECUTIVE SUMMARY

Vision Zero is a road safety philosophy that states that no loss of life or serious injury due to traffic crashes is acceptable. By adopting the Kamloops Vision Zero Strategy and Action Plan, the City is affirming and taking meaningful steps towards ending traffic fatalities and serious injuries.



The Vision Zero Approach

Vision Zero is a widely adopted approach in BC and across Canada. Its goals and objectives are reflected in the BC Road Safety Strategy 2025 and Canada's Road Safety Strategy 2025. The need for the Kamloops Vision Zero Strategy and Action Plan was identified in the Transportation Master Plan. It is supportive of many goals of KAMPLAN: City of Kamloops Official Community Plan, which aims to have a more sustainable and pedestrian- and bike-friendly community where people can move safely, regardless of the mode of transportation they use.

Vision Zero can be achieved by implementing the Safe System approach, a people-centred view of road safety that considers human life and health as paramount to all else and the first and foremost concern when designing the transportation system. A Safe System is based on reducing serious injury and fatal crashes through a holistic philosophy that addresses the primary known causes of traffic-related crashes by:

- Making the transportation system more accommodating and “forgiving” of human error.
- Managing the forces that injure people in a crash to the level a human body can tolerate without serious injury, which typically means reducing the speeds of the vehicles involved.
- Minimizing the level of unsafe user behaviour by creating awareness, improving skills and knowledge, and creating designs that are intuitive.



Peter Olsen

Analysis Of Crashes In Kamloops

Over 25 people are seriously injured in traffic crashes and another 4 lose their lives every year on city and provincial roads in Kamloops. A crash analysis of data from 2015 to 2019 showed that one in 20 crashes lead to a fatality or serious injury. In addition, even if they make up a small proportion of road users, people walking, using mobility aids, cycling, or operating motorcycles are overrepresented in fatal and serious injury crashes.

These severe crashes tend to occur on the city's wider roads, where there are more than two travel lanes in total. The main locations where crashes occur differ depending on the mode of transportation. The Kamloops Vision Zero Strategy and Action Plan identifies high-crash corridors for each of the main modes of transportation for which data is available (walking, biking, motorcycling, and driving).

In addition to an analysis of crash data, the development of the Kamloops Vision Zero Strategy and Action Plan sought to understand the lived experience of Kamloopians. When asked about their feeling of safety, 75% of respondents said they did not feel safe cycling, about two out of every three said they did not feel safe driving a motorcycle, and about 40% said they did not feel safe walking. Conversely, about 75% of respondents felt safe driving or riding transit. People were also asked to report locations where they have experienced near misses and where they have safety concerns. Combining this information with the high-crash corridors, a high-injury network was developed for Kamloops, which will be an important component of the early projects for the Kamloops Vision Zero Strategy and Action Plan.

Vision Zero Success Stories

Vision Zero is an effective approach to eliminating traffic fatalities and serious injuries. The success stories of Strathcona County and Edmonton, Alberta, are detailed in the Kamloops Vision Zero Strategy and Action Plan as well as those of BC municipalities, including Chilliwack, Vancouver, and Surrey. These cities have all implemented bold action plans and strategies that have yielded

significant reductions in traffic-related fatalities and serious injuries since their implementation.

The success stories provide insights that Kamloops can draw on to implement the Vision Zero Strategy and Action Plan.

Vision Zero Strategy

The Kamloops Vision Zero Strategy and Action Plan establishes a Vision Zero Goal and a Vision Zero Keystone, which are translated to concrete strategies and actions in the Vision Zero Action Plan.

VISION ZERO GOAL

Kamloops will have zero crashes causing fatalities or serious injuries by 2039.

VISION ZERO KEYSTONE

All people have a right to safe mobility. Transportation safety in Kamloops will be the top priority in all actions and decisions for planning, designing, operating, and maintaining the transportation system. The transportation system includes roads and streets, sidewalks, transit stops, pathways, bike lanes, intersections, and crosswalks and other infrastructure that supports mobility for people travelling by foot, bike, transit, automobile, and other modes.

VISION ZERO ACTION PLAN

The action plan is organized into five Emphasis Areas. Each contain several Strategies and associated Actions or steps that the City of Kamloops and its partners in transportation safety will carry out to achieve the Vision Zero Goal. There are 27 Strategies in the Action Plan

EMPHASIS AREA 1: EVIDENCE-BASED SAFETY DECISIONS

The City of Kamloops will make decisions based on local crash data and lived experience data, industry best practices, and evidence-based research to enable more informed decision making that prioritizes safety.

The Vision Zero Strategies that support this Emphasis Area are:

- Hire a road safety engineer
- Perform in-service road safety reviews and road safety audits
- Support near-miss reporting by the community
- Complete post-crash reviews of fatal and serious injury crashes
- Establish multimodal traffic volume and speed data program
- Expand and enhance crash data sources
- Prepare Vision Zero Annual Reports

EMPHASIS AREA 2: SAFETY & LIVABILITY

A livable city is a safe city and vice versa. The City of Kamloops will create a safe and livable city through land use planning, speed management, and providing travel options.

The Vision Zero Strategies that support this Emphasis Area are:

- Accelerate and enhance the active transportation network
- Create speed management program and traffic calming policy
- Deploy traffic and speed enforcement to high-injury/high-risk locations
- Require transportation safety reviews for land development applications



EMPHASIS AREA 3: EQUITABLE SAFETY

Safety for all users will be supported by the City of Kamloops' transportation system regardless of trip purpose, mode choice, age, ability, gender, race, income, or other social determinants.

The Vision Zero Strategies that support this Emphasis Area are:

- Create accessible streets for people with disabilities
- Develop and implement Safe Routes to School
- Track and seek input from equity-seeking communities
- Advocate and educate on safer vehicles

EMPHASIS AREA 4: SAFETY BY DESIGN

Travel speeds combined with the type and location of conflicts on Kamloops streets and at intersections will be managed to minimize the potential for a crash to occur and minimize the risk of serious or fatal injury if a crash does occur.

The Vision Zero Strategies that support this Emphasis Area are:

- Implement safety upgrades along the High-Injury Network
- Update design standards to incorporate Complete Streets and Safe System
- Create safe intersections and corridors
- Implement more modern roundabouts
- Prioritize maintenance activities to improve safety
- Review and address lighting deficiencies
- Support safety improvements on provincial roads

EMPHASIS AREA 5: CREATING A SAFETY CULTURE

Achieving zero fatalities and serious injuries will require fundamental shifts and participation in transportation safety for both institutional culture, such as the City of Kamloops and other government partners, and public culture of the city's residents and visitors.

The Vision Zero Strategies that support this Emphasis Area are:

- Collaborate with partners to reduce impaired driving
- Collaborate with partners to reduce distracted driving
- Encourage City staff and partners to model safe travel behaviour
- Coordinate transportation safety events with partners in the community
- Support children and youth education about transportation safety
- Support partners in delivering motorcycle operator training programs



Leading The Change

Strong leadership, sustainable funding and implementation priorities will be required by the City of Kamloops for the Vision Zero Strategy and Action Plan to succeed. A schedule for implementation over ten years will be developed which will include Capital and Operating budget estimates.

Measuring performance is integral to the plan and demonstrates actions taken are having the intended outcomes. The performance measures identified below will be part of the Vision Zero Annual Reports that will be published every year.

VISION ZERO TARGETS

The target on both City roads and Province of British Columbia Roads is zero serious injury and fatal crashes by 2039.

COMMUNITY OUTCOMES

Progress on five community outcomes will be measured:

1. Speed and speed limit compliance
2. Distracted and inattentive driver citations or crash contributing factors
3. Impaired driver citations or crash contributing factors
4. Perception of safety through an annual survey
5. Mode shift to sustainable transportation modes such as transit, walking, and cycling.



PROJECT OUTCOMES

Project Indicators are the output that result from the Kamloops Vision Zero Strategy and Action Plan. These foundational actions that are both critical to creating a Safe System and under the direct control and responsibility of the City of Kamloops.

- Number and kilometres of in-service safety reviews completed per year
- Number and kilometres of road safety audits completed per year
- Number and kilometres of engineering improvements implemented on the High-Injury Corridors completed per year
- Reduction in fatal and serious injuries along High-Injury Corridors
- Number of walking and cycling crossing improvement projects completed per year
- Number of intersection transportation safety improvement projects completed per year
- Length (km) of new or enhanced walking and cycling routes built per year
- Percent of city homes served by accessible all ages and abilities walking and cycling infrastructure
- Number of locations with permanent multimodal traffic speed and volume equipment installed per year and total number
- Number of locations with driver speed feedback displays installed per year and total number
- Number of resident concerns received per year and average time to respond

Conclusion

The countdown to 2039 starts now. This is the date set to reach the goal of zero crashes causing fatalities or serious injuries. Work to implement the strategies and actions begins immediately and will require the City of Kamloops and its partners in mobility to move quickly to reduce unnecessary death and suffering for Kamloopians. With a concerted effort and thoughtful implementation of strategies, Vision Zero is an achievable goal.





1.0 A VISION OF KAMLOOPS' FUTURE

The Kamloops Vision Zero Strategy and Action Plan is an initiative to end fatalities and serious injuries caused by crashes in the transportation system in Kamloops by 2039. It is informed by Vision Zero, a road safety philosophy which states that no loss of life due to traffic crashes is acceptable.

Every fatal or serious injury crash comes with a human cost—not a statistic or a number, but a real person. Each victim has family and friends who are deeply affected by their tragic death or debilitating injury. Creating the Kamloops Vision Zero Strategy and Action Plan is based on data but also stories from people whose lives have been personally affected by traffic crashes. Humanizing these life-changing events helps us to recognize just how crucial traffic safety is in Kamloops—and that we all have an important role to play in creating safer roads. We are grateful to those who shared their stories throughout the development of this Strategy and Action Plan.

The Kamloops Vision Zero Strategy and Action Plan aligns with the international transportation safety community as well as the

Vision Zero goals and objectives articulated in the British Columbia Road Safety Strategy 2025 and Canada's Road Safety Strategy 2025. The Kamloops Vision Zero Strategy and Action Plan is founded on international best practice, local evidence, and the lived experience of Kamloops residents, and represents a way forward that takes the best from elsewhere and tailors it to Kamloops.

The Kamloops Vision Zero Strategy and Action Plan was identified as a need in the Transportation Master Plan. This first edition of the Vision Zero Strategy and Action Plan, 2023 to 2033, is a starting point. It builds off past successes and addresses issues to establish the foundation for a Safe System for Kamloops. Subsequent



What Is Vision Zero?

WHERE DOES VISION ZERO COME FROM?

Originally conceived in Sweden in 1997, the Vision Zero philosophy has been adopted and implemented in many countries and communities around the world, and with much success. Edmonton, Alberta was the first city in Canada to adopt Vision Zero in 2015 and has since achieved significant decreases in fatal and serious injury crashes. In British Columbia, Vision Zero has been adopted in policy or practice by the City of Vancouver, City of Surrey, City of Chilliwack, City of North Vancouver, City of New Westminster, City of Coquitlam, City of Delta and the District of Saanich.

- Vision Zero views human life and health as paramount to all else, stating that it should be the first and highest priority when designing a street network.
- Vision Zero recognizes that humans make mistakes when traveling in the roadway and states that no one should die or be seriously injured as a result of these mistakes.

Table 1 presents a comparison between the conventional approach to road safety and the Vision Zero approach.

Table 1: Vision Zero vs. Conventional Approach to Road Safety

CONVENTIONAL APPROACH	VISION ZERO APPROACH
Traffic deaths are inevitable	Traffic deaths are preventable
Prevent all crashes	Prevent fatal and severe injury
People should be perfect	People make mistakes
Safety relies on individual road user	Safety is a shared responsibility, starting with system designers
Safety is one priority	Safety is the priority

HOW IS VISION ZERO SUPPORTED BY KAMLOOPS' POLICY?

The Kamloops Vision Zero Strategy and Action Plan is part of Kamloops' coordinated efforts to create a livable, healthy, safe, and vibrant community. The Strategic Plan 2022-2026 highlights Areas of Focus and Council Directions that include important factors that are tied to Vision Zero. A safe city is a livable city and vice versa. Efforts made to improve livability, social connectedness, environmental leadership and climate resilience, and transparent and accountable governance all contribute to supporting Vision Zero.

Likewise, initiatives that increase transportation safety create streets that are more accessible and livable for people of all ages and abilities. Implementing Vision Zero can include trees and plantings that improve local environment, provide habitat for nature, and support winter operations. Creating safer and more comfortable corridors along commercial main streets can attract more people and increase revenues for local businesses as people tend to linger longer and feel less threatened by hostile environments. Achieving Vision Zero does more than just increase transportation safety, it is part of the broader approach to health, safety, economic development, environmental sustainability, neighbourhood vibrancy, and social well-being. All these inter-related objectives are articulated in KAMPLAN – Official Community Plan and the Transportation Master Plan.

KAMPLAN includes the following selection of goals and policies that support Vision Zero:



Create an environmentally, socially, culturally, and economically sustainable transportation system...

- Adopt a complete streets approach...that provides users of all ages and abilities (including pedestrians, bicyclists, public transit passengers, drivers of private automobiles, and operators of commercial vehicles) with safe and comfortable access, movement, and crossing...



Be a pedestrian-friendly community with networks that integrate with transit, neighbourhood amenities, parks, open space, and schools

- Increase the safety and accessibility of sidewalks and pathways by improving the design of new streets and retrofitting existing streets as they are replaced or upgraded...



Provide safe and convenient bicycle routes suitable for commuting, recreating, and other daily trips

- Create a continuous network of safe and direct bicycling routes to encourage commuting and other daily trips that connect residents to major employment, schools, and amenities...
- Support improvements that raise awareness among vehicular traffic and increase safety for and visibility of bicyclists...



Sustain the responsible planning and development of roads and transportation connections to facilitate efficient movement of people...

- Reduce the number of crashes causing fatalities or serious injuries to zero through initiatives identified in the City of Kamloops' Transportation Master Plan, including those designed to increase road safety and improve public awareness..."



Likewise, the City of Kamloops’ Transportation Master Plan includes the many supports for Vision Zero, including the ones noted below related to walking and cycling safety, speed management, lighting, and winter maintenance:



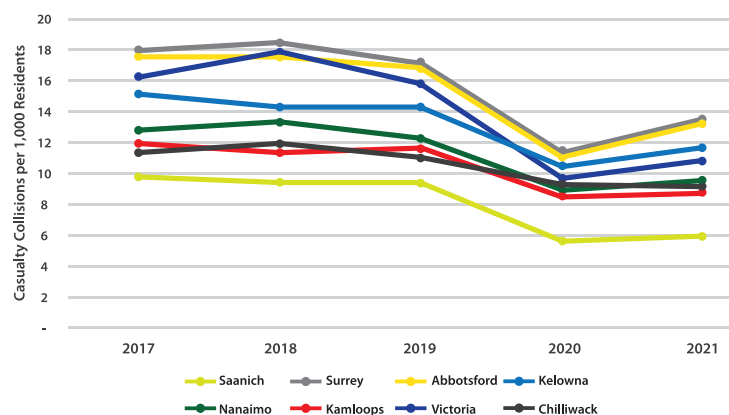
Create an environmentally, socially, culturally, and economically sustainable transportation system...

- Users of all ages and abilities have safe and comfortable options for travel...
- Safe transportation for all users regardless of their mode choice...
 - Maintain or increase investment in cycling, pedestrian, and transit infrastructure, and continue promotion of sustainable transportation choices...
 - Adopt a complete streets approach to planning and designing new roads and to retrofitting existing roads. Complete streets are designed and operated to enable users of all ages and abilities, including pedestrians, cyclists, public transit passengers and vehicles, commercial vehicles, and private automobiles, with safe and comfortable access, movement, and crossing. Complete streets are intended to serve all users and transportation modes equally, as opposed to conventional 20th century designs that prioritize low-occupancy motorized vehicles...
 - Continue to partner with ICBC through the Safer City program and other initiatives to increase the safety of the travelling public...
 - Continue to implement safety and design improvements in the transportation network on all projects where feasible...
 - Develop and implement a comprehensive Vision Zero Road Safety Strategy by 2021 that outlines goals and measures to achieve a target of zero crashes causing fatalities or serious injuries by 2039.

Kamloops is at a similar point to many communities around the world. Globally, traffic-related deaths claim more than 1.35 million lives every year and traffic crashes are the leading cause of death for children, youth, and young adults aged 5 to 29 years old around the world.¹ These statistics have created international strategies and actions including the Decade of Action in Road Safety which was adopted by Canada and many of the provinces.

In 2020, the international community came together at the *Third Global Ministerial Conference on Road Safety* in Stockholm, Sweden. The panel of academic experts published nine “Road Safety Recommendations” for what actions are needed to achieve greater success in the coming decade based on the performance of actions in the previous decade.² The holistic recommendations include areas such as transportation mode shift, child and youth health, infrastructure, vehicles, technologies, speeds, monitoring and reporting, and procurement.

Kamloops was compared to other municipalities in B.C. of comparable size or land use. The following shows the trend in casualty collisions (injuries plus fatality collisions), based on ICBC data from 2017 to 2021.³ On a per capita basis, Kamloops performs relatively well in comparison, with only Saanich and Chilliwack having a lower per capita casualty collision rate.



At the national level, Kamloops’ efforts on Vision Zero align with that of the federal, provincial, and territorial governments. *Canada’s Road Safety Strategy 2025* entitled, “Towards Zero: The Safest Roads in the World,” builds on the previous national strategy and aligns with the international commitment to road safety. The Strategy includes key approaches to achieve vision zero and uses a 10-year timeframe for the 2025 edition of the Strategy:

- Adopt a Safe System approach
- Achieve a downward trend towards zero by using two indicators:
 - Fatalities and serious injuries per billion kilometres travelled
 - Fatalities and serious injuries per one hundred thousand population
- Adopt road safety best practices

The *British Columbia Road Safety Strategy 2025: A Collaborative Framework for Road Safety* also adopts Vision Zero and builds on the national strategy. The *BC Road Safety Strategy* uses two targets to track progress:

- Continuous downward trends in the rate-based number of fatalities and serious injuries (per 100,000 population)
- Support the global goal set by the Stockholm Declaration on road safety to reduce road traffic deaths and injuries by 50% by 2030

Similar to the national strategy, the *BC Road Safety Strategy* is based on a Safe System approach and focuses on addressing high-risk driver behaviours (impairment, speeding, and distraction and inattention), targeting high-crash locations, and protecting vulnerable road users (people who walk, cycle, or other types of mobility devices). It also provides links to different funding opportunities that are available for Vision Zero projects.

¹ World Health Organization. Global status report on road safety, 2018.

² Third Ministerial Conference on Road Safety, Stockholm, Sweden, February 19-20, 2020. Saving Lives Beyond 2020: The Next Steps.

³ ICBC Crash Maps: <https://public.tableau.com/app/profile/icbc/viz/>





Why Vision Zero?

This section shares the science behind Vision Zero and the critical elements that support safe transportation in communities. This information is foundational to the Kamloops Vision Zero Strategy & Action Plan.

SAFE SYSTEM APPROACH

The Safe System approach is people-centred and views human life and health as paramount to all else and should be the first and foremost consideration when designing the transportation system. A Safe System is based on reducing serious injury and fatal crashes through a holistic philosophy that addresses the primary known causes of traffic-related crashes by:

- Making the transportation system more accommodating and “forgiving” of human error
- Managing the forces that injure people in a crash to the level a human body can tolerate without serious injury
- Minimizing the level of unsafe user behaviour⁴

A Safe System approach addresses the five elements of a safe transportation system—safe road users, safe vehicles, safe speeds, safe roads, and post-crash care—and considers six core principles that are labelled around the figure (e.g. Humans Make Mistakes). This approach is a central component for the Kamloops Vision Zero Strategy and Action Plan, with strategies identified that support all aspects of the Safe System approach.



Figure 1: Safe System Approach



The following describes each of the Safe System elements:



■ **Safe Road Users:** Road users are expected to comply with rules of the road, including paying attention, adapting to changing conditions, not driving under the influence, and driving without distraction.



■ **Safe Vehicles:** Safe vehicles include technology and components that help prevent crashes from occurring or protect occupants when a crash occurs.



■ **Safe Speeds:** According to the Organisation for Economic Co-operation and Development⁴, “Speed is at the heart of a forgiving road transport system. It transcends all aspects of safety: without speed there can be no movement, but with speed comes kinetic energy, and with kinetic energy and human mistakes come crashes, injuries, and even deaths.”



■ **Safe Roads:** Design features and safety countermeasures can contribute to safe roads by, for example, separating users in space and time.



■ **Post-Crash Care:** Post-crash care incorporates elements related to emergency services and medical care, crash reporting and investigation, traffic incident management, and the justice system.

4 Peden M et al. World report on road safety injury prevention. Geneva, World Health Organization, 2004.

5 International Transport Forum (ITF), Zero Road Deaths and Serious Injuries: Leading a Paradigm Shift to a Safe System (2016), 107, http://www.towardszerofoundation.org/wp-content/uploads/2016/10/Zero_road_deaths-SafeSystems.pdf.

HUMANS & SAFETY

Creating a Safe System that supports Vision Zero for Kamloops requires considering the users of the transportation system – the residents, visitors, and others that travel on streets and pathways throughout the city. The vulnerability of the human body to injury should be the limiting design parameter for the transportation system to reduce the chance of serious injury and fatal crashes from occurring. Understanding human behaviour is critical to create a transportation system that is easy to use and limits errors that can cause crashes. The following highlights factors that affect safety of people travelling and the human characteristics that need to be considered in the planning, design, and operation of Kamloops' transportation system.

THE HUMAN BODY IS VULNERABLE TO INJURY

A Safe System includes both the design of the transportation system's roads and intersections as well as the design of vehicles to create an overall system that considers the vulnerability of the human body to kinetic energy. Kinetic energy is transferred to people when a crash occurs due to the difference in speed they are travelling at as compared to the speed and physical size of the other objects or road users that are involved in the crash.⁶ In crashes involving people walking and cycling, people are extremely vulnerable to the kinetic energy that is passed onto them when struck by a motor vehicle because they do not have a reinforced outer shell protecting them from the crash. Conversely, people driving are more protected due to vehicle crumple zones and the structure and chassis of the vehicle, which significantly reduces the amount of kinetic energy transferred to a vehicle occupant.

Figure 2 illustrates the probability of a fatal or serious injury occurring for different types of crashes at different speeds. The vertical direction represents an increasing probability of a serious injury or fatality, while the horizontal direction indicates the impact speed. Each line in the figure is for a different type of crash. The likelihood of a person being fatally or seriously injured decreases for all potential crash types as speed decreases. Figure 3 illustrates the types of vehicle crashes depicted in Figure 2.

Speed not only impacts the severity of a crash, but travel speed also impacts the likelihood of a crash occurring from mistakes that people can make due to the limitations of how humans react and respond to a potential crash. Figure 4, derived from NACTO's "City Limits: Setting Safe Speed Limits on Urban Streets" and data from TAC's *Geometric Design Guide for Canadian Roads*, visually describes the

impacts speed has on safety due to our ability as humans to react and respond and the braking capability of the vehicles we drive.

Managing travel speeds is a major component of creating a Safe System and an essential element for the Kamloops Vision Zero Strategy & Action Plan.

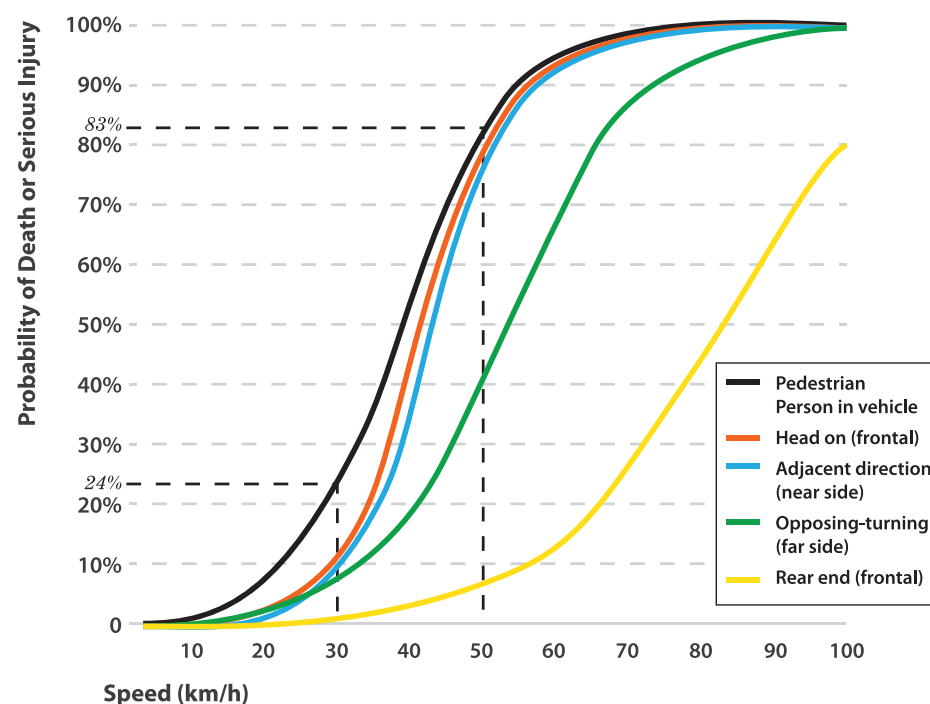
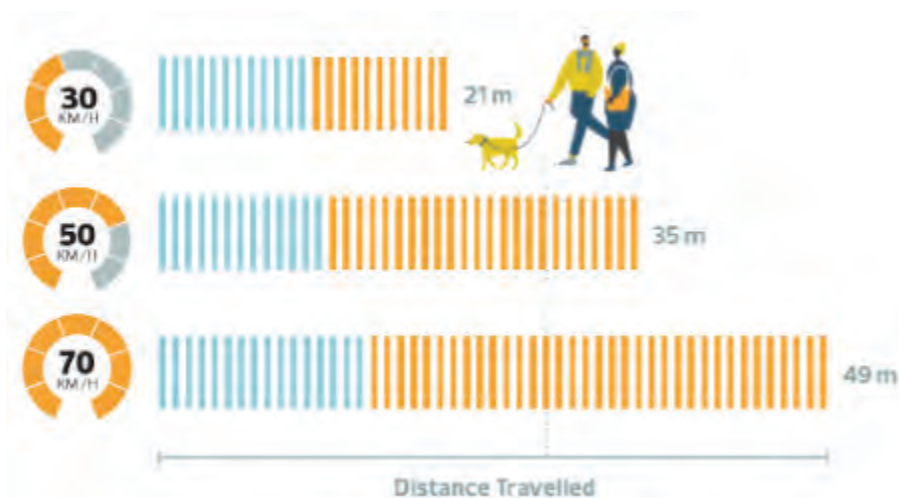
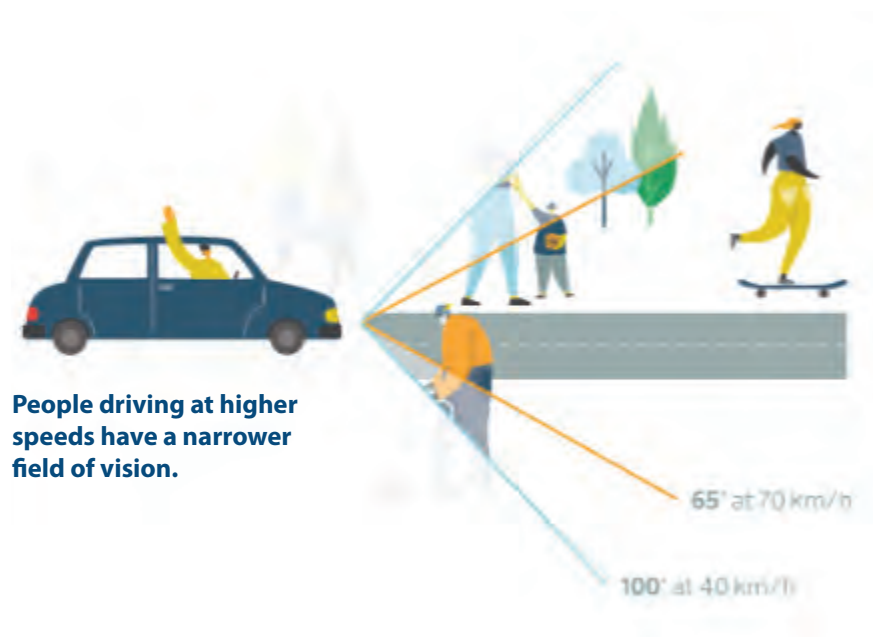
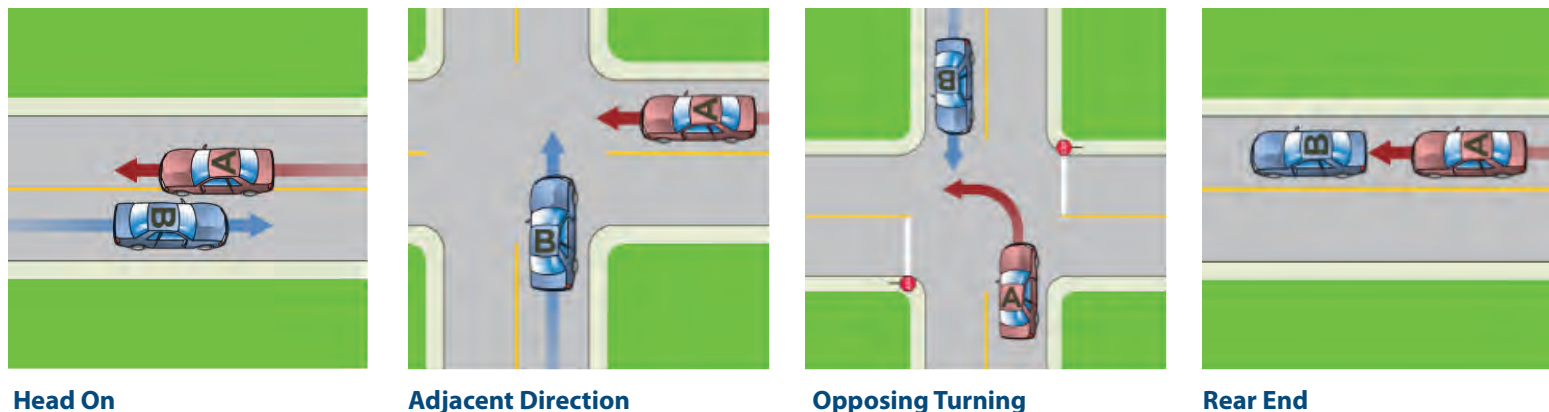


Figure 2: Probability of Death or Serious Injury during a Traffic Crash vs. Speed⁷ (Modified from: City of Edmonton)

⁶ Jurewicz C et al. Exploration of vehicle impact speed - injury severity relationships for application in safer road design. *Transportation Research Procedia*, 2016, 14:4247–4256.

⁷ Jurewicz C et al. Exploration of vehicle impact speed - injury severity relationships for application in safer road design. *Transportation Research Procedia*, 2016, 14:4247–4256.

Figure 3: Crash Diagrams (Graphic Credit: ICBC)



People driving at higher speeds travel further before they can react. This is commonly referred to as the perception-reaction time.

Vehicles travelling at higher speeds have longer braking distances.

Thinking distance

Braking distance

Figure 4: Impact of Speed on Identifying Conflicts and Stopping (Graphic Credit: City of Edmonton)



HUMANS MAKE MISTAKES

Everyone makes mistakes including when travelling. This is understandable given that we are all operating with a different understanding of our environment, different knowledge of the rules, incorrect decisions and diagnosis of a situation, incomplete information on what actions or behaviours other people may take, and the amount of information needed to process a correct decision may not be fully available.⁸

There are many ways that errors can occur when humans interact with the transportation system. Compared to other transport modes, surface transportation, including driving, walking, and cycling, has far more possible errors,

which means that the transportation system is inherently dangerous and requires specific management, care, and design.

Within a Safe System, the transportation system should be designed to only require simple decisions to limit the potential for mistakes. And, if a mistake is made, this should not lead to a serious injury or fatality. The design of the streets, pathways, and intersections should provide clear cues to people driving, walking, and cycling, as well as what to expect and how to act. The Kamloops Vision Zero Strategy & Action Plan includes recommendations to create a more forgiving transportation system to reduce the chance of a fatal or serious injury if a person makes a mistake.

⁸ Wegman F et al. *Advancing Sustainable Safety: National Road Safety Outlook for 2005-2020*. The Hague, SWOV, 2006.



EFFECTIVE ACTIONS TO REDUCE SAFETY RISKS

In our workplaces, we have health and safety programs that are intended to identify, remove, mitigate, and limit risks to our safety. These health and safety programs typically apply an approach called “hierarchy of controls” that provides a framework for different types of controls that progress from most effective to least effective. Figure 5 illustrates the “hierarchy of controls” from WorkSafeBC. In workplaces, eliminating hazards altogether by removing the risk or changing how a work task is completed is the most effective, while personal protective equipment are the least effective measures and are included at the bottom to deal with any remaining risks.

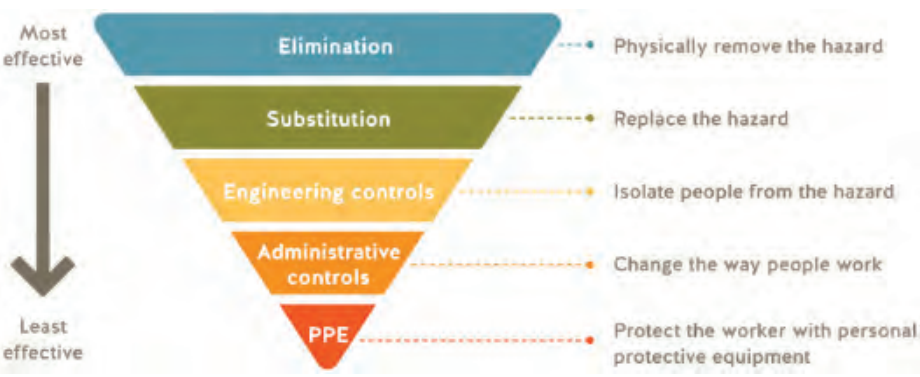


Figure 5: Hierarchy of Controls ⁹

Similar to workplace safety, the Federal Highway Administration in the United States have created a “hierarchy of controls” that applies the Safe System principles to evaluate and prioritize transportation safety countermeasures that are intended to improve safety for surface transportation that is presented in Table 2¹⁰. Within this framework, actions that eliminate exposure to the crash before it can occur are the most effective.

ELIMINATION	Eliminate exposure to the crash before it can occur
SUBSTITUON	Replace with strategy that lowers injury severity in the event of a crash
ENGINEERING CONTROL	Make changes to how we design and operate the road system, vehicles, and programs
ADMINISTRATIVE CONTROL	Change the way people use the system through education, legislation, and policies
PPE	Personal protective equipment (e.g. motorcycle helmets and protective gear)

Table 2: Hierarchy of Controls Applied to the Transportation System

The Australian Road Research Board developed a framework that includes examples of the specific actions that could be taken for each level of control as presented in Table 3¹¹. Under this approach, the priority for actions for implementation should be those types that remove or reduce risks such as providing separated bicycle infrastructure, removing poles in the roadside, and building roundabouts. While actions related to education and enforcement programs or personal protective equipment also contribute to safety, just like in workplaces, more effort should be invested in the actions that have more impact on creating a Safe System. For the Kamloops Vision Zero Strategy and Action Plan, strategies and actions that remove risks are higher priorities for implementation.

⁹ WorkSafeBC, available at: <https://www.worksafebc.com/en/health-safety/create-manage/managing-risk/controlling-risks>

¹⁰ Federal Highway Administration. *Integrating the Safe System Approach with the Highway Safety Improvement Program: An Informational Report*. FHWA-SA-20-018. Washington, DC., Federal Highway Administration, 2020.

¹¹ McTiernan D et al. *Safe System Roads for Local Government*. Austroads, Sydney, Australia, 2016.

HIERARCHY	RISK CONTROL METHOD	EFFECT OF CONTROL	EXAMPLE ACTIONS
1	Remove the risk	Remove the hazard from the road and traffic environment	<p>Remove a tree or utility pole from the roadside area</p> <p>Grade separated pedestrian crossings</p> <p>Fully separated bicycle infrastructure</p>
2	Reduce the risk	<p>Replace one hazard with another, less severe and more controllable, hazard</p> <p>Physically separate road users from the hazard to minimize road user interaction with the hazard, or modify the design of the road infrastructure to reduce road user interaction with the hazard and/or assist road user control</p>	<p>Road safety barrier</p> <p>Roundabout</p> <p>Traffic signal control pedestrian crossings</p> <p>Improve road surface pavement markings</p> <p>Improve the New Car Assessment Project rating of the vehicle fleet</p>
3	Change road user behaviour	Provide warning/advice to seek appropriate behaviour	<p>Curve warning/speed advisory signs</p> <p>Reduced speed limit and school zone alert signing</p> <p>Vehicle safety features, such as speed alerts, lane departure warning, blind-spot monitoring, etc.</p> <p>Enforcement, education, and training</p>
4	Protect the road user	Use equipment to protect users from death/injury	<p>Seat belts, anti-lock braking system, electronic stability control, automatic emergency braking</p> <p>Pedestrian airbags and bonnet designs for vehicles</p> <p>Replace a rigid lighting pole with a frangible pole</p>

Table 3: Example of Hierarchy of Control Applied to the Transportation System

Why Do We Need to Increase Our Efforts to Save Lives in Kamloops?

ANALYZING KAMLOOPS CRASH DATA (2015 – 2019)

Over 25 people are seriously injured in traffic crashes and another 4 lose their lives every year on City and Provincial roads in Kamloops. These victims are family and friends, and their loss is a loss to our community. What is most tragic, is their deaths and life-changing injuries are preventable.

Figure 6 shows the total number of crashes as well as serious injury and fatal crashes that have occurred on Kamloops' roads over a five-year period (2015 through 2019 from Traffic Accident System (TAS) Data¹², avoiding years where the COVID-19 pandemic impacted travel patterns and behaviours). While numbers fluctuate from year to year, it is clear there is work to be done to improve the safety of Kamloops' transportation system. The chart highlights that while All Crashes may have a downward trend, crashes that cause death and serious injury are still very prevalent and require action. The crashes along provincial roads within Kamloops shows a similar trend, as shown in Figure 7.

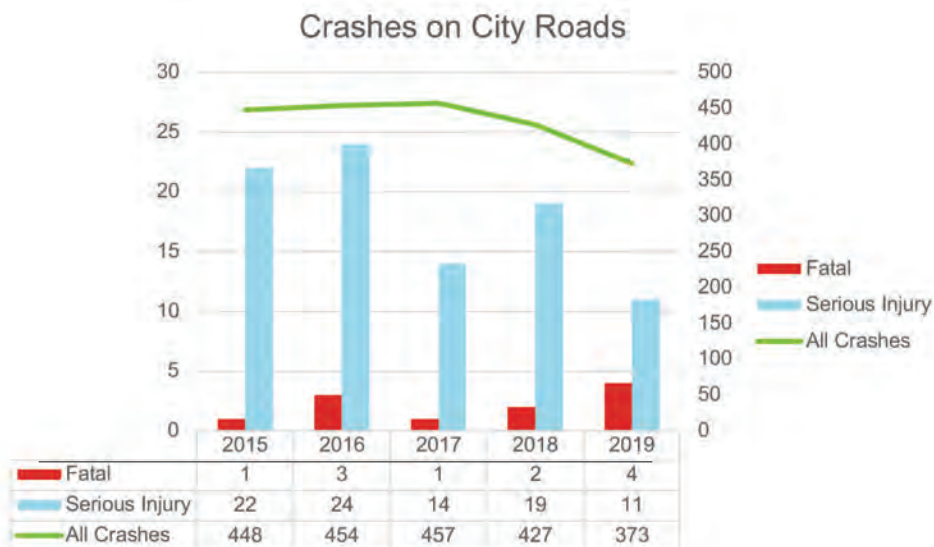


Figure 6: Traffic Crash History on City of Kamloops Roads (2015–2019)

¹² NOTE: The analysis for the Kamloops Vision Zero Strategy and Action Plan used Traffic Accident System data instead of crash data from ICBC because Traffic Accident System data had additional differentiation of injury severity—fatal, major injury, minor injury, property damage only—versus the severity coded within the ICBC dataset—fatal, injury, property damage only. Because Vision Zero is focused on both fatalities and serious injuries, differentiating between injury severity was important to develop actions that target these severities of crashes.





Both the City of Kamloops and the Provincial government play a role in safe travel. Fatal and serious injury crashes for residents and visitors of Kamloops and Tk'emlúps te Secwepemc can occur along streets that are the responsibility of the City of Kamloops and those that are the responsibility of the British Columbia Ministry of Transportation and Infrastructure. The Ministry of Transportation and Infrastructure (MOTI) are also important partners for transportation safety projects, programs, and funding.

The City of Kamloops will need to collaborate with and advocate for investments by MOTI and other provincial Ministries to improve the safety of the provincial highway system that serves Kamloops. Collaborative actions are part of the Vision Zero Strategy and Action Plan; however, the focus of the Strategy is on actions the City of Kamloops and its partners in transportation safety can lead to improve the safety of the transportation system – City of Kamloops streets and pathways – that is the City of Kamloops' responsibility to plan, design, build, operate, and maintain.

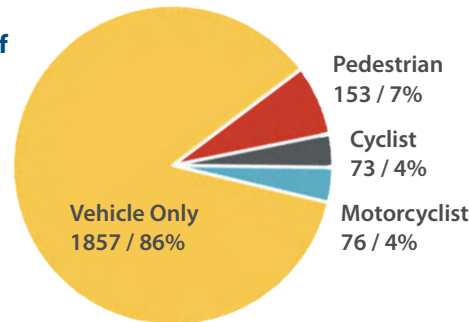
Analyzing the Kamloops crash data, we have identified the following trends and findings.

Number/Proportion, Time of Year, Time of Day

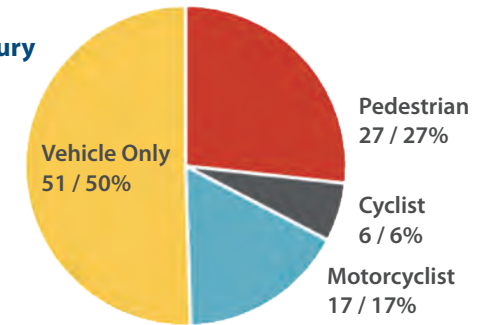
- 5% of all crashes involve a fatality or serious injury (1 in 20 crashes)
- Fatal and serious injury crashes occur in all months of the year
- Serious injury and fatal crashes involving people cycling and riding motorcycles occur more often in summer months
- Serious injury and fatal crashes occur more often during the afternoon rush and evening hours
- Darkness and partial illumination are present in a high proportion of serious injury and fatal crashes that involve people walking
- Serious injury and fatal crashes for people walking and people cycling are lower on weekends for people walking or cycling, but higher for crashes that only involve motor vehicle drivers and passengers
- “Vulnerable road users”, a term commonly used to describe people walking, using a mobility aid, cycling, or operating motorcycles, are over-represented in fatal and serious injury crashes as shown in Figure 8 (14% of all crashes involve “vulnerable road users” vs. 50% of serious injury and fatal crashes)

Figure 8:
All Crashes vs.
Fatal and Serious
Injury Crashes
by Mode of
Transportation
(2015-2019)

All Crashes by Mode of Transportation



Fatal and Serious Injury Crashes by Mode of Transportation



DID YOU KNOW?

A study completed by de Leur Consulting Ltd. for the Edmonton Capital Region Intersection Safety Partnership calculated the costs that traffic crashes have on society (*Collision Cost Study Update: FINAL Report*. Capital Region Intersection Safety Partnership, 2018). These include “internal costs” that are borne by the individual and by emergency services as well as “external costs” that are borne by people close to the individual, such as family members and society as a whole. Based on this study, fatal crashes can range in cost between \$2.4 million and \$6.4 million per fatality, while serious injuries range in cost between \$0.4 million and \$1.6 million. Applying these values to the fatal and serious injuries in Kamloops results in costs of approximately \$20 million to \$70 million each year.

YEAR	2015	2016	2017	2018	2019
FATALITIES	2	4	1	5	7
SERIOUS INJURIES	36	30	24	22	16
COST(MILLIONS)	\$19.2–\$70.4	\$21.6–\$73.6	\$12.0–\$44.8	\$20.8–\$67.2	\$23.2–\$70.4

For example, in 2015, there were 2 fatalities and 36 serious injuries. Multiplying 2 fatalities by \$2.4 million results in \$4.8 million dollars. Multiplying 36 serious injuries by \$0.4 million results in \$14.4 million. Adding these two numbers together is \$19.2 million. Likewise, the fatalities and serious injuries can be multiplied by the higher range of costs, \$6.4 million and \$1.6 million, respectively, and added together to result in an upper cost of \$70.4 million in 2015. This can be completed for each year to calculate the lower and upper estimates for the cost of fatalities and serious injuries in Kamloops.



Street Characteristics

- Fatal and serious injury crashes occur at approximately similar proportions at intersections and mid-block locations, while approximately 9 out of 10 serious injury and fatal crashes occur along wider streets with more than two travel lanes as compared to streets with only two total travel lanes (92 crashes vs. 9)

Contributing Factors

- When considering fatal and serious injury crashes, "Weather", "Speed", "Driver Inattention or Distraction", "Road Conditions", and "Alcohol or Drugs Suspected or Impaired" are the top five most common contributing factors reported by police (see Figure 9)

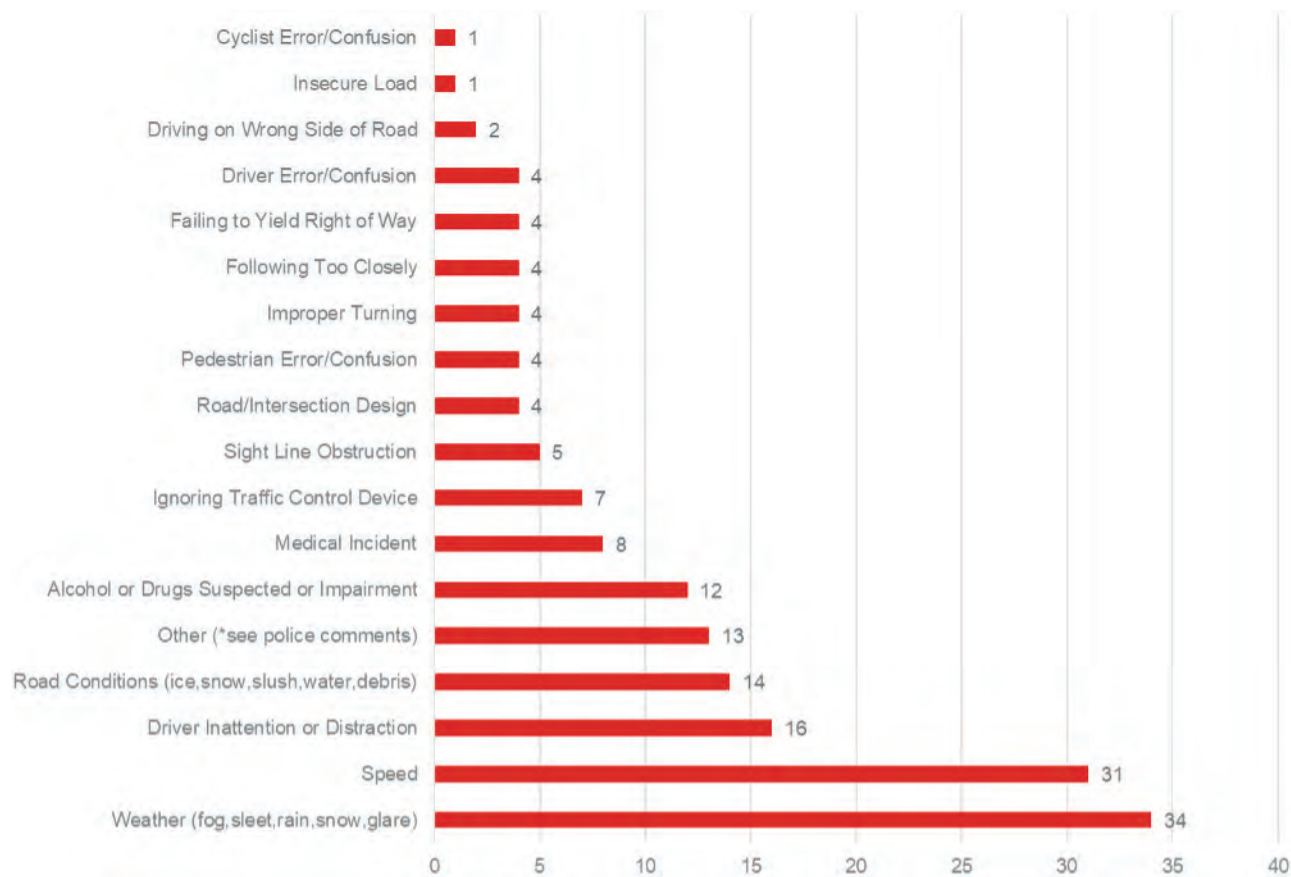


Figure 9: Contributing Factors Identified in Police Crash Data for Fatal & Serious Injury Crashes (2015-2019)

Fatal and Serious Injury Crash Trends by Mode of Transportation

- Most serious injury and fatal crashes involving people walking or cycling occur most often when they have right of way
- Most serious injury and fatal run-off-road, head-on, and rear-end crashes that only involve people driving or riding in vehicles are high-speed related
- The majority of fatal and major injury crashes are occurring on roads with 50 km/h posted speed limits and along roads with more than two lanes
- Serious injury and fatal crashes for people who are driving or riding in vehicles at intersections are related to right- and left-turn movements

Location of Serious Injury and Fatal Crashes

The location of serious injury and fatal crashes were reviewed for motor vehicle crashes to identify high-crash corridors. Likewise, high-crash corridors were identified for people walking, people cycling, and people riding motorcycles; however, in addition to serious injury and fatal crashes, minor injury crashes were also considered due to the level of vulnerability people have to injury when walking, cycling, or riding a motorcycle because they are not protected by a reinforced structure. If conditions had been slightly different, a minor injury crash involving a vulnerable road user could easily result in a serious injury or fatality. The location of minor injury crashes can also provide insights on conditions that may result in more serious injury in the future that could be alleviated if actions were taken. Figure 10 through Figure 13 present the High-Crash Corridors for each mode of transportation. The following highlights trends identified:

- High-crash corridors for people walking and cycling are predominantly located in higher activity areas as well as along more rural roadways that lack walking or cycling infrastructure
- High-crash corridors for people riding motorcycles are predominantly located along higher speed and hilly/curved roadways
- High-crash corridors for people driving or riding as passengers in motor vehicles:
- In central areas, serious injury and fatal crashes are most frequently right-angle and rear-end crashes
- In outlying areas, serious injury and fatal crashes are more frequently run-off-road and head-on crashes



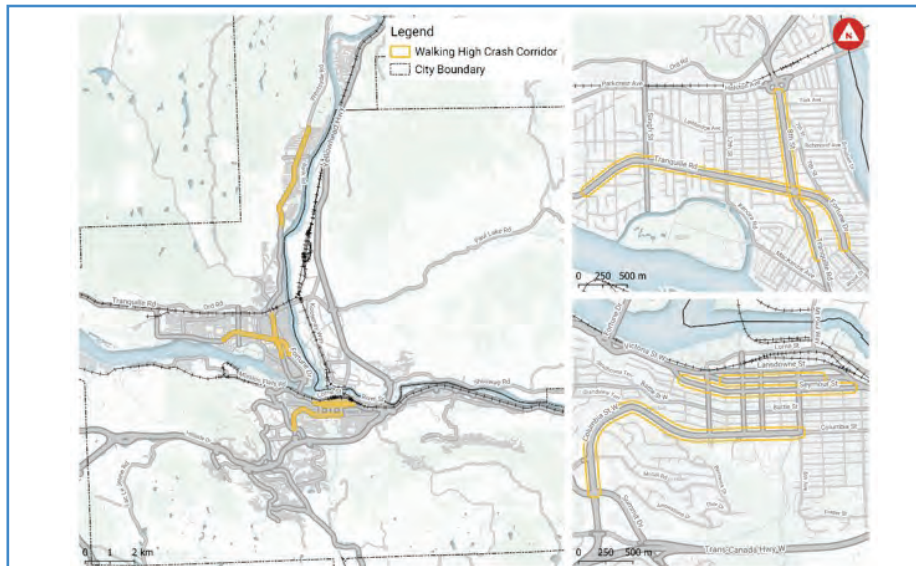


Figure 10: Walking High-Crash Corridors Based on Crash Data (2015–2019)

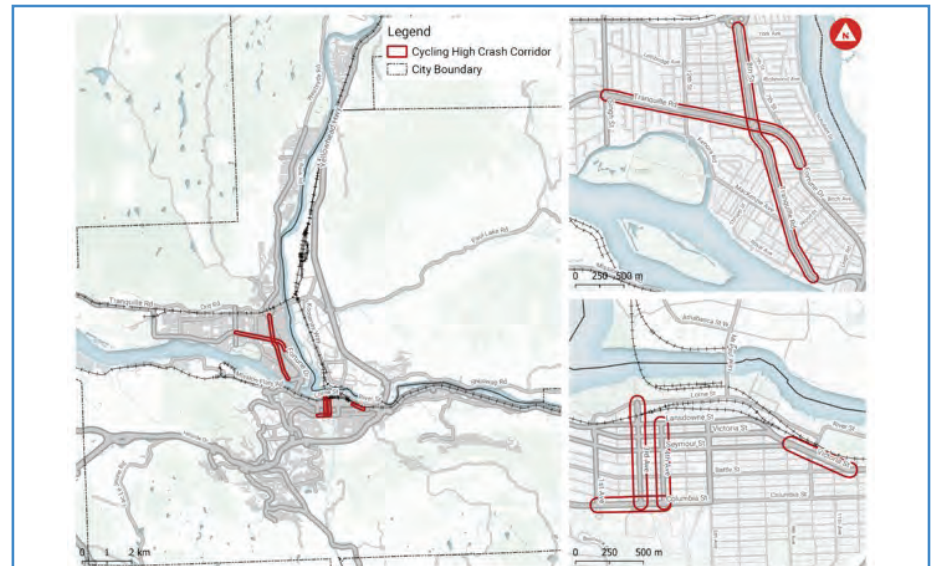


Figure 11: Cycling High-Crash Corridors Based on Crash Data (2015–2019)

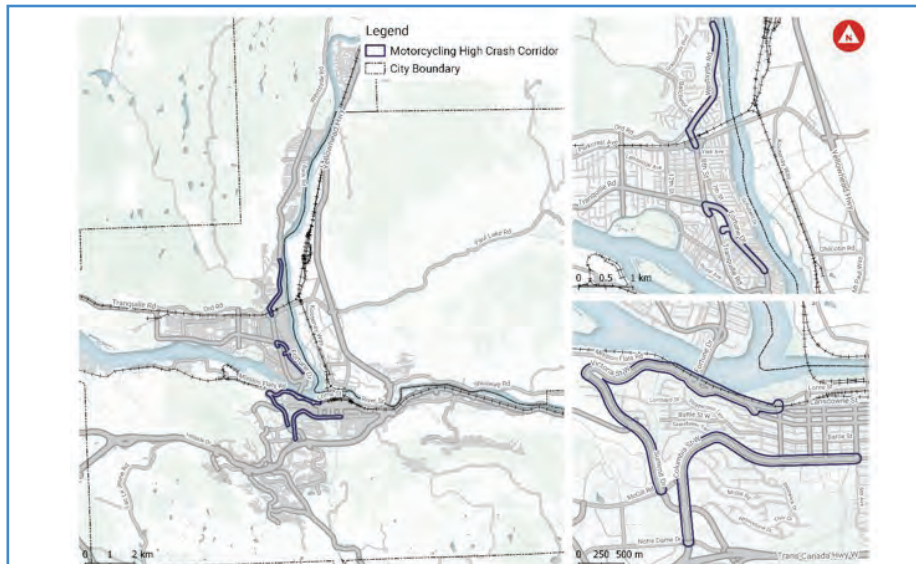


Figure 12: Motorcycling High-Crash Corridors Based on Crash Data (2015–2019)

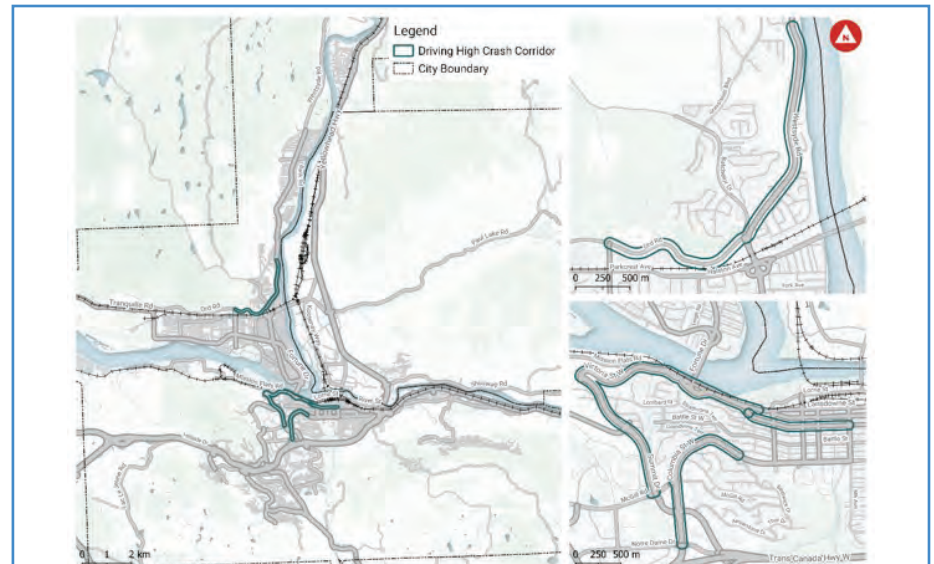


Figure 13: Driving High-Crash Corridors Based on Crash Data (2015–2019)

THE LIVED EXPERIENCES OF KAMLOOPIANS

Crash data is an important input to understanding the level of traffic safety of a community's streets. However, the crash data cannot tell the entire story. Crash data are derived from police reports or insurance claims data from the Insurance Corporation of British Columbia. While these provide important information, they typically exclude information about crashes that do not involve a motor vehicle, nor can they provide information about locations where "near misses" are happening. Engaging with the community allows us to learn about the lived experiences with transportation safety of Kamloops residents. To create the Kamloops Vision Zero Strategy and Action Plan that proactively addresses safety for all people in Kamloops, we need to understand where and when people feel safe and unsafe when walking, cycling, driving, operating a motorcycle, and using mobility aids, and how our streets contribute to those feelings. We know peoples' experience will differ from person to person depending on their individual lived experiences, background, age, race, gender, income, ability, and many other factors associated with personal identity.

Kamloops residents provided comments about their feeling of safety walking, cycling, driving a motorcycle, taking transit, and driving a vehicle. From those comments, 75% of respondents said they did not feel safe cycling, about two out of every three said they didn't feel safe driving a motorcycle, and about 40% said they didn't feel safe walking. Conversely, about 75% of respondents felt safe driving or riding transit. When asked why this was the case, the top three themes regarding feeling unsafe on Kamloops streets were:

1. Lack of safe cycling and walking facilities
2. Poor road conditions (potholes, lack of painted lines)
3. Lack of enforcement for dangerous/distracted driving

When asked to identify the top five issues in Kamloops that contribute to crashes and injuries in the Kamloops transportation system, the top common identified issues were:

- Aggressive driving (52% of responses)
- Distracted driving/cycling/walking (50%)
- Speeding (49%)
- Road or intersection design/operation (48%)
- Ignoring signs or signals (36%)
- Driver error or confusion (35%)





Interestingly, when we compare peoples’ perceptions of the contributing factors to the contributing factors noted in the data from police reports for serious injury and fatal crashes, there are consistencies related to speeding and driver distraction/inattention. However, people did not identify alcohol or drug impairment as highly as noted in the police data, while people seem to identify issues with design, ignoring traffic signs and signals, and driver confusion as much larger issues than identified in the police data for serious injury and fatal crashes.

Kamloops residents shared locations where they have experienced near misses and locations where they have concerns or feel unsafe due to traffic safety (Figure 14). These locations of near misses and concerns were mapped to review their location as compared to the location of crashes used in the crash analysis. Peoples’ lived experiences help to expand the understanding of locations within the transportation that have safety issues.

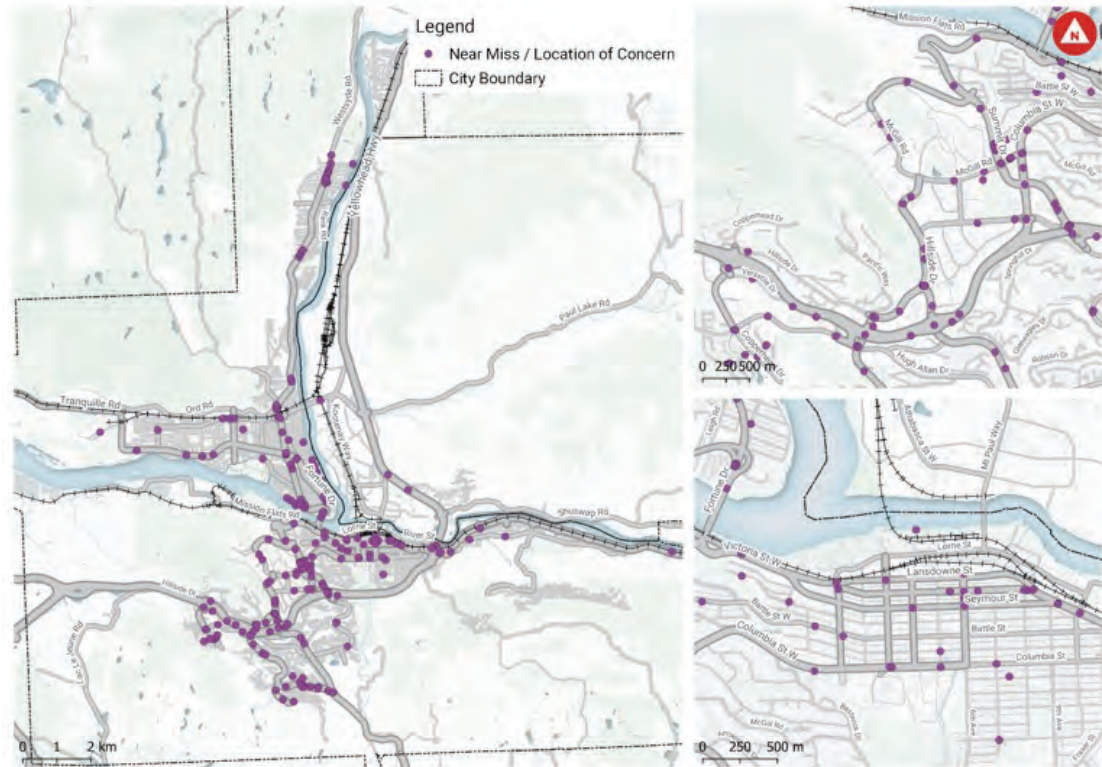


Figure 14: Locations of Near Misses and Traffic Safety Concerns Identified by Kamloops Residents



THE KAMLOOPS HIGH-INJURY NETWORK

Combining the high-crash corridors identified during the crash analysis with the locations of near misses and safety concerns identified through Kamloops residents' lived experiences allows us to identify a High-Injury Network within the transportation system. The Kamloops High-Injury Network is illustrated in Figure 15.

This network will be an important component of the early projects for the Kamloops Vision Zero Strategy and Action Plan for two reasons:

1. These are locations with known issues that are resulting in serious injuries and fatalities for Kamloops residents and visitors.
2. Further analyzing these corridors, identifying and implementing safety improvements, and learning from these projects will help to inform changes that are required at similar locations throughout the Kamloops transportation system to create a Safe System and achieve Vision Zero.

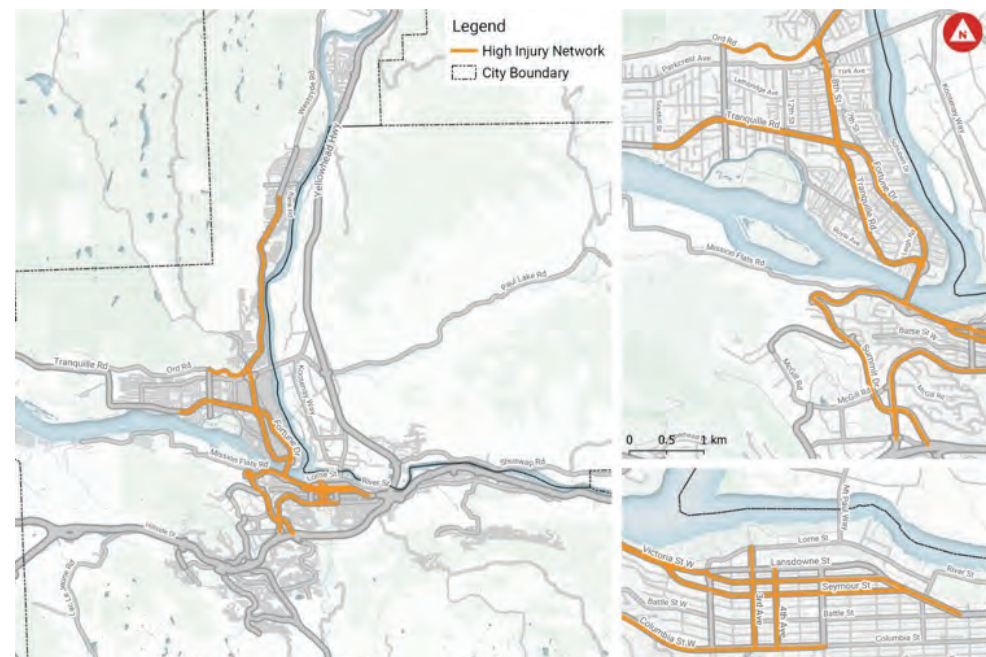


Figure 15: Kamloops High-Injury Network



2.0 VISION ZERO STRATEGY

The Kamloops Vision Zero Strategy is organized around a Vision Zero Goal that outlines the overall target for the Vision Zero Action Plan for the City of Kamloops. The Vision Zero Keystone describes the foundational concept that underpins the Strategy & Action Plan, including the Action Plan Emphasis Areas and their associated Strategies and Actions.

The Vision Zero Emphasis Areas provide an organizing framework to create a Safe System in Kamloops as part of the Action Plan. The Vision Zero Strategies organized under the Vision Zero Emphasis Areas describe the individual Strategies and their associated Actions/steps that the City of Kamloops and its partners in transportation safety will carry out to achieve the Vision Zero Goal.

Vision Zero Goal

Kamloops will have zero crashes causing fatalities or serious injuries by 2039.

Vision Zero Keystone

All people have a right to safe mobility. Transportation safety in Kamloops will be the top priority in all actions and decisions for planning, designing, operating, and maintaining the transportation system. The transportation system includes roads and streets, sidewalks, transit stops, pathways, bike lanes, intersections, and crosswalks and other infrastructure that supports mobility for people travelling by foot, bike, transit, automobile, and other modes.



3.0 VISION ZERO ACTION PLAN

Vision Zero will require expertise, support, and action from a wide range of partners in addition to the City of Kamloops – community, government, and others – to address all parts of the Safe System. The Kamloops Vision Zero Action Plan includes Emphasis Areas to create a Safe System for the city. Each Emphasis Area reflects the Vision Zero and Safe System principles described earlier.

Each Vision Zero Emphasis Area and its associated Strategies within the Action Plan were developed based on:

- **Vision Zero and Safe System best practices from industry**
- **Evidence-based research**
- **Findings from the Kamloops crash data analysis**
- **Input from Kamloops residents' lived experience**

This collection of inputs resulted in a holistic set of Emphasis Areas and Strategies that both apply lessons from North America and around the world to create a Safe System and achieve Vision Zero, and the local nuances of Kamloops that affect how the Vision Zero should be applied in Kamloops.

The City's progress with respect to the strategy is summarized as:



NEW

Has not yet been tried.



ENHANCE

Already being conducted by the City but can be added to for more safety benefits.



REVISE

A program already exists in the City, but revisions are required in the organization and delivery to achieve safety outcomes (no additional funds may be needed).



Kathleen Fisher

The figure on the next page describes the standard format in which each strategy is presented.

1 STRATEGY NAME

Each strategy name refers to a distinct activity that can be undertaken by the City, and is numbered for easy reference.

2 STRATEGY DESCRIPTION

Each strategy is defined, along with background information. The proven or potential benefits are described, and general guidance for implementation is presented.

3 STATUS IN KAMLOOPS

The City's progress with respect to the strategy is summarized as:

New = Has not yet been tried.

Enhance = Already being conducted by the City but can be added to for more safety benefits.

Revise = A program already exists in the City, but revisions are required in the organization and delivery to achieve safety outcomes (no additional funds may be needed).

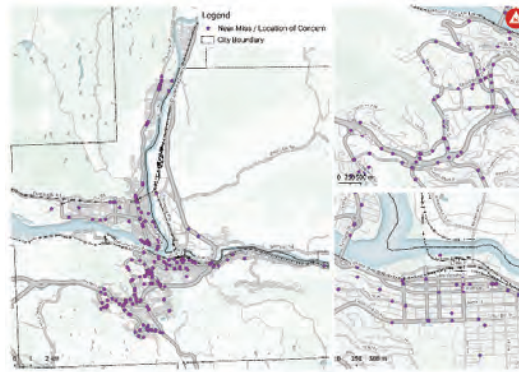
4 ACTIONS

A series of specific measurable steps the City and others can take to successfully budget and implement the strategy, including required policies, analysis, selection of locations and potential evaluation.

1

STRATEGY 1.3: SUPPORT NEAR-MISS REPORTING BY THE COMMUNITY

Near misses are only near misses because of an interruption in the chain of events that could have otherwise resulted in a crash, with potentially serious consequences. By having the community report where and when they have had a near miss incident, the City of Kamloops can learn where risks exist within the transportation network. This is important because the location of fatal and serious injury crashes can appear to



occur at random, when in fact they occur at locations with certain types of characteristics, but a fatal or serious injury crash just may not have occurred yet. Based on analysis of high severity crashes in New Zealand (2014-2018), Dr. Fergus Tate found that fatal and serious injury crashes are rare events and over 60% of fatal crashes occur at sites where there has not been a fatal or serious crash in five years previous. Together with the High-Injury Network, the combined crash and near miss dataset will allow the City of Kamloops to proactively address known safety issues.

Near miss reporting can be gathered using a combination of online and phone tools. For example, the Kamloops Vision Zero Strategy and Action Plan used an online mapping tool to collect near misses and locations of concern from residents, while the City of Kamloops currently receives concerns via email and calls.

2

STATUS: ENHANCE

Through the engagement for the Vision Zero Strategy and Action Plan, a near miss mapping tool was deployed. The City of Kamloops can relaunch this tool and monitor the incoming results on a regular basis.

3

LINK TO EVIDENCE:

- ❑ DATA – Available data from police or ICBC only include crashes but lack information on locations where risks are present but have yet to result in a serious or fatal injury crash
- ❑ LIVED EXPERIENCE – Throughout the project, residents were eager to share locations of where they have experienced near misses or have concerns about safety
- ❑ BEST PRACTICE – Collecting data on near misses fills a known data gap and has been shown to support proactive safety actions

4

ACTIONS:

1. Publish online portal for placement of pins and recording of detailed information by the public
2. Log service request calls and emails in online portal
3. Review submitted data points as they are submitted and respond to resident concerns
4. Review near miss database to identify any trends annually and include in Vision Zero Annual Report
5. Undertake capital projects to address any trends found by near-miss reporting



Summary, Status, Link to Evidence and Actions



EMPHASIS AREA 1:

Evidence-Based Safety Decisions

The City of Kamloops will make decisions based on local crash data and lived experience data, industry best practices, and evidence-based research to enable more informed decision making that prioritizes safety.

The Vision Zero Strategies that support this Emphasis Area are:



STRATEGY 1.1

Hire a road safety engineer



STRATEGY 1.2

Perform in-service road safety reviews and road safety audits



STRATEGY 1.3

Support near-miss reporting by the community



STRATEGY 1.4

Complete post-crash reviews of fatal and serious injury crashes



STRATEGY 1.5

Establish multimodal traffic volume and speed data program



STRATEGY 1.6

Expand and enhance crash data sources



STRATEGY 1.7

Prepare Vision Zero annual reports



STRATEGY 1.1:

HIRE A ROAD SAFETY ENGINEER

A road safety engineer is a professional with specific training and knowledge in traffic safety.

This person can coordinate programs and efforts towards achieving zero traffic-related fatalities and serious injuries based on a sound understanding of safety principles such as the Safe Systems approach. They can develop and implement traffic safety designs and solutions and integrate road safety improvements with other projects and programs already in place.

The presence of a dedicated road safety staff person ensures traffic safety remains a priority and that strategies identified are translated into actions. This is a key component of the progress achieved by the municipalities highlighted in the Vision Zero Success Stories section of the Kamloops Vision Zero Strategy and Action Plan.



Status: New

The City of Kamloops does not currently have a dedicated road safety engineer. The implementation of the

strategies described in the Kamloops Vision Zero Strategy and Action Plan will require, on average, one full-time equivalent employee (see Figure 21). Having a dedicated staff person to direct and oversee the implementation will ensure strategies translate to on-the-ground actions that will make meaningful progress towards zero traffic-related fatalities and serious injuries.

Link To Evidence:

BEST PRACTICE - Cities and jurisdictions with a dedicated road safety unit or staff are known to make meaningful progress in reducing traffic-related fatalities and serious injuries.

Actions:

- Secure funding for a full-time employee and E-Bike Strategy.
- Develop a job description and selection criteria
- Hire a competent road safety engineer





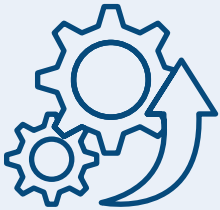
STRATEGY 1.2:

PERFORM IN-SERVICE ROAD SAFETY REVIEWS AND ROAD SAFETY AUDITS

A road safety audit is a formal, independent review of a transportation project by a team of road safety specialists.

The Canadian Road Safety Audit Guide (Transportation Association of Canada, 2001) describes the process in detail. RSAs are proven to reduce crashes and can be conducted at various stages including concept design, functional planning, preliminary design, detailed design, during construction and post-construction; however, they provide greatest value at the planning and preliminary design stages and on larger and more complex projects that involve higher speeds and interactions between vulnerable road users and vehicle traffic. For example, they can be made a requirement on all Capital projects that exceed a certain value (e.g. \$250,000).

In-service road safety reviews (ISRSRs) are similar in concept to RSAs, but are conducted on existing roadways that are prone to injury-causing crashes based on the crash data or the absence of safety features. For example, each year, in-service reviews can be conducted at the top high-crash signalized intersections and corridors in the Kamloops and can include both low-cost measures, such as changes to signals, signs, and markings, that can make an immediate impact as well as more significant geometric changes that lead to more sustainable injury crash reductions.



Status: Enhance

The City of Kamloops has conducted in-service reviews and road safety audits on an infrequent and ad-hoc basis but have been dependent on ICBC expertise. Having a proactive and regular annual program would help ensure that safety issues are addressed during planning and design, and that existing issues are systematically addressed.

Link to Evidence

- **DATA** - Data indicates that some intersections and corridors are more crash prone than others.
- **LIVED EXPERIENCE** - Residents indicated that road design was an issue that needed to be addressed.
- **BEST PRACTICE** - Safety reviews and audits have proven to significantly reduce the risk of injury by identifying features that are known contribute to injury.

Actions:

- Develop a policy that specifies the types of projects and the project stages which require road safety audits
- Develop a process for identifying intersections or corridors where in-service road safety reviews will be conducted each year
- Conduct in-service road safety reviews and road safety audits on an annual basis



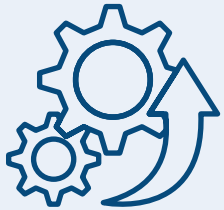
STRATEGY 1.3:

SUPPORT NEAR-MISS REPORTING BY THE COMMUNITY

Near misses are only near misses because of an interruption in the chain of events that could have otherwise resulted in a crash, with potentially serious consequences.

By having the community report where and when they have had a near miss incident, the City of Kamloops can learn where risks exist within the transportation network. This is important because the location of fatal and serious injury crashes can appear to occur at random, when in fact they occur at locations with certain types of characteristics, but a fatal or serious injury crash just may not have occurred yet. Based on analysis of high severity crashes in New Zealand (2014–2018), Dr. Fergus Tate found that fatal and serious injury crashes are rare events and over 60% of fatal crashes occur at sites where there has not been a fatal or serious crash in five years previous. Together with the High-Injury Network, the combined crash and near miss dataset will allow the City of Kamloops to proactively address known safety issues.

Near miss reporting can be gathered using a combination of online and phone tools. For example, the Kamloops Vision Zero Strategy and Action Plan used an online mapping tool to collect near misses and locations of concern from residents, while the City of Kamloops currently receives concerns via email and calls.



Status: Enhance

Through the engagement for the Vision Zero Strategy and Action Plan, a near miss mapping tool was deployed. The City of Kamloops can relaunch this tool and monitor the incoming results on a regular basis.

Link to Evidence

- **DATA** - Available data from police or ICBC only include crashes but lack information on locations where risks are present but have yet to result in a serious or fatal injury crash.
- **LIVED EXPERIENCE** - Throughout the project, residents were eager to share locations of where they have experienced near misses or have concerns about safety.
- **BEST PRACTICE** - Collecting data on near misses fills a known data gap and has been shown to support proactive safety actions.

Actions:

- Publish online portal for placement of pins and recording of detailed information by the public
- Log service request calls and emails in online portal
- Review submitted data points as they are submitted and respond to resident concerns
- Review near miss database to identify any trends annually and include in the Vision Zero annual report
- Action any trends noted through capital projects or behaviour programs



STRATEGY 1.4:

COMPLETE POST-CRASH REVIEWS OF FATAL AND SERIOUS INJURY CRASHES

When a fatality or serious injury occurs in a community, it is a difficult and sensitive time.

It must also be taken as a learning opportunity for all involved. A set of objective procedures should be in place to provide appropriate support, facilitate diligent follow-up, and result in continuous improvement. The RCMP follow a very well-defined and thorough process for assessing the scene, securing the crash site, and collecting facts and evidence. However, such incidents could be followed with an in-depth transportation safety review that may result in the identification of measures to prevent further tragedies. The post-crash review process for fatal and serious injury crash should be inclusive of reviewing a defined “area” beyond the site of the incident, performing multiple site visits to investigate road conditions and user behaviour, and analysis of crash history that may result in immediate mitigations and longer-term improvements to both the site and other locations in the Kamloops where similar characteristics exist. This supports the Safe System approach by identifying and addressing systemic issues.



Status: New

Police teams conduct investigations of severe crashes, but the role of the City of Kamloops staff in learning about crash causation and participating in post-crash reviews has been limited.

Link to Evidence

- **DATA** - This strategy aims to collect meaningful data to make informed decisions about interventions at severe crash locations that can also be deployed across the transportation system.
- **BEST PRACTICE** - Post-fatality/serious injury reviews have been conducted in other jurisdictions and provided valuable insights.

Actions:

- Review fatality reports conducted by police and investigators for the fatal crashes that occurred over the past five years to identify risk and contributing factors
- Develop a process for conducting supplementary reviews led by City of Kamloops staff, including timelines and who would be involved (design a data collection form with industry/stakeholder assistance if required)
- As serious incidents occur, review locations where all fatalities and serious injuries are reported following the defined process
- Apply lessons learned to other locations with similar characteristics



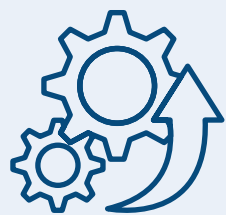
STRATEGY 1.5:

ESTABLISH MULTIMODAL TRAFFIC VOLUME AND SPEED DATA PROGRAM

Understanding the extent of travel and the behaviour of people travelling on the streets of Kamloops is limited by the amount of data collected.

Without multimodal traffic volumes and motor vehicle speeds, it is difficult to assess crash rates, exposure, and other factors that can influence crash analysis and actions. By increasing the data collected, the City of Kamloops can make more informed decisions and be proactive in taking action throughout the community.

To collect data, the City of Kamloops can use permanent or portable data collection equipment. The deployment of the equipment does require staff training and time and the data that is collected should be verified and cleaned for any anomalies.



Status: Enhance

The City of Kamloops currently collects traffic volumes and speed data throughout the city. This strategy enhances this work by providing more resources and infrastructure towards this task.

Link to Evidence

- **DATA** - Data on volumes and speed across the community is limited at present and limits understanding of crash rates, exposure, and other factors that can influence crash analysis and actions.
- **LIVED EXPERIENCE** - Residents have noted speed as a significant safety concern in Kamloops.
- **BEST PRACTICE** - Robust and regularly collected speed and volume data are key components to making informed decisions and taking proactive actions.

Actions:

- Identify required data points, and develop a plan to deploy volume and speed measuring devices throughout Kamloops, focused first on the High-Injury Network
- Deploy measuring devices and collect volume and speed data
- Verify and clean volume and speed data collected
- Publish data (internally or publicly available) for use in planning, design, and prioritization exercises



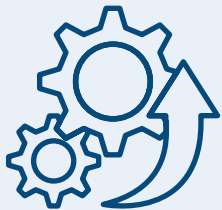
STRATEGY 1.6:

EXPAND AND ENHANCE CRASH DATA SOURCES

Current sources of crash data are from insurance claims and police reports.

These typically require a motor vehicle to be involved in a crash; which may result in missing crashes between non-motorized travelers. Currently, the available data from police or ICBC can lack information on injury severity, especially those crashes resulting in hospitalization since the condition of the injured person may change.

In addition to information related to the severity of a crash, other information related to the location and context could be collected. This would allow the City of Kamloops to learn more about the crash and contributing factors, and then apply these learnings to other places within the city with similar conditions.



Status: Enhance

Currently, the only data sources used by City of Kamloops staff are from insurance claims and police reports. This strategy would expand the data inputs to support stronger decision making by the City of Kamloops.

Link to Evidence

- **BEST PRACTICE** - Expanding sources to include data from hospitals and other health agencies has been used in other BC communities to better understand safety.

Actions:

Review and refine crash report form used by police and other first responders

- Develop data sharing agreement with health services and determine what type of data can be shared
- Analyze hospital admission data for trends in behaviour and design
- Compile with other data sources to identify priority areas for design changes or behaviour programs

Review and refine crash report form used by police and other first responders

- Develop recommendations for changes to reporting format
- Deliver or support training in changed methodology and format for collecting information
- Pilot modified reporting format
- Deploy modified reporting format

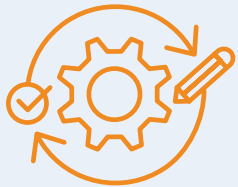


STRATEGY 1.7:

PREPARE VISION ZERO ANNUAL REPORTS

An annual report is used to communicate to the community and decision makers the progress that the City of Kamloops has achieved towards the Vision Zero Strategy.

It is also a tool that enables transparency in the application of the design treatments and behaviour programs and the impact that these measures have had. By providing public access to assessment criteria, prioritization decisions, implementation status, and post-implementation evaluations for all safety related projects, stakeholders and citizens will have a shared understanding of the diversity of considerations that go into achieving Vision Zero.



Status: Revise

The City of Kamloops currently document and share the traffic safety actions taken in the previous year, but an expanded report will be required to document and allow comparison of year-over-year performance of the implementation of the Vision Zero Strategy and Action Plan.

Link to Evidence

- **BEST PRACTICE** - Producing annual reports has helped other communities to be transparent in the delivery of their Vision Zero programs.

Actions:

- Compile and publish annual report that includes crash data, near miss data, and hospital data from past 5 years
- Describe actions that have been completed within the community for the past year
- Publish ongoing statistics related to the Vision Zero Targets, Community Outcomes, and Project Outcomes

EMPHASIS AREA 2:

Safety and Livability

A livable city is a safe city and vice versa. The City of Kamloops will create a safe and livable city through land use planning, speed management, and providing travel options.

The Vision Zero Strategies that support this Emphasis Area are:



STRATEGY 2.1

Accelerate and enhance the active transportation network



STRATEGY 2.2

Create speed management program and traffic calming policy



STRATEGY 2.3

Deploy traffic and speed enforcement to high-injury/high-risk locations



STRATEGY 2.4

Require transportation safety reviews for land development applications



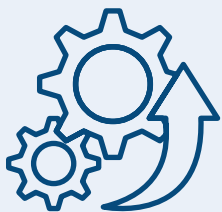
STRATEGY 2.1:

ACCELERATE AND ENHANCE THE ACTIVE TRANSPORTATION NETWORK

Increasing the proportion of trips made on foot, by bike, and via transit reduces the amount of traffic on the streets, which in turn reduces exposure to safety risks.

Providing the environment that makes people comfortable to walk, ride a bicycle, and take transit requires safe and comfortable infrastructure and services to attract people to use these modes. Perceptions and feelings of safety are connected to the choice of transportation mode, and currently many people feel less safe when traveling by modes other than driving a personal vehicle. As we improve safety for all modes, progress in this area will be measured by the increase in daily trips made by active transportation and transit. And, by increasing the number of trips made by active transportation and transit, the significant cost to expand roads can be avoided.

This strategy links to other City of Kamloops objectives related to sustainability, economic development, and livability. For example, KAMPLAN has the objective to “create an environmentally, socially, culturally, and economically sustainable transportation system”; this goal is reiterated in the City of Kamloops’ Transportation Master Plan and Climate Action Plan.



Status: Enhance

The City of Kamloops has been implementing walking, cycling, and transit projects on a regular basis. The amount of change required needs to be increased to support mode shift and safety.

Link To Evidence:

- **DATA** – Walking and cycling infrastructure was noted to be lacking or could be improved along the High-Injury Network and elsewhere in the community
- **LIVED EXPERIENCE** – Residents have expressed their strong support to improve walking, cycling, and transit in Kamloops
- **BEST PRACTICE** – Increasing the proportion of trips made on foot, by bike, and by transit reduces the amount of traffic on the streets, reducing exposure, and requires safe and comfortable infrastructure to attract people to use these modes

Actions:

- Implement the cycling, walking, and transit network described in the Transportation Master Plan, Community Climate Action Plan, and other City of Kamloops strategic plans
- Deploy support programs (e.g., Transportation Demand Management) to ensure walking, cycling, and transit are easy to use, understand, and navigate
- Incorporate best practice designs for walking, cycling, and transit into the design standards, with consideration for micro-mobility options (e.g. e-scooters) and e-bikes



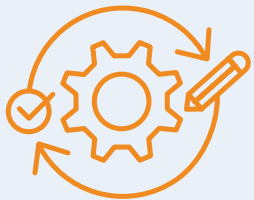
STRATEGY 2.2:

CREATE SPEED MANAGEMENT PROGRAM AND TRAFFIC CALMING POLICY

Vehicle operating speed plays a significant role in a driver's decision making, the probability of a crash occurring (especially for rear end, off road, and right-angle crashes which are prevalent in Kamloops for motorcycle and motor vehicle drivers), and the severity of a crash should one occur.

At higher speeds, a person's cone of vision narrows. In addition, more distance is required to identify a potential conflict, decide on a course of action, and to come to a safe stop. All of this increases the likelihood of a crash and the crash severity. The probability of a fatal or serious injury crash also increases as speeds increase.

Setting, designing for, and enforcing context-based speed limits in Kamloops are required that reflect the character of the places the streets pass through and serve. Establishing a Speed Management Program and Traffic Calming Policy will support changes to the design of streets in Kamloops and the approach to setting and enforcing speeds. Applying a Complete Streets approach and establishing speed limits based on the Safe System approach will create a livable, equitable, and walkable community that also supports the City of Kamloops' objectives for sustainability.



Status: Revise

The City of Kamloops has an approach to set speed limits. Enhancements to this program include further consideration of land use context, the contribution streets have on creating livable and safe places, and the survivability of crashes.

Link To Evidence:

- **DATA** – Data showed that speed and design had an influence on safety performance and is one of the top 5 contributing factors in fatal and serious injury crashes in Kamloops
- **LIVED EXPERIENCE** – Residents have identified speeding as a major traffic safety concern
- **BEST PRACTICE** – The World Health Organization identified speed management as a top priority to create a Safe System

Actions:

Review & Evaluate

- Collect operating speed data along High-Injury Network and within a selection of neighbourhoods that are representative for different neighbourhood configurations across Kamloops
- Analyze speed data and identify locations and factors where operating speeds are higher than posted speeds, or play a disproportionate role in crashes.
- Identify safe speeds to support a Safe System by road classification, land use context, and crash survivability.



Update & Develop

- Develop and obtain approval for a Speed Management Program and Speed Limit Policy to support Safe System considerations that will lead to potential changing posted speed limits
- Develop and obtain approval for a Traffic Calming Policy to establish process and approach to managing speeds within residential neighbourhoods
- Educate the community on speed management, speed limit changes, and the Traffic Calming Policy

Implement & Refine

- Implement speed limit changes, as required
- Update design standards to create self-explaining roads that support safe operating speeds
- Consider adopting an enforcement grace period during speed limit changes to support behaviour change
- Redesign and reconstruct corridors where design is inconsistent with new Design Standards



STRATEGY 2.3:

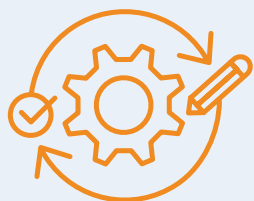
DEPLOY TRAFFIC AND SPEED ENFORCEMENT TO HIGH-INJURY/HIGH-RISK LOCATIONS

Traffic safety enforcement is typically under-resourced. This is related to a number of factors, such as the priority given to other police matters such as crime prevention, and the political climate around traffic ticketing.

However, traffic deaths and serious injuries persist, and enforcement is an important component of a traffic safety program. The rules of the road need to be enforced and safe behaviours encouraged to protect the public from offenders.

In a Vision Zero environment, traffic enforcement has the sole objective of minimizing the risk of serious injuries and fatalities in the road network. Deployment should be carried out based on evidence that indicates these trends. For example, the High-Injury Network can be targeted more regularly based on the behaviours identified as crash contributing factors and from public engagement. Intersection safety cameras should be installed at locations with speed-related or right-angle crashes, both of which are typically more severe than other crashes. Intersection safety cameras represent a more objective, safer and less resource-intensive approach than manned enforcement for these crash types.

Enforcement is most effective when it is combined with engineering and education efforts. Programs such as Speed Watch aim to bring these approaches together and should be revived. For example, where lower speed limits are posted, speed display signs can be erected as an educational tool and enforcement would only be activated if the engineering and education approaches do not yield the desired result. Another example is leveraging the BC Sector-Wide Road Safety Calendar that aims to provide focus on traffic safety themes each month. City of Kamloops staff should work with police and other partners to ensure the calendar is being followed and to suggest locations for each month based on the crash data or public engagement.



Status: Revise

In recent years, the RCMP have been conducting traffic enforcement independently of City of Kamloops staff input. Closer collaboration is expected to yield better safety outcomes.

Link To Evidence:

- **DATA** – Crash data and other sources of safety data provided to the City of Kamloops can be used to focus enforcement efforts on high-risk behaviours and high-injury locations
- **ENGAGEMENT** – The public engagement results identified road user behaviours that can be addressed through enforcement

- **BEST PRACTICE** – Traffic enforcement is proven to impact safety, particularly when it is integrated, targeted, frequent, and sustained



Actions:

- Develop criteria for high-crash locations and behaviours to target enforcement with RCMP, ICBC, City of Kamloops staff and other partners
- Identify locations for targeted enforcement
- Implement and follow the BC Sector-wide Road Safety Calendar
- Develop educational campaigns in support of enforcement activities
- Revive Community Policing Program by working closely with ICBC and RCMP to identify locations for the Speed Watch program



STRATEGY 2.4:

REQUIRE TRANSPORTATION SAFETY REVIEWS FOR LAND DEVELOPMENT APPLICATIONS

To move towards zero deaths and serious injuries within Kamloops' transportation system, the safety implications of all projects affecting transportation need to be considered at all stages.

The earlier the stage safety is considered, the more significant the safety intervention can be. There has been an increasing recognition that it is necessary to include safety considerations in land use planning, land development, and transportation system planning. The publication "Sustainable and Safe" states the safety of transportation can be improved when land use planning and development takes a form with a mixture of land uses, compact development, and efficient public transport. All these measures reduce the length of driving trips, make walking and cycling more practical, and reduce exposure by reducing vehicle-kilometers travelled.

The City of Kamloops's development approvals processes and land use planning do not currently include the requirement for a Road Safety Audit or transportation safety study. Traffic impact studies, where required, are typically focused on capacity and access considerations. Considering safety in the land use planning process could include prioritizing dedicated space for vulnerable users and transit, building networks that include roundabouts, ensuring walking and cycling routes are located along desire lines, and ensuring design speeds do not exceed the recommended Safe System thresholds (see Strategy 4.2).

As part of the development permit application and approval process, developers should be required to submit plans for safely accommodating all road users, including people walking, cycling, using micromobility devices, using mobility aids such as wheelchairs, transit users, and drivers. Conflict points should be minimized at driveways and transitions between the surrounding pathway system and the property. Developers can also be required to fund road improvements where safety would be impacted by the proposed development. This would require the development of policies, guidelines, and, in certain cases, bylaw revisions.

Status: New



Link To Evidence:

- **ENGAGEMENT** – The need to consider safety during the planning and development stage was among the top 10 actions supported by residents during engagement on this Strategy and Action Plan
- **BEST PRACTICE** – Best practices on integrated land use and transportation planning identify that mobility systems can be made safe through land use planning that provides for mixed uses, compact development, and efficient public transport

Actions:

- Update Traffic Impact Assessment terms of reference template to include safety reviews based on the Safe System Approach and revised design practices
- When updating Official Community Plan and Transportation Master Plan, include policies stating that safety be explicitly considered in all land use and transportation planning projects and, in the interim, develop and approve policies to direct that development permit applications incorporate transportation safety reviews

EMPHASIS AREA 3:

Equitable Safety

Safety for all users will be supported by the City of Kamloops' transportation system regardless of trip purpose, mode choice, age, ability, gender, race, income, or other social determinants.

The Vision Zero Strategies that support this Emphasis Area are:



STRATEGY 3.1

Create accessible streets for people with disabilities



STRATEGY 3.2

Develop and implement Safe Routes to School



STRATEGY 3.3

Track and seek input from equity-seeking communities



STRATEGY 3.4

Advocate and educate on safer vehicles



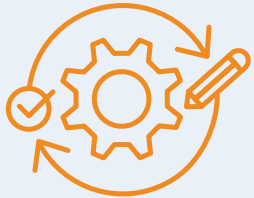
STRATEGY 3.1:

CREATE ACCESSIBLE STREETS FOR PEOPLE WITH DISABILITIES

Creating an accessible transportation system allows people of all ages and abilities to move safely and comfortably.

Universal design or universal accessibility is not achieved through a single measure, such as a curb ramp. While a curb ramp may support people with mobility impairments, its design may direct people to the centre of an intersection where a person with a vision impairment could be struck.

The Transportation Association of Canada's Geometric Design Guide for Canadian Roads and the BC Active Transportation Design Guide outline the needs of people of all ages and abilities, including people with disabilities, and how these needs can be met in the transportation system. People of any age may require assistive devices for mobility, sight, hearing, or other impairments. There are a number of physical and cognitive conditions that may affect a person's mobility and require accommodation through the design of a street or pathway.



Status: Revise

The City of Kamloops does incorporate some design treatments to make the streets accessible for people with unique mobility requirements.

Link To Evidence:

- **DATA** - Data showed that children and youth are involved in crashes and there are gaps in walking and cycling infrastructure to support access to schools.
- **LIVED EXPERIENCE** - Residents identified Safe Routes to School as one of the top five actions to improve safety in Kamloops and more could be done to support safe travel for children and youth

- **BEST PRACTICE** - Other jurisdictions have used Safe Routes to School to both help to grow the culture of safety in communities and increase

Actions:

- Assess all school sites for safety issues and constraints and develop Safe Routes to School plans that consider active travel planning and the potential for School Streets programs
- Develop a strategy, based on safety risks, to implement changes at schools and communities related to Safe Routes to School throughout the city

- Implement changes to address common issues at all schools and to address issues at specific schools
- Monitor safety at schools through site visits, school administration and parent council collaboration, and near-miss reporting
- Monitor school travel patterns, mode choice, and noted barriers to walking, cycling, and busing



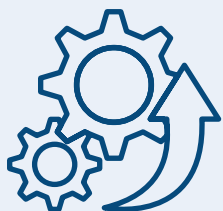
STRATEGY 3.2:

DEVELOP AND IMPLEMENT SAFE ROUTES TO SCHOOL

During school start and dismissal, the school grounds and surrounding streets, sidewalks, bikeways, pathways, public transit and school buses experience high levels of activity within a concentrated area.

Safe Routes to School programs aim to reduce incidents and unsafe traffic-related behaviours at schools. Safe Routes to School programs use internationally recognized school travel planning approaches to coordinate engagement, education, and encouragement with engineering improvements and enforcement in support of immediate and longer-term increases in active school travel. Safe Routes to School programs incorporate active school travel that promotes the use of human-powered, non-motorized transportation modes for trips to and from school, including walking, cycling, scooting, skateboarding, and using a wheelchair. The approach to developing Safe Routes to School focuses on comprehensive school health that has been shown to be effective in improving safety while improving health, education, and social outcomes for children and youth.

This Strategy can include a “School Streets program” where no motor vehicles are allowed near the school for 45 minutes during the drop-off and pickup periods. School Streets programs distribute traffic over a larger area instead of having it concentrated at the school site. This reduces the volume of traffic at schools and increases safety for children.



Status: Enhance

The City of Kamloops currently has a Safe Routes to School program that could be revised to address issues identified by the community and prioritized to support safe mobility.

Link To Evidence:

- **LIVED EXPERIENCE** - Residents have expressed the desire to enhance the walkability and bikeability of Kamloops, which includes accessibility for people of all ages and abilities. When asked to rank all actions in terms of importance, this action was in the top five for residents.
- **BEST PRACTICE** - Best practices in creating a Safe System include considerations of equity and accessibility to support safe travel for people of all ages and abilities.

Actions:

- Audit High-Injury Network and primary walking network for universal design and accessibility
- Document findings and implementation experience to support changes to design standards
- Develop and incorporate accessibility guidelines into Design Criteria Manual



STRATEGY 3.3:

TRACK AND SEEK INPUT FROM EQUITY-SEEKING COMMUNITIES

The transportation system is one of the many mechanisms through which society has historically marginalized certain communities.

Working to address systemic inequity and build inclusion is a critical component of the Kamloops Vision Zero Strategy and Action Plan. Removing transportation-related barriers will require confronting uncomfortable topics, learning about experiences others have had that may not align with our own, and acting as allies to those who are disproportionately affected by the way the system is currently planned, designed, activated, and maintained.

While the initial Actions for this Strategy require consultation with equity-seeking communities to identify the transportation-related barriers they experience in Kamloops, examples of the types of barriers experienced in other communities include:

- Individuals who cannot travel out of “food desserts” (i.e. neighbourhoods without access to grocery stores for fresh food) are left with food options that lead to long-term health issues.

- Disabled individuals and those with chronic medical concerns who cannot get to the doctor will not receive adequate care.
- Investments in transportation improvements may not be targeted to neighbourhoods with households with lower incomes, decreasing their safety, accessibility, and travel options to jobs, schools, arts and culture, recreation, places of worship, etc.

- Consultation for transportation projects may not incorporate input from different backgrounds, races, ethnicities, or those who do not speak English, resulting in negative impacts to their neighbourhoods and communities.



Link to Evidence:

- **DATA** - There is a data gap to understand how age, gender, race and ethnicity, income, and other social determinants impact perceptions of safety and what is needed to improve safety.
- **BEST PRACTICE** - Equity is a major consideration in Vision Zero plans for other communities across North America.

Status: New

Actions:

- Identify equity-seeking communities by working with social service, non-profit, faith, provincial, and government leaders
- Collaborate with groups representing equity seeking communities to obtain input on the issue of traffic safety as members of these communities do not typically participate in public engagement events such as online surveys and public meetings
- Summarize input received from equity-seeking communities and incorporate it into transportation safety projects and programs

EMPHASIS AREA 4:

Safety by Design

Travel speeds combined with the type and location of conflicts on Kamloops streets and at intersections will be managed to minimize the potential for a crash to occur and minimize the risk of serious or fatal injury if a crash does occur.

The Vision Zero Strategies that support this Emphasis Area are:



STRATEGY 4.1

Implement safety upgrades along the High-Injury Network



STRATEGY 4.2

Update design standards to incorporate Complete Streets and Safe System



STRATEGY 4.3

Create safe intersections and corridors



STRATEGY 4.4

Implement more modern roundabouts



STRATEGY 4.5

Prioritize maintenance activities to improve safety



STRATEGY 4.6

Review and address lighting deficiencies



STRATEGY 4.7

Support safety improvements on provincial roads



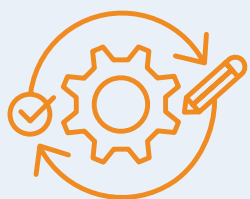
STRATEGY 4.1:

IMPLEMENT SAFETY UPGRADES ALONG THE HIGH-INJURY NETWORK

Addressing safety along the High-Injury Network in Kamloops is an important part of a Vision Zero program.

Corridor-level interventions have a greater impact than individual intersection improvements. Some of the most impactful changes relate to the roadway cross-section between intersections, for example, the availability of dedicated spaces for vulnerable road users. Corridor approaches can also lead to greater simplicity for road users by encouraging design consistency, access management, and more effective speed management. Examples of proven corridor measures include: narrowing lanes, adding overhead lighting, reducing speed limits, adding walking and cycling infrastructure, adding median barriers, managing parking, and enhanced right-of-way controls and operations.

Focusing on the High-Injury Network allows the City of Kamloops to target corridors with known issues that are contributing to fatal and serious injury crashes. As these corridors are studied and analyzed, changes are made, and monitoring of the changes is completed, the City of Kamloops can learn and adopt strategies that are shown to be successful. These lessons will allow the City of Kamloops to proactively address similar safety issues located elsewhere in the transportation system, but where fatal and serious injury crashes have not yet occurred.



Status: Revise

The City of Kamloops has previously commissioned in-service safety reviews along corridors as part of the Safer City initiative with the support of ICBC. These can be carried out as part of a regular program.

Link to Evidence

- **DATA** - The High-Injury Network was identified by analyzing the location of fatal and serious injury crashes in Kamloops.

- **LIVED EXPERIENCE** - Resident input on the location of safety concerns and near misses were used to identify the High-Injury Network.

- **BEST PRACTICE** - Reviewing corridors with a history of fatal and serious injury crashes is recognized as being more holistic and effective than reviewing intersections or segments in isolation and is a method to implement proactive safety improvements elsewhere in the network.

Actions:

- Undertake in-service road safety reviews for the High-Injury Network and identify design changes
- Implement design changes
- Conduct an annual evaluation of the results of improvements implemented and make additional changes as required



STRATEGY 4.2:

IMPLEMENT SAFETY UPGRADES ALONG THE HIGH-INJURY NETWORK

Currently some of the design criteria used as a standard in Kamloops does not meet national guidance, especially related to bikeways, walkability, accessibility, and safety.

The intent of revised and updated design standards that incorporate Complete Streets and Safe System approaches is to encourage a holistic approach to street design that will develop a network of streets that are safe, attractive, comfortable, and welcoming to all users in all seasons while considering operational and maintenance challenges. Flexibility in design is permitted through variance in street element design values based on the modal priorities and land use context of a specific corridor. Additionally, safety considerations need to be prioritized, consistently articulated, and incorporated for each design to manage speed and conflicts. Applying a winter maintenance lens to the design standards will also support snow and ice control activities and snow storage and designing for winter will not compromise safety objectives during non-winter months.

Specific changes to be considered include:

- Revising sidewalk and curb ramp design requirements to ensure universal accessibility
- Adding design requirements for bicycle infrastructure such as protected bike lanes
- Reviewing and reducing motor vehicle lane widths to 3.0 m to 3.5 m depending on the roadway type (3.0 m for local streets, 3.3 m for collector streets, and 3.3 to 3.5 m for arterial streets)
- Adding intersection design requirements and standards for modern roundabouts

The Design Criteria Manual and the City's approach to design and traffic operations also needs to consider design and operating speeds. To create a Safe System, removing conflicts from occurring at or above critical speeds is important. Alternatively, speed limits could be reduced to decrease crash severity, which may also require design changes. The critical impact speeds¹³ are noted in Table 4 and should form the basis of design standards and traffic operation practices for the City of Kamloops.

Jurewicz C et al. Exploration of vehicle impact speed - injury severity relationships for application in safer road design. Transportation Research Procedia, 2016, 14:4247–4256.

Tingcall C et al. Vision Zero - An ethical approach to safety and mobility. Presented at the 6th ITE International Conference Road Safety & Traffic Enforcement: Beyond 2000, Melbourne, 1999.

Wegman F et al. Advancing Sustainable Safety: National Road Safety Outlook for 2005-2020. The Hague, SWOV, 2006.

Wramborg P. The New Approach to Traffic Planning and Street Design - Growth, Account and Implementation. Presented at Road Safety on Three Continents Conference, Moscow, 2001.

IMPACT TYPES AND ROAD USER	SAFE SPEED(KM)
Roads with possible conflicts between motor vehicles and people walking or cycling	30 or less
Intersections with possible side impact conflicts between motor vehicles	50 or less
Roads with possible frontal conflicts between motor vehicles	70 or less
Roads with no possible frontal or side impact conflicts (only impact with infrastructure)	100 or less

Table 4: Safe System Speeds by Impact Type



Status: Revise

The City of Kamloops has street design and construction standards and criteria which were last published in 2012. Various design elements have seen updates since that time, but the entire document should be updated to reflect current best practice for street design and apply Complete Street and Safe System approaches and the 2019 edition of the Master Municipal Construction Documents within the City of Kamloops Design Criteria Manual.

Actions:

Review and Evaluate

- Evaluate streets typologies in Kamloops based on the last 10 years of design and implementation and best practices from other winter cities
- Conduct a thorough review of the Design Criteria Manual with consideration of the following lens as they relate to design dimensions and suitability/selection of design elements: Equity and Accessibility, Safe System, Climate Resilience, Asset Management, and Maintenance
- Use pilot or temporary measures to test design treatments that may be novel in Kamloops

Update and Develop

- Update design standards that reflect the desire to achieve Complete Streets and a Safe System and add design treatments based on evidence-based research

Link to Evidence

- **DATA** - Data showed that speed and design had an influence on safety performance.
- **LIVED EXPERIENCE** - Residents have said that streets feel unsafe to travel on when walking and cycling because these modes of transportation have not been adequately considered in design.
- **BEST PRACTICE** - Complete Street and Safe System approaches have been widely adopted across North America and winter cities as one way to move towards Vision Zero, sustainable, and equitable transportation.



STRATEGY 4.3:

CREATE SAFE INTERSECTIONS AND CORRIDORS

Intersections are the locations in a transportation network where two or more roadways or pathways meet, where vehicles are turning, and where many of the walking and cycling crossings are located.

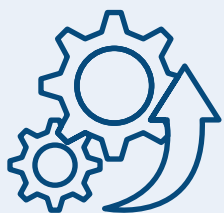
This connectivity is vital to the transportation network but requires that people walking, cycling, and driving to approach the same points in time and space, creating situations where they come into conflict with one another. Signalized, partially signalized, stop-controlled, yield-controlled, roundabouts, and uncontrolled intersections all share this characteristic.

Safety strategies and projects at intersections seek to:

- Separate critical movements in time
- Separate critical movements in space
- Increase compliance with the traffic control
- Warn users of the presence of the intersection and other users
- Slow traffic to safer speeds on the approaches and through intersections

Intersections are typically a focus of safety improvements for Vision Zero plans. Research has shown the safety benefits of new intersection types and design guidelines and documented crash modification factors can be used to support identifying and evaluating proposed intersection changes. The focus of much of the transportation safety literature, including the American Association of State Highway and Transportation Officials Highway Safety Manual, is on intersection safety. Intersection treatments that are associated with the most significant reductions in serious injury and fatal crashes, including installation of modern roundabouts, protected intersections, protected-only left turns, smart right-turn channels, and red light violation enforcement.

Effective access management is a key to improving safety at and adjacent to intersections. The number of access points, coupled with the speed differential between vehicles traveling along the roadway and vehicles using driveways, contributes to rear-end crashes.



Status: Enhance

The City of Kamloops has targeted improvements to the geometry and traffic control at intersections for various users, such as protected-only left turns, pedestrian signals, and smart right-turn channels. However, these proven treatments can be implemented more widely, and the toolbox of other proven treatments can be more fully used.

Link to Evidence

- **DATA** - Half of all fatal and serious injury crashes were reported at intersections or driveways.
- **LIVED EXPERIENCE** - Creating safe intersections and crossings was identified as the top priority action by Kamloops residents.
- **BEST PRACTICE** - Many of the proven safety countermeasures are targeted at intersection design and traffic control.

ACTIONS:

Implement Access and Left-Turn Management:

- Assess High-Injury Network of all left turns based on risk factors associated with motor vehicle speed and number of lanes crossed.
- Restrict access to commercial properties near intersections by closing driveways on major streets, moving them to cross streets, or restricting turns into and out of driveways to reduce conflicts between through and turning traffic.
- Implement more protected-only left-turn phases by revising the existing traffic control warrant for protected-only left-turn phase to encourage the more widespread use of these devices. This signal phasing is particularly helpful where opposing through-traffic speeds are high (e.g. 70 km/h where there are two opposing lanes and 60 km/h where there are more than two opposing lanes).
- Evaluate the results of each protected-only left-turn phase or turn restriction installation and publicize the results.

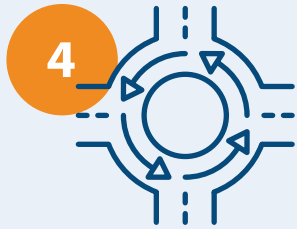
Implement More Smart Right-Turn Channels

- Where high-speed right-turn channels exist, replace the large islands with more compact right-turn islands. These are expected to reduce right-turn speeds and improve sight lines of conflicting traffic and pedestrians.
- For new intersections where right-turn islands are required to accommodate truck movements, encourage the use of smart right-turn channels.
- Evaluate the results of each smart right-turn installation and include the findings in the annual reporting.

Implement Walking and Cycling Intersection and Mid-Block Crossing Treatments

- Install more marked and enhanced crossings at signalized and unsignalized intersections for people walking. Treatments can include pedestrian signals and rectangular rapid flashing beacons. These crossings can be supplemented with motorist warning signs.
- Formalize mid-block crossings when required to support comfort, convenience, and accessibility.

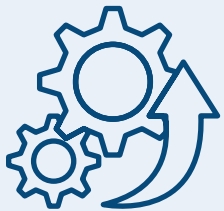
- Incorporate raised pedestrian refuge islands, or medians at crossing locations along roadways, in design guidance and future design treatments. Refuge islands and medians that are raised (i.e. not just painted) provide pedestrians more secure places of refuge during the street crossing.
- For all pedestrian and bicycle crossing locations, eliminate screening by physical objects (e.g. utility poles, light standards, parked vehicles, vegetation).
- Implement traffic calming and speed management programs and designs.
- Include dedicated infrastructure at intersections for bikeways and paths to support all ages and abilities infrastructure.
- Screen where these are required based on High-Injury Network walking and cycling networks, as adopted in the Transportation Master Plan.
- Implement as standalone projects or as integrated components in larger capital projects.
- Evaluate the results of each crossing treatment and include the findings in the annual reporting.



STRATEGY 4.4:

IMPLEMENT MORE MODERN ROUNDABOUTS

With their ability to reduce the number of conflict points in half, including head-on and left-turn conflicts, which are more severe, and decreasing the speed through the intersection, modern roundabouts with off-street walking and cycling facilities could become the preferred intersection treatment for the City of Kamloops at collector-collector, collector-arterial, and arterial-arterial street intersections.



Status: Enhance

While modern roundabouts are currently used in the City, this intersection treatment can be implemented more widely.

Link to Evidence:

- **DATA** - Half of all fatal and serious injury crashes were reported at intersections or driveways.
- **LIVED EXPERIENCE** - Creating safe intersections and crossings was identified as the top priority action by Kamloops residents.
- **BEST PRACTICE** - Many of the proven safety countermeasures are targeted at intersection design and traffic control, with modern roundabouts reducing the number of conflict points in half.

Actions:

- Conduct an evaluation of existing roundabouts in the city/region, and publicize the results, so that their benefits can be appreciated
- Develop a progressive policy for the installation of roundabouts in place of stop or signal-controlled intersections
- Provide training for City of Kamloops staff on roundabout design standards
- Deliver a public campaign on the safe and correct use of a roundabout
- Evaluate the results of each roundabout installation and publicize the results



STRATEGY 4.5:

PRIORITIZE MAINTENANCE ACTIVITIES TO IMPROVE SAFETY

Maintenance of the transportation system is required in all four seasons.

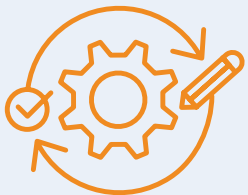
In the summer, it is important to keep the streets and pathways free of debris by sweeping and maintaining adjacent vegetation (e.g. mowing grass, trimming bushes or hedges, pruning trees).

In the fall, sweeping the streets and pathways to remove debris like fallen leaves is necessary, and preparation for winter maintenance (e.g. placement of markers and snow fences) should be underway.

In the winter, ice control (e.g. salting or brining, gritting), snow clearing, and snow removal become the prevalent activities. Winter maintenance is an important component of creating a comfortable environment for walking and cycling year-round.

In the spring, maintenance activities include removing markers and fences, sweeping the streets and pathways of grit and debris, remarking worn pavement markings, repairing surfaces (e.g. patching paved surfaces, grading unpaved surfaces), and replacing broken delineators and other traffic control devices.

Reviewing the annual maintenance of the transportation system will address concerns Kamloops residents have raised and will allow the City of Kamloops to make changes that respond to the fact that weather and road conditions are among the top five contributing factors for fatal and serious injury crashes.



Status: Revise

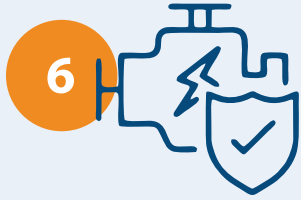
The City of Kamloops maintains trails, pathways, and streets, but the sequencing of the activity could be revised to improve safety for all users.

Link to Evidence

- **DATA** - Data showed that road conditions and weather were among the top five contributing factors in fatal and serious injury crashes.
- **LIVED EXPERIENCE** - Residents identified roadway and trail maintenance as a top 10 action to improve safety in Kamloops.
- **BEST PRACTICE** - Research and industry best practices identify that maintenance and roadway conditions impact the safety performance for all modes.

Actions:

- Develop a priority maintenance network for walking, cycling, and driving based on the High-Injury Network, network connectivity, and level of use
- Develop a maintenance policy and schedule (debris sweeping, pavement marking, snow clearing) for the priority maintenance network
- Incorporate maintenance considerations into design standards



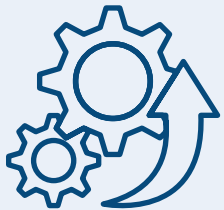
STRATEGY 4.6:

REVIEW AND ADDRESS LIGHTING DEFICIENCIES

Roadway crashes at night are typically disproportionately higher in number and severity than crashes during the day and the duration of darker time periods during winter months can impact safety.

Improved roadway lighting may help to reduce crashes that occur under less than optimal light conditions. Intersections may warrant higher lighting levels than roadway segments to make people walking and cycling more conspicuous to people driving and to support navigation of conflicts at intersections. Good lighting on roadways, bridges, tunnels, and pathways is also important for safety and personal security. Sufficient roadway and pathway illumination also helps people cycling at night to see surface conditions and obstacles or people in the path of travel. With good design, lighting can enhance safety of the cycling and walking and improve the ambience of areas of nighttime activity.

Although older drivers tend to drive less at night, effective lighting provides a particular benefit to older drivers because visual acuity deteriorates with age and due to the need for older drivers to prepare farther in advance for unusual or unexpected roadway elements, such as intersections, horizontal curves, and railroad grade crossings. Improved lighting at these roadway elements will provide them with additional preview distance and more time to prepare a planned action.



Status: Enhance

The City of Kamloops has lighting along streets and pathways. A thorough review of the transportation system lighting is required to identify and address lighting issues that are impacting safety.

Link to Evidence:

- **DATA** - Darkness or only partial illumination were present in a high proportion of serious injury and fatal crashes that involve people walking.
- **LIVED EXPERIENCE** - Residents identified lighting as a top 10 actions to improve safety in Kamloops.
- **BEST PRACTICE** - Lighting at intersections and along corridors has been identified in research and best practices to impact safety, particularly for people walking and cycling.

Actions:

- Create street lighting master plan
- Conduct field investigations to record current lighting levels at intersections and corridors within the High-Injury Network
- Adjust lighting levels based on field investigation and desktop review



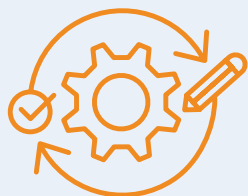
STRATEGY 4.7:

SUPPORT SAFETY IMPROVEMENTS ON PROVINCIAL ROADS

The safety of the provincial highways located within the boundaries of Kamloops are outside the control and responsibility of the City of Kamloops but impact the safety of residents on a daily basis.

Some highways are also part of the emergency evacuation route network and their design, operation, and safety are important to Kamloops residents. How the provincial roads transition and connect to the City of Kamloops streets will impact their efficiency as evacuation routes; however, on a daily basis, the design of these connections must also meet driver expectations and create self-explaining roads that communicate anticipated safe travel behaviour and support safe travel.

In parts of the city, the provincial roads and highways—including bridges and at interchanges—represent barriers for walking, cycling, and transit access. The lack of active transportation facilities along these roads decreases safety and can cause people to walk on the road or in places they are not expected. Supporting the Ministry of Transportation and Infrastructure in adding in safe crossings and active transportation facilities at intersections, interchanges, and bridges as well as along provincially owned roadways will improve the connectivity, accessibility, and safety for Kamloops residents, and ultimately, the City of Kamloops' efforts to achieve Vision Zero and support safe mobility for residents and visitors.



Status: Revise

The City of Kamloops currently works with the provincial government on transportation projects and initiatives in the area. Revising these efforts to include a stronger safety lens will support Vision Zero.

Link to Evidence:

- **DATA** - Data showed that a significant proportion of the fatal and serious injury crashes in the Kamloops region occur on provincial roads.
- **LIVED EXPERIENCE** - Residents identified improving safety of the provincial highways as a top 10 priority.

Actions:

- Share crash analysis and public engagement feedback with the Province
- Support the identification of areas of concern on provincial roadways within Kamloops city boundaries
- Advocate for a Safe System approach to the design of provincial roadways (e.g. participating in studies such as KATS)

EMPHASIS AREA 5:

Creating a Safety Culture

Achieving zero fatalities and serious injuries will require fundamental shifts and participation in transportation safety for both institutional culture, such as the City of Kamloops and other government partners, and public culture of the city's residents and visitors.

The Vision Zero Strategies that support this Emphasis Area are:



STRATEGY 5.1

Collaborate with partners to reduce impaired driving



STRATEGY 5.2

Collaborate with partners to reduce distracted driving



STRATEGY 5.3

Encourage City staff and partners to model safe travel behaviour



STRATEGY 5.4

Coordinate transportation safety events with partners in the community



STRATEGY 5.5

Support children and youth education about transportation safety



STRATEGY 5.6

Support partners in delivering motorcycle operator training programs



STRATEGY 5.1:

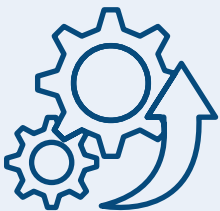
COLLABORATE WITH PARTNERS TO REDUCE IMPAIRED DRIVING

Alcohol- or drug-impaired drivers include occasional drinkers/users who may drive after drinking too much or using drugs and persistent offenders who regularly drive while impaired.

In a roadside survey in Canada, researchers collected oral fluid samples from approximately 1,200 nighttime drivers. They found 10% of drivers tested positive for drug use. This was slightly higher than the percentage of drivers who tested positive for alcohol use (8%). Of the drug positive cases, almost 90% involved a single drug, the most common being marijuana or cocaine. Male drivers were more likely than female drivers to test positive for drugs. In Kamloops, drug or alcohol impairment or suspected impairment was identified as one of the top five contributing factors in serious injury and fatal crashes.

According to the National Highway Traffic Safety Administration, four basic strategies are used to reduce alcohol- and drug-impaired crashes and driving under the influence of drugs and/or alcohol:

- **Deterrence:** Enact, publicize, enforce, and adjudicate laws prohibiting alcohol- and drug-impaired driving so that people choose not to drive impaired.
- **Prevention:** Reduce drinking and keep drinkers from driving and the similarly for drug use.
- **Communications and outreach:** Inform the public of the dangers of impaired driving and establish positive social norms that make driving while impaired unacceptable.
- **Alcohol treatment:** Reduce alcohol or drug dependency or addiction among drivers.



Status: Enhance

The RCMP includes the enforcement of impaired driving laws among its priorities; however, injury crashes related to this behaviour continue to persist.

Link to Evidence:

- **DATA** - Data showed that driver impairment was among the top five contributing factors in fatal and serious injury crashes in Kamloops.
- **BEST PRACTICE** - Many jurisdictions are working with law enforcement and other partners to address drug and alcohol impaired driving as part of their road safety programs.

Actions:

- Educate the public by developing or supporting public awareness campaigns or encouraging pledges from members of the public (e.g. linked to City of Kamloops website)
- Support RCMP in enforcing alcohol- and drug-impaired laws, including sobriety checkpoints



STRATEGY 5.2:

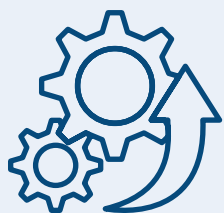
COLLABORATE WITH PARTNERS TO REDUCE DISTRACTED DRIVING

Although the specific type of distraction and driver inattention in crashes in Kamloops could not be established based on the information provided, distraction is a universal and increasing contributor to crashes.

Distraction happens when drivers—or other road users—look away from or take their mind away from the roadway by engaging in other tasks, such as eating, grooming, turning to/speaking with passengers, looking at or playing with car features, listening to loud music, or expressing road rage. The fastest growing source of distraction is electronic mobile devices—talking, listening, browsing, and texting. Current legislation bans distracted driving, yet the Traffic Injury Research Foundation reported an increasing proportion of Canadians self-reported talking on their handheld phone while driving in 2021, and this proportion has increased

every year for the past four years. Strategies to curb distracted driving include:

- Educate road users of the risks of distraction
- Encourage road users and companies to make a pledge/commitment
- Disable mobile devices while in motion
- Give enforcement officers the tools they need to identify distraction



Status: Enhance

The RCMP includes the enforcement of distracted driving laws among its priorities; however, injury crashes related to this behaviour continue to persist.

Link to Evidence:

- **DATA** - Data showed that driver inattention/distraction was among the top five contributing factors in fatal and serious injury crashes, while data from ICBC indicate that over 40% of drivers admit to using their cell phones while driving (which is one of the predominant sources of distraction).
- **LIVED EXPERIENCE** - Distracted driving ranked as one of the top concerns of Kamloops residents.
- **BEST PRACTICE** - Many jurisdictions are exploring more innovative techniques to address this issue, and different approaches have shown to be more effective for different segments of the population.

Actions:

- Educate the public by developing or supporting public awareness campaigns (such as “Leave the Phone Alone”) or encouraging pledges from members of the public (e.g. linked to City of Kamloops website)
- Enhance surveillance and tools by working with industry to advocate for the seizure of phones to determine their use leading up to crashes
- Encourage the public to utilize car and phone apps that discourage phone use while the vehicle is in motion



STRATEGY 5.3:

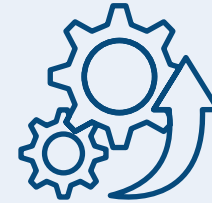
ENCOURAGE CITY STAFF AND PARTNERS TO MODEL SAFE TRAVEL BEHAVIOUR

“Transportation safety culture” can be defined as the shared belief system of a group of people, which influences road user behaviours and stakeholder actions that impact traffic safety.

Road users include all participants in the roadway transportation system. Road user behaviours include actions that influence crash risk and crash severity. Importantly, this definition applies to stakeholder actions as well.

To achieve Vision Zero, it is necessary to create a culture that prioritizes safety, encourages safe road user behaviour, and facilitates cooperation among stakeholders. The way our society values transportation safety will determine our ultimate success. Speeding, aggressive driving, impaired driving, distraction, and not wearing a seat belt are leading causes of crashes and fatalities in North America. Each of these is a deliberate behaviour. Deliberate behaviours are those we choose to commit, and decisions to commit deliberate behaviours can be changed. However, improving transportation safety involves more than just changing driver behaviours. Passengers can speak up when they see drivers engaging in risky behaviours; families can establish safe driving rules; workplace leaders can establish policies and provide training on traffic safety; and community and provincial officials can pass and enforce laws. These are examples of additional deliberate behaviours. And, just like a driver's decisions, the decisions of these stakeholders can be changed.

Change starts with its leaders. The City of Kamloops and its partners are encouraged to strengthen their own policies and practices, and to encourage other large employers in the city to do the same. The intent is to set a positive example for all residents and workers in Kamloops to adopt safe driving practices. Types of behaviours that should include zero tolerance are alcohol- or drug-impaired driving, distracted driving, and speeding. Regular training and monitoring of incidents are an important part of a fleet management system that prioritizes safety. Examples of company and employee policies can be found at [DriveSmartBC.ca/Commercial-Vehicles/Employee-Safe-Driving-Policy](https://www.drivesmartbc.ca/Commercial-Vehicles/Employee-Safe-Driving-Policy).



Status: Enhance

Although there are some regulations in place for the operation of City of Kamloops fleet vehicles, adding to and formalizing these can further enhance safety.

Link to Evidence:

- **BEST PRACTICE** - Culture change starts with the organizations requesting the change and most successful road safety programs across North America have leaders who “walk the talk”.

Actions:

Review City of Kamloops Policies

- Review and update employee policies for safe vehicle use and reporting
- Monitor safe staff driving practices, and produce an annual report
- Provide staff training as required, and provide rewards/recognition for safe vehicle use practices

Encourage Partners to Adopt Similar Policies

- Request and review the company vehicle safety policies of all partners and suppliers



STRATEGY 5.4:

COORDINATE TRANSPORTATION SAFETY EVENTS WITH PARTNERS IN THE COMMUNITY

We are collectively and individually responsible for enabling safety on our streets.

Achieving Vision Zero goes far beyond the City of Kamloops. It requires an integrated approach throughout the Kamloops and with partners in the community. The Kamloops Vision Zero Strategy and Action Plan leverages the experiences, insights, and actions being taken by partners in the community—post-secondary institutions, the provincial ministries, school boards, community associations, business associations, private industry, and others—to expand the understanding of traffic safety. This will grow the culture of traffic safety in the community.

One of the reasons that traffic-related deaths have been so persistent around the world is the pervasive global and local assumption that serious injuries and the loss of life on streets are inevitable in a modern society. Events to draw attention to traffic safety and safe travel behaviours can build understanding of traffic safety and advocates in traffic safety to support implementation of the Vision Zero Strategy and Action Plan.



Link to Evidence

- **BEST PRACTICE** - Best practices from other jurisdictions that are implementing Vision Zero plans include the component of building a safety culture and utilizing partners and community organizations to reach all residents and workers.

Status: New

Actions:

- Convene groups focused on traffic safety on a regular basis to discuss upcoming events and programs aligned with the BC Sector-Wide Road Safety Calendar
- Advertise and publicize traffic safety events occurring in the city through existing and new communication channels (e.g. website, various social media platforms)



STRATEGY 5.5:

SUPPORT CHILDREN AND YOUTH EDUCATION ABOUT TRANSPORTATION SAFETY

Children and youth are highly impressionable and start to form habits that often remain into adulthood.

They are exposed to various road situations for the first time, whether it be riding a bicycle or crossing the street by themselves. Children, due to their size, are harder for drivers to see and have not fully developed their cognitive abilities. Youth (e.g. teens) tend to may have a sense of feeling invulnerable and are more likely to engage in risk-taking behaviour while also being less experienced in identifying hazards. Therefore, the transportation system needs to be designed to safely accommodate these younger users in spite of their limitations. Children are also generally highly receptive to training and encouragement, and these opportunities should be provided as much as possible through both the school system and other community initiatives.

ICBC has developed free learning resources to build road safety skills and awareness among children and youth. The curriculum covers pre-school to Grade 10. A booklet and activity sheets have been developed for each grade. The resources can be found at [ICBC.com/Road-Safety/Teaching/Pages/For-Educators.aspx](https://www.icbc.com/Road-Safety/Teaching/Pages/For-Educators.aspx). After driving age, other resources are available from ICBC, such as the Speakers Program. While it may be a challenge to get these covered in the classroom, its implementation is essential for helping to create a culture of road safety that will help the City of Kamloops achieve Vision Zero.

Other specific programs have been developed in many municipalities to create a safer environment for children walking or cycling to or from school in coordination with health partners and advocacy groups. In Alberta, the Safety City Program is an example of an interactive program that is delivered by simulating the road environment within a protected area (containing cars, roadways and traffic control devices), with the key message of safety. Safe Routes to School programs can also be targeted to children to encourage walking and cycling, to select certain routes and crossing locations, and to use the facilities safely.



Status: New

Link to Evidence:

- **DATA** - 200 crashes in Kamloops over five years involved people aged 18 years and under.
- **BEST PRACTICE** - Early education about road safety is more likely to result in learned and retained safe travel behaviours.

Actions:

- Support the implementation of a road safety school curriculum by working with ICBC and the school district to ensure that the administration and teachers at all elementary and high schools in Kamloops are aware of the ICBC road safety materials and of their importance
- Provide an orientation of the curriculum to school administration and teachers
- Research the Safety City facilities available in other jurisdictions (e.g. Red Deer, Alberta)
- Identify sponsors and land parcels that could be used to build a Safety City facility



STRATEGY 5.6:

SUPPORT PARTNERS IN DELIVERING MOTORCYCLE OPERATOR TRAINING PROGRAMS

While motorcyclists typically make up less than 2% of the traffic, they are involved in 16% of the fatal and serious injury crashes.

A high proportion of motorcycling crashes result in serious injury, making it inherently the most dangerous mode of transport. This is primarily due to the ability to travel at high speeds without having a protective shield that exist for other motorized vehicles travelling at similar speeds. It is also related to having less friction on the road (two wheels instead of at least four) and being much less visible than other high-speed users in the vehicle travel lanes. The most common crash types involving motorcycles are run-off-road (loss of control) and crashes in which drivers of vehicles accept gaps in traffic in front of a motorcyclist because it is more difficult to judge their speed. Motorcycle operators are also more likely to make an improper turn or pass other users improperly than other users. Locations of motorcyclist crashes are widespread but are more common where the terrain is hilly, and where roads contain frequent or sharp curves.

It is relatively easy to obtain a motorcycle license. Proper helmet use is difficult to enforce unless motorcyclists are pulled over for other reasons or in response to crashes. Therefore, rather than to discourage motorcycling or regulate helmet use, the most practical approach to addressing motorcycling fatalities and serious injuries is to educate all road users of their presence, and to provide enhanced training for current and interested motorcyclists, including proper helmet selection and use, and what to do at the scene of a crash to maximize the chances of survival.



Status: New

Link to Evidence

- **DATA** - There have been 17 fatal and serious injury crashes that involved a person riding a motorcycle in the past five years.

Actions:

- Supporting existing motorcycle safety campaigns put on by ICBC for Motorcycle Safety Month (May) and develop a local public campaign later in the summer when motorcyclists are still on the roads, to remind road users of their presence.
- Support motorcycle operator training to supplement the minimum training required to obtain a license, including review of available training for motorcyclists. For example, the company Biker Down (winner of the Prince Michael International Road Safety Award) is currently offering free training for motorcyclists. Details are available at BikerDown.ca.
- Consider supporting training activities (e.g. offering venues) to make motorcycle operator training more accessible and of higher quality.

SUMMARY OF STRATEGIES

Emphasis Area 1: Evidence-Based Safety Decisions

1	1.1	Hire a road safety engineer
2	1.2	Perform in-service road safety reviews and road safety audits
3	1.3	Support near-miss reporting by the community
4	1.4	Complete post-crash reviews of fatal and serious injury crashes
5	1.5	Establish multimodal traffic volume and speed data program
6	1.6	Expand and enhance crash data sources
7	1.7	Prepare Vision Zero annual reports

Emphasis Area 2: Safety & Livability

8	2.1	Accelerate and enhance the active transportation network
9	2.2	Create Speed Management Program and Traffic Calming Policy
10	2.3	Deploy traffic and speed enforcement to high-injury/high-risk locations
11	2.4	Require transportation safety reviews for land development applications

Emphasis Area 3: Equitable Safety

12	3.1	Create accessible streets for people with disabilities
13	3.2	Develop and implement Safe Routes to School
14	3.3	Track and seek input from equity-seeking communities

Emphasis Area 4: Safety by Design

15	4.1	Implement safety upgrades along the High-Injury Network
16	4.2	Update design standards to incorporate Complete Streets and Safe System
17	4.3	Create safe intersections and corridors
18	4.4	Implement more modern roundabouts
19	4.5	Prioritize maintenance activities to improve safety
20	4.6	Review and address lighting deficiencies
21	4.7	Support safety improvements on provincial roads

Emphasis Area 5: Creating a Safety Culture

22	5.1	Collaborate with partners to reduce impaired driving
23	5.2	Collaborate with partner to reduce distracted driving
24	5.3	Encourage City staff and partners to model safe travel behaviour
25	5.4	Coordinate transportation safety events with partners in the community
26	5.5	Support children and youth education about transportation safety
27	5.6	Support partners in delivering motorcycle operator training programs



4.0 LEADING THE CHANGE

Strong leadership and sustainable funding will be required by the City of Kamloops for the Vision Zero Strategy and Action Plan to be implemented and succeed. The United States' Federal Highway Administration publication Road Safety Fundamentals describes the safety management team having three components (Table 5)—Leaders, Champions, and Coalitions. All three elements are required for the successful implementation of the Vision Zero Strategy and Action Plan and will need to be made a priority within the City of Kamloops organization and amongst stakeholders.

LEADERSHIP	CHAMPIONS	COALITIONS
<ul style="list-style-type: none"> ■ Leaders bring people together, provide essential direction, and motivate people to participate in and implement the program. ■ Leaders should be engaged and actively involved in the process. ■ Good leaders influence policy direction, set priorities, and define performance expectations. ■ They energize the road safety process and see to it that a plan is developed, and once developed, is implemented. ■ They are risk takers, problems solvers, and creative thinkers committed to doing what is necessary to advance the cause, which sometimes means breaking traditional institutional barriers and balancing competing agency priorities. 	<ul style="list-style-type: none"> ■ Successful road safety programs call for at least one champion to assist in gathering all critical safety partners into a collaborative group. ■ Champions provide enthusiasm and support for the safety programs. ■ Like leaders, champions must be credible and accountable, have excellent interpersonal and organizational skills, and be skilled expeditors. ■ Safety champions help secure the necessary leadership, resources, visibility, support, and commitment of all partners. ■ Sometimes the leadership, or the leadership of the primary sponsoring agency, appoints the champion. ■ A safety champion can reside at any level within the organizational structure and can perform various functions. 	<ul style="list-style-type: none"> ■ Safety partners and organizations bring unique and valuable perspectives to bear on the transportation safety problem. ■ Differing philosophies, competing priorities, and varying business cultures may make collaboration a challenge. ■ Coalitions are an opportunity for road safety leaders and champions to bring together the various disciplines and agencies and focus on the shared goal of reducing crashes. ■ Whether coalitions are short-term, long-term, or permanent, they offer road safety collaborators the prospect of solving complex issues through partnerships

Table 5: Vision Zero Safety Management Team



Measuring Performance

The purpose of measuring and reporting on the Kamloops Vision Zero Strategy and Action Plan is to determine if actions being taken are having the intended outcomes on the community; and to measure their effectiveness. Measuring performance considers three types of metrics: Vision Zero Targets, Community Outcomes, and Project Outcomes. The performance measure identified below will be part of the Vision Zero annual reports that will be published every year.

VISION ZERO TARGETS

The purpose: Reducing the number of people killed and seriously injured is the fundamental measure of success in achieving Vision Zero. The following measures will be monitored:

City of Kamloops streets and pathways

- Fatalities and Serious Injuries (all road users): The number of fatal and serious injury crashes per year helps to ensure progress is being made to reaching zero. Data obtained from Traffic Accident System dataset.
- TARGET: Zero serious injury and fatal crashes by 2039
- Current Five-Year Average: 20.2 per year

City of Kamloops and Province of BC Roads

- Fatalities and Serious Injuries (all road users—city and provincial roads): The number of fatal and serious injury crashes per year. Data obtained from Traffic Accident System dataset.
- TARGET: Zero serious injury and fatal crashes by 2039
- Current Five-Year Average: 29.4 per year



COMMUNITY OUTCOMES

Community Outcomes are measures that are related to traffic safety culture in Kamloops—as a reminder, speed, distraction, and impairment were among the top five contributing factors in serious and fatal injury crashes—and other City of Kamloops initiatives that support traffic safety as well as broader community outcomes outlined in KAMPLAN: City of Kamloops Official Community Plan and the Transportation Master Plan.

- **Speed and Speed Limit Compliance:** Speed data can be used to evaluate the transportation safety risk. Changes in driver behaviour can be evaluated by tracking speed compliance from data obtained from speed monitoring equipment and speeding violations that are issued through police or automated enforcement.
 - Progress on this measure can be identified through decreases in speeding at monitoring sites and through decreases in speeding violations.
- **Distracted and Inattentive Driver Citations/Contributing Factors:** City-wide behaviour change can be measured by evaluating the total number of distracted driver or inattentive driver violations and having these identified as contributing factors for fatal and serious injury crashes on police reports. Progress on this measure can be identified through decreases in speeding at monitoring sites and through decreases in speeding violations.
 - Progress on this measure can be identified through continuous decreases in distracted and inattentive driving violations and identified contributing factors.
- **Impaired Driver Citations/Contributing Factors:** City-wide behaviour change can be measured by evaluating the total number of impaired or suspected drug or alcohol impaired driver violations and having these identified as contributing factors for fatal and serious injury crashes on police reports.
 - Progress on this measure can be identified through continuous decreases in impaired driving violations and identified contributing factors.
- **Perception of Safety:** As part of an annual survey, perceptions of safety from Kamloops residents about traffic safety both incorporates lived experience to the Vision Zero program and connects the City of Kamloops objectives to improve livability.
 - Progress on this measure can be identified by increasing perceptions of transportation safety.
- **Mode Shift:** Creating a safer transportation system can be partially achieved through more people travelling by sustainable transportation modes—transit, walking, and cycling. Obtained through Journey to Work census question data or through data on mode choices for daily trips.
 - Progress on this measure can be identified by increasing the number of daily trips made by sustainable transportation modes, further supporting a safer, more sustainable, more connected, and more livable community.



PROJECT OUTCOMES

Project indicators are associated with outputs that result from the Kamloops Vision Zero Strategy and Action Plan. While there are numerous actions identified in the Strategy and Action Plan, the selected Project Indicators focus on the foundational actions that are both critical to creating a Safe System and under the direct control and responsibility of the City of Kamloops.

- Number and kilometre of in-service safety reviews completed per year
- Number and kilometre of road safety audits completed per year
- Number and kilometre of engineering improvements implemented on the high-injury corridors completed per year
- Reduction in fatal and serious injuries along high-injury corridors
- Number of walking and cycling crossing improvement projects completed per year
- Number of intersection transportation safety improvement projects completed per year
- Length (kilometre) of new or enhanced walking and cycling routes built per year
- Percentage of city homes served by accessible all ages and abilities walking and cycling infrastructure
- Number of locations with permanent multimodal traffic speed and volume equipment installed per year and total number
- Number of locations with driver speed feedback displays installed per year and total number
- Number of resident concerns received per year and average time to respond

CONCLUSION

The Kamloops Vision Zero and Action Plan is a programmatic, action oriented approach toward supporting many of the goals of KAMPLAN: City of Kamloops Official Community Plan, which aims to have a more sustainable, pedestrian and bike-friendly community where people can move safely, regardless of the mode of transportation they use. Successes in Canadian cities that have implemented bold action plans and strategies have yielded significant reductions in traffic-related fatalities and serious injuries. The countdown to 2039, the date set to reach the goal of zero crashes causing fatalities or serious injuries, starts now. Work to implement the strategies and actions begins immediately and will require the City of Kamloops and its partners in mobility to move quickly to reduce unnecessary death and suffering for Kamloopians. With a concerted effort and thoughtful implementation of strategies, Vision Zero is an achievable goal.





VISION ZERO SUCCESS STORIES





Success Story: Strathcona County

Strathcona County is a specialized municipality of almost 100,000 residents located east of Edmonton, Alberta. Strathcona County covers an area of 1,262 square kilometres and includes large rural areas with farms and industrial uses, while Sherwood Park is the major urban community with a population of over 72,000. Sherwood Park is located along the Trans-Canada Highway 16 and is served by the CN and CP Railways, creating opportunities for logistics and shipping, manufacturing, and industrial businesses due to the commercial good land connections in addition to airports within the Edmonton region.

Strathcona County has a total roadway network of 1,955 km of public roadways that includes 225 km of Provincial Highways, and 416 km of urban roads and 1,314 km of rural roads owned, operated, and maintained by Strathcona County. There are also 287 km of trails in Sherwood Park and dozens of kilometres of regional trails that serve Strathcona County and connect to surrounding communities.

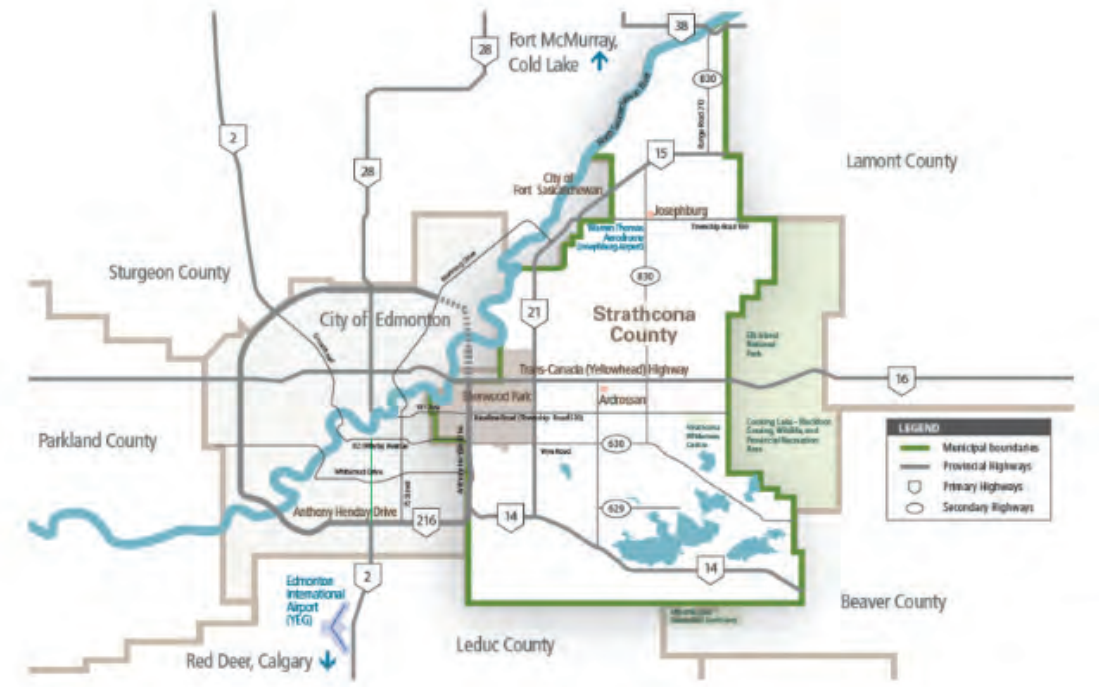


Figure 16: Map of Strathcona County

In 2005, Strathcona County initiated its formal traffic safety program with the creation of the Traffic Safety Committee. In 2006, the Office of Traffic Safety was created within the Strathcona County administration. In 2008, Strathcona County became one of the first municipalities in Canada to create a Traffic Safety Strategic Plan. Since that time, there have been subsequent updates to the Traffic Safety Strategic Plan to reflect advancements in traffic safety research and best practices, with the most current plan approved in 2015.

The Traffic Safety Strategic Plan serves as an internal guiding document for Strathcona County's decision-making processes related to traffic safety. The Traffic Safety Strategic Plan supports the vision, goals, and policies outlined in the Municipal Development Plan, Integrated Transportation Master Plan, Sustainable Rural Roads Master Plan, and Transit Master Plan. Likewise, supporting the implementation of the Safe System approach of the Traffic Safety Strategic Plan includes the County's Design and Construction Standards and the Traffic Calming Policy in addition to using national and provincial guidelines. The integrated team to implement the Traffic Safety Strategic Plan includes: Strathcona County departments with staff from Transportation Planning and Engineering, Planning and Development Services, and Transportation and Agriculture Services; RCMP; Provincial Sheriffs; and Municipal Peace Officers.

The Traffic Safety Strategic Plan has the following Vision, Mission, and Guiding Principles:

- Vision: No one is seriously or killed while travelling on Strathcona County's road network.
- Mission: Strathcona County is committed to the proactive implementation of integrated, evidence-based, and collaborative road safety strategies to create an increasingly safe and sustainable transportation environment.

Since 2015, there has been a significant decrease in the number of fatal and serious injury crashes on Strathcona County roads as illustrated in Figure 17. Achieving these improvements in safety has taken concerted and coordinated efforts between the County and its partners.

The Strategies being implemented from the Traffic Safety Strategic Plan are:

- Strategy 1: Traffic Safety Data Collection, Analysis and Management Program
- Strategy 2: Road Network Screening Program
- Strategy 3: Integrated Safety-Focused Enforcement Program
- Strategy 4: Integrated Public Education and Social Marketing Program
- Strategy 5: In-Service Road Safety Review Program
- Strategy 6: Neighbourhood Traffic Safety Strategy
- Strategy 7: Road Safety Audit Program
- Strategy 8: Intersection Safety Strategy
- Strategy 9: Rural Road Safety Strategy
- Strategy 10: Work Zone Safety Strategy
- Strategy 11: MARD/Older Adults Traffic Safety Strategy
- Strategy 12: Safe Vehicle Strategy
- Strategy 13: Corporate Traffic Safety Strategy



Figure 17: Combined Fatal and Serious Injury Crashes on Strathcona County Roads (2015–2021)



Strathcona County uses a combination of capital budgets to fund traffic safety improvements. For large and planned projects, the County uses a capital business case with capital budgets approved annually through the County budget process. For more minor upgrades such as RRFBs, crosswalks, curb extensions, and median islands, the County coordinates with the annual neighbourhood rehabilitation program and adds funds to the rehabilitation project from an annual capital budget. There are also asset management programs associated with trail maintenance and road maintenance, which contribute to safety, in addition to capital budgets to support expanding and upgrading the walking, cycling, and trail networks.

The following approximate average annual funding levels are included in the County's current and projected annual budgets for 2022-2026:

- Traffic and Pedestrian Safety Improvements: \$600,000
- Traffic Signal / Intersection Replacements: \$850,000
- Sidewalk Missing Links: \$600,000
- Asphalt Trail Rehab: \$300,000
- Urban Road Rehab: \$15,000,000
- Bus Pad Additions: \$300,000

The County's Planning, Engineering and Safety Branch is supported by an operating budget to fund four full time equivalent staff:

- Senior Traffic Safety Engineer
- Traffic Engineer
- Junior Technologist
- Traffic Safety Liaison

An important component of the County's traffic safety program is data collection, analysis, and reporting. Strathcona County collects before and after speed and volume data for analysis and assessment to allow for evaluation of their programs, policies, and plans. These data are also used to respond to resident inquiries. Multimodal traffic volume and speed data also help to identify locations that require traffic calming and to install new crosswalks or other safety improvements.



When we asked Ryan Anders, Acting Director of Transportation Planning and Engineering, (and born in Kamloops and raised in Logan Lake), he had the following advice for Kamloops:

"Understanding the travel characteristics and safety issues in the community requires a robust data collection program – traffic volumes, motor vehicle speeds, walking and cycling volumes. This information is critical to understand risks and behaviours and helps to identify traffic safety projects that can create a Safe System."

"Be deliberate and focused. Focus first on the corridors that are part of the High-Injury Network. Learn what safety issues exist and how they can be addressed. Take those lessons and apply them across the transportation network over time."

"Be responsive to resident requests and concerns. Have a system in place to accept this valuable lived experience information from residents. This helps the traffic safety program be more robust and more proactive by addressing near misses and areas of concern and helping to provide more information than is available from crash data alone. It is also incredibly important to respond to resident input in a timely way to support transparency and trust in the traffic safety program. Annual reports are an important part of providing consistent information to the community and Council to support future traffic safety actions."

"Improving safety requires funding, staffing, and working together across Administration. There are many ways to adjust existing City practices and project scopes that can include a greater focus on safety and address known issues and risks. This typically takes a bit more effort but limited additional funding. That said, dedicated staff that focus on traffic safety and dedicated capital budgets to address safety that cannot be tied to other City projects is also critical to be able to address known safety issues and proactively address safety risks elsewhere in the city."



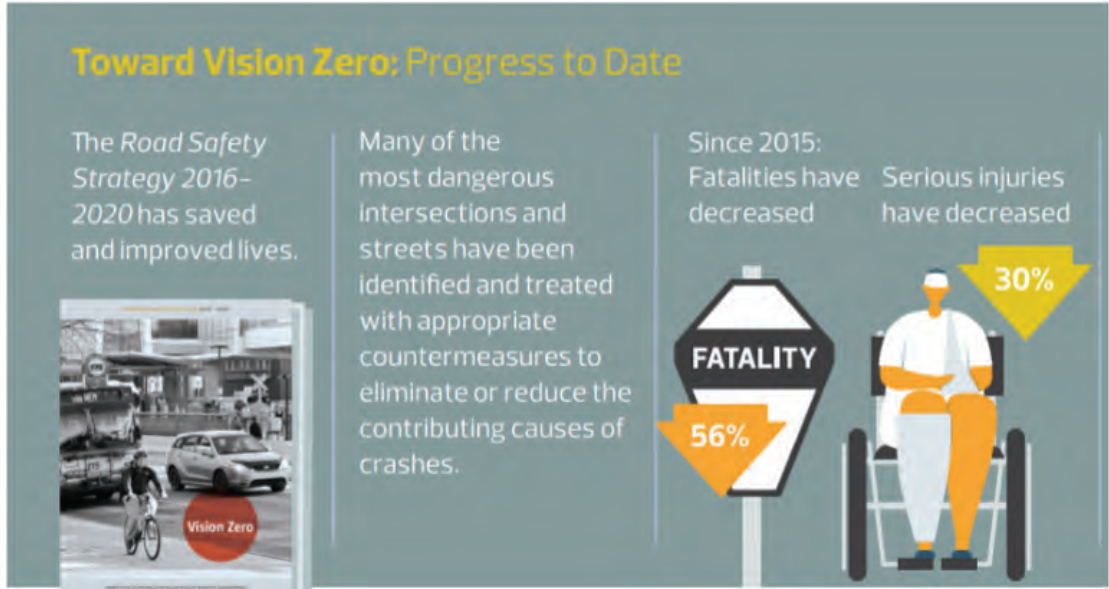


Success Story: Edmonton

The City of Edmonton has long focused on the issue of road safety and because of that attention, and continued action, has seen changes in the number of people becoming hurt or injured while using the transportation system.

The past Road Safety Strategy 2016-2020 delivered strong results with fatalities being reduced by 56% and serious injuries cut by 30% since 2015. This is a result of having many of the most dangerous intersections and streets identified and treated with appropriate countermeasures to eliminate or reduce the contributing causes of crashes.

In 2020, the City of Edmonton endorsed further effort to move towards zero fatalities and serious injuries in the transportation system by acknowledging that a combination of location-based and system-wide approaches is now necessary to tackle widespread issues that contribute to crashes. This includes street design and cultural norms around traffic and mobility that are inhibiting safe and livable streets.





The Safe Mobility Strategy 2021-2025 was principle-based and evidence-informed and used a variety of data inputs, such as lived-experience, crash statistics, and best practices, to guide where actions would be focused. The five principles of the Safe Mobility Strategy are: We all move, We all deserve to move safely, We are connected, We are successful when we work together, We are informed by analytics, lived experience, and research.

The crash data that was analyzed for this project was displayed as a High Injury Network, which shows the parts of the city that are performing poorly with respect to transportation safety by each mode of travel (i.e. driving, motorcycle, cycling, walking). This High Injury Network is used to prioritize maintenance and operational work plans, as well as capital project prioritization.

The Safe Mobility Strategy also proposes to change the conversation in two critical ways. First, the Safe Mobility Strategy explicitly ties traffic safety to the vision and goals of ConnectEdmonton and The City Plan. There is a growing realization that issues affecting traffic safety are interdependent with broader policy areas such as land use, climate resilience, and health, as well as with more traditional transportation policies such as promoting transit and active transportation.

Figure 18:
Safe Mobility Strategy
2021-2025 Principles



Safe Mobility Strategy Purpose and Principles

Purpose
Achieve Vision Zero through safe and livable streets in Edmonton.

Principles

We all move.	Edmonton's streets are for everyone no matter how they are moving, and the most vulnerable users need to be protected. A Gender-Based Analysis Plus (GBA+) lens and in-depth equity analysis is used to identify the groups and modes for which Edmonton's transportation network is less safe, and actions will be identified and implemented to address underlying inequities and enable everyone to thrive.
We all deserve to move safely.	It's simple: no loss of life is acceptable, and no one should have to travel in fear. This is the basis of the Vision Zero goal and inspires the actions and outcomes in the <i>Safe Mobility Strategy</i> .
We are connected.	The <i>Safe Mobility Strategy</i> puts forward a plan that lives out safety and livability as envisioned in <i>ConnectEdmonton</i> and set out in the <i>City Plan</i> . How people move impacts and is impacted by the rich complexity of Edmonton as a connected community; a human-centered approach to this work helps to advance Council's priorities around health, urban places, climate resilience, and economic prosperity.
We are successful when we work together.	We are collectively and individually responsible for enabling safety on our streets. Achieving Vision Zero goes far beyond the City of Edmonton's Traffic Safety section; it requires an integrated approach throughout the City of Edmonton and with partners in the community. The <i>Safe Mobility Strategy</i> leverages the experience, insight, and support of groups such as post-secondary institutions, Alberta Health Services, school boards, community leagues, business improvement areas, private industry, and other orders of government in its planning and execution.
We are informed by analytics, lived experience, and research.	The City of Edmonton works closely with the Edmonton Police Service and the University of Alberta to collect and analyze quantitative data to inform traffic safety actions. This work brings insight into the realities of how Edmontonians are moving through the transportation network, but it doesn't integrate the community's experience and wisdom. Systems for gathering and using qualitative data are built to round out the information needed to proactively achieve safety and livability goals in addition to being responsive to where conflicts are occurring.



Second, the Safe Mobility Strategy looks beyond the traditional disciplines of engineering, education, and enforcement to facilitate the difficult decisions necessary to change the status quo and achieve a more livable and equitable Edmonton where everyone can move safely. Gathering the lived experience of Edmontonians affected by traffic violence is an important data point to put alongside the quantitative data that typically guides traffic safety programs.

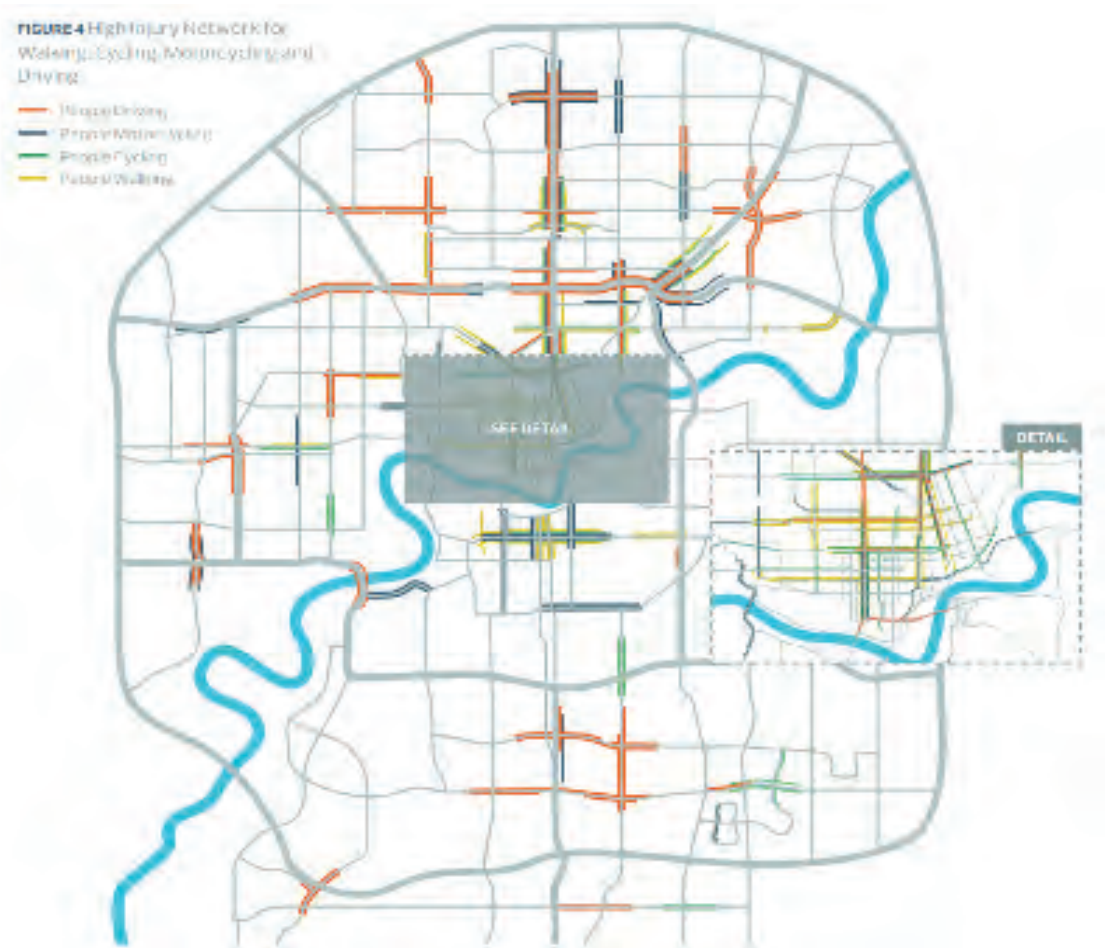


Figure 19:
City of Edmonton High-Injury Network

Success Story: Other BC Municipalities

The City of Kamloops is joining a list of other BC municipalities that have adopted Vision Zero in policy or practice. The City of Kamloops can use the following examples as inspiration and start conversations with these and other municipalities in B.C. to further its progress and success in Vision Zero. Several of the referenced initiatives are among the Actions identified as part of this Plan. All of the images shown are taken from the City's websites or from presentations made by staff at the municipalities.

City of Chilliwack – A “Safer City”

Chilliwack is an eastern Fraser Valley community in British Columbia with a population of 100,580 (2021 Census). The City of Chilliwack was one of the six municipalities – along with the City of Kamloops – that became designated as one of ICBC's “Safer Cities” in 2003 or earlier. The Safer City designation was given based on a partnership with ICBC to undertake training in road safety and to implement policies and programs in support of road safety, such as road safety reviews, intersection design and speed management. It is joint program between the City of Chilliwack, the Chilliwack RCMP, ICBC and Speed Watch. The team's focus is improving road safety for all road users. One of the keys to success has been the hiring of a Public Safety Specialist, a position which has now been in place for 20 years and translated into the growth and success of the program.

The program integrates and leverages a 3'E' approach, Engineering, Enforcement and Education into one framework to maximize key resources. Successful Education and Enforcement initiatives include:

- Public awareness campaigns on the full range of road safety topics, from roundabouts and safer school travel, to distracted or impaired driving and occupant restraints
- Extensive information on its website, provided for each transport mode, including a series of creative educational videos for each road users type to use the road safely in various conditions.
- “3 strikes” campaigns, which include prominent signage (engineering), speed display devices (education) and downstream ticketing (enforcement)
- Annual “Road Safety Day”, which includes fun and interactive activities for all ages.

The City of Chilliwack's casualty (injury plus fatality) crash rate has been among the lowest over the past several years, due to its well-established safety program, its truly multi-disciplinary approach, and the community's pride in being part of a “safer city”.



City of Vancouver – Attention to Data Management

The City of Vancouver is the largest municipality by population in the BC Lower Mainland, with 662,248 residents. The City launched its first “Towards Zero” strategy in 2016. This included a foundational strategy of exploring several data sources to obtain the most accurate and current information possible to inform its decisions and programs.



Because a high proportion of the fatalities and serious injury crashes in Vancouver involve pedestrians and cyclists, which are sometimes not included in insurance claims data, the City has a data sharing agreement with Vancouver General Hospital (which treats most of the severe injuries) and reviews hospital data for trends. The hospital data provides more accurate information than ICBC or police-collected data for: injury severity, age and gender demographics, eventual outcomes (several days or weeks after the initial event), and city of residence. The City also makes use of Ambulance data, which provides the most accurate data regarding incident location. The use of hospitalization and ambulance data in addition to ICBC and TAS data provides a fuller picture of trends and possible causes of severe crashes in the city.

Some of the most common measures implemented in Vancouver in support of pedestrian and cycling safety include: protected-only left-turn phases, LED signals, new pedestrian signals, countdown timers, slower walking speeds, leading pedestrian intervals, RRFBs, and green point for conflict areas. The City has also famously installed the first fully protected intersections in Canada, on either end of the Burrard Bridge, which contains most of the above treatments as well as geometric modifications to provide a complete street through the intersection in all directions.

Finally, the City conducts regular evaluations of its treatments to demonstrate their benefits and justify their implementation throughout the road network. Nearly all of the treatments have resulted in significant benefits.

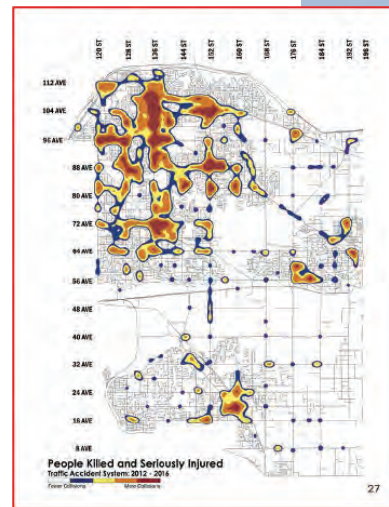


City of Surrey – A Holistic Corridor Approach

The City of Surrey is the second most populous municipality in BC and one of the fast growing in Canada, with 585,320 residents. The City of Surrey was the first municipality in BC to prepare a comprehensive strategy, the Safe Mobility Plan in 2013, which brought together various partners in road safety and presented a blueprint for improving road safety using a system approach. In 2019, the City Council formally adopted Vision Zero, established a Vision Zero Action Team and released its strategy to the public. The data analysis revealed that several of the highest crash intersections were located along a handful of corridors. Therefore, the City conducted reviews of two of the most injury-crash prone roadways: King George Blvd and Scott Road. The King George Blvd review contained several holistic and innovative approaches to addressing injury crashes, including:

- Establishing a vision of the corridor that promoted safe system principles: a slower, narrower, more accessible, more transit-focused, more consistent, with more protections for the more vulnerable users.
- A complete evidence-based approach, linking issues and mitigation options back to the data analysis.
- A speed management strategy that included gateways, narrower lanes, modified signal coordination, automated enforcement and a future core zone.
- More consistent cross-sections for each of the major corridor segments, featuring more dedicated spaces for transit, bicycles and pedestrians.
- Additional midblock crosswalks within the City Centre.
- Removal of several right-turn islands; conversion of others to Smart channels.
- Demonstration of the minimal impacts of the recommended safety measures on vehicle capacity and delays.

The City has also conducted a review of its Design Standards, piloted a Slow Streets Program, and commissioned dedicated Pedestrian Safety and Cyclist Safety studies, which include the adoption of progressive policies to encourage greater safety for these modes. The result of these and other initiatives has been a significant reduction in KSI (killed and serious injury) crashes over the past 5 years.





VISION ZERO

[Kamloops.ca/VisionZero](https://kamloops.ca/VisionZero) | [LetsTalk.Kamloops.ca/VisionZero](https://lets-talk.kamloops.ca/VisionZero)

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