Vision Zero

Kelowna's Safe Mobility Action Plan

January 2026

City of Kelowna

Endorsed by Kelowna City Council
on January 12, 2026

City of Kelowna

URBAN SYSTEMS

TranSafe Consulting LTD
Road Safety Engineering and Planning

Contents

Appendices

1 Introduction

Everyone should have the right to get home safely.

Every day, thousands of people make trips on Kelowna's transportation network, whether by driving, walking, cycling, motorcycling, taking transit, or using micromobility devices. People are travelling to fulfill their daily needs, whether their trips are to work, school, shopping, or for recreation. Our goal is to ensure that roads are safe for everyone – no matter who they are, where they are going, or how they are getting there.

Unfortunately, this isn't always the case. From 2018 and 2022, police attended to and reported over 2,900 collisions on City of Kelowna owned roads, including 13 people that tragically lost their lives, nearly 120 people who were seriously injured, and nearly 1,000 people who had a minor injury.[1] Over half of fatal and serious injury collisions involved a vulnerable road user (VRU), such as people walking, biking, motorcycling, or using a micromobility device.

Collisions resulting in injuries or fatalities on City-owned streets have a social cost of $73 million per year. These numbers underrepresent the actual cost to society as they exclude property damage only collisions and injury collisions that occur on provincial highways including Highway 97 and 33. Kelowna isn't unique. Across Canada, transportation collisions resulted in nearly 2,000 deaths and nearly 120,000 injuries in 2022 alone.[2]

Transportation-related collisions have significant impacts on people's lives, especially those that cause fatalities or serious injuries. Collisions are traumatic events for those involved and tragic events for families and communities affected.

The right to travel safely on Kelowna's roads is a **public health issue**, an **equity issue**, and an **ethical issue**.

Why Safe Mobility Matters

On average in Kelowna*, once every:

2 **HOURS** a collision is reported to ICBC

11 **HOURS** a police officer attends and reports a collision

24 **HOURS** a police officer attends and reports an injury collision

8 **DAYS** somebody is killed or seriously injured

Every year:

6 people are killed

32 people walking are injured or killed

40 people cycling are injured or killed

19 people motorcycling are injured or killed

$73 **MILLION** is the social cost of police-reported injury collisions on City-owned roads per year, with the actual number likely much higher

*Includes collisions on City of Kelowna roads and highways under MoTT jurisdiction

1 The RCMP defines a "serious injury" based on the Regulations Prescribing Physical Injuries under the Royal Canadian Mounted Police Act. A physical injury is considered "serious" if it is not minor, requires medical attention, and falls into categories such as substantial bodily impairment, loss of function or sensation, major fractures, severe burns or cuts, or substantial disfigurement. Examples of injuries initially presumed serious if they result in hospital admission include fractures, severe burns, loss of body parts, or loss of sight or hearing.

2 Transport Canada, Canadian Motor Vehicle Traffic Collision Statistics: 2022. Accessed at: https://tc.canada.ca/en/road-transportation/statistics-data/canadian-motor-vehicle-traffic-collision-statistics/2022/canadian-motor-vehicle-traffic-collision-statistics-2022

Deaths and serious injuries on our transportation network are preventable.

Despite these statistics, we know from evidence around the world that it is possible to significantly reduce, and even prevent, deaths and serious injuries on our transportation system.

This is why the City of Kelowna has developed this Safe Mobility Action Plan, which embraces **Vision Zero** and aims to **eliminate deaths and serious injuries from our transportation system**.

The Safe Mobility Action Plan applies a Safe System Approach, which acknowledges that mistakes are inevitable and transportation systems can be designed to prevent those errors from leading to serious injuries or fatalities. The Safe System approach recognizes human vulnerability and emphasizes creating a safer, more forgiving system for all road users.

Why a Safe Mobility Action Plan?

The Safe Mobility Action Plan demonstrates the City's commitment to safer streets and reflects Council's recognition that traffic safety is a top priority for Kelowna. The plan builds on the direction from the 2040 Transportation Master Plan (TMP), and was developed in alignment with the City's Council Priorities 2023-2026, BC's Road Safety Strategy, and Canada's Road Safety Strategy. Together, these initiatives guide Kelowna toward a safer, more sustainable transportation future.

The Safe Mobility Action Plan aims for **Vision Zero**, which means working to eliminate transportation-related fatalities and serious injuries from our transportation network. This supports the City's goal to improve safety by reducing the frequency and severity of injuries on our transportation network while promoting safe, healthy, and equitable mobility.

The Plan recognizes that everyone has the right to travel safely, regardless of how they chose to get around. Improving safety for people walking, cycling, and other vulnerable road users is essential, as they face the greatest risk of serious injury or death in a collision. Creating safer streets not only protects these users but also helps make more people feel comfortable traveling by active modes, including on foot and by bicycle.

The Safe Mobility Action Plan is a key initiative that responds to this challenge, prioritizing the safety of all road users. Through this work, the City is focusing on delivering effective and implementable solutions that will make Kelowna a better place to live, work, and play.

What is Vision Zero?

Vision Zero seeks to eliminate all traffic fatalities and serious injuries while promoting safe, healthy, and equitable mobility for all road users. This includes, people who walk, ride a bike, use a mobility aid, ride a motorcycle, take the bus, or drive.

It is a recognition that one traffic fatality or serious injury is too many.

Working towards achieving Vision Zero will require significant investments and staff time over the next ten years and beyond. The Plan includes **29 actions** for the City and its partners to implement which have been grouped into **four Action Areas**:

The City is committed to efficiently implementing these actions to enhance community livability and improve road safety for all residents. By working collaboratively with our partners and the community, Kelowna is taking meaningful steps towards eliminating deaths and serious injuries on our roads.

How was the Safe Mobility Action Plan developed?

The Safe Mobility Action Plan was developed over a multi-year process that involved working closely with partners, engaging with the community, and conducting extensive collision data analysis.

- **Working with interested parties** involved holding workshops with City staff from several departments, as well as others who play an important role in ensuring safe mobility in Kelowna. These interested parties include Interior Health, Insurance Corporation of British Columbia (ICBC), BC RCMP Highway Patrol, Kelowna Fire Department, BC Transit, BC Ministry of Transportation and Transit (MoTT), School District #23, Kelowna Chamber of Commerce, Tourism Kelowna, Kelowna Airport, Regional District of the Central Okanagan (RDCO), Safe Routes 4 Schools, UBC Okanagan, and Okanagan College.
- **Community engagement** took place in spring 2024 and included an online survey hosted on the City's Get Involved engagement website. The survey featured a map where participants could place a marker based on a category (biking, road or sidewalk, speeds etc.) and describe why they felt safe or unsafe at a location. The engagement received more than 5,600 page views, over 1,200 survey responses, and more than 180 map pins placed. An open house was held on Tuesday, May 28, 2024 at Parkinson Recreation Centre. Further details about the engagement process and results are found in **Appendix C**.
- **Collision analysis** involved extensive analysis of two main data sources: Traffic Accident System (TAS) police-reported data and collision data reported to ICBC between 2018 and 2022. While there is overlap between the two datasets, each dataset has their own benefits and limitations. Data analysis primarily used TAS data, only included City-owned roads (excluded collisions occurring along Highways 97 and 33, which are under provincial jurisdiction), and excluded Property Damage Only (PDO) collisions to focus instead only on collisions resulting in more serious injuries or fatalities.

What is the City already doing to improve safe mobility?

The City proactively implements safe mobility improvements through policies, capital projects and retrofits, as well as education and advocacy initiatives. Broader strategies such as the Transportation Master Plan and neighbourhood plans identify specific safety targets and projects.

The City has many safe mobility initiatives and programs, which the Safe Mobility Action Plan builds on. These include the Safe Routes 4 Schools Program, Neighbourhood Traffic Calming Program, Crosswalk Safety, Signals, and Flashers Program, Bicycle Network Improvement Program, Sidewalk Network Expansion Program, and the Roundabout First Policy. The City collaborates with partners including BC Transit, Interior Health, RDCO, MoTT and the RCMP to achieve safe mobility objectives.

ICBC is a key partner in supporting road safety initiatives in Kelowna. They have helped fund upgrades including smart right-turn channels and other road designs aimed at improving safety. Through ICBC's Road Improvement Program and increased collaboration, the City is delivering projects that reduce collisions and make our streets safer for everyone.

An overview of existing safety measures and enhancements in Kelowna is summarized on the following page. This overview identifies City and partner initiatives and highlights potential safety improvements and countermeasures for the future.

Pedestrian Safety

20 km New sidewalks built since 2016

130+ Traffic signals in Kelowna

80+ Upgraded crosswalks, including over 20 pedestrian activated half signals and 60 upgraded crosswalks

Accessible Design

60% Of traffic signals have Accessible Pedestrian Signals that provide information for people with low vision

Cycling Safety

28 km New multi-use pathways and protected bike lanes built since 2016

15 km New painted bike lanes built since 2016

Traffic Calming

175+ Speed humps, speed cushions, and raised crosswalks have been installed to slow vehicle speeds

3 Raised Intersections, which reinforce intended travel speed and allows for improved crossing conditions for pedestrians

Street Network & Intersection Safety

7 Smart right turns

The City has constructed 7 new smart right-turn channels in partnership with ICBC, which reduce speeds and improve sightlines for right-turning drivers. Preliminary analysis shows an approximate 80 per cent reduction in right-turn collisions after installation.

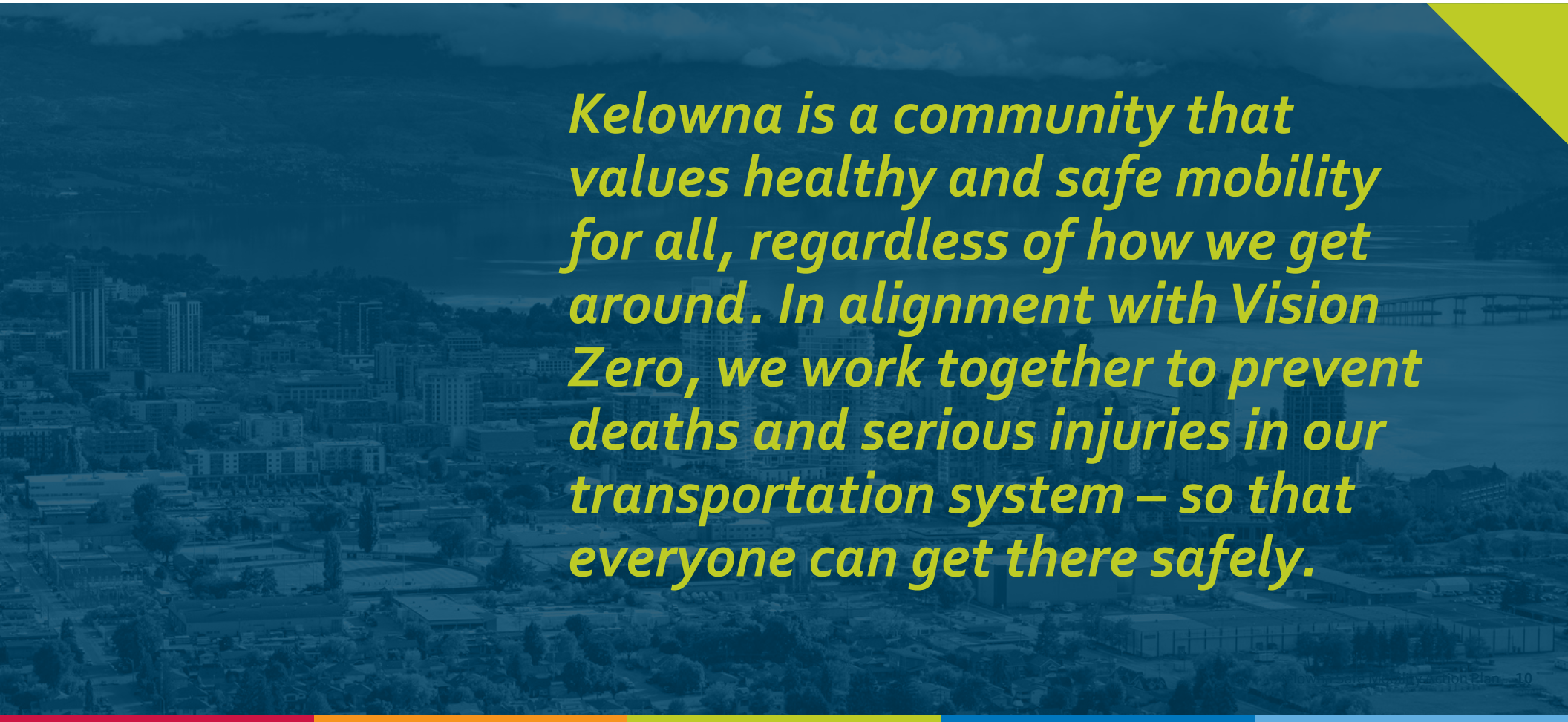
16 Roundabouts and Traffic Circles

There are 16 roundabouts and traffic circles in Kelowna. Modern roundabouts can reduce injury collisions by up to 75 per cent as they reduce speed and eliminate head-on, right-angle and left-turn collisions.

2 Our Vision for Safe Mobility

Our Vision is Zero

A **vision statement** was developed that describes the desired future state of safe mobility in Kelowna. A vision statement is a clear statement of what we aspire to achieve and our ultimate goal for safe mobility in Kelowna. It has helped guide the development of the Safe Mobility Action Plan and will continue to be referenced as implementation of safe mobility improvements occurs in Kelowna.



Kelowna is a community that values healthy and safe mobility for all, regardless of how we get around. In alignment with Vision Zero, we work together to prevent deaths and serious injuries in our transportation system – so that everyone can get there safely.

Guiding Principles

Eight guiding principles were developed to set the foundation for the Safe Mobility Action Plan, future decisions, and investments around safe mobility. The principles align with the City's current policy directions and were developed with input from interested parties and the community.

1 Collaborate and partner

Working together – including combining efforts and reducing duplication – can achieve greater results. This is due to common goals between partners and the broad range of expertise, diversity, and spheres of influence that partnerships can bring.

2 Protect people walking, biking, and rolling

People walking, using a mobility aid, riding a bike, using other non-motorized modes, or riding a motorcycle are more likely to be killed or seriously injured if a collision occurs. By prioritizing initiatives and projects that address the safety needs of people traveling using these modes, streets can be inherently safer for everyone.

3 Incorporate equity

Initiatives and projects in areas with higher equity needs are prioritized, to ensure everyone can get where they need to go safely. This includes groups that are already known to be socially or economically disadvantaged as well as other groups that emerge from the data as being more prone to injury and fatality, such as youth and seniors.

4 Take a proactive approach

The earlier that safety is considered in the transportation lifecycle, the more favourable the long-term safety performance outcomes are. Safety can be considered as early as the land use and transportation planning stages.

5 Base all decisions on evidence

All decisions are informed by good data – recent, reliable, and informative – and by credible research.

6 Utilize technology and innovation

Technology is leveraged to its full potential in data collection, analysis, and solution development, both safety and efficiency.

7 Secure and maintain sustainable funding

Safe mobility should be prioritized for funding regardless of economic cycles. A range of sustainable funding sources and support is required, including both public and private sectors.

8 Pursue culture change

Creating a favourable safety culture comes from an improved understanding of our belief systems, attitudes, and behaviours. Since culture change may take a long time, it is necessary to start early to reach our goals.

Getting to Vision Zero: The Safe System Approach

The foundation of the Safe Mobility Action Plan is Vision Zero and the Safe System Approach. **Vision Zero is the goal. The Safe System Approach is our roadmap to getting there.**

Vision Zero is a philosophy that views death and serious injuries as unacceptable consequences of collisions and establishes the goal to eliminate them. Vision Zero prioritizes human life and health in the transportation system and asserts that deaths and serious injuries are preventable. The Safe System Approach is an integrated and comprehensive process to improve the safety performance of the transportation system that allows for errors but eliminates predictable and preventable serious injuries and fatalities.

The Safe System Approach is a framework to guide safe mobility policies and programs. This approach views safe road networks as a holistic system consisting of six elements, as shown in **Figure 1**.These six elements do not stand alone, but rather they interact with one another such that progress in one area benefits and supports improvement in the others. Together, these six elements create layers of protection and shared responsibility for the safety of all road users. This can be shown through the "Swiss Cheese Model,"[3] where each layer contributes to a redundant system where lapses and weaknesses in one part of the system can occur without resulting in a complete failure of the system leading to death or serious injuries. Deaths and serious injuries only happen when all layers fail.

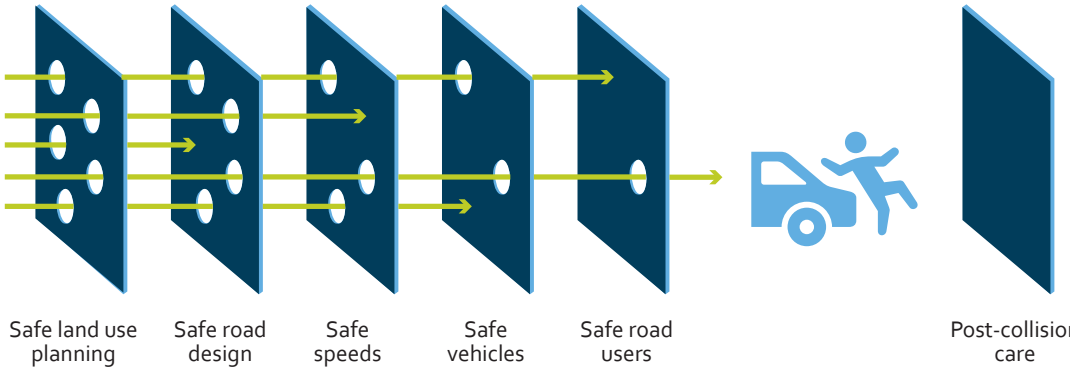


Figure 1 Safe System Elements
(Source: Adapted from City of Guelph Vision Zero Action Plan)

3 Federal Highway Administration (FHWA), Vision Zero Toolkit, 2024

Considered comprehensively and in collaboration with partner agencies, the Safe System Approach will support broad improvements in safe mobility and help Kelowna to eliminate collisions resulting in serious or fatal injuries while reducing the occurrence of all collisions. The Safe System Approach offers a new way of understanding and addressing road safety compared to a traditional approach, as shown in **Figure 2**.

The following principles are key to the Safe System Approach:

- Deaths and serious injuries on roads are unacceptable.
- People make mistakes and they are inherently vulnerable but they should not result in injury or death.
- Responsibility is shared among system designers and road users.
- A systematic approach that includes overlapping measures is necessary.
- Improvements to safety are proactive.

The belief that all people have the right to travel safely on Kelowna's roads is an underlying assumption of the Safe Mobility Action Plan. Our goal is to ensure that roads are safe for everyone – no matter who they are, where they are going, or how they are getting there.

Traditional Approach Vs Safe System Approach to Safe Mobility

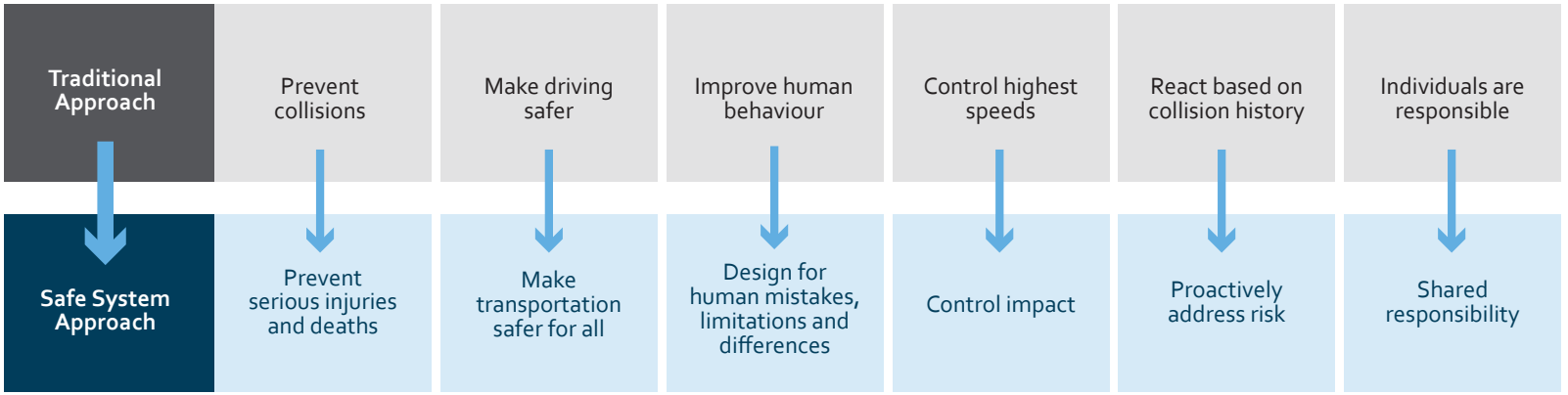


Figure 2 Traditional Approach Compared to the Safe System Approach
(Source: Adapted from City of Guelph Vision Zero Action Plan)

What is Vision Zero?

The philosophy that road fatalities and serious injuries can and should be eliminated while providing safe, healthy, and equitable mobility for all road users.

Safe System Approach

An integrated and comprehensive process to improve the safety performance of the transportation system that makes allowance for errors and eliminates predictable and preventable serious injuries and fatalities.

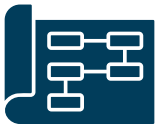
Safe Speeds

Safe Road Users

Safe Vehicles

Safe Road Design

Post-Crash Care



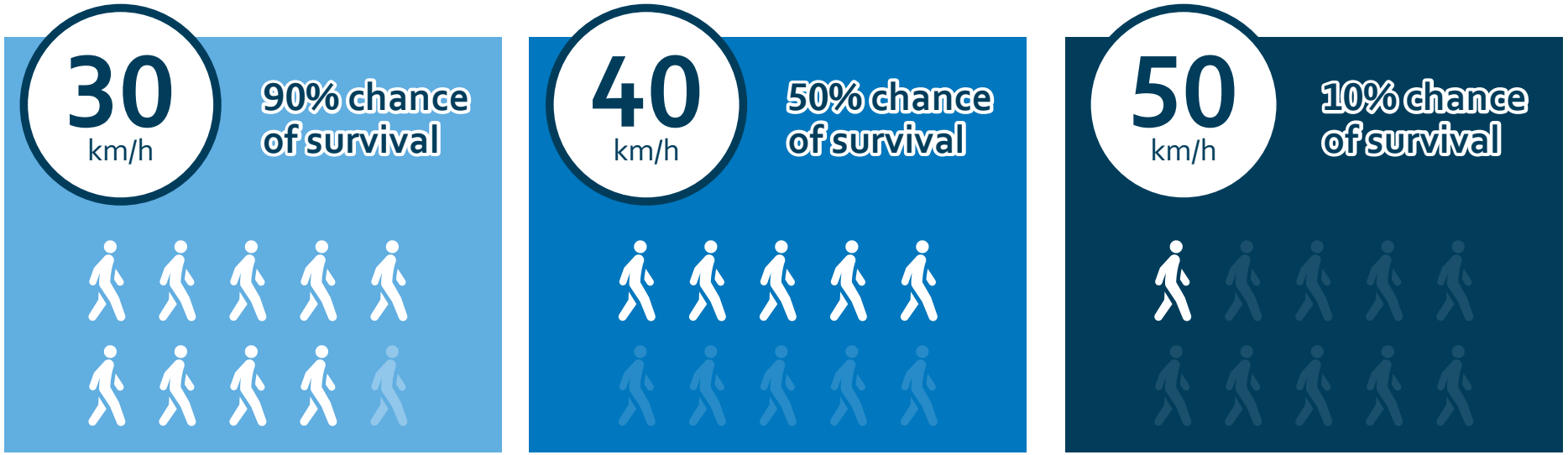
Safe Land Use Planning

Safe System Element 1

Safe Speeds

Research shows that higher speeds increase the risk and the likelihood that a crash will result in a serious injury or fatality. At higher speeds, drivers have a narrower field of vision, and they have less time to react to unexpected occurrences. Collisions at higher speeds have worse outcomes for people. The faster a vehicle is moving, the longer the stopping distance and therefore, the greater the force of impact will be. In Kelowna, excessive speed is one of the leading causes of fatal and serious injury collisions, accounting for over eight per cent of the total. Roads with higher posted speed limits are riskier, regardless of whether drivers exceed those limits. Kelowna can encourage safe speeds through initiatives such as speed limit reductions, traffic calming, and enforcement to minimize the risks of speed and allow the safe movement of all road users.

Risk of death during a crash, based on vehicle travel speed[4]



4 Wramborg, P 2005, 'A new approach to a safe and sustainable road structure and street design for urban areas', *Road safety on four continents conference, 2005, Warsaw, Poland*, Swedish National Road and Transport Research Institute (VTI), Linkoeping, Sweden

Safe System Element 2

Safe Road Users

People play an important role in safe mobility. While people may aim to be responsible road users, mistakes happen, and sometimes poor decisions can have devastating consequences. Vision Zero recognizes that human error is inevitable. A focus of the Safe System Approach is to identify behaviours that contribute to collisions and enact changes that minimize the consequences of mistakes and poor decisions when they happen.

Being a safe road user means people doing their part to understand and follow the rules of the road, thinking about safety when they travel, and acting in accordance with their abilities and limitations. Working together to be responsible road users is critical to supporting a culture of safety and building equity within our transportation system. It is also an important step to addressing current road safety challenges.

Safe road users pay attention to their surroundings and travel with care in areas where different modes share the road. In Kelowna, this may include people walking, rolling, or cycling. In Kelowna's rural areas, it may also include people riding horses or driving farm equipment.

Actions to encourage safe road users can include investments in education and awareness and opportunities to strengthen enforcement of laws to safeguard all road users.

Safe System Element 3

Safe Vehicles

The types of vehicles involved in collisions can have a significant impact on the outcomes. While speed is a major factor, other critical factors in collisions severity include the size, weight, and design of a vehicle. Current trends show a shift towards larger vehicles, which pose greater risks to pedestrians in collisions. Research has found that vehicles with high front-end heights are responsible for higher pedestrian death rates.

As Kelowna encourages more sustainable transportation, the increasing weight of electric vehicles presents a new safety consideration, as their batteries make them significantly heavier than conventional vehicles. However, regulating vehicle design such as front-end height can help mitigate the impact of vehicle weight on pedestrian safety.

Kelowna and its partners can also advocate to the federal government for other safety features such as:

- Autonomous braking;
- Speed limiters;
- Safe exit assist;
- Restriction on dashboards and entertainment functions; and
- Standardized bumper heights.

Safe System Element 4

Safe Road Design

Roads should be designed to be forgiving and reduce the severity of collisions when they do occur. Interventions that contribute to safe roads include physical infrastructure to separate users and slow travel speeds, removing hazards, improving sight lines, and upgrading traffic controls.

Data provided by sources such as ICBC and RCMP can provide valuable insights into contributing factors to collisions and the types of collisions that are most common at different locations. The findings from this data, along with information provided by residents, can be used to design infrastructure and implement countermeasures to improve safety where needed.

In addition, a focus on equity will allow Kelowna to prioritize actions to improve safety through road design in areas where there is a higher need.

Actions to address safe roads can include focusing on designing and building infrastructure to encourage safe behaviour and to reduce conflicts between different users. Actions can also emphasize the need to analyse and modify existing roads and intersections to ensure there are safe travel conditions for everyone, regardless of their travel mode.

Safe System Element 5

Post-Crash Care

A key focus of the Safe Mobility Action Plan is primary prevention - stopping injuries from happening and minimizing the severity when they do occur. **However, providing adequate emergency response treatment can minimize harm.** Post-crash care actions include ensuring that when injuries occur on Kelowna's streets, excellent care is available to the injured, regardless of who they are, the type of road users they might be, or where the crash occurs. It also includes efficient movement of injured persons to hospital where they can receive care to improve their long-term outcomes. Research shows that a significant number of fatalities on roads are preventable with improved post-crash care. In Canada, vehicle crashes and the resulting traumas place a significant burden on health care and emergency services and have other societal costs.

By enhancing post-crash care, we can further reduce the risk that crashes will result in serious or life-threatening injuries, thus working towards a safe transportation system.

To successfully promote high-quality post-crash care, the City of Kelowna can continue to collaborate with provincial emergency health services and hospitals to learn and share valuable information that could save time and lives.

Safe System Element 6

Safe Land Use Planning

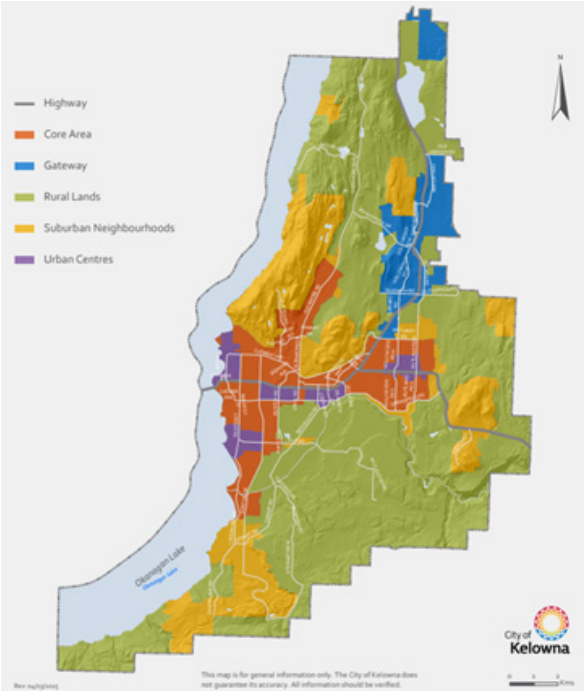


Figure 3 City of Kelowna Growth Strategy Districts
Source: City of Kelowna 2040 Official Community Plan

The City's community planning framework supports development in Urban Centres and the Core Area. Kelowna has five Urban Centres including Downtown, Pandosy, Capri-Landmark, Midtown, and Rutland, as shown in **Figure 3**. These Urban Centres will serve as hubs of activity within the city, offering the greatest concentration of employment, shopping, entertainment, and housing. Due to their central location and concentration of activity, walking and biking can be convenient ways for people to move around these areas. The Core Area encompasses flat neighbourhoods on the valley floor near Urban Centres. Although originally built with a car-oriented design, these areas are well positioned to support more walking, biking, and transit due to their terrain and proximity to destinations.

Concentrating growth in Urban Centres and within the Core Area where people travel shorter distances and use active modes and transit more frequently can directly reduce the total kilometres travelled by private vehicles. This shift supports safer conditions for people who walk, roll, and cycle. As Kelowna grows and more people choose walking and biking, ensuring the safety of vulnerable road users will be increasingly critical. This trend is already evident in areas like Downtown, where walking volumes are highest. Transit is also a safe and reliable mode of travel, and planning more homes and jobs in complete communities helps make transit more efficient and accessible. This approach is a proven strategy to enhance road safety.

An integrated approach to land use and transportation planning is necessary to ensure that future policies, plans, and regulations that guide land development and transportation align with the overarching goal to achieve zero traffic fatalities and serious injuries on Kelowna's roads. This includes focused consideration during the development of community plans, as well as in the formulation and review of development applications.

Actions related to safe land use planning can focus on reducing conflict between different modes and prioritizing road safety in land use and transportation planning. This can include minimizing the number of driveways on high volume streets, prioritizing road safety as new plans and policies are developed, and working with BC Transit to increase transit ridership.

Community Equity and Safe Mobility

All people have the right to move around Kelowna safely. A lack of mobility or access to safe transportation infrastructure can limit social and economic opportunities and can contribute to exclusion. Certain groups tend to be more adversely affected by inequities in the transportation system, including children, youth, older adults, single parents, low-income groups, ethnic minority populations, people with disabilities, and others who may not have access to a vehicle.

A central goal of the Safe Mobility Action Plan is to provide equitable access to transportation infrastructure across the city by prioritizing the needs of people of all ages, abilities, backgrounds, and identities. This requires recognizing that some neighbourhoods and populations have seen less investment compared to others. Targeted efforts may be required to achieve equitable outcomes.

Key equity considerations are summarized on the following pages.

Housing and Transportation Costs

Affordability is a significant and on-going concern for many households. According to Statistics Canada, in 2021, transportation accounted for about 11 per cent of the average expenditure per household in Canada and 94 per cent of this ($9,501) went towards private transportation.[5] While housing costs are fixed, transportation costs (excluding vehicle ownership) can be lowered by living in areas with greater density and having access to more transportation options.

Infrastructure and Access to Transit

A lack of safe walking and cycling infrastructure, limited bus service, and basic facilities at transit stops are some of the challenges that residents in some areas of Kelowna face when they travel. In addition, a large geographic area with long distances between destinations, and a circuitous road network can make it difficult to find a direct route. The City supports growth and development inside the Urban Centres and Core Area for employment, education, and recreation. For rural residents, this means that they must commute longer distances to access jobs, education, and services, and they have limited opportunities to use active transportation.

5 Statistics Canada, Household Spending, Canada, Regions and Provinces. 2025. Accessed at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110022201

Accessibility

In 2022, 27 per cent of Canadians aged 15 and older had at least one disability. This represents an increase of 4.7 per cent from 2017. Between 2017 and 2022 growth in Canada's senior population contributed to the overall rise in the disability rates. In 2019, almost one in four people (23.8 per cent) in the Kelowna Census Metropolitan Area over the age of 15 had a disability, according to Statistics Canada. As the population ages, the proportion of people with disabilities is expected to grow. Disabilities vary in nature and severity including physical, sensory and cognitive challenges. People with disabilities often face barriers to safe and independent mobility. Accessible and inclusive active transportation infrastructure is essential to ensuring safety, autonomy, and equitable access to community resources.

Non-Drivers

Due to age, ability, or financial constraints, some people do not drive a car. For non-drivers, navigating the transportation system to access employment, school, and services can be challenging. Seniors, people with disabilities, and children and youth regularly use Kelowna's walking, cycling, and transit networks to meet their daily needs, yet the data shows that people using these modes are more vulnerable and face a higher risk of death or serious injury when involved in a crash. Non-drivers are also exposed to all the challenges of navigating a road network that prioritizes personal vehicles.

How will the Plan help address safe mobility inequities?

The processes, strategies, and outcomes of the Safe Mobility Action Plan will serve all, particularly traditionally underserved populations. The planning process included a GIS-based equity analysis to understand safe mobility within equity deserving communities to help identify opportunities. The equity analysis determines neighbourhoods with higher concentrations of equity-deserving populations. Nine indicators were used to examine equity across neighbourhoods, as shown in **Table 1**. The equity analysis found that the areas with the greatest equity need are generally in Rutland and areas south of downtown and near the Highway 97 corridor, as shown in **Figure 4**.

The Safe Mobility Action Plan will consider strategies and actions that favour equity-deserving people and neighbourhoods to ensure investments in time and infrastructure support the City's commitment to improving community equity.

Figure 4 Overall Equity Need

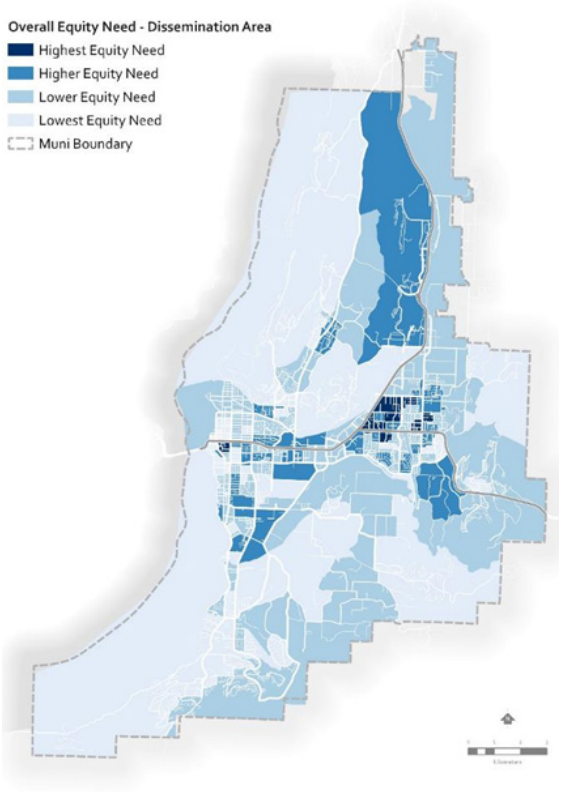


Table 1 Populations Included in the Equity Analysis

Characteristic	Census Description
Youth	People ages 0 to 14 years
Seniors	People aged 65 years and over
Low Household Income	Prevalence of low-income based on the low-income measure after tax (LIM-AT)
Indigenous Populations	Indigenous identity
Recent Immigrants	Immigrant status and period of immigration is 2016-2021
Visible Minorities	Total visible minority population
People with Limited Knowledge of English	Knowledge of official languages is Neither French nor English or French Only
Rent-Burdened Households	Average percent of household income spent on shelter
Single Parent Households	Total lone-parent census families in private households

3

Safe Mobility in Kelowna

What the data tells us

This section summarizes the current state of safe mobility in Kelowna and highlights findings from collision data analysis such as overall collision trends, collisions involving different types of road users, key contributing factors, injury severity, and pre-collision movements for different road users. Analysis is primarily based on police-reported Traffic Accident System (TAS) data.

Historic collisions are just one piece of the puzzle. Safe mobility indicators also include lived experiences and the presence of proactive safety measures.

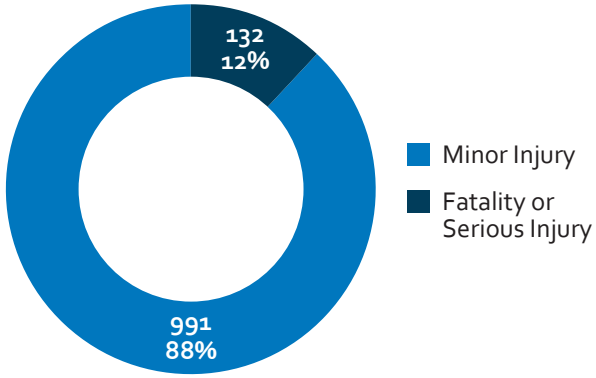


Figure 5 All Police-Reported Injury Collisions (TAS, 2018-2022)

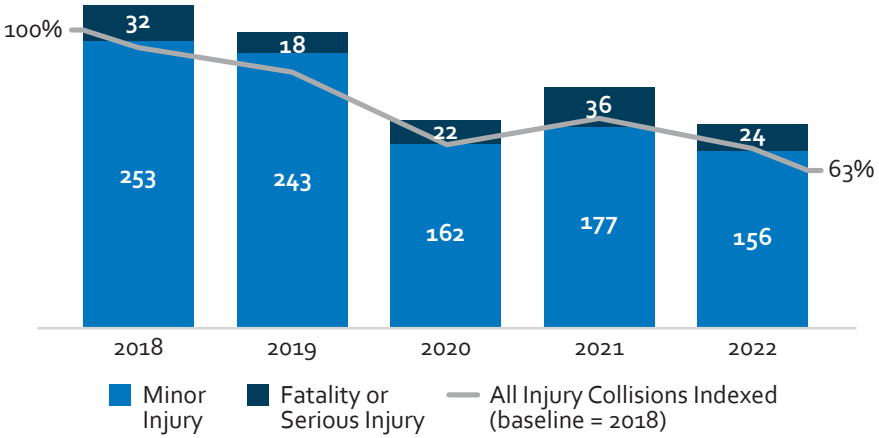


Figure 6 Police-reported Injury Collision Trends in Kelowna by Year (TAS, 2018-2022)

Overall Collision Trends

From 2018 to 2022, police attended to and reported over 2,900 collisions on City-owned roads, including over 1,100 that resulted in injuries or fatalities.

Injury and fatal collisions represented approximately 39 per cent of all police-reported collisions on City-owned roads over this time, with the remaining 61 per cent of police-attended collisions only resulting in property damage. As shown in **Figure 5**, 132 (12 per cent) of collisions resulted in a person being killed or seriously injured, while 991 (88 per cent) resulted in a minor injury.

As shown in **Figure 6**, the number of injury collisions (including fatalities, serious injuries, and minor injuries) has been declining over the past five years. It is important to note that between 2020 and 2022, the COVID-19 pandemic led to reduced travel demand and fewer vehicles on the road, which likely contributed to the observed decline in collisions during that period. Looking at vulnerable road users, collisions involving people cycling have been decreasing year over year, declining by 52 per cent compared to 2018. Meanwhile, the annual distance travelled by bike increased 35 per cent over this period.[6] This suggests that the continuous build-out of Kelowna's all ages and abilities (AAA) cycling network and other cycling network improvements are helping to improve cycling safety. However, injury collisions involving pedestrians have been relatively stable over the past five years.

6 City of Kelowna, 2024 Transportation Master Plan

People walking, cycling, or riding motorcycles were more likely to be killed or seriously injured when a collision occurred.

As shown in **Figure 7**, over half (52 per cent) of fatal and serious injury collisions involved a vulnerable road user (people walking, cycling, motorcycling, or using micromobility devices), compared to 30 per cent of all injury collisions. Vulnerable road users were overrepresented in all injury and fatal collisions when compared to the number of people travelling by vehicle, as people walking and cycling only accounted for 12.1 per cent of all trips.

Pedestrians were the most common vulnerable road user to be killed or seriously injured, followed by motorcyclists. Motorcyclists who were killed or seriously injured were involved in both vehicle-motorcycle and single-motorcycle collisions.

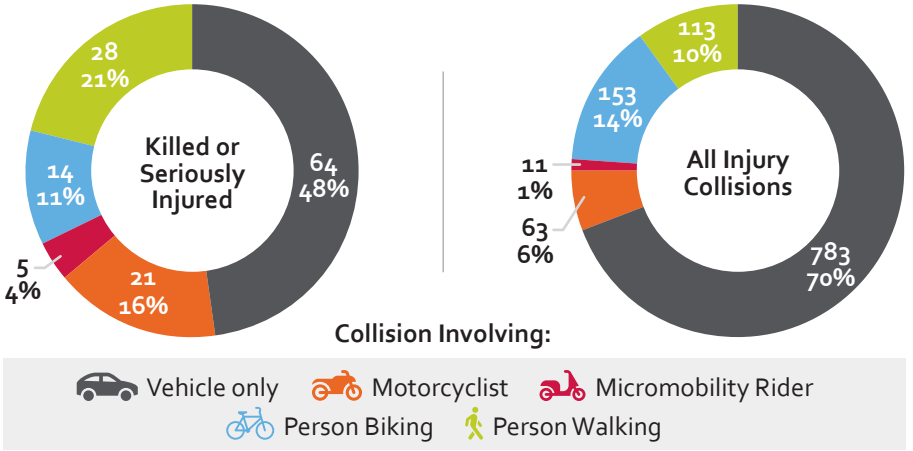


Figure 7 Collision Severities by Mode (TAS, 2018-2022)

Why Collisions Are Happening

Rear ends, right angle collisions, and left turns across traffic were the most common types of collisions.

As shown in **Figure 8**, when two or more vehicles were involved in an injury collision (including fatalities, serious injuries, and minor injuries), rear end collisions, intersection right angle collisions, and left turn vehicles colliding with oncoming traffic were the three most common collision types, accounting for 70 per cent of all injury collisions, and 49 per cent of all fatal and serious injury collisions.

Off road-right and off-road left collisions were the most common single vehicle collision types.

Driver inattention, influence of drugs or alcohol, and reckless driving were the most common contributing factors to collisions.

As shown in **Figure 9**, driver inattention was the number one contributor factor to all fatal and serious injury collisions, followed by the influence of drugs or alcohol, reckless driving (excluding speeding), and failing to yield or ignoring a traffic control device.

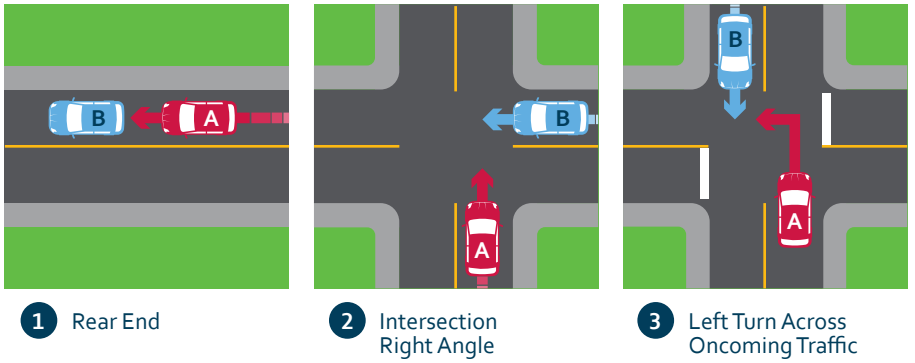


Figure 8 Visual Representation of Common Vehicle-Collision Types

Source: Modified from ICBC

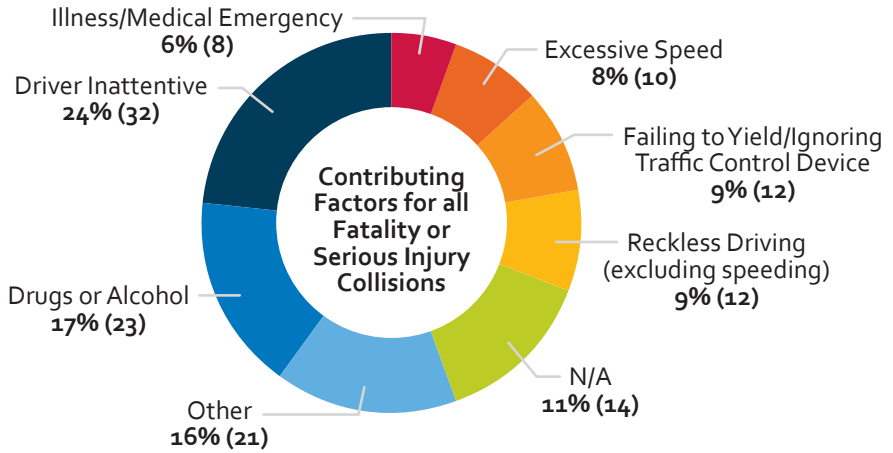
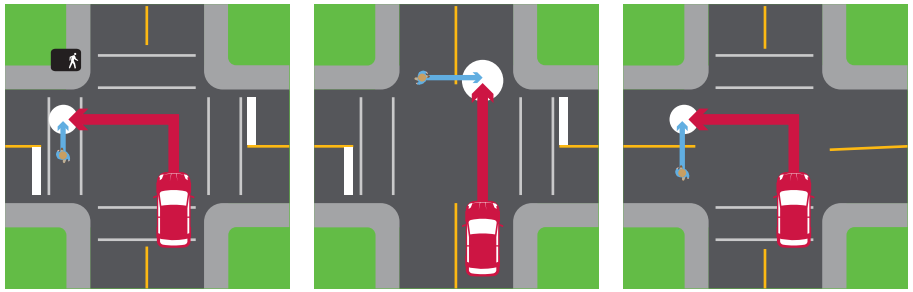


Figure 9 Primary Contributing Factors for Fatal and Serious Injury Collisions (Source, TAS 2018-2022)

Pedestrians were most often involved in a collision when they were in a crosswalk and vehicles turn left.

The most common types of pedestrian-involved collisions are shown in **Figure 10**. The most frequent collision type involved a vehicle making a left turn while a pedestrian was crossing with the signal. This collision type had the highest number of pedestrian injury collisions (17 per cent) and the highest number of pedestrian fatal and serious injury collisions (21 per cent). Other common pedestrian collision types included a vehicle going straight ahead while a pedestrian crossed the street with no signal and no crosswalk (nine per cent of all injury collisions), and a vehicle making a left turn while a pedestrian crossed with no signal and no crosswalk (eight per cent of all injury collisions).

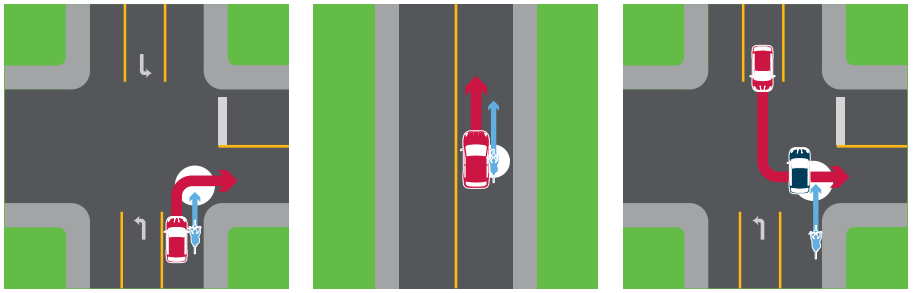


1. Vehicle making left turn and pedestrian in crosswalk at a traffic signal
2. Vehicle going straight with pedestrian crossing with no signal and no crosswalk
3. Vehicle making left turn and pedestrian crossing with no signal and no crosswalk

Figure 10 Visual Representation of Most Common Types of Pedestrian Collisions

Cyclists were most often involved in a collision when vehicles turned right.

The most common types of cycling-involved collisions are shown in **Figure 11**. The most common type of cycling injury collision was a right hook collision (vehicle turning right and cyclist going straight), accounting for 32 per cent of cases. The second most common collision was a side swipe collision (vehicle and cyclist both going straight). Lastly, left cross collisions (vehicle turning left and cyclist going straight) saw the highest number of fatal and serious injury collisions (21 per cent) and accounted for 14 percent of all cyclist injury collisions.



1. Right Hook
2. Side Swipe
3. Left Cross

Figure 11 Visual Representation of Most Common Types of Pedestrian Collisions

When Collisions Are Happening

More collisions occurred when more people were on the roads.

Collisions can occur in any month, on any day, and at any time. However, time trends can help to identify when and why some collisions are occurring.

As shown in **Figure 12**, more injury collisions occurred between June and October, which are generally warmer months. While June through August aligns with Kelowna's peak summer tourism season, the elevated collisions in September and October likely reflect other factors such as school traffic, commuting patterns, and seasonal changes, in addition to shoulder-season tourism.

As shown in **Figure 13**, more injury collisions occurred during the afternoon peak period, which is when most vehicles are on the road. Contrastingly, fewer collisions occurred during the morning peak period relative to overall traffic volumes.

As shown in **Figure 14**, injury rates were higher on weekdays, corresponding with increased travel activity. However, injuries on the weekends tended to be more severe.

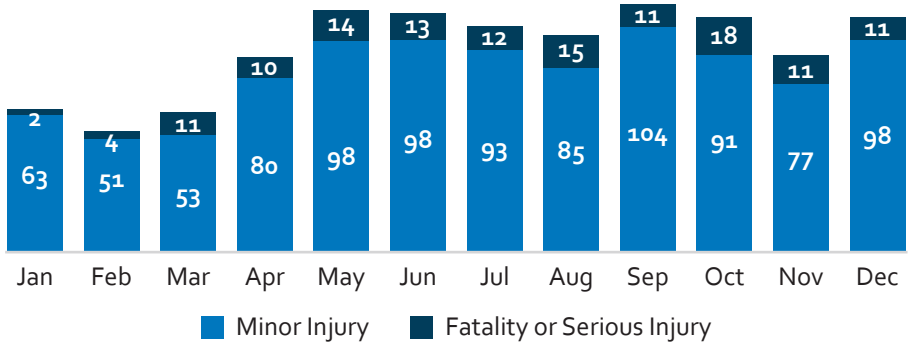


Figure 12 Injury Collisions by Month (Source, TAS 2018-2022)

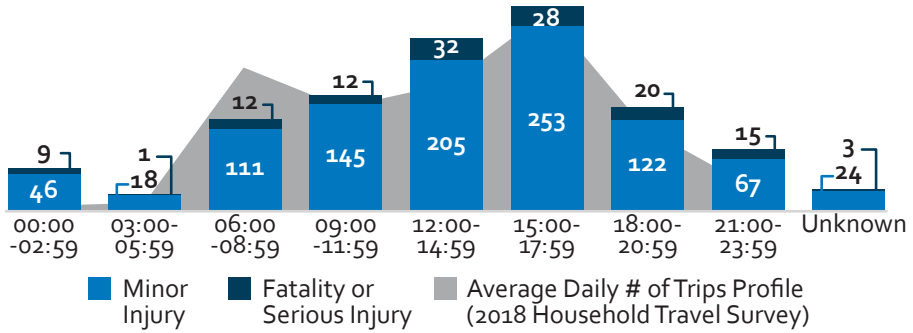


Figure 13 Injury Collisions by Time of Day (Source, TAS 2018-2022)

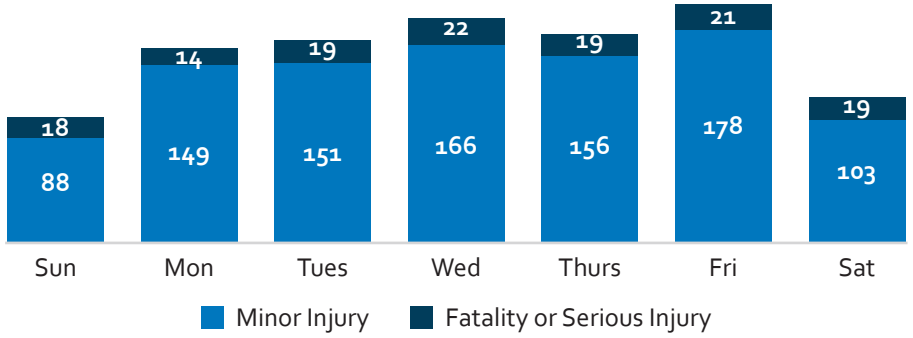


Figure 14 Injury Collisions by Day of Week (Source, TAS 2018-2022)

Where Collisions Are Happening

Injury collisions happen throughout Kelowna, and rarely occur in the same location.

Figure 15 illustrates the location of all collisions that resulted in fatality or serious injury based on TAS data from 2018 to 2022. This data includes collisions that occurred on City-owned roads only (excluding provincial highways). 91 per cent of fatal and serious injury collisions occurred at locations where no other collision of the same severity occurred during the study period. Put simply, fatal and serious injury collisions rarely recur at the same location.

To act preventively on risk factors, it's essential to understand why fatal and serious injury collisions occur, including factors such as human behaviour, pre-collision movements, road or intersection design, and more. Developing a system-wide plan and proactively implementing safety measures and programs using the Safe System Approach allows interventions to be put in place without waiting for collisions to occur.

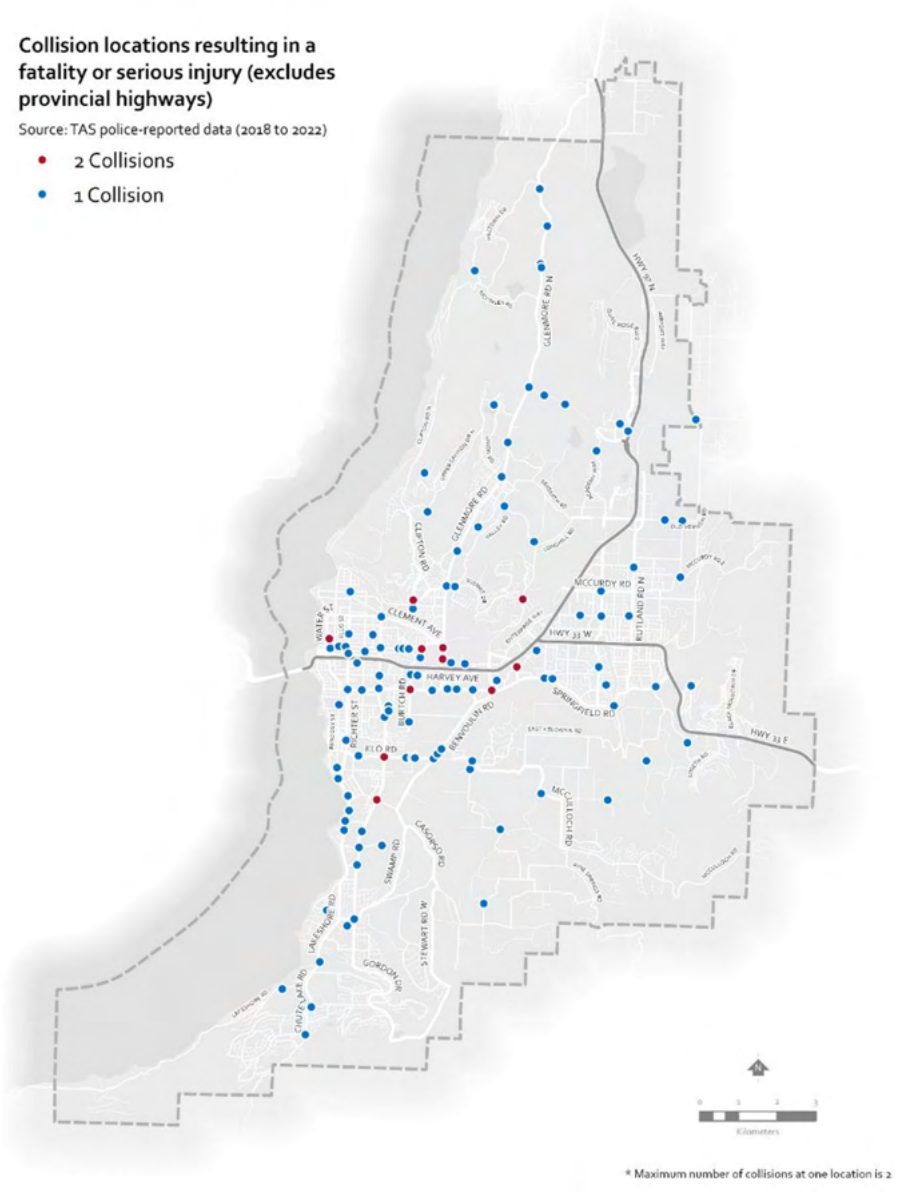


Figure 15 Fatal and Serious Injury Collisions by Location (Source: TAS, 2018 - 2022)

Who is Involved in Collisions

Younger drivers are the most likely to be involved in injury collisions.

As shown in **Figure 16**, the highest number of collisions resulting in injury was among drivers aged 15 to 34. When compared to the proportion of licensed drivers in Kelowna by age category, people aged 15 to 24 were the most over-represented, followed by people aged 25-34 and people aged 75 and over.

Younger pedestrians are more likely to be involved in injury collisions.

As shown in **Figure 17**, younger pedestrians were most likely to be involved in injury collisions, with those aged 15 to 24 representing 23 per cent of injured pedestrians. Six pedestrians aged 14 and under were hit by a car while walking, two of whom were seriously injured. When compared against the proportion of walking trips in Kelowna by age category, people aged 15 to 24 were over-represented as well as people aged 75 and over.

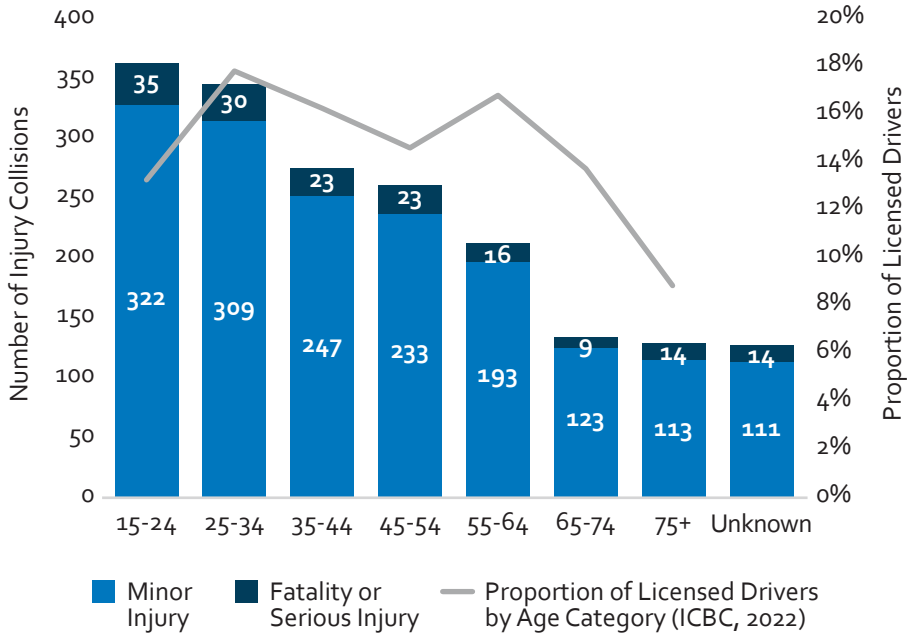


Figure 16 Injury Collisions by Driver Age Category (Source: TAS, 2018 – 2022)

Note: This includes drivers of every vehicle involved in an injury collision (for example, a two vehicle collision results in the ages of two drivers being included). As a result, the numbers are higher than other figures.

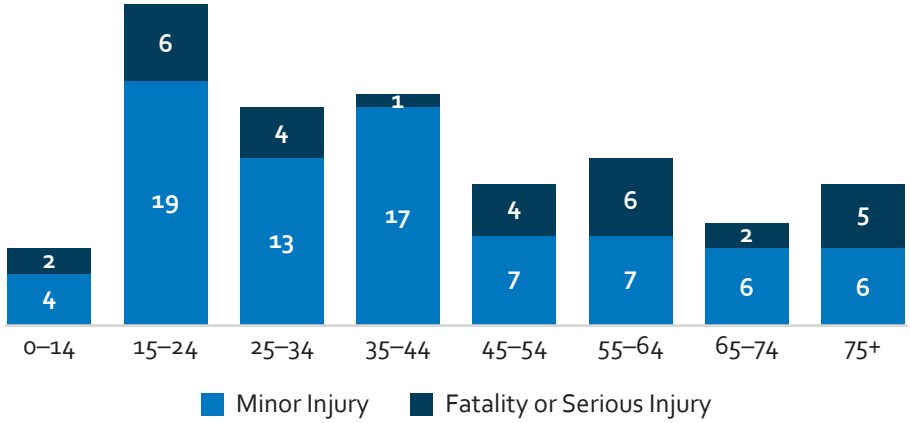


Figure 17 Pedestrian Involved in Injury Collisions by Age Category (TAS, 2018-2022)

What we learned from community members

Community engagement for the Safe Mobility Action Plan was conducted in Spring 2024 with a goal of informing residents and interested parties of this plan and transportation-related safety issues in Kelowna. People were asked to share their experiences and perceived safety issues, opportunities, and challenges via an online survey hosted on the City's Get Involved webpage. A map was also available for participants to place a marker based on a category (biking, road, sidewalk, speeds, etc.) and describe why they felt unsafe in that area. The online survey had more than 5,600 page views and more than 1,300 survey responses and map pins placed.

An open house was hosted on May 28, 2024, at the Parkinson Recreation Centre to provide an opportunity for in-person feedback. A workshop with interested parties was also held in April 2024, with representatives from the following organizations and programs participating:

- City of Kelowna;
- Safe Routes 4 Schools;
- RDCO;
- Interior Health;
- School District #23;
- BC MOTT (Central Okanagan Integrated Transportation Network);
- ICBC;
- Kelowna Fire Department;
- Kelowna RCMP;
- BC RCMP Highway Patrol;
- Kelowna Chamber of Commerce;
- Okanagan College;
- UBC Okanagan;
- Kelowna Airport; and
- Tourism Kelowna.

The feedback received through this community engagement was used to help identify focus areas, set targets, and develop actions that informed the Safe Mobility Action Plan.

The key findings from the first round of community engagement are summarized below and in **Appendix C**.

FINDINGS

Two-thirds of Kelowna residents do not feel safe from collisions when traveling on Kelowna's streets.

When asked how safe respondents feel from collisions on Kelowna streets, 67 per cent stated feeling 'not very safe' or 'very unsafe', while 33 per cent of respondents stated feeling 'somewhat safe' or 'very safe.'

People feel the least safe when riding a motorcycle or cycling.

When respondents were asked about perceptions of safety for different modes of transportation, riding the bus received the highest 'very safe' responses, as shown below in **Figure 18**. Driving a car received the highest number of 'very safe' and 'somewhat safe' responses combined, followed closely by walking. Riding a motorcycle, biking, and 'other' received the highest proportion of combined 'very unsafe' and 'somewhat unsafe' responses.

Respondents were asked what they felt were the top three contributors to serious injuries and fatalities on Kelowna's roads. The top five perceived contributors to serious injuries and deaths selected included:

- Intersection design and control;
- Speeding;
- Ignoring a traffic control device or failing to yield;
- Aggressive road user behaviours; and
- Distracted driving.

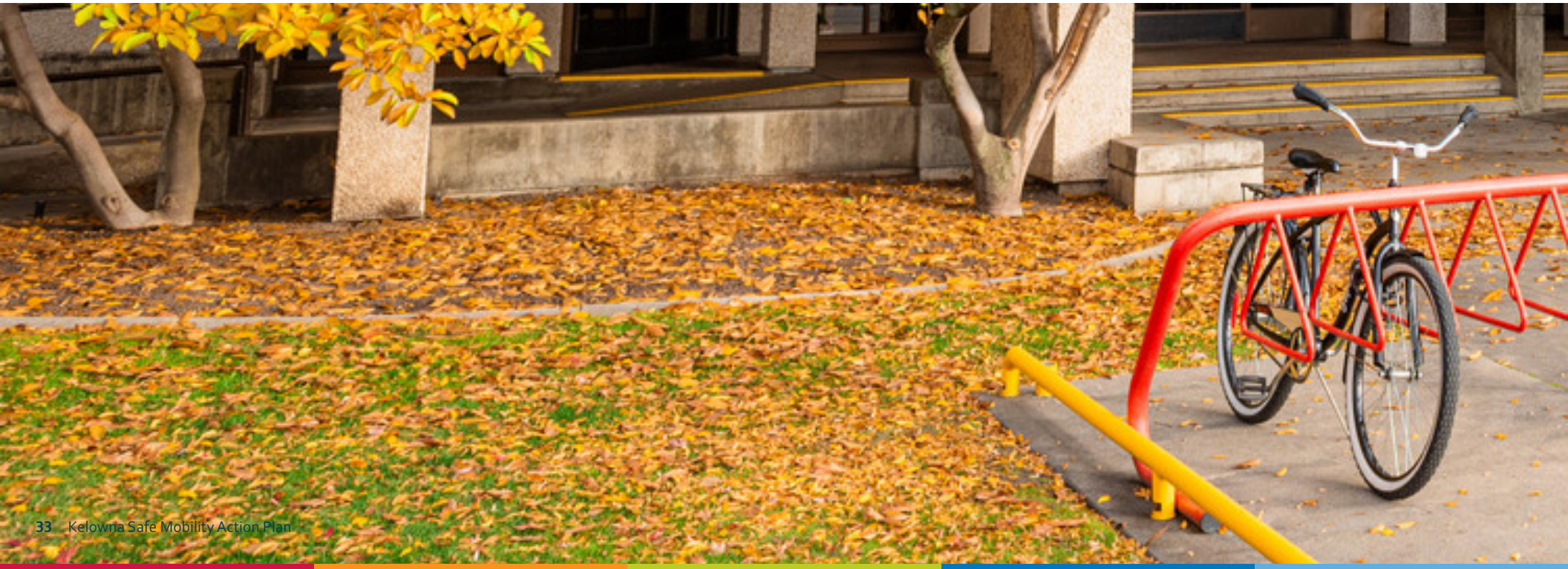
The least frequently identified contributors included lack of safe walking facilities, poor weather and road surface conditions, and medical emergencies.

An interactive location-based tool was used to gather input on what makes people feel safe or unsafe on Kelowna's streets. Participants most commonly reported feeling unsafe due to an incomplete cycling network (30 mentions), unsafe intersections (27 mentions), unsafe speeds (23 mentions), and unsafe crossings (23 mentions).Of the 12 comments related to feeling safe, 50 per cent mentioned feeling safer when using a protected bicycle lane or multi-use pathway.

Figure 18 Round 1 Engagement Results (Perception of Safety and Modes of Travel)

FINDINGS

Respondents were asked what would make them feel safer from collisions when travelling around Kelowna. Responses were grouped into common themes. A word cloud was used to visualize the most frequently mentioned ideas with larger words representing more common suggestions.



What the City is Currently Doing

The City of Kelowna also has ongoing programs that focus on improving safe mobility for all road users. These include:

- Neighbourhood Traffic Calming Program;
- Safe Routes 4 Schools Program;
- Road Safety Improvements Development Cost Charges;
- Crosswalk Safety, Signals, and Flashers Program;
- Sidewalk Network Expansion Program;
- Sidewalk and Bikeway Renewal Program;
- Bicycle Network Improvement Program; and
- Partnership with ICBC through the Road Improvement Program.

The City also has an Active Transportation Development Cost Charges program that helps fund larger scale capital improvement projects to the City's All Ages and Abilities primary cycling network, improving safety for active transportation users.

4

Action Plan

Working towards achieving Vision Zero and realizing the goals of the Safe Mobility Action Plan will require significant investments over the next ten years and into the future.

This Action Plan includes **29 actions** for the City and its partners to implement and have been grouped into **four strategic Action Areas**. These actions are designed to guide the long-term improvements across Kelowna's transportation network, ensuring everyone can travel safely on Kelowna's transportation network.

Action Area 1

Build Safe Intersections for All

Action Area 2

Protect Vulnerable Road Users

Action Area 3

Design for Safe Speeds

Action Area 4

Create a Positive Safety Culture with our Partners

The description of each action includes a summary of the following elements:

Action Description: A summary of the action along with relevant background information and rationale.

What the Data Tells Us: A summary of relevant data, evidence, and/or best practices for the action, including:

- **Data:** what the collision data analysis found.
- **Lived Experience:** qualitative data gathered from public input and engagement.
- **Research or Best Practice:** what research elsewhere or best practice has shown regarding the effectiveness of the proposed treatment(s).

Action Areas Supported: The actions have been organized based on the primary Action Area they contribute to; however, many actions have multiple benefits and support other action areas. Each action identifies which additional Action Areas are supported.

Safe System Elements Supported: Each action supports one or more elements of the Safe System approach. Each action identifies which Safe System elements are supported.

Status in Kelowna: The City and its partners are already making significant progress in improving safe mobility. While progress is already being made for some actions, others may require enhancements or new actions to be taken by the City or its partners. The status of each action is summarized as follows:

- **New:** A new action that is not currently been implemented by the City or its partners.
- **Continue:** An action that is already being conducted by the City or by external partners which the City can continue to support.
- **Enhance:** An action that is already being conducted by the City, but should be revised or enhanced to be implemented more effectively, more often, and/or differently to achieve desired safety outcomes.

A description of each of these elements is provided for each action along with information on how the actions taken by the City and its partners can prevent deaths and serious injuries in our transportation system. **Appendix D** includes suggested steps the City and/or its partners can take to successfully deliver each action.

Action Areas

Action Area 1: Build Safe Intersections for All

Action 1.1: Conduct Advanced Network Screening

Action 1.2: Pilot Safe System Audits

Action 1.3: Implement Left-Turn Protections

Action 1.4: Implement Right-Turn Treatments

Action 1.5: Install Roundabouts at High-Risk Intersections

Action 1.6: Advocate to Expand Intersection Safety Camera Program

Action 1.7: Apply High Friction Surface Treatment

Action 1.8: Reduce Conflict Points at Minor Accesses

Action Area 2: Protect Vulnerable Road Users

Action 2.1: Apply an Equity Lens to Prioritizing Safety Improvements

Action 2.2: Prioritize Mode Shift to Transit

Action 2.3: Fill in Sidewalk Gaps on Major Roads

Action 2.4: Implement the All Ages and Abilities Bike Network

Action 2.5: Monitor Safety of Micromobility Devices

Action 2.6: Implement Leading Pedestrian and Bicycle Intervals

Action 2.7: Proactively Reduce Pedestrian and Cycling Injuries and Fatalities That Do Not Involve Motor Vehicles

Action 2.8: Improve Motorcycle Safety Awareness and Education

Action 2.9: Conduct Gap Analysis of Uncontrolled and Half-signal Crosswalks on Major Roads

Action 2.10: Enhance School Safety

Action Area 3: Design for Safe Speeds

Action 3.1: Conduct Pilot Speed Limit Reduction Project

Action 3.2: Advance Neighbourhood Traffic Calming

Action 3.3: Develop an Arterial Speed Reduction Program

Action Area 4: Create a Positive Safety Culture with our Partners

Action 4.1: Develop a Culture of Safety Among Youth and Young Adults

Action 4.2: Reduce Distracted Driving

Action 4.3: Target Speeding and Aggressive Driving

Action 4.4: Enforce Impaired Driving

Action 4.5: Support Safety Improvements on Provincial Roads

Action 4.6: Develop Educational Campaigns and Materials

Action 4.7: Develop a Vision Zero Working Group

Action 4.8: Work with Partners to Improve Collision Data

Action Area 1: Build Safe Intersections for All

Intersections and crossings are the locations in the transportation network where roadways meet, where many people are turning, and where many pedestrian and cycling crossings are located. They are the connection points between people driving, using transit, walking, and cycling and involve complex interactions between all road users.

Intersections and crossings create connectivity that is vital to the transportation network, but they require that road users approach the same points in time and space, creating situations where different road users may come into conflict with one another.

Intersections and crossings are also the locations where most collisions occur and can often be the most significant real or perceived barriers for people walking, cycling, or using other forms of active transportation. Fully signalized, partially signalized, stop controlled, yield controlled, and uncontrolled intersections as well as roundabouts all have conflict points, but each has different characteristics. Safety strategies at intersections and crossings can seek to:

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

Since intersections occupy relatively small areas, they can often be upgraded or improved in a relatively cost-effective manner compared to full corridors.

Intersection and crossing treatments can target collisions involving all three turning movements from each approach:

- **Through vehicle collisions:** these typically involve right-angle collisions resulting from red light violations or rear end collisions caused by high approach speeds, inattention, congestion, or lane changing.
- **Left-turn collisions:** these typically involve sight constraints, the acceptance of inadequate gaps, risky movements during the intergreen period, or inadequate attention to crossing pedestrians.
- **Right-turn collisions:** these are often caused by high turning speeds, and divided attention on red between oncoming traffic from the left and pedestrians on the right.

Eight actions have been developed to Build Safe Intersections For All road users by addressing these common causes.

Action 1.1: Conduct Advanced Network Screening

Enhance the City's current network screening approach to prioritize locations with a higher risk of serious injuries and fatalities

Description

Network screening is a process undertaken to identify locations within the transportation network where the greatest concentrations of collisions occur.

Several approaches may be used to complete this process, including accounting for the number and severity of crashes and other factors. The end goal is to identify where additional analysis is needed and to develop solutions to improve safe mobility.

The traditional approach to network screening has focused on collision density, regardless of collision severity. In contrast, an advanced network screening method focuses on identifying locations with a high likelihood of future collisions resulting in fatality or serious injury by converting collision history into risk-based numbers. The outcome of this work is to identify a Priority Investigation Network (PIN), a target set of corridors and intersections with the highest investigation priority based on collision history and other risk indicators. This network helps prioritize safety improvement efforts at locations where they have the greatest potential for reducing more severe collisions.

While traditional network screening typically focuses on intersections, the advanced network screening methodology also identifies high risk corridors.

Action Areas Supported

Action Area 2 | Action Area 3 | Action Area 4

Safe System Elements Supported

Safe Road Design | Safe Road Users | Safe Speeds

Status in Kelowna: Enhance

The City currently conducts traditional network screening every five to ten years. However, it relies on past collision records rather than projections, which can limit proactive identification of emerging risk areas. To align with the Safe System approach, the City will pilot an advanced methodology to focus on collisions that result in fatalities and serious injuries. As outlined in **Action 2.1**, the City will incorporate the results of the equity analysis to ensure that equity consideration are integrated into the screening process. This initiative will be undertaken in partnership with ICBC's Road Improvement program.

Action 1.2: Conduct Safe System Audits

Enhance the City's current approach to conducting Road Safety Audits and In-service Road Safety Reviews following a Safe System-based approach

Description

A Road Safety Audit is an independent review of a proposed transportation project that identifies and addresses potential safety issues that could lead to serious collisions based on the Transportation Association of Canada (TAC) Canadian Road Safety Audit Guide. Road Safety Audits are a valuable tool and are proven to be effective at reducing collisions. Road Safety Audits can be conducted at any stage in a project life cycle, ranging from conceptual design through to detailed design or even during construction or post-construction. In-service Road Safety Reviews (ISRSRs) are like Road Safety Audits but are conducted on existing roadways.

The United States Federal Highway Administration (FHWA) and Austroads in Australia have developed a Safe System Assessment Framework, which presents a framework for assessing how well existing or proposed infrastructure and road environments align with Safe System objectives.

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users

Status in Kelowna: Enhance

The City is actively conducting Road Safety Audits and In-Service Road Safety Reviews as part of a commitment to road safety. The City's Subdivision, Development & Servicing Bylaw (Bylaw 7900) states that Road Safety Audits may be required at the discretion of the City Engineer for designs of new segments of arterial roads, signalized intersections, roundabouts, major road network bridges, and when making changes to an existing arterial road that involves any of the following: new road features (such as lanes, intersections, or traffic control devices), the presence of vulnerable road users, the proposed design cannot meet design guidance, or the location has higher than average collision frequency. In some cases, the City hires third-party engineers to complete In-Service Road Safety Reviews.

In addition, the City has a strong ongoing partnership with ICBC, participating annually in its Municipal Road Safety Audit Program. These audits are typically applied to projects in the design phase and offer a valuable, no-cost resource that enhances our safety planning.

The City should adopt a Safe System-based approach to conducting Road Safety Audits and In-service Road Safety Reviews. Unlike traditional Road Safety Audits, which primarily focus on compliance with design standards and identifying hazards that may lead to crashes, a Safe System-based audit evaluates whether the road environment can accommodate inevitable human errors without resulting in death or serious injury. This approach incorporates key elements of the Safe System Assessment Framework and the Canadian Road Safety Audit Guide, emphasizing speed management and separation of vulnerable users. While Safe System audits are typically undertaken for proposed improvement projects, they can also be applied to existing infrastructure to identify systemic risks to road users, similar to an In-Service Road Safety Review.

Action 1.3: Implement Left-Turn Protections

Continue identifying opportunities to enhance left turn protections or left turn calming

Description

Left-turn movements across opposing traffic are complex and a major contributor to injury collisions in Kelowna. Protected phasing can improve safety by reducing conflicts between oncoming vehicles and pedestrians.

Signalized turn phasing can reduce or eliminate this conflict point in two ways:

- **Fully protected:** left turns are only permitted during a dedicated left turn phase (green arrow), followed by a red light where no turns are permitted, or
- **Protected-permissive:** left turns are permitted during a dedicated left turn phase (green arrow), followed by a green light where drivers must yield to oncoming traffic before turning.

Fully protected left-turns can also virtually eliminate the conflict point between left-turn vehicles and pedestrians.

Left-turn calming (e.g. "centre-line hardening") is a recent treatment in response to high-speed left turns where drivers are pre-occupied with the high-workload task of judging oncoming traffic in multiple lanes, and accelerate during the left-turn before checking for pedestrians crossing the departure leg. This treatment extends the median or introduces physical elements in the receiving lane, discouraging drivers from cutting the corner, helping lower speeds and improve pedestrian visibility. Left-turn calming strips on the exit leg can help control both left-turn speeds and their path, allowing trucks to move over them if needed.

Other left-turn treatments include:

- Adding or lengthening left-turn lanes to prevent lane spillage, and
- Aligning left-turn lanes with a positive offset to enhance visibility of oncoming traffic.

Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users

What the Data Tells Us

Data: When two or more vehicles were involved in a collision in Kelowna, left-turn opposing movements accounted for 16 per cent of all injury collisions and nearly 20 per cent of collisions resulting in serious injuries or fatalities between 2018 and 2022.

Additionally, when pedestrians were injured in a collision, the leading cause was a vehicle making a left turn and striking the pedestrian while they were lawfully crossing with the signal. This scenario accounted for 17 per cent of all pedestrian injury collisions and 21 per cent of those resulting in serious injuries or fatalities.

Research: Research has shown that enhancing left-turn protection results in significant safety benefits, including a 24 per cent reduction in left-turn opposing collisions with protected-permissive phasing[7] and up to 99 per cent with fully protected turn signals.[8]

Status in Kelowna: Enhance

The City has made significant progress in implementing left turn protections at signalized intersections. Currently, 14 intersections in the city feature fully protected left turn phasing, and many others include protected-permissive phasing. Along Highway 97, several intersections with protected-permissive phasing require left-turning vehicles to cross three lanes of traffic. While these efforts have contributed to improved safety, further opportunities exist to enhance left-turn protections, particularly in areas with higher collision rates, complex geometries, or high pedestrian activity.

MoTT is currently undertaking a left turn study to assess the effectiveness of left turns at traffic signals along Highway 97 in Kelowna. The report seeks to identify targeted improvements that enhance both mobility and safety for road users along this corridor.

The City should identify opportunities for enhanced left turn protections or to pilot left turn calming. Research should be conducted to understand how left turn calming is implemented in other cold-climate cities and explore strategies to mitigate potential maintenance challenges.

7 Srinivasan, R.; Lyon, C.; Persaud, B.; Baek, J.; Gross, F.; Smith, S.; Sundstrom, C. A. "Crash Modification Factors for Changing Left Turn Phasing." Presented at the Transportation Research Board 91st Annual Meeting, Paper No. 12-2521, January 22-26, 2012, Washington, DC.

8 Harkey, D.L., R. Srinivasan, J. Baek, F. Council, K. Eccles, N. Lefler, F. Gross, B. Persaud, C. Lyon, E. Hauer, and J. Bonneson. National Cooperative Highway Research Report 617: Accident Modification Factors for Traffic Engineering and ITS Improvements, NCHRP, Transportation Research Board, Washington, DC, 2008.

Action 1.4: Implement Right-Turn Treatments

Continue to identify opportunities to improve safety involving right-turning vehicles

Description

Collisions involving right-turning vehicles are one of the leading causes of pedestrian and cycling injury collisions in Kelowna, with "right hooks" accounting for nearly a third of cycling injury collisions and approximately 16 per cent of pedestrian injury collisions.

There are a number of treatments that should be considered to improve safety associated with right-turning vehicles, including:

- **Protected intersections:** Protected intersections include design features that minimize conflicts between drivers and vulnerable road users by separating movements through space and time with raised corner islands, pedestrian refuge areas, and signal phases for pedestrians and cyclists.
- **Right-turn on red restrictions:** Where right-turns on red are permitted, drivers must watch for pedestrians crossing and for people cycling approaching from behind, while also looking for a gap in traffic to turn. This creates a complex scenario that can lead to driver mistakes. Prohibiting right-turns on red means drivers can only turn right when the light is green, reducing the chance of conflict.
- **Protected signal phasing for people cycling:** "Right hooks" are the leading cause of cycling injuries in Kelowna. Where there are high volumes of turning vehicles and people cycling, dedicated bicycle signals with separate phases can be used to separate vehicle and cycling movements.
- **Removing or reconfiguring channelized right turn lanes:** Channelized right-turn lanes negatively impact safety by facilitating higher-speed right turns and increasing pedestrian crossing distances. They also create conflicts and introduce a higher driver workload. Removing right turn lanes with a reduction in corner radius can improve safety for people walking and cycling by reducing vehicle turning speeds and the number of conflict points with vulnerable road users. Alternatively, the channel can be redesigned as a smart right channel. Smart right turn channels increase the entry angle to the cross street and reduce the turning radius which leads to increased visibility of pedestrians and conflicting traffic, while reducing right turns speeds and pedestrian crossing distances. Raising crosswalks across right-turn channels can further reduce vehicle speeds through the turn, enhancing pedestrian visibility.

Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users

What the Data Tells Us

Data: The leading cause of cycling injury collisions was found to be a "right hook" collision where the vehicles turned right and struck a person cycling straight through. These "right hooks" accounted for 41 per cent of all cycling injury collision in Kelowna between 2018 and 2022, or a total of 62 cycling injury collisions over this period.

15.9 per cent of pedestrian injury collisions involved a right turning vehicle, including five collisions at a signalized intersection, four at an unsignalized crossing with a crosswalk, and three at an unsignalized crossing without a marked crosswalk.

Research: The reconfiguration of right-turn islands/channels to a smart right-turn design has led to injury collision reductions of up to 80 per cent in Kelowna. The complete removal of right-turn islands and approach lanes also have a significant impact by reducing the corner radius and turning speeds and eliminating a conflict point.

Status in Kelowna: Enhance

In 2025, seven smart right-turn channels were constructed on both City and MoTT roads, demonstrating significant safety improvements. The City collaborates proactively with MoTT on redesigning intersections that cross Highways 97 and 33, including Active Transportation Corridor (ATC) projects. The City's Subdivision, Development & Servicing Bylaw (Bylaw 7900) discourages conventional channelized right turn lanes in Core Areas and Urban Centres but requires smart channel design where larger design vehicles are accommodated. Kelowna is also improving safety by implementing right-turn on red restrictions, particularly on ATCs where the restriction benefits people walking and cycling. Additionally, ATCs include protected bike signal phases to reduce conflicts between people cycling and right turn vehicles.

To enhance these efforts, the City could expand the use of raised crosswalks at smart right channels and increase right-turn-on-red restrictions at high-risk intersections to further reduce conflicts and improve visibility for vulnerable road users.

Action 1.5: Install Roundabouts at High-Risk Intersections

Continue to install roundabouts at high-risk intersections as a priority safety measure, ensuring designs accommodate people with disabilities, pedestrians, and cyclists

Description

Modern roundabouts, distinct from neighbourhood traffic circles, are circular intersections where vehicles travel counterclockwise around a central island. Vehicles entering the roundabout yield to traffic already circulating. Roundabouts are associated with improved safety due to fewer conflict points, slower approach speeds and safer impact angles. These benefits are more pronounced in single-lane roundabouts. Multi-lane roundabouts, while still safer than conventional signalized intersections, introduce more complexity, and crossing distance.

What the Data Tells Us

Data: Right-angle and left-turn collisions accounted for 39 per cent of vehicle-only injury collisions in Kelowna between 2018 and 2022. Roundabouts are effective at eliminating these collision types.

Research: Roundabouts are associated with a 75 per cent reduction in injury collision compared to conventional intersections.[9]

Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users

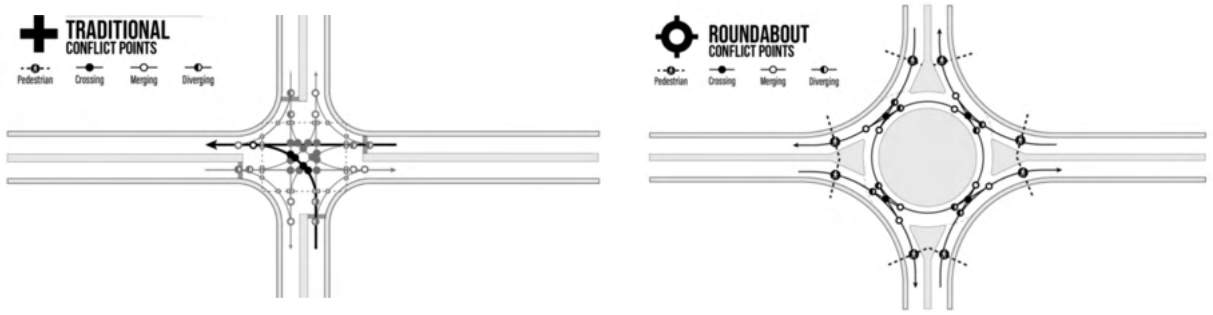


Figure 19 Conflict points at a Roundabout vs Traditional Intersection

Source: A Safe System-Based Framework And Analytical Methodology For Assessing Intersections, FHWA, 2021

9 Transportation Association of Canada. Canadian Roundabout Design Guide, 2017.

Status in Kelowna: Enhance

Kelowna has shown leadership in roundabout implementation guided by its Roundabout First Policy (Bylaw 7900), which includes both prioritization criteria and evaluation methods of existing intersections.

As of 2025:

- 16 roundabouts are operational;
- 3 are in design; and
- A Roundabout Assessment Memo (2023) identified and prioritized four additional candidate sites.

The City uses a Roundabout Assessment Tool to evaluate intersections based on collision data, traffic volumes, life-cycle costs, and geometry to determine cost-effective and safety-focused solutions.

While roundabouts improve safety overall, they can present challenges for people walking and cycling and those with sight loss. The City should continue reviewing and updating guidance and incorporate new standards as they become available to ensure roundabouts meet accessibility guidelines.

Action 1.6: Advocate to Expand Intersection Safety Camera Program

Advocate to expand the Intersection Safety Camera Program in Kelowna, including additional locations

Description

Red-light running typically occurs when motorists are unwilling to wait an extra signal cycle, or they are inattentive or distracted from the traffic control. The resulting collisions are typically severe. To help reduce the number of collisions at intersections, the RCMP, provincial government, and ICBC have partnered together to operate the Intersection Safety Camera program. Through this program, there are currently 140 cameras in 26 communities across the province to deter drivers from running a red light. The cameras are placed at intersections based on the type, severity, and frequency of crashes at that location. The cameras also have the ability to enforce speed limits.

ICBC is currently in process of developing a new program for automated enforcement by 2027. No new locations will be installed until the updated program is ready.

What the Data Tells Us

Data: Right-angle collisions at intersections accounted for 23 per cent of injury collisions between multiple vehicles in Kelowna between 2018 and 2022. Furthermore, 18 per cent of collisions resulting in fatalities or serious injuries in Kelowna involved either reckless driving or failure to yield or stop.

Lived Experience: Ignoring a traffic control or failing to yield was the third most significant concern identified by the community through the public engagement.

Action Areas Supported

Action Area 2 | Action Area 4

Safe System Elements Supported

Safe Road Design | Safe Road Users | Safe Speeds

Research: Intersection Safety Cameras that issue tickets for red-light violations are a proven countermeasure, with some studies claiming a 29 per cent reduction in angle collisions that result in injury.[10]

Status in Kelowna: Continue

Kelowna currently has five intersections with safety cameras, four of which are on Highway 97 (provincial jurisdiction) and one on a City-managed road (Springfield Road and Dilworth Drive). Two locations along Highway 97 include speed enforcement. While expansion is on hold until ICBC's new program is launched in 2027, the City has a role to play in advocating for more locations.

10 Goldenbeld, C., S. Daniels, and G. Schermers. "Red Light Cameras Revisited. Recent Evidence on Red Light Camera Safety Effects". Accident Analysis and Prevention, Vol. 128, (2019) pp. 139-147.

Action 1.7: Apply High Friction Surface Treatments

Implement High Friction Surface Treatment at intersection approaches that have a high prevalence of rear-end collisions and/or collisions in wet conditions

Description

High Friction Surface Treatment (HFST) is a pavement surfacing system with exceptional skid resistance properties not typically provided by conventional materials. HFST can lead to significant injury reduction associated with friction demand issues, such as those occurring on wet pavement, or at high vehicle speeds. In Kelowna, rear end collisions are the most common injury collision type. Research by the FWHA indicates that HFST can significantly reduce wet-weather crashes.

What the Data Tells Us

Data: Rear end collisions are the most common injury collision type in Kelowna, accounting for 31 per cent of injury collisions between 2018 and 2022.

Research: A research report published by the FHWA estimated that HFST can reduce wet-weather crashes by 83 percent and total crashes by 57 per cent.[11] In addition, MoTT recently completed an HFST pilot on select highways and found reductions of 64 per cent in collisions in wet conditions, 57 per cent in rear-end collisions, and 51 per cent in serious collisions overall.[12]

Status in Kelowna: New

The City of Kelowna could begin discussions with MoTT to identify and implement HFST at locations along Highway 97 and Highway 33, in addition to City-managed intersections. These treatments could be prioritized at sites with high collision rates or known safety concerns to support shared goals around collision reduction.

Action Areas Supported

Action Area 3

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users

Safe Speeds

11 Federal Highway Administration, FHWA Research and Technology Evaluation: High Friction Surface Treatments (Washington, DC: 2021) https://doi.org/10.21949/1521640.

12 Essa, Sengupta and Takyi. "Safety Effectiveness of High Friction Surface Treatment at Signalized Intersections in British Columbia" Transportation Research Record: Journal of the Transportation Research Board, 2025.

Action 1.8: Reduce Conflict Points at Minor Accesses

Use access management tools to reduce conflict points at minor access points such as driveways and minor-cross streets

Description

The locations where minor access points such as driveways and minor cross-streets meet major roadways can result in increased conflict points for road users and transit vehicles. In some cases, these conflicts can be addressed by considering signalization, time-based turn restrictions, or physically restricting movements on to the major roadways with physical devices as flexible delineator posts or raised medians.

Access management is a tool that can be used to direct road users to more visible and protected locations and manage and/or limit high risk movements.

What the Data Tells Us

Data: Between 2018 and 2022, 23 per cent of all injury collisions in Kelowna (including all intersections and accesses) were right-angle collisions, the second most frequent collision type. In addition, 12 collisions resulting in fatalities or serious injuries in Kelowna (nine per cent of the total) involved failing to yield or ignoring a traffic control device.

Status in Kelowna: Continue

The City currently applies access management principles through the Subdivision, Development & Servicing Bylaw (Bylaw 7900) which includes guidance for new developments such as driveway consolidation, driveway width medians, and turn restrictions. However, there is limited guidance for conflict points along existing arterial roadways. Over time, the City should work to reduce the number and frequency of driveways as land development and/or lot consolidation occurs.

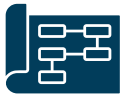
Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users



Safe Land Use Planning

Action Area 2: Protect Vulnerable Road Users

Vulnerable road users including people walking, cycling, motorcycling, or using another type of small micromobility device, are more likely to be killed or seriously injured when a collision occurs.

Between 2018 and 2022, there were over 330 collisions resulting in injuries or fatalities among vulnerable road users on all roads, including highway 97 & 33. Of these, 64 (19 per cent) which resulted in a serious injury or fatality. Vulnerable road users accounted for over half of all fatal and serious injury collisions in Kelowna, compared to 30 per cent of all injury collisions. Pedestrians were the most common vulnerable road user to be killed or seriously injured, followed by motorcyclists.

While collisions involving pedestrians and motorcyclists have not been decreasing, collisions involving people cycling have been decreasing year over year, which may suggest that the continuous build-out of Kelowna's all ages and abilities (AAA) bicycle network and other bicycle network improvements are helping to improve cycling safety.

While relatively few injuries involving scooter users were reported, micromobility use is increasing and collisions involving these users should continue to be monitored.

Ten actions have been identified to **Protect Vulnerable Road Users**.

Action 2.1: Apply an Equity Lens to Prioritizing Safety Improvements

Engage with equity-deserving groups to understand their barriers and challenges and ensure equity is considered in the City's decision-making process when prioritizing safety improvements

Action Areas Supported

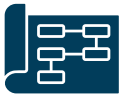
Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users



Safe Land Use Planning

Description

Everyone has the right to move around Kelowna safely. Research has shown that there are significant social and equity issues related to transportation. A lack of personal mobility or access to transportation services can hinder an individual's social and economic development and can result in social exclusion. Certain groups are more adversely affected, including children, youth, older adults, single parents, low-income groups, ethnic minority populations, and people with disabilities.

A central aim of the Safe Mobility Action Plan is to build a transportation network that serves all areas of the city and provides equitable access for all residents. This means prioritizing people of all ages, abilities, backgrounds, and identities, especially equity-deserving populations.

Safe mobility efforts must recognize that some neighbourhoods have seen less investment than others and may require more targeted efforts to reach equitable outcomes.

What the Data Tells Us

Data: A GIS-based equity analysis was conducted to identify neighbourhoods with higher concentrations of equity-deserving populations using nine indicators. The analysis found that areas with the greatest equity need are generally in Rutland, and areas south and east of Downtown.

Status in Kelowna: Enhance

The City's Transportation Master Plan (TMP) emphasizes inclusive and accessible transportation for residents of all ages, incomes, and abilities. While equity-based prioritization criteria is not yet included, it is recognized as a key gap to be addressed in the next TMP update.

The City is currently developing a Transportation Accessibility Strategy focused on improving accessibility considerations in the design, construction, and maintenance of transportation infrastructure. The Strategy will include design guidance to help remove barriers across Kelowna's transportation network. The City also engages with the Accessibility Advisory Committee and applies an accessibility lens to capital projects.

As the Safe Mobility Action Plan is implemented, the City and its partners should ensure that investments in safe mobility actively address equity impacts, particularly those affecting people of different ages, ethnic backgrounds, and socio-economic circumstances.

For larger plans and studies, the City should consider developing community engagement strategies that emphasize outreach to underserved and equity-deserving communities. This approach recognizes that some groups may be less likely to report collisions or may avoid certain areas due to perceived safety concerns. Engagement efforts should ensure these voices are heard and reflected in decision-making.

Action 2.2: Prioritize Mode Shift to Transit

Continue investing in transit services and facilities to increase transit use as the safest form of travel

Description

Public transit is a critical part of Kelowna's transportation system, offering an affordable and equitable transportation option for residents. Kelowna Regional Transit ridership saw 6.4 million boardings in 2024. The City's TMP includes a target of doubling transit ridership by 2040 and calls for increasing the City's investment in transit service and infrastructure to make transit faster and more reliable.

Increasing transit ridership has the potential to significantly reduce collisions and injuries in Kelowna, provided that key supporting elements such as connectivity to transit (improved sidewalks, bikeways, crosswalk locations, secure bike parking, and park and ride facilities), transit reliability and priority measures (increased service, dedicated bus lanes and traffic signal priority) are in place.

What the Data Tells Us

Lived Experience: Survey respondents told us, among all modes, that they felt safest when riding the bus, with two-thirds of survey respondents who answered this question saying they felt "very safe" or "somewhat safe" while riding the bus.

Research: Public transit is consistently shown to be the safest form of travel, with an injury rate 10 times lower than passenger vehicles.[13]

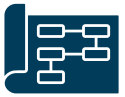
Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Users



Safe Land Use Planning

Status in Kelowna: Continue

Kelowna is expanding access through the Umo digital fare system, enabling a flexible fare program. The City supports ridership through ProPASS and UPASS which are employer subsidized transit passes and has launched an Affordable Transit Pass Study to explore low-cost transit passes. The Commuter Choice Program, also launched in 2025, will guide employers in reducing peak hour driving, by promoting transit and other modes.

BC Transit and the City are heavily investing in transit infrastructure, including more frequent transit service, transit priority infrastructure, transit exchange and bus stop improvements, dedicated transit lanes on Harvey Avenue, and a new Transit Operations Centre to support near term service growth and transition to battery-electric buses.

Transit exchanges are evolving into mobility hubs, integrating micromobility vehicles, secure bike parking, and pickup/drop-off areas to improve multimodal access.

To build on this momentum the City should continue advocating for expanded transit service levels, improved regional connectivity, and sustain funding to support ridership growth and safety outcomes.

13 American Public Transit Association. The Hidden Transportation Safety Solution: Public Transportation, 2016.

Action 2.3: Fill in Sidewalk Gaps on Major Roads

Continue implementing sidewalks to fill in gaps in the sidewalk network on major roads

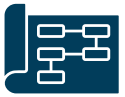
Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users



Safe Land Use Planning

Description

Walking is the most fundamental form of transportation. Almost every trip starts and ends with walking. Most walking trips are relatively short trips to access key destinations throughout Kelowna, although many people may also walk for longer recreational or exercise purposes. Sidewalks form the backbone of the Kelowna's pedestrian network.

What the Data Tells Us

Data: Approximately 10 per cent of pedestrian injuries between 2018 and 2022 occurred on streets with no sidewalk. Six of these reported injury cases were on collector or arterial roads with no sidewalks.

Lived Experience: While many survey respondents told us they do feel safe walking in Kelowna (with 43 per cent of survey respondents who answered this question saying the felt "very safe" or "somewhat safe" while walking), the majority of respondents said they feel unsafe (57 per cent who answered this question saying the felt "very unsafe" or "somewhat unsafe" while walking).

Status in Kelowna: Continue

The City is actively working to fill in sidewalk gaps on collector and arterial roads through various programs and initiatives. These initiatives include:

- **Neighbourhood Street Urbanization Program:** This initiative aims to urbanize local and collector streets by adding sidewalks where they are missing. This initiative enhances pedestrian safety and accessibility in residential areas.
- **Sidewalk Network Program:** This program is dedicated to expanding the sidewalk network throughout the city. The program prioritizes areas with high pedestrian traffic and aims to improve overall sidewalk completeness in Kelowna's Core Area.
- **Major Road Projects (DCC):** Development contributions are used to fund major road projects, including the construction of sidewalks on both sides of arterial roads.

The combined efforts of various programs have advanced the City's goal of improving sidewalk completeness, particularly in the Core Area. However, 26 per cent of major roads in Kelowna still lack sidewalks on both sides. The City's Pedestrian and Bicycle Master Plan (PBMP) identified gaps and prioritized them for improvement. Given the plan's age and Kelowna's evolving population and mobility needs, updating the PBMP would ensure sidewalk expansion reflects current pedestrian demands, safety concerns and land use changes.

Filling these gaps is a long-term project, and current funding levels, progress will remain slow. The TMP proposes doubling the funding for the Sidewalk Expansion Program to accelerate network improvements. To support this, the City should continue prioritizing sidewalk investment in capital planning and advocate for sustained funding to help close gaps more quickly. As part of infrastructure upgrades, improvements to lighting on sidewalks should also be considered to enhance nighttime visibility and safety.

Action 2.4: Implement the All Ages and Abilities Bike Network

Continue implementing the All Ages and Abilities bike network, including new facilities, and spot improvements

Description

Cycling is an affordable, healthy, and sustainable way to help people get around Kelowna without a car. For trips under five kilometres, cycling can also offer travel times that are competitive with driving. The TMP aims to quadruple the number of trips made by bicycle by 2040. The key to making biking an attractive option is building a network of facilities that are well connected and comfortable for people of all ages and abilities ('AAA').

What the Data Tells Us

Data: 154 cycling-involved collisions resulted in injury between 2018 and 2022. These collisions were typically more severe, with 14 (nine per cent) of those resulting in somebody being killed or seriously injured. Collisions involving people cycling have been decreasing year over year, declining by 52 per cent compared to 2018. Meanwhile, the annual distance travelled by bike increased 35 per cent over this period. This suggests that the continuous build-out of Kelowna's AAA bike network and other network improvements are helping to improve cycling safety.

Lived Experience: Most survey respondents told us they do not feel safe cycling in Kelowna, with 82.5 per cent of survey respondents who answered this question saying they felt "very unsafe" or "somewhat unsafe" while cycling.

Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users

Safe Land Use Planning

Research: Research shows that adding protected bicycle lanes reduces all collisions and injuries by 30-50 per cent, and that converting painted bicycle lanes to protected bicycle lanes can reduce crashes by 53 per cent.[14]

Status in Kelowna: Continue

The City of Kelowna has made significant progress in expanding its cycling infrastructure including the construction of numerous Active Transportation Corridors (ATCs) over the past 15 years. These corridors feature AAA cycling facilities, contribution to a growing network of over 70 km of protected bicycle lanes, 45 km of which are fully connected.

Despite these achievements, there are still significant gaps in the cycling network, and many cycling facilities do not meet AAA standards. To ensure cycling remains a safe, convenient, and comfortable transportation option, the city should continue investing in the AAA bike network. This includes funding new facilities, upgrades to existing infrastructure, and implanting spot improvements to enhance safety and connectivity across the network. As part of infrastructure upgrades, improvements to lighting ATCs should also be considered to enhance nighttime visibility and safety.

14 Pasadena Complete Streets Coalition. Protected Bike Lanes Are Good For Everyone. Accessed at: https://www.pasadenacsc.org/blog/facts-about-protected-bike-lanes#:~:text=Repeated%20studies%20consistently%20show%20that,a%20piece%20of%20the%20road.

Action 2.5: Monitor Safety of Micromobility Devices

Continue to support the increase of micromobility devices, while working with partners to monitor trends and identify opportunities to enhance safety of micromobility users

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users

Safe Land Use Planning

Description

Micromobility refers to small, lightweight, and low-speed devices including human-powered mobility devices such as conventional bicycles, skateboards, and rollerblades, as well as electric-assisted mobility devices like e-bikes and e-scooters. The City is participating in the Provincial electric kick scooter pilot project which allows both privately owned devices and shared micromobility devices operated privately under the City's operating conditions. The program offers 1,000 rentable, regulation-compliant e-scooters and e-bikes via a mobile app.

In partnership with Interior Health, the City has monitored health and acute care impacts from the pilot. Interior Health recommended safety measures for the shared program which included: sidewalk detection with audible warnings, education campaigns, cognitive tests before evening rides to reduce the likelihood of impaired riding, slow ride zones, restricting ride zones (including downtown between 10:30 pm and 4:00 am), and helmet selfie discounts.

Privately owned micromobility devices such as segways, hoverboards, and mobility scooters have become more varied, making them harder to regulate, shifting the burden more toward enforcement

What the Data Tells Us

Data: Interior Health hospital data showed a sharp rise in e-scooter related injury visits at Kelowna General Hospital (KGH) in 2021, coinciding with the launch of the pilot project. That year saw 72 confirmed emergency department visits among riders aged 16-64. Injury visits declined in the following years, with 48 visits in 2022 and 42 in 2023. Lime operator data from spring 2023 to spring 2024 recorded 24 incidents, with only two incidents considered severe (requiring more than 24 hours of medical attention).

Only 16 per cent of riders aged 16-64 years who visited KGH emergency department for e-scooter related injuries reported wearing a helmet, highlighting a key area for improvement.

Status in Kelowna: Continue

The City should continue to participate in the Provincial pilot and maintain support for safe, regulated, and provincially approved micromobility devices. Collaboration with partners to monitor trends and identify opportunities safety improvements will be key. As micromobility use grows and evolves, there will be ongoing opportunities to increase compliant riding. Addressing high-risk behaviors like impaired riding or sidewalk use will require both education and enforcement.

Action 2.6: Implement Leading Pedestrian and Bicycle Intervals

Expand City-Wide installations of Leading Pedestrian and Bicycle Intervals to give people walking and biking a head start

Description

Leading Pedestrian Intervals (LPIs) and Leading Bicycle Intervals (LBIs) are traffic signal timing changes that give pedestrians a head start into the crosswalk before vehicles receive a green light. This early entry improves visibility and significantly reduces the risk of collisions.

At locations where bicycle volumes and/or vehicle turning volumes are below the threshold for a protected phase, or where protected phases are not feasible, LBIs can be considered. Leading intervals are typically between 3 and 8 seconds and occur in advance of the green indication for turning motor vehicles.

What the Data Tells Us

Research: LPI's have been shown to reduce pedestrian/turning vehicle collisions by 59 per cent, with minimal delays to vehicle traffic.[15]

Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users

Safe Land Use Planning

Status in Kelowna: Enhance

The City has installed LPIs and LBIs at over five intersections, which included but not limited to:

- Sutherland Avenue at Ethel Street;
- Sutherland Avenue at Burtch Road;
- Sutherland Avenue at Richter Street;
- Lakeshore Road at Richter Street; and
- Leckie Road at Dilworth Drive.

The City is actively developing an implementation plan for the broader deployment of LPIs and LBIs citywide. The City should continue identifying opportunities to implement LPIs and LBIs where they meet design guidelines and are feasible, to support safer and more accessible intersections for all road users.

15 Federal Highway Administration (FHWA). Toolbox of Pedestrian Countermeasures and Their Potential Effectiveness, 2018.

Action 2.7: Proactively Reduce Pedestrian and Cycling Injuries and Fatalities That Do Not Involve Motor Vehicles

Work with partners to develop a better understanding of pedestrian and cycling injuries and fatalities in Kelowna that do not involve motor vehicles and identify safety improvements

Action Areas Supported

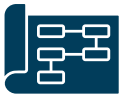
Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users



Safe Land Use Planning

Description

Walking and cycling injuries that do not involve a motor vehicle are relatively common, but they are underreported and not well understood. Traditional road safety datasets generally exclude injuries or fatalities on roadways that do not involve motor vehicles, despite emerging evidence that they occur more frequently than collisions with motor vehicles.

While motor vehicle collisions remain a major concern in Kelowna due to their frequency and severity, improving safety for pedestrians and cyclists in non-vehicle incidents remains important. Addressing these overlooked events enhances overall road safety and helps reduce strain on our healthcare system.

What the Data Tells Us

Research: Research from Metro Vancouver found that just under half (47 per cent) of recorded cycling injury crashes were a result of an interaction with a motor vehicle. The remaining cycling injury crashes (53 per cent) resulted from collisions with surfaces (such as potholes, gravel, leaves, tracks, roots, icy or wet surfaces), infrastructure (such as bollards, furniture, curbs, fences, speed bumps, stairs), or other route users (such as pedestrians, other bicycle users or animals).[16]

Further, a recent province-wide study in British Columbia found that pedestrian falls requiring hospital admission were 2.3 times more frequent than those from motor vehicle collisions, accounting for 68.5 per cent of 6,737 total pedestrian admissions. Similarly, cyclist injuries from falls were 1.8 times more common than those from motor vehicle collisions, representing 48.6 per cent of 2,409 total cyclist admissions. The study also found falls disproportionately affected older adults, females, higher-income individuals, and rural residents for both pedestrians and cyclists.[17]

Status in Kelowna: Continue

The City currently takes a reactive approach to addressing pedestrian and cycling collisions and injuries, including those that do not involve motor vehicles, such as pedestrian falls. While residents can report infrastructure concerns through the City's service and request page, and community groups often contribute by suggesting improvements or reporting incidents, there remains a need for more proactive data collection and analysis. The City, together with Interior Health, is working to better understand non-motor vehicle injury issues. Continued data sharing and collaboration between agencies will be essential to support evidence-based decision making and enhance efforts to improve pedestrian and cycling safety across Kelowna.

16 Bicyclists' Injuries & The Cycling Environment. UBC Cycling in Cities Program, 2007.

17 Branion-Calles, M.; Godfreyson, A.; Berniaz, K.; Arason, N.; Erderlyi, S; Winter, M; Teschke, K; Rajabali, F; Harris, M.A.; Brubacher, J. "Comparing pedestrian and cyclist injuries from falls and collisions in British Columbia, Canada: Frequencies and population characteristics" Journal of Transport & Health 42 (2025)

Action 2.8: Improve Motorcycle Safety Awareness and Education

Work with partners to improve motorcycle safety through improved data collection and analysis, awareness, and education

Description

A high proportion of motorcycling crashes result in serious injuries or fatalities, making it inherently the most high-risk form of travel, due to a combination of their high speeds and the lack of physical protection in the event of a collision.

Motorcycle collisions are often linked to their limited visibility compared to vehicles, as well as the difficulty other road users face in accurately judging their speeds and movements. Other contributing factors can be site specific and relate to the road geometry, pavement condition, and roadside treatments. Additionally, speed, aggressive driving and improper equipment or helmet uses further increase the risk.

What the Data Tells Us

Data: Motorcyclists were involved in 16 per cent of collisions resulting in injuries or fatalities in Kelowna between 2018 and 2022, which is significantly higher than the proportion of traffic represented by motorcyclists.

Status in Kelowna: Continue

Kelowna is actively monitoring collision data involving motorcyclists to understand emerging trends, risk locations and contributing roadway factors. The City should work with its partners to improve motorcycle safety through focused data analysis, awareness, and education.

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users

Safe Vehicles

Action 2.9: Conduct Gap Analysis of Uncontrolled and Half-signal Crosswalks on Major Roads

Conduct a gap analysis of crosswalks on major roads and identify potential safety issues

Description

Convenient and accessible crosswalk locations in Kelowna are essential for the safety of vulnerable road users and to provide access to transit stops and key destinations. As streets become busier, safe and well-designed crossings become an increasingly critical part of the pedestrian network. Crosswalks help protect pedestrians by clearly defining safe crossing points, increasing visibility, and encouraging predictable interactions between road users. Crosswalk safety features may include signs, markings, flashing beacons (such as Rectangular Rapid Flashing Beacons), or signals.

What the Data Tells Us

Data: Between 2018 and 2022, 178 fatal or injury collisions occurred along arterial roads at locations with no intersection controls, representing approximately 16 per cent of all fatal or injury collisions. A further ten injury collisions occurred on arterial roads with crosswalks with flashing lights, and eight occurred on arterial roads at pedestrian half-signals.

Status in Kelowna: Continue

Kelowna currently has a crosswalk program that is operating on a service request basis, resulting in construction of approximately six to eight crosswalks per year.

Focusing on crosswalks on major roads, the City should complete a gap analysis to identify locations for new crosswalks and identify potential safety issues at existing locations for further review. This analysis will focus on Kelowna's busiest roads in the city to identify and address safety concerns more effectively.

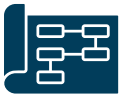
Action Areas Supported

Action Area 2

Safe System Elements Supported

Safe Road Design

Safe Road Users



Safe Land Use Planning

Action 2.10: Enhance School Safety

Continue to support the Clean Air and Safe Routes 4 School to explore opportunities to improve safety of school zones

Description

Enhancing school safety is essential to protecting children and youth who are still developing their awareness, judgement, and ability to navigate traffic environments. Young students are less predictable, making it critical to design school zones that prioritize their safety as they travel to and from school. These zones are dynamic environments with a mix of transportation modes including walking, cycling, public transit, and parent drop-offs. Lowered speed limits within school zones are a key measure to reduce the risk and severity of collisions. As school zones are present on different road classifications, including arterial, local, and collector roads, and are active only during specific hours, clear visibility, signage, and enforcement are important for driver compliance. School travel studies play a vital role in identifying safety concerns, understanding travel patterns, and guiding infrastructure improvements

Status in Kelowna: Continue

The City has demonstrated strong commitment to enhancing school safety through programs and partnerships. In 2025, two elementary schools participated in the Clean Air and Safe Routes 4 Schools program, with seven schools having previously participated. Administered by the Regional District of Central Okanagan (RDCO), this program encourages active transportation for students living 2.5km of their school and support collaborative school travel planning to address safety infrastructure and air quality concerns.

Action Areas Supported

Action Area 2

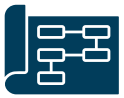
Action Area 4

Safe System Elements Supported

Safe Speeds

Safe Road Design

Safe Road Users



Safe Land Use Planning

Further, the City prioritizes school zones through its Neighbourhood Traffic Calming program, crosswalk program, sidewalk network expansion program, and works closely with RDCO and school safety traffic officer to identify future opportunities for improvement.

Looking ahead, the City should explore enhancements to school zone safety through a combination of infrastructure upgrades, traffic calming, and speed management. This includes implementing permanent speed limits where appropriate, high visibility signage, pavement markings, and crosswalk upgrades. School travel studies remain a valuable tool for identifying specific safety concerns and guiding targeted improvements. These efforts should be supported by RCMP enforcement and education campaigns aimed at improving motorist behavior. Clear signage around parking restrictions and U-turn will also help create safer school environments.

Action Area 3: Design for Safe Speeds

The relationship between vehicle speed and the severity of collisions is well-established.

Higher speed collisions are more likely to occur than collisions at lower speeds, and the higher the vehicle speed involved in a collision, the more likely it is to result in a serious injury or fatality. Higher speeds result in more serious collisions because:

1. Collisions at higher speeds are more forceful;
2. Drivers traveling at higher speeds have a narrower field of vision;
3. Drivers traveling at higher speeds need more time and distance to come to a complete stop; and
4. Drivers traveling at higher speeds require long braking distance.

Effective speed management can both prevent collisions and make them less severe.

The most sustainable way to achieve safer speeds is not by only changing speed limits, but by modifying roadway design features to make it more natural for drivers to travel at the target speeds, and then posting speeds that are consistent with these designs. Other features such as narrower lanes, tighter curb radii, and traffic calming can all serve to reduce speeds. Modifying lane widths has the potential to impact speeds and collision severity between intersections. Adopting a new approach to speed limits - based on the survivability of a collision rather than on design speed or operational speeds - will help the City work towards zero fatalities and serious injuries.

Three actions have been identified to **Design for Safe Speeds.**

Action 3.1: Conduct Pilot Speed Limit Reduction Project

Pilot area-specific speed limit reductions to assess safety benefits

Description

Safe System speed limits represent a modern approach to setting speed limits, grounded in the principle that human error is inevitable and road systems should be designed to minimize severity of collisions. This philosophy aligns with the goal of Vision Zero by ensuring that, in the event of a collision, the likelihood of survival remains high. Several municipalities across British Columbia including Victoria, Saanich, and Rossland, have recently adopted lower default speed limits on some or all roads in their communities, recognizing the critical role speed plays in crash outcomes and survivability.

What the Data Tells Us

Data: Excessive speeds accounted for approximately eight per cent of fatal or injury collisions between 2018 and 2022.

Lived Experience: Survey respondents identified speeding as the second highest contributing factor to serious injuries and deaths on Kelowna's roads.

Research: The City of Edmonton has achieved a 31 per cent reduction in fatal and serious injury collisions on major roads in Edmonton when speed limits were lowered from 50 to 40 km/h.[18]

ICBC has found that speeding is the top contributing factor to vehicle crash fatalities in British Columbia.[19] A pedestrian hit by a vehicle travelling at 55 km/h has a 90 per cent chance of severe injury or death, at 40km/h that number drops to 50 per cent, and at 30km/h it drops to 10 per cent.

Action Areas Supported

Action Area 2 | Action Area 3 | Action Area 4

Safe System Elements Supported

Safe Speeds | Safe Road Design | Safe Road Users | Safe Land Use Planning

Status in Kelowna: New

The City's speed limit policy, last updated in 2007, primarily supports speed limits of 50 km/h and above and is due for a review. However, progress has been made through other initiatives, including speed limit reductions along ATCs, in neighbourhood traffic calmed areas, and in select neighbourhoods where there is poor road geometry or sightlines. While Bylaw 7900 does not set posted speed limits, it guides the design speed of new roads, which in turn influences operating and posted speeds to better align with safety objectives.

To further support pedestrian and cycling safety, the City should consider piloting area- specific speed limit reductions. Potential pilot areas include a traffic calmed neighbourhood or areas with high pedestrian activity such as the Downtown Urban Centre or hospital area.

18 El-Basyouny, Abohasan, Contini, Elmasry "Assessing the Effectiveness of Speed Limit Reduction in Edmonton" Accident Analysis and Prevention, February 2024).

19 ICBC, Quick Statistics – Contributing Factors. Accessed at: https://public.tableau.com/app/profile/icbc/viz/QuickStatistics-Contributingfactors/Contributingfactors

Action 3.2: Advance Neighbourhood Traffic Calming

Continue to implement neighbourhood traffic calming based on the Traffic Calming Policy to reduce speeds on residential streets

Description

Traffic calming is an effective tool used to reduce vehicle speeds and lower traffic volumes, contributing to safer and more livable neighbourhoods. The City has a Neighbourhood Traffic Calming Program to create vibrant, livable neighbourhoods by reducing the negative impacts of vehicles on residential streets. Every year, the City receives various road safety concerns from residents, and this program provides a structure approach to implementing traffic calming solutions in response.

Traffic calming measures are selected based on the TAC Canadian Guide to Traffic Calming, and includes tools such as speed humps, speed cushions, raised crosswalks, curb extensions, chicanes, traffic circles, lane narrowing, signage and pavement markings, education, and enforcement.

What the Data Tells Us

Data: Excessive speeds accounted for approximately eight per cent of fatal or injury collisions between 2018 and 2022.

Lived Experience: Survey respondents identified speeding as the second highest contributing factor to serious injuries and deaths on Kelowna's roads.

Research: ICBC has found that speeding is the top contributing factor to vehicle crash fatalities in British Columbia.[20] A pedestrian hit by a vehicle travelling at 55 km/h has a 90 per cent chance of severe injury or death, at 40km/h that number drops to 50 per cent, and at 30km/h it drops to 10 per cent.

Action Areas Supported

Action Area 2

Action Area 3

Safe System Elements Supported

Safe Speeds

Safe Road Design

Safe Road Users

Safe Land Use Planning

Status in Kelowna: Continue

The City has a well-established traffic calming program and continues to respond to community requests through targeted traffic calming projects. These requests are typically submitted through the City's Service Request page, allowing residents to easily report concerns and suggest locations for review. The program follows a structured nine-step process to ensure that requests are considered thoroughly, priority locations are identified, and resources are allocated equitably across the city. The Neighbourhood Traffic Calming Program Policy 300 was updated in February 2025, reflecting the City's commitment to continuous improvement and a more equitable approach to traffic safety. To ensure the policy remains effective and relevant, it is recommended that Policy 300 be reviewed and updated every five years.

20 ICBC, Quick Statistics – Contributing Factors. Accessed at: https://public.tableau.com/app/profile/icbc/viz/QuickStatistics-Contributingfactors/Contributingfactors

Action 3.3: Develop an Arterial Speed Reduction Program

Identify opportunities for managing speeds on arterial roads

Description

While traffic calming is typically applied to local and collector streets, many traffic calming tools are not appropriate for arterial roads due to their function and traffic volumes. However, there are a number of strategies available to reduce speed and improve safety on arterial roads, including: "green wave" signal timings based on posted speed limits, speed reader boards, reduced vehicle lane widths, dedicated cycling infrastructure and wider sidewalks, intersection cameras, enhanced pavement markings, and treatments at intersections.

What the Data Tells Us

Data: Excessive speeds accounted for approximately eight per cent of fatal or injury collisions between 2018 and 2022.

Lived Experience: Survey respondents reported that they perceive speeding as one of the leading contributors to serious injuries and fatalities on Kelowna's roads.

Research: ICBC has found that speeding is the top contributing factor to vehicle crash fatalities in British Columbia.[21] A pedestrian hit by a vehicle travelling at 55 km/h has a 90 per cent chance of severe injury or death, at 40km/h that number drops to 50 per cent, and at 30km/h it drops to 10 per cent.

Action Areas Supported

Action Area 2

Action Area 3

Safe System Elements Supported

Safe Speeds

Safe Road Design

Safe Road Users

Safe Land Use Planning

Status in Kelowna: New

The City manages speed on arterial roads through several initiatives. The Subdivision, Development & Servicing Bylaw (Bylaw 7900) establishes lane width guidelines, while the Sidewalk and Bikeway Renewal Program focuses on enhancing cycling on arterial roads and narrowing lane widths.

To build on these efforts, the City should consider formalizing an Arterial Speed Reduction Program aimed at systematically identifying and implementing speed reductions on key arterial corridors. This program could support targeted interventions in areas with high pedestrian and cycling activity, poor road geometry, or collision history.

21 ICBC, Quick Statistics – Contributing Factors. Accessed at: https://public.tableau.com/app/profile/icbc/viz/QuickStatistics-Contributingfactors/Contributingfactors

Action Area 4: Create a Positive Safety Culture with our Partners

Safety culture refers to the shared belief system of a group of people, which influences road user behaviours and partner actions that impact safe mobility.

Road users include all participants in the transportation system, and their behaviours such as speed choice or distraction, directly influence crash risk and crash severity. Importantly, this definition applies to partner organizations whose decisions and policies shape road safety outcomes.

Kelowna's transportation system is a shared system. Therefore, to achieve a target of zero fatalities and serious injuries, it is necessary to create a culture that prioritizes safety, encourages safe road user behaviour, and facilitates cooperation among our partners. The way our society values transportation safety will determine the success of the plan. Speeding, aggressive driving, impaired driving, distraction, and not wearing a seat belt are among the leading causes of crashes and fatalities. Drivers can be encouraged to change these behaviours, but other individuals can also play a role with their behaviours - for example, 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 sensible laws.

Creating a safety culture and ensuring safe mobility is a shared responsibility in Kelowna, and various organizations work diligently to address road safety within their own mandates including MoTT, Kelowna RCMP and BC RCMP Highway Patrol, ICBC, Interior Health, SD23, UBC Okanagan, Okanagan College, various advocacy groups, and others. Each partner organization brings specific mandates, expertise, perspectives, and abilities to reach different segments of the public.

Our partners already have programs in place for addressing various driver behaviours and continue to enhance these efforts. These partners have come together to influence this Safe Mobility Action Plan, and their continued involvement and leadership will help to continue this progress towards our collective goal of no fatalities and serious injuries on Kelowna's roads.

This goal can be advanced by embracing the Safe System Approach, enhancing initiatives based on emerging evidence and seizing opportunities for collaboration. Partners can also unite to amplify their voice in advocating for legislation that supports safer mobility, and prepare for future challenges such as climate change, public health issues, technological change, and automation.

Eight actions have been identified to **Create a Positive Safety Culture With our Partners.**

Action 4.1: Develop a Culture of Safety Among Youth and Young Adults

Work with partners to identify safety initiatives and develop educational programs to improve safety among youth and young adults

Description

Research has found that transportation fatalities have significantly increased among youth and young adults. Children and young adults are more likely to walk, bike, or use micromobility devices. As youth gain more travel independence in their teenage years, they can gain access to lower speed motorcycles and begin obtaining driver's licenses. Commuting behaviour can be influenced during major life transitions, such as getting a driver's license in high school or when starting university or college.

What the Data Tells Us

Data: Younger drivers are the most likely to be involved in injury and fatal collisions in Kelowna. Between 2018 and 2022, drivers aged 15 to 24 accounted for 21 per cent of all fatal and injury collisions in Kelowna, despite only representing 13 per cent of licensed drivers and seven per cent of daily vehicle trips. Younger people are also more likely to be killed or injured as pedestrians or motorcyclists. People aged 15 to 24 accounted for 23 per cent of injured pedestrians, while six pedestrians aged 14 and under were hit by a car while walking between 2018 and 2022. Motorcycle drivers aged 15 to 24 accounted for 33 percent of motorcycle-involved fatalities and serious injuries.

Status in Kelowna: Continue

Several programs in Kelowna, delivered through various organizations and community partners, promote safety among youth and young adults. Initiatives such as the Clean Air and Safe Routes 4 Schools program support active and safe travel to school. The City will continue to explore opportunities for new initiatives and partnerships including bike education for school-aged children which is currently delivered by Elevation Outdoors. They deliver the Everyone Rides Grade 4-5 program in Kelowna with funding and support from the BC Active Transportation Strategy. Additionally, the RCMP offers a bike rodeo-style program for younger children as a fun and engaging safety initiative.

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Speeds

Safe Road Design

Safe Road Users

Action 4.2: Reduce Distracted Driving

Advocate for educational programs and campaigns to educate the public about distracted driving

Description

Driver inattention is the leading contributing factor in all collisions resulting in fatalities and serious injuries in Kelowna and across Canada. Distracted driving was a factor in 24 per cent of motor vehicle fatalities in Canada in 2020.

Distractions happen 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, interacting with passengers, or looking at or playing with interactive car feature systems. One of the most significant sources of distraction remains the use of electronic mobile devices for talking, listening, browsing, and texting, which are all activities proven to reduce attention and safety, regardless of whether the device is handheld.

What the Data Tells Us

Data: Driver inattention was the leading contributing factor in fatal and serious injury collisions in Kelowna between 2018 and 2022, accounting for 24 per cent of all fatal and serious injury collisions.

Lived Experience: Survey respondents told us that they felt distracted driving was one of the top five contributing factors to serious injuries in Kelowna.

Status in Kelowna: Continue

ICBC and RCMP currently lead various campaigns focused on reducing distracted driving including an annual province-wide initiative. To build on this momentum, the City of Kelowna should continue to advocate for distracted driving education and enforcement campaigns.

Action Areas Supported

Action Area 4

Safe System Elements Supported

Safe Speeds

Safe Road Users

Action 4.3: Target Speeding and Aggressive Driving

Work with partners to increase enforcement of speeding and aggressive driving

Description

Speeding and aggressive driving are significant contributors to fatal and serious injuries in Kelowna. Enforcement of speed limits and other risky behaviours can be targeted along corridor segments where a higher frequency or proportion of these serious injuries and fatalities occur. Enforcement efforts can also be focused downstream of speed display devices, where these violations are more clearly by choice and not due to driver awareness.

Action Areas Supported

Action Area 3

Action Area 4

Safe System Elements Supported

Safe Speeds

Safe Road Users

What the Data Tells Us

Data: 24 fatal and serious injury collisions (18 per cent) involved reckless driving or failure to yield/stop, and another eight per cent involved excessive speeding.

Lived Experience: Survey respondents told us that they felt speeding is the second highest contributing factor and that aggressive road user behaviours are the fourth higher contributing factor to serious injuries and fatalities on Kelowna's roads, respectively.

Status in Kelowna: Continue

In 2024, there were 3,902 traffic interactions by the RCMP (tickets and warnings), which was one third lower than 2023 but nearly double that of 2022. The RCMP is committed to working alongside the City and the Province to enhance safe mobility through education and enforcement. This includes proactive initiatives supported by public awareness campaigns to influence driver behaviour, with a focus on distracted, impaired, and aggressive driving.

In 2024, in response to recommendation from the Mayor's Task Force on Crime Reduction, the RCMP refreshed the volunteer Speed Watch Program. Since this resumed, 4,000 vehicles have been monitored, identifying 10 per cent exceeding the speed limit by 11-20 km/hr and 2 per cent speeding over 21 km/hr.

To continue improving road safety, the City will work with the RCMP to sustain and expand these efforts, including the Speed Watch program and education-based enforcement initiatives. The Kelowna Traffic Unit is also facilitating quarterly meetings with interested parties, bringing together a variety of working partners to develop and implement long-term safety measures and review identified hot spots within the community.

Action 4.4: Enforce Impaired Driving

Work with partners to understand trends in alcohol or drug-involved collisions and support educational campaigns and initiatives and increased enforcement to reduce impaired driving

Description

Driving while under the influence of alcohol or drugs greatly increases a person's risk of crashing and hurting or killing themselves or others. In BC, 64 people die every year in collisions involving impaired driving. Preventing impaired driving is essential to protecting all road users, especially people vulnerable individuals such as those who walk and cycle. Addressing this issue through enforcement education and community awareness is a key step toward building a safer transportation system.

What the Data Tells Us

Data: Drivers under the influence of drugs or alcohol was the second leading contributing factor in fatal and serious injury collisions in Kelowna between 2018 and 2022, accounting for 17 per cent of all fatal and serious injury collisions. Alcohol involvement is the leading contributing factor to single-vehicle injury collisions in Kelowna, and drugs or alcohol were the second leading contributing factor to all fatal and serious injury collisions in Kelowna.

Lived Experience: Survey respondents told us impaired driving was one of the top ten contributing factors to serious injuries and fatalities on Kelowna's roads.

Status in Kelowna: Continue

The RCMP is actively targeting high-risk driving behaviors, including impaired driving through enforcement and education initiatives. Given Kelowna's high proportion of fatal and serious injury collisions related to impaired driving, there is a strong need for expanded efforts. Engaging other partners such as Tourism Kelowna and MADD can help broaden outreach and reinforce safe driving messages. It is recommended that the City continues to advocate and support these enforcement and education initiatives to reduce impaired driving throughout the city.

Action Areas Supported

Action Area 4

Safe System Elements Supported

Safe Road Users

Action 4.5: Support Safety Improvements on Provincial Roads

Collaborate with BC MoTT on safety improvements on roads under Provincial jurisdiction, including Highway 97 and Highway 33

Description

Highway 97 and Highway 33 are roadways under Provincial jurisdiction that pass-through Kelowna. The safety of provincial highways located within the boundaries of Kelowna are outside the control and responsibility of the City of Kelowna but impact the safety of residents daily.

What the Data Tells Us

Data: Nearly 40% of all injury collisions in Kelowna occur on Provincial Highways (Highway 97 and Highway 33), underscoring the critical role these corridors play in community safety and the need for targeted interventions.

Status in Kelowna: Continue

The City of Kelowna collaborates with MoTT on various projects and continues to seek opportunities to advance road safety initiatives on Highway 97 and 33. Current initiatives led by BC MoTT and the Central Okanagan Integrated Transportation Network Program include:

- Highway 97 Left Turn Study;
- Higher capacity transit on Highway 97; and
- Updating the Highway 97 alternate bike route.

Action Areas Supported

Action Area 4

Safe System Elements Supported

Safe Road Users

Safe Road Design

The City of Kelowna has also partnered with the province on the Central Okanagan Integrated Transportation Strategy which aims to enhance safety and connectivity across the region. Key safety initiatives include:

- Developing safe and convenient walking, cycling, and transit networks; and
- Implementing transportation infrastructure and services that are accessible, safe, affordable, and comfortable for all residents.

To build on this momentum, the City should continue to explore opportunities to collaborate with BC MoTT to implement further road safety improvements. This includes advocating for in-service road safety reviews, adding shade components and sun relief along active transportation and transit networks, and identifying opportunities for targeted infrastructure upgrades.

Action 4.6: Develop Educational Campaigns and Materials

Develop educational campaigns and materials to raise awareness about Vision Zero and safe mobility and to educate the public about new, innovative, or existing treatments

Description

Innovative and engaging education and outreach efforts can help to raise awareness about Vision Zero and safe mobility. They can also provide an opportunity to educate the public about new and innovative treatments, as a lack of education and familiarity of new infrastructure can be a barrier to use. Education campaigns and materials can include:

- Online, including providing information on a dedicated project webpage with supporting resources, videos, and social media;
- Published materials can be provided on-site, handed out by staff, available in community facilities or businesses; and
- Signage and posters can be provided on-site to show examples of how to use a new active transportation facility.
- Media Releases can be completed to raise awareness and to educate the public.

Status in Kelowna: Continue

The City should continue to develop educational campaigns and materials that raise public awareness and understanding of new, innovative, and existing transportation treatments including shared micromobility devices. These efforts should leverage multiple platforms including social media, printed material, and media outreach. Education is a key tool to encourage safe behaviour among all road users. Additionally, the City can consider developing tailored educational materials to serve various audiences and populations such as seniors, migrant/seasonal workers, immigrants, and tourists, to ensure messaging is relevant, accessible, and inclusive.

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Speeds

Safe Road Design

Safe Road Users

Action 4.7: Develop a Vision Zero Working Group

Develop a Vision Zero Working Group to advance road safety initiatives with community partners

Description

Establishing a Vision Zero Working Group is a key step in advancing road safety initiatives and maintaining momentum towards the City's Vision Zero goal. Working groups bring diverse expertise and perspectives, allowing for coordinated action and effective problem solving. Potential members could include Kelowna RCMP, BC RCMP Highway Patrol, Community Safety, Transportation Operations and Maintenance, Integrated Transportation, BC MoTT, Interior Health, and the School District, among others.

Status in Kelowna: New

The City currently does not have a formal Vision Zero Working group in place. It is recommended that the City establishes a dedicated working group to lead and coordinate road safety efforts. This group would support collaboration across organizations, guide Vision Zero actions, and help identify safety issues and opportunities for improvement. Formalizing this structure would strengthen Kelowna's commitment to safe mobility and ensure progress towards Vision Zero objectives.

Action Areas Supported

Action Area 4

Safe System Elements Supported

Safe Road Design

Safe Road Users

Action 4.8: Work with Partners to Improve Collision Data

Work with partners to improve how collision data is collected, analyzed, and reported

Description

Accurate and consistent data is essential for tracking progress toward Vision Zero and supporting road safety initiatives. Currently, data from ICBC, RCMP, and Interior Health has some gaps and inconsistencies, limiting the City's ability to analyze serious and fatal collisions effectively. Enhancing both the RCMP and ICBC's data collection will improve reliability to support better decision-making and help identify safety priorities.

Key improvements may include:

- Improved collision reporting. Enhancements to the RCMP's collision reporting process will provide more consistent and reliable data on fatal and serious injury crashes, enabling more accurate and comprehensive analysis. Enhancements may include:
  - » More precise location data (e.g., GPS coordinates);
  - » Improved crash descriptors aligning ICBC's categories more closely with police reporting (e.g. distinguishing left-turns vs head-in collisions);and
  - » Expanded reporting on micromobility crashes.
- Better data on distracted and impaired driving. Currently, the RCMP's collision reporting process captures some information; however, there are opportunities for improvement. These include distinguishing the types of distractions (e.g., phone use vs other in-vehicle distractions) and increasing data collection on impaired driving. Note: RCMP feedback indicates distracted driving data is difficult to report due to lack of witnesses and drivers' reluctance to self-report.

Action Areas Supported

Action Area 2

Action Area 4

Safe System Elements Supported

Safe Road Users

Safe Road Design

- Improve data on collisions involving active transportation. Pedestrians, cyclists, and micromobility collisions are currently under-represented in datasets. The City should work with Interior Health and other partners to collect crash data for collisions involving active transportation.

Additional efforts could focus on:

- Aligning datasets between ICBC, RCMP, and Interior Health.
- Exploring alternative methods to capture distracted driving data.
- Improving ICBC data quality to differentiate major and minor injuries.
- Leveraging trauma data from Interior Helat for a clearer picture of crash severity.

Status in Kelowna: Continue

Kelowna relies heavily on ICBC data for transportation planning, which lacks detail on injury severity. The City should work with partners to expand crash data types and improve reporting methods. The Kelowna RCMP will be migrating to a digital collision reporting system, which will streamline data collection and improve sharing with client groups such as ICBC and the City. Continued collaboration is recommended to enhance data quality, fill gaps in active transportation incident reporting, and support more effective data analysis.

5 Implementation

Vision Zero is a priority for Kelowna and the Safe Mobility Action Plan represents the City's commitment to address key safety issues with the goal of eliminating traffic fatalities and serious injuries over time.

Effective and timely implementation of the actions in this plan will require focused effort, partnerships, and collaboration. It will also require support from Kelowna City Council and input from the residents of Kelowna. Other steps essential to implementation of the Safe Mobility Action Plan include securing funding and developing a Vision Zero Working Group as identified in Action 4.7. Project prioritization will be guided by this Action Plan, in coordination with other transportation plans and initiatives. This process will emphasize equitable distribution of transportation resources, considering project scope and budget opportunities to algin with concurrent infrastructure improvements, and proximity to key community destinations. These factors will inform a strategic and inclusive approach to implementing safe mobility improvements.

How will we implement the plan?

Realizing the vision of the Safe Mobility Action Plan will be an ambitious pursuit that will require a dedicated approach to implementation.

An implementation plan has been developed for each of the 29 actions identifying lead responsibilities, relative benefits and costs, overall priority, and progress to date. While all actions are important the plan provides guidance for prioritizing efforts over the next decade and beyond.

Funding and Partnerships

Implementation the Safe Mobility Action Plan will require dedicated funding, staff time for capital improvements, support for new programs, and strong collaborations with internal and external partners.

Action	Status	Description	Primary Responsibility	Relative Benefits	Relative Cost	Priority	Progress
Action Area 1: Build Safe Intersections for All							
Action 1.1: Conduct Advanced Network Screening	Enhance	Enhance the City's current network screening approach to prioritize locations with a higher risk of serious injuries and fatalities	Primary / Transportation Engineering	High	Low	High	Underway
Action 1.2: Pilot Safe System Audits	Enhance	Enhance the City's current approach to conducting Road Safety Audits and In-service Road Safety Reviews following a Safe System-based approach	Primary / Transportation Engineering	High	Low	High	Underway
Action 1.3: Implement Left-Turn Protections	Enhance	Continue identifying opportunities to enhance left turn protections or left turn calming	Primary / Transportation Engineering	High	Low	High	Underway
Action 1.4: Implement Right-Turn Treatments	Enhance	Continue to identify opportunities to improve safety involving right-turning vehicles	Primary / Transportation Engineering	High	Moderate	High	Underway
Action 1.5: Install Roundabouts at High-Risk Intersections	Enhance	Install roundabout at high-risk intersection as a priority safety measure, ensuring designs accommodate people with disabilities, pedestrians, and cyclists	Primary / Transportation Engineering	High	High	High	Underway
Action 1.6: Advocate to Expand Intersection Safety Camera Program	Continue	Advocate to expand the Intersection Safety Camera Program in Kelowna, including additional locations	Supporting / Strategic Transportation Planning	High	Low	High	Underway
Action 1.7: Implement High Friction Surface Treatment	New	Implement High Friction Surface Treatment at intersection approaches that have a high prevalence of rear-end collisions and/or collisions in wet conditions	Primary / Transportation Engineering	Moderate	Moderate	Med	Not Started
Action 1.8: Reduce Conflict Points at Minor Accesses	Continue	Use access management tools to reduce conflict points at minor access points such as driveways and minor-cross streets	Primary / Transportation Engineering	Moderate	Moderate	Med	Underway

Action	Status	Description	Primary Responsibility	Relative Benefits	Relative Cost	Priority	Progress
Action Area 2: Protect Vulnerable Road Users							
Action 2.1: Apply an Equity Lens to Prioritizing Safety Improvements	Enhance	Engage with equity-deserving groups to understand their barriers and challenges and ensure equity is considered in the City's decision-making process when prioritizing safety improvements	Primary / Strategic Transportation	High	Low	High	Underway
Action 2.2: Prioritize Mode Shift to Transit	Continue	Continue investing in transit services and facilities to increase transit use as the safest form of travel	Primary / Transit and Programs	High	High	High	Underway
Action 2.3: Fill in Sidewalk Gaps on Major Roads	Continue	Continue implementing sidewalks to fill in gaps in the sidewalk network on major roads	Primary / Transportation Engineering	Moderate	High	Med	Underway
Action 2.4: Implement the All Ages and Abilities Bike Network	Continue	Continue implementing the All Ages and Abilities bike network, including new facilities, and spot improvements	Primary / Transportation Engineering	High	High	High	Underway
Action 2.5: Monitor Safety of Micromobility Devices	Continue	Continue to support the increase of micromobility devices, while working with partners to monitor trends and identify opportunities to enhance safety of micromobility users	Primary / Strategic Transportation Planning	Moderate	Low	Low	Underway
Action 2.6: Implement Leading Pedestrian and Bicycle Intervals	Continue	Expand City-Wide installations of Leading Pedestrian and Bicycle Intervals to give people walking and biking a head start	Primary / Transportation Engineering	High	Low	High	Underway
Action 2.7: Proactively Reduce Pedestrian and Cycling Injuries and Fatalities That Do Not Involve Motor Vehicles	Continue	Work with partners to develop a better understanding of pedestrian and cycling injuries and fatalities in Kelowna that do not involve motor vehicles and identify safety improvements	Supporting / Strategic Transportation Planning	Moderate	Low	Med	Underway
Action 2.8: Improve Motorcycle Safety Awareness and Education	Continue	Work with partners to improve motorcycle safety through improved data collection and analysis, awareness, and education	Supporting / Strategic Transportation Planning	Low	Moderate	Low	Underway

Action	Status	Description	Primary Responsibility	Relative Benefits	Relative Cost	Priority	Progress
Action 2.9: Conduct Gap Analysis of Uncontrolled and Half-signal Crosswalks on Major Roads	Continue	Conduct a gap analysis of crosswalks on major roads and identify potential safety issues	Primary / Transportation Engineering	Moderate	Moderate	High	Underway
Action 2.10: Enhance School Safety	Continue	Continue to support the Clean Air and Safe Routes 4 School to explore opportunities to improve safety of school zones	Primary / Transportation Engineering	Moderate	Low	Med	Underway

Action	Status	Description	Primary Responsibility	Relative Benefits	Relative Cost	Priority	Progress
Action Area 3: Design for Safe Speeds							
Action 3.1: Conduct Pilot Speed Limit Reduction Project	New	Pilot area-specific speed limit reductions to assess safety benefits	Primary / Strategic Transportation Planning	High	Low	High	Not Started
Action 3.2: Advance Neighbourhood Traffic Calming	Continue	Continue to implement neighbourhood traffic calming based on the Traffic Calming Policy to reduce speeds on residential streets	Primary / Transportation Engineering	Moderate	Moderate	Med	Underway
Action 3.3: Develop an Arterial Speed Reduction Program	New	Identify opportunities for managing speeds on arterial roads	Primary / Strategic Transportation Planning	Moderate	Low	High	Not Started

Action	Status	Description	Primary Responsibility	Relative Benefits	Relative Cost	Priority	Progress
Action Area 4: Create a Positive Safety Culture with our Partners							
Action 4.1: Develop a Culture of Safety Among Youth and Young Adults	Continue	Work with partners to identify safety initiatives and develop educational programs to improve safety among youth and young adults	Supporting / Strategic Transportation Planning	Moderate	Moderate	Med	Underway
Action 4.2: Reduce Distracted Driving	Continue	Advocate for educational programs and campaigns to educate the public about distracted driving	Supporting / Strategic Transportation Planning	Moderate	Moderate	Med	Underway
Action 4.3: Target Speeding and Aggressive Driving	Continue	Work with partners to increase enforcement of speeding and aggressive driving	Supporting / Strategic Transportation Planning	High	Moderate	High	Underway
Action 4.4: Enforce Impaired Driving	Continue	Work with partners to understand trends in alcohol or drug-involved collisions and support educational campaigns and initiatives and increased enforcement to reduce impaired driving	Supporting / Strategic Transportation Planning	High	Moderate	High	Underway
Action 4.5: Support Safety Improvements on Provincial Roads	Continue	Collaborate with BC MoTT on safety improvements on roads under Provincial jurisdiction, including Highway 97 and Highway 33	Supporting / Transportation Engineering	High	High	High	Underway
Action 4.6: Develop Educational Campaigns and Materials	Continue	Develop educational campaigns and materials to raise awareness about Vision Zero and safe mobility and to educate the public about new, innovative, or existing treatments	Primary / Strategic Transportation Planning	Moderate	Moderate	Med	Underway
Action 4.7: Develop a Vision Zero Working Group	New	Develop a Vision Zero Working Group to advance road safety initiatives with community partners	Primary / Strategic Transportation Planning	High	Low	High	Not Started
Action 4.8: Work with Partners to Improve Collision Data	Continue	Work with partners to improve how collision data is collected, analyzed, and reported	Primary / Strategic Transportation Planning	Med	Low	High	Underway

Monitoring

Kelowna is committed to implementing the Safe Mobility Action Plan over a 10-year timeframe. The following steps will be taken to monitor progress with implementation.

Annual Monitoring

Kelowna's progress on the Safe Mobility Action Plan will be monitored annually, with a focus on tracking advancements towards zero traffic fatalities and serious injuries.

Key performance indicators can include:

- Overall performance metrics:
  - » Annual fatal and serious injury collisions
  - » Share of fatal and serious collisions on the Priority Investigation Network as outlined in Action 1.1
  - » Annual fatal and serious injury collisions by mode: cyclists, pedestrians, motorcyclists
- Action Area 1: Build Safe Intersections For All
  - » %=Per cent of Intersection treatments improvements completed on the Priority Investigation Network (e.g. roundabouts, protected signal phasing, added signals, smart right channels)
- Action Area 2: Protect Vulnerable Road Users
  - » Annual transit trips
  - » Proportion of major roads with sidewalks on one or both sides
  - » Length of All Ages and Abilities bike infrastructure
  - » Per cent of traffic signals on the Priority Investigation Network with leading pedestrian and/or bicycle intervals
  - » Number of new or upgraded crosswalks implemented on the Priority Investigation Network.
- Action Area 3: Design for Safe Speeds
  - » Per cent of corridors on the Priority Investigation Network that have had treatments done
  - » Per cent of corridors on the Priority Investigation Network with lowered speed limits
- Action Area 4: Create a Positive Safety Culture with our Partners
  - » Summary of safety initiatives, educational programs, and road safety improvements delivered in collaboration with partners or under provincially managed roads

Progress Reporting

A five-year review of the Safe Mobility Action Plan will be undertaken to identify completed actions, prioritize remaining actions, and assess the overall success and impact of progress to-date. Updates to the Safe Mobility Action Plan and course corrections may be pursued to ensure Kelowna remains committed to completing the Safe Mobility Action Plan action items within the next 10 years, while making meaningful progress toward achieving the Vision Zero target.

Appendices

Appendix A: Acronyms

The following acronyms and abbreviations are used throughout this document that may not be readily understood by all readers.

AAA	All Ages and Abilities
ATC	Active Transportation Corridor
BCRSS	British Columbia's Road Safety Strategy
CRSS	Canada's Road Safety Strategy
ICBC	Insurance Corporation of British Columbia
KSI	Killed or Seriously Injured
MoTT	British Columbia Ministry of Transportation and Transit
OCP	Official Community Plan
RRFB	Rectangular Rapid Flashing Beacon
SMAP	Safe Mobility Action Plan
TAS	Traffic Accident System
TAC	Transportation Association of Canada
TMP	Transportation Master Plan

Appendix B: Terminology

The following terminology has been defined below as it is referenced throughout the document throughout this document and may not be readily understood by all readers.

Accessibility	The design of products, devices, services, vehicles, and environments to be usable by all people, including people with physical, cognitive, or other disabilities.
Active Transportation	Any active trip made from one place to another, whether to work, school, the store, or to visit with friends and family. Active Transportation includes any form of human powered transportation. Walking and cycling are the most popular and well-known forms of active transportation. However, the definition extends much further than that to include skateboarding, wheeling, riding a horse, in-line skating, using a mobility aid, and riding the bus.
All Ages and Abilities (AAA)	Active transportation facilities that are considered safe and comfortable for people of all ages and abilities. A range of bicycle facility types may be AAA facilities, depending on their design and the surrounding context.
Micromobility	The range of small, low-speed vehicles and conveyances that can be electric or human-powered, and either privately owned or part of shared fleets.
Rectangular Rapid Flashing Beacon (RRFB)	Two rectangular shaped yellow indicators, each with a light emitting diode (LED) light that flash at alternating frequencies when activated. RRFBs are installed in tandem with crosswalk signs at uncontrolled, marked crosswalks to enhance pedestrian conspicuity and increase driver awareness.
Safe System	A framework to guide safe mobility policies and programs that views safe road networks as holistic systems consisting of six elements – Safe Vehicles, Safe Roads, Safe Road Users, Safe Speeds, Safe Land Use Planning, and Post-Crash Care.
Vision Zero	Eliminating all traffic injuries and fatalities while ensuring safe, healthy, and equitable mobility for all road users.
Vulnerable Road User	Individual at greater risk in the transportation system due to lack of physical protection or social factors. This includes anyone outside of a motor vehicle such as pedestrians, cyclists, people using mobility aids , motorcyclists, and those facing systemic barriers such as low income or new Canadians.

Appendix C: Community Engagement Findings

Safe Mobility Action Plan

Engagement Summary – July 2024

Project Overview

Transportation-related collisions have significant impacts on people's lives, especially those caused by fatalities and injuries. In 2021, there were over 4,600 collisions in Kelowna (based on ICBC data). Approximately one-third of these resulted in a fatality or any type of injury.

The Safe Mobility Action Plan has been identified as a recommended action through the 2040 Transportation Master Plan (TMP), where staff heard that transportation safety is a top priority for residents.

The Safe Mobility Action Plan aims to reduce transportation-related fatalities and serious injuries on Kelowna's transportation network. The Plan will recognize that humans make mistakes, and that the transportation system should be designed to forgive errors and prevent them from resulting in more severe consequences, such as someone being killed or seriously injured.

Engagement Overview

This engagement summary compiles the community engagement input received during the Spring 2024 engagement period for the Safe Mobility Action Plan. The input collected through this engagement and technical work will inform the draft Safe Mobility Action Plan. Focus areas, targets and actions will be identified and used to develop the draft Safe Mobility Action plan which will then go back to the community for further public engagement to determine if the plan suits the needs of the community.

The goal of the public engagement was to inform residents and interested parties of the project, as well as about road safety and transportation-related issues in Kelowna. People were asked to share their experiences and perceived safety issues, opportunities and challenges via an online survey hosted on Get Involved. A map was also available for participants to place a marker based on a category (biking, road or sidewalk, speeds etc.) so people could describe why they feel unsafe in that area.

To provide the opportunity for in-person feedback, an open house was hosted on Tuesday, May 28 at the Parkinson Recreation Centre. Further to the engagement process, a community partners workshop was held. Representatives from the following organizations and programs participated in the community partners workshop: City of Kelowna, Safe Routes 4 Schools, Regional District of Central Okanagan, Interior Health, School District #23, Ministry of Transportation and Infrastructure (Central Okanagan Integrated Transportation Network), Interior Health, Insurance Corporation of British Columbia, Kelowna Fire Department, Kelowna RCMP, BC RCMP Highway Patrol, Kelowna Chamber of Commerce, Okanagan College, UBC Okanagan, Kelowna Airport, and Tourism Kelowna.

Promotion

While this engagement opportunity was available city wide, the strategies used to promote it likely appealed more to residents 24-69 years old with a household income of more than $60,000 (based on the demographics reported by the outlets used.)

A news release was picked up by every major news source in Kelowna including Castanet and Kelowna Now. Digital advertising efforts, Facebook, Instagram and Google ads, were viewed more than 190,000 times and received more than 1,800 clicks to the project page. Social media ads also collected more than 260 comments discussing the topic of safety in Kelowna.

Direct emails were sent to relevant groups who have an existing affinity with the topic including Road Safety BC, the Community Against Preventable Injury and the BC trucking Association, among others, to encourage them to share with their audiences.

Survey Results

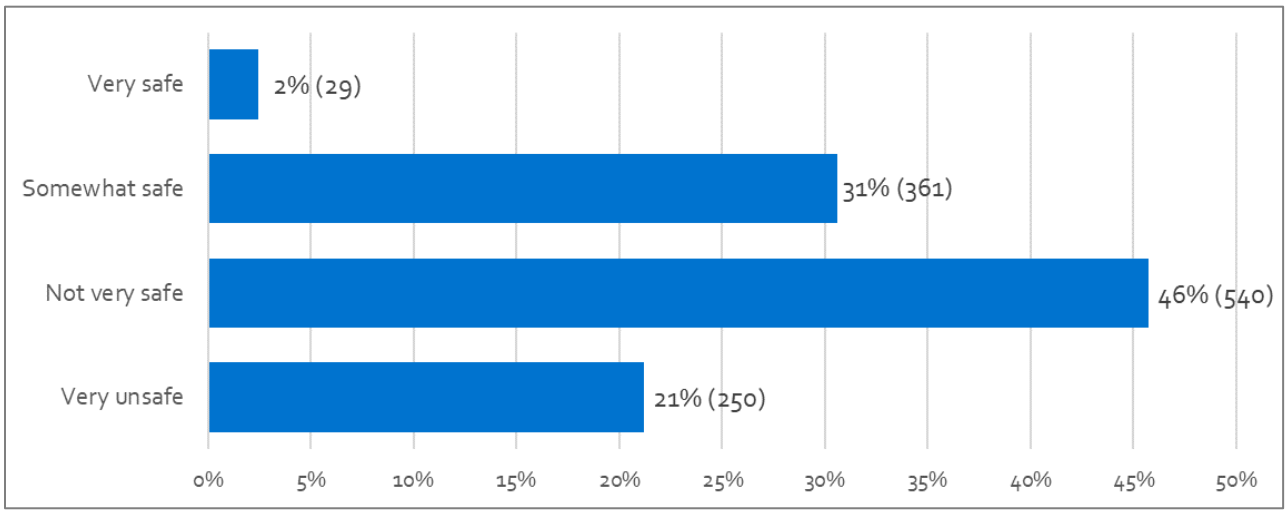
Results from open surveys such as this are a collection of opinions and perceptions from interested or potentially affected residents, and not a statistically random sample of all Kelowna residents. This report contains results from the open survey. Due to the opt-in and open method, results are qualitative in nature and cannot be said to represent the views of all Kelowna citizens.

There were more than 5,600 page views and more than 1,300 survey responses and map pins placed. While the percentage of people who took part in an engagement activity was 40 per cent of the total page visits, the page views can be considered as part of the "engaged population" as they were aware about the Safe Mobility Action Plan via the site.

Perceptions of safety

When asked how safe respondents feel from collisions on Kelowna streets, the most common response (46 per cent) was 'not very safe' while the least common response was 'very safe' at two per cent.

Overall, 33 per cent of respondents stated feeling 'somewhat safe' or 'very safe' from collisions on Kelowna streets, while 67 per cent stated feeling 'not very safe' or 'very unsafe.



Perception of safety from collisions

Respondents were asked what would make them feel safer from collisions when travelling around. Comments have been categorized into common themes based on what would make people feel safer from collisions and can be found below, with the largest words being the most mentioned.

The highest number of mentions highlighted the need for enforcement (372). These comments related primarily to the need for red-light running and speed enforcement, with a smaller amount focused on cyclist rules and distracted driving enforcement. Other high responses included safer bike infrastructure (primarily protected bike lanes) (170) and the need for more protected left turn signals (155).

Additional responses included intersection upgrades (e.g. improved visibility), signal timings (e.g. allowing more yellow and red time to clear the intersection), and more road safety education for all travel modes.

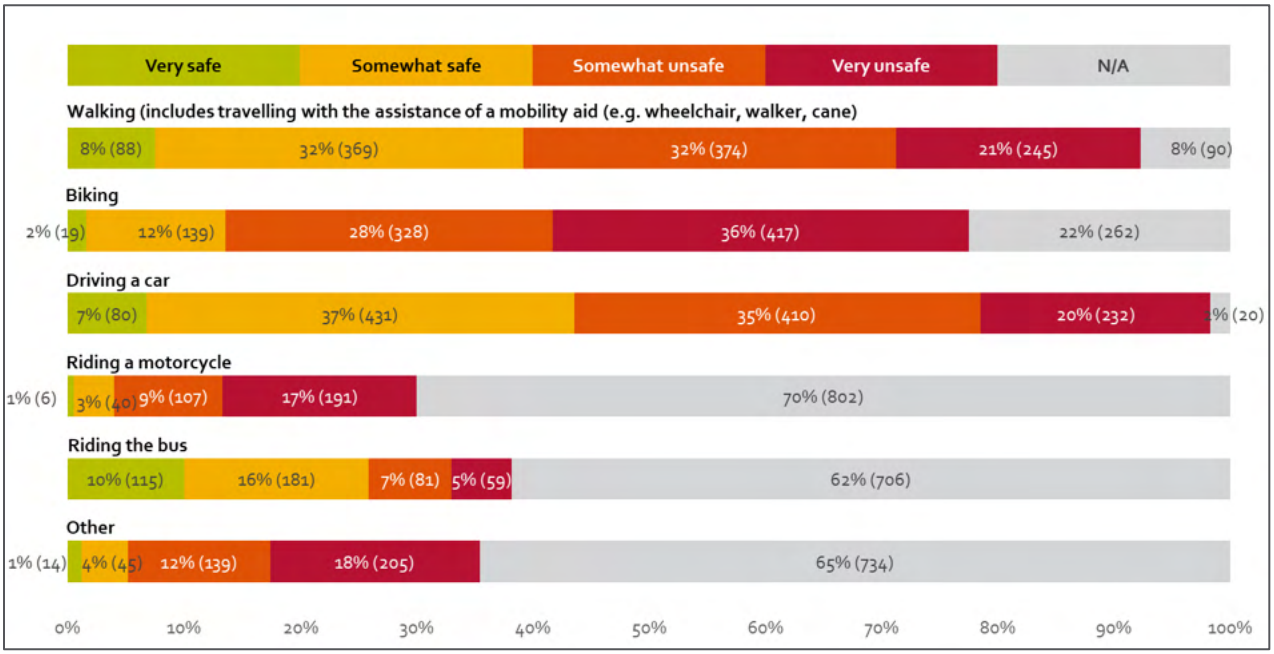
Comments that did not fall into one of the categories in the above themes included a highway bypass of the city, less intersections/signals, more driver awareness, more use of vehicle turning signals, more driving tests for seniors, vehicle overpasses, a public train, removing the HOV lane on Highway 97 or shifting it to the left-hand side, and enforcing legal sidewalk use.

It is important to the plan, to also understand participants' perception of safety when using different travel modes (walking, biking, driving etc.)

Overall, survey respondents who indicated they used the specified travel mode at least "some of the time" indicated that they felt safest while riding the bus, driving a car, and walking.

When respondents were asked about perceptions of safety of the different modes of transportation, riding the bus received the most 'very safe' responses. Driving a car and walking received the highest number of 'very safe" and 'somewhat safe" responses. Driving, walking, and riding the bus also received the highest proportion of 'very safe' and 'somewhat safe' responses. Riding a motorcycle, biking and 'other' received the highest proportion of combined "very unsafe" and "somewhat unsafe responses".

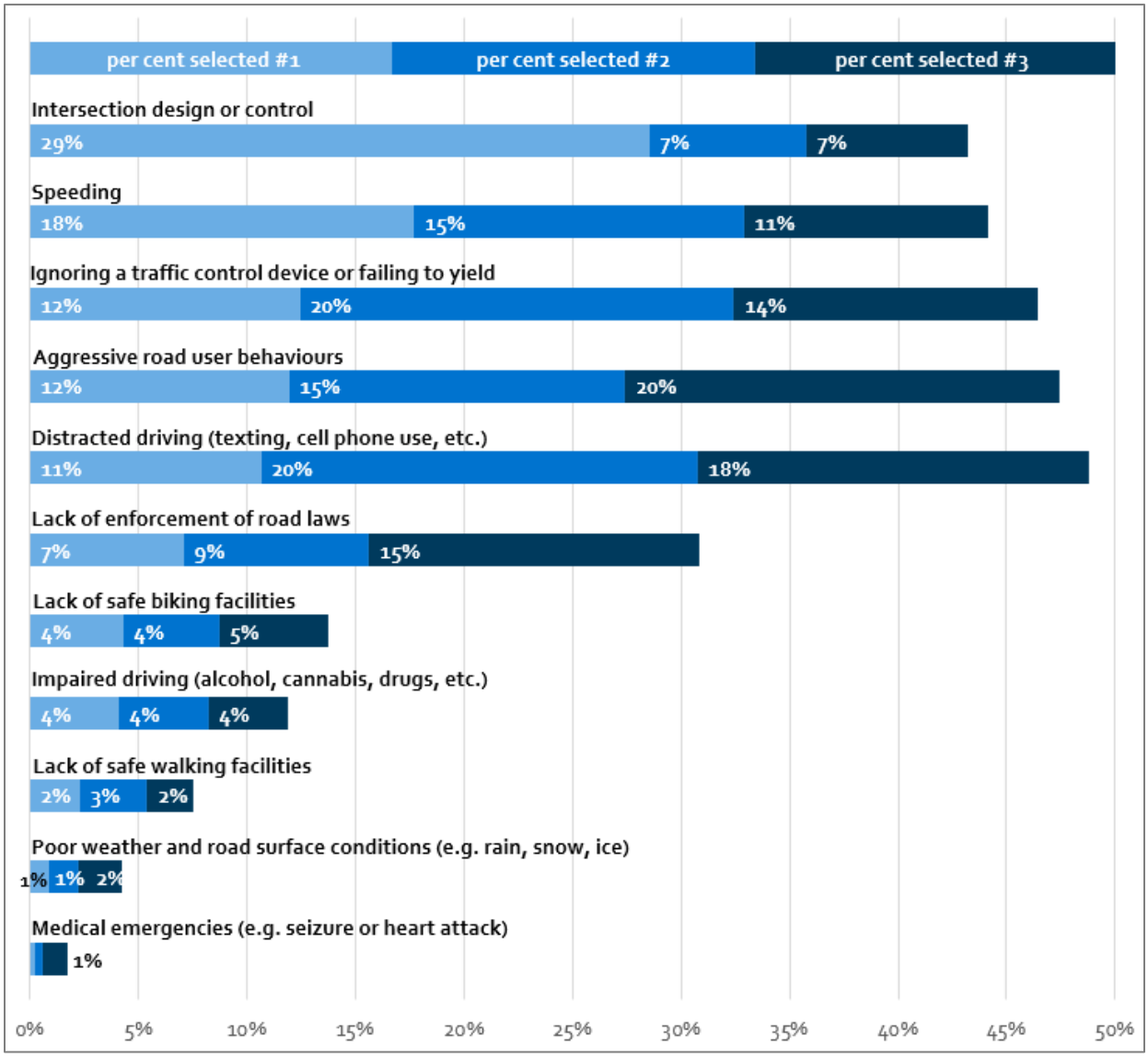
- Riding the bus, driving, and walking received the highest proportion of 'very safe' plus 'somewhat safe' responses.
- Riding a motorcycle, other, and biking received the highest proportion of 'somewhat unsafe' plus 'very unsafe' responses.



Perception regarding safety and modes of travel

Perception of contributors to serious injuries

Respondents were asked what they felt were the top three contributors to serious injuries and deaths on Kelowna roads. "Intersection design and control", "speeding" and "ignoring a traffic control device of failing to yield", "ignoring a traffic control device or failing to yield", "aggressive road user behaviours", and "distracted driving" were selected as the top five perceived contributor to serious injuries and deaths overall and were also the top five selected as a number one perceived contributor. The contributors chosen the least included "lack of safe walking facilities", "poor weather and road surface conditions" and "medical emergencies".

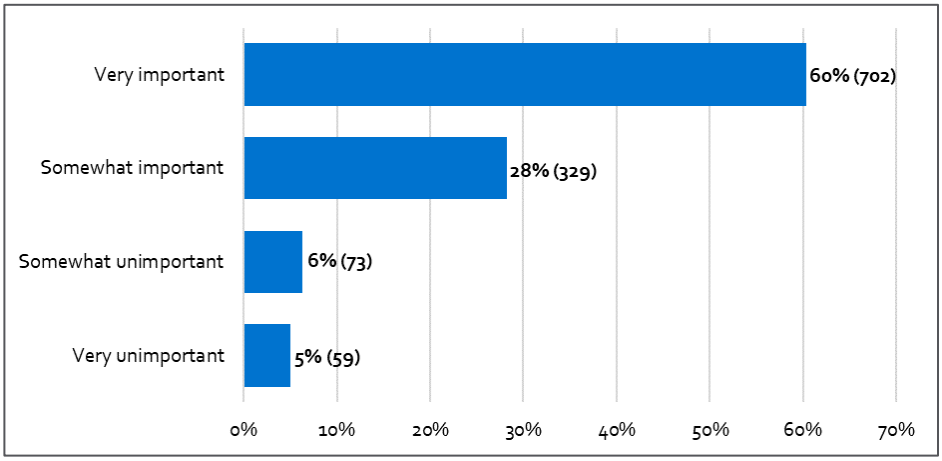


Perception regarding contributors to serious injuries

Vision and guiding principles

Vision Zero, from the Transportation Association of Canada, is a philosophy that road fatalities and serious injuries can and should be eliminated while providing safe, healthy and equitable mobility for all road users.

Of the 1,163 responses, 60 per cent of respondents felt that it is "very important" for Kelowna to aim for Vision Zero, with an additional 28 per cent indicating that it is "somewhat important."



- 3 out of 5 respondents felt that it is very important for Kelowna to aim for Vision Zero.

Survey respondents were shown the following draft vision, which was developed through workshops with various City of Kelowna departments and key partners.

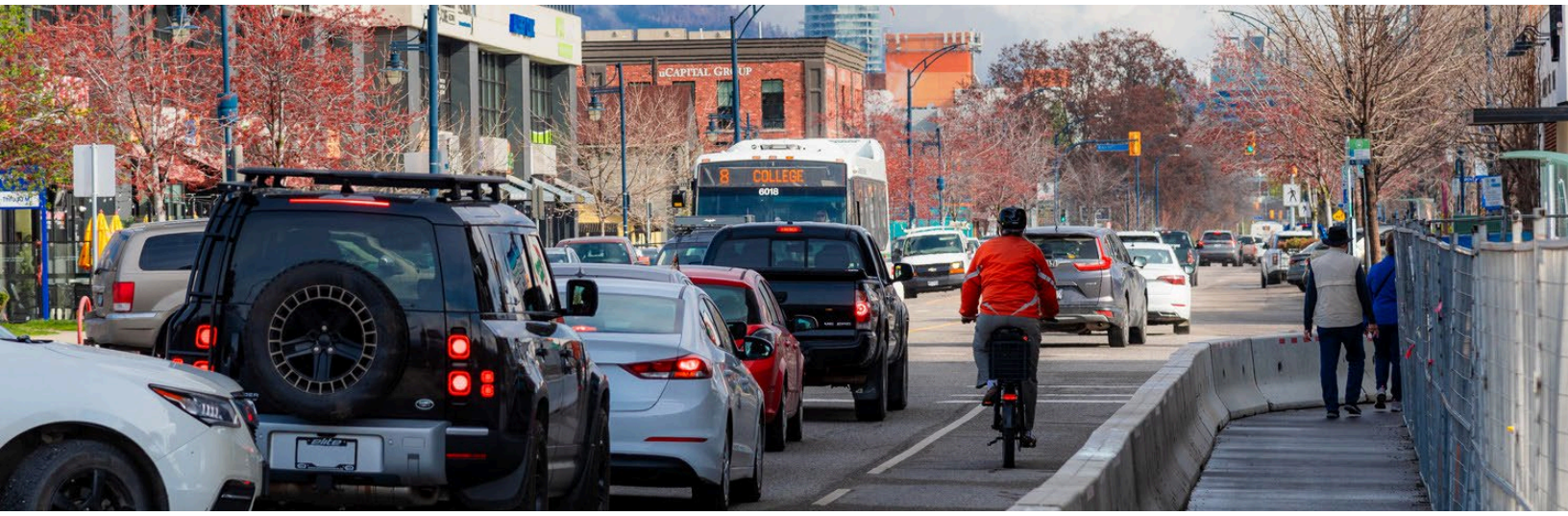
"Kelowna is a community that values healthy and safe mobility for all, regardless of how we get around. In alignment with Vision Zero, we work together to prevent deaths and serious injuries in our transportation system – so that everyone can get there safely."

Over half showed support for the vision with 40 per cent demonstrating "neutral support".

- Approximately 1 in 3 responses related to wanting to see more immediate action

There were 99 comments and of those 99, 28 written comments related to wanting to see more immediate action, 16 respondents felt that the vision is unrealistic, 13 responses related to direct text change suggestions in the vision statement and 11 respondents commented that more emphasis should be placed on active and public transport. Other comments related to wanting to see an emphasis on enforcement, accessibility, air pollution, quality of life, and equity. **The top three topics mentioned relating to updating the vision statement were:**

- Immediate action
- Vision unrealistic
- Adjustments to vision language ("who is the *we* in the statement?" for example)



Survey respondents were shown the following guiding principles, which were developed by the project team and supported by the working group workshops.

Collaborate & partner	**Base all decisions on evidence**
Protect people walking, biking, and rolling	**Utilize technology and innovation**
Incorporate equity	**Secure and maintain sustainable funding**
Take a proactive approach	**Pursue culture change**

A total of 67 suggestions were received for the guiding principles. **The most common themes related to:**

- Including enforcement as a guiding principle
- Updating language in the existing principles
- Reducing the number of principles and simplifying the language in the descriptions

The remaining comments surrounded treating all travel modes equally, wanting to see immediate action, considering traffic throughout efficiency versus the effectiveness of different safety measures, climate change, accessibility, quality of life, and holding the City accountable for implementation.

Existing Conditions Mapping Exercise

In addition to the online survey, an online mapping exercise was provided to get input from participants about what makes them feel safe or unsafe on Kelowna streets using a location-based method.

Of the 175 markers pinned, 163 comments related to feeling unsafe, while 12 comments related to feeling safe.

Perceptions of Feeling Unsafe

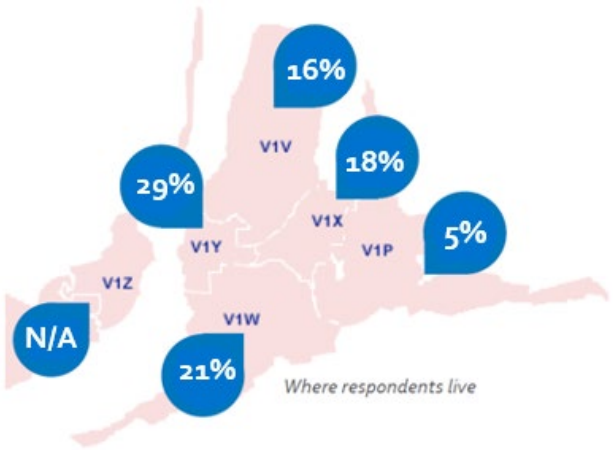
Of the 163 comments related to feeling unsafe, general themes were collected. The most common responses for feeling unsafe included an incomplete bike network (30 mentions), unsafe intersections (27 mentions), unsafe speeds (23 mentions), and unsafe crossings (23 mentions). Other comments surrounded lack of sidewalks, lack of crossings, safety concerns with existing protected bike lanes, and aggressive driving among others.

Perceptions of Feeling Safe

Of the 12 comments related to feeling safe, half of the comments surrounded feeling safer when using a protected bike lane or multi-use pathway. The remaining comments included feeling safer when road closures or specific intersection improvements for people walking or biking (such as giving the person crossing the road a headstart) were provided.

Demographics

The majority of survey respondents were between 46 and 69 years old, aligning to the average population in Kelowna in this age bracket. However, the respondents of this survey were of a higher income bracket than the majority of Kelowna.



Next Steps

In addition to this summary, written comments will be carried through this project and others for consideration. Industry best practices, current state evaluation, technical planning and input summarized in this report will inform a draft Safe Mobility Action Plan and be presented to Council.

Appendix D: Action Delivery Framework

Action Area 1: Build Safe Intersections for All

Action 1.1: Conduct Advanced Network Screening

Enhance the City's current network screening approach to prioritize locations with a higher risk of serious injuries and fatalities

Delivery Approach

1. Adopt and implement a risk-based advanced network screening process that prioritizes locations with the highest potential to reduce fatal and serious injury collisions and use it to inform a High-Risk Safety Improvement Plan guiding capital investment. Work is underway to integrate this process into planning and capital projects.
2. Review and compare screening methods and share key findings with partners. Best practice is to conduct screening approximately every five years, while allowing flexibility based on local needs and available resources.

Action 1.2: Conduct Safe System Audits

Enhance the City's current approach to conducting Road Safety Audits and In-service Road Safety Reviews following a Safe System-based approach

Delivery Approach

1. Identify and implement fully protected or protected-permissive left turn phasing in locations with higher collision rates, high active transportation activity, or where challenging geometries exist. This can include locations with high speed limits (e.g. above 50km/h) or where vehicles are required to cross multiple lanes of traffic.
2. Integrate enhanced left-turn protections into capital projects in areas with high left turn collision rates, using outputs from the Advanced Network Screening outputs. Prioritize locations with high-speed left turns, significant active transportation activity, or known collision history due to left turning vehicles.
3. Monitor the performance of implemented measures where feasible and adjust approaches as needed to maximize safety benefits. Share performance results and incorporate lessons learned into future design decisions.

.

Action 1.3: Implement Left-Turn Protections

Continue identifying opportunities to enhance left turn protections or left turn calming

Delivery Approach

1. Identify and implement fully protected or protected-permissive left turn phasing in locations with higher collision rates, high active transportation activity, or where challenging geometries exist. This can include locations with high speed limits (e.g. above 50km/h) or where vehicles are required to cross multiple lanes of traffic..
2. Integrate enhanced left-turn protections into capital projects in areas with high left turn collision rates, using outputs from the Advanced Network Screening outputs.
3. Incorporate left-turn calming in intersection design processes based on outputs from Advance Network Screening. Prioritize locations with high-speed left turns, significant active transportation activity, or known collision history due to left turning vehicles.
4. Monitor the performance of implemented measures where feasible and adjust approaches as needed to maximize safety benefits. Share performance results and incorporate lessons learned into future design decisions.

Action 1.4: Implement Right-Turn Treatments

Continue to identify opportunities to improve safety involving right-turning vehicles

Delivery Approach

1. Identify locations of all conventional channelized right turn lanes and review collision history at those locations, and prioritize locations for removal of channelized right turn lanes or converting them to "smart" channels, focusing on locations with high collision rates, high vehicle turning speeds, active transportation volumes, and poor geometry.
2. Develop policy or guidelines outlining when to implement right-turn on red restrictions.
3. Continue to expand the use of curb extensions at intersections with high collision rates.
4. Update Bylaw 7900 to include fully protected intersections designs as a standard for capital projects.

Action 1.5: Install Roundabouts at High-Risk Intersections

Continue to install roundabouts at high-risk intersections as a priority safety measure, ensuring designs accommodate people with disabilities, pedestrians, and cyclists

Delivery Approach

1. Strengthen roundabout design guidance by integrating accessibility and active transportation considerations with design guidance aligned from national guidelines.
2. Apply existing roundabout assessment tool – which includes cost-benefit analysis and collision reduction potential, to identify and prioritize intersection with high collision risk, high turn volumes, or where signalized intersection would be less effective.

Action 1.6: Advocate to Expand Intersection Safety Camera Program

Advocate to expand the Intersection Safety Camera Program in Kelowna, including additional locations

Delivery Approach

1. Advocate for automated enforcement program expansion and municipal participation in automated enforcement, including more locations for speed enforcement, and explore opportunities to reinvest revenue into municipal road safety initiatives.

Action 1.7:Apply High Friction Surface Treatments

Implement High Friction Surface Treatment at intersection approaches that have a high prevalence of rear-end collisions and/or collisions in wet conditions

Delivery Approach

1. Implement High Friction Surface Treatment (HFST) at select intersection approaches on City or MOTT roads with a history of rear-end or wet-weather related collisions. Treatments should be incorporated through existing capital improvement projects to support efficient delivery. Locations should be prioritized using collision data and engineering judgment.

Action 1.8: Reduce Conflict Points at Minor Accesses

Use access management tools to reduce conflict points at minor access points such as driveways and minor-cross streets

Delivery Approach

1. Develop a formal decision-making framework to consistently identify and prioritize access management treatments along arterial roads. Treatments may range from time-based turn restrictions to full access closures and rerouting to signalized intersections. Apply this framework to road upgrades, complete street projects, and corridors with high multimodal activity or collision history.
2. Coordinate with Development Planning to reduce access frequency over time. Support the consolidation and relocation of driveways and unsignalized accesses.

Action Area 2: Protect Vulnerable Road Users

Action 2.1: Apply an Equity Lens to Prioritizing Safety Improvements

Engage with equity-deserving groups to understand their barriers and challenges and ensure equity is considered in the City's decision-making process when prioritizing safety improvements

Delivery Approach

1. Strengthen project level engagement with equity-deserving groups to understand their barriers and challenges through capital projects. This is done by applying inclusive consultation practices during planning and design stages.
2. Complete the TAS to improve transportation equity.
3. Integrate road safety and equity scoring into project prioritization for TMP and PBMP updates and capital planning. Base criteria on demographics data and accessibility gaps in underserved areas.

Action 2.2: Prioritize Mode Shift to Transit

Continue investing in transit services and facilities to increase transit use as the safest form of travel

Delivery Approach

1. Continue to plan for and invest in public transit infrastructure that enhances transit priority and enables transit service expansion.
2. Complete the Affordable Transit Pass Study (currently underway in 2025) and implement recommendations in partnership with BC Transit and the Kelowna Regional Transit system.
3. When designing new transit stops or upgrading existing ones, review safety trends to address safety concerns on major roads.
4. Continue to invest in pedestrian and cycling safety and connectivity to access bus stops and transit exchanges, such as sidewalks and crosswalks and accommodating secure storage of bicycles at exchanges.
5. Advocate to provincial partners to develop public educational campaigns highlighting the safety, environmental and health benefits of transit.

Action 2.3: Fill in Sidewalk Gaps on Major Roads

Continue implementing sidewalks to fill in gaps in the sidewalk network on major roads

Delivery Approach

1. Prioritize completion of the remaining sidewalk gaps on major roads, with an increased focus on equity and safety.
2. Continue to advance programs that support sidewalk completion including the Sidewalk Network Expansion Program and the Neighbourhood Street Urbanization Program.

Action 2.4: Implement the All Ages and Abilities Bike Network

Continue implementing the All Ages and Abilities bike network, including new facilities, and spot improvements

Delivery Approach

1. Develop a spot improvement list of priority improvements at locations with higher numbers of cyclist collisions resulting in serious injuries or fatalities, to be addressed through capital projects and programs
2. Continue to update Bylaw 7900 as required to incorporate best practices in bicycle facility design based on emerging best practices, including updates to the *BC Active Transportation Design Guide*.

Action 2.5: Monitor Safety of Micromobility Devices

Continue to support the increase of micromobility devices, while working with partners to monitor trends and identify opportunities to enhance safety of micromobility users

Delivery Approach

1. Continue to partner with Interior Health to monitor trends over time and identify opportunities to improve micromobility safety.
2. Collaborate with shared micromobility providers to refine best practices regarding rider safety and education.

Action 2.6: Implement Leading Pedestrian and Bicycle Intervals

Expand City-Wide installations of Leading Pedestrian and Bicycle Intervals to give people walking and biking a head start

Delivery Approach

1. Finalize and implement the LPI/LBI strategy including the development and adoption of installation guidance based on best practice from other municipalities.

Action 2.7: Proactively Study Pedestrian and Cycling Injuries and Fatalities That Do Not Involve Motor Vehicles

Work with partners to develop a better understanding of pedestrian and cycling injuries and fatalities in Kelowna that do not involve motor vehicles and identify safety improvements

Delivery Approach

1. City of Kelowna to continue monitoring Service Requests and inquiries from community groups related to active transportation safety.
2. Continue to collaborate with Interior Health to develop injury dataset, conduct data analysis, and summarize findings.

Action 2.8: Improve Motorcycle Safety Awareness and Education

Work with partners to improve motorcycle safety through improved data collection and analysis, awareness, and education

Delivery Approach

1. Analyze motorcycle collisions to better understand trends regarding their locations and roadway characteristics.
2. Advocate for improved education and awareness campaigns through ICBC, RoadSafety BC, and the RCMP when motorcycling activity is high.

Action 2.9: Conduct Gap Analysis of Uncontrolled and Half-signal Crosswalks on Major Roads

Conduct a gap analysis of crosswalks on major roads and identify potential safety issues

Delivery Approach

1. Complete the crosswalk network analysis focused on major arterial roads. This includes completing an inventory of existing crosswalks, identifying gaps and safety concerns, reviewing treatments compared to TAC guidelines, evaluating the City's hierarchy of treatments and warrants, and recommending upgrades and policy updates based on findings.

Action 2.10: Enhance School Safety

Continue to support the Clean Air and Safe Routes 4 School to explore opportunities to improve safety of school zones

Delivery Approach

1. Continue to support and expand the Safe Routes 4 School program to include more elementary schools as well as middle and high schools.
2. Where schools are not participating in the program, review and implement tools to enhance visibility and safety of school zones, including extended school zone hours, speed limits, high visibility signage, speed limit paint on asphalt.
3. Prioritize implementation of safety measures in school zones through existing programs and capital projects.
4. Advocate and explore "School Street" initiatives, which is a car-free block adjacent to schools that prioritizes walking, cycling, or rolling.

Action Area 3: Design for Safe Speeds

Action 3.1: Conduct Pilot Speed Limit Reduction Project

Pilot area-specific speed limit reductions to assess safety benefits

Delivery Approach

1. Update the City's existing speed limit guideline to reflect modern safety practices.
2. Develop and implement an area-specific speed limit study that reviews existing speed limits, evaluates different speed limit strategies, identifies candidate areas or corridors for speed reduction, and evaluates effectiveness of the program. The program should include educational material to support speed limit reduction.

Action 3.2: Advance Neighbourhood Traffic Calming

Continue to implement neighbourhood traffic calming based on the Traffic Calming Policy to reduce speeds on residential streets

Delivery Approach

1. Continue to implement and improve the Neighbourhood Traffic Calming Program through ongoing projects and procedural reviews to ensure effectiveness of the program and identify areas for improvement.
2. Conduct a comprehensive review of the program every three to five years to evaluate its effectiveness and identify areas for improvement.

Action 3.3: Develop an Arterial Speed Reduction Program

Identify opportunities for managing speeds on arterial roads

Delivery Approach

1. Use outcomes from the advanced network screening study to identify high-risk arterial corridors, then target these locations for speed data collection, issue analysis, and evaluation of speed management strategies
2. Advocate for increased speed enforcement on arterial roadways with the RCMP and for additional Intersection Safety Cameras on arterial roads in partnership with ICBC and the Province (See **Action 1.6**).
3. Continue to support initiatives that narrow vehicle travel lane widths along arterial roads, which could be implemented as part of an arterial speed reduction program or through other coordinated efforts, including redevelopment, capital projects, and related programs.

Action Area 4: Create a Positive Safety Culture with our Partners

Action 4.1: Develop a Culture of Safety Among Youth and Young Adults

Work with partners to identify safety initiatives and develop educational programs to improve safety among youth and young adults

Delivery Approach

1. Explore opportunities to improve road safety infrastructure at middle schools and high schools (see **Action 2.10**).
2. Support targeted social media safety for youth and young adults in partnership with ICBC and Road Safety BC.
3. Support the Road Safety Curriculum and ICBC speaker series through high schools.
4. Support local organizations with existing bike education experience to expand offerings (more ages, settings, opportunities) to gain bike education.
5. Support road safety initiatives with UBC Okanagan and Okanagan College.

Action 4.2: Reduce Distracted Driving

Advocate for educational programs and campaigns to educate the public about distracted driving

Delivery Approach

1. Advocate for programs to educate the public about distracted driving, such as public awareness campaigns or encouraging pledges from the public.
2. Advocate for stronger laws and enforcement around distracted driving.
3. Utilize existing resources such as Drop It and Drive (https://tirf.ca/diad/) for educational campaigns

Action 4.3: Target Speeding and Aggressive Driving

Work with partners to increase enforcement of speeding and aggressive driving

Delivery Approach

1. Map fatal and serious injury collisions for which excessive speeding, reckless driving and other violations are contributing factors, and analyze trends.
2. Share network screening results (see **Action 1.1**) with RCMP, to focus efforts where fatal and serious injury collisions and specific behaviours are concentrated.
3. Evaluate the reduction in fatal and serious injury collisions based on increased enforcement.

Action 4.4: Enforce Impaired Driving

Work with partners to understand trends in alcohol or drug-involved collisions and support educational campaigns and initiatives and increased enforcement to reduce impaired driving

Delivery Approach

1. Support campaigns of partner agencies (e.g. Tourism Kelowna, UBC Okanagan, Okanagan College) to address impaired driving.
2. Provide trends in alcohol or drug-involved collisions in the City to key partners (e.g. RCMP, Mothers Against Drunk Driving), such as collisions by time of day.
3. Advocate and promote alternative transportation options within the tourism and hospitality sector to help reduce impaired driving.

Action 4.5: Support Safety Improvements on Provincial Roads

Collaborate with BC MoTT on safety improvements on roads under Provincial jurisdiction, including Highway 97 and Highway 33

Delivery Approach

1. Continue to engage with BC MOTT and the Central Okanagan Integrated Transportation Network Program projects and seek opportunities to advance road safety initiatives.

Action 4.6: Develop Educational Campaigns and Materials

Develop educational campaigns and materials to raise awareness about Vision Zero and safe mobility and to educate the public about new, innovative, or existing treatments

Delivery Approach

1. Ensure capital projects develop a communications and engagement material outlining safety benefits.
2. Develop educational campaigns for new or innovative safety treatments the City is implementing and share results with key partners.

Action 4.7: Develop a Vision Zero Working Group

Develop a Vision Zero Working Group to advance road safety initiatives with community partners

Delivery Approach

1. Develop list of key community partners and meet quarterly to discuss initiatives, implementation, and results of road safety initiatives.

Action 4.8: Work with Partners to Improve Collision Data

Work with partners to improve how collision data is collected, analyzed, and reported

Delivery Approach

1. Define key data sources and metrics to track Safe Mobility Action Plan progress.
2. Establish a reporting format to record qualitative and quantitative observations and data related to road safety. A standardized format will ensure a consistent approach that will lead to better data for decision making.