



VISION ZERO

KELOWNA'S SAFE MOBILITY ACTION PLAN

Report #1: Current State of Safe Mobility in Kelowna

October 2024



TranSafe

URBAN
SYSTEMS

City of
Kelowna



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1.0 Introduction



Everyone should have the right to travel safely.

Transportation-related collisions have significant impacts on people's lives, especially those that cause fatalities or injuries. Police reported over 2,800 collisions on Kelowna's roads between 2018 and 2022 (excluding provincial highways). Approximately 2 out of every 5 police-reported collisions resulted in a fatality or any type of injury.

The right to travel safely on Kelowna's roads is a **public health issue**, an **equity issue**, and an **ethical issue**. The Safe Mobility Action Plan aims to reduce transportation-related fatalities and serious injuries in Kelowna. 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.

Kelowna's Safe Mobility Action Plan will:

- Develop a vision, guiding principles, and targets for safe mobility in Kelowna;
- Collect and analyze data to understand local collision trends and concerns;
- Develop key focus areas and actions aimed at reducing fatalities and serious injuries, informed by data and community input; and
- Identify implementation and monitoring tactics to track successes and challenges over time.

This is the first report prepared as part of the Safe Mobility Action Plan and summarizes the current state of safe mobility in Kelowna.

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

22 people walking are injured or killed

41 people cycling are injured or killed

13 people motorcycling are injured or killed

Why a Safe Mobility Action Plan?

The Safe Mobility Action Plan was identified as a recommended action through the [2040 Transportation Master Plan](#) (TMP), where the City heard that transportation safety is a top priority for residents. The Safe Mobility Action Plan is also being developed in alignment with the City's [Council Priorities 2023-2026](#), [BC's Road Safety Strategy](#), and [Canada's Road Safety Strategy](#).

The objective of the Safe Mobility Action Plan (SMAP) is to reduce and prevent transportation-related fatalities and serious injuries on the City of Kelowna's transportation network.

The Plan will use a **Safe System Approach**, which recognizes that mistakes are unavoidable, and that the transportation system should be designed to forgive errors and prevent them from resulting in more severe consequences.

The Plan also aims for **Vision Zero**. This, in turn, will support 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 their chosen travel mode, therefore the safety of all travel modes needs to be considered.

The Plan will build off the successes of the City's existing safe mobility programs and best practices from Canada's Road Safety Strategy, BC's Road Safety Strategy, and other municipalities and jurisdictions.

The Plan is a key initiative that directly addresses the safety of all road users, seeking to eliminate collisions that result in serious injuries and fatalities in Kelowna, and reduce the occurrence of all

collisions. Kelowna's population growth amplifies the need to enhance safety on our roads. Through this Plan, the City is prioritizing safety and well-being and is focusing on delivering effective and implementable solutions over the short-, medium- and long-term that will make Kelowna a better place to live, work, and play.

Actual and perceived safety on roads in Kelowna can be a major barrier to active transportation uptake in the community. Kelowna's objectives of encouraging walking and cycling in the community can help be achieved by improving safety for vulnerable road users, who are more likely to be killed or seriously injured when involved in a collision. This is even more important as new and emerging mobility options become more common, such as e-bikes and e-scooters, with additional user groups to consider in the transportation network.

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, but is not limited to, 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.

What is the Safe System Approach?

The Safe System Approach is a framework to guide safe mobility policies and programs, as shown in [Figure 1](#). This approach views safe road networks as a holistic system consisting of six elements:

1. Safe Speeds
2. Safe Road Users
3. Safe Vehicles
4. Post-Collision Care
5. Safe Roads
6. Safe Land Use Planning

Together with the underlying principles and action areas, each of these elements contributes to overall safe mobility by supporting Kelowna in realizing its goal of improving safety for all road users. The 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. 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 and reduce the occurrence of all collisions.



Figure 1: Vision Zero and the System Approach Framework (Source: Transportation Association of Canada: Vision Zero and the Safe System Approach: A Primer for Canada (2023))

Study Process

The Safe Mobility Action Plan is being developed in two phases between Winter 2024 and Winter 2025.

Phase 1: Current State

Winter 2024 - Summer 2024

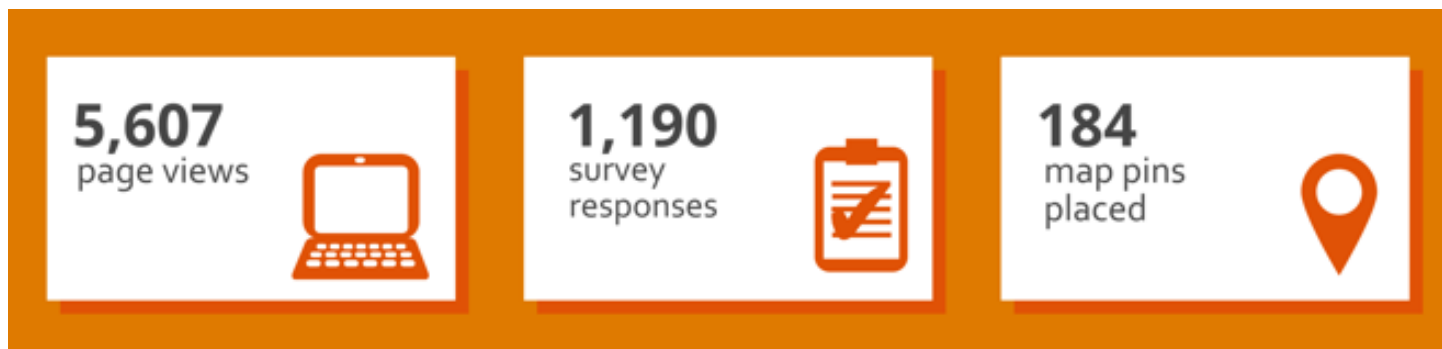
1. Communications Plan
2. Plan, Policy, and Program Review
3. Data Collection and Analysis
4. Vision, Target & Guiding Principles Workshops (Internal and Key Partners)
5. Phase 1 Community Engagement
6. Current State of Safe Mobility Report

Phase 2: Focus Areas and Action Plan

Summer 2024 – Winter 2025

7. Identify Focus Areas, Targets, and Actions
8. Focus Areas, Targets, and Actions Workshops (Internal and External)
9. Implementation and Monitoring
10. Draft Safe Mobility Action Plan
11. Phase 2 Community Engagement
12. Council Endorsement
13. Final Report

The first phase of community engagement took place in spring 2024 and included an online survey hosted on the City's *Get Involved engagement website*, including a map where participants could place a marker based on a category (biking, road or sidewalk, speeds etc.) and describe why they feel safe or unsafe at a location. There were more than 5,600 page views, more than 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 to the engagement process, a community partners workshop was held. Details about the engagement process are found in the [Engagement Summary Report](#) and summarized in Section 4.0.



About this Report

This report presents the findings of Phase 1 of the Safe Mobility Action Plan, which shows the current state of safe mobility in Kelowna to achieve the following:

- Create a benchmark for Kelowna with respect to Safe System elements, and to provide a baseline for the City to measure its own progress towards its Vision Zero goal.
- Provide a fact-based understanding of existing safety performance, infrastructure, policies, practices, and processes.
- Highlight collision trends to inform key focus areas, which will be investigated further in subsequent phases of the project.

2.0 Community Profile



Demographics and geography have a significant impact on transportation choices and travel patterns, and by extension safe mobility. The following section summarizes key demographic and geographic characteristics of Kelowna. This information will be used to inform the direction of the Safe Mobility Action Plan.

Population

With a population of nearly 160,000 residents, Kelowna is the largest city in the Central Okanagan region and the third-largest metropolitan area in B.C., after Vancouver and Victoria.

Kelowna has experienced significant population growth with a 13.5 per cent increase from 2016 to 2021. Over the next 20 years, Kelowna's population is projected to continue to grow significantly, reaching over 200,000 people by 2041, which will continue to increase pressure on the city's transportation system.

Population Identity

Based on 2021 Census data, approximately 14 per cent of Kelowna's population identifies as a visible minority. Five and a half per cent of Kelowna residents identify as Indigenous.

Around 15 per cent of Kelowna's residents, or approximately 21,500 people, are immigrants. Of this population, about 6,000 have immigrated in the past 10 years.

The vast majority of the population has knowledge of English, with under one per cent of the population being non-English speakers.

Age

The average age in Kelowna is 43.4 years old, which is one year younger than the metropolitan area average (44.2) and slightly older than the provincial average (43.1).

Roughly 33 per cent of Kelowna's population is under the age of 30, a trend that has stayed the same since 2016.

As of 2021, approximately 21 per cent of Kelowna's population is 65 years old or older. In the future, it is projected that the population will change to include a higher proportion of residents who are over 65.



Offering safe and diverse mobility options is crucial to ensure that an aging population can actively engage in their communities through all stages of life, regardless of their physical abilities.

Income

The median household after-tax income in Kelowna is \$73,500, lower than the regional median of \$75,500.

Based on the low-income cut-offs, after-tax (LICO-AT), 4.8 per cent of households in Kelowna are considered low-income. This is slightly higher than the regional average of 4.2 per cent.

Mode Share

According to the 2021 Census, 84 per cent of Kelowna's employed labour force commute by vehicle, while approximately 13 per cent of commute trips are made by walking (6 per cent), public transit (4 per cent), cycling (3 per cent). The 'other' category makes up the remaining 3 per cent.

Distance travelled by bike has increased by 35 per cent between 2018 and 2022, reaching almost 12 million kilometres travelled per year. Meanwhile, distance travelled by walking has increased 5 per cent from 2018 levels ([TMP Reporting](#)).

It is important to note that the distance of people's trips and where they live has a significant impact on how they choose to commute. Households located in Kelowna's Core Area¹ make significantly more trips by walking, cycling, and transit, while 90 per cent of households in outlying and hillside areas rely more heavily on private vehicles.

The time of year also correlates to changes in how people commute. Cycling greatly fluctuates throughout the year, with a peak in the summer months due to warmer weather, and a drop in the winter months. During winter, transit ridership is at its highest, likely because of the school calendar.

¹ The Core Area generally refers to the flat part of the valley and neighbourhoods near the Urban Centres. (Kelowna 2040 Transportation Master Plan Existing and Future Conditions Technical Report: https://www.kelowna.ca/sites/files/1/docs/related/tmp_existing_and_future_conditions_technical_report.pdf)

Land Area and Growth Centres

Kelowna encompasses 214 square kilometres of land and has a population density of 747 people per square kilometre.

As identified in the 2040 Official Community Plan (OCP), there are five Growth Strategy Districts in the city. Each of these Districts have their own unique transportation challenges and opportunities. The Growth Strategy Districts include: Urban Centres, Core Area, Suburban Neighbourhoods, The Gateway and Rural Lands.

- **Urban Centres:** Kelowna has five Urban Centres – Downtown, Pandosy, Capri Landmark, Midtown, and Rutland. According to the 2040 OCP Growth Scenario, 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.
- **Core Area:** The Core Area of the city encompasses flat regions on the valley floor and neighbourhoods near Urban Centres, primarily consisting of detached housing alongside some multi-family and commercial developments along major corridors. Despite its car-centric design, this area holds potential for transitioning to sustainable modes of transportation given its gentle terrain and proximity between destinations.
- **The Gateway:** Encompassing UBC Okanagan, Kelowna International Airport, and nearby industrial lands, the Gateway area is projected to host approximately one-fifth of new job opportunities in the next two decades. Transit ridership is notably high among residents of the UBC Okanagan campus and neighbouring areas; however, other industrial parts of the Gateway are challenging to reach without a vehicle due to limited transit service. The proximity of many destinations to the Okanagan Rail Trail offers the potential for commuting by bike, with the potential of electric bikes for longer trips to the area.
- **Rural Lands:** These areas are predominantly agricultural, with scattered residential properties, housing about four per cent of the city's population and 12 per cent of its jobs. These regions are characterized by narrow roads with tight corners and intersections at irregular angles, often lacking sidewalks and bike lanes, which pose challenges as traffic increases.

Road Network

Kelowna covers a large area with a wide range of land uses, from active agriculture to high rises. Different areas of the city have different transportation options, challenges, and opportunities.

Kelowna has roughly 800 kilometres of streets, from major arterials to small residential streets. Some are designed to move people and goods across the city. Others are intended to support local businesses or provide attractive places to live. Defining the role of a street can help clarify expectations and inform design choices. Streets are defined into two groups by what they prioritize: the Major Road Network (which prioritize mobility and moving quickly) and Neighbourhood Street Network (which prioritize to access to businesses and residences). Combined with land uses, these street types (or road types) form the City's Functional Road Classification System, as shown in **Figure 2**. These classifications help set expectations for types of users and amount of use, as well as determine priorities for activities like snow clearing or street sweeping and the requirements for new developments. The Functional Classification System and road network is a part of both the 2040 OCP and 2040 TMP.

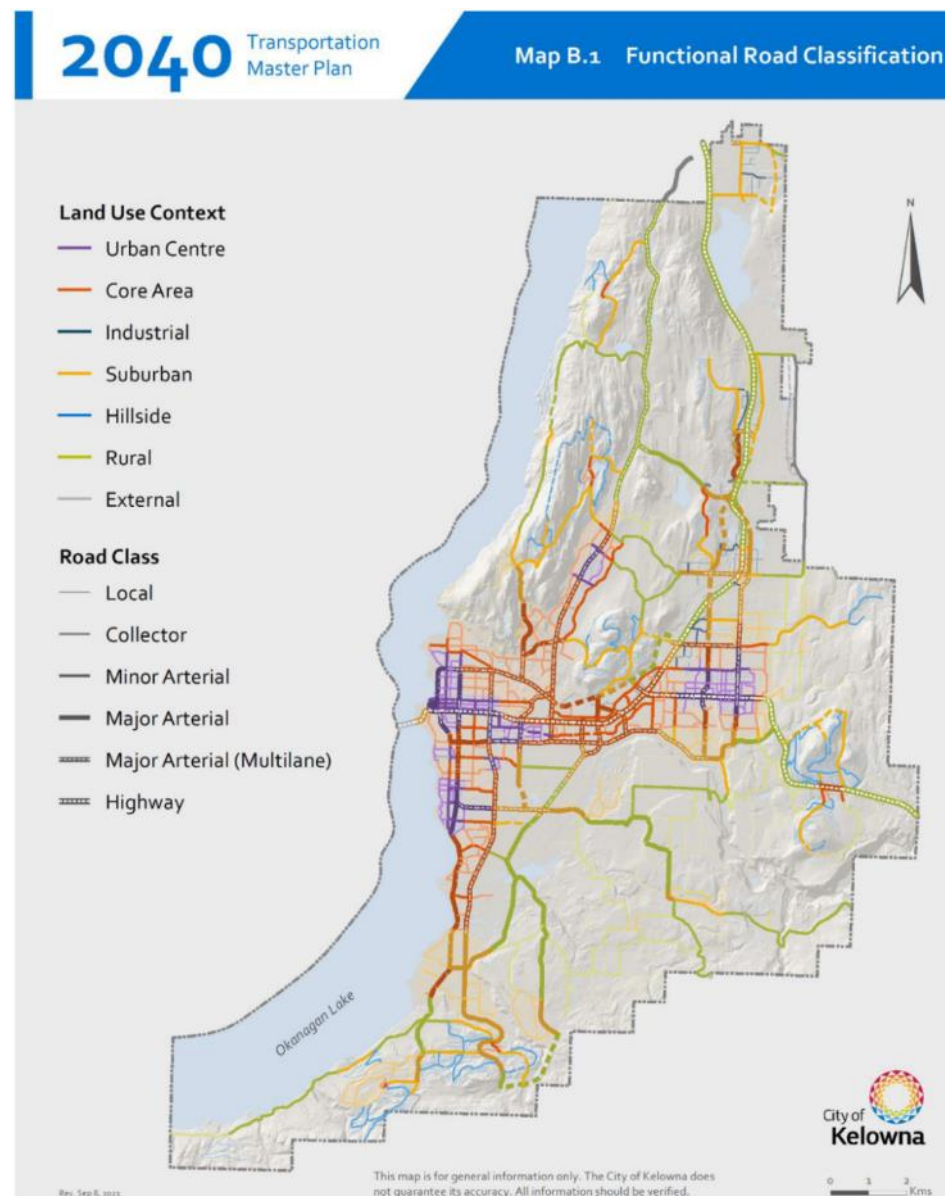


Figure 2: Functional Road Classification (Source: 2024 TMP)

Community Equity and Safe Mobility

What is Equity in the Context of Safe Mobility?

All people have 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 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.

One of the central aims of the Safe Mobility Action Plan is to develop a transportation network that serves all areas of the city and provides equitable access for all residents. This means being inclusive of – and prioritizing – people of all ages, abilities, backgrounds, and identities. It is especially important to focus on centering equity and supporting equity-deserving populations

Safe mobility improvement efforts must recognize that certain neighbourhoods and people have seen less investment compared to others. Not all neighbourhoods are starting from the same place in terms of safe mobility investments and practices, and some neighbourhoods may require more targeted efforts to reach equitable outcomes.

As the Safe Mobility Action Plan is implemented over the coming years, the City and its partners must work to ensure that investments in road safety improve any negative, unintended equity consequences, particularly as it relates to age, ethnicity, and socio-economic status.

How will the SMAP Help Address Safe Mobility Inequities?

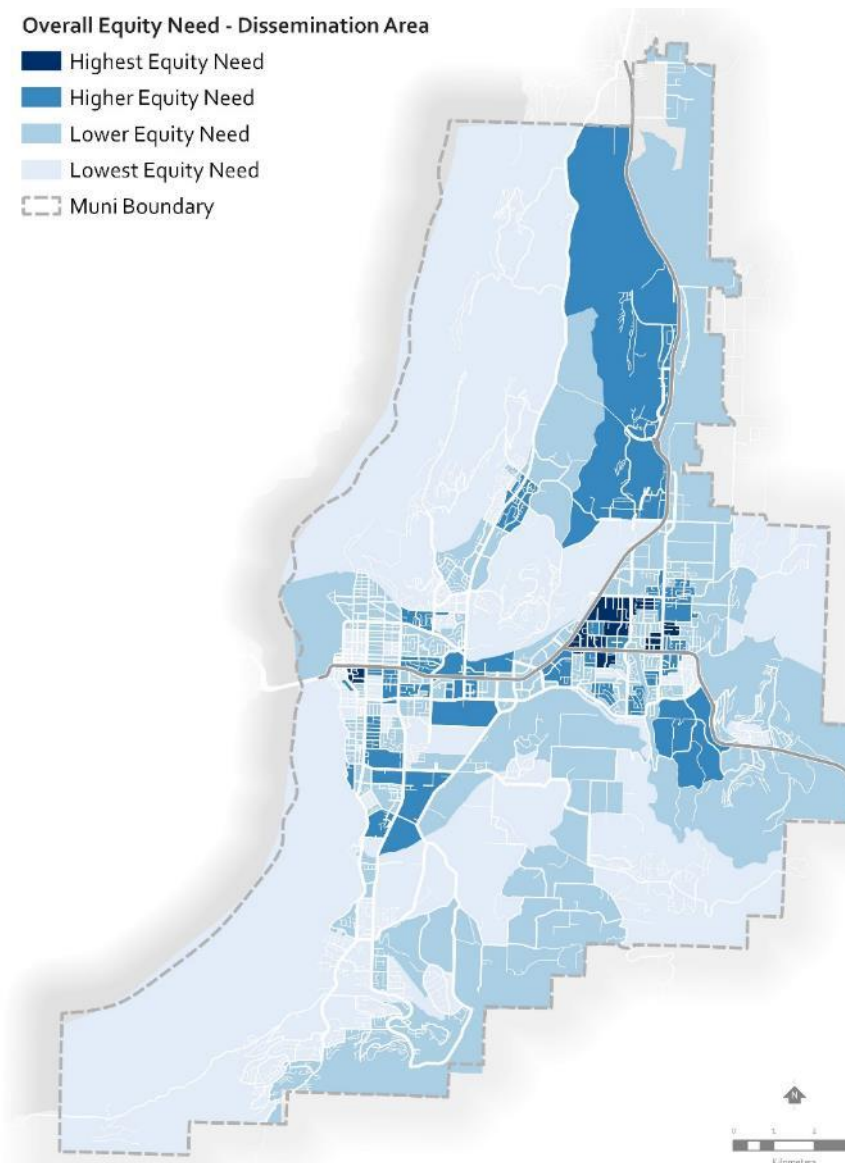
The processes, strategies, and outcomes of the Safe Mobility Action Plan will intentionally serve all, particularly vulnerable and traditionally underserved populations. The planning process included a GIS-based equity analysis to understand safe mobility within equity deserving communities to help identify 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, as shown in [Figure 3](#).

The SMAP 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.

Table 1: Equity Analysis Criteria

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

Figure 3: Overall Equity Need



3.0 Safe Mobility in Context



Policy Context

Discourse and planning for safe mobility continues to evolve around the world, with new ideas and actions consistently being implemented to work towards safer transportation systems. This section provides an overview of the national, provincial, and local contexts that are informing the development of the Safe Mobility Action Plan.

National

Canada's *Road Safety Strategy 2025* (CRSS 2025), developed in 2016, is a framework for reducing traffic injuries and fatalities in Canada. The long-term vision of "Making Canada's roads the safest in the world", builds on previous iterations of the strategy by integrating Towards Zero. By adopting Towards Zero in the vision, CRSS 2025 embeds international best practice as an aspiration for safe mobility in Canada. This vision will persist beyond the CRSS 2025 timelines and highlights optimal safe mobility outcomes across Canada.

CRSS 2025's principles align with international best practices in safe mobility, including the adoption of the Safe System Approach and a 10-year timeframe. The strategy continues to be flexible, allowing Canadian jurisdictions to implement safe mobility programs that meet their own specific needs.

The CRSS 2025 is based on three (3) key guiding principles:

- 1. Adopt a Safe System Approach**

An approach that recognizes that road users are prone to error, and that the system should be designed to limit these errors and reduce more severe consequences, using all available tools.

- 2. Downward Trend Toward Zero**

A year over year reduction in traffic fatalities and serious injuries until their eventual elimination.

- 3. Best Practices**

Implementing measures that effectively reduce fatalities and serious injuries and replicating and expanding their use for maximum impact and to encourage regional and national consistency.

Provincial

British Columbia's *Road Safety Strategy 2025: A Collaborative Framework for Road Safety* (BCRSS 2025) provides a provincial structure for achieving safe mobility goals. Guided by Vision Zero, the strategy targets continuous downward trends in fatalities and serious injuries across B.C. The strategy also supports the global goal to reduce road traffic deaths and injuries by 50 per cent by 2030.

Three pillars provide the foundation for BCRSS 2025 and achieving the strategy's vision:

1. Working Together for a Safer Future

Encouraging collaboration within the road safety sector to use a Safe System Approach and public health perspective to address road safety challenges.

2. Tools to Make Our Roads Safer

Integrating enforcement, infrastructure, data, and other tools to make roads safer.

3. Inspiring British Columbians to Make Safe Road Choices

Providing the best information to road users to make safe choices to keep themselves and others safe.

In March 2015, the BC Ministry of Transportation and Infrastructure (MoTI) presented *BC on the Move: A 10-Year Transportation Plan*. Among the 12 objectives outlined in the plan were dedicated highway safety improvement plans that include:

- \$25 million per year safety improvement program;
- \$10 million per year for intersection improvements;
- Enhancements to DriveBC; and
- Strategies to improve roadside worker safety.

During its first year, the safety program was to focus on installing pilot variable speed zones, pilot wildlife detection systems, and community safety projects. *BC on the Move* also contains objectives to keep the highway system in good repair and to expand its capacity and reliability, thus improving safety and supporting economic development.

Community Safety Projects consist of 20 to 25 annual projects focusing on crosswalks, signals, intersection improvements, and signs on provincial roads.

With respect to the Okanagan, BC MoTI plans to continue project planning, design, and construction along the Highway 97 corridor through the communities of Kelowna, West Kelowna and Peachland as part of the *Central Okanagan Integrated Transportation Network*. This program includes regional active transportation connections, safety improvements at intersections on Highway 97 through Kelowna, among others.

City of Kelowna

The City of Kelowna has established plans, policies, programs, and municipal bylaws that work together to prioritize safe mobility within our community. These documents and programs help to make our streets safer through various means such as land use, intersection design improvements, traffic calming, active transportation planning, development frontage design guidelines, and more. Relevant planning and strategy documents are summarized in the table below.

Imagine Kelowna (2018)	Imagine Kelowna is a vision for the community, by the community. Part of the vision is a community that puts people first with goals of building healthy neighbourhoods and embracing diverse transportation options to shift away from our car-centric culture. This document guided the 2040 Transportation Master Plan's development.
2040 Official Community Plan (OCP) (2022)	The 2040 OCP is an extensive update of Kelowna's planning and land-use policies to reflect the Imagine Kelowna community vision. To better coordinate land use and transportation planning, this plan was developed in tandem with the 2040 Transportation Master Plan. Safe land use planning is also a pillar in the Safe System Approach.
2040 Transportation Master Plan (TMP) (2022)	The 2040 Transportation Master Plan is an extensive update of citywide plans for transportation improvements that will keep Kelowna moving now and into the future. One of the twelve goals set out in the TMP is to improve safety. Policies on speed control, investing in alternative transportation modes, filling sidewalk gaps, a focus on safety when redesigning intersections, and other safety-related items are incorporated into this document.
Pedestrian and Bicycle Master Plan (2016)	This Plan identifies infrastructure, planning, and policy requirements to promote walking and cycling in the community. It is based on a vision for the City that ensures that walking and cycling are safe, convenient, and practical modes of travel.
Bylaw 7900 – Subdivision, Development & Servicing Bylaw (2023)	Road safety is explicitly written into Bylaw 7900 as part of the 2023 update. Some road safety policies include designing to safely accommodate all road users, road safety audit guidance, and a roundabouts first policy.
Bylaw 8120 – Traffic Bylaw	The traffic bylaw provides outlines regulations for how people driving, biking, and walking should act in the City and provides other regulations such as parking and traffic control device placement.
Policy 300 - Neighbourhood Traffic Management Policy (2010)	The neighbourhood traffic management policy was last reviewed in 2010. Staff are currently revising the policy which is set to be updated in late 2024.

**Healthy City Strategy –
Community for All – Kelowna’s
All Ages & Abilities Action Plan**

The City of Kelowna partnered with Interior Health to develop this Strategy, which is a long-term integrative plan that focuses on health places and spaces, community health, and quality of life for Kelowna residents. The vision for Community for All is “a city that is healthy, safe, active and inclusive for seniors, children and those with diverse abilities”.

**Climate Resilient Kelowna
Strategy (2024)**

The City developed a Strategy to guide how our community can reduce greenhouse gas (GHG) emissions that contribute to climate change as well as how to prepare for and adapt to the changes we are expecting. Part of this Strategy focuses on making improvements to more sustainable transportation modes, such as walking, biking, and public transit.

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 a dedicated Active Transportation Development Cost Charges program that dedicates funding to developing priority connections in the City's All Ages and Abilities primary bike network, improving safety for the full range of wheeled devices.

Best Practices

This section outlines some best practices when developing a Road Safety Strategy/Safe Mobility Action Plan from across Canada.

Canada

A project was completed in 2021 by the Transportation Association of Canada (TAC)'s Vision Zero & Safe System Subcommittee to establish a snapshot of Canadian practices in Vision Zero and the Safe System Approach. Vision Zero is the philosophy that states that fatalities and serious injuries are unacceptable and should be eliminated. The Safe System Approach is a comprehensive and holistic process that describes how to achieve Vision Zero.

The review included an environmental scan, which found that 31 municipalities across Canada have a published policy or plan in support of Vision Zero and/or the Safe System approach.

A survey was also conducted to gain an understanding of current practices related to safe mobility particularly as it relates to Vision Zero and the Safe System Approach. The survey included TAC members represented on the Road Safety Committee and other committees under the Safety, Design, and Operations Council. Respondents included 19 "large" (greater than 100,000 population) municipalities in Canada. Since Kelowna meets the definition of a large municipality, the survey responses among the large municipalities were reviewed, and indicated the following findings:

1. About two-thirds of large municipalities who responded to the survey indicated they had a road safety strategic and/or action plan in place;
2. Nearly 80 per cent of large municipalities included an ultimate target of zero fatalities and serious injuries in their Plan. Most of these referred to “Vision Zero” or “Target Zero” as their adopted philosophy;
3. The municipal government departments involved in the development of Plans were: Traffic Engineering (100%), Transportation Planning (87%), Communications (80%), Police (73%), School Board (60%) and Public Health (53%).
4. About one-third of municipalities indicated that public safety was explicitly stated as their top priority.
5. Most large municipalities expressed that there are challenges with quality or timeliness of collision data for use in decision making.
6. Most (84%) large municipal organizations conduct evaluations and monitor effectiveness of implemented measures in support of Vision Zero and the Safe System.
7. Only 32% of large municipalities have a dedicated Road Safety or Vision Zero annual/year-over-year budget.
8. Approximately half of the respondents (52%) have a formal staff or council committee focused on road safety or to advance Vision Zero principles.
9. The majority of large municipalities (63%) inconsistently or rarely consider human factors in transportation planning and design engineering practices.
10. The most common countermeasures that municipalities have in place in support of the safe system (by element) were as follows:
 1. **Safe Roads:** Pedestrian Signals/Rectangular Rapid Flashing Beacons (RRFBs)/Pedestrian Crossovers (PXOs), pedestrian countdown signals, fully accessible push buttons
 2. **Safe Speeds:** Speed display devices, on-street cycling facilities, lower residential speed limits.
 3. **Safe Road Users:** Public education targeted at cyclists, safe routes to school programs, distracted driving public education
 4. **Safe Vehicles:** Transit priority, public transit lanes, pilot projects for connected and automated vehicles
 5. **Post Collision Care:** Traffic signal priority for emergency vehicles

While most large municipalities in Canada have already developed a road safety plan, most “small” municipalities (population less than 100,000) have *not* developed or started on the development of a road safety plan.

To build on best practices from other municipalities in Canada, the development of the Safe Mobility Action Plan will take into account the following decisions and approaches.

1. Adoption of Vision Zero as a clear statement that road safety is a priority in the municipality, and the Safe System Approach as the proven framework for achieving its ultimate goal.
2. Formation of extensive internal and external stakeholder groups to help inform and support the Plan (including non-traditional partners such as health authorities)
3. Exploration of various data sources to measure road safety in Kelowna, including hospitalization data that may provide a more accurate reflection of serious injuries in the transportation system.
4. Consideration of dedicated staffing, governance structures and budgets in order to succeed in reaching its goal.
5. Development of a monitoring and evaluation plan to as accurately as possible measure progress towards its goal.
6. Inclusion of proven countermeasures covering the Safe System elements in the actions that will be developed as part of its Plan.
7. Exploration of more innovative measures that have the potential to address persisting collision trends.

British Columbia

Eight municipalities in BC have developed a plan within the last decade regarding Vision Zero and/or the Safe System Approach, as summarized below in [Table 2](#).

These communities' plans address the local safe mobility issues while adhering to best practice. Vision Zero and the Safe System Approach are guiding principles in most of these documents. Key themes include:

- Designing safe streets;
- Encouraging speed reduction;
- Promoting responsible user behaviour; and
- Improving data management and usage to inform decision-making.

Some communities include a targeted action plan related to infrastructure and program investments that will improve safe mobility. Sharing information is also key, with most communities providing dedicated web pages or resources that highlight safe mobility issues, progress made, or programs that support safer travel.

Table 2: BC Municipalities with A Published Road Safety Strategy or Safe Mobility Action Plan

Municipality	Population	Year Adopted (most recent version)
City of Coquitlam	LU	Underway (2024)
City of Kamloops	MU	2023
District of Saanich	LU	2023
City of Burnaby	LU	2021
City of North Vancouver	MU	2020
City of Victoria	MU	2020
City of Surrey	LU	2019
City of Vancouver	LU	2016

LU = Large urban (>100,000) | MU = Medium urban (25,000-100,000) | U/R = urban/rural

4.0 Safe Mobility in Kelowna



The following 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.

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

Data Sources

Two main data sources were considered for this analysis – Traffic Accident System (TAS) police-reported data and collision data reported to the Insurance Corporation of British Columbia (ICBC). While there is overlap between the two datasets, each dataset has their own benefits and limitations. For this analysis, the primary dataset used is the TAS dataset. A comparison of the available data sources, and assumptions and limitations of the analysis are summarized in [Table 3](#) below.

Assumptions for the analyses include:

- TAS police-reported dataset was used;
- All data analysis includes City-owned roads only (excludes collisions occurring along Highways 97 and 33, which are under provincial jurisdiction);
- Property Damage Only (PDO) collisions have been excluded from the analysis to focus instead only collisions resulting in more serious consequences (i.e. injury and fatal collisions); and
- Killed or Seriously Injured (KSI) collisions represent a collision resulting in at least one death or major injury (overnight in hospital), as reported by police at the time of collision reporting.



Table 3: Summary of Available Collision Datasets

Data Source	Application in SMAP	Assumptions and Limitations	Fatal & Injury Collisions (cleaned) 2018 to 2022 – City-owned roads only	Property Damage Only (cleaned) 2018 to 2022 – City-owned roads only
Traffic Accident System (TAS) Records obtained by Kelowna RCMP when they respond to traffic collisions	Overall crash trends, crash trends by mode and location, understand contributing factors to crashes such as intersection type, crash configuration and environmental conditions	- Smaller number of collisions reported compared to ICBC dataset. - Typically only the more serious collisions involving injury or fatality are attended by police. - More details on crash configuration (e.g. turning movements) - Distinguishes between injury severity (i.e. separates out minor and major injury). - Contributing factors are recorded. - Details on involved persons recorded (i.e. number, age, gender, license type, etc.) - Fatal collisions are reconciled between ICBC, RCMP, hospital, and coroner.	1,123	1,782
ICBC Claims Self-reported data collected by ICBC as part of the vehicle insurance claim process	Not used for this analysis	- Larger number of collisions reported compared to TAS dataset (4x more injury collisions, 5x more property damage only collisions) - Claims are self-reported. - Generally contains more pedestrian- and cyclist- involved collisions compared to TAS dataset. - Does not differentiate between injury severity. - Examples of injuries can include sprains, strains, bruises and minor whiplash. - Provides a written description of what occurred, which can allow for more understanding of why a collision occurred. - Only those with ICBC coverage are reported.	4,596	9,136

Overall Collision Trends

Collision Frequency

From 2018 to 2022, police attended to and reported over 2,800 collisions on City-owned roads (excludes provincial highways), including over 1,100 that resulted in injury. Injury collisions represented approximately 39 per cent of all police-reported collisions on City-owned roads, with the remaining 61 per cent of police-attended collisions only resulting in property damage. As shown in **Figure 4**, 132 (12 per cent) of injury collisions resulted in a fatality or serious injury (KSI collision), while 991 (88 per cent) resulted in a minor injury.

Social Cost of Collisions

Collisions are traumatic events for those involved and tragic events for families and communities affected. The social cost of collisions can be estimated based on published average costs by collision outcome. Direct costs are attributed to costs including fatalities, injuries, property damage, first responders, health care, and traffic delay costs.

Police-reported injury collisions total over \$73 million per year on City-owned roads². Based on ICBC injury claims, this total is around 5 times higher because there is a larger number of reported collisions. These numbers underrepresent the actual cost to society as it excludes property damage only collisions and injury collisions that occur on provincial highways.

Indirect costs are less tangible and difficult to quantify. An example of this is an individual that is unable to return to work following a collision due to injury severity – resulting in a loss of economic productivity.

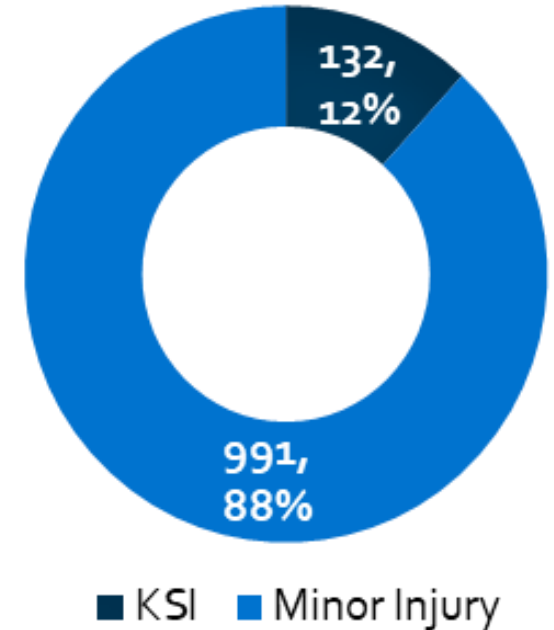


Figure 4: All Police-Reported Injury Collisions (TAS, 2018-2022)

The social cost of police-reported injury collisions alone is over \$73 million dollars per year on City-owned roads

² Calculated using Transport Canada's 'Table 4: Values of statistical life per casualty type' inflated to 2024 Canadian dollars. Source: <https://tc.canada.ca/en/road-transportation/statistics-data/statistics-data-road-safety/2020-statistics-social-costs-collisions-canada>

Conflicting Pairs

Of the 132 collisions that resulted in someone being killed or seriously injured, when looking at which road users were involved, the most common collision conflicting pairs were multi-vehicle (two or more vehicles) collisions (35 collisions, or 26 per cent of KSI collisions), vehicle – pedestrian collisions (28, or 21 percent of KSI collisions), and single vehicle collisions (28, or 21 per cent of KSI collisions), as shown in [Figure 5](#).

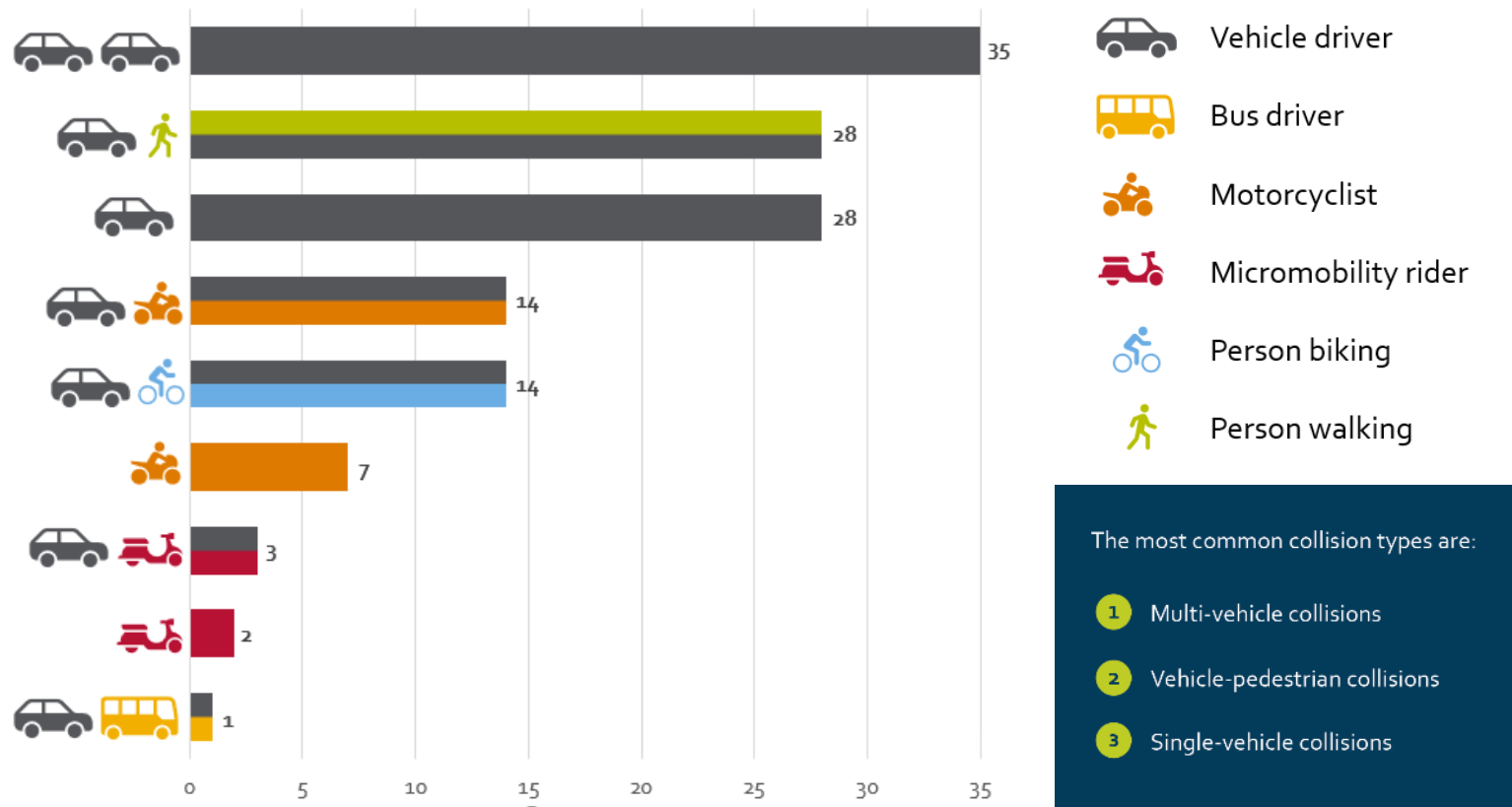


Figure 5: KSI Collisions by Conflicting Pair (TAS, 2018-2022)

Note: Micromobility devices can include mobility scooters, electric scooters, and mopeds among other small, motorized travel devices.

Vulnerable Road Users

Vulnerable road users – including pedestrians, cyclists, and motorcyclists – are more likely to be killed or seriously injured when an injury collision occurs (30 per cent of all injury collisions compared to 52 per cent of KSI collisions). This is because the human body is vulnerable to kinetic energy. A person who is walking, biking, or motorcycling has no protective shell and no design features to absorb the impact of a collision, whereas vehicles are designed with passive safety systems in their protective shell, with safety features such as seatbelts, airbags, and crumple zone, which protect passengers in various ways.

As shown in **Figure 6**, 52 per cent of KSI collisions involved a vulnerable road user (people walking, biking, motorcycling, or using another small micromobility device). Pedestrians were the most common vulnerable road user to be killed or seriously injured, followed by motorcyclists. Motorcyclists who are killed or seriously injured are involved in both vehicle-motorcycle and single-motorcycle collisions.

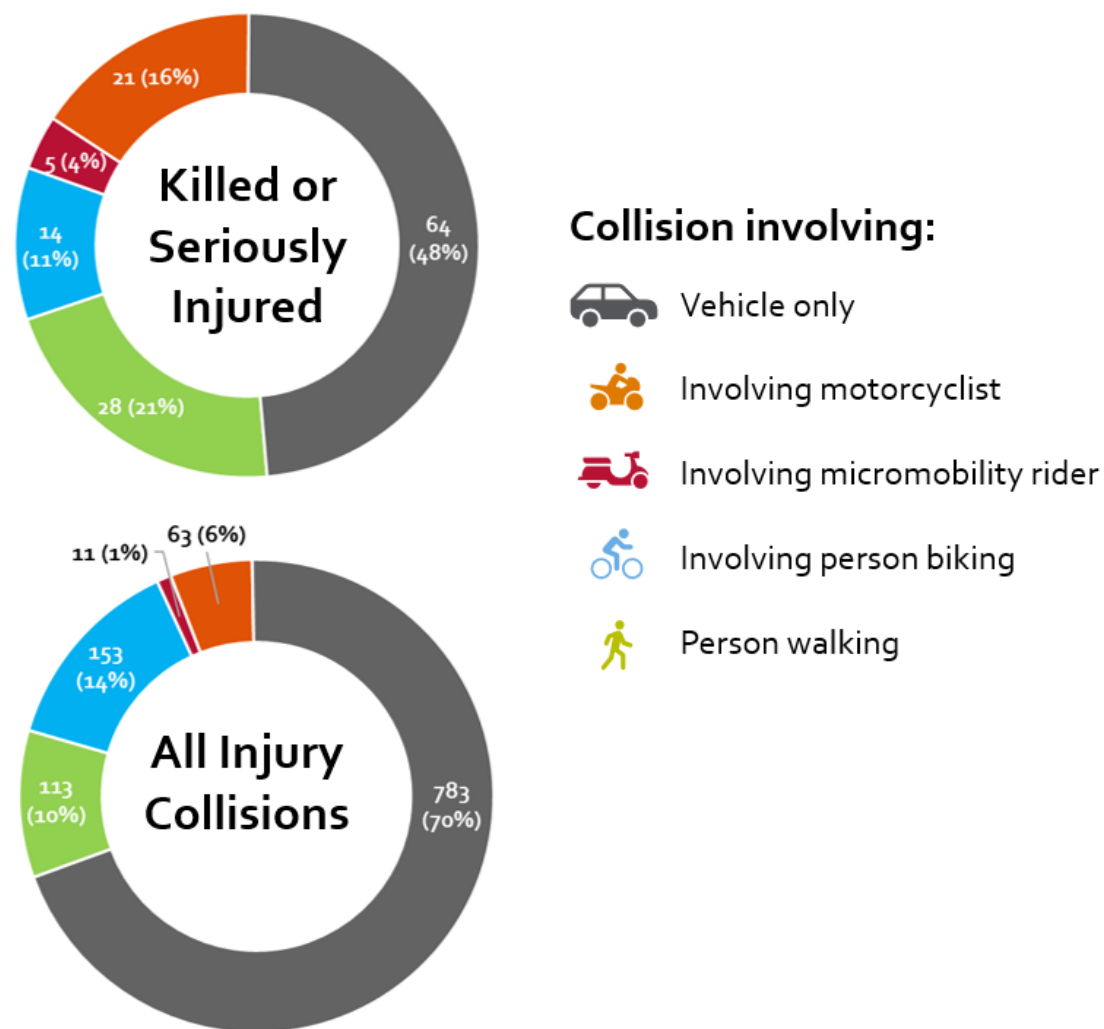


Figure 6: Collision Severities by Mode (TAS, 2018-2022)

Contributing Factors

As shown in [Figure 7](#), driver inattention was the number one contributor factor to all KSI collisions, followed by the influence of drugs or alcohol, reckless driving (excluding speeding) and failing to yield or ignoring a traffic control device. Primary contributing factor is based on police judgment at the collision scene. It is important to note that multiple factors often act in combination to lead to a collision. Speeding is commonly noted as a secondary contributing factor.

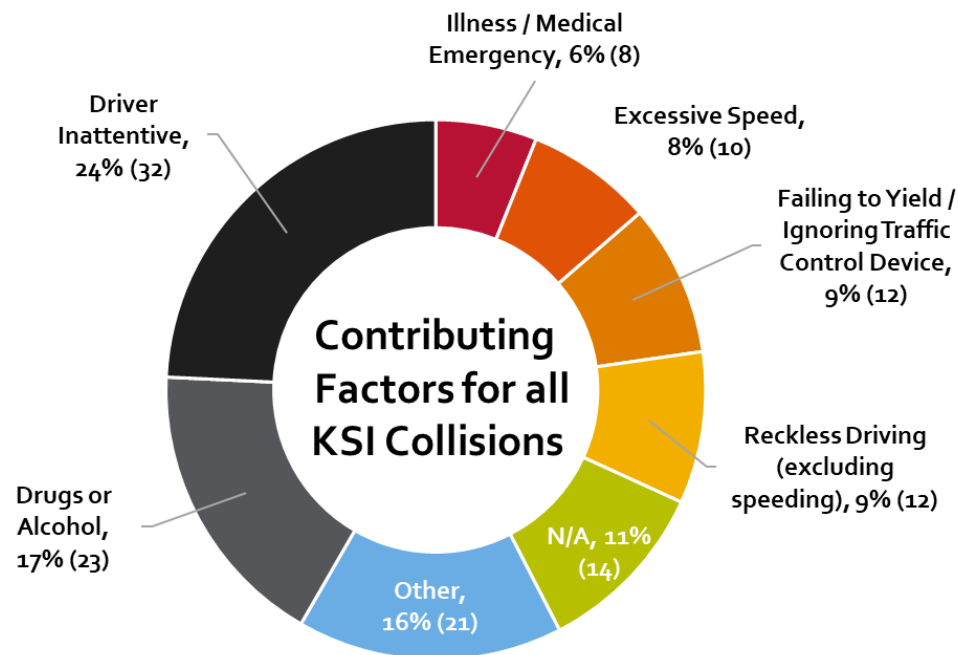


Figure 7: Primary Contributing Factors for KSI Collisions (Source, TAS 2018-2022)

Annual Trends

Collision analyses typically focus on five-year periods to identify trends while avoiding emphasis on year-to-year fluctuations. As shown in [Figure 8](#), the number of injury collisions (including KSI and minor injuries) has been declining over the past five years.

Fewer injury collisions occurred in 2020 which can likely be attributed to an overall decline in travel due to the COVID-19 pandemic.

Temporal Trends

Collisions can occur in any month, on any day, at any time. However, time trends can help to identify when and why some collisions are occurring. There were more injuries on weekdays, when there were more people taking trips. Injuries on the weekends tended to be more severe.

As shown in [Figure 14](#)^{Error! Reference source not found.}, the time-of-day distribution of injury collisions (including KSI and minor injuries) generally followed the same trend as the profile of daily trips, with some exceptions to this trend:

- Fewer collisions occurred relative to the traffic profile between 6:00 am and 9:00 am;
- Inversely, more collisions occurred between 9:00 pm and 3:00am relative to the traffic volumes;
- Looking at KSI collisions only, higher KSI collisions occurred on:
 - Saturday nights from 9:00 pm to Sunday morning at 3:00 am, and
 - Friday afternoons from 12:00 pm to 3:00pm.

The absolute number of collisions is decreasing, showing a **37% decrease** from 2018 to 2022.

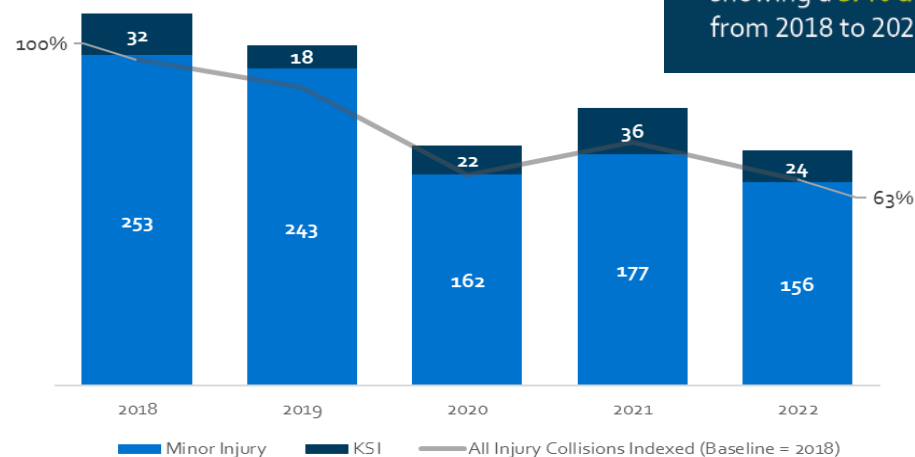


Figure 8: Police-reported Injury Collision Trends in Kelowna by Year (TAS, 2018-2022)

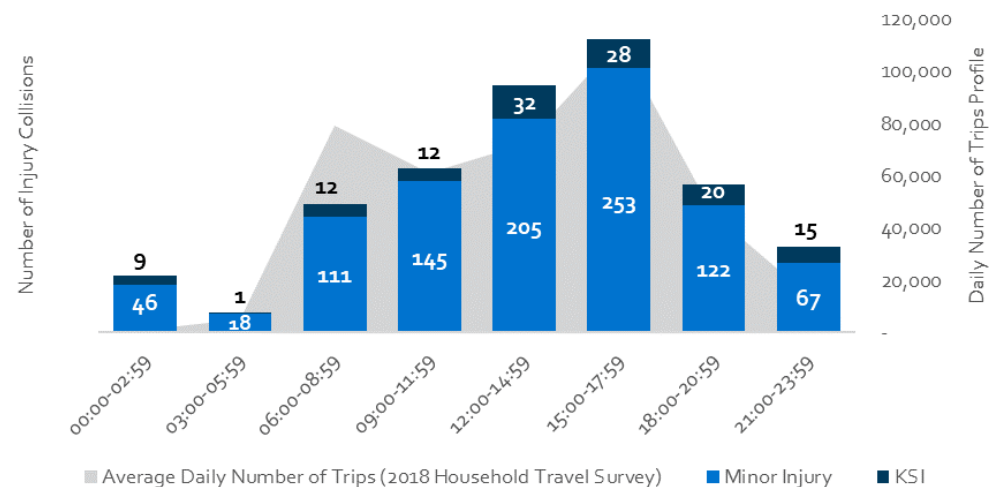


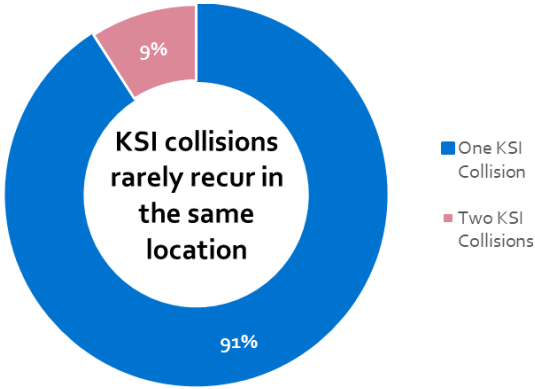
Figure 9: Police-reported Injury Collision Trends by Time of Day Compared to Daily Trip Profile (TAS, 2018-2022)

Figure 10: KSI Collisions by Location (Source: TAS, 2018-2022)

Collision Patterns by Location

Figure 10 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 and excludes provincial highways. 91 per cent of KSI collisions occurred at locations where no other collision of the same severity occurred during this period. Put simply, KSI collisions rarely recur in the same location.

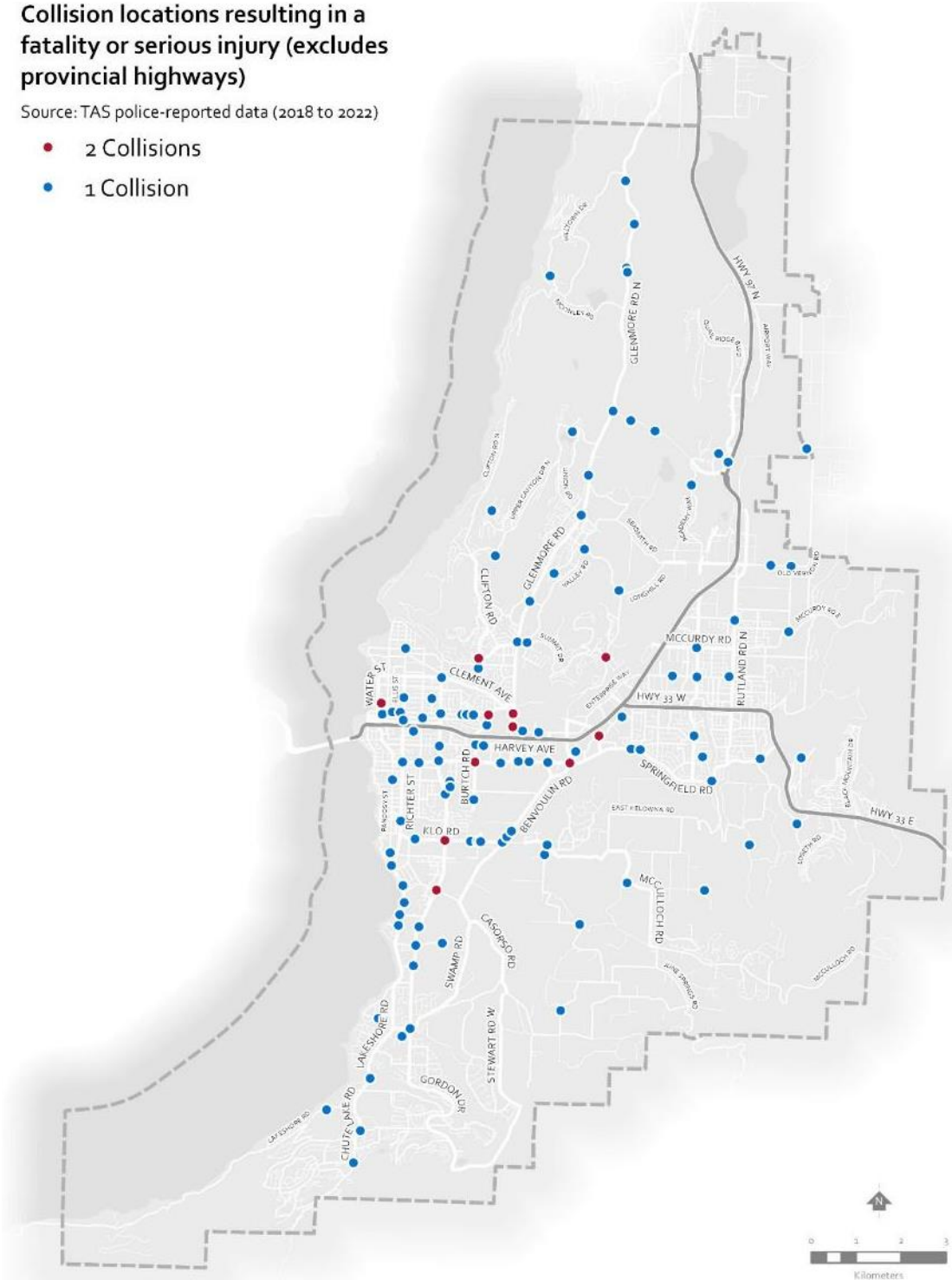
To act preventively on risk factors, it's essential to understand why KSI collisions occur – including factors such as human behaviour, pre-collision movements, road or intersection design, and more. Developing a system-wide plan and proactively implementing safety measures and programs using the Safe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



Collision locations resulting in a fatality or serious injury (excludes provincial highways)

Source: TAS police-reported data (2018 to 2022)

- 2 Collisions
- 1 Collision



Vehicle-Only Collisions

This section summarizes findings from collisions that only involved vehicles (excludes collisions involving cyclists, pedestrians, motorcyclists, and micromobility users).

Multi-vehicle Collision Trends

When two or more vehicles were involved in an injury collision, rear ends, intersection right angle, and left turn across oncoming traffic were the most common collision types, accounting for 70 per cent of all injury collisions, as shown in [Figure 11](#), and 49 per cent of all KSI collisions. A visual representation of these collision types can be seen in [Figure 12](#).

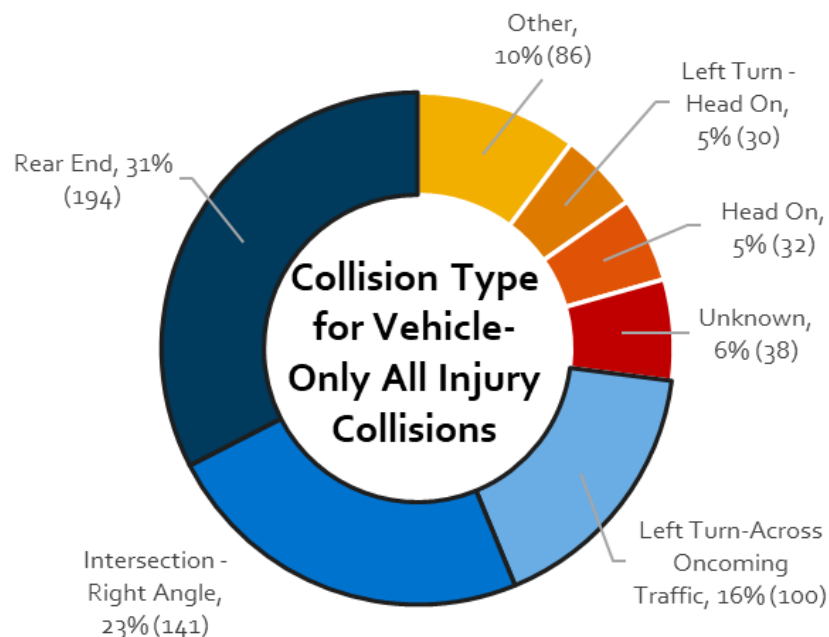


Figure 11: Vehicle-only – All Injury Collision Types (Source, TAS 2018-2022)

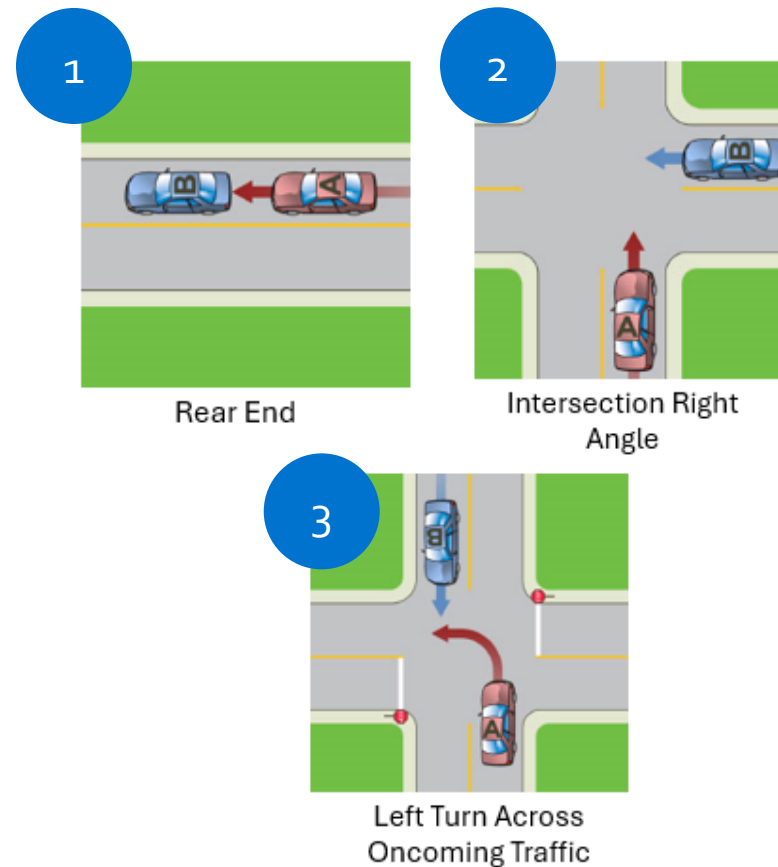


Figure 12: Visual Representation of Common Vehicle-Collision Types (Source: Modified from ICBC)

The top five primary contributing factors for multi-vehicle collisions are shown in [Figure 13](#). Key findings include:

- Driver inattentiveness is the leading primary contributing factor for both KSI collisions and all injury collisions. However, it should be noted that inattentiveness captures a wide range of situations, from inattentiveness to the traffic control device, looking at something other than the road, to in-vehicle distractions such as interacting with passengers or use of mobile phone;
- Failing to yield right of way and alcohol use are also leading factors for both KSI collisions and all injury collisions; and
- Following too closely and ignoring traffic control devices are leading contributing factors for all injury collisions, but not specifically KSI collisions.

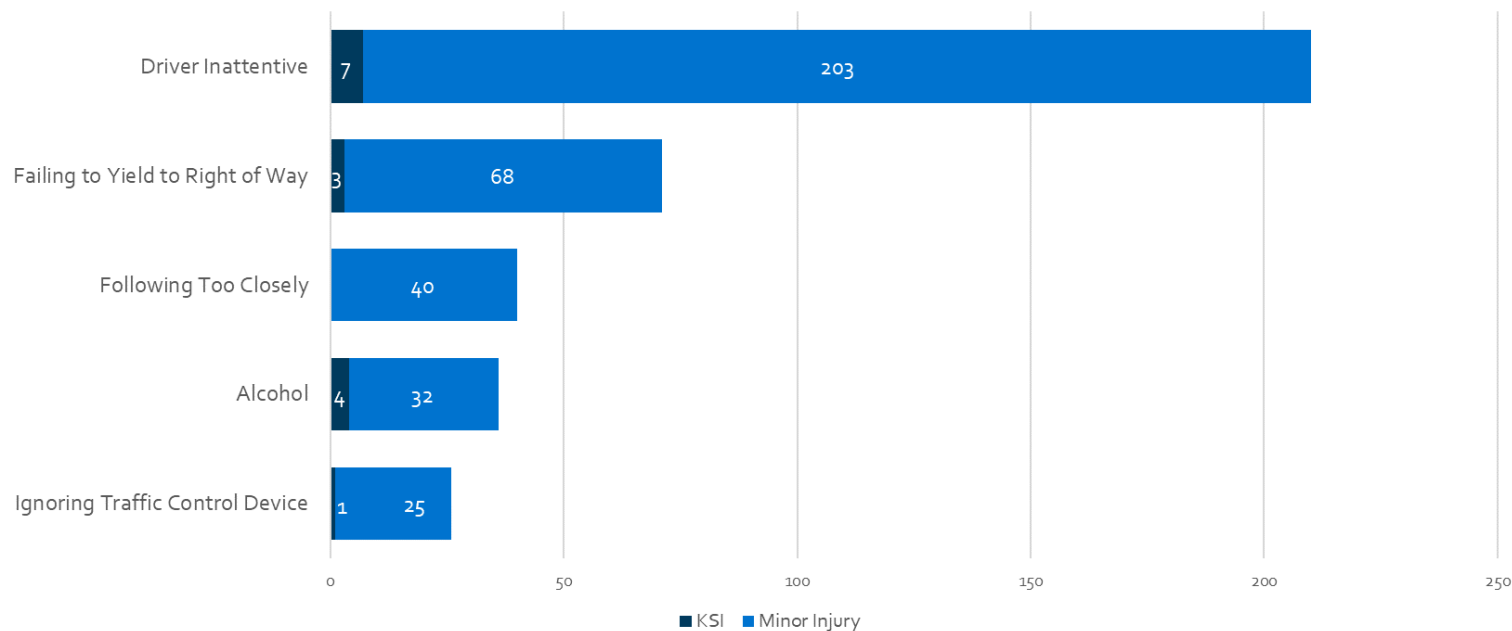


Figure 13: Vehicle-only Injury Collisions – Top Primary Contributing Factors (Source, TAS 2018-2022)

Single-vehicle Collision Trends

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

The top five primary contributing factors for single vehicle collisions are shown in **Figure 14**. Key findings include:

- Alcohol, driver inattentiveness, and excessive speeds contributed to the most injury collisions (including both KSI and minor injury collisions);
- Alcohol, excessive speeds, and illness/medical emergency contributed to the most KSI collisions;
- Driver inattentiveness was high, but this can be misrepresentative of why these collisions occur as noted in the previous section;
- Poor road conditions were a higher contributing factor for less severe injury crashes, but was not a leading cause of KSI collisions; and
- Illness / medical emergency collisions can be related to a variety of pre-existing medical conditions including heart failure, seizures, sudden loss of consciousness, etc.

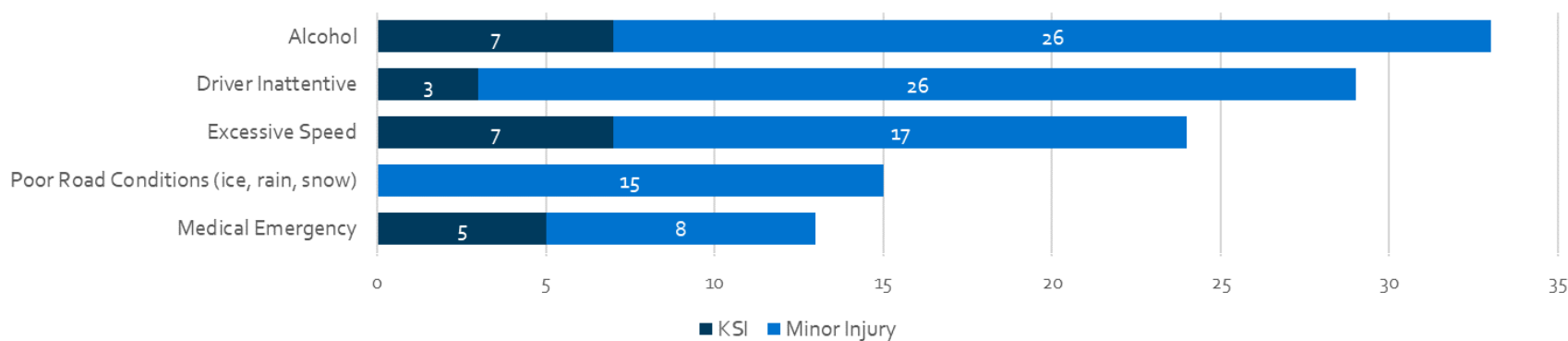


Figure 14: Single Vehicle Collisions – Top Primary Contributing Factors (TAS, 2018-2022)

Drivers in Injury Collisions by Age Category

This section summarizes vehicle drivers by age for any type of injury collision (i.e. multi-vehicle, single vehicle, pedestrian, cyclist, etc.).

Younger drivers were the most likely to be involved in KSI and minor injury collisions. These results include drivers of every vehicle involved in an injury collision (i.e., a two-vehicle collision includes the ages of both drivers, regardless of who was at fault). When compared to the proportion of licensed drivers in Kelowna by age category, those aged 15 to 24 are the most over-represented, followed by age 25-34 and age 75 and over, as shown in **Error! Reference source not found.**

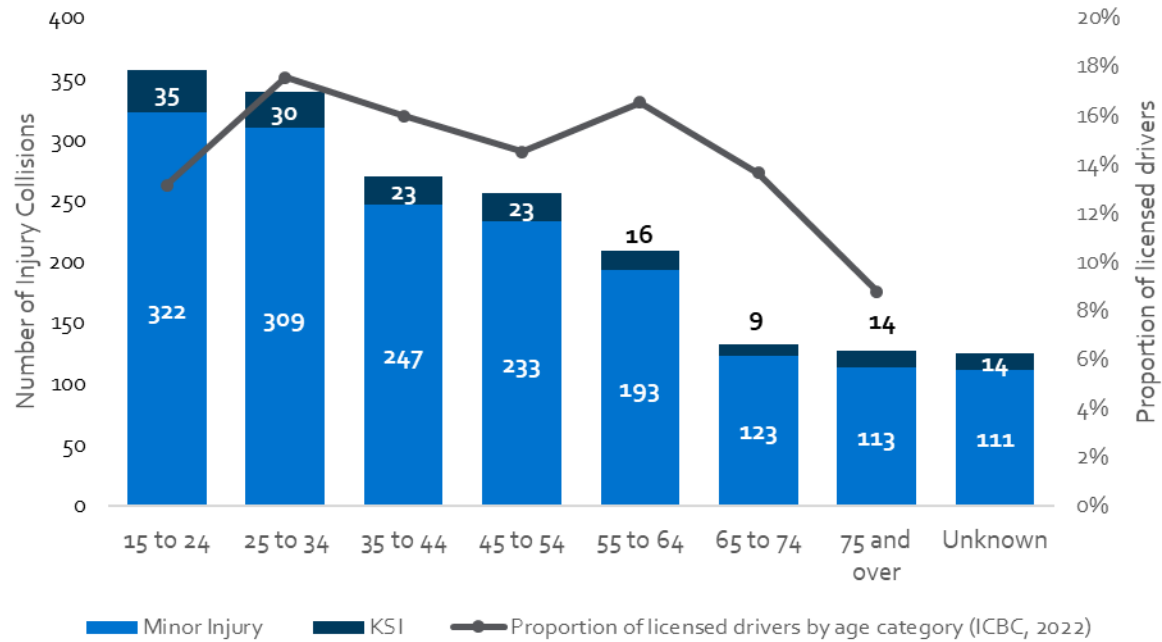


Figure 15: Drivers involved in injury collisions by age by proportion of licensed drivers (TAS, 2018-2022)

Vehicle – Pedestrian Collisions

This section provides analysis on collisions that involved a vehicle and a pedestrian.

Vehicle-Pedestrian Collision Trends

A total of 112 collisions resulting in any kind of pedestrian injury occurred from 2018 to 2022. While there was an increase in 2019, collisions involving pedestrians resulting in injuries have been relatively stable over the past five years, as shown in [Figure 16](#).

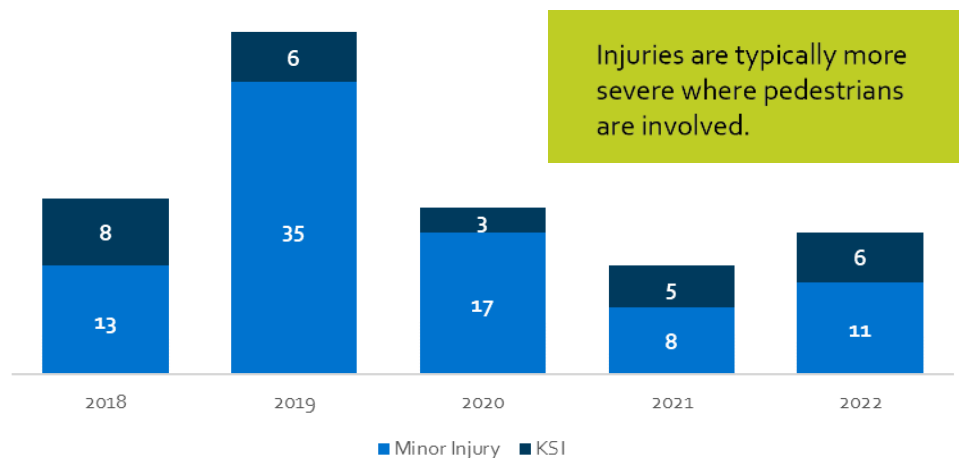


Figure 16: Annual Trends in Collisions Involving Pedestrians (TAS, 2018-2022)

As shown in [Figure 17](#), when a collision between a vehicle and a pedestrian occurred, the most frequent collision type involved a vehicle making a left turn conflicting while a pedestrian was crossing with the signal. This collision type had the highest number of all pedestrian injury collisions (17 per cent) and the highest number of pedestrian KSI collisions (6 out of 28, or 21 per cent). Other common pedestrian collision types for both KSI and all injury collisions included:

- Vehicle going straight ahead conflicting with a pedestrian crossing the street with no signal and no crosswalk (9 per cent of all injury collisions); and
- Vehicle making a left turn conflicting with a pedestrian crossing with no signal and no crosswalk (8 per cent of all injury collisions).

A visual representation of the most common pedestrian collision types can be seen in [Figure 18](#).

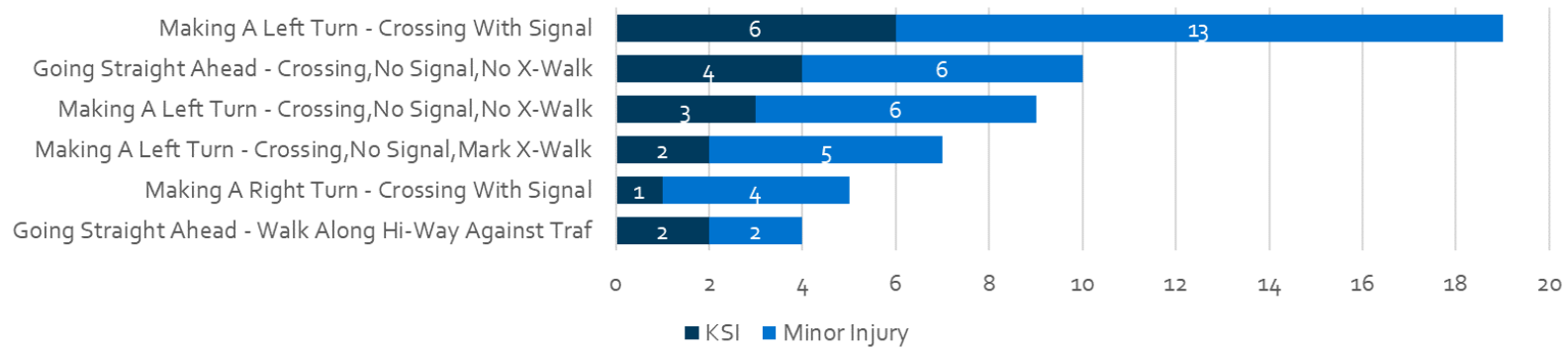


Figure 17: Top Vehicle-pedestrian Injury Collision Types (vehicle movement - left, pedestrian movement - right) (Source, TAS 2018-2022)

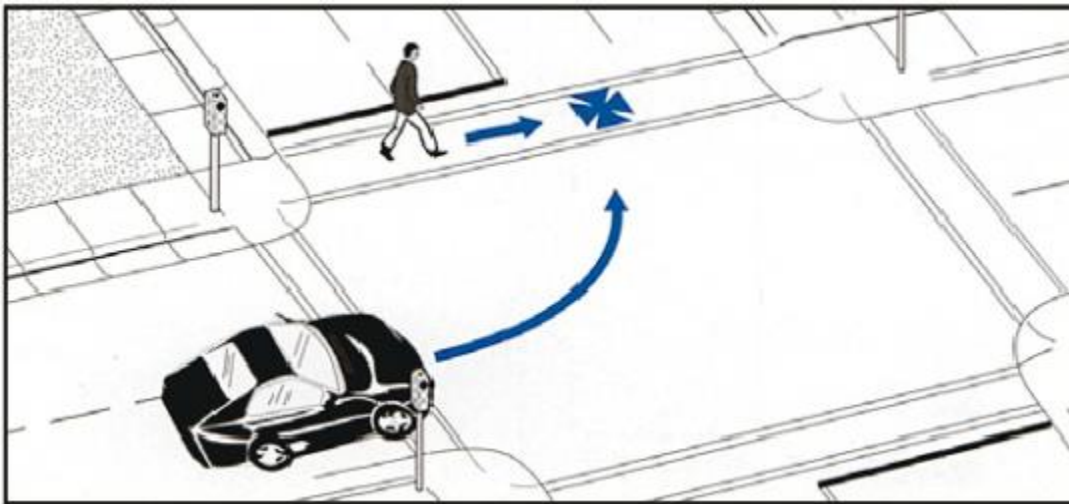


Figure 18: Visual Representation of Left Turn Crossing with Signal and Pedestrian in Crosswalk (Source: FHWA)

The top contributing factor for injury collisions between a vehicle and a pedestrian was driver inattentiveness, followed by driver failing to yield, as shown in [Figure 19](#).

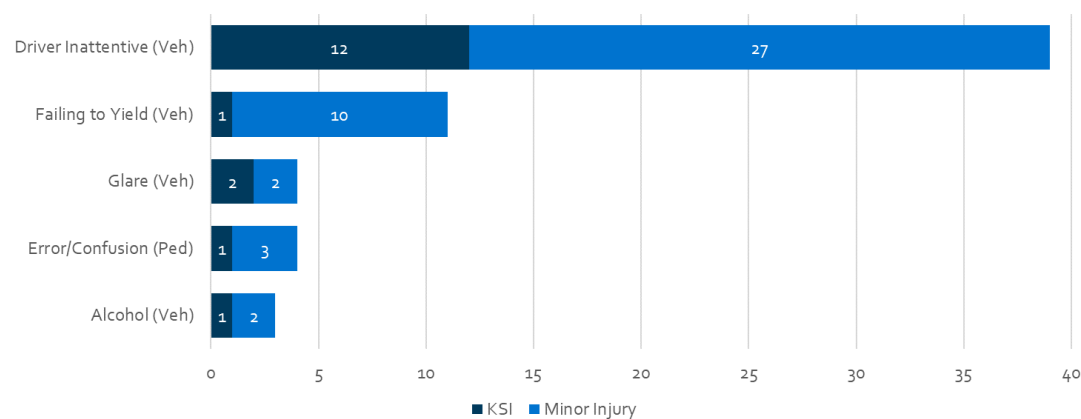


Figure 19: Top Vehicle-pedestrian Injury Contributing Factors (Source, TAS 2018-2022)

Pedestrians in Injury Collisions by Age Category

As shown in [Figure 20](#), younger pedestrians were most likely to be involved in KSI and minor 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, those aged 15 to 24 are over-represented as well as those aged 75 and over.

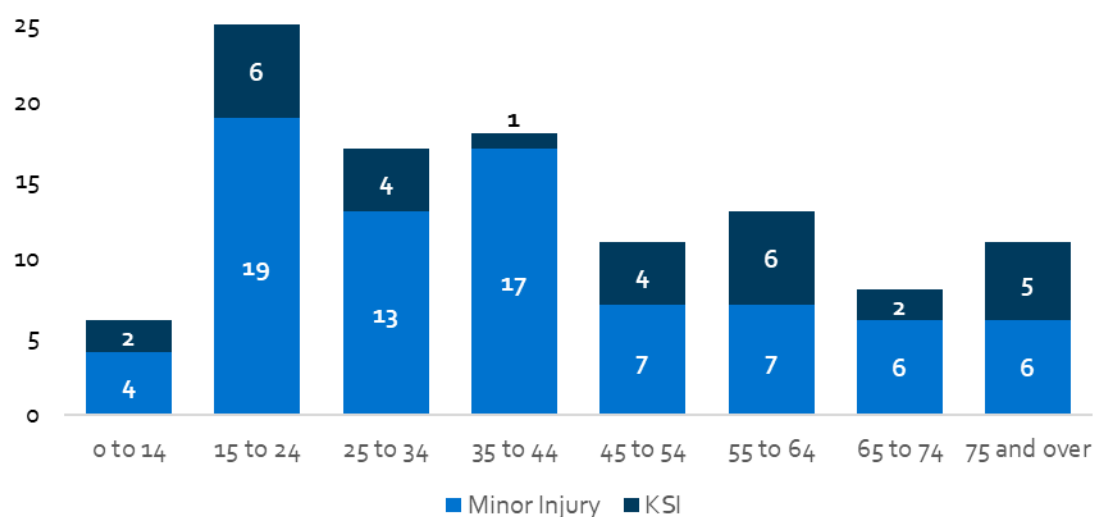


Figure 20: Pedestrian Involved in Injury Collisions by Age Category (TAS, 2018-2022)

Figure 21: Pedestrian-involved Injury Collisions by Location (Source: TAS, 2018-2022)

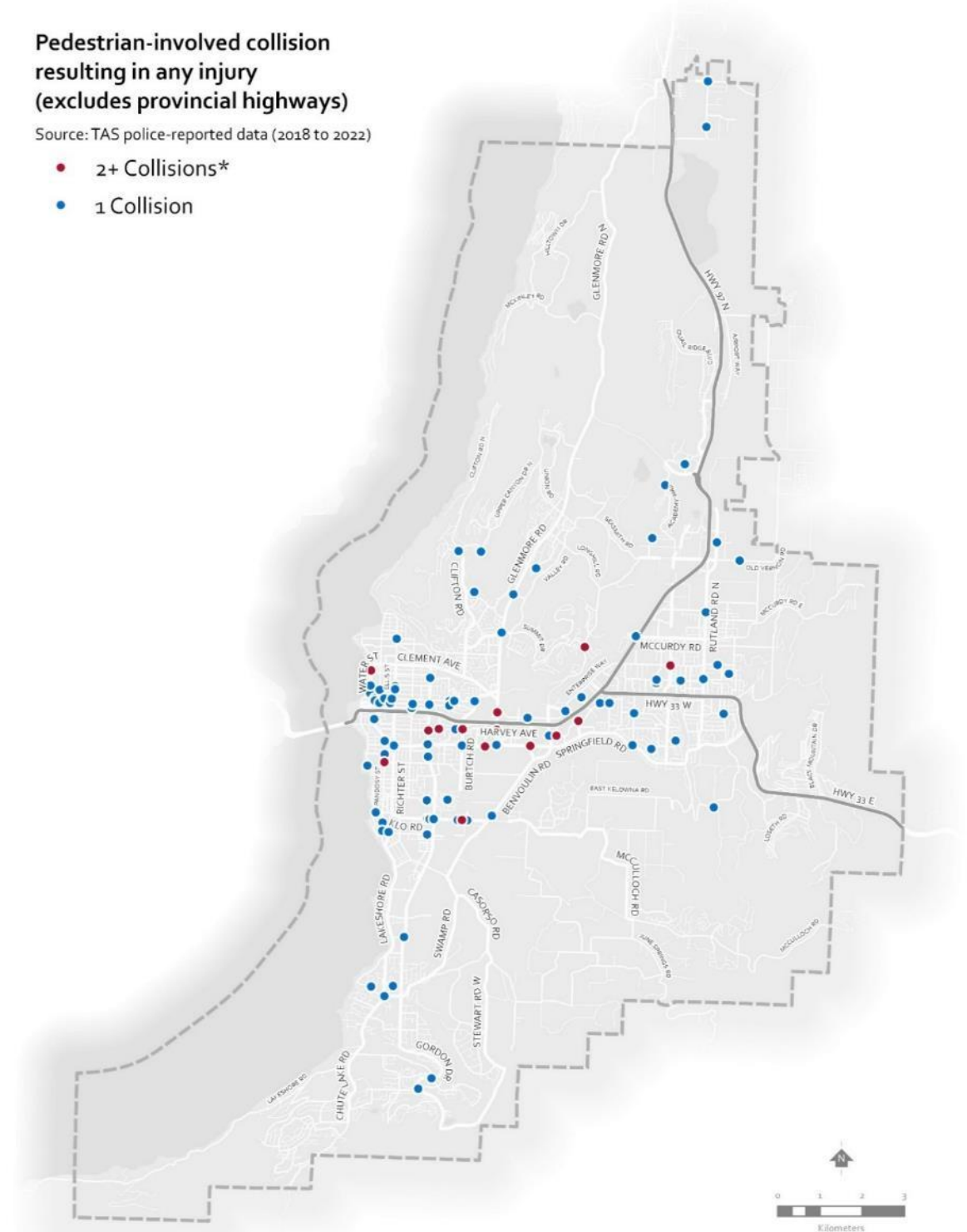
Pedestrian Collisions Locations

Figure 21 illustrates the location of collisions involving pedestrians that resulted in any injury between 2018 and 2022. This data includes only collisions that occurred on City-owned roads and excludes highways.

Pedestrian-involved collision resulting in any injury (excludes provincial highways)

Source: TAS police-reported data (2018 to 2022)

- 2+ Collisions*
- 1 Collision

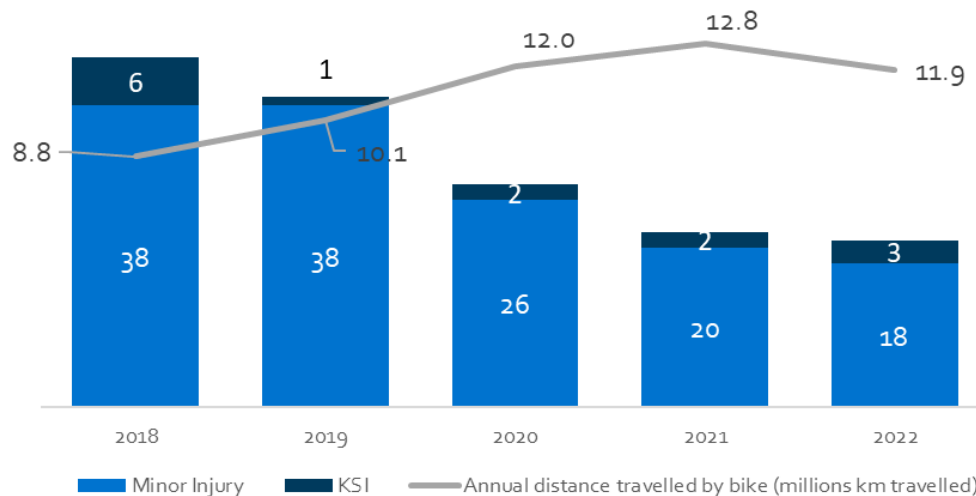


Vehicle - Cyclist Collision Trends

This section provides analysis on collisions that involved a vehicle and a cyclist.

Vehicle-Cyclist Collision Trends

A total of 154 collisions resulting in any kind of cyclist injury occurred from 2018 to 2022. Collisions with cyclists were typically more severe, with 14 (9%) of those collisions resulting in somebody being killed or seriously injured. As shown in **Figure 22**, collisions involving cyclists 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 all ages and abilities (AAA) bike network and other bike network improvements are helping to improve cyclist safety.



Collisions with cyclists decreasing while distance travelled by bike has increased by 35 per cent

Figure 22: Annual Collision Trends Involving a Cyclist (TAS, 2018-2022)

As shown in **Figure 23**, the highest number of all cyclist injury collisions involved a vehicle making a right turn with a cyclist going straight ahead (right hook collision), accounting for 32 per cent of cyclist-involved collisions. The second most common collision type for all cyclist injury collisions was a vehicle going straight ahead and a cyclist going straight ahead (side swipe collision). A vehicle making a left turn while a cyclist continued straight (left cross collision) saw the highest number of KSI collisions (3 out of 14, or 21 percent) and accounted for 14 per cent of all cyclist injury collisions.

A visual representation of these collision types can be seen in [Figure 24](#).

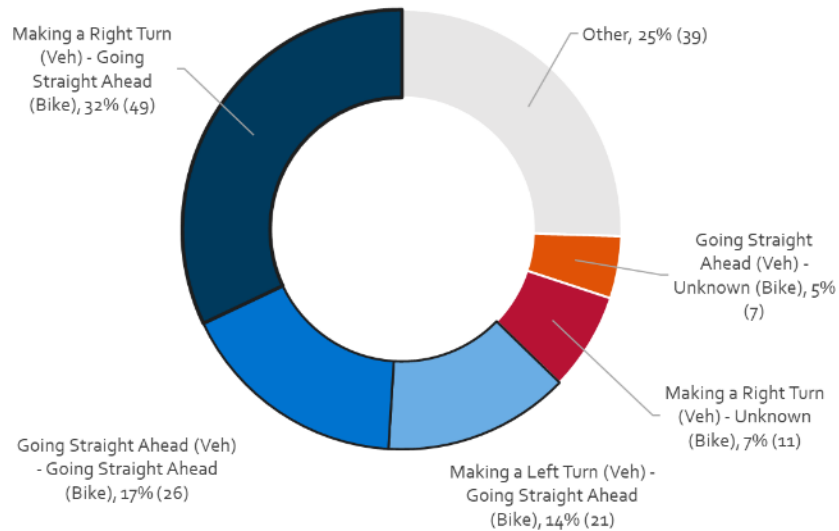


Figure 23: Vehicle-cyclist Injury Collision Types (Source, TAS 2018-2022)

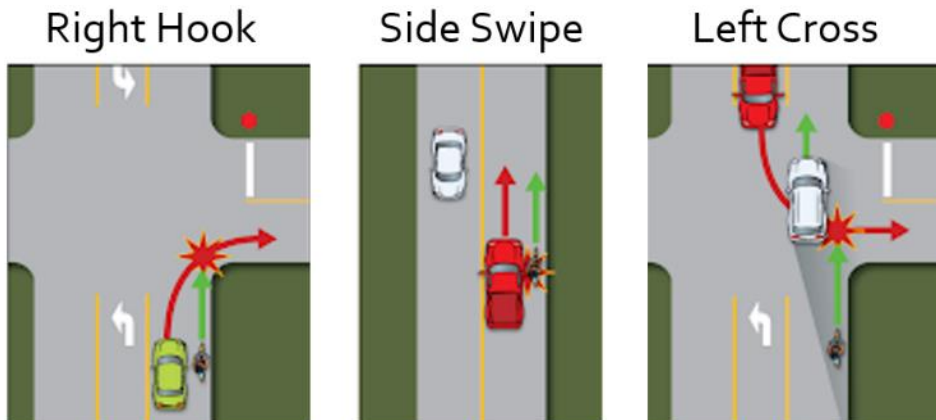


Figure 24: Visual Representation of Most Common Types of Cycling Injury Collisions (Source: Adapted from Keri Caffrey Inc)

The top primary contributing factors for collisions between drivers and cyclists were driver inattentiveness, driver failing to yield, cyclist inattentiveness, inattentiveness by both parties, and cyclist failing to yield, as shown in [Figure 25](#).

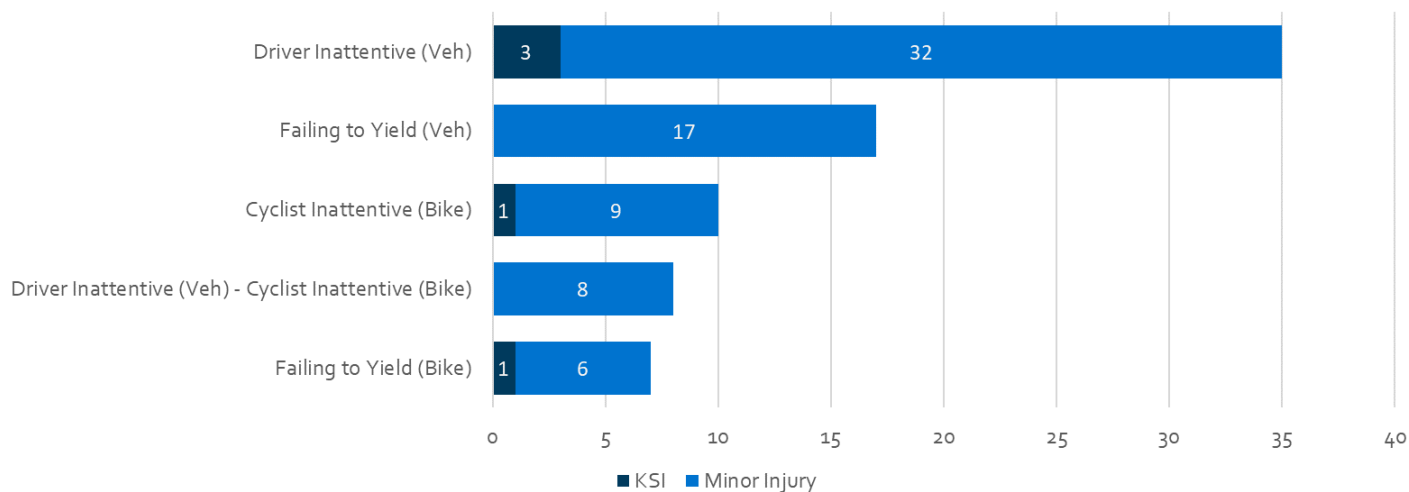


Figure 25: Contributing factors for Collisions Involving Cyclists (TAS, 2018-2022)

Cyclists in Injury Collisions by Age Category

The proportion of cyclists injured in a collision generally follows the same trend as the proportion of biking trips by age category, but some groups are slightly over-represented (notably, the 15 to 34 and 45 to 54 age groups), as shown in [Figure 26](#). Cyclists aged 25 to 44 are the largest age group experiencing KSI and minor injury collisions, representing 41 per cent of killed or seriously injured cyclists. Cyclists aged 35 to 44 are the largest age group experiencing KSI collisions, representing 50 per cent of KSI collisions involving a cyclist.

More male cyclists compared to female cyclists were involved in collisions resulting in injury; males represented 67 per cent and 73 per cent of all injury and KSI collisions, respectively. This corresponds with the trend that males are more likely to bike compared to females. In the 2022 Transportation Citizen Survey, 57 per cent of males said they have biked at least some of the time, compared to 40 per cent of females.

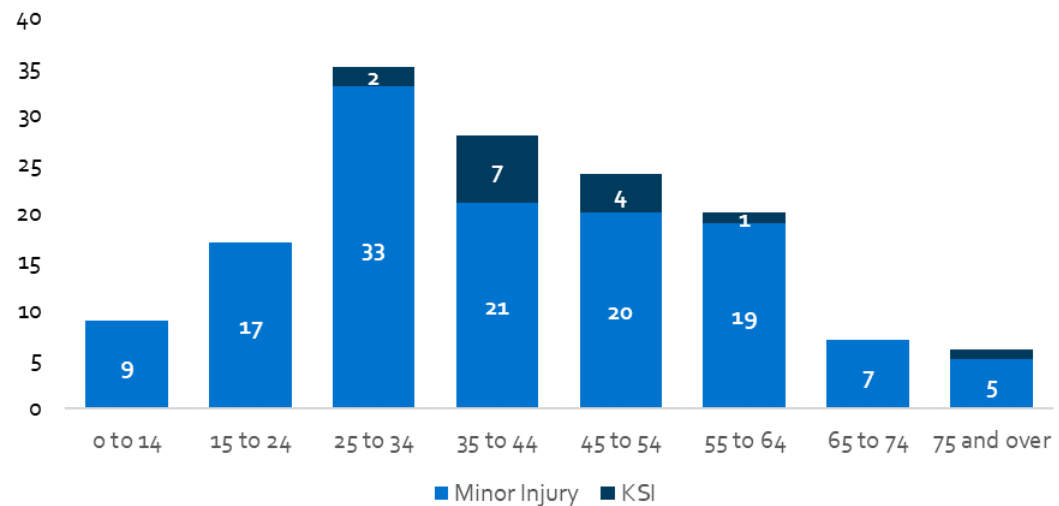


Figure 26: Cyclists Involved in Injury Collisions by Age Category (TAS, 2018-2022)

Figure 27: Cyclist-involved Injury Collisions by Location (Source: TAS, 2018-2022)

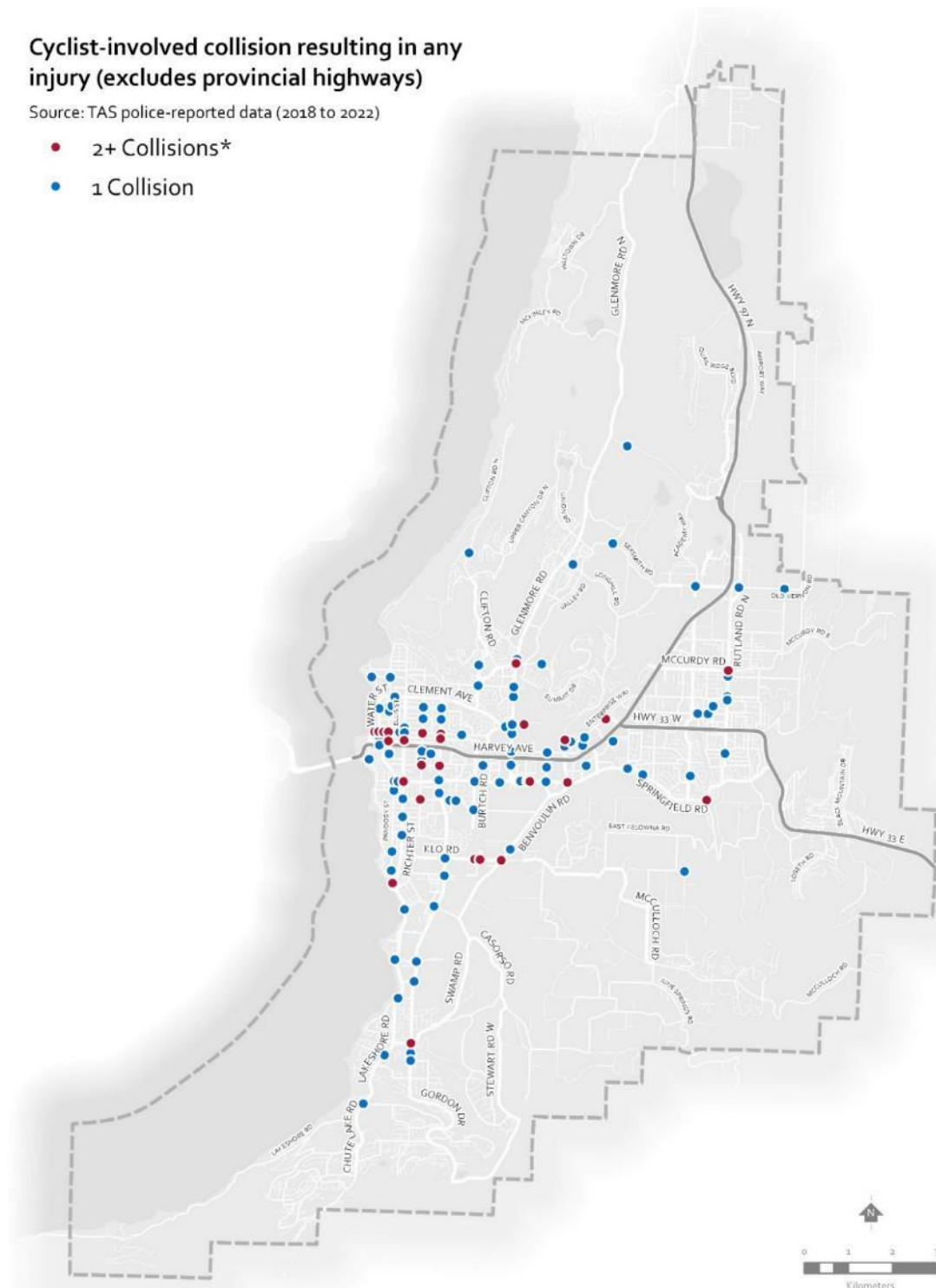
Cyclist Collisions Locations

Figure 27 illustrates the location of collisions involving cyclists that resulted in any injury from 2018 to 2022. This data includes only collisions that occurred on City-owned roads and excludes highways.

Cyclist-involved collision resulting in any injury (excludes provincial highways)

Source: TAS police-reported data (2018 to 2022)

- 2+ Collisions*
- 1 Collision



* Maximum number of collisions at one location is 3

Motorcyclist-Involved Collisions

This section provides analysis on collisions that only involved a motorcyclist (either vehicle-motorcycle collisions or single motorcyclist collisions).

Motorcyclist Collision Trends

Between 2018 and 2022, a total of 64 motorcycle collisions resulted in an injury, as shown in [Figure 28](#). The greatest number of collisions occurred in 2018, while the highest proportion of KSI collisions occurred in 2021.

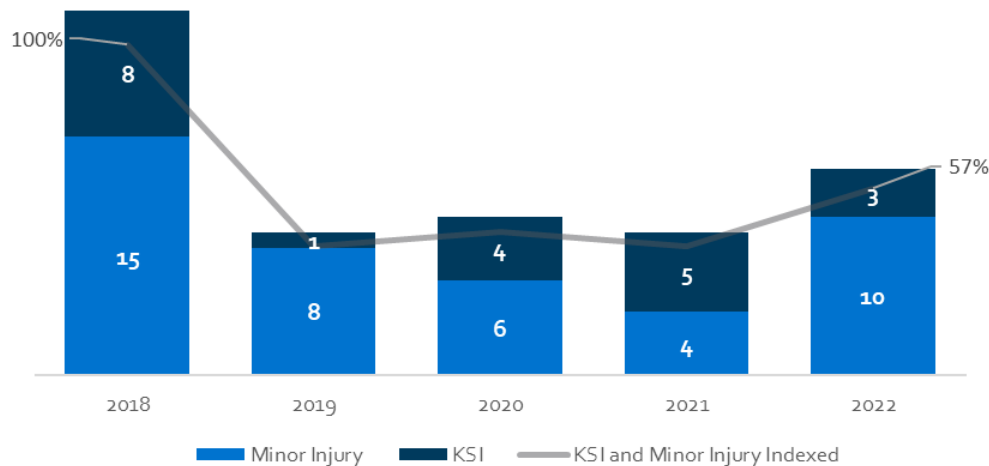


Figure 28: Annual Collision Trends Involving a Motorcyclist (TAS, 2018-2022)

When a collision involving a motorcyclist occurred, 69 per cent of all injury collisions involved either a single motorcycle going straight ahead, a vehicle making a left turn while a motorcyclist continued straight (left cross), or both a vehicle and motorcyclist going straight, as shown in [Figure 29](#). A vehicle turning left with a motorcyclist going straight ahead had the highest number of KSI collisions (8 out of 21, or 38 per cent).

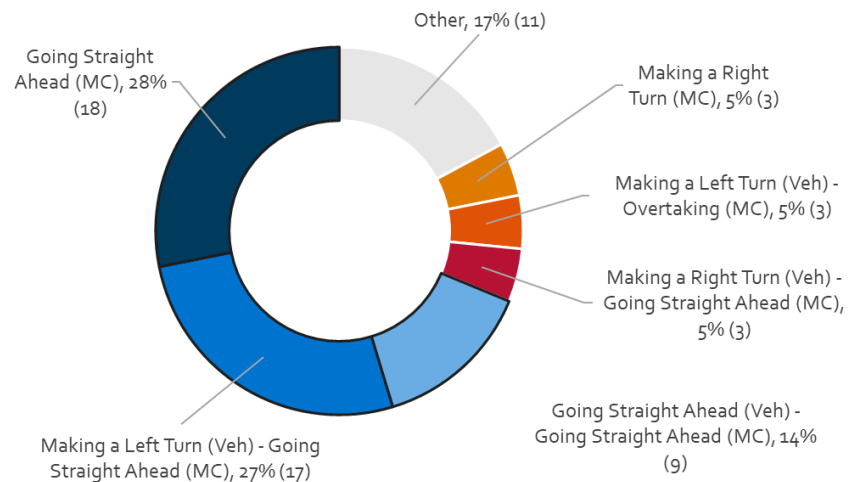


Figure 29: Vehicle-Motorcycle Injury Collision Types (Source, TAS 2018-2022)

The top contributing factors for collisions involving a motorcyclist included driver inattentiveness for both vehicle drivers and motorcyclists, a vehicle failing to yield, alcohol use, and a motorcyclist following too closely, as shown in **Figure 30**.

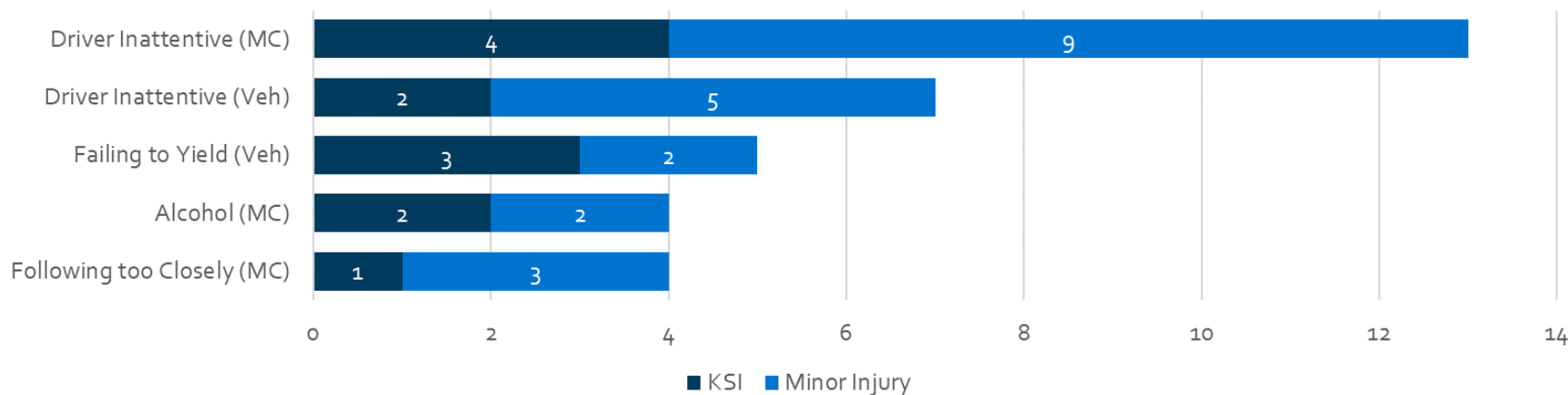


Figure 30: Contributing Factors for Collisions Involving Motorcyclists (TAS, 2018-2022)

Motorcyclists in Injury Collisions by Age Category

The data used in this analysis for motorcycle collisions includes motorcycle drivers only and excludes passengers. Younger motorcycle drivers saw the highest number of injury collisions and are over-represented compared to the population of the same group (ages 15 to 34), as shown in Figure 31.

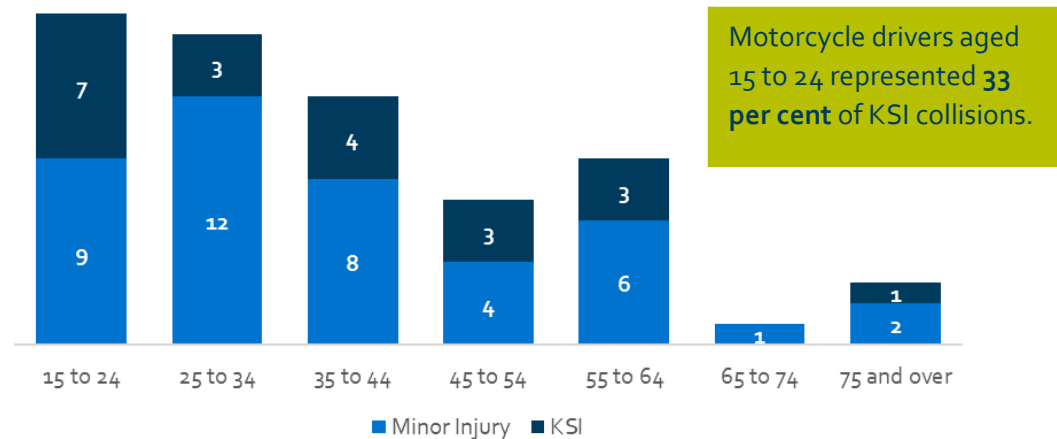


Figure 31: Motorcyclists Involved in Injury Collisions by Age Group (TAS, 2018-2022)

Figure 32: Motorcyclist-involved Injury Collisions by Location (Source: TAS, 2018-2022)

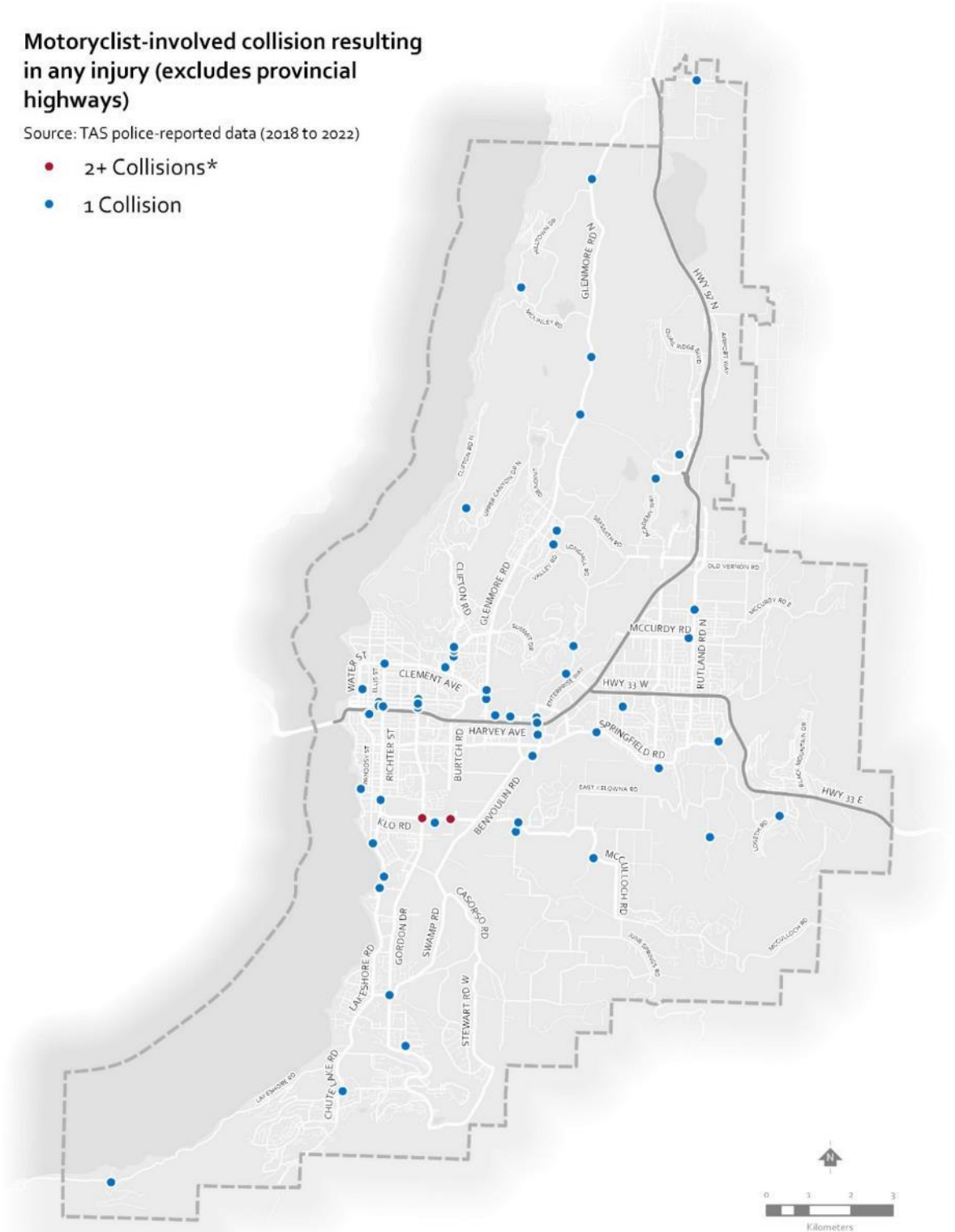
Motorcycle Collision Locations

Figure 32 illustrates the location of collisions that resulted in any injury from 2018 to 2022. This data includes only collisions that occurred on City-owned roads and excludes highways.

Motorcyclist-involved collision resulting in any injury (excludes provincial highways)

Source: TAS police-reported data (2018 to 2022)

- 2+ Collisions*
- 1 Collision



Safe Mobility Lived Experience: What We Learned

The first round of engagement for the Safe Mobility Action Plan was conducted in Spring 2024. The goal of the first round of public engagement was to inform residents and interested parties of the project, as well as about safe mobility 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 the City's *Get Involved* webpage. A map was also available for participants to place a marker based on a category (biking, road or sidewalk, speeds, etc.) and describe why they feel 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 community partners workshop was also held in April 2024, with representatives from the following organizations and programs participating:



- City of Kelowna;
- Safe Routes 4 Schools;
- Regional District of Central Okanagan;
- Interior Health;
- School District #23;
- BC MoTI (Central Okanagan Integrated Transportation Network);
- Interior Health;
- 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 will be used to help identify focus areas, targets and actions and to develop the Draft Safe Mobility Action Plan. Focus areas and key actions will then go back to the community for further community engagement (round two).

The key findings from the first round of community engagement are summarized below; the complete **Engagement Summary Report** is [here](#).

Perceptions of Safety

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.'

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 33**. Driving a car received the highest number of 'very safe' and 'somewhat safe' responses, followed closely by walking. Riding a motorcycle, biking, and 'other' received the highest proportion of combined 'very unsafe' and 'somewhat unsafe' responses.

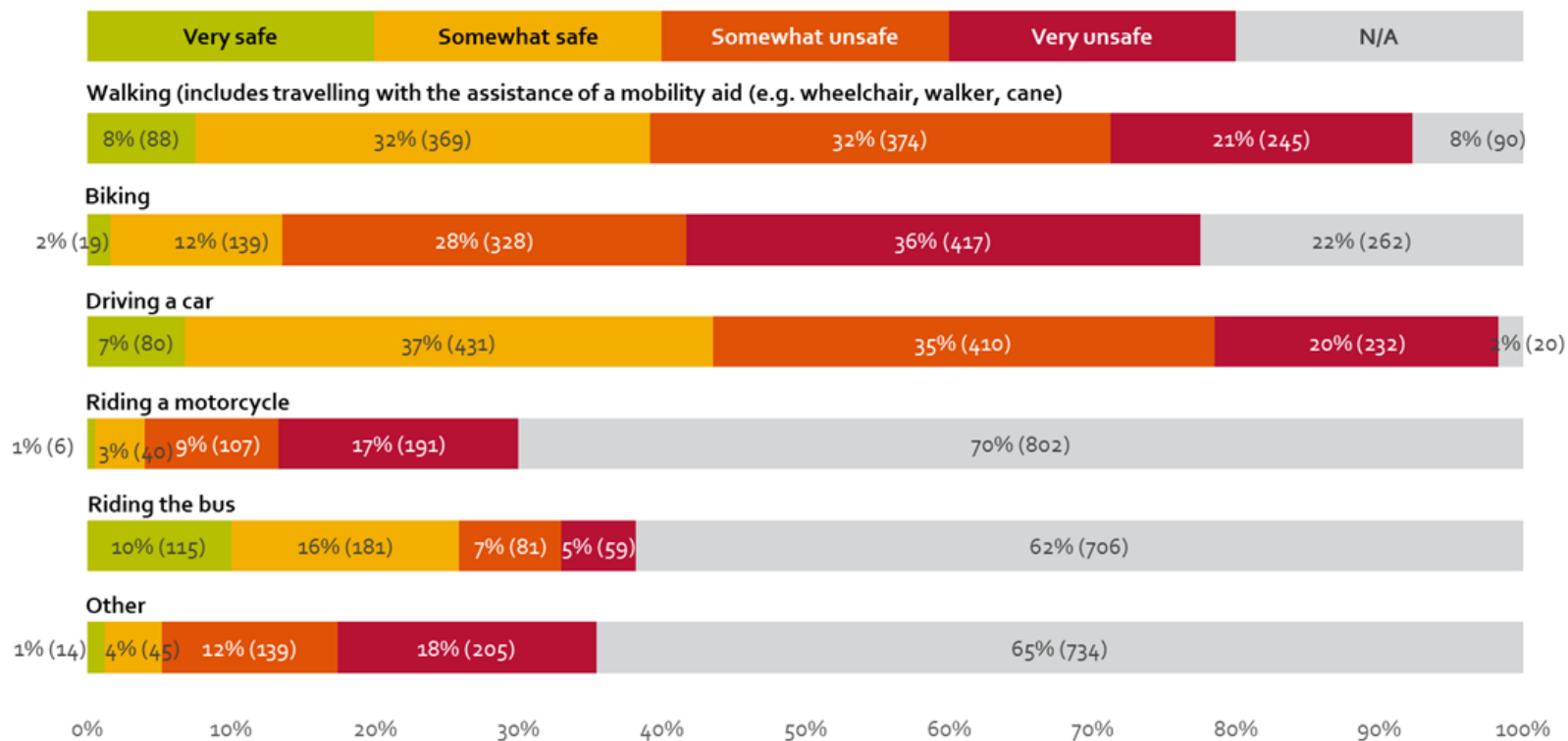


Figure 33: Round 1 Engagement Results (Perception of Safety and Modes of Travel)

Respondents were asked what they felt were the top three contributors to serious injuries and deaths on Kelowna roads; the top five perceived contributors to serious injuries and deaths selected are listed below:

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

The contributors chosen the least were lack of safe walking facilities, poor weather and road surface conditions, and medical emergencies. These perceptions will be considered in the identification of focus areas and actions for the Safe Mobility Plan.

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.



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.

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).

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.

Vision & Guiding Principles

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.'

Survey respondents were shown the following draft vision, which was developed through workshops with various City 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 of respondents showed support for the vision with 40 per cent demonstrating 'neutral support.' A total of 99 written comments were submitted through the survey; of which, the top three topics mentioned related to the vision were:

- Wanting to see more immediate action;
- Vision is unrealistic; and
- Adjustments to the vision statement language (i.e., more emphasis should be placed on active and public transport).

Survey respondents were shown the following guiding principles for the development of the Safe Mobility Action Plan, 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; and
- Reducing the number of principles and simplifying the language in the descriptions.

Safety Enhancements

The City of Kelowna proactively initiates and implements safe mobility improvements on an ongoing basis. These improvements include policies, capital projects and retrofits, and education and advocacy initiatives. Various plans identify specific targets and projects, such as the Transportation Master Plan and other neighbourhood specific plans. The Safe Mobility Action Plan will be a more targeted plan that focuses on reducing the frequency and injury severity of collisions in a strategic, city-wide approach informed by this report and community engagement.

To ensure these improvements are successful, the City of Kelowna has collaborated with other organizations, including BC Transit, Interior Health, ICBC, the BC MoTI, and the Regional District of the Central Okanagan. Ongoing and continued collaboration with these agencies and others is crucial to realizing the safe mobility objectives of Kelowna.

Existing measures and recent enhancements implemented in the City are summarized below. This summary is not exhaustive but is intended to create an understanding of the level of effort and investment made by the City and partners, and highlight some of the possible safety improvements and countermeasures that could be applied in the future.

Pedestrian Safety

20 km

New Sidewalks

The City has constructed over 20 km of accessible-width sidewalks based on the BC Active Transportation Design Guide since 2016.

130+

Traffic Signals

There are over 130 fully signalized intersections and half signals in Kelowna.

80+

Upgraded Crosswalks

Over 20 pedestrian activated half signals and over 60 upgraded crosswalks (flashing beacons and rectangular rapid flashing beacons (RRFBs)) are provided in Kelowna.

Accessible Design

60%

Audible Pedestrian Signals

60 per cent of full and half signals in Kelowna have audible pedestrian signals that provide information for people with low vision on the timing and direction of safe crossing.

Cycling Safety

28 km

New Multi-use Pathways and Protected Bike Lanes

Over 28 km of multi-use pathways and protected bike lanes have been built in Kelowna since 2016. Recent projects include Abbott Street, Sutherland Avenue, Leckie Road, and Glenmore Road Active Transportation Corridors.

15 km

New Painted Bike Lanes

Over 15 km of painted bike lanes have been built since 2016.

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, with an example shown in .

12

Roundabouts and Traffic Circles

There are 12 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 collisions³.

Traffic Calming

175+

Speed humps, speed cushions, raised crosswalks

Over 175 speed humps, speed cushions, or raised crosswalks have been installed in Kelowna to slow vehicle speeds.

3

Raised Intersections

The City has 3 raised intersections, which reinforce intended travel speed and allows for improved crossing conditions for pedestrians.

Other traffic calming treatments have been implemented across Kelowna including chicanes, curb extensions, and traffic circles.

³ <https://www.icbc.com/about-icbc/newsroom/2024-feb07-roundabouts>

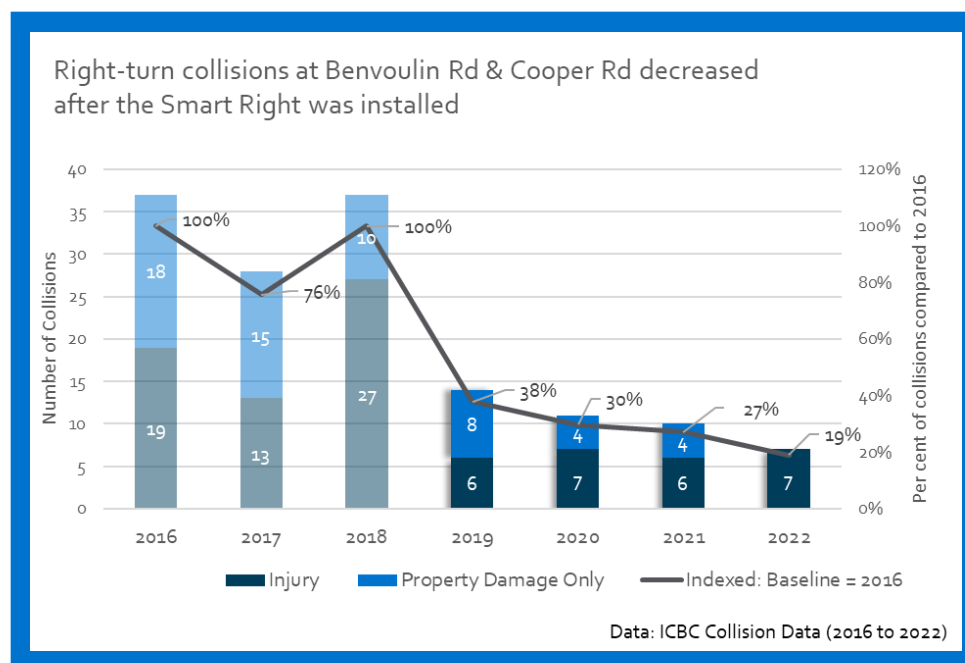


Figure 34: Right-turn Collisions at the Smart Right location at Benvoulin Rd & Cooper Rd intersection (constructed 2019) (source: [TMP Reporting, City of Kelowna](#))

School Zones

There are 20 public elementary schools, 9 public middle or secondary schools, and 10 independent schools in Kelowna. School zones have speed limits of 30km/h between 8:00 am and 5:00 pm. Through the Regional District of the Central Okanagan, Clean Air and Safe Routes 4 Schools helps encourage students and parents to use active transportation if they live 2.5 km or less from their school. This program is currently open to elementary schools and the City of Kelowna provides infrastructure improvements around the school to improve safety and encourage active transportation.

9

Safe Routes 4 Schools

9 elementary schools have had (or are in the process of) infrastructure improvements through Safe Routes 4 Schools in Kelowna.

Transit Infrastructure

800+

Bus Stops

Over 800 bus stops are provided in Kelowna which interface between the pedestrian network and access to transit service.

70%

Bus Stops with Sidewalk Connection

70 per cent of bus stops have a sidewalk connection to the stop.

45%

Sidewalk Connection and Meet Accessibility Guidelines

45 per cent of bus stops have a sidewalk connection to the stop and meet BC Transit's accessibility guidelines.

2

Bus Queue Jump Lanes

Two locations have bus queue jump lanes (Lakeshore Road at Richter Street and Lakeshore Road at Dehart Road)



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

BCRSS British Columbia's Road Safety Strategy

CRSS Canada's Road Safety Strategy

ICBC Insurance Corporation of British Columbia

KSI Killed or Seriously Injured

MOTI British Columbia Ministry of Transportation and Infrastructure

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	Anyone outside of a motor vehicle including pedestrians, cyclists, people using mobility assistance devices (i.e., people who use wheelchairs, mobility scooters, etc.), and motorcyclists. These road users do not benefit from vehicle protections like crumple zones, airbags, and a protected passenger compartment.

