APPENDIX A

ROAD SAFETY *ACTION PLAN*

SAANICH ROAD SAFETY **ACTION PLAN**

Working Paper #1: Current State of Road Safety in Saanich

May 2023

Saanich

Saanich

ROAD SAFETY *ACTION PLAN*

Vision Zero is an ambitious goal to eliminate all serious traffic injuries and fatalities while ensuring safe, healthy, and equitable mobility for all road users.

This includes people who walk, ride a bike, use a mobility aid, take the bus or drive.

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1. Introduction

In February 2022, District of Saanich Council adopted **Vision Zero** as the approach to road safety in Saanich and passed a motion directing staff to develop a Road Safety Action Plan (RSAP) in alignment with Vision Zero and a Safe System approach.

Building off existing programs and partnerships, including with the Saanich Police Department and the Insurance Corporation of B.C. (ICBC), the RSAP involves:

- Collecting and analyzing crash data to understand the risks and impacts of crashes for all road users, especially people walking, cycling, or using motorcycles, as well as the locations of concern in Saanich;
- Identifying targets and actions based on data analysis, community consultation and an equity-based approach; and
- Developing an implementation and monitoring plan to prioritize and track progress on improved road safety and zero traffic fatalities and/or injuries.

What is Vision Zero?

Vision Zero is an ambitious goal to eliminate all serious traffic injuries and fatalities while ensuring safe, healthy, and equitable mobility for all road users.

This includes people who walk, ride a bike, use a mobility aid, take the bus or drive.

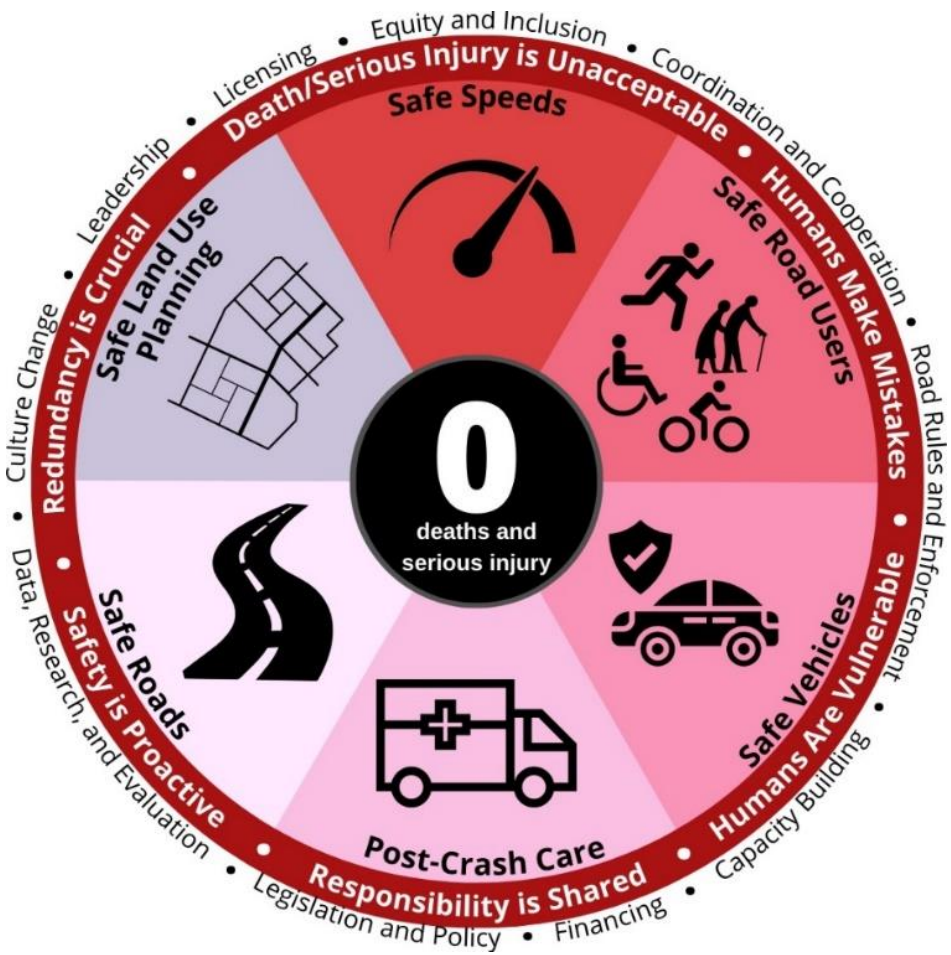
Why a Road Safety Action Plan (RSAP)?

Saanich's first-ever Road Safety Action Plan (RSAP) is a key initiative that directly addresses the safety of all road users, seeking to eliminate crashes that result in serious injuries and fatalities in the District. With Saanich's growth has come a recognition of the need to enhance safety on the District's roads. By undertaking the RSAP process, the District is prioritizing community safety and well-being and is focusing on delivering effective and implementable solutions over the short-, medium- and long-term that will make Saanich a better place to live, work, and play.

The RSAP is grounded in Vision Zero and the Safe System Approach. Vision Zero seeks to eliminate all traffic fatalities and injuries while promoting safe, healthy, and equitable mobility. It is a recognition that one traffic fatality or serious injury is too many.

The Safe System Approach supports Vision Zero by recognizing mistakes are unavoidable and that the transportation system should be designed to forgive errors and prevent them from resulting in negative consequences.

The RSAP also complements other key District priorities, including enhancing community well-being and championing climate action and environmental leadership. For example, a major barrier to active transportation uptake is actual and perceived safety on roads in Saanich. By improving safety for vulnerable users, the RSAP can directly influence Saanich's objectives to see more community members walking and cycling daily. This is even more prevalent as new and emerging mobility options grow in popularity, such as e-bikes and e-scooters, providing an additional user group to consider in the transportation network.



What is the Safe System Approach?

The Safe System Approach is a framework to guide road safety policies and programs. This approach views safe road networks as holistic systems consisting of six elements:

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

Each of these elements contributes to overall safety by supporting Saanich in realizing it's Vision Zero goal. The six components 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 road safety and help Saanich achieve its Vision Zero goal.

1.1 Current State of Road Safety

The RSAP is a long-term commitment to achieve zero fatalities and serious injuries in our transportation system. The plan prioritizes road safety for all road users, but especially pedestrians, cyclists, motorcyclists, and people using mobility aids who are more likely to be injured or killed in crashes involving motor vehicles. The plan identifies strategies and actions to ensure that people can travel safely in Saanich by working over a 10-year timeframe to address deficiencies in critical infrastructure including roads, crossings, sidewalks, and multi-use pathways. To address shifting mobility options, new data, progress made, and other changes over the course of this plan, it is critical that the RSAP is reviewed and updated at regular intervals, so the plan remains current and relevant.

While the RSAP is an “action plan”, it is only the start of Saanich’s commitment to road safety. The actions identified in the plan will need long-term and permanent implementation, continued support from Council, staff, and the community, and significant financial contributions from all jurisdictions involved in developing safe transportation systems. The importance of this multi-faceted commitment is stressed throughout the RSAP and will be carried forward throughout the implementation of the plan.

This report documents the findings of Phase 1 of the Road Safety Action Plan project. The objective of Phase 1 is to establish the current state of road safety in Saanich, in order to:

- Create a benchmark for Saanich, both compared to other municipalities and with respect to Vision Zero and Safe System principles, and to provide a baseline for the District to measure its own progress towards the ultimate goal;
- Provide a fact-based understanding of existing safety performance, infrastructure, policies, practices, and processes; and
- Highlight potential issues and opportunities for enhancement, which will be investigated further in subsequent phases of the project.

1.2 About Saanich

Demographics and geography play a significant role in influencing transportation choices and travel patterns, and by extension road safety. This section summarizes some of Saanich's key demographic and geographic characteristics that will be used to inform the direction of the RSAP.

Population

Saanich is home to approximately 118,000 residents and has the highest population of all municipalities in the Capital Region.

Between 2016 and 2021, the District's population grew by 3.1%. This represents moderate growth compared to most other municipalities and in comparison to the average regional growth rate of 8.4%.

Despite this trend, new development and projected population growth in Saanich along with regional transportation demand will continue to increase pressure on the District's transportation system.

Population Identity

According to the 2021 Census, 25% of Saanich's population are visible minorities. Approximately 3.5% of Saanich residents identify as Indigenous.

A further 22,045 people are immigrants (22.5% of the population), of which approximately 6,300 have immigrated in the past 10 years.

Approximately 1.6% of Saanich's population does not have knowledge of English.

Age

Saanich's median age is 44.4 years old, slightly younger than the regional median (45.2) and older than the provincial average (42.8).

Roughly 34% of Saanich's population is under 30 years of age, a decrease of around 6% from the 2016 Census. People in this age group tend to rely more on transit, walking, and cycling to access schools and services.

Residents over 60 also make up a significant, and growing, segment of the population, accounting for approximately 31% of the population. The needs and travel patterns of older residents are also unique and providing a range of mobility options is important to ensure that an aging population can participate in their communities at all stages of life, regardless of ability.

Income

Saanich's median after-tax income is $83,000, higher than the regional median of $75,000.

Based on the low-income cut-offs, after tax (LICO-AT), 5.3% of households in Saanich are low-income compared to 4.5% in the Capital Region.

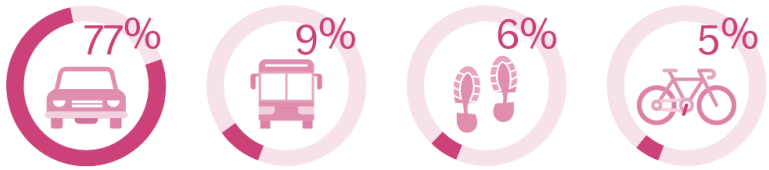
Mode Share

The 2021 Census indicates that approximately 20% of commute trips to work and school in Saanich are made by walking (6%), cycling (5%), and transit (9%). The majority of commute trips are made by vehicle (77%). This understanding of travel mode share relates to the number of collisions involving each travel option, and ultimately the likelihood and severity of crashes occurring on Saanich roads.

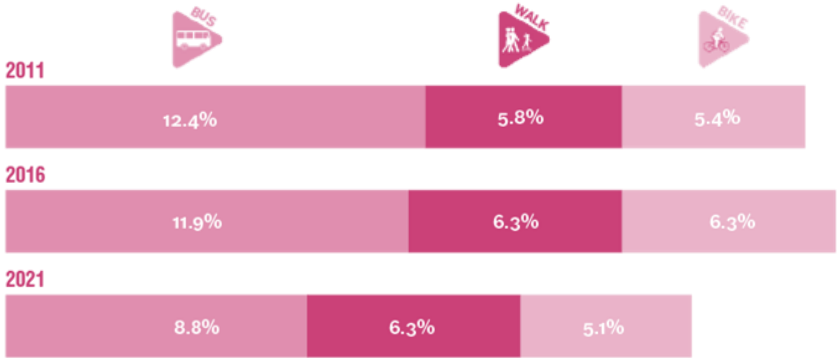
While the percentage of commute trips made by walking, cycling, and transit in Saanich has steadily increased over the past 25 years, the rate dropped from approximately 24% in 2016 to 20% in 2021 which may be due to changed behaviours related to the COVID-19 pandemic.

The CRD's 2017 Origin-Destination Household Travel Survey provides data regarding all trip types and found that approximately 23% of all trips in Saanich are made by walking, cycling and transit, including approximately 10% by transit, 8% made by walking, and 5% made by bicycle.

Through the Climate Plan, Saanich has established a target of 36% all trips being made by active modes (walking, cycling, transit) by 2030.



Commute Mode Share in Saanich (2021)



Historic Commute Mode Share in Saanich

Land Area + Growth Centres

At approximately103 km^2 in land area, Saanich is the largest municipality in the Capital Region. This represents an overall population density of approximately 1,137 people per km^2, and greater if considered for the areas outside Saanich's rural areas.

Saanich is comprised of a network of Centres, Corridors, and Villages where growth has and will continue to be focused in the future. In the Official Community Plan (OCP), seven Centres, seven Villages, and one Rural Village are identified.

The Centres in Saanich include:

- Cedar Hill
- Hillside
- Royal Oak
- Quadra-McKenzie
- Tillicum-Burnside
- University
- Uptown-Douglas

The Villages in Saanich include:

- Broadmead
- Cadboro Bay
- Cordova Bay
- Feltham
- Four Corners
- Gorge
- Strawberry Vale

Corridors will be added to Saanich's land use framework as part of the Strategic OCP update schedule for completion in 2023. They will include Shelbourne Street, McKenzie Avenue, Quadra Street, and Tillicum Road.

Road Network

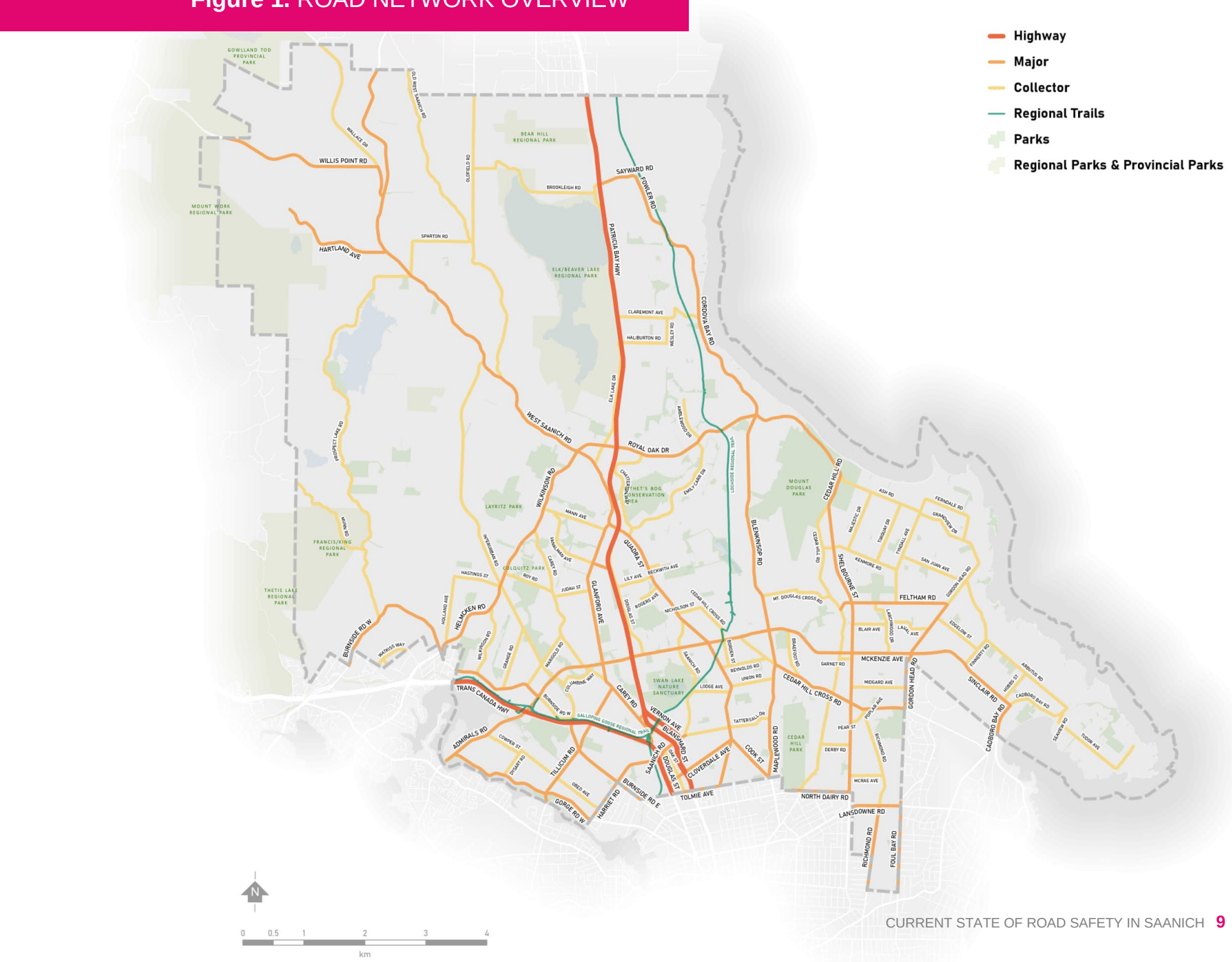
Due to its size, Saanich has a vast and significant transportation network connecting to neighbouring communities, as shown in **Figure 1**.

Higher order roads are classified into Highways, and Major and Collector roads. Major and Collector roads are constructed and maintained by the District, and provide key connections within Saanich to employment centres, commercial centres, and other key community destinations. Longer distance trips are generally focused on Major and Collector roads, whereas Local roads provide access to neighbourhoods.

Two major highways - Highway 1 and 17 - are under the jurisdiction of the B.C. Ministry of Transportation and Infrastructure (MoTI), as well as sections of McKenzie Avenue.

The Galloping Goose and Lochside Regional Trails provide long-distance multi-modal connections and are popular commuter and recreation routes. These two trails are under the jurisdiction of the Capital Regional District (CRD)

Figure 1. ROAD NETWORK OVERVIEW



1.3 Community Equity + Road Safety

The District of Saanich is committed to improving its programs and practices as they relate to Diversity, Equity, and Inclusion. The District is guided by the principle that embracing diversity enriches the lives of all people and enhances the cultural fabric of the community.

What is Equity in the Context of Road Safety?

A key premise of Vision Zero is that all people have the right to move about Saanich safely.

To create safe systems, efforts to improve road safety must recognize that certain neighbourhoods and people have been systemically discriminated against. Not all neighbourhoods are starting from the same place in terms of road safety investments and practices, and some neighbourhoods may require more targeted efforts to reach equitable outcomes.

As the RSAP is implemented over the next ten (10) years and beyond, the District and its partners must work to ensure that investments in road safety improve – not exacerbate – negative, unintended equity consequences, particularly as it relates to age, ethnicity, and socio-economic status.

How Will the RSAP Help Address Road Safety Inequities?

Steps are being taken to ensure that the processes, strategies, and outcomes of the RSAP serve all, particularly vulnerable and traditionally underserved populations. This includes a planning process with specific analysis to understand road safety within equity deserving communities and opportunities for community participation specifically focused on underserved populations.

The RSAP will result in strategies and actions that favour equity deserving people and neighbourhoods to ensure investments in time and infrastructure support the District's commitment to improving community equity.

Strategies to Address Equity in Road Safety

Inspired by work undertaken by the Vision Zero Network, three (3) broad strategies have been established to address equity in road safety in Saanich.

1. **Invest Where Needs are Greatest**

   Road safety improvements are often focused in locations experiencing the highest number of crashes.

   And while this should continue to be a key approach, consideration should also be given to how priorities are identified in consideration of the need to support equity deserving people and neighbourhoods. This will ensure our most vulnerable are supported and road safety concerns are better addressed in under-served areas.

2. **Engage with Saanich Residents**

   Data is important, but it does not tell the full story.

   Assessing which needs are greatest requires data combined with conversations with Saanich residents. If done well, both the District and the community will better understand needs, uncover new information, and be empowered to continue supporting road safety improvements.

3. **Re-Think the Role of Enforcement**

   Vision Zero does not necessarily call for more traffic enforcement.

   Instead, the focus is much broader and supports of the Safe Systems Approach by considering not only traditional enforcement of safe road users and appropriate speeds, as examples, but also ensuring supportive land use planning and post-crash patient care.

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2. Road Safety in Context

Discourse and planning for road safety 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 global, national, provincial, regional, and local contexts that are informing the development of Saanich's RSAP.

2.1 Global

In September 2020, the United Nations (UN) General Assembly adopted resolution A/RES/74/299 "Improving global road safety", proclaiming the Decade of Action for Road Safety 2021-2030, with the ambitious target of preventing at least 50% of road traffic deaths and injuries by 2030. The World Health Organization (WHO) and the regional commissions of the UN, in cooperation with other partners in the UN Road Safety Collaboration, have developed a *Global Plan for the Decade of Action*, which was released in October 2021.

The Global Plan aligns with the Stockholm Declaration, by emphasizing the importance of a holistic approach to road safety and calling on continued improvements in the design of roads and vehicles; enhancement of laws and law enforcement; and provision of timely, life-saving emergency care for the injured. The Global Plan also reflects the Stockholm Declaration's support of policies to promote walking, cycling, and public transit as inherently healthy and environmentally sound modes of transport.

The Stockholm Declaration

In 2020, delegates from 140 countries committed to addressing the loss of life on roads around the world through the Stockholm Declaration. The central target of the declaration is working towards a global fatality reduction of at least 50 % in road traffic deaths from 2020 to 2030. To achieve this target, the declaration renews the focus on safe speeds, modal shift, inter-sectoral collaboration, and infrastructure recommendations.

Progress made during the previous *Decade of Action for Road Safety 2011-2020* has laid the foundation for accelerated action in the years ahead. Among achievements are inclusion of road safety on the global health and development agenda, broad dissemination of scientific guidance on what works, strengthening of partnerships and networks, and mobilization of resources. This new Decade of Action report provides opportunities to harness the success and lessons of previous years and building upon them to save more lives.

The Global Plan endorses the Safe System Approach. In addition, road safety objectives are capture in the United Nations' Sustainable Development Goals:

- SDG target 3.6 calls to halve the number of global deaths and injuries from road traffic crashes
- SDG target 11.2, on a 2030 timeframe, calls for improving road safety in the provision of access to transport systems and expanding public transport

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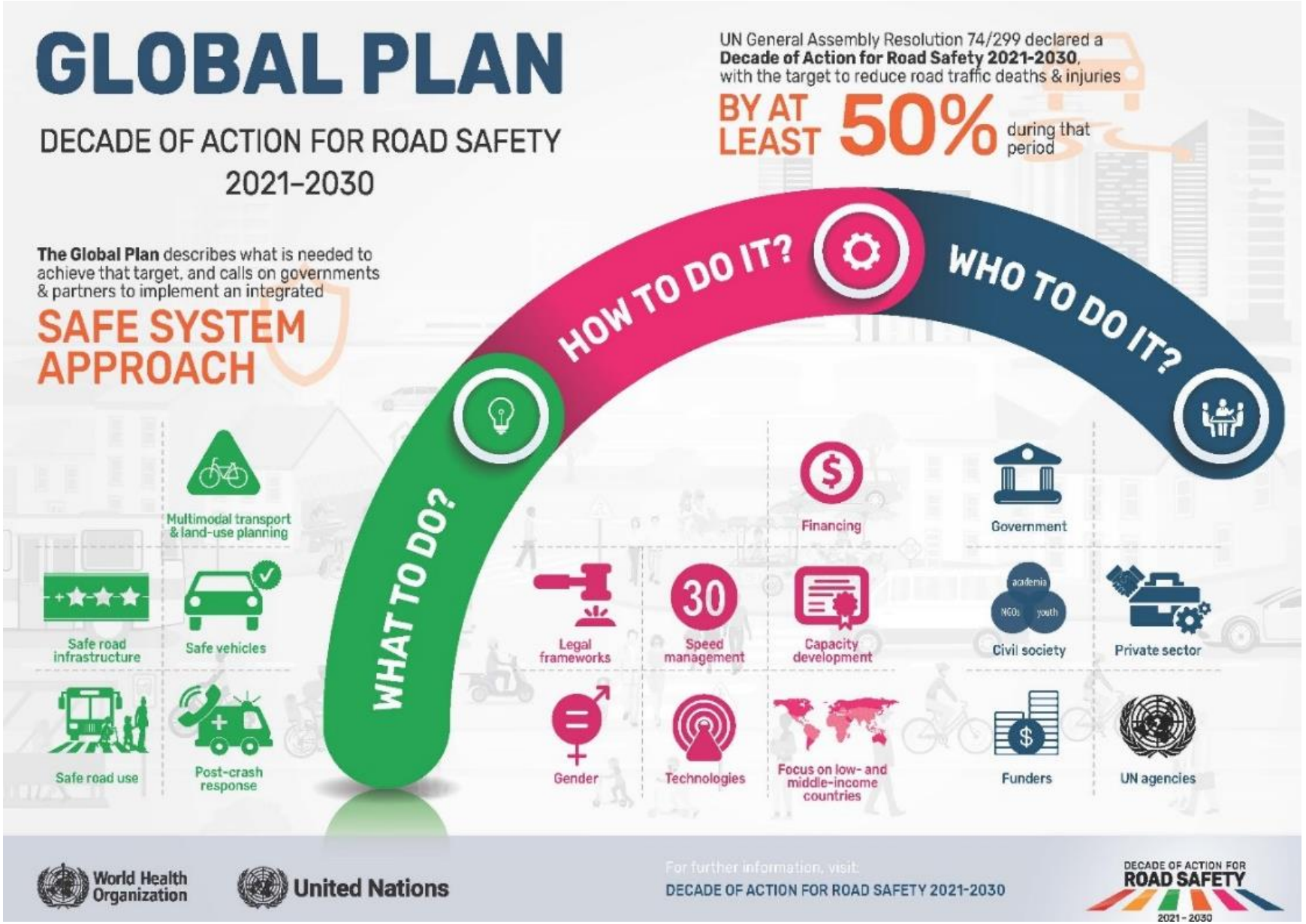
GLOBAL PLAN
DECADE OF ACTION FOR ROAD SAFETY
2021–2030
UN General Assembly Resolution 74/299 declared a Decade of Action for Road Safety 2021-2030, with the target to reduce road traffic deaths & injuries
BY AT LEAST 50% during that period
The Global Plan describes what is needed to achieve that target, and calls on governments & partners to implement an integrated
SAFE SYSTEM APPROACH
WHAT TO DO?
HOW TO DO IT?
WHO TO DO IT?
Multimodal transport & land-use planning
Safe road infrastructure
Safe vehicles
Safe road use
Post-crash response
Legal frameworks
Speed management
Capacity development
Gender
Technologies
Focus on low- and middle-income countries
Financing
Government
Civil society
academia
NGOs
youth
Private sector
Funders
UN agencies
World Health Organization
United Nations
For further information, visit:
DECADE OF ACTION FOR ROAD SAFETY 2021-2030
DECADE OF ACTION FOR ROAD SAFETY
2021 - 2030

2.2 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, RSS 2025 embeds international best practice as an aspiration for road safety in Canada. This vision will persist beyond the RSS 2025 timelines and highlight optimal road safety outcomes across Canada.

RSS 2025's principles have been aligned with international best practices in road safety, including the adoption of the Safe System approach and a 10-year time frame. The strategy continues to be flexible, allowing Canadian jurisdictions to implement road safety programs that meet their own specific needs.

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

1. **Adopt a Safe Systems 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 the negative 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 have been shown to effectively reduce fatalities and serious injuries and replicating and expanding their use for maximum impact and to encourage regional and national consistency.

CANADA'S ROAD SAFETY STRATEGY 2025

Towards Zero

Based on achieving Vision Zero, Towards Zero involves implementing infrastructure and program solutions to achieve downward trends in the rate-based number of fatalities and serious injuries occurring on Canada's roads.

2.3 Provincial

British Columbia's Road Safety Strategy 2025: A Collaborative Framework for Road Safety (BCRSS 2025) provides a provincial structure for achieving road safety 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% 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 that themselves and other safe.

BC Road Safety Strategy 2025

A Collaborative Framework for Road Safety

BRITISH COLUMBIA

Whether you're a driver, pedestrian, cyclist, skateboarder or another type of road user, you want to be confident that our roads are safe.

A framework rooted in the vision of realizing zero fatalities and serious injuries on B.C. roads.

Targets

- Continuous downward trends in rate-based number of fatalities and serious injuries (per 100,000 population)
- Reducing road traffic deaths and serious injuries by 50% in 2030 (Stockholm Declaration)

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Based on three pillars, this framework outlines the tools, initiatives, awareness campaigns and enforcement programs that create a road safety network in B.C.

1. Working together for the future of road safety
2. Tools to make our roads safer
3. Inspiring British Columbians to make safe road choices

2.4 Regional

The Capital Regional District (CRD) Traffic Safety Commission reviews traffic safety in the region and makes recommendations through a committee to the CRD Board to help reduce or eliminate road safety issues. The Commission is comprised of a CRD Director and community members, from relevant sectors such as health, academia, law enforcement, and engineering. The Commission also plans and carries out traffic safety education programs as provided for in the annual budget and approved by the CRD Board. Ongoing campaigns and programs include eliminating distracted, impaired, and high-risk driving, increasing seatbelt use, pedestrian and cyclist safety, and “slow down and move over” for service vehicles, among others.

2.5 Saanich

The District of Saanich has established policies, plans, and municipal bylaws that have set direction to prioritize road safety in our community. These documents help direct road safety in Saanich through various priorities and improvements from active transportation planning, traffic calming and speed reduction programs and specific corridor and intersection improvements.

Road safety is engrained in Saanich’s land use, environmental, equity, and economic development goals to create a community that prioritizes all ages and abilities in the broader community’s vision and goals.

Combined with planning initiatives completed by senior government and other local governments and transportation service providers, this section describes the current planning and regulatory framework guiding the development of the Road Safety Action Plan.

Relevant planning and strategy documents are summarized in **Table 1**.

Table 1. SUMMARY OF RELEVANT PLANS + STRATEGIES

Document	Relevance to Road Safety Action Plan
District of Saanich Strategic Plan (2019 – 2023)	The Strategic Plan prioritizes long-term planning, strengthening road safety, and promoting active transportation to create a convenient, affordable, accessible, and efficient transportation system.
Official Community Plan (2008) (Strategic update underway)	The existing OCP sets out policy to foster pedestrian and cycling-friendly neighbourhoods, employ traffic calming connections, encourage multi-modal travel, and accommodate people with disabilities.
Active Transportation Plan (2018) (Update underway)	The ATP is a long-range plan focused on increasing transportation options by improving accessibility, convenience and safety for people who walk, ride a bike, or take the bus. The plan includes a vision and targets to increase the proportion of trips made by active transportation, as well as work towards zero traffic-related fatalities and serious injuries. The District's commitment to Vision Zero and key directions from the RSAP regarding multi-modal road safety will be reinforced in the updated ATP.
Climate Plan (2020)	A key goal of the Climate Plan is to cut GHG emissions in half by 2030 and to achieve net zero by 2050. Key mobility objectives in the plan include ensuring that 22% of all trips are taken by walking and cycling by 2030 and 30% by 2050. Constructing safe, connected and physically separated walking and cycling infrastructure will be important to shifting mode share and meeting these goals and objectives.

Document	Relevance to Road Safety Action Plan
E-Mobility Strategy (2020)	The strategy recognizes that safety is a major barrier to e-bike adoption – including an individual's safety and the safety concerns of other active transportation users. Recommendations include e-bike education programs and speed reductions on residential streets to support the transition to active transportation and e-bikes. The strategy addresses other kinds of electric mobility devices, including e-scooters, and the need to develop policies and infrastructure to support these options.
Speed Limit Establishment Policy (2022)	This policy sets guidelines for establishing appropriate speed limits on all streets in Saanich. Managing motor vehicle speeds is an important way to reduce the number and severity of crashes. This policy is intended to help Saanich to achieve its goal of zero traffic fatalities and serious injuries.
Streets and Traffic Bylaw (2002)	The Road Safety Action Plan will consider updates to the Bylaw to ensure alignment with the Plan. Through this review, the Bylaw will better reflect how road users of various modes should act in the District, the requirements for vehicles, infrastructure, parking and speed limits, and the resulting penalties for infractions.
Uptown-Douglas Plan (2022)	The Uptown-Douglas (UD) Plan provides a 30-year vision for the centre that "puts people first". This direction looks to develop safe, people-friendly connections by establishing sidewalks on both sides of all streets, requiring a boulevard space to physically separate sidewalks from the roadway, and ensuring transportation infrastructure design addresses accessibility needs.

Document	Relevance to Road Safety Action Plan
Local Area Plans (LAPs) (various)	**Cordova Bay Local Area Plan** (2021) The recently adopted Cordova Bay LAP identifies existing challenges related to connectivity and topography. Key improvements for this community look to create safe and convenient pedestrian crossings, calm traffic, and incorporate sidewalks on both sides of the street. **Cadboro Bay Local Area Plan** (Draft) The draft Cadboro Bay LAP looks to diversify transportation options and create safe links that are welcoming to pedestrians and cyclists. Sinclair Road is a priority route for safe walking and cycling infrastructure. **Other LAPs** A number of other LAPs have previously been developed in addition to those identified above that include strategies and policies relating to multi-modal transportation and road safety. • Blenkinsop Local Area Plan (1989) • Carey Local Area Plan (1999) • Gordon Head Local Area Plan (1997) • North Quadra Local Area Plan (2003) • Quadra Local Area Plan (2001) • Royal Oak Local Area Plan (2001) • Rural Saanich Local Area Plan (2007) • Saanich Core Local Area Plan (1999) • Shelbourne Local Area Plan (1998) • Tillicum Local Area Plan (2021)

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3. Current + Best Practices

This section outlines existing road safety practices across Canada and globally, providing an overview of best practices applied at the provincial, national, and international levels. Understanding how road safety is addressed in these contexts will inform the RSAP.

3.1 Canada

A project was recently completed by the Transportation Association of Canada (TAC)'s Vision Zero and 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 have a published policy or plan in support of Vision Zero and/or the Safe System approach.

A survey was also conducted by TAC in 2021 to gain an understanding of current practices related to road safety particularly as it relates to Vision Zero and the Safe System Approach. The survey included TAC members represented on the Road Safety Steering Committee and other committees under the Safety, Design, and Operations Council. Respondents included 24 large (greater than 100,000 population) municipalities in Canada, representing about 75% of large municipalities across the country. Although several of these municipalities are significantly larger than Saanich (based on population), they were found to have more substantial Vision Zero policies and programs than smaller municipalities and were more consistent with the District's aspirations.

The survey covered several topics, including:

1. Adoption of Vision Zero policy or plan
2. Process for developing road safety plan
3. Consistency of plans/practices with Vision Zero
4. Implementation of Safe System countermeasures

Key survey findings and how the District of Saanich compares are as follows:

Adoption of Vision Zero policy or plan

1. Of the 24 large municipalities surveyed, Saanich is one of 10 municipalities that has adopted a Vision Zero policy.
2. Saanich will be one of 14 large municipalities with a published road safety strategy or action plan.

Process for developing road safety plan

1. Saanich involves more government departments in the Plan than most other large municipalities.
2. Saanich involves a wider range of NGOs in its Plan than other large municipalities.
3. Saanich is one of only 6 large municipalities to include multi-stage and multi-faceted engagement, with special attention to equity considerations.

Consistency of plans/practices with Vision Zero principles

1. Saanich is one of only 6 large municipalities that identifies road safety as its top priority in the transportation system.
2. Like most other large municipalities surveyed, Saanich's funding for road safety comes primarily from capital and operating budgets. There is currently no dedicated funding for road safety.
3. Some funding comes from partner contributions and fuel tax revenues.
4. Evaluation and monitoring of road safety initiatives in Saanich is irregular. Nine large municipalities surveyed have formal monitoring and evaluation programs in place, which suggests that Saanich could also benefit from a more formalized program.

3.2 British Columbia

As noted in the previous section, six municipalities in BC have a plan or policy in place regarding Vision Zero and/or the Safe System Approach. These are listed in **Table 2**.

Table 2. BC MUNICIPALITIES WITH A PUBLISHED ROAD SAFETY PLAN OR POLICY

Municipality		Plan or Policy	Year Adopted (most recent version)
City of Vancouver	LU	Plan	2016
City of Surrey	LU	Plan	2019
City of Chilliwack	MU/R	Plan	2005
City of North Vancouver	MU	Plan	2020
City of Vernon	MU	Policy	2013
City of Kamloops	MU	Policy	2018

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

Across these six communities, their respective road safety plans or policies address the specific local road safety issues while adhering to best practice. Vision Zero and the Safe Systems Approach are emphasized in most of these documents as guiding principles. Key themes include designing safe streets, encouraging speed reduction, promoting responsible user driver 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 road safety. Sharing information is also key, with most communities providing dedicated web pages or resources that highlight road safety issues, progress made, and/or programs that support safer travel.

3.3 Vancouver Island Communities

Presently, no communities on Vancouver Island have developed a dedicated road safety plan or policy. Many communities are committed to improving safety across their transportation systems through policies and actions included in transportation master planning or other community-wide transportation initiatives.

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4. Road Safety Analysis

An understanding of the frequency, location and nature of road safety concerns is critical to understanding current issues in the transportation system and measuring progress as the RSAP is implemented. The following section presents detailed analysis based on several established datasets of overall crash trends, crashes among different types of road users, locations of interest, factors contributing to crashes, and where crashes occur in relation to equity deserving populations.

Analysis results create an understanding of crash trends throughout the community and will contribute to the development of the actions in the RSAP.

4.1 Data Sources

A comprehensive analysis has been undertaken and is presented in the following sections to develop an understanding of road safety and crash trends in Saanich. The analysis is based on three (3) available datasets that reflect current safety performance and against which future progress can be monitored. These datasets are summarized in **Table 3**, including the assumptions and limitations of each.

Table 3. SUMMARY OF AVAILABLE ROAD SAFETY DATASETS

Data Source	Application in RSAP	Assumptions & Limitations
ICBC Claims Data collected by ICBC as part of the vehicle insurance claim process	Overall crash trends, crash trends by mode and location	Considered the most complete record of crashes Approx. 10% of crashes lack location attributes resulting in incomplete spatial analysis Captures only a small proportion of crashes involving pedestrians and cyclists (only where claim is made) Includes all crash types including fatalities, injury, and property damage. Analysis only considers crashes resulting in casualties (injury or fatality)
Traffic Accident System (TAS) Records obtained by Saanich Police when they respond to traffic incidents	Understand contributing factors to crashes such as intersection type, crash configuration and environmental conditions	Does not include crash location attributes (i.e., coordinates), cannot be mapped for spatial analysis Tends to lack records for minor crashes where Police did not attend, changed to report on crashes only over $10,000 in damage
Hospitalizations & Vital Statistics Part of Island Health's medical records and the BC Children's Hospital Research Institute tracking system	Understand impact of crashes on health care system Understand fatal crashes in the transportation system	Accounts only for crashes that result in hospitalizations or fatalities Does not include data on crash location or contributing factors

4.2 Overall Crash Trends

Crash Frequency

For the period of 2017-2021, a total of 4,615 non-fatal injury crashes (i.e., crashes where an injury occurred but not a fatality) and 11 fatal crashes were reported in Saanich through ICBC claims data.

Crashes resulting in injury represent 43% of all ICBC claims reported over the same period (10,864 total claims).

To put this in perspective, on average once every…

4 hours
a crash occurs in Saanich

10 hours
an injury-causing crash occurs in Saanich

6 months
a crash resulting in a fatality occurs in Saanich

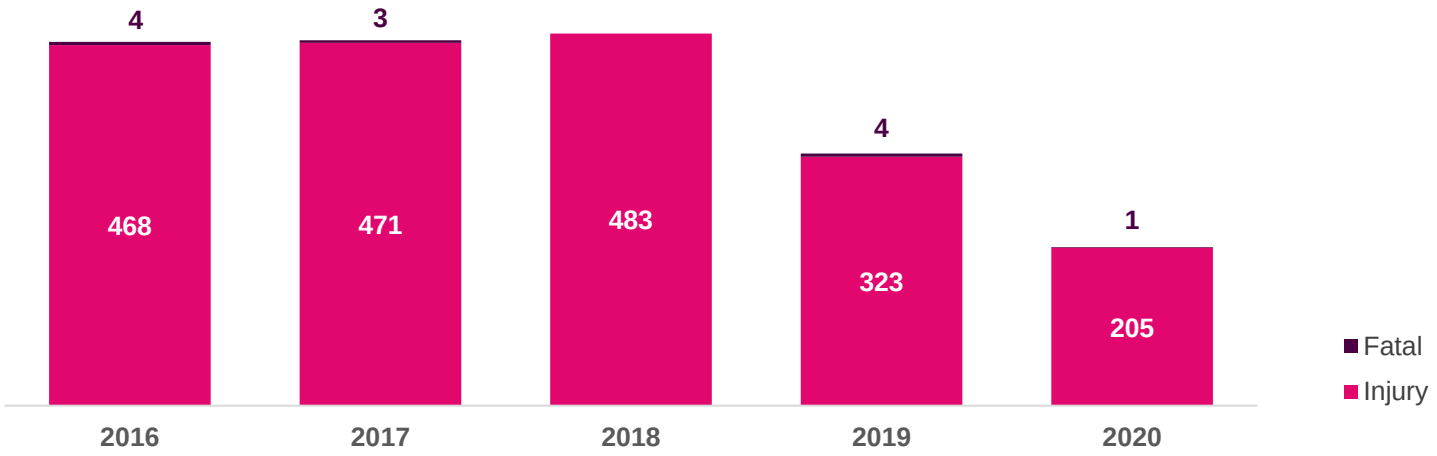
Annual Trends

The TAS database indicates that a modest increase in crash occurrence took place between 2016 and 2018, before decreasing significantly in 2019 and 2020. The reduced total number of crashes in 2020 corresponds with the decrease in total trips being taken during this period due to public health measures. There is no clear reason for the reduction in crashes by almost one-third between 2018 and 2019.

Fatal crashes were highest in 2016 and 2019, with 4 fatal crashes occurring each year. Interestingly, 2018 experienced the most total crashes but without a fatality.

Year over year trends in crashes for Saanich for the five-year period between 2016 and 2020 are shown in **Figure 2** below.

Figure 2. ANNUAL CRASH TRENDS IN SAANICH (TAS, 2016-2020)



Societal Cost

Crashes are tragic events for families and communities. Societal costs of crashes can be estimated based on published average costs by crash outcome.[1]

Crashes in Saanich total over $90 million each year in direct costs alone. Direct costs are attributed to things like lost productivity, legal fees, insurance and health care costs, and vehicle delays.

Indirect costs are less tangible and are typically associated with treatments to relieve pain and suffering that occur post-crash and over time. These costs can be significant but are difficult to quantify.

"Crashes in Saanich total over $90 million each year in direct costs"

[1] Cost of Collisions Update, Capital Region Intersection Safety Partnership, 2018

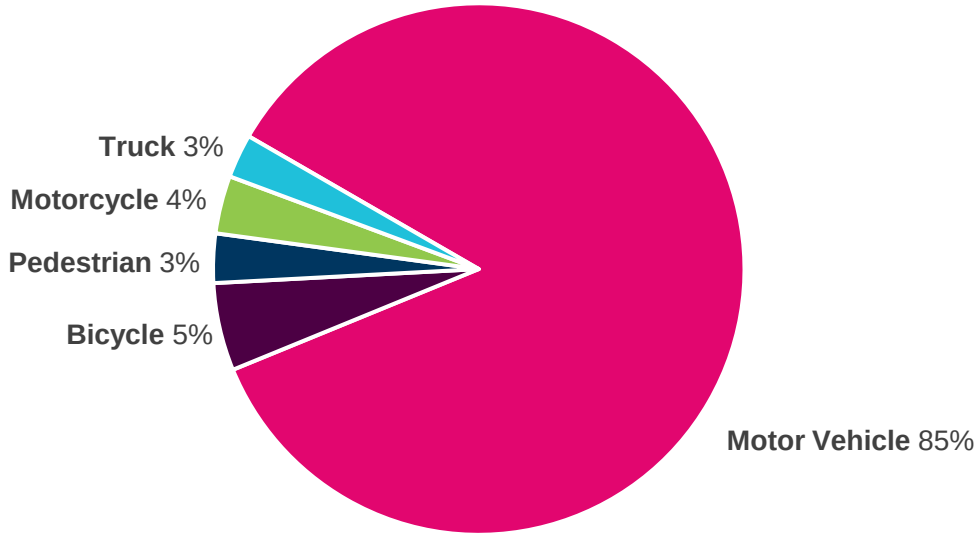
Crash Trends by Travel Mode

Twelve percent of all crashes in Saanich involve a person walking, cycling, or using a motorcycle. The impact and severity of crashes is often highest among these vulnerable road users due in part to the fact that people who walk or ride a bike do not have the protection of a vehicle around them when they travel.

Most crashes (85%) involve passenger vehicles. There are approximately 800 crashes each year and they include single vehicle crashes as well as crashes involving two or more vehicles.

A summary of crashes by travel mode is outlined in **Figure 3** below.

Figure 3. CRASHES IN SAANICH BY TRAVEL MODE (ICBC, 2017-2021)

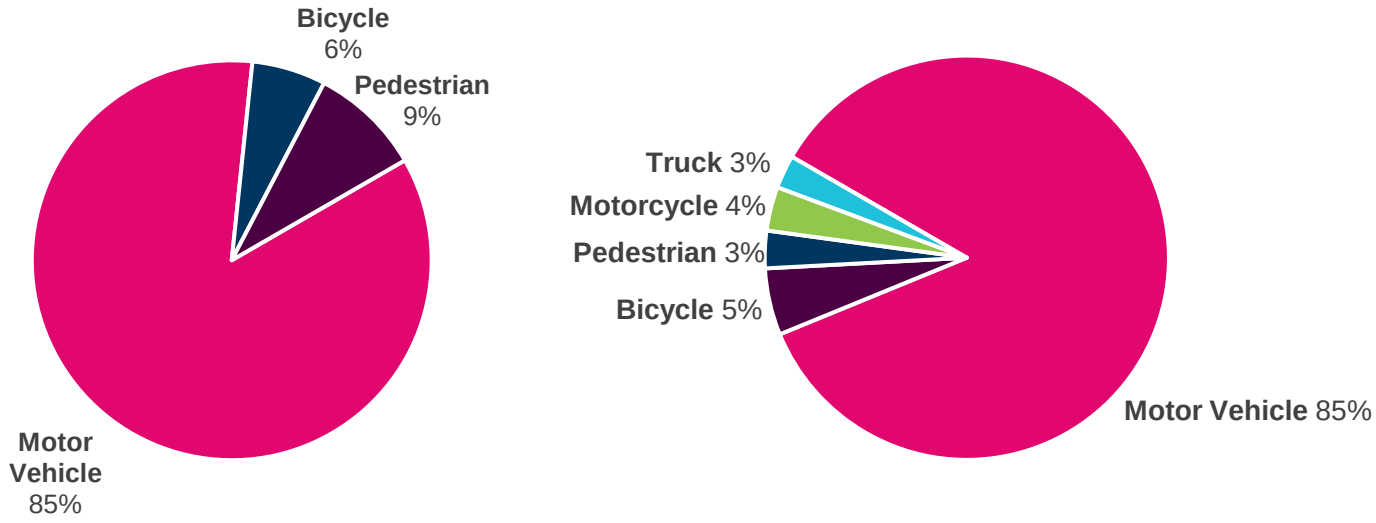


Crashes by travel mode are compared to overall travel mode share in **Figure 4**. It should be noted that the comparison excludes transit trips as part of the overall mode share. As a result, trips made by passenger vehicles, walking, and bicycles are overrepresented.

The results indicate that crashes involving pedestrians (3% of total) are much lower than the overall proportion of trips made by walking (9%). Vehicle-related crashes represent a greater proportion of all crashes (92%) as compared to the proportion of all trips by vehicle (85%). These results suggest that a vehicle trip is more likely to result in a crash than a trip made by walking (Note: ICBC crash data source limitations).

Importantly, as identified in the previous section, the impact and severity of a crash involving a person walking is typically much higher than a crash involving one or more vehicles. The lower likelihood of a crash involving a pedestrian does not necessarily represent a greater level of safety.

Figure 4. OVERALL TRIPS (LEFT) **AND OVERALL CRASHES** (RIGHT) **BY TRAVEL MODE** (ICBC, 2017-2021)



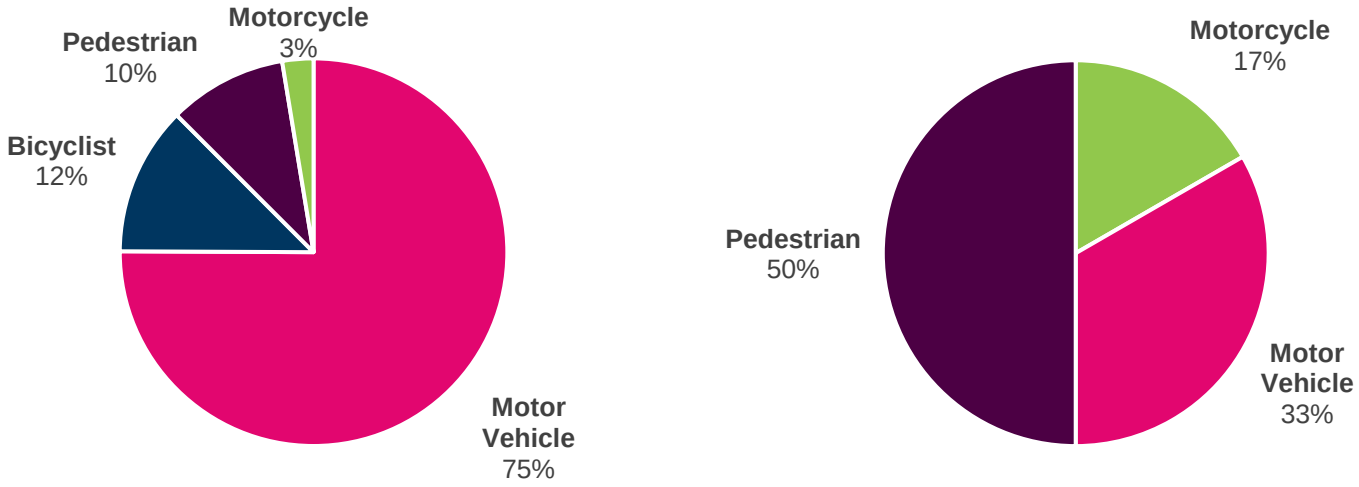
Crashes + Fatalities by Travel Mode

It should be noted that the summary below is based on the TAS dataset, which presents different crash totals than the ICBC data referenced above.

Half of all fatalities (50%) that occurred in Saanich between 2016 and 2020 involved pedestrians, with another 17% representing people on motorcycles. These figures are significantly higher than the proportion of all crashes involving pedestrians (10%) and motorcycles (3%), suggesting that while the overall occurrence of crashes involving these vulnerable road users is relatively low, the impact and severity is high. No fatal crashes involving bicyclists were recorded during this period.

A comparison of total crashes versus fatal crashes for each travel mode is presented below in **Figure 5**.

Figure 5. **CRASHES** (LEFT) AND **FATAL CRASHES** (RIGHT) **BY TRAVEL MODE** (TAS, 2016-2020)



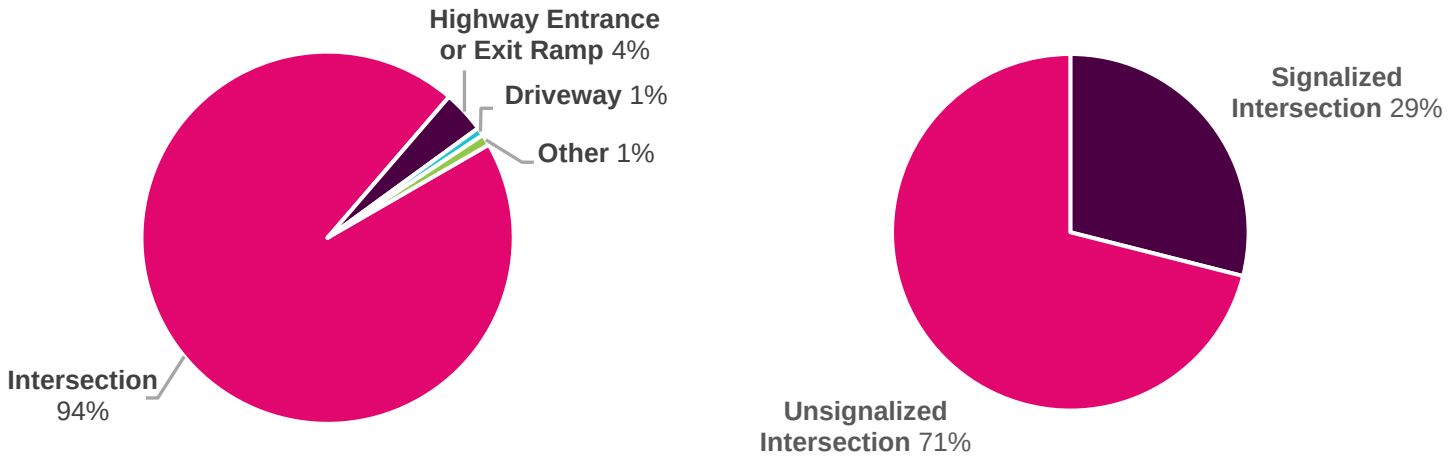
Location Characteristics

Not surprisingly, most crashes occur at intersections where complex interactions between various travel modes can lead to conflict. Approximately 19 of every 20 crashes in Saanich occur at intersections (per TAS data), which is much higher than the proportion of crashes occurring at intersections in most other communities.

Nearly three-quarters (71%) of all crashes occur at unsignalized locations which is likely the result of higher traffic volumes at intersections. The high proportion of crashes at unsignalized locations is perhaps a result of driver indecision and/or confusion where explicit traffic control (i.e., signalization, stop signs) is not present.

Crashes by road location characteristics are shown in **Figure 6**.

Figure 6. **CRASHES BY LOCATION** (LEFT), **CRASHES BY TRAFFIC CONTROL TYPE** (RIGHT) (TAS, 2016-2020)



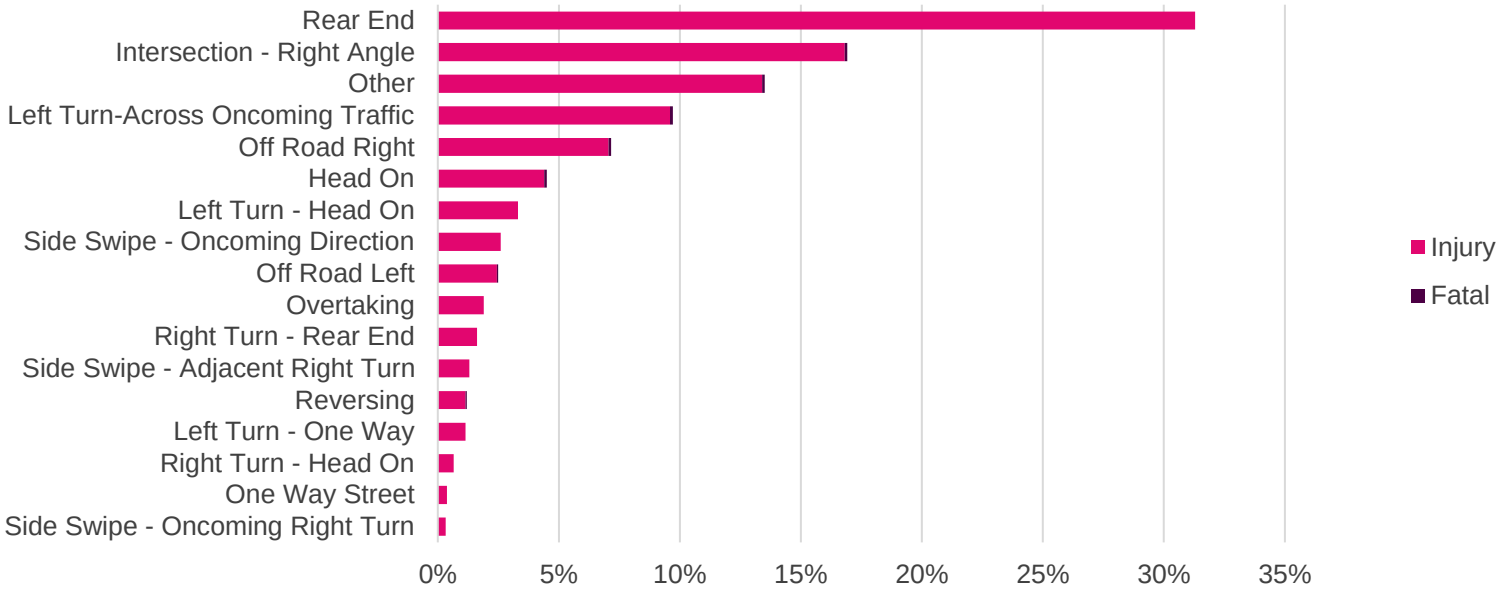
Collision Patterns

Rear-end crashes are the most common crash configuration, representing almost 30% of all crashes in Saanich. Importantly, none of the rear-end crashes were found to be fatal, suggesting a lower overall severity among these crashes.

Other common crash configurations include intersection right angle, left turn-across oncoming traffic, and off-road right. Each of these configurations typically leads to more significant impacts, with crashes involving head-on patterns and/or left turn movements often resulting in the most severe outcomes. Collision types where the greatest proportion result in a fatality include head on, left turns across on-coming traffic, intersection right angle, and off-road right turn.

A full account of collision patterns and crash configuration is presented in **Figure 7** below. Please note, fatalities are shown in the chart but are difficult to identify given the small number compared to injuries.

Figure 7. CRASHES BY COLLISION PATTERN (TAS, 2016-2020)



Time

Time can be an important factor in determining when crashes occur, including the month, day, and time-of-day. Overall trends for these three factors are shown in **Figure 8**, **Figure 9**, and **Figure 10**.

Between 2016-2020, crashes peaked in January, May, and October, with no noticeable seasonal trends. Throughout the week, crashes in Saanich tended to be higher mid-week, with the highest number found to be on Thursdays, followed by Wednesday and Tuesday. The hourly distribution of crashes reflects peak traffic patterns with more crashes occurring during typical commuting times and peaking between 4:00 and 6:00pm.

Figure 8. MONTHLY TREND IN CRASHES (TAS, 2016-2020)

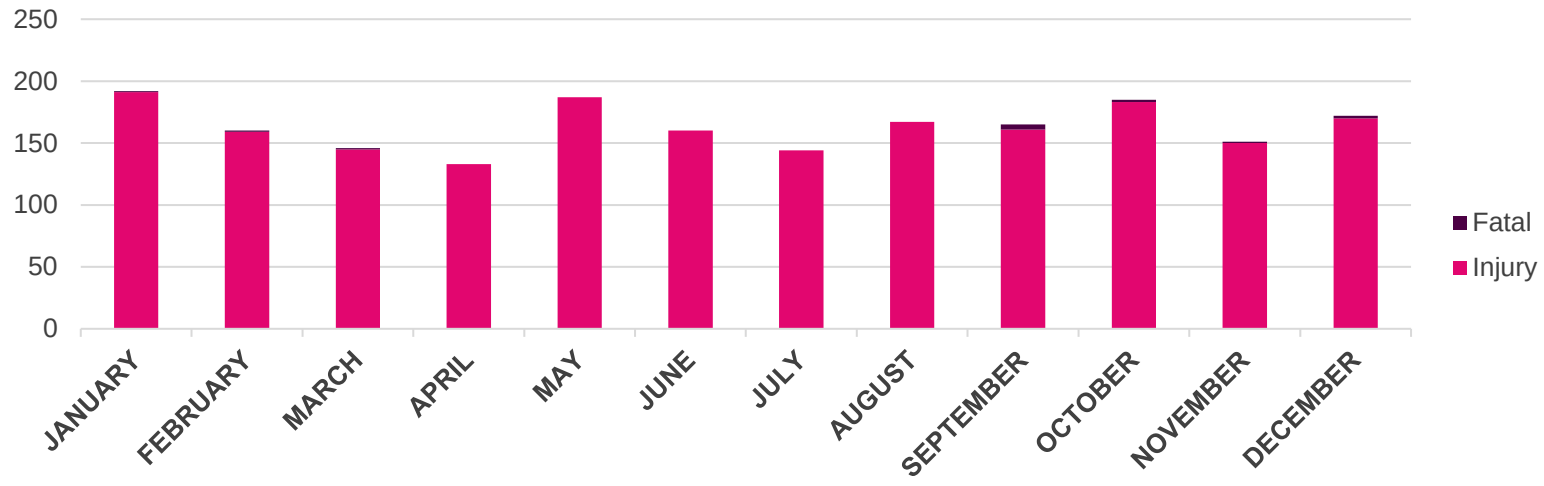


Figure 9. DAILY TREND IN CRASHES (TAS, 2016-2020)

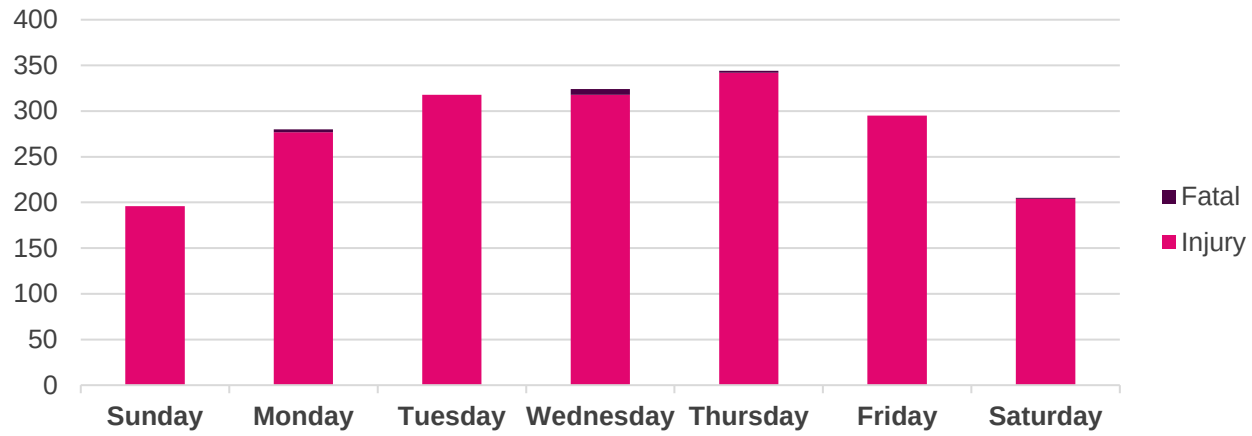
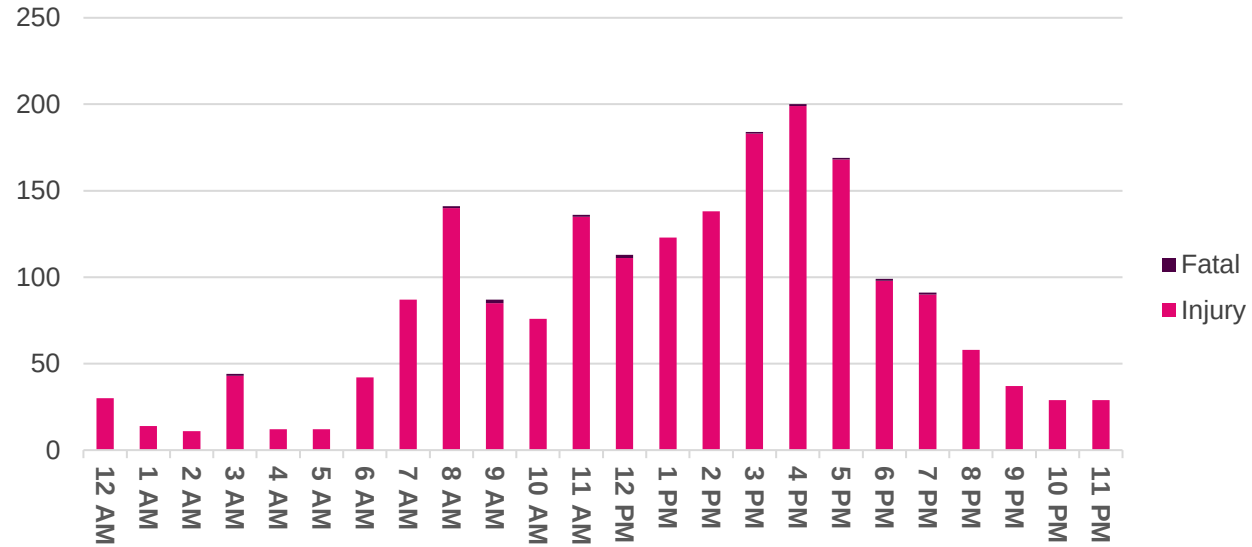


Figure 10. HOURLY TREND IN CRASHES (TAS, 2016-2020)



4.3 Crash Patterns by Location

Crashes occurring between 2017 and 2021 were mapped using ICBC claims data and are shown in **Figure 11**.

Crashes are spread throughout Saanich, with some of the greatest concentrations occurring along high-volume corridors such as Douglas Street and Blanshard Street, McKenzie Avenue, Shelbourne Street and Tillicum Road. Intersections with the highest crash frequencies are summarized below.

Highest Crash Locations in Saanich, by Road Type (5-year ICBC collision record, 2017-2021)

Major Roads

1. McKenzie Ave / Quadra St
2. McKenzie Ave / Shelbourne St
3. Burnside Rd W / Tillicum Rd
4. Interurban Rd / Wilkinson Rd / Hastings St
5. Burnside Rd E / Burnside Rd W / Harriet Rd
6. McKenzie Ave / Saanich Rd
7. McKenzie Ave / Borden St / Lochside Trail
8. Burnside Rd W / Helmcken Rd
9. McKenzie Ave / Blenkinsop Rd
10. McKenzie Ave / Gordon Head Rd

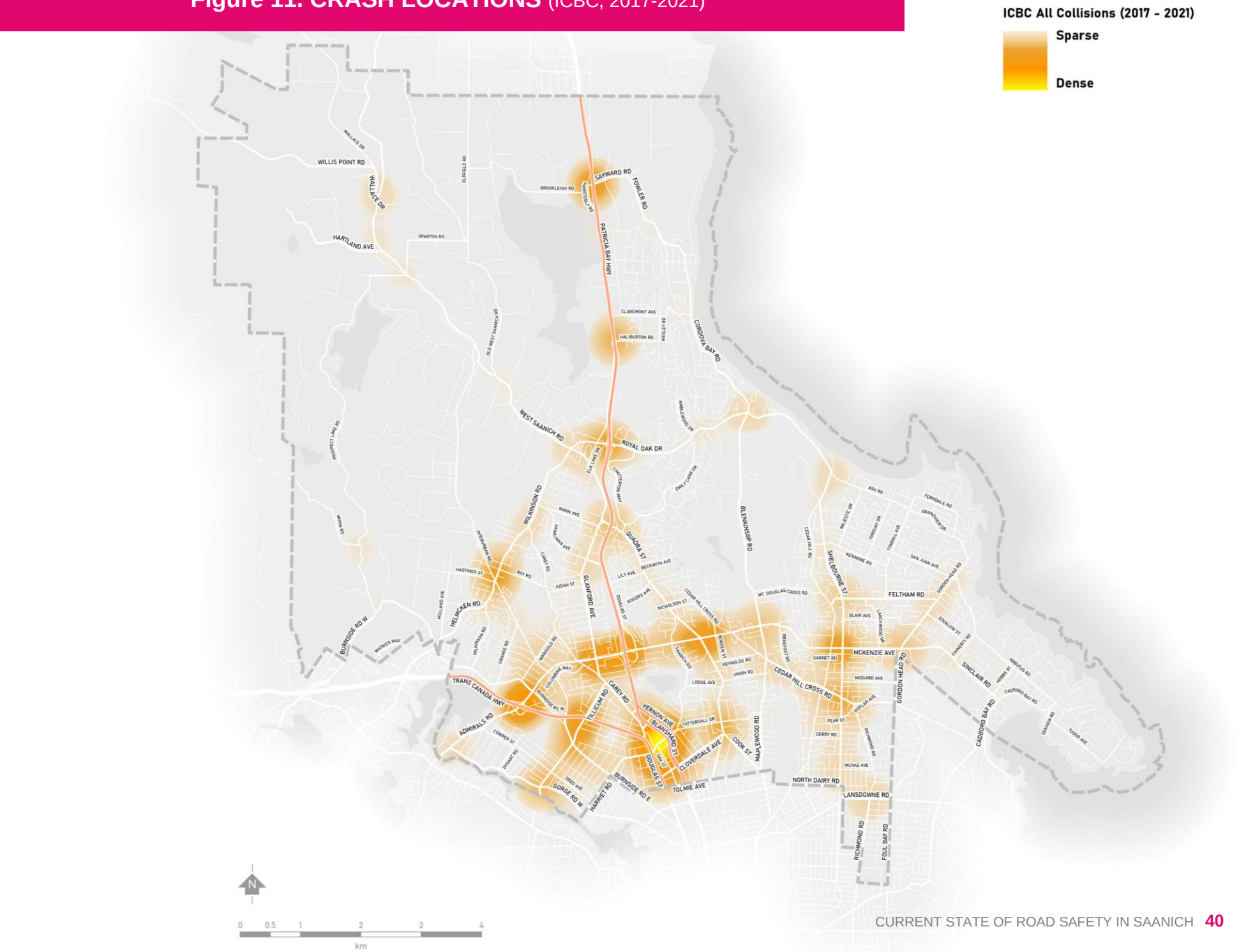
Collector Roads

1. Interurban Rd / Colquitz-Carey Park Trail
2. Interurban Rd / Columbine Way
3. Cedar Hill Cross Rd / Reynolds Rd
4. Prospect Lake Rd / Munn Rd
5. Cedar Hill Rd / Pear St
6. Interurban Rd / Dumeresq St
7. Interurban Rd / Grange Rd
8. Gordon Head Rd / San Juan Ave
9. Tattersall Dr / Savannah Ave
10. Arbutus Rd / Gordon Head Rd

Highways (MoTI Jurisdiction)

1. Trans Canada Hwy / McKenzie Ave / Admirals Rd
2. Blanshard St / Saanich Rd
3. Patricia Bay Hwy / Sayward Rd
4. Douglas St / McKenzie Ave / Patricia Bay Hwy
5. Douglas St / Saanich Rd / Boleskine Rd
6. McKenzie Ave / Glanford Ave
7. Trans Canada Hwy / Tillicum Rd
8. Elk Lake Dr / Haliburton Rd / Patricia Bay Hwy
9. Patricia Bay Hwy / Royal Oak Dr
10. Blanshard St / Cloverdale Ave

Figure 11. CRASH LOCATIONS (ICBC, 2017-2021)



4.4 Comparison with Other Communities

The crash frequency in Saanich was compared to other jurisdictions for the purpose of contextualizing and benchmarking Saanich's network safety performance. Other medium- to large-sized municipalities in British Columbia sharing similar attributes were selected in consultation with District staff and RSAP Steering Committee. Crash statistics were normalized relative to population to present representative crash rates for comparison between communities.

The comparison of crash trends over the past five years is shown in **Figure 12**, and indicates the following:

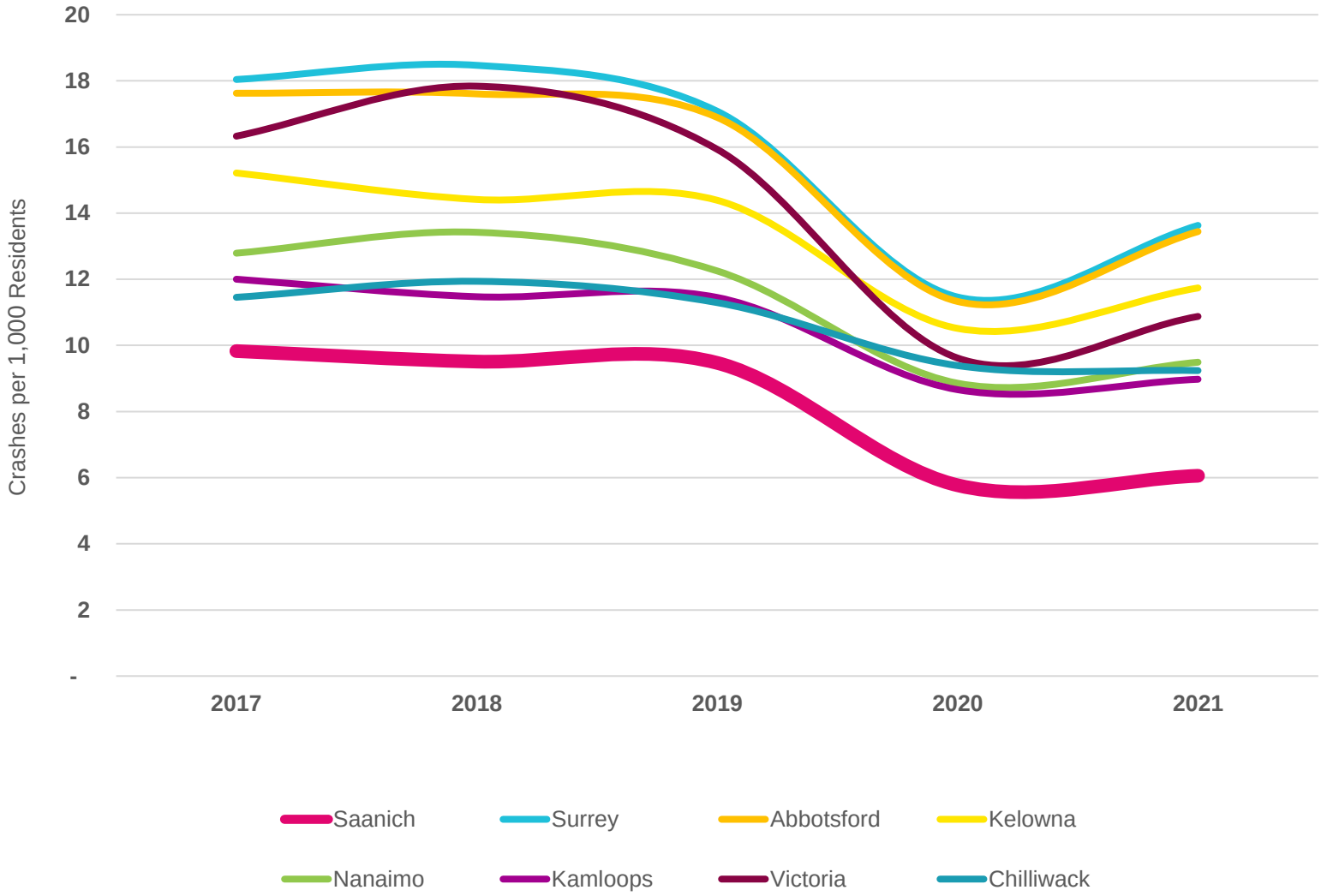
1. Saanich is experiencing an approximately 30% lower crash rate year-over-year as compared to other communities.
2. While all communities experienced a reduction in crashes in 2020 during the global pandemic, Saanich is one of the few communities to not experience a corresponding increase in 2021.
3. The communities with the next-lowest crash rates were Chilliwack and Kamloops, both of which are smaller communities.

Comparison Communities

The following communities were used to benchmark road safety performance (2021 population in parathesis):

- Abbotsford (pop. 153,524)
- Chilliwack (pop. 93,203)
- Kamloops (pop. 97,902)
- Nanaimo (pop. 99,863)
- Saanich (pop. 117,735)
- Surrey (pop. 568,322)
- Victoria (pop. 91,867)

Figure 12. ANNUAL CRASH COMPARISON TO OTHER COMMUNITIES (ICBC, 2017-2021)



4.5 Pedestrian & Cyclist Crash Trends

Increasing the number of trips made by active transportation is a key goal of the District's Active Transportation Plan, and something that improved comfort and safety engaging in walking, cycling, and other self-propelled travel options can help to address. Pedestrians and cyclists are more likely to suffer serious injuries or death in crashes involving motor vehicles due to the lack of protection compared with motor vehicle occupants. Not only are the consequences of pedestrian and cyclist crashes generally more severe, but the safety concerns many Saanich residents feel may also limit the number of trips made by active transportation.

Crashes involving these modes were analyzed to understand overall trends and locations of concern. Detailed analysis of trends is based on TAS data, except for crash mapping which is based on ICBC data.

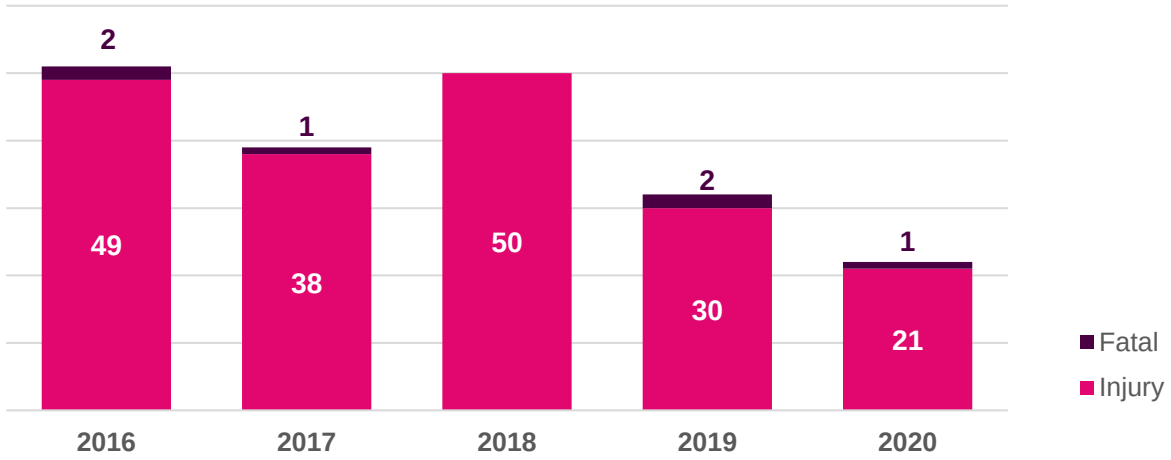
Inconsistencies in the recording of ICBC's data on crashes involving pedestrians and cyclists in 2021 resulted in crash totals for these modes being underrepresented. It is assumed that the same data discrepancy does not affect TAS data.

Pedestrian Crashes

Each year, approximately 40 crashes occur in Saanich involving pedestrians. Annual trends have shown upwards of 50 pedestrian crashes (2018), with a decline in 2019 and 2020 (**Figure** 13).

Crashes involving pedestrians most often occur at intersections and involve one or more vehicles. The crash severity is typically high where pedestrians are involved, with 6 fatalities occurring between 2016 and 2020 (per TAS data).

Figure 13. ANNUAL TREND IN PEDESTRIAN CRASHES (TAS, 2016-2020)



Pedestrian Crash Locations

Pedestrian crashes are generally concentrated in areas of higher density and mixed land uses, such as the Uptown-Douglas area, Shelbourne Street and Tillicum Road. These locations experience some of the greatest pedestrian activity in Saanich and often correspond with corridors and intersections with high traffic volumes. Limited opportunities for pedestrian crossing on major corridors and complex interactions at busy intersections likely lead to the high number of pedestrian crashes in these areas.

Areas in more outlying locations have also seen pedestrian crashes, including in Royal Oak (near the Patricia Bay Highway / Royal Oak Drive intersection), along Admirals Road and Interurban Road, Haliburton Road and areas near Claremont Secondary School, and locations around Helmcken Road and Glanford Avenue.

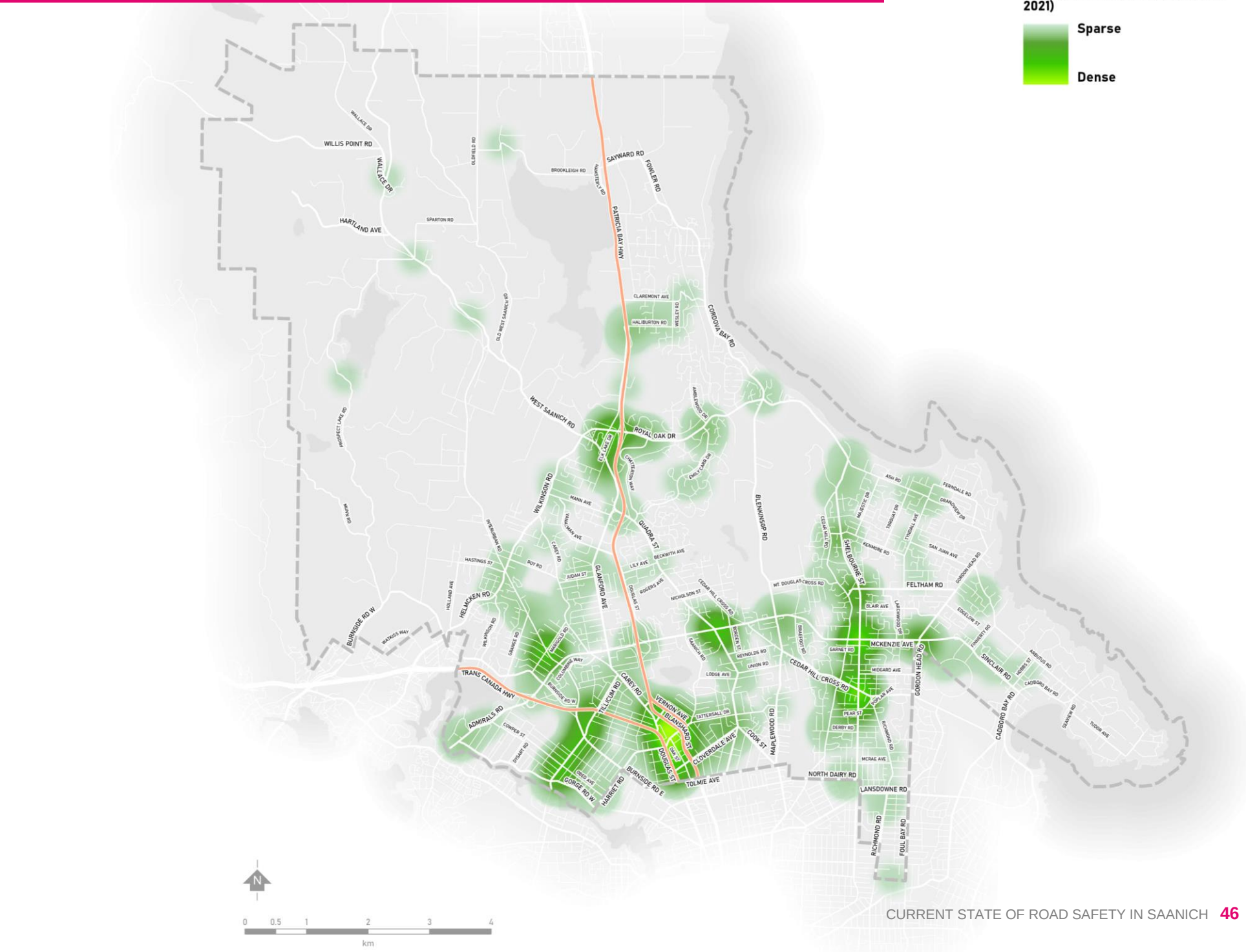
Pedestrian crash locations are shown in **Figure 14**.

Time of Year and Time of Day Trends

The vast majority of crashes involving pedestrians occurred between October and January. These represent some of the darkest months of the year, presumably with low light and visibility leading to a higher rate of crashes involving pedestrians.

Similarly, the hourly distribution of crashes involving pedestrians reflects peak traffic patterns, but crashes occur throughout the day and continue well into the evening hours, with a peak from 7:00 to 8:00pm.

Figure 14. COLLISIONS INVOLVING PEDESTRIANS (ICBC, 2012-2021)

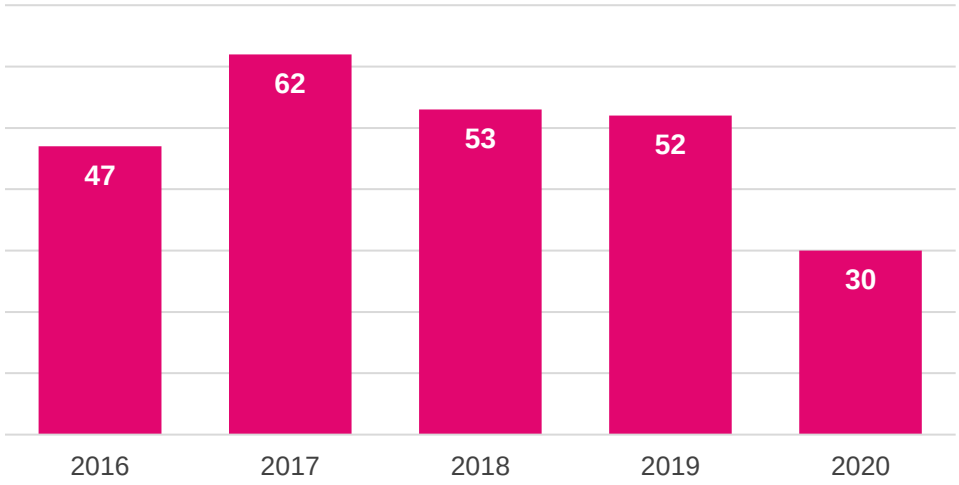


Cyclist Crashes

Each year, approximately 50 crashes occur in Saanich involving people on bicycles. Annual trends have shown between 47 and 62 cyclist crashes each year between 2016 and 2019, with a significant drop in the number of occurrences in 2020 presumably as result of the fewer number of trips made during the COVID-19 pandemic (**Figure 15**).

The TAS data indicates that despite the approximately 50 crashes each year involving cyclists, none over the past five years have resulted in a fatality. Despite a lack of fatalities, crashes involving cyclists commonly result in significant injuries.

Figure 15. **ANNUAL TREND IN CYCLIST CRASHES** (TAS, 2016-2020)



Cyclist Crash Locations

As compared to walking trips, cycling trips are generally over longer distance and less confined directly to one neighbourhood or local area. As a result, cyclist crash locations are focused along corridors and locations with higher cyclist volumes. Cyclist crash locations are summarized in **Figure 16**.

The mapping demonstrates a high number of cyclist crashes along major corridors such as Douglas Street, McKenzie Avenue, Shelbourne Street, and Tillicum Road. Presumably these corridors carry a large number of cyclists, but also exhibit high traffic volumes likely resulting in a greater number of vehicle-cyclist conflicts. Incomplete or poor cycling infrastructure may also contribute to crashes.

The mapping also highlights cyclist crashes along key cycling corridors such as the Galloping Goose and Lochside Regional Trail. These locations do not have the same level of vehicle traffic as those highlighted above, but a significant number of cyclists use these corridors on a daily basis and crashes are shown at key intersections with municipal streets (e.g., Royal Oak Drive, Cordova Bay Road, Quadra Street, Tillicum Road).

Cyclist collisions at McKenzie Avenue are observed in the dataset, but it is assumed occurrences have dropped since the Galloping Goose Regional Trail was grade-separated in 2018 as part of the McKenzie Interchange project.

Time of Year and Time of Day

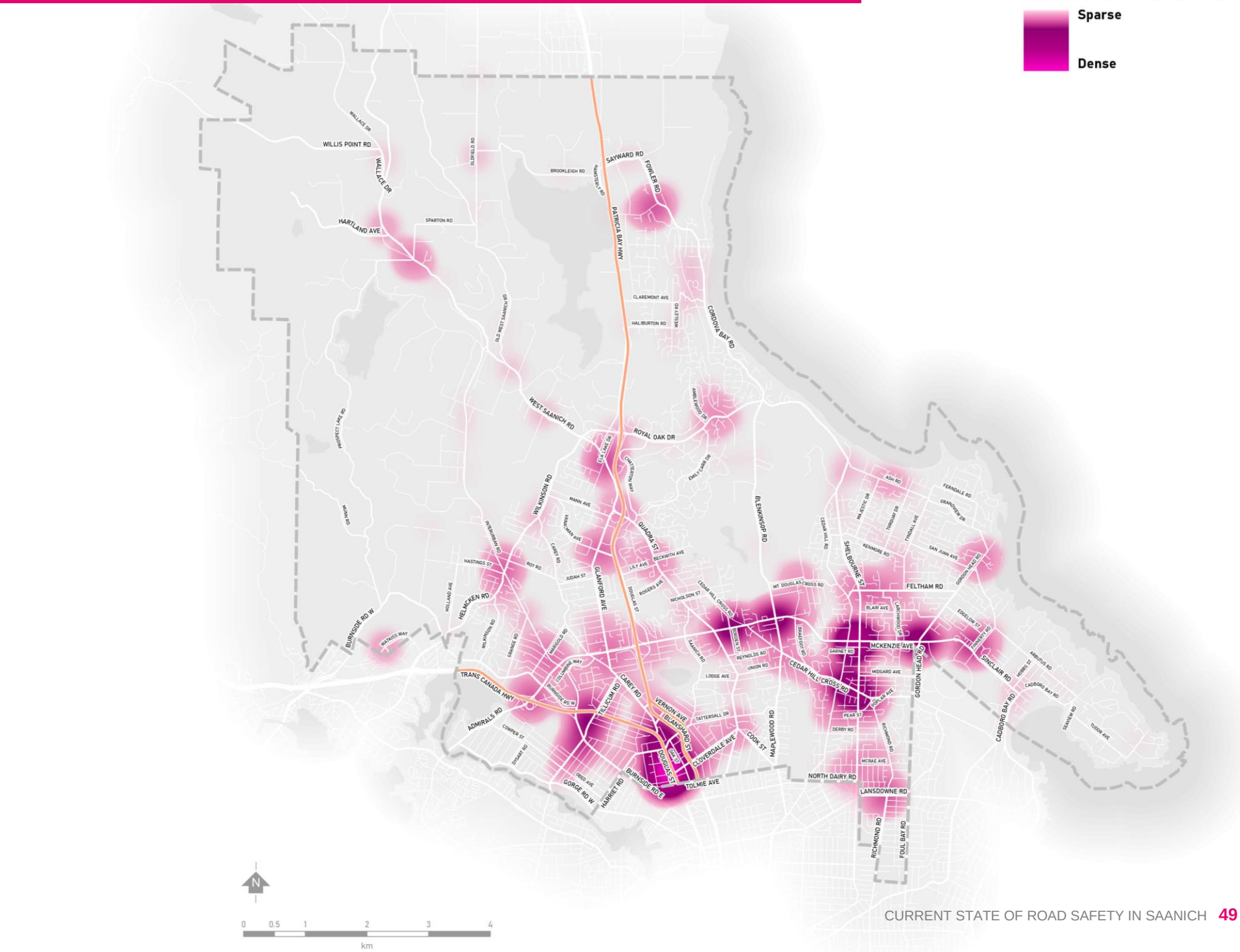
Crashes involving cyclists peak on weekdays and during the summer months. The highest number of cyclist crashes occur on Thursday. Time-of-day distribution of cyclist crashes generally reflects overall traffic patterns, with a peak during the morning and afternoon commute periods and fewer occurrences throughout the rest of the day.

Conditions

Most crashes (86%) occurred during daylight hours.

About 20% of cyclist crashes occurred in wet conditions. This rate is similar to the total severe crashes involving all modes, but substantially fewer than crashes involving pedestrians where slower braking and slipping is less of a factor.

Figure 16. COLLISIONS INVOLVING CYCLISTS (ICBC, 2012-2021)

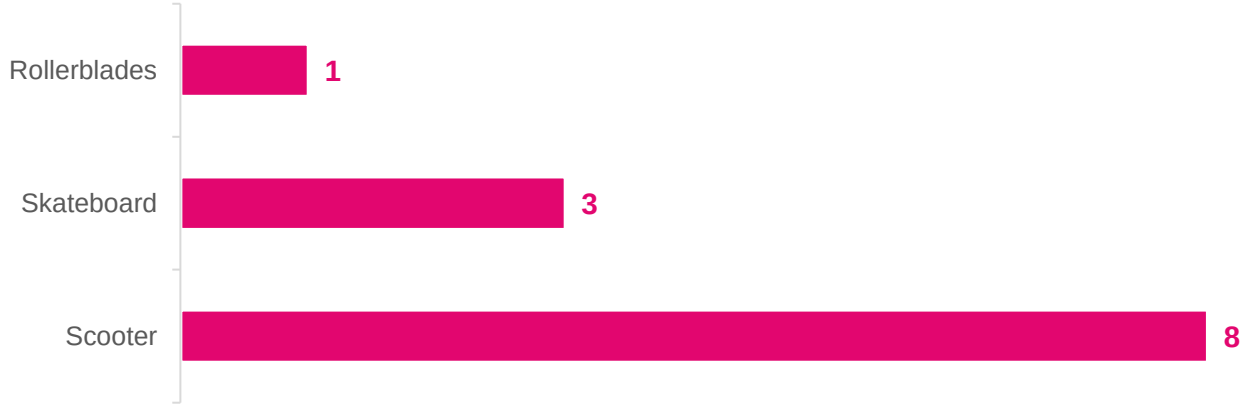


4.6 Micromobility Devices

The popularity and diversity of micromobility devices has grown rapidly over recent years, with an evolving regulatory framework around them. Because micromobility is still relatively new and emerging, its definition is continuously evolving and can be seen differently by various transportation agencies. Generally, small, low-speed vehicles and conveyances that can be electric or human-powered, and either privately owned or part of shared fleets are considered micromobility devices. Crashes involving select micromobility devices (rollerblades, skateboards, and scooters) were analyzed in this section.

Between 2017 and 2021, crashes involving micromobility devices represented only 0.3% of all crashes in Saanich (12 crashes). As shown in **Figure 17**, scooters were the most common micromobility devices involved in crashes.

Figure 17. CRASHES INVOLVING MICROMOBILITY DEVICES BY TYPE (ICBC, 2017-2021)



Note: Bicycles are excluded from this chart

4.7 Motorcycle Crash Trends

Motorcycle Crashes

Trends in motorcycle crashes showed upwards of 15 crashes in each of 2016 and 2017, with a significant reduction during the period of 2018 to 2020 (8 in 2018, 4 in 2019, 7 in 2020).

Two (2) motorcycle crashes between 2016 and 2020 resulted in fatalities, representing approximately 4% of all crashes involving a person on a motorcycle.

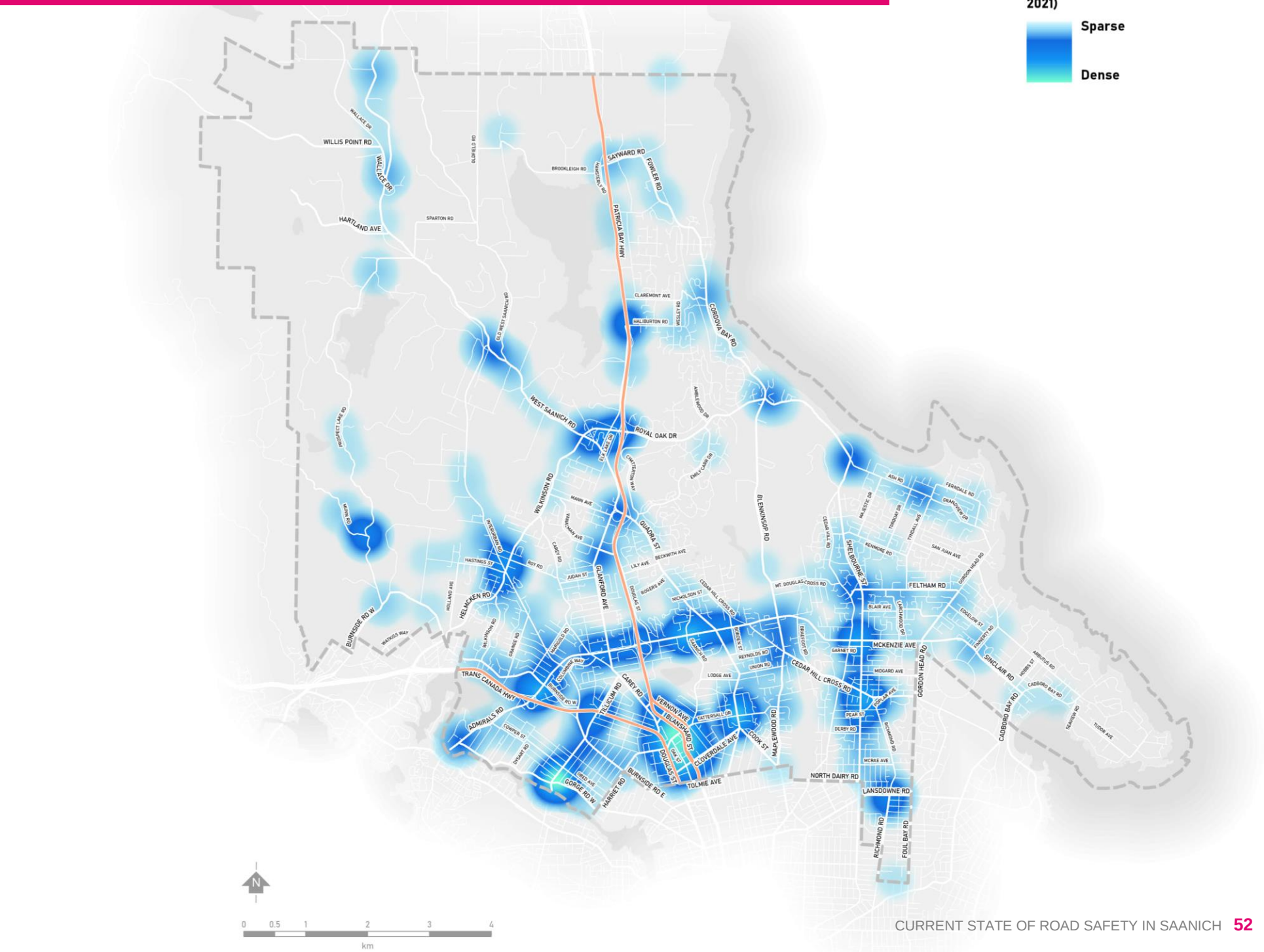
The large majority of motorcycle crashes in Saanich (92%) occurred on roads under the District's jurisdiction. The remainder were on corridors such as Highway 1, Highway 17 and McKenzie Avenue that are under MoTI's jurisdiction.

Motorcycle Crash Locations

Motorcycle crash locations generally reflect some of the highest volume vehicle corridors in Saanich, including Douglas Street, McKenzie Avenue, and some of the busier intersections along Shelbourne Street. Refer to **Figure 18**.

Where the pedestrian and cyclist crash locations are more focused in urban areas and along busy corridors, motorcycle crashes are also occurring in more remote locations. Intersections such as Wilkinson Road / Interurban Road, West Saanich Road / Interurban Road, and Prospect Lake Road / Munn Road all show motorcycle crash history.

Figure 18. COLLISIONS INVOLVING MOTORCYCLES (ICBC, 2012-2021)



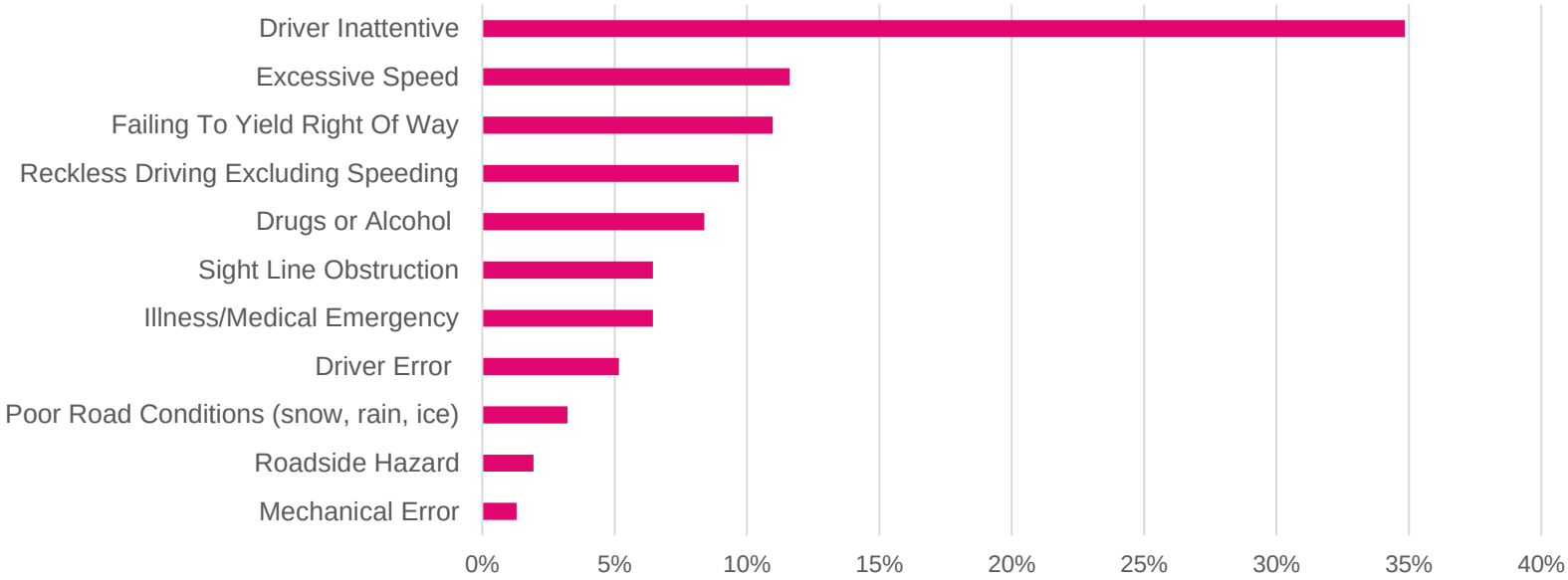
4.8 Crash Causes + Characteristics

Information about road users involved in severe crashes were analyzed using TAS data, including contributing factors to crashes, demographics, and vehicle types. Key trends and findings are summarized in this section.

Contributing Factors

As shown in **Figure 19**, the most common cause of severe crashes was “driver inattentiveness” which was a contributing factor in over 50% of crashes where causes are known. This percentage could be misrepresented, however, due to drivers not admitting fault or culpability when questioned by police (e.g., a driver may deny that they were texting while driving).

Figure 19. CONTRIBUTING FACTORS TO SEVERE CRASHES (TAS, 2016-2020)



Age + Gender

Age demographics and gender were also shown to be significant factors in severe crashes. As shown in **Figure 20**, younger road users were found to be most likely to be involved in a severe crash, with people ages 15-24 accounting for 24% of all severe crashes and the highest number of fatal crashes (4). The 25-34 age group accounted for the second most severe crashes at 22%.

Men were found to be more likely to be involved in any type of crash and these incidents were far more likely to be fatal or severe crashes, with men accounting for 70% of all recorded fatal or severe crashes as per **Figure 21**.

Figure 20. **CRASH TRENDS BY AGE GROUP** (TAS, 2016-2020)

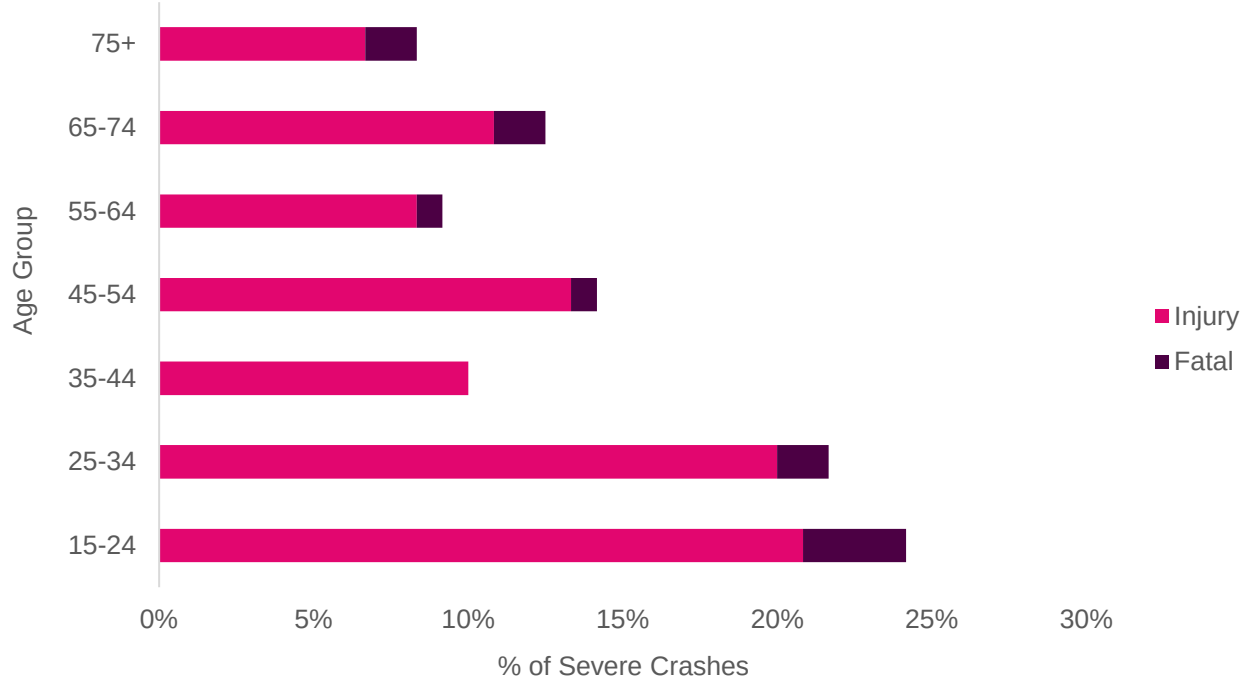
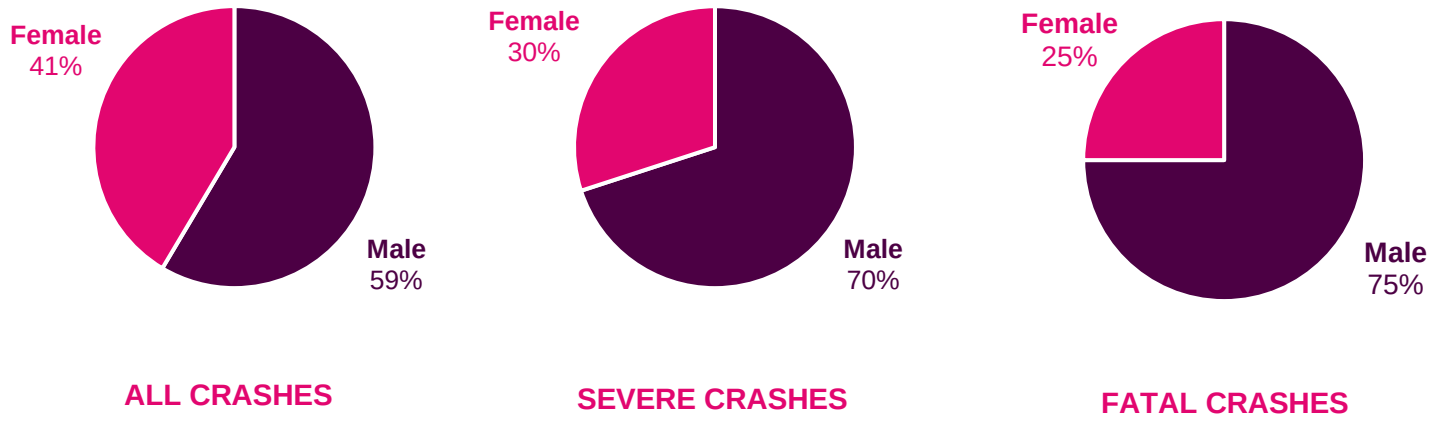


Figure 21. CRASH TRENDS BY GENDER (TAS, 2016-2020)



Vehicle Type

It is also important to understand the types of vehicles involved in collisions, as different vehicle sizes and models can affect the likelihood of a fatal or severe crash occurring. Most severe crashes were involve cars (63%), followed by trucks and SUVs at 13% and 12% respectively.

New vehicles on the road are increasingly trucks and SUVs as they made up 73% of all new vehicle registrations between 2020-2021. SUVs have significantly increased in the share of new vehicle registrations over time, reaching 54% of all new registrations in 2021, up from 35% of new registrations between 2011-2016. Larger vehicles like trucks and SUVs typically have more serious consequences when involved in collisions due to their size and mass.

4.9 Equity Analysis

A key premise of Vision Zero is that all people have the right to move about Saanich safely. To this end, a targeted equity analysis was undertaken to assess how crash patterns interact with equity-deserving populations in Saanich. A composite equity score, developed in consultation with District staff, was considered alongside ICBC Claims data for the total number of crashes (2017-2021), and the total number of pedestrian and cyclist crashes (2012-2021). *While the equity analysis is still in development, this section presents the analysis and findings to date.*

The equity analysis aims to establish a composite equity scoring for each census tract in Saanich (21 total) that is comprised of nine (9) unique indicators generally factoring for age, income level, and race and ethnicity. Areas with lower composite equity scores are referred to as having higher need.

Note that this information is representative of the number of crashes involving that mode, which varies greatly between modes, and therefore should not be compared between maps.

What Factors are Included in the Equity Analysis?

- Income
- Number of Seniors
- Number of Youth
- Indigenous People
- Recent Immigrants
- Non-English Speakers
- Visible Minorities
- Single Parent Households
- Rent-burdened Households

Equity Analysis of Total Crashes

The composite equity score was overlaid with all crashes to understand the density of crashes in comparison to equity deserving areas (based on census tracts) within Saanich (**Figure 22)**. The analysis demonstrates that the highest concentrations of crashes occur in areas of moderate-high or high equity need, particularly around Uptown-Douglas and along Shelbourne Street and McKenzie Avenue. This may partially be the result of areas of high equity need being located along busy corridors with higher traffic volumes where crashes occur at greater frequency. Areas of lower equity need are generally located in the northern, eastern, and rural sections of Saanich, away from corridors, where traffic volumes are lower and crash occurrence is lower.

Equity Analysis of Pedestrian and Cyclist Crashes

An equity analysis was also specifically undertaken relative to the location of pedestrian and cyclist crashes, as shown in **Figure 23** and **Figure 24**. Pedestrian crashes are focused near areas of higher density and mixed land uses, such as the Uptown-Douglas area, Shelbourne Street and Tillicum Road, each of which borders at least one area of high equity need. These areas generally encompass corridors and intersections with high traffic volumes and are good candidate locations for targeted improvements to address road safety concerns and provide safe conditions for pedestrians.

Areas with lower equity need also experience concentrated pedestrian crashes, including in Royal Oak (near the Highway 17/Royal Oak Drive intersection) and along Interurban Road near McKenzie Avenue.

Cycling trips are generally longer distance in nature and less confined to one area. Crashes involving cyclists are concentrated along key corridors such as Douglas Street, McKenzie Avenue, and Shelbourne Street, as well as in intersections along key cycling corridors such as the Lochside and Galloping Goose Regional Trails and along McKenzie Avenue leading to UVic. Many of these locations also border at least one area of high equity need. Cycling crashes are generally more limited in areas of low equity need, with only a modest number of crashes in areas such as the northern sections of the Lochside Regional Trail and along West Saanich Road.

Figure 22. EQUITY SCORE AND TOTAL CRASHES (ICBC, 2017-2021)

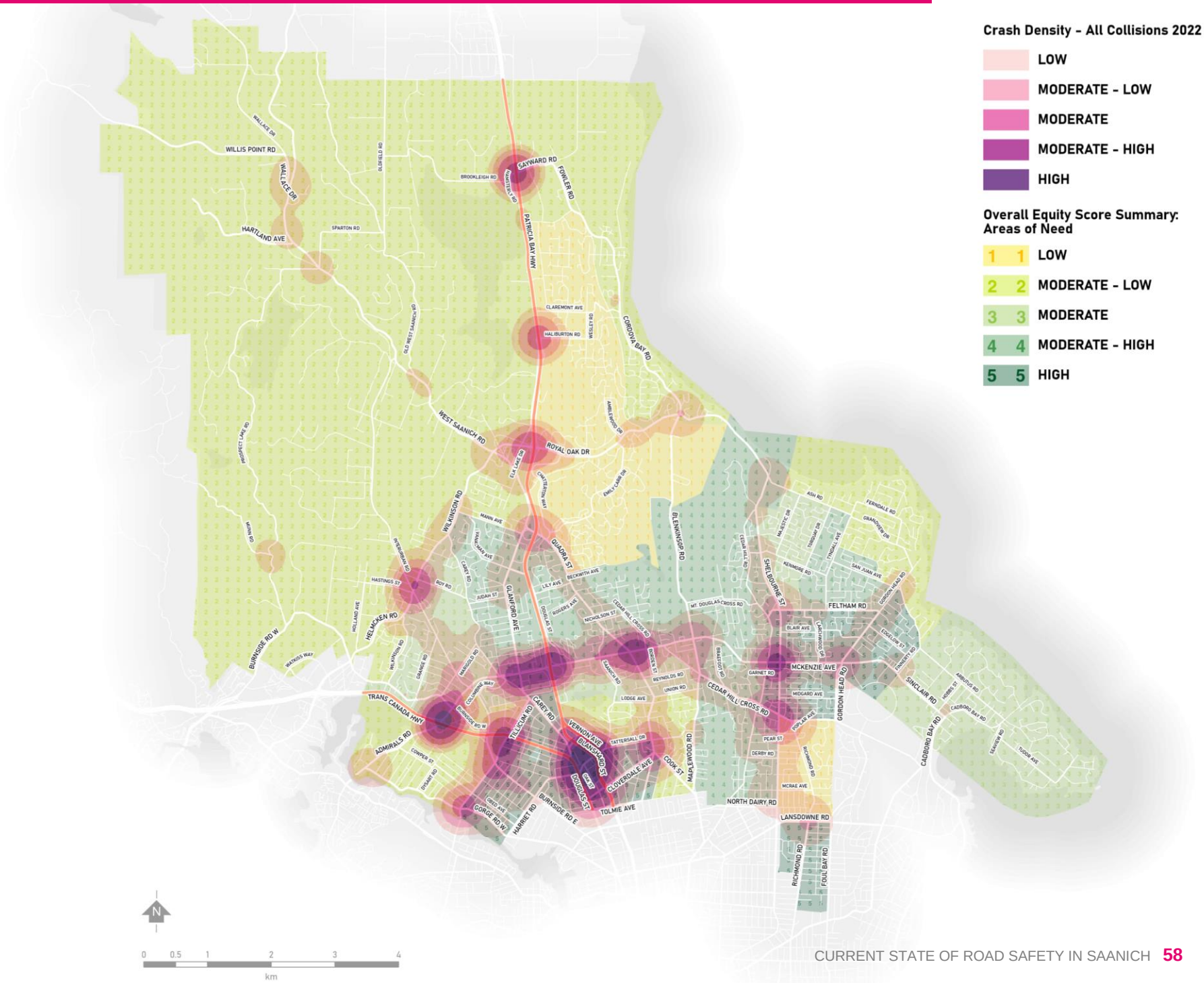


Figure 23. EQUITY SCORE AND PEDESTRIAN CRASHES (ICBC, 2017-2021)

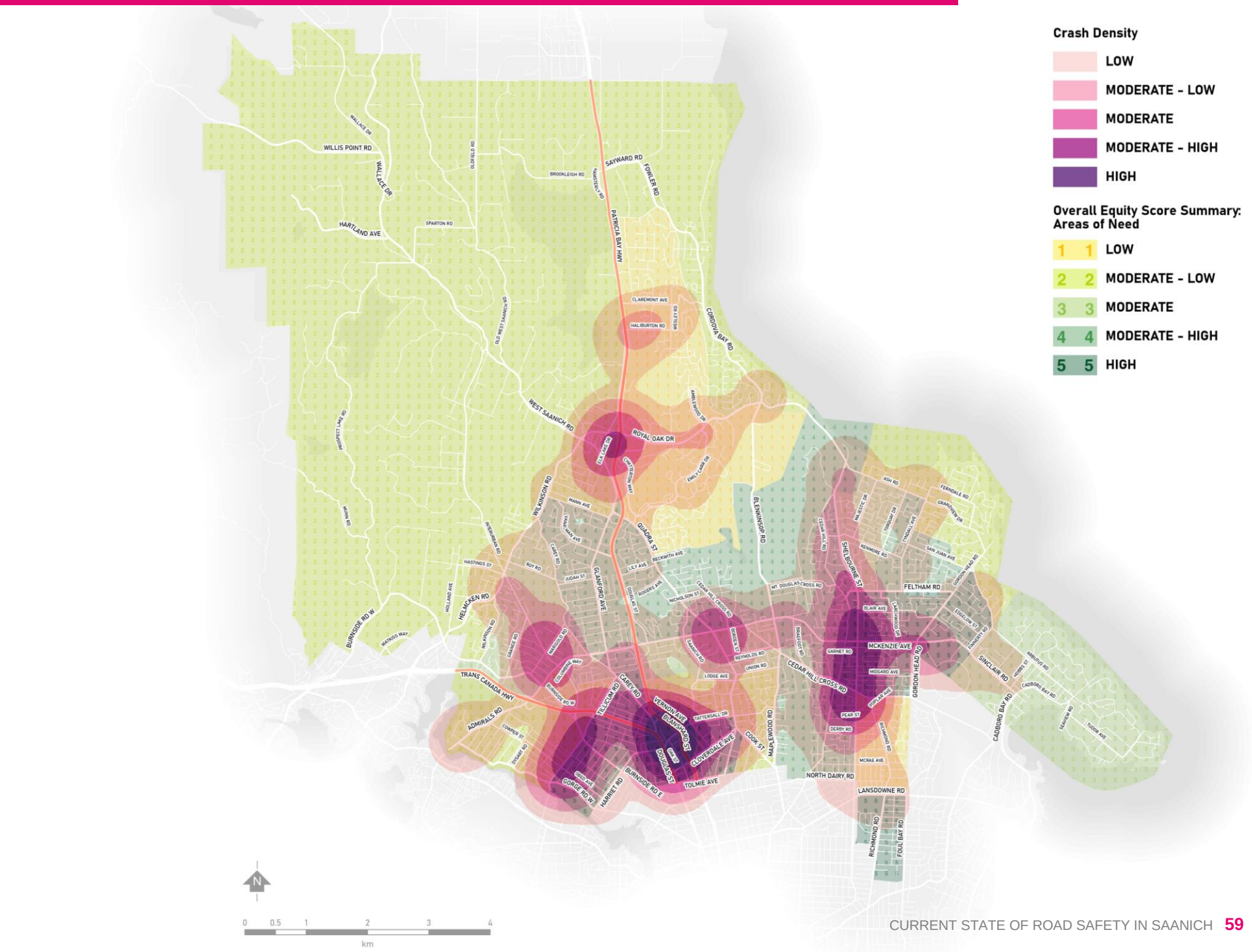
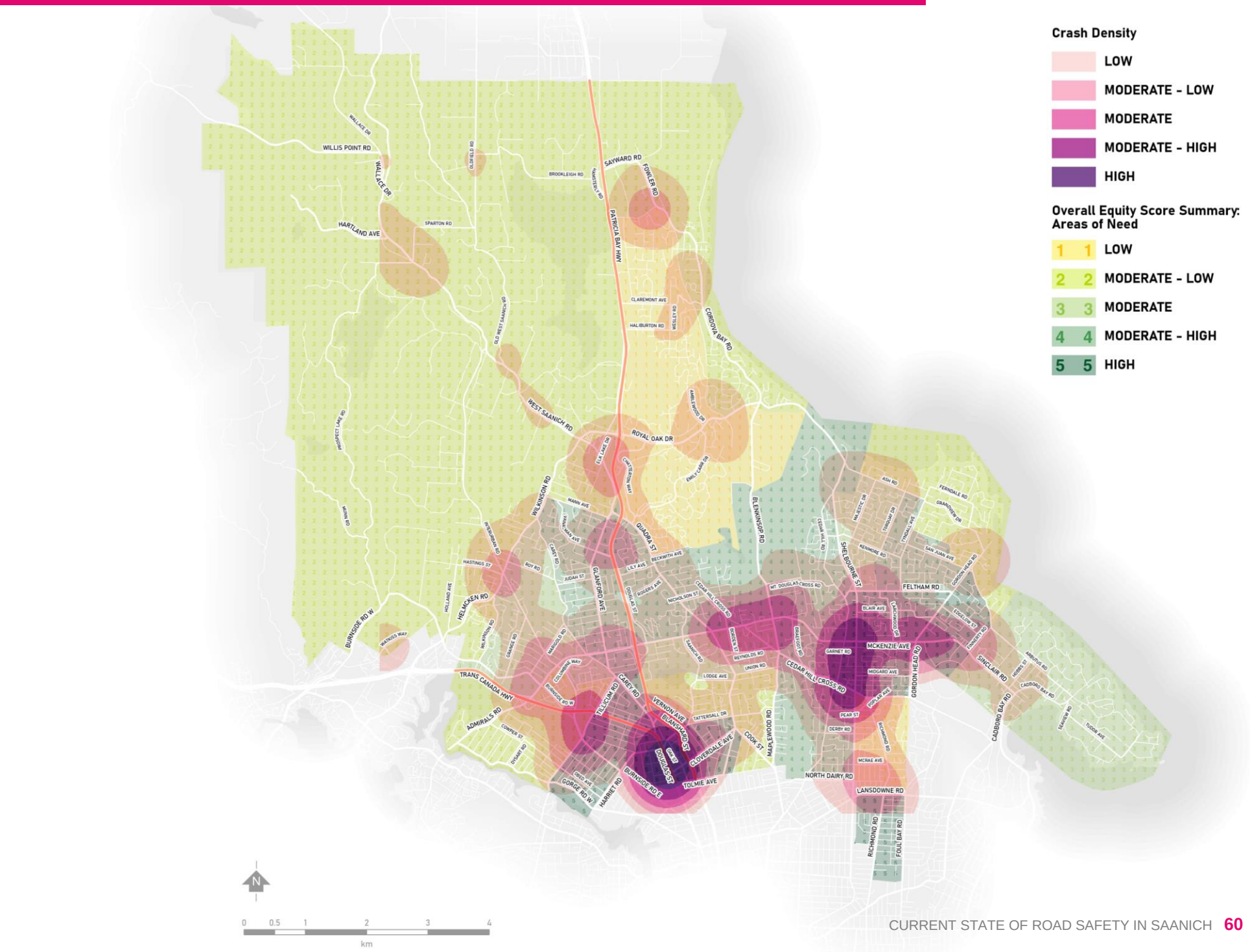


Figure 24. EQUITY SCORE AND CYCLIST CRASHES (ICBC, 2017-2021)



ROAD SAFETY *ACTION PLAN*

Saanich

5. Infrastructure Review

A general review of transportation infrastructure in Saanich was undertaken in Fall 2022. The result of the review is contained on the following pages. The review describes current road infrastructure – both strengths and weaknesses - to create an understanding of how road safety performance is influence by the facilities currently in place.

A synopsis of current and past safety improvements and countermeasures is also provided both to understand what Saanich and its partners have achieved in the past, as well as to identify some of the features and improvements that may be employed through the implementation the RSAP.

Network Screening

A comprehensive network screening exercise is being undertaken to supplement and expand on the crash analysis presented in ***Section 4***. This exercise will result in a greater understanding of the following:

1. Locations with the greatest crash history;
2. Crash trends for different street types in consideration of classification and number of travel lanes;
3. Crash trends for corridors, intersections, and crossings separate of one another;
4. Contributing factors for high crash locations (i.e., geometry, sightlines, weather, driver behaviour, etc.); and
5. Mitigation options to improve high crash locations.

The results of the network screening will help the District make future investments in road safety, ensuring that investments are strategic and that they address the locations of greatest concern.

What is Network Screening?

Network screening is the process undertaken to identify crash-prone locations in the transportation network.

It will allow the District and its partners to identify road infrastructure deficiencies and traffic operational / control features that may have contributed to the crashes and to determine appropriate mitigation measures.

This process is critical in a Vision Zero-inspired road safety management program, which aims to eliminate serious injuries and fatalities in the transportation system.

5.1 General Conditions

The streets and trails in Saanich were constructed many years ago and have evolved over time. Areas in the north (outside the Urban Containment Boundary) are more rural in character, while several areas within the Urban Containment Boundary (UCB) are intentionally designed suburban communities with wide roads and limited sidewalks.

Planning principles have since changed to favour more compact communities and transportation design standards now call for complete streets and greater emphasis on active transportation facilities. Changes in transportation infrastructure occur slowly due to the vast geographic extent of Saanich and the significant level of investment that is required.

A key objective of the RSAP is understanding the most significant road safety challenges facing Saanich and identifying strategic, directed actions toward improving current conditions. Some of the underlying road safety concerns on Saanich streets are summarized on the following page. The intent is that each will be addressed as the RSAP is developed and the District and its partners advance improvements in road safety.

What are the Underlying Challenges with Saanich's Current Road Infrastructure?

1. Vehicle-Focused Street Design

Much of Saanich was developed in an era when personal vehicles were the primary and preferred travel option. Many streets have wide travel lanes and sweeping turn geometry, intended to prioritize vehicle travel and high-speed turns. Through the RSAP, Saanich and its partners will continue to work to pursue improvements that balance road infrastructure and realize multi-modal safety improvements.

2. Busy Corridors & Intersections

Streets such as McKenzie Avenue, Shelbourne Street, and Quadra Street carry more than 25,000 vehicles per day. Balancing the need for through traffic and the localized desire to cross these major streets proves challenging both in creating safe intersections and allowing for safe, comfortable active transportation opportunities within neighbourhoods.

3. Limited Pedestrian Facilities

While Saanich's recent streetscape improvements have included high-quality sidewalk infrastructure, many streets still lack sidewalks or include only walkways at the roadside. This includes a large number of roadside shoulders separated by only an extruded asphalt curb (EAC) - including on Major and Collector roads - where people walk directly adjacent to vehicle traffic.

4. Rural Streets

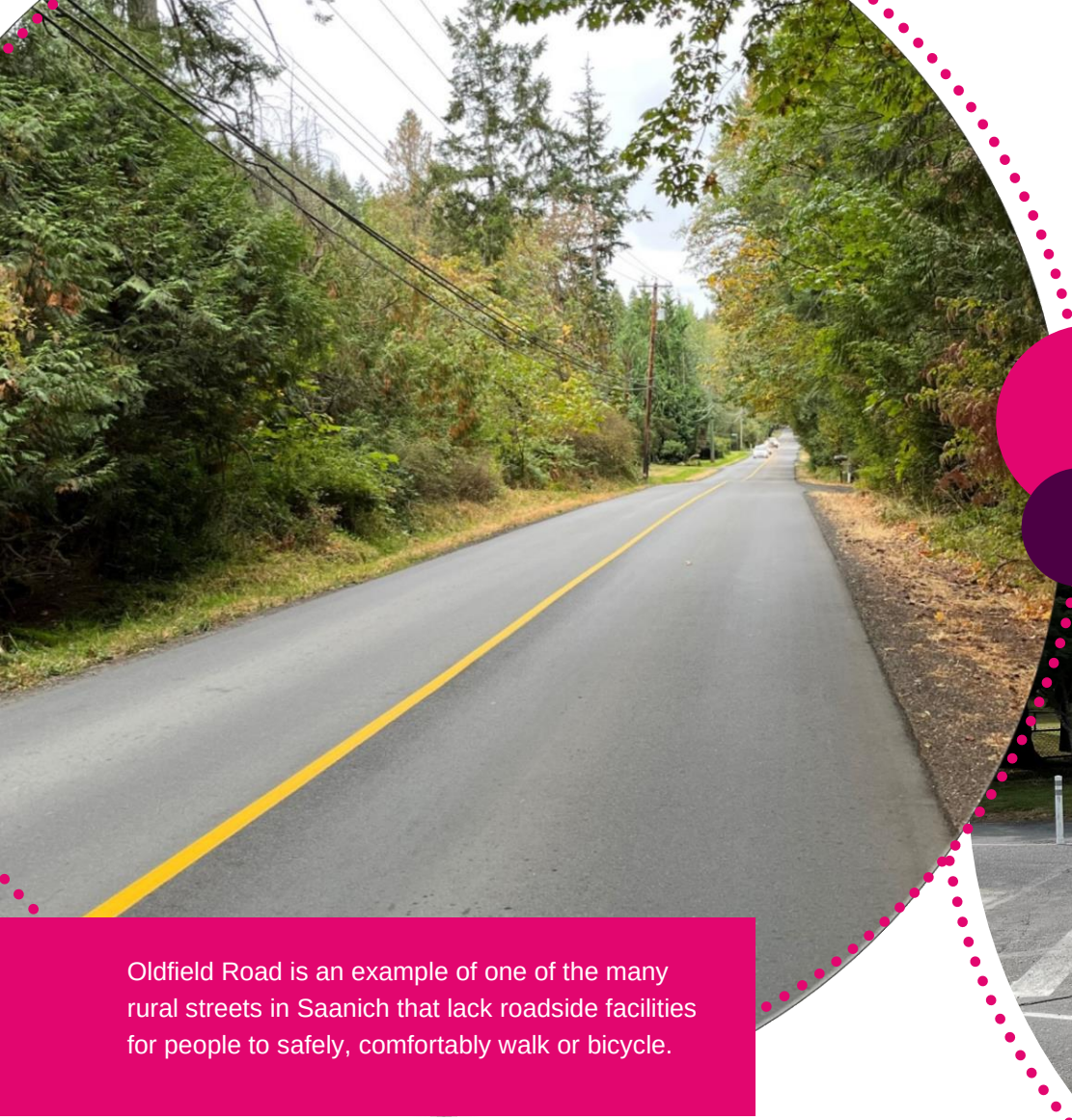
In rural areas, streets generally do not include sidewalks with curb and gutter. As a result, many streets in rural Saanich lack dedicated space for people walking and cycling, and are challenging environments to feel safe and comfortable engaging in active transportation.

Solutions are needed that both manage vehicle speeds and motorist behaviour to create comfortable roadside conditions, as well as to work to develop dedicated facilities for people walking and cycling in rural areas.

5. Highway Corridors & Crossings

Numerous Saanich streets approach and cross Highway 1, Highway 17, and other corridors under MOTI jurisdiction. Many of these intersections are designed to prioritize high speeds, with limited accommodation for people engaging in active transportation. A series of over- and under-passes are provided for people walking and cycling, although each provides challenges with grades and/or personal security.

Collaboration with MOTI is critical to creating safe highway intersections and better linking neighbourhoods throughout Saanich.



Oldfield Road is an example of one of the many rural streets in Saanich that lack roadside facilities for people to safely, comfortably walk or bicycle.

Recent improvements on Cedar Hill Cross Road to narrow vehicle travel lanes, reduce pedestrian crossing distances, and slow turn movenents.

5.2 Safety Improvements & Counter Measures

The District of Saanich has pro-actively pursued road safety improvements in the past. Most commonly improvements are pursued through the District's annual transportation capital works, either as part of a large capital project or targeted retrofit. Improvements are also linked to priorities in the 2018 Active Transportation Plan or as identified through initiatives such as Local Area Plans (LAPs) and safe routes to school initiatives.

The District has realized a number of safety improvements on Saanich roads in cooperation with ICBC. Collaboration with MOTI on highway corridors and intersections, as well as with the CRD at regional trail crossings, have also yielded local improvements. Continued collaboration with these agencies and others is crucial to realizing the road safety objectives of Saanich.

A summary the past road safety improvements and counter-measures that have been pursued in Saanich is included on the following pages. This is a representative summary of some of the improvements that have been made in recent years that is not intended to present a comprehensive account, but rather create understanding of the level of effort and investment made by the District and partners, as well as highlight some of the possible safety improvements and counter-measures that may be applied in future.

Pedestrian Safety

31 km
of Accessible Sidewalks

Since 2014, over 31 km of sidewalk has been installed that is of sufficient width to allow two people with mobility devices to pass in opposing directions (1.8m or wider).

130
Upgraded Crosswalks

Approximately 130 pedestrian activated crosswalks are found throughout Saanich that include conventional flashing beacons, rectangular rapid flashing beacons (RRFBs), and pedestrian activated signals.

30
Leading Pedestrian Intervals

Leading pedestrian intervals (LPIs) are in place in 30 locations throughout Saanich, most commonly where heavy turning traffic comes into conflict with crossing pedestrians.

A **leading pedestrian interval** (LPI) gives pedestrians a head start when entering an intersection to enhance visibility and reinforce their right-of-way over turning vehicles

Accessible Design

925

Accessible Curb Ramps

925 accessible curb ramps are found throughout Saanich providing safe, barrier-free access between sidewalks and crossing locations.

142

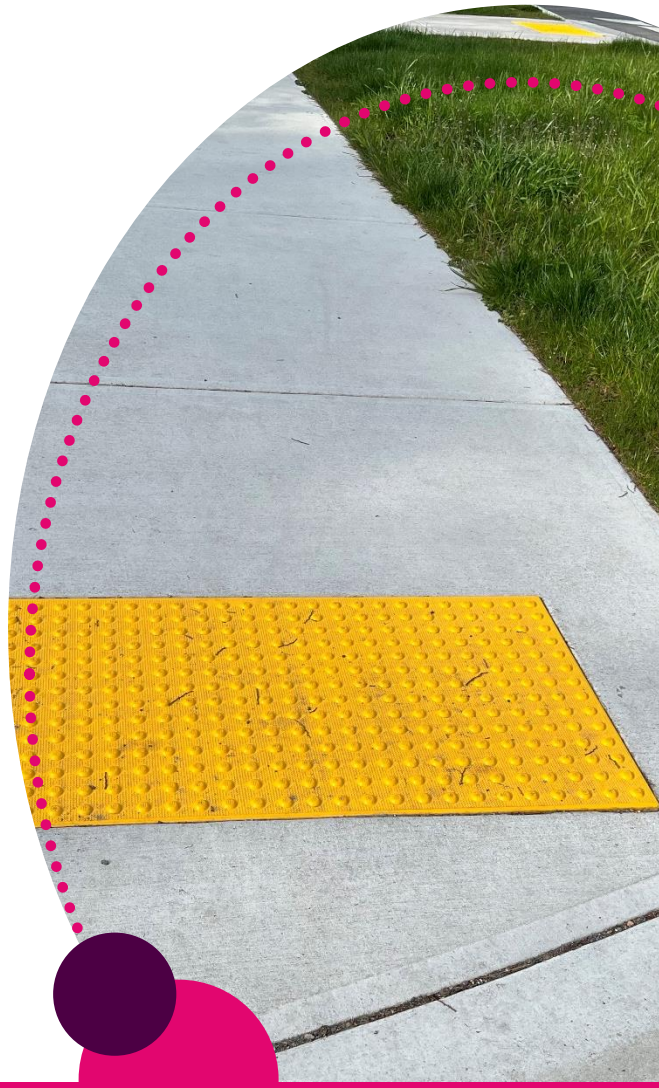
Curb Ramps with Tactile Surface

142 fully accessible curb ramps have been constructed in Saanich that include tactile surfaces to support people with limited vision to safely cross the street.

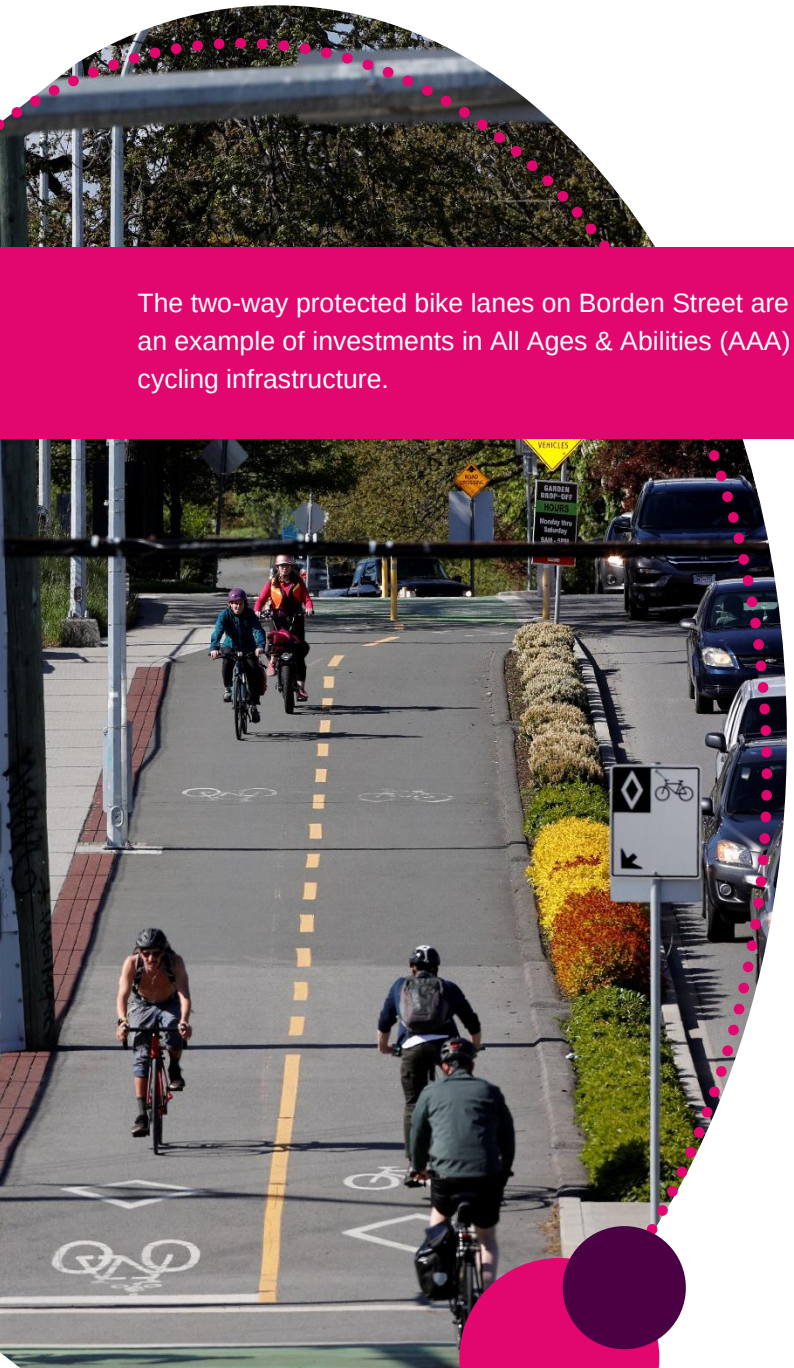
99%

Audible Pedestrian Signals

All but one of the 84 signalized intersections in Saanich have audible pedestrian signals that provide information for people with low vision on the timing and direction for safe crossing (final location planned for improvement in 2023).



Curb ramps with tactile surfaces provide a safe transition between sidewalk and roadway, with tactile surfaces aiding people with low vision detect they are entering a road



The two-way protected bike lanes on Borden Street are an example of investments in All Ages & Abilities (AAA) cycling infrastructure.

Cycling Safety

174 km
Cycling Facilities

Saanich has built approximately 174 km of cycling facilities.

16 km
Protected Bike Lanes

Approximately 16 km of protected bike lanes have been constructed in Saanich, highlighted by recent improvements on Lansdowne Road, Shelbourne Street, and Tillicum Road. Significant growth in the number of kilometres of protected bike lanes is anticipated over the next five years resulting from the use of pre-cast concrete curbs in many locations.

19
Regional Trail Crossing Improvements

Improvements have been made at 19 crossings of the Lochside Regional Trail and Galloping Goose Regional Trail in recent years, most notably improvements at Borden Street and the grade-separated crossing at the McKenzie Interchange.

Street Network & Intersection Safety

23

Protected Left-Turn Signal Phasing

Protected left-turn signal phasing has been put in place in 23 locations in Saanich to separate left-turn movements from through movements, eliminating conflicts with other vehicles, cyclists and pedestrians.

In certain locations, delayed left-turn phasing allows higher priority pedestrian crossing to occur in advance of left-turns.

0

New Right-Turn Channelizations

Right-turn channelizations negatively impact safety by facilitating higher-speed right turns, potential for pedestrian conflicts, and higher driver workload. They are gradually being reduced throughout Saanich, with no new channelizations being installed.

Intersections where right-turn channelizations have been removed in past include McKenzie Avenue / Cedar Hill X Road, Royal Oak Drive / West Saanich Road, and West Saanich Road / Glanford Avenue.

Road Diets

Road diets have been pursued on a number of Saanich streets where excess vehicle capacity has been repurposed to better accommodate other street functions such as providing pedestrian infrastructure or new, safer cycling facilities. Recent examples include Tillicum Road, Feltham Road, and Shelbourne Street.

Transit Infrastructure

706
Bus Stops

Bus stops are the interface between the pedestrian network and access to transit service. There are 706 bus stops located throughout Saanich that provide access to the many routes operating in the community.

50%
Accessible Bus Stops

Half of all bus stops in Saanich meet BC Transit's accessibility guidelines including unimpeded access, functional widths and maneuvering space, and tactile treatments.

30km
Bus Lanes

Saanich and partners have installed approximately 30km of dedicated bus lanes to prioritize transit operations on key corridors, highlighted by facilities on Douglas Street, Tillicum Road, Saanich Road and Vernon Avenue.

36%
Bus Stops with Shelters

Over one-third of all bus stops in Saanich (approx. 255) include a shelter providing added comfort for passengers waiting for their bus to arrive.

Accessible design leading to and from bus stops – including sidewalks with curb ramps - is critical to ensuring all Saanich residents can access public transit.

Traffic Calming

38

Speed Humps & Raised Crosswalks

Speed humps (26) and raised crosswalks (12) are found throughout Saanich that slow vehicle speeds through neighbourhoods and in the vicinity of schools and parks.

3

Raised Intersections

Raised intersections reinforce intended travel speed and allow for improved crossing conditions. Over the past five (5) years, raised intersections have been installed in the following locations:

1. Braefoot Road / Harrop Road
2. Gordon Head Road / Midgard Avenue
3. Finnerty Road / Edgelow Street

Raised crosswalks not only reduce vehicle speeds, but also provide accessibility benefits by allowing crossing to occur at sidewalk level.

Raised crosswalks are found throughout Saanich, including the example above from Edgelow Street nearby Arbutus Middle School.

School Zones

59
School Zones

59 school zones are found throughout Saanich where the speed limit is 30 km/h during school hours. School zones differ from playground zones where speed limits are reduced typically at all times (not only during school hours).

25
Active & Safe Routes to School Programs

Active & Safe Routes to School programs have been completed at 25 Saanich schools over the past ten (10) years, helping to identify barriers to walking and support more people walking to school.

Enhanced school zone safety features were recently installed at a number of Saanich schools to reinforce 30 km/h speed limits.

Safety features include vertical yellow “School Zone” signs and school zone pavement markings on all Major and Collector streets in school zones.

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**
ATP	**Active Transportation Plan**
CRD	**Capital Regional District**
CMF	**Collision Modification Factor**
CRF	**Crash Reduction Factor**
EAC	**Extruded Asphalt Curb**
ICBC	**Insurance Corporation of British Columbia**
LAP	**Local Area Plan**
LPI	**Leading Pedestrian Interval**
MOTI	**British Columbia Ministry of Transportation and Infrastructure**
OCP	**Official Community Plan**
RRFB	**Rectangular Rapid Flashing Beacon**
RSAP	**Road Safety Action Plan**
RSS	**Road Safety Strategy**
SUV	**Sport Utility Vehicle**
TWSI	**Tactile Warning Surface Indicator**
TAS	**Traffic Accident System**
TAC	**Transportation Association of Canada**

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.
Complete Street	A street designed and operated to enable safe and efficient access for all street users, including people walking, cycling, and using other active modes, in addition to transit and motor vehicle users. Complete streets are designed to integrate all transportation modes while responding to local context and considering the needs of people of all ages and abilities.
Counter Measure	An infrastructure design or program approach used to address specific and demonstrated road safety concerns.

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.
Network Screening	The process undertaken to identify crash-prone locations within the transportation network. Several approaches may be taken to carry this process, with the end goal of accurately and strategically identifying where to focus efforts to mitigate road safety issues.
New Mobility	A broad term that covers new and emerging forms of transportation, including autonomous vehicles, electric motor vehicles, mobility as a service, shared mobility, electric bicycles, and small, one-person electric vehicles.
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.
Road Diet	A reduction in the number of travel lanes or reduction in travel lane width to provide additional space or improve safety for non-vehicular travel modes. Road diets often make use of excess vehicle capacity (i.e., lanes) by reducing from four lanes (2 in each direction) to three lanes, with left turns accommodated from the centre lane. The additional road space is commonly used to support improvements to sidewalks, boulevards, cycling facilities and/or transit facilities.
Safe System	A framework to guide road safety 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.

Tactile Warning Surface Indicator (TWSI)	A warning treatment that alerts the pedestrian to the presence of a street crossing through a tactile surface and/or contrasting colour. TWSIs may also enhance the sidewalk-crosswalk interface by guiding pedestrians with visual or other disabilities to and from the crosswalk with directional grooves.
Universal Design	The design of products, environments, programs, and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. 'Universal design' shall not exclude assistive devices for a particular group.
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.


Saanich