



City of North Bay Road Safety Strategy

2025 – 2029

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Road Safety Strategy Partner Framework Partners



- ▶ North Bay Accessibility Committee
- ▶ North Bay Road Safety Committee



Introduction

North Bay is a vibrant community in Northeastern Ontario, Canada, nestled on the shores of Lake Nipissing and Trout Lake. Known for its scenic beauty and outdoor recreational opportunities, the City offers a unique blend of urban amenities and scenic landscapes. With deep historical roots in the railway and timber industries, North Bay has since transformed into a modern hub for education, healthcare, and tourism. Home to Nipissing University and Canadore College, the City also serves as a gateway to Northern Ontario's pristine wilderness, drawing nature lovers, hikers, and adventurers throughout the year. Spanning over 320 square kilometres, North Bay has an estimated population of 52,700, according to the 2021 census.

Road safety is an issue of great importance both locally and globally. Motor vehicle collisions remain a leading cause of death and disability in many areas, including North Bay, imposing heavy economic burdens and life-changing consequences. In 2022 alone, North Bay experienced 717 motor vehicle collisions, of which 107 resulted in injuries, underscoring the need for a holistic approach to improve road safety.

In response, North Bay has developed a comprehensive Road Safety Strategy. The Strategy reflects the latest advancements in traffic safety, focusing on identifying factors contributing to collisions and determining and implementing targeted interventions. Its primary goal is to save lives and reduce injuries resulting from motor vehicle collisions, with an emphasis on fatal and serious collisions. By fostering collaboration among key stakeholders in engineering, enforcement, education, and public engagement, the Strategy aims to create safer roads and cultivate a positive safety culture for travellers in North Bay.

This document provides an overview of North Bay's Road Safety Strategy. It outlines the City's Vision Zero approach to road safety, highlights the current state and emerging trends within the road network, and details key aspects of the Strategy. This includes a comprehensive examination of the six emphasis areas, the process undertaken in developing the Plan, and information on available resources, monitoring, and reporting mechanisms. The appendices offer a complete list of countermeasures for each emphasis area.

Vision Zero Principles and Safe Systems Approach

Vision Zero is a data-driven strategy supported by policies to eliminate traffic fatalities and serious injuries. It originated in Sweden in 1997 and has since been adopted by multiple communities worldwide, including here in North Bay. Vision Zero can be summed up in one powerful statement:

The loss of life from a motor vehicle collision is never acceptable.

Achieving the Vision Zero goal requires adopting a Safe System approach based on the understanding that people make mistakes, and our bodies can only handle so much force in a collision. Figure 1 below, adopted from the Transportation Association of Canada, illustrates the Safe System approach, highlighting the elements, principles, and key action areas which together form a comprehensive strategy with multiple layers of protection for road users. This system works in two ways: by preventing collisions from happening in the first place and by designing the road network to reduce collisions' severity when they occur.

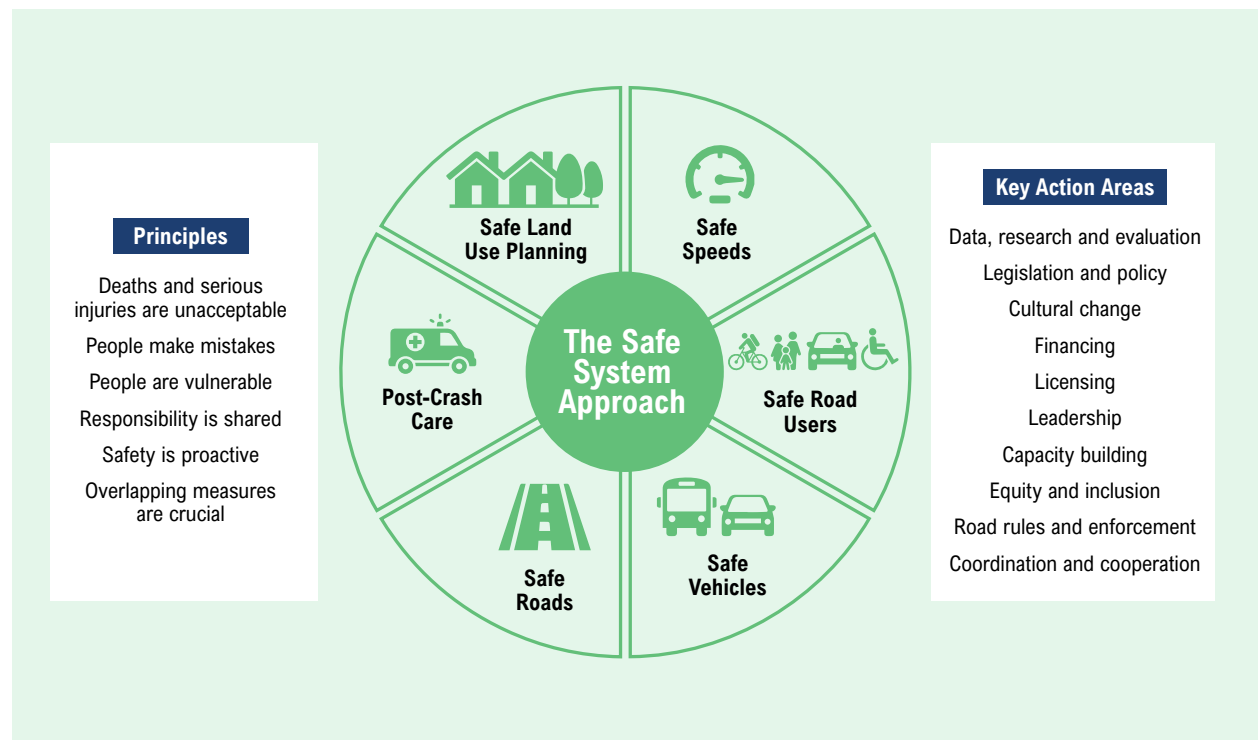


Figure 1: Safe System Approach Diagram

Quick Facts

A six-year (2015 to 2019, and 2022) comprehensive analysis of traffic collisions was conducted to review the current state of road safety in North Bay and inform the development of the Road Safety Strategy. The COVID-19 pandemic altered traffic volumes and patterns between 2020 and 2021. Therefore, collision data from this period was excluded from the analysis. The following sections provide further details on the collision analysis findings.



Intersection collisions are the most common type of collision in North Bay, contributing to 69% of fatal and injury collisions.



100% of the fatal collisions occurring in North Bay involved pedestrians.



17% of fatal and injury collisions occurring in North Bay involved pedestrians or cyclists.



33% of the fatal and injury collisions occurring in North Bay are a result of aggressive driving.



40% of the fatal and injury collisions occurring in North Bay were defined as distracted driving.



PM rush hour (3 PM – 6 PM) is the most common time for fatal and injury collisions.

Trends in the City of North Bay's Road Safety

Within the six-year study period, more than 4,900 collisions were reported on City roads. Of those collisions, more than 800 collisions resulted in an injury or fatality. The number of annual collisions and the proportion of collision type (property damage only collisions and injury or fatal collisions) is shown in Figure 2 below.

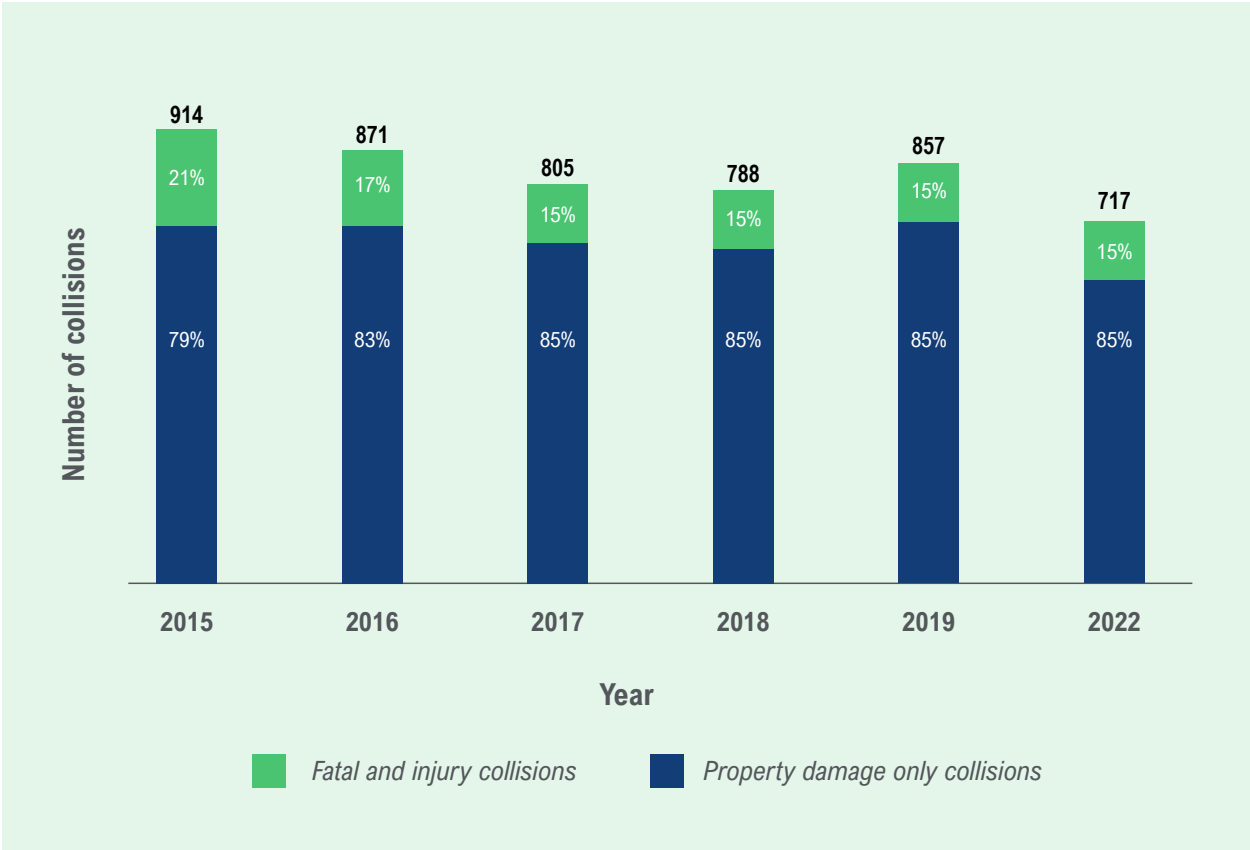


Figure 2: Annual Collisions in North Bay

In recent years, the City and its partners have made progress in slightly reducing the overall frequency and severity of collisions. However, injury and fatal collisions continue to account for 15% of all incidents. Aligned with the Vision Zero philosophy, the Road Safety Strategy will prioritize efforts to reduce these serious collisions on City roads. Figure 3 highlights this focus by illustrating the number of fatal or injury collisions across the most common collision types in the City.

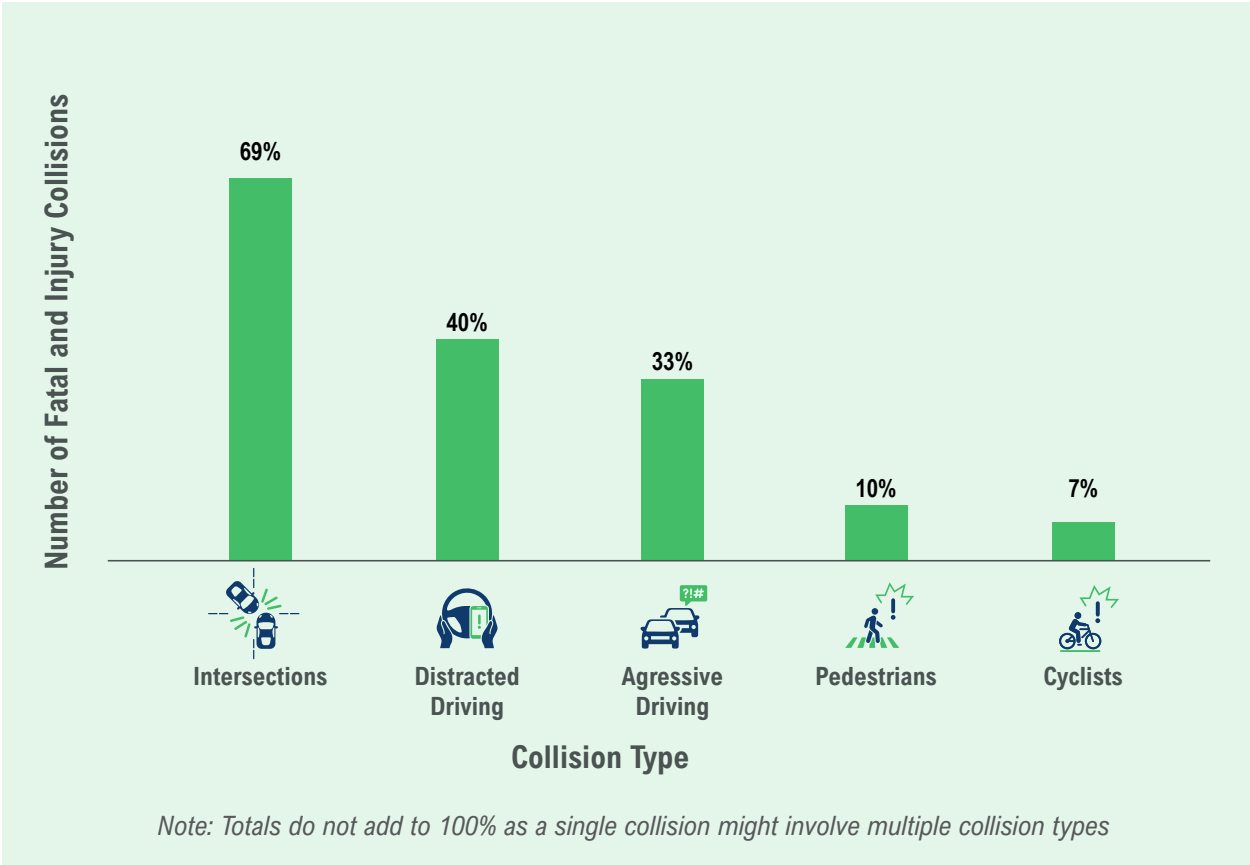


Figure 3: Number of Collisions by Collision Type

A single collision might involve multiple collision types. For example, if an impaired driver hits a cyclist at an intersection, it is classified as an intersection, cyclist, and impaired driving collision.

The findings from the six-year collision analysis played a crucial role in shaping the Road Safety Strategy. By identifying patterns, high-risk areas, and common factors contributing to collisions.

North Bay Road Safety Strategy

Everyone deserves the right to travel safely, regardless of their mode of transportation or their destination. Ensuring safety for all road users reduces collisions and fosters an inclusive and accessible environment, allowing people to move confidently and effortlessly throughout their community.

The City of North Bay has already launched several important road safety projects and programs. However, further efforts are needed to enhance safety for everyone. To address this, the City has developed a comprehensive five-year Road Safety Strategy (2025 to 2029) that builds on the current initiatives to reduce fatal and injury collisions and improve road safety for all users.

How Was the North Bay Road Safety Strategy Developed?

The development of the Road Safety Strategy was a collaborative process, with feedback from key stakeholders. The process began with a review of the City's current road safety programs and industry best practices. This was followed by a thorough data analysis, including historical collision data. Using this information and input from the public, the City and its road safety partners defined the vision, mission, goals, and key safety concerns (also known as emphasis areas) of the Strategy. From there, specific safety initiatives or countermeasures, were created to address these areas and reduce fatal and injury collisions over the next five years, in line with the City's multi-modal transportation goals. The City will implement these initiatives through an Action Plan and will regularly evaluate their effectiveness.

Figure 4 below illustrates the steps involved in the development and implementation of the Road Safety Strategy.

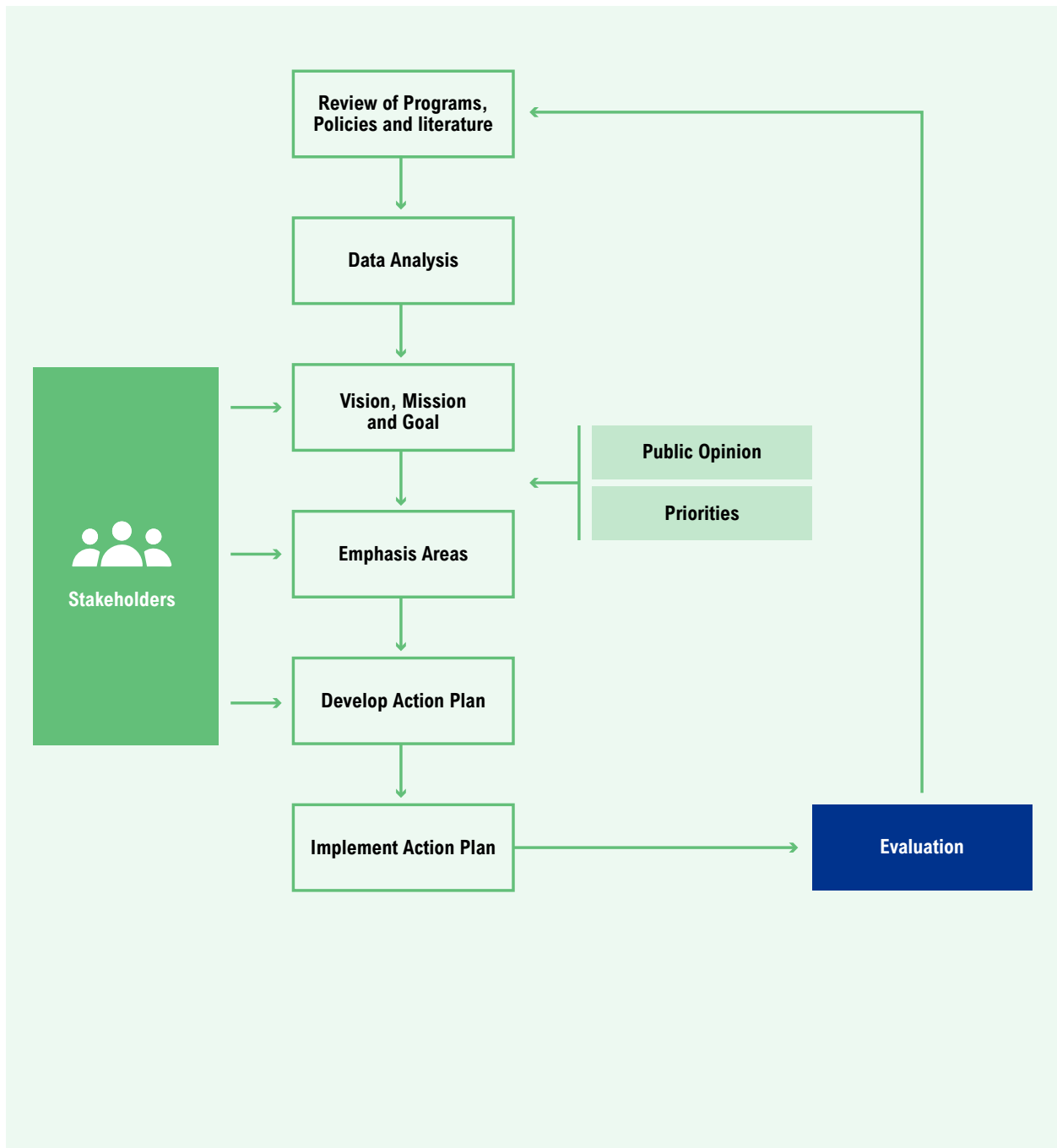


Figure 4: Road Safety Strategy Development and Implementation Process

The effectiveness of the Road Safety Strategy will be evaluated after the five-year implementation period. Based on the evaluation results, the City will make recommendations and adjustments to the Strategy to continue progressing toward the vision of eliminating fatal and serious injury collisions on City roads.

What Is the Vision, Mission, and Goal?

To create a detailed strategy for reducing motor vehicle fatalities and injuries in North Bay, a vision, mission, and goal were established for the Road Safety Strategy. The vision represents a high-level, long-term ideal that guides the overall Strategy. The mission statement provides specific direction on how to achieve the vision. The goal outlines what the Strategy aims to accomplish within a set timeframe, serving as a crucial step toward realizing the broader vision.

The vision, mission and goal were shaped by a detailed analysis of collision data and feedback from project stakeholders, ensuring they address the City's most pressing road safety concerns.



Vision

Zero fatal and serious injury collisions on our roads.



Mission

A data-driven and collaborative approach to prevent fatal and serious injury collisions and create a safe and efficient transportation system for all road users through community partnership, culture change, education, enforcement, and innovative design.



Goal

Reduce fatal and serious injury collisions by a minimum of 15% within five years.

What Are Emphasis Areas?

An Emphasis Area is a type or group of collisions that is a priority safety concern. The City will allocate human and financial resources, along with strategic initiatives, to take action and reduce these groups of collisions.

The six Emphasis Areas for the Road Safety Strategy are shown in **Figure 5** (speeding is included under aggressive driving):



Figure 5: North Bay Road Safety Strategy – Selected Emphasis Areas

What Is the Action Plan?

The Strategy consists of a comprehensive set of countermeasures known as the Road Safety Strategy Action Plan. A countermeasure is an action taken to reduce the frequency or severity of one or more specific types of collisions. There are three types of countermeasures included in the Action Plan:

- **Engineering countermeasures** involve modifying the road’s physical format, such as adding traffic calming measures, adjusting traffic signals, installing signs or pavement markings, updating policies or practices such as traffic flow or parking, or using technology like variable message signs.
- **Enforcement countermeasures** include both police-staffed and automated enforcement. These countermeasures attempt to gain better compliance with existing rules of the road, with the secondary aim of educating drivers about the consequences of their actions.
- **Education & Engagement countermeasures** aim to change road user behaviour so that road users are more aware of the rules of the road, road safety, and forthcoming changes to roads and neighbourhoods.

The Action Plan outlines the steps needed to achieve the City’s goal of reducing fatal and serious injury collisions by a minimum of 15% within five years. It includes a total of 74 countermeasures, 20 road safety management initiatives and 54 emphasis area-specific countermeasures.

Table 1 summarizes the number of countermeasures included in the Action Plan.


Emphasis Area	Countermeasure			Total
	Engineering	Education & Engagement	Enforcement	
 Road Safety Management	19	1	-	20
 Intersections	13	-	-	13
 Aggressive Driving	7	1	1	9
 Distracted Driving	3	1	1	5
 Pedestrians	13	1	1	15
 Cyclists	5	1	1	7
 School Zones	4	1	-	5
Total	64	6	4	74

Table 1: Summary of Action Plan by Emphasis Area and Type of Countermeasures



Road Safety Management Initiatives

Road safety management initiatives refer to a broad range of tasks and functions that contribute to the effective functioning and success of the Road Safety Strategy. Some examples of general countermeasures include:



Speed Data Collection Program



Vision Zero Dashboard



Annual Road Safety Report



Identification of Collision Hot Spots (Network Screening)

Intersections

Collisions involving vehicles passing through, approaching, or waiting to enter an intersection are defined as intersection collisions. Within the six-year study period (2015 to 2019, and 2022), a total of 568 fatal and injury collisions occurred at intersections, accounting for approximately 69% of fatal and injury collisions within the City. Out of all fatal and injury collisions at intersections, approximately 51% occurred at signalized intersections, and 49% occurred at unsignalized intersections. Most collisions occurring at intersections were classified as rear end, turning movement and angle collisions. **Figure 6** shows the history of intersection collisions in the City.

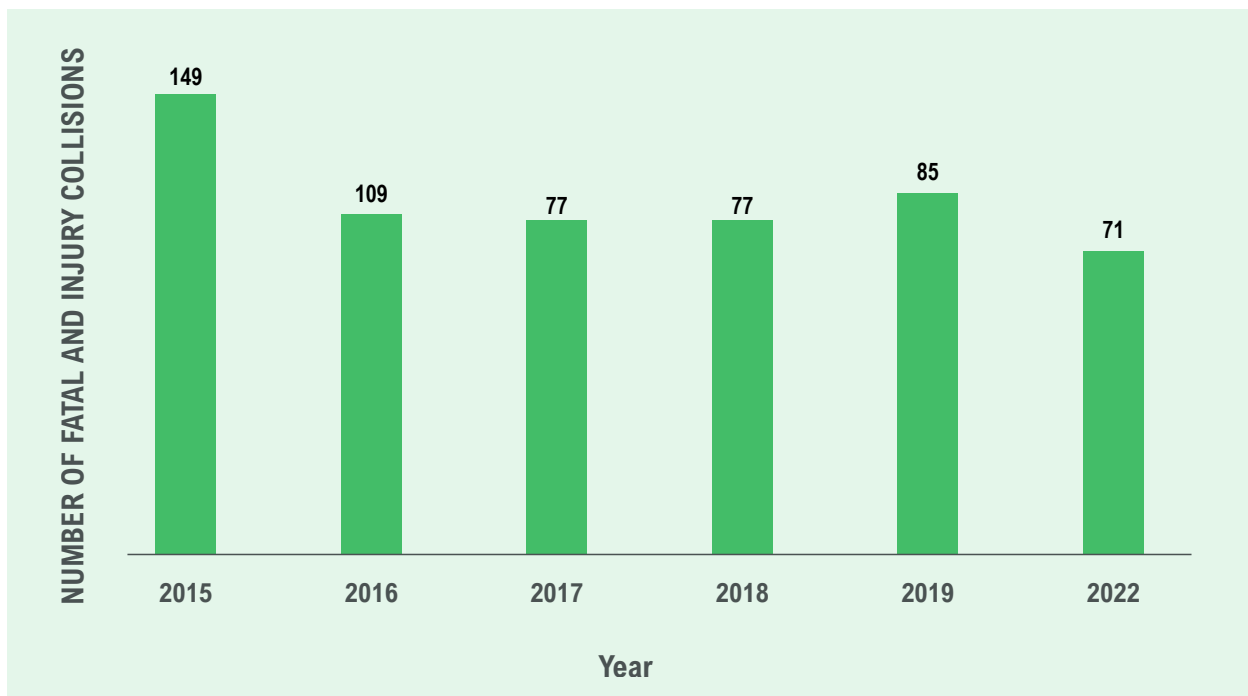


Figure 6: Annual Fatal and Injury Intersection Collisions

Countermeasures for intersections are generally engineering-related, such as adding left-turn lanes, implementing traffic signals, and improving sight lines. However, enforcement-related countermeasures such as red light cameras and automated speed enforcement may also be introduced. Intersections vary in design, traffic volume, and capacity. Therefore, countermeasures will vary from location to location. Some countermeasures are best suited for future road projects, while low-cost options could be implemented systemically across North Bay to improve safety.

In total, the intersections emphasis area has 13 countermeasures included in the Road Safety Strategy Action Plan. Examples of countermeasures to address intersection collisions in North Bay are shown below:



Red Light Cameras



**Left-turn Signal Phases
(Protected and Protected-Permissive)**



All-Way Stop Signs



Automated Speed Enforcement



Intersection Lighting



Aggressive Driving

Aggressive driving is defined as speeding, careless driving, stunt driving, failing to yield the right-of-way, or disregarding traffic control devices. These behaviours can harm the driver, passengers, and other road users. Within the six-year study period, there was a total of 276 fatal and injury collisions defined as aggressive driving. These collisions accounted for 33% of the total fatal and injury collisions occurring in North Bay. Most aggressive driving-related fatal and injury collisions were caused by failure to yield right-of-way, losing control, and disregarding traffic control devices. The history of collisions from aggressive driving in the City is shown in the **Figure 7**.

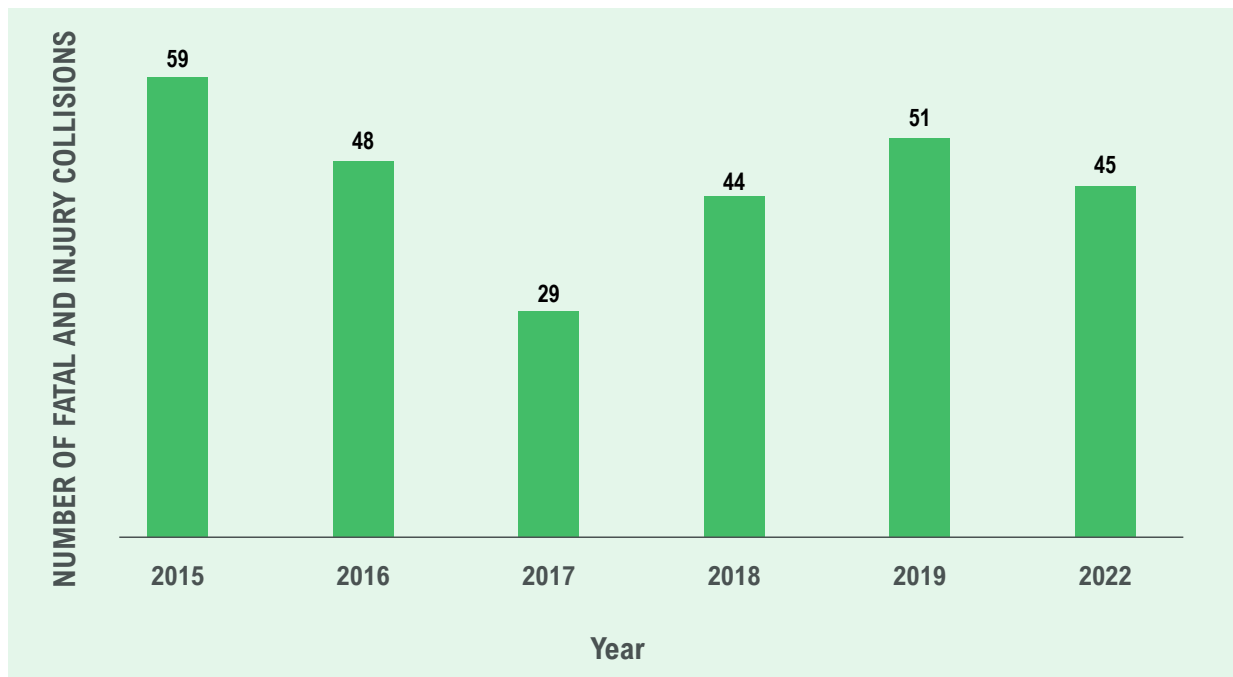







Figure 7: Annual Fatal and Injury Aggressive Driving Collisions

In total, there are 9 countermeasures included in the Road Safety Strategy Action Plan to address aggressive driving. The countermeasures aim to change the behaviour of drivers, but behavioural change is not immediate. To achieve timely results, engineering-related measures such as speed feedback signs, speed humps/ cushions, or community safety zones can effectively deter aggressive driving.

Examples of road safety countermeasures to reduce aggressive driving collisions in North Bay are shown below:

 A photograph showing a yellow diamond-shaped sign with a black silhouette of a person walking, a white rectangular sign with the text 'COMMUNITY SAFETY ZONE', and a white rectangular sign with the text 'MAXIMUM'.	Community Safety Zones
 A close-up photograph of a car's front wheel on a road with a raised speed hump or cushion.	Speed Humps / Cushions
 A photograph of a road with a grassy and tree-lined median strip separating the lanes.	Centre Medians
 A photograph of a police car with its blue emergency lights flashing at night.	Police Enforcement Focused on Aggressive Driving
 A photograph of a speed feedback sign showing the text 'YOUR SPEED' above a digital display showing the number '33'.	Speed Feedback Signs Program



Distracted Driving

Distracted driving refers to the act of operating a vehicle while engaging in activities that divert the driver's attention away from the primary task of driving. These distractions can significantly increase the risk of collisions, injuries, and fatalities on the road. Examples of distracted driving activities include:

- Using a mobile phone to text or talk
- Eating or drinking
- Grooming
- Using a handheld electronic device (e.g., tablet or game console)
- Adjusting or programming a GPS

Within the study period, a total of 300 fatal and injury collisions were defined as distracted driving, which accounts for 40% of the total fatal and injury collisions occurring in North Bay. The history of reported distracted driving collisions is shown in **Figure 8**.

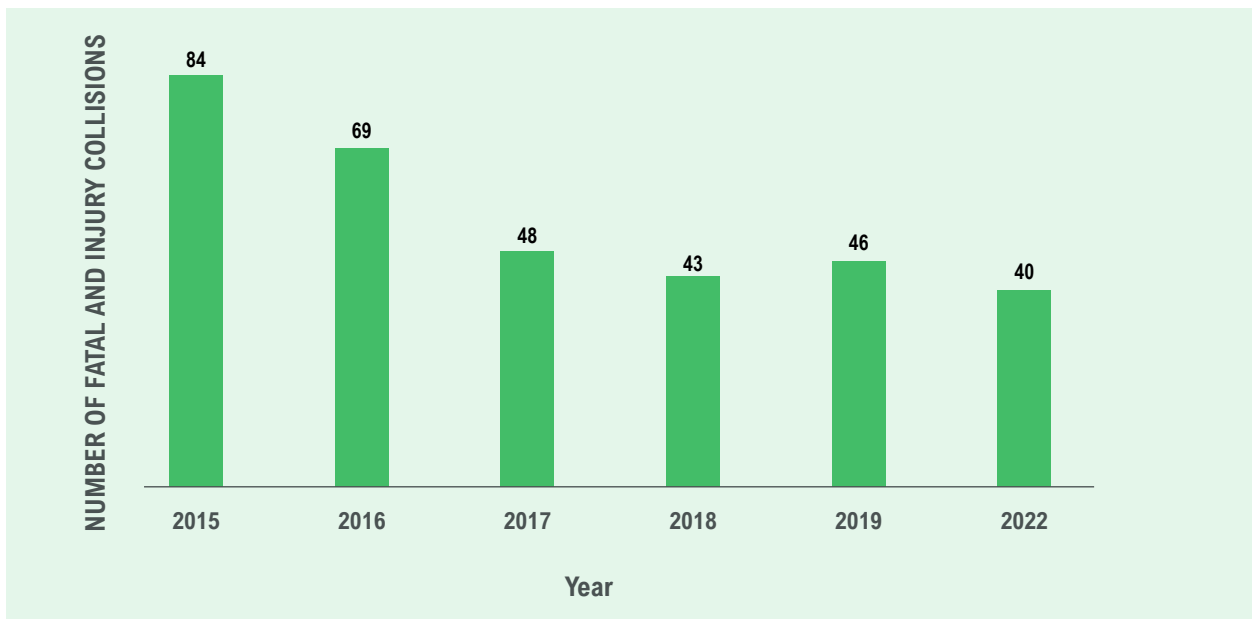


Figure 8: Annual Fatal and Injury Distracted Driving Collisions

In total, there are 5 countermeasures included in the Road Safety Strategy Action Plan to address distracted driving. Examples are shown below:



Shoulder and/or Centreline Rumble Strips



Guide Rail Upgrades



Enhanced Pavement Markings



Police Enforcement Focused on Distracted Driving



Distracted Driving Educational Campaigns



Pedestrians

Pedestrians are among the most vulnerable road users, facing a significantly higher risk of serious injury or death when involved in traffic collisions. Unlike motorists, who are protected by vehicles, pedestrians have little to no physical protection, making even low-speed impacts potentially life-threatening.

Within the six-year study period, there was a total of 80 fatal and injury collisions involving pedestrians, which accounts for approximately 10% of total fatal and injury collisions in the City. Additionally, collisions involving pedestrians accounted for 100% of fatal collisions occurring in North Bay within the study period. Figure 9 shows the history of fatal and injury collisions involving pedestrians in North Bay.

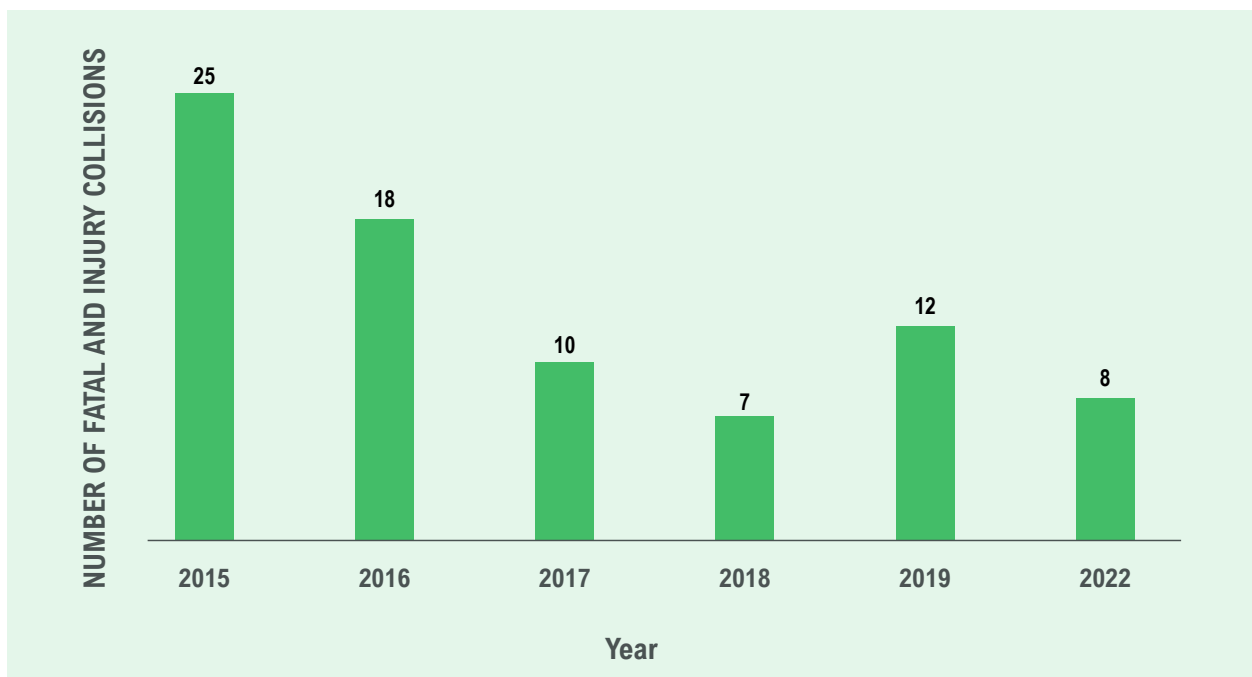


Figure 9: Annual Fatal and Injury Pedestrian Collisions

A combination of engineering, enforcement, and education & enforcement countermeasures are suggested to reduce the number of pedestrian related collisions in the City. In total, there are 15 countermeasures included in the Road Safety Strategy Action Plan. Examples of countermeasures to address pedestrian collisions in North Bay are shown below:



Pedestrian Countdown Timers



Sidewalk Network Expansion



Zebra Crossing Pavement Markings



Leading Pedestrian Intervals (LPIs)



Accessibility Improvements

Cyclists

Similar to pedestrians, cyclists are at a heightened risk of serious injury or death when involved in a motor vehicle collision. Within the study period, there was a total of 59 fatal and injury collisions in the City involving cyclists, contributing to 7% of the total fatal and injury collisions occurring in North Bay. The annual number of fatal and injury collisions involving cyclists has noticeably declined since 2014. However, there is still work to be done. Prioritizing cyclist safety reduces the frequency and severity of collisions and encourages the development of safer, more inclusive urban environments. The history of cyclist collisions in the North Bay is shown in **Figure 10**.

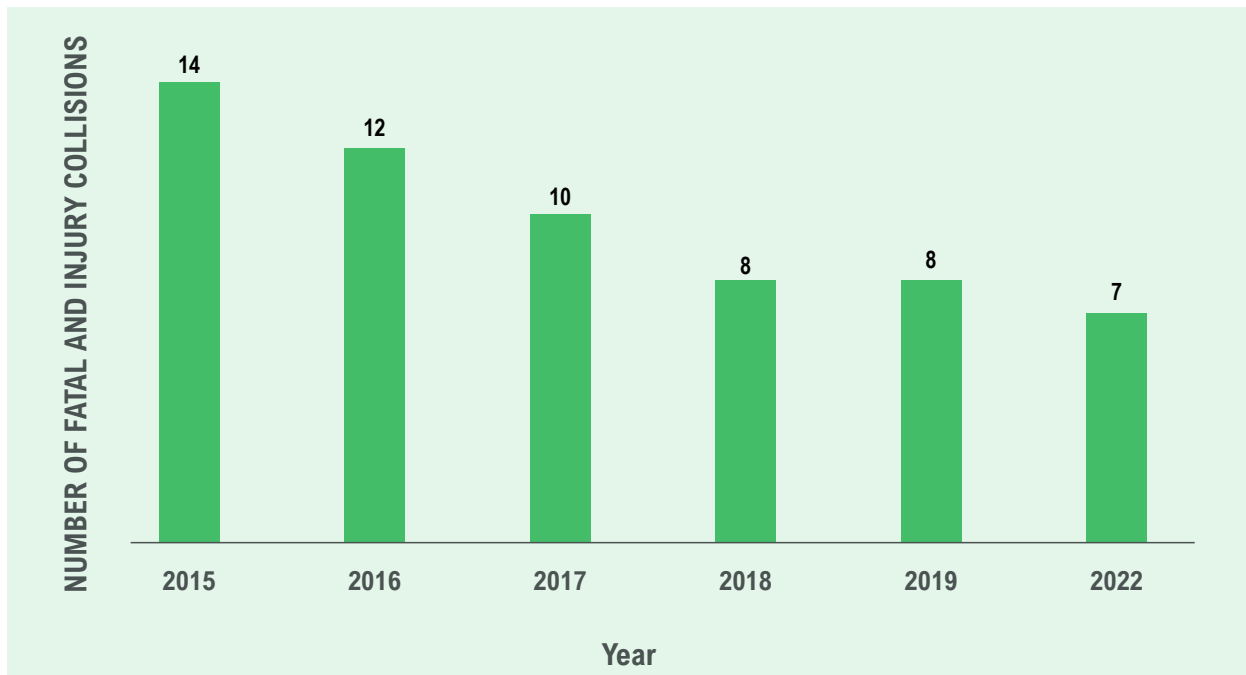


Figure 10: Annual Fatal and Injury Cyclist Collisions

A combination of engineering, enforcement, and education & enforcement countermeasures are suggested to reduce the number of cyclist-related collisions in the City. In total, there are 7 countermeasures included in the Road Safety Strategy Action Plan. Examples of countermeasures to address cyclist collisions in North Bay are shown below:



New Cycling Infrastructure (Off-Road Facilities)



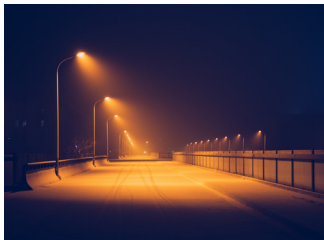
Bicycle Signals



Crossrides



Cyclist Safety Educational Campaigns



Improved and Continuous Illumination

School Zones

A school zone refers to an area on a street near a school or a designated crossing leading to a school with the likely presence of younger pedestrians or cyclists. Although school zones were not exclusively analyzed during collision analysis as this information was unavailable, school children are also known as vulnerable road users, and collisions involving school children generally have a higher severity of injury. Improving school zone safety may also improve active school travel (i.e., using human-powered travel to get to and from school, including cycling, rollerblading, skateboarding, and scootering).

In total, there are 5 countermeasures included in the Road Safety Strategy Action Plan to address school zone safety. Examples of countermeasures are shown below:



Establishing School Zones



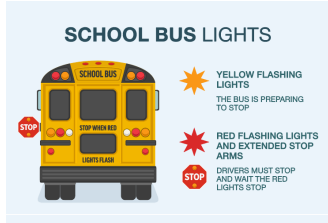
Crossing Guard Program



School Crossings



Safe Neighbourhood Program



School Zone Safety Educational Campaigns

Moving Forward

The City's Road Safety Strategy outlines a plan to address North Bay's specific road safety challenges, with the goal of reducing fatal and serious injury collisions by a minimum of 15% within five years while also progressing toward the long-term vision of eliminating such collisions entirely. Achieving this requires the commitment of the City and partner agencies, along with the approval of additional human and financial resources to implement the Action Plan. It is essential to embed a strong traffic safety culture into the decision-making process across the City and its transportation partners. Fostering this positive safety culture involves:

- Creating an environment where traffic safety is prioritized and continually pursued
- Collaborating with City staff, road safety partners, and the public to share ideas and gather feedback
- Incorporating data in all decision-making
- Prioritizing safety in existing, expanding, and new programs, projects, and initiatives

Next Steps

Within the next five years, the City and its road safety partners will implement numerous countermeasures to reduce fatal and injury collisions across North Bay. The Road Safety Strategy is a dynamic, evolving framework designed to guide safety management efforts. To ensure meaningful improvements in road safety, regular meetings between the City and partner agencies are essential. These meetings will allow for decisions on budgets, priorities, and goals while providing a platform to assess progress and hold all partners accountable.

Resources

The implementation of the Road Safety Strategy will require additional resources (both human and financial). Implementing the Road Safety Strategy will require an investment in 3.5 additional full-time employees, which can be achieved through a combination of new hires, reallocating existing staff, and engaging external contractors or consultants.

The estimated budget for the five-year Road Safety Strategy is \$9.2 million¹. This value includes the total estimated cost for all countermeasures comprised in the Action Plan, not including operating costs. **Figure 11** illustrates the annual budget required for the Road Safety Strategy.

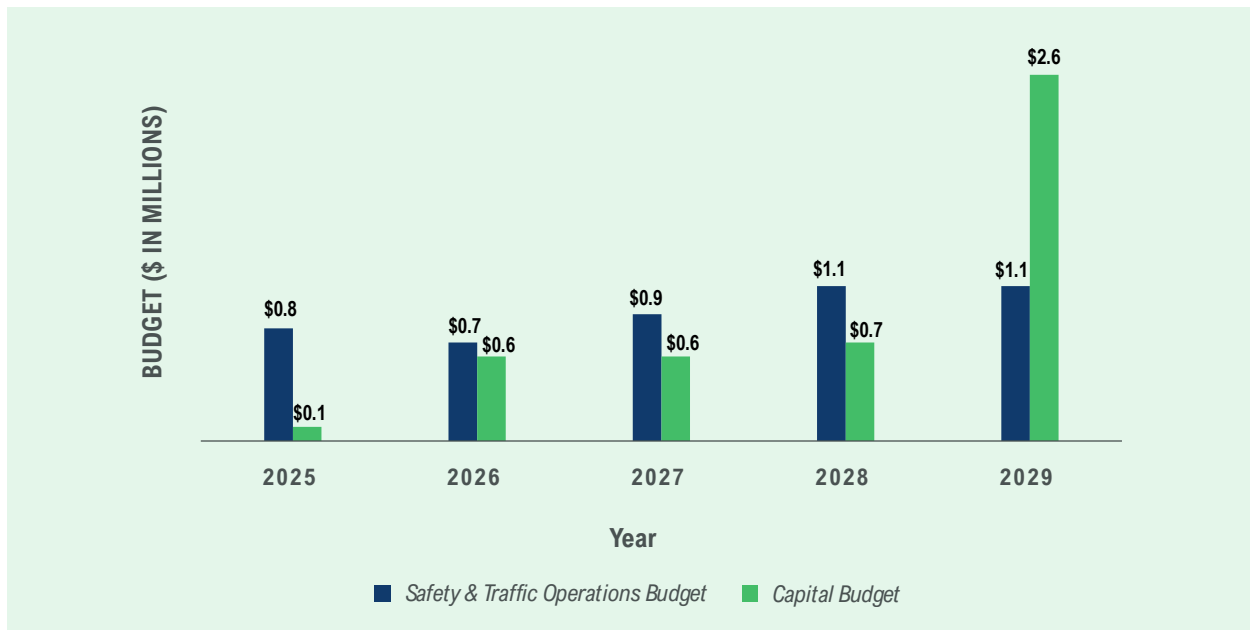


Figure 11: Road Safety Strategy Annual Budget

As shown, the annual budget increases toward the end of the Road Safety Strategy timeline. This increase is due to the implementation of larger, more costly countermeasures (such as traffic signals and roundabouts), which require extensive engineering studies and approvals before they can be executed.

Monitoring and Evaluation

The progress of the Road Safety Strategy will be assessed and documented annually in the Road Safety Report. The Strategy includes a robust evaluation and monitoring system, backed by key performance indicators and a data collection program, to track progress and ensure the success of efforts to reduce fatal and injury collisions.

The success of the Road Safety Strategy will be evaluated based on various components, including but not limited to:

- The number of countermeasures implemented
- The reduction of total fatal and serious injury collisions
- The reduction of emphasis on area-specific fatal and serious injury collisions
- The reduction of vehicular speed
- Feedback from the public

¹ The Road Safety Strategy budget is contingent on all budget approvals by Council.

What Can You Do?

Whether you're driving, walking, cycling, or using transit, staying aware of what to expect when navigating the transportation network is important. Roadway users can encounter various potentially hazardous situations. Here are actions you can take to help the City reach its goal and contribute to the vision of safer roads:

- Adapt to changing conditions like weather, construction zones, and other unexpected factors.
- Educate yourself and others on proper driving behaviours.
- Understand, respect, and obey all rules of the road.
- Respect other road users around you.
- Check your condition, your vehicle's condition, and minimize distractions before you start driving.
- **Prioritize safety at all times.**

