



Niagara Region

# Road Safety Strategic Plan

**MOVING  
ROADS  
FORWARD**

**VISION  
ZERO**

Niagara  Region



# Welcome to the inaugural Niagara Region Road Safety Strategic Plan



**Jim Bradley**

Regional Chair, Niagara Region

“Regional Council strongly supports the Vision Zero initiative to reduce injuries and deaths on our regional roads. As Niagara’s population continues to grow at an incredible rate, we must ensure that our road network can handle that growth while prioritizing safety for motorists, cyclists and pedestrians alike. The Vision Zero Road Safety Strategic Plan offers a comprehensive and data-informed plan that reinforces Council’s commitment to building an Equitable Region that places safety and responsibility at the centre of everything we do.”



**Terry Ricketts**

Commissioner of Public Works,  
Niagara Region

“As a corporation, Niagara Region has worked, and continues to work, to provide a transportation network that is safe, efficient and responsive to the needs of all residents. The adoption and implementation of the Vision Zero Road Safety Strategic Plan is crucial to bringing to life the ‘Equitable Region’ Council Strategic Priority area. While ensuring the implementation of this plan moves forward, we will continue to pursue all strategies that will make our transportation network safe and reliable for Niagara residents.”



**Bill Fordy**

Chief of Police,  
Niagara Regional Police Service

“Public safety is a shared responsibility, and at the Niagara Regional Police Service, we believe in working together with our community to make our roads safer for everyone. As proud partners in Niagara Region’s Vision Zero Road Safety Strategic Plan, we are committed to a community-first approach—engaging, educating, and enforcing in collaboration with residents and stakeholders. Through these efforts, we strive to reduce traffic-related injuries and fatalities, ensuring safe and responsible travel for all who call Niagara home and those who visit our region.”

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# Introduction



Niagara Regional Headquarters at Sir Isaac Brock Way and Schmon Parkway

# Introduction

## Supporting Niagara's roads to move forward

Niagara Region, part of Ontario's Greater Golden Horseshoe, has experienced rapid growth in recent years. Known for its tourist attractions, stunning scenery, world-class wineries, and vibrant hospitality industry, it is a place to live, study, work, and enjoy life.

The region encompasses both dense urban centers and rural areas, creating diverse transportation needs and challenges. The Niagara Regional road network links these communities through over 1,700 lane-kilometres of roadway. In recent years, rapid population growth and increased travel to, from, and within Niagara have placed greater demands on the Regional road network. These changes have led to higher traffic volumes and more complex travel patterns, emphasizing the need for a coordinated plan to address road safety and reduce collisions.

Each year, Niagara experiences between 350 and 400 injuries and 8-9 fatalities on roadways under the jurisdiction of Niagara Region. Niagara Region needs a plan.

The Road Safety Strategic Plan (the Road Safety Plan) is Niagara Region's roadmap to address this challenge and improve the safety of the regional road network. It is aligned with the worldwide Vision Zero initiative—which sets the ambitious goal of eliminating serious injuries and fatalities.

The purpose of the Plan is to:

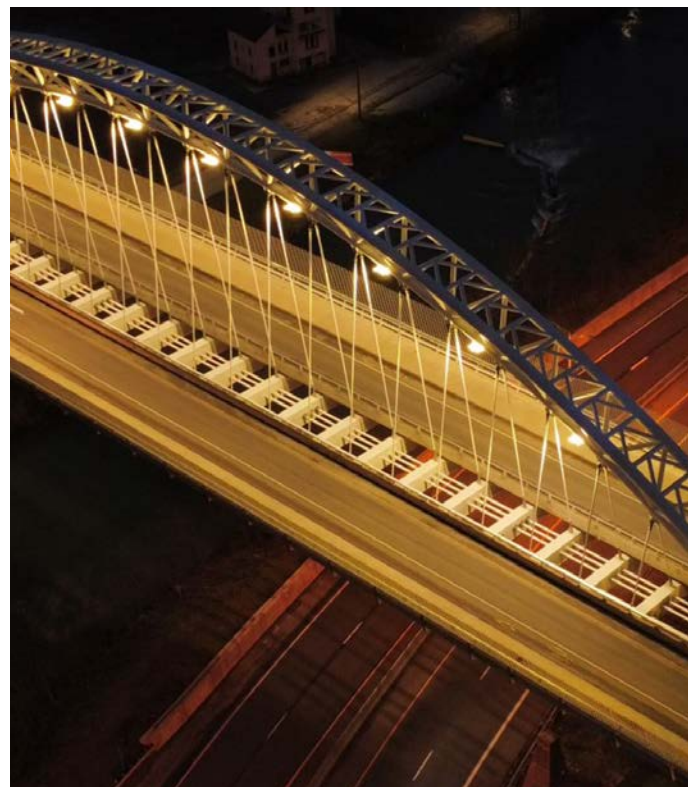
- Analyze where and why serious collisions are happening on the Regional Road network today.
- Identify the engineering, enforcement, and education tools to combat these trends.

- Establish a clear framework for prioritizing available resources and actions to reduce collisions.
- Outline the methods for tracking and monitoring progress.

This strategy has been developed in collaboration with key partners, including Niagara Regional Police, Public Health, and local area municipalities.

There is a common responsibility to improve road safety and protect the lives of all those who live, work, and travel in Niagara.

Developing the Road Safety Strategic Plan starts with taking a data-driven approach. By looking at what types of collisions occur more frequently on the roads, there is a better focus on where available resources should be directed.



Burgoyne Bridge at Night, St. Catharines



# Road Safety in Niagara Today

## Data indicates a recent increase in the number of injury collisions on Regional roads

Collisions that occurred on regional roads between 2017 to 2019 and 2022 to 2023 were analyzed to identify trends related to road safety. Collisions that occurred in 2020 and 2021 were not included due to the impacts of the COVID-19 pandemic, which significantly impacted trip-making patterns in the region. The focus is on injury and fatal collisions because this will have the greatest impact on improving road safety.

During the analysis period, 1,907 injury collisions and 42 fatal collisions were recorded. The total number of fatal and injury collisions by year is shown in Figure 1. This analysis was based on traffic collision information for Regional roads as obtained from the Ministry of Transportation Ontario.

The number of injury collisions decreased between 2017 to 2019 but increased again after the COVID-19 pandemic to numbers close to 2017. This increase is consistent with observations across various similar jurisdictions in Ontario. Even considering the fact that the number of residents in the region has been increasing, the rate of fatal and injury collisions per 100,000 residents closely resembles trends in Figure 1.

A map of Niagara region showing the locations of injury and fatal collisions on regional roads is provided in Figure 2. The map illustrates that collisions are more frequent in areas with higher traffic volumes such as urban arterial roads.

After a decline from 2017 to 2019, injury collisions on Regional roads have increased in recent years, while fatal collisions have remained consistent. Niagara needs a focused road safety strategy to reverse this trend and improve the safety on the regional road network.

Figure 1. Frequency of Fatal and Injury Collisions for 2017 to 2019, 2022 and 2023

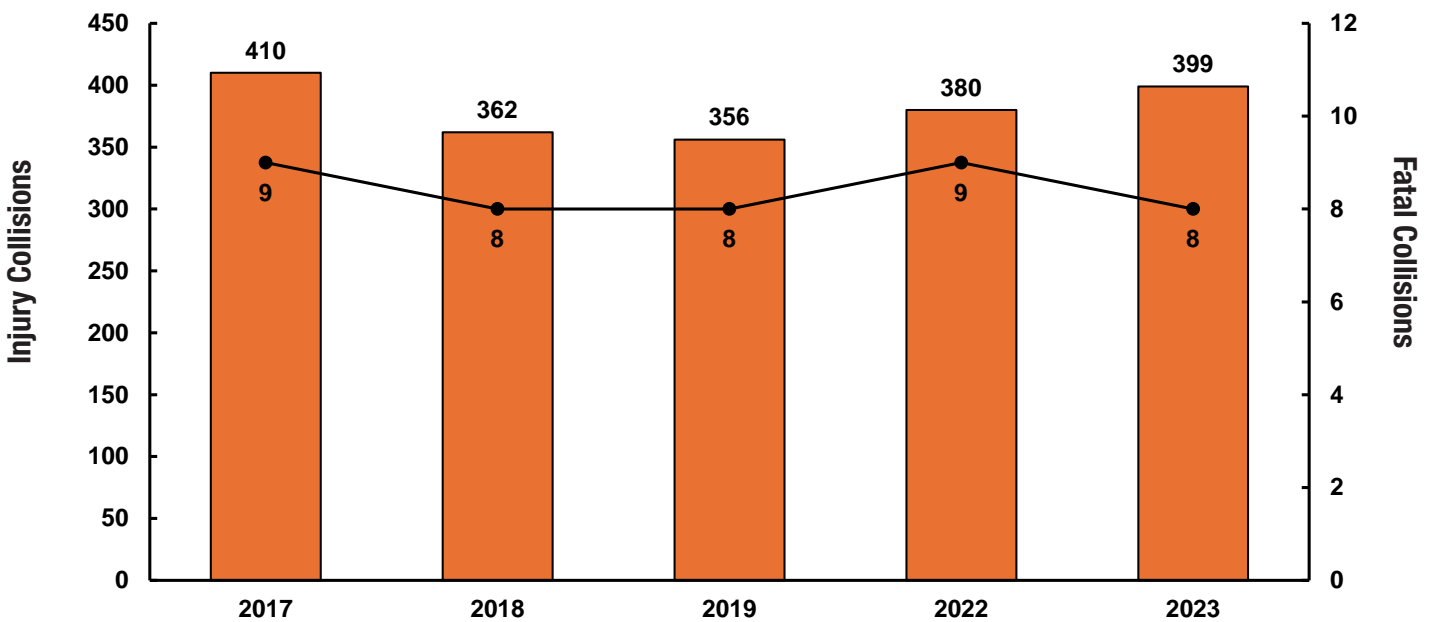
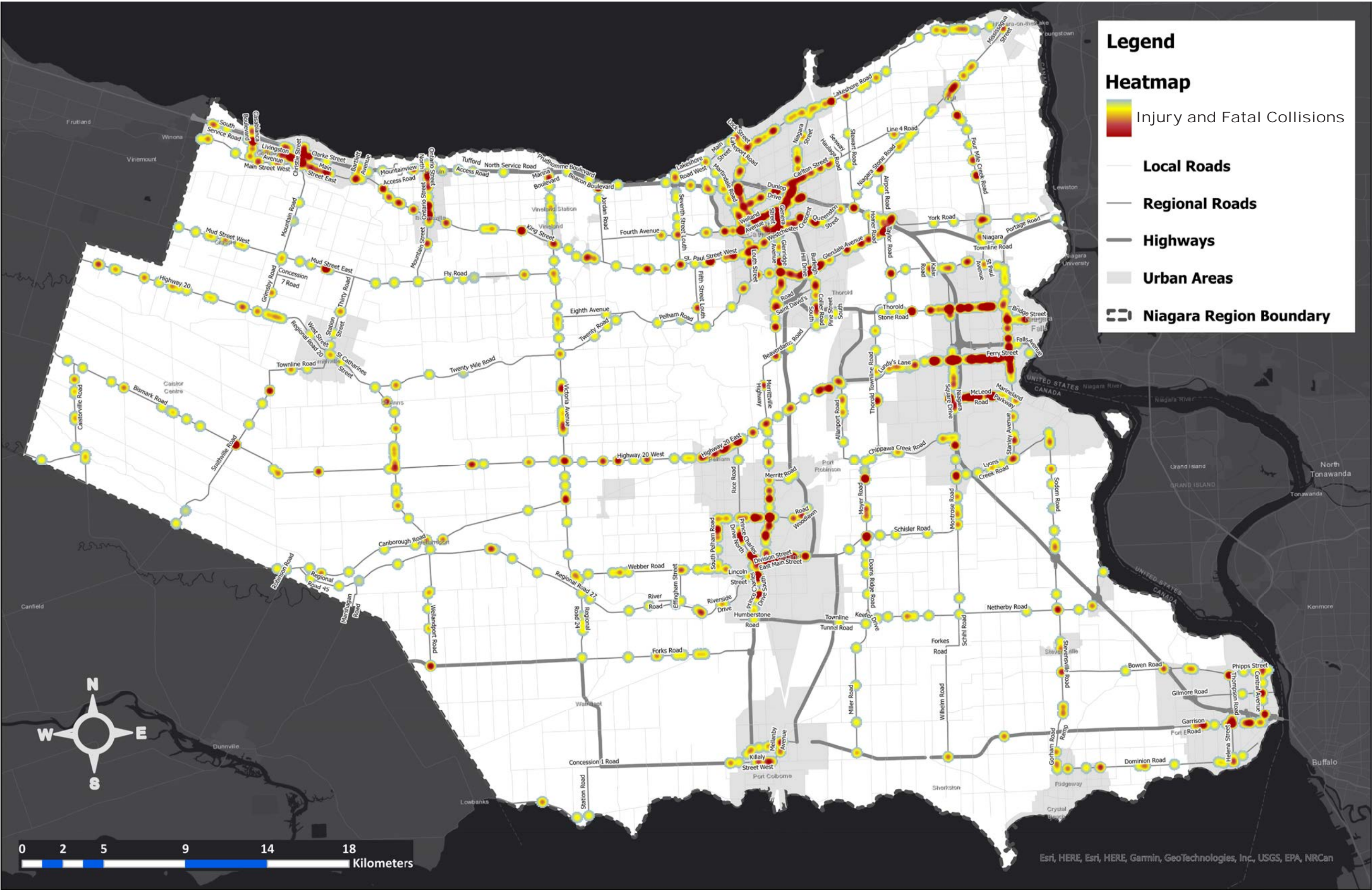


Figure 2. Heat Map of Fatal and Injury Collisions on Regional Roads in Niagara Region for 2017 to 2019, 2022 and 2023





# Developing the Road Safety Plan

## The Road Safety Plan follows a circular process

The Road Safety Plan is developed using a data-driven framework. By analyzing collision data and identifying key trends, efforts are focused on addressing the most frequent causes and locations of collisions. This approach ensures that future actions will have the greatest impact on reducing serious collisions.

The following three sections detail each step of this process, from identifying high-risk areas to implementing targeted solutions. This structured approach ensures accountability and enables Niagara Region's roads to become safer in a systematic and measurable way.

### Examine Collision Trends, Identify Emphasis Areas and Countermeasures

The process begins with an analysis of collision data to identify where and what types of collisions are occurring on Regional roads. This information is used to develop categories of collisions to be addressed, referred to as Emphasis Areas. Next, the available actions and tools that can address each Emphasis Area are identified. These solutions, known as countermeasures, may include engineering, enforcement, and education strategies.

### Take Action

Once focus areas and available tools are determined, action is taken to improve safety. This is done as part of planned road reconstruction and at identified problem locations.

### Monitor and Improve

Trends are monitored to assess the effectiveness of implemented countermeasures and to ensure progress toward the goal of eliminating serious collisions. The Road Safety Strategic Plan is regularly updated to reflect current collision trends

Improving road safety is an ongoing process. Current trends are examined, actions are taken, and reevaluation is conducted using updated collision data. This cycle continues until all serious collisions are eliminated from the region's road network.



Niagara Stone Road (RR 55) at Concession Road 6

## The Road Safety Plan is based on the global Vision Zero initiative

The Road Safety Plan aligns with the global Vision Zero initiative, founded in Sweden in 1997, with the belief that no loss of life resulting from traffic collisions is acceptable. Vision Zero aims to eliminate all traffic-related deaths and serious injuries by prioritizing safe and accessible roadways for all users. At its core, Vision Zero recognizes that while human errors are inevitable, the road system can and should be designed to prevent those errors from resulting in severe consequences.

The Vision Zero approach shifts the responsibility for road safety from each individual road user to the entire transportation system, emphasizing that road design, traffic regulations, and community planning can work together to contribute to a safer environment.

Vision Zero's proactive and systemic approach ensures that safety is considered at every stage, drawing on measures related to engineering, enforcement, and education, making it a transformative approach to reducing collisions and enhancing quality of life in communities worldwide.

## The Vision Statement is the foundation of the Road Safety Plan

The vision statement provides a foundation for achieving the best possible results. It summarizes the main objective of the Road Safety Plan, highlighting a significant yet achievable goal. The vision statement was developed collaboratively with interested parties.

## Niagara Region's Vision Statement

Niagara region is a community that values healthy and safe mobility for all residents and visitors, regardless of how they move.

Niagara is committed to working together to achieve Vision Zero, the elimination of fatalities and serious injuries on roadways.



Roundabout: York Road (RR 81) at Glendale Avenue (RR 89)

# Working together is necessary to achieve success

The Road Safety Plan was developed collaboratively with many interested parties from across Niagara through a technical advisory committee.

The committee was comprised of staff from the Region and its twelve area municipalities as well as representatives from public education, enforcement, the Ministry of Transportation, and participants from community engagement and advocacy groups.

All interested parties provided input into the Road Safety Plan during multiple touchpoints across the project including the development of the vision, the Emphasis Areas, and the action plan.

Road user safety is a shared responsibility, and the success of the Road Safety Plan relies on the commitment and involvement of the partners and interested parties. The technical advisory committee will evolve into a road safety working group, as detailed in the Action Plan section.

## In Niagara region there is:



**An injury collision every 23 hours.**



**A fatal collision every 44 days.**



**A pedestrian fatal or injury collision every 11 days.**



**A cyclist fatal or injury collision every 17 days.**

Figure 3. Interested Parties Participating in the Road Safety Plan Development





# Emphasis Areas & Countermeasures



Dominion Road Roundabout, Fort Erie

# To build the Road Safety Plan, collision trends in Niagara Region were examined

In Niagara, fatal and injury collisions most frequently:

- Happen at Intersections, or
- Involve Agressive & Distracted Driving as contributing factors.

Dedicating resources to these factors can help achieve road safety improvements.

The Road Safety Plan is based on statistical information from the collisions occurring on Regional roadways. Analysis of factors contributing to collisions on Regional Roads between 2017 and 2019, as well as in 2022 and 2023, identified seven key trends. Common actions were grouped for trends such as cyclist and pedestrian collisions, categorized as vulnerable road users.

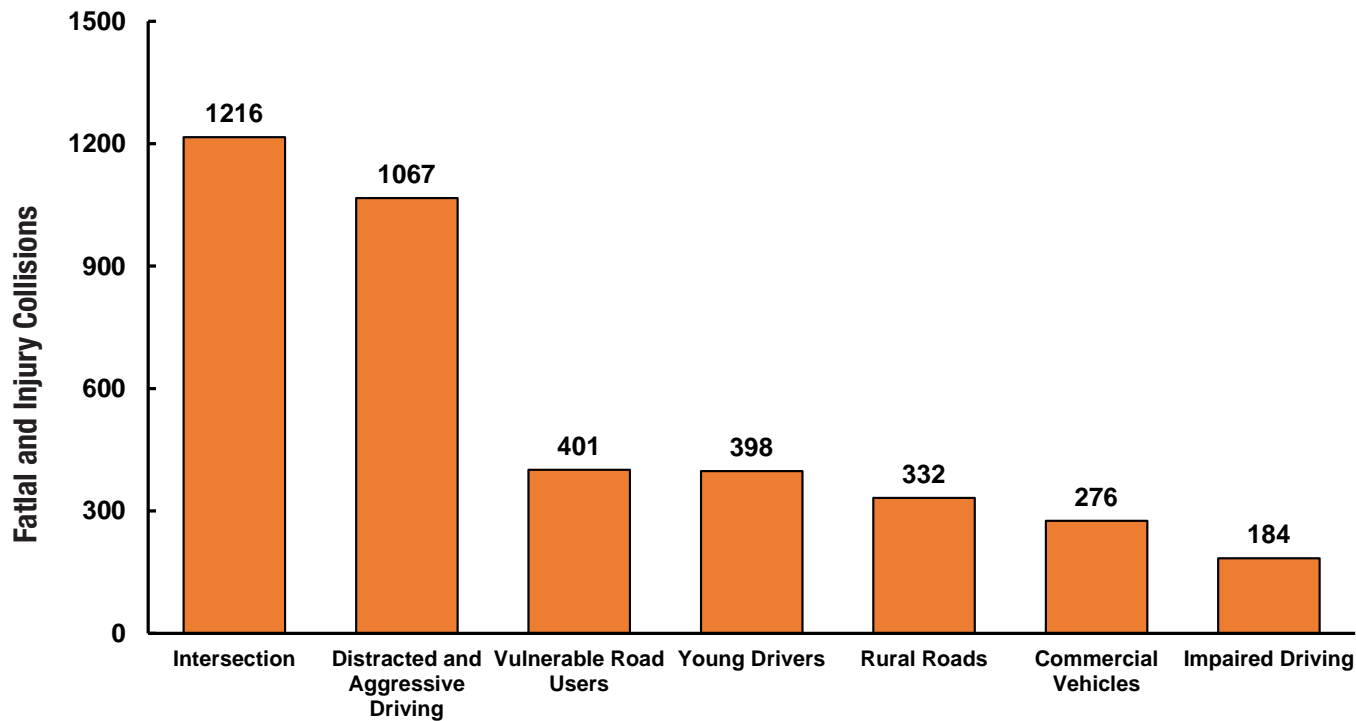
Through these analyses, in collaboration with the technical committee, seven Emphasis Areas were identified, focusing on the largest groups of fatal or injury collisions.

Figure 4 shows the frequency of fatal and injury collisions for the years of 2017 to 2019, 2022, and 2023, for each of the Emphasis Areas.

A single collision may involve multiple emphasis areas; hence, there are overlaps among emphasis area totals. For example, if a pedestrian was involved in a collision with a vehicle whose driver was distracted at an intersection, this one collision is represented and counted in three Emphasis Areas: vulnerable road users, distracted and aggressive driving, and intersections.

The next section explains each Emphasis Area more fully and elaborates on how each one contributes to the fatal and injury collision trends seen across Niagara’s regional road network.

Figure 4. Fatal and Injury Collisions Trends for 2017 to 2019, 2022 and 2023





## Intersections



Spatial analysis shows that most collisions occur at intersections. Intersections are complex environments that involve numerous road user decisions and vehicle movements. Road users interact with signals, signage, pavement markings, lane configurations, to name a few.

In Niagara, a majority of injury collisions occur at signalized intersections with angle collisions being the predominant type, followed closely by rear-end collisions. This is consistent with similar municipalities in Ontario.

## Distracted and aggressive driving



Distracted and aggressive driving contribute to a significant number of collisions in Niagara. Distraction reduces drivers' ability to react to road and traffic conditions and excessive speed contributes to loss of control and increased collision severity.

In Niagara's fatal and injury collisions related to aggressive and distracted driving, most drivers failed to yield the right-of-way, were following too close, or disobeyed traffic control.

## Vulnerable road users



Niagara, like other municipalities, encourages residents and visitors to engage in active transportation such as walking and cycling. The increase of 'vulnerable road users' have resulted in some unfortunate injury statistics across almost all jurisdictions. About a third of Niagara's residents do not drive or have access to an automobile. Protecting our vulnerable road users should be a priority.

## Young and new drivers



Drivers with less experience with road networks and with operating motor vehicles are more likely to be involved in collisions. These collisions have the added societal cost of more years of lost life and lost or unrealized potential. In Niagara, one-fifth of all injury and fatal collisions involved an at-fault driver who was 25 years old or younger.

## Rural roads



Another emphasis area is Niagara's large geographical area and high concentration of rural roads. Agriculture, viticulture, and related industries are important to Niagara's economy and the associated rural roads bring their own unique challenges.

Collisions on rural roads tend to involve higher operating speeds, curves, and nighttime driving. Road safety principles best applied to rural roads are different from urban roads and deserve their own focus.

## Commercial vehicles



Related to industry and Niagara's economy is the increase in commercial vehicles. As the population has increased, so too have the demands for goods. Most goods are transported by large commercial vehicles which have specific operational challenges that must be considered in road design, planning, and construction.

Most collisions involving commercial vehicles occur at intersections, where the driver has lost control or has failed to yield the right-of-way.

## Impaired driving



Lastly, although societal pressures and enforcement have improved the overall picture, driver impairment continues to be a contributing factor in traffic collisions. The most typical type of impairment is due to alcohol consumption but can also involve drug use and extreme fatigue.



# The next step was to examine countermeasures

Across the Emphasis Areas, the Road Safety Plan identifies specific countermeasures to reduce collision frequency and severity. A countermeasure is an action taken to reduce the frequency or severity of motor vehicle collisions. Several countermeasures are identified to address the safety concerns for each emphasis area. Countermeasures were selected using a collaborative approach with interested parties focusing on industry experience, effectiveness, and the ability to deliver and implement the countermeasures. There are three main categories of countermeasures: engineering, enforcement, and education/empathy:

## Engineering



Engineering countermeasures involve changes to the physical geometry of the roadway, traffic control and warning devices, and pavement markings and may require road construction projects. Engineering-related countermeasures may also involve regulatory changes such as to the Ontario Highway Traffic Act. Engineering is the most effective type of countermeasure.

## Enforcement



Enforcement countermeasures focus on the rules of the road. They typically involve law enforcement agencies and are intended to improve compliance with roadway regulations and encourage desirable road user behaviour.

## Education and Empathy



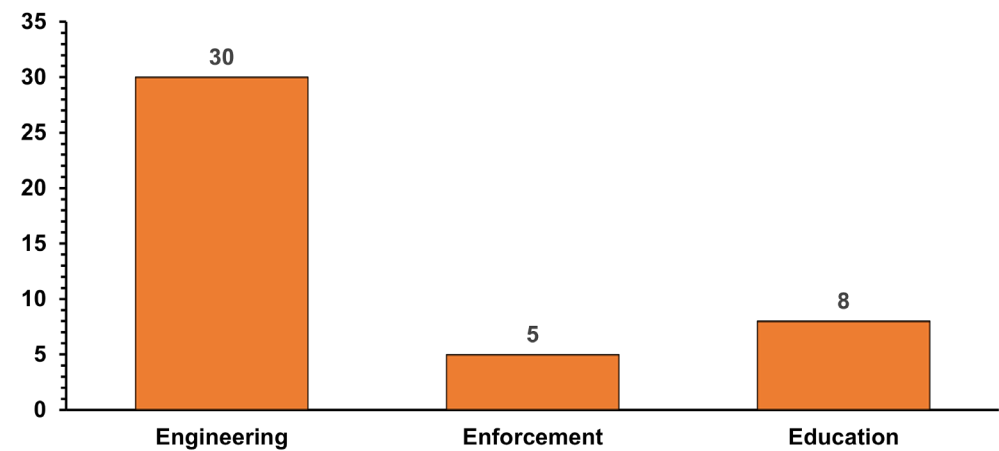
These countermeasures involve a better understanding and enhancement of road user knowledge and behaviour. The goal is to improve road users' awareness of their surroundings and ability to make safer decisions. Developing the Road Safety Plan required the combination of all three types of countermeasures for a multi-faceted and effective approach to improving road safety in Niagara region.

## The Road Safety Plan includes forty-three (43) countermeasures

Figure 5 is a tally of the Plan's countermeasures in each category. The 'Appendix: Countermeasures' section at the end of this document provides a description of each of the countermeasures. Every road safety project has a unique set of characteristics and challenges. How the appropriate countermeasures are selected for each location is discussed further in the 'Action Plan' section.

The countermeasures in the Road Safety Plan are the tools that will be used to improve road safety for each situation. Some countermeasures, such as red-light cameras or automated speed enforcement, may constitute a program that is applied across multiple areas or locations in the region. Other countermeasures, such as right- or left-turn calming or intersection illumination, are more location-specific since they may be appropriate for some road network locations and not for others.

Figure 5. Number of Countermeasures in the Road Safety Plan, by Category





# Action Plan



Intersection Reconstruction RR 20 at RR 14



# Taking action to improve road safety

Having understood where and why collisions are occurring and what measures can be used to address them, the next step in the Road Safety Plan is to establish a clear framework for prioritizing available resources and acting on the information learned from the previous steps.

While road safety has always been a consideration as part of capital projects, the Road Safety Plan will formalize and support this continued effort. The Road Safety Plan will also work to directly address specific high-collision areas and trends and implement network-wide countermeasure programs. This three-pronged approach ensures that actions are taken holistically and in parallel, not in isolation.

The three approaches and how they work together are described in the following sections.

## 1. Incorporate Road Safety in Capital Projects

- Planned road reconstruction projects offer the best opportunity to make meaningful improvements and implement countermeasures.
- Countermeasures can often be incorporated during the development and design stages, at minimal additional cost to the project, representing the best use of available funding.
- Many capital projects are already planned for the locations known to have high collision frequency.
- Moving forward, road safety will be formally incorporated into projects through completion of road safety audits. A road safety audit is a formal, independent assessment of a project to identify potential safety issues and recommend project improvements during the design phase.

Figure 6 is an example of a recent capital project that incorporated road safety. Figure 7 reflects the collision priority location information from Figure 2, along with planned capital road improvement projects layered on top.

**Figure 6. RR 20 – Lundy’s Lane, Montrose Road to Highland Avenue - Ongoing Environmental Assessment**

A Road Safety Audit was completed as a component of the ongoing environmental assessment from Montrose to Highland. The environmental assessment will incorporate countermeasures such as new pedestrian signals, removal of right-turn channels, and reduction of curb-radii throughout the corridor.



Lundy's Lane, Niagara Falls



Figure 7. Fatal and Injury Collisions on Regional Roads in Niagara Region and Locations of Capital Projects



## 2. Directly Target High-Collision Areas

- From data analysis that has been completed, there are locations in Niagara known to be priority locations for traffic collisions. These locations will be evaluated and addressed in a formalized and systematic manner.
- Five (5) in-service road safety reviews will be completed annually, targeting these high-priority locations. A safety review evaluates a road's current safety performance, identifying existing or potential hazards and recommending countermeasures.
- Each year, recommendations from the previous year's safety reviews will be implemented while a new set of reviews will be conducted for the next set of priority locations.
- Network screening can identify locations with potential for safety improvement. This process analyzes collision data and risk factors to identify locations with higher-than-expected collisions. This helps with proactive road safety planning.

An example of a recent in-service road safety review is provided in Figure 8. Figure 9 has the priority location information from Figure 2, along with the ongoing 2024 safety reviews and those planned for 2025 and 2026, illustrating the alignment of safety reviews with the areas of concern.

## 3. Network-Wide Countermeasure Programs

- Network screening or other quantitative criteria will be used to determine locations for network-wide actions. For example, establishing Community Safety Zones uses a warrant process that examines factors such as collision history, speed of vehicles, land use, and the road environment. Additional examples include the speed limit policy and school zone review, expansion of speed display boards, expansion of centerline bollards, and education campaigns.

**Figure 8. RR 83 - Carlton Street, Ontario Street to Lake Street - In-Service Road Safety Review**

Initiated in response to a collision with a crossing guard, the results of this safety review will relocate the school crossing to the west and south legs of intersection, restrict on-street parking near intersections to improve visibility, implement three new pedestrian crossovers, and reduce lane widths to 3.5 metres.



Carlton Street, St. Catharines



Figure 9. Fatal and Injury Collisions on Regional Roads in Niagara Region and Locations for ISRSRs for 2024, 2025, and 2026





## Establishing the Road Safety Working Group

A Road Safety Working Group is a common feature of successful road safety plans. An inter-agency Road Safety Working Group will coordinate efforts related to the selection and implementation of countermeasures.

This group will merge a number of existing committees that to-date have guided the development of the Road Safety Plan, the implementation of automated enforcement, and traffic operations. The working group will include staff from the Region, area municipalities, and key partner agencies such as NRPS, Public Health, and Region communications.



Intersection Reconstruction Ontario Street (RR 42)



# Monitoring and Improving



Bridge Street (RR 43) at Victoria Avenue



# Setting the key performance indicators

A set of key performance indicators (‘indicators’) should be developed to allow Region staff to measure the magnitude of road user safety issues, assessing risk, and assessing the effectiveness of road safety programs. Indicators related to collision rates are recommended as they are readily available for Region staff to extract and analyze.

To align with Vision Zero's goals and objectives, they should be based primarily on fatal and injury collisions. While Vision Zero plans in other jurisdictions generally focus on fatal and serious injury collisions, fatal and injury collisions provide a greater number of data points for analysis and may allow Region staff to better identify emerging trends in safety performance.

In addition, Region staff are not currently able to process fatal and seriously injured collisions because that requires extracting a data field from collision reports that are not readily available.

The following indicators will be included as part of the monitoring plan:

Indicator	Starting Point	Goal
Total Fatal and Injury Collisions per 100,000 Residents (5 Year Average)	82.8	Ongoing reduction in the number of serious collisions for the regional network as a whole.
Total Collisions per 100,000 Residents (5 Year Average)	623	

Where applicable, individual countermeasures will be tracked with indicators more specific to their respective emphasis area. In addition, the number of countermeasures implemented per year will be tracked to quantify the results of the road safety funding.

# Establishing regular reporting and updating the Road Safety Plan

An updated road safety report will be developed annually which will include data on collisions and trends and comparisons to previous years. Collision trends will be analyzed as they relate to the investments in actions and improvements to road safety.

The annual report will track completed, in progress, and planned countermeasures. The indicators will also be updated and measured against the previous report.



Pedestrian crossover at RR 20 at South Grimsby Road 5



# Conclusion



Sir Isaac Brock Way and Schmon Parkway/John McDonnell Street



## The Road Safety Plan will be a living process, enabling road safety management and improvement

Niagara region is home to nearly half-a-million residents and welcomes nearly 14 million visitors each year. The Region and its local area municipalities work to maintain and enhance the road network and to support mobility for those who live, work, study, and play in this beautiful area of Ontario.

Collisions on the regional road network impact many people and have both direct and indirect costs. Those involved in collisions are directly affected by property damage, and injuries that are sometimes fatal or life-altering. Collisions where someone is fatally or seriously injured affect the person's friends, family, and colleagues, not to mention the societal costs of hospitalization, rehabilitation, and on-going care. All residents are indirectly impacted by collisions that cause traffic delays and result in higher insurance premiums.

In Niagara region, collisions of all types are either holding steady or trending upwards. It is imperative that the Region, local municipalities, interested parties, and community partners work together to address these trends.

The Road Safety Strategic Plan, consistent with the concept of Vision Zero, provides a method and framework for this important endeavour. Under Vision Zero, all road users, and the authorities who design, engineer, construct, and maintain the roads, share responsibility for reducing fatal and injury collisions.

Niagara's Road Safety Strategic Plan is evidence-based and analyzes the locations and causes of traffic collisions over the past five years. The technical advisory committee examined this data analysis and selected seven specific emphasis areas that will be the focus of the Road Safety Plan. A list of countermeasure tools that can be tailored to address trouble areas was also developed.

An inter-agency Road Safety Working Group will coordinate efforts related to the selection and implementation of countermeasures. An Annual Collision Report will be undertaken each year, providing updates on traffic collision data and trends, and progress reports on the actions being undertaken to improve road safety in Niagara under this strategy.



Pedestrian Crossover - King Street (RR 81) at William Street



# Appendix



RR 20 and Dennis Drive, West Lincoln

# Many countermeasures are available to implement the Road Safety Plan

## Intersections



### Red Light Cameras

Red light cameras detect and capture images of vehicles entering an intersection when the traffic signal is red. They help reduce severe collision types such as angle and head-on collisions at signalized intersections.

### Leading Pedestrian Intervals

Leading pedestrian intervals change traffic signal timing to let pedestrians start crossing before vehicles get a green light. This allows drivers to see pedestrians more easily and reduces pedestrian-vehicle collisions.

### Ladder Crosswalks

Ladder crosswalks are used to improve visibility at intersections and pedestrian crossovers. They specifically address the challenge of low pedestrian visibility at crossings.

### Sightline Reviews

Sightline reviews are conducted at intersections and other accesses. This ensures that drivers have unobstructed views and can see approaching drivers, cyclists, and pedestrians.

### Right Turn Calming

Measures that reduce speeds of right-turning vehicles to decrease conflicts and improve safety. Measures include curb extensions, reduction of curb-radii, and right-turn channel removal or conversion.

### Left Turn Calming

Measures that reduce speeds of left-turning vehicles to decrease conflicts and improve safety. Measures include dedicated left-turn phasing, intersection guidelines, opposing left-turn lane offsetting, and geometric realignment to slow vehicle speeds.

## Accessibility Measures

Implementation of accessibility measures at intersections to increase accessibility for pedestrians as part of reconstruction projects. Measures include accessible pedestrian signals, tactile walking surface indicators, and curb ramp realignment.

### Turn Restrictions

Turn restrictions are implemented at specific locations based on collision history and safety needs.

### Intersection Illumination

Review lighting levels at intersections to improve visibility and reduce the potential for nighttime collisions.

## Aggressive and Distracted Driving



### Speed Display Boards

Speed display boards are used to encourage drivers to slow down by providing feedback when they exceed speed limits.

### Automated Speed Enforcement

Automated speed enforcement is an automated system that uses a camera and a speed measurement device to help enforce posted speed limits in community safety zones. Automated speed enforcement complements police activities by enforcing safer speeds.

### Distracted Driving Education Campaign

An education campaign will be developed to address distracted and aggressive driving. This campaign will incorporate existing efforts by Transportation, Niagara Regional Police Service, Public Health, and others.

### Traffic Calming

Develop a traffic calming guideline that outlines appropriate measures for regional roads, such as centerline bollards, horizontal bump-outs, and enhanced pavement markings.



## Strategic Enforcement Based on Crashes and Infractions

Niagara Regional Police Service will continue targeted enforcement of traffic violations such as speeding and aggressive driving.

### Vulnerable Road Users



#### Longer Crossing Times

Extended pedestrian crossing times will be implemented at locations to better accommodate younger, older, and disabled pedestrians.

#### Motorcycle Safety Education Campaign

Public education materials will be developed to promote safe sharing of the roads with motorcycle riders.

#### Community Safety Zones

Community safety zones highlight areas of the road network where safety is a particular concern due to the presence of vulnerable road users, such as children or older adults.

#### Speed Limit Policy and School Zone Review

The region's speed limit policy and school zones will be reviewed and updated to enhance road safety and align with best practices from peer municipalities. Updates could include preferred treatments for signage, pavement markings, pedestrian crossovers, and crossing guards, standardized across the region..

#### Pedestrian Crossovers

Pedestrian crossovers and mid-block pedestrian signals will be used to provide protected crossing locations between intersections.

#### Active Transportation Master Plan

As part of the Transportation Master Plan update, a dedicated Active Transportation Master Plan will be created to guide the development of active transportation infrastructure. The Active Transportation Master Plan will analyze demand patterns, existing and planned infrastructure, and opportunities to coordinate with planned capital projects.

## Enhanced Cycling Pavement Markings

Implement additional green pavement markings for on-road cycling facilities in key locations and conflict areas

### Young Drivers



#### Road Safety Curricula

Develop education/training modules targeted at reducing driver misbehavior (e.g. excessive speeding and aggressive driving, distracted driving, and impaired driving) and pilot these modules with young drivers in Niagara region high schools.

#### “Safety City” Facility

The “Niagara Safety Village” facility continues to provide school-aged children with a real-life, interactive environment to learn road safety. This initiative focuses on teaching safe driving, walking, and cycling practices.

#### Young Driver Education Campaigns

An education campaign will be developed to address the fact that young drivers are overrepresented in serious collisions. The campaign will aim to promote safer driving habits among this demographic.

### Rural Roads



#### Clear Zones, Unrecoverable Slopes, and Guardrail Reviews

Review current clear-zone policy to reflect recommendations for removal of hazards, mitigation of unrecoverable slopes, installation of guardrails, or other measures related to the clear zone.

#### Median Enhancement

Develop a program to prioritize and review roadway medians and propose measures to reduce crossover collisions. Measures could consist of buffering, pavement markings, centreline rumble strips, and raised medians.

### **Curve Warning Reviews**

Reduce the likelihood of roadway departures through a review of advanced curve warning signage on regional roads. This review will ensure that required and appropriate signage is in place on all major curves on the region's road network.

### **Shoulder Rumble Strips**

Rumble strips provide physical feedback to a driver when departing a lane providing an opportunity for them to recover before fully leaving the paved road surface. Identify locations that would benefit from the implementation of shoulder rumble strips in reducing run off road collisions.

### **Shoulder Drop-off Maintenance**

Significant drop-offs between the paved surface of the road and the shoulder can make it more difficult for vehicles to recover and avoid collisions. Continue the annual review of shoulder drop off distances on rural roads, ensuring compliance with minimum maintenance standards.

### **Roadway Illumination**

Undertake review of lighting levels at rural road intersections to improve visibility and reduce the potential for nighttime collisions.

### **Pavement Markings**

Reduce the likelihood of roadway departures through a review of line painting and other pavement markings on regional roads. Develop application and implementation guidelines for pavement markings in rural settings.

### **Farm Vehicle Safety Education Campaign**

Develop an education campaign focused on farm vehicles on regional roads including education of other drivers on key considerations when near slow-moving vehicles. Review current design standards to consider farm-vehicle accommodation. Include farm vehicle operations as part of in-service safety reviews, where applicable.

## **Commercial Vehicles**



### **Enhanced Truck Route Guidance**

Opportunities will be evaluated to improve truck route signage, encouraging trucks to follow preferred routes.

### **Truck Regulation and By-Pass Enforcement**

Work with the Town of Lincoln and the Ontario Ministry of Transportation to support the use of video surveillance to monitor trucks re-routing onto regional roads illegally.

### **Truck Aprons**

Identify locations to install truck aprons which could include intersection corners, channelized right-turn lanes, and roundabouts.

### **Commercial Vehicle Safety Education Campaign**

Develop a safety campaign related to heavy trucks, including safe industry practices (e.g., routing, vehicle safety, etc.) and public outreach on how to share the road with heavy trucks.

## **Impaired Driving**



### **Support Reduce Impaired Driving Everywhere Program ('RIDE')**

The RIDE program plays a crucial role in reducing drinking and driving offenses. Niagara Regional Police Service sets up checkpoints and stops vehicles to check for impaired drivers as part of this initiative.

### **Impaired Driving Educational Campaigns**

Partner with Niagara Regional Police Service to deliver messaging and public education related to impaired driving.



## Safety Programs

### **Annual Collision Report**

Review collision data each year and compare with previous years to identify and monitor trends. Analyze road safety performance to determine if improved performance correlates with actions taken, and if action plan changes are warranted. Deliver report to regional leadership.

### **Road Safety Working Group**

Establish an inter-agency Road Safety Working Group that will coordinate the selection and implementation of countermeasures.

### **In-Service Safety Review Program**

Conduct in-service safety reviews on an annual basis, with locations identified through annual network screening.

### **Network Screening**

On a three-year cycle, examine collision trends and patterns to identify locations with higher-than-expected collision frequencies. This will assist with selection of locations for future safety studies and initiatives.

### **Road Safety Audits**

Leverage planned road reconstruction projects to incorporate road safety countermeasures through the completion of road safety audits.





Welland Canal Bridge 13, Welland