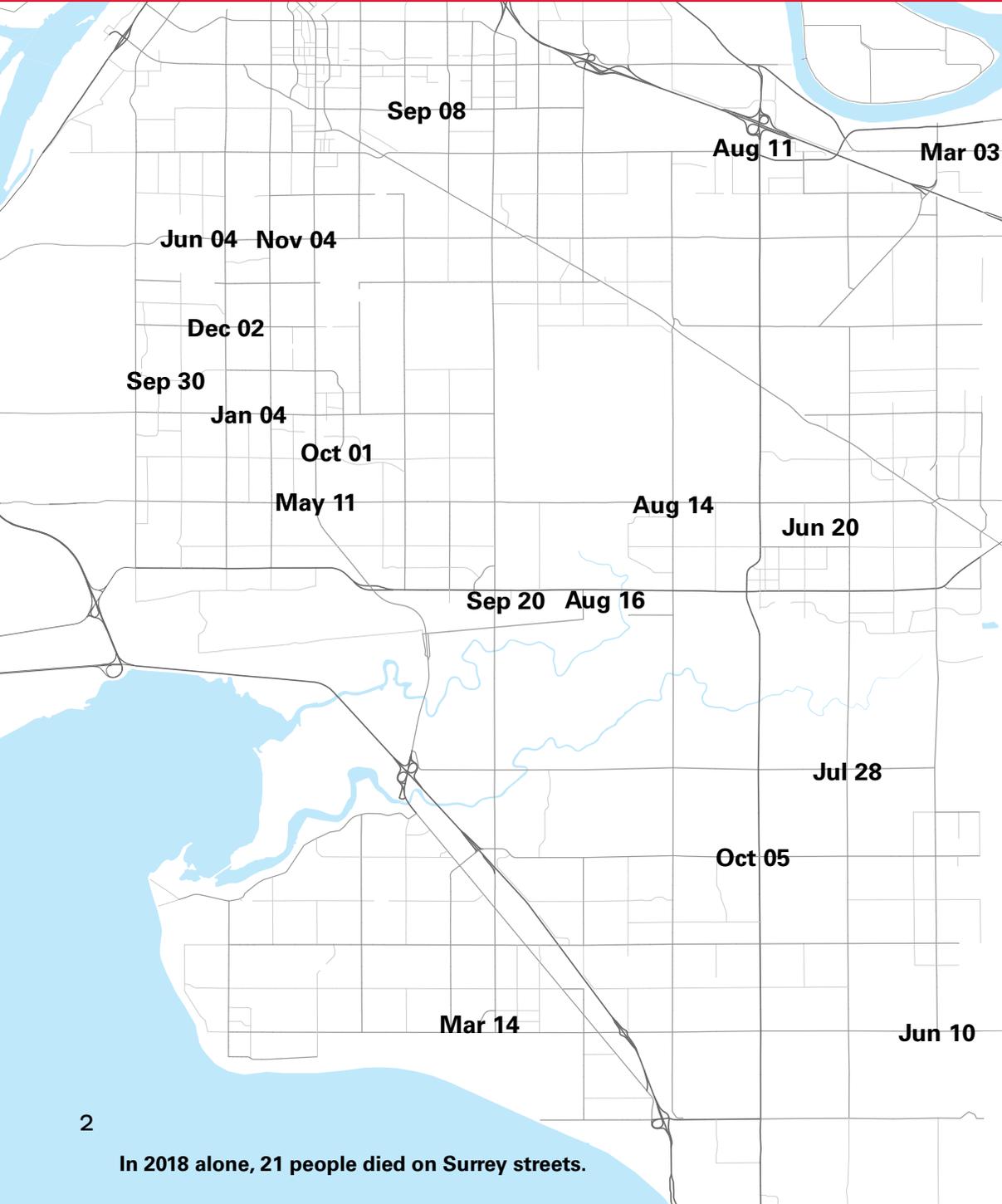


# VISION ZERO SURREY



SAFE STREETS FOR EVERYONE

# VISION ZERO SURREY SAFE MOBILITY PLAN 2019-2023



# Even one death on our streets is too many.

This plan is dedicated to all the people who have lost their lives in traffic, to those who have been seriously injured in crashes and to the many families and friends who live with this life-altering loss. Refusing to accept these as the inevitable price of mobility, we will work harder to make Surrey's roads safer and our communities healthier for everyone.

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OUR VISION

**Surrey has Zero people killed and seriously injured on its roads and human life is valued above all else in the transportation network.**

OUR MISSION

**Working in collaboration with our partners, we will take equitable, data-driven and evidence-based actions to ensure that city resources are spent where they will have the greatest impact on creating safer streets.**



# Acknowledgement

The City of Surrey would like to acknowledge our road safety partners who have assisted in the development of the Vision Zero Surrey Safe Mobility Plan 2019-2023. Their investment of time, contribution of critical data, and commitment to helping us build a robust, evidence-led framework for action which targets the right priorities, has been invaluable.

We look forward to continued collaboration as we work in partnership towards zero people killed and seriously injured in Surrey.



One is too many. **20 people on average lose their lives as a result of traffic collisions in Surrey each year. Another 12,000 are injured.** These numbers represent real people. Our family members, friends and neighbours. We need everyone to be able to get where they need to go safely, whether by foot, bike, transit or car. We must do better.

I am proud to present the **Vision Zero Surrey – Safe Mobility Plan**, which will guide us towards zero people killed and seriously injured on our streets through strategic actions and investment. Vision Zero recognizes that traffic collisions resulting in lives lost and serious injuries are not “accidents,” but preventable tragedies. Adopting a data-driven, evidence-led Safe Systems Approach will change how we design, manage and use these public spaces. Collaborating with our partners and Vision Zero experts from around the world, we will deliver innovative technologies and approaches and, save lives.

Everyone has a role to play in keeping our roads safe. By working together we can make safe mobility a reality for all, including those who are most vulnerable to injury and death.

Zero is the only acceptable goal to aim for.

**Doug McCallum, Mayor**



Councillor  
Linda Annis



Councillor  
Doug Elford



Councillor  
Laurie Guerra



Councillor  
Brenda Locke



Councillor  
Jack Singh  
Hundial



Councillor  
Mandeep Nagra



Councillor  
Allison Patton



Councillor  
Steven  
Pettigrew

***“On behalf of the BC Injury Research and Prevention Unit (BCIRPU), I would like to express my support for the Vision Zero Surrey Safe Mobility Plan, 2019-2023. The City of Surrey’s adoption of Vision Zero is an excellent strategy for reducing the incidence of preventable road-related injuries, consistent with the overall goal to reduce the societal and economic burden of injury in British Columbia. The leadership that the City of Surrey displays in heading Vision Zero—a multi-faceted effort that includes policy-makers, law enforcement, schools, stakeholder groups, and the communities they serve—is to be commended. I am pleased to offer my strong support for this initiative, and look forward to seeing its progress and success over the next five years.”***

Ian Pike, BSPE, MSc, PhD

Director

BC Injury Research and Prevention Unit

***“Vision Zero recognizes that the prevention of death and serious injuries on our roads requires far more than improving driver education and enforcement—it acknowledges that many factors contribute to safe mobility such as roadway design, speeds, vehicle design, and policies to encourage and protect people who walk, cycle, or have mobility challenges. Doing so requires a multidisciplinary approach involving diverse stakeholders to tackle this complex problem, such as what’s outlined in the Vision Zero Surrey Safe Mobility Plan. Vision Zero embraces the kind of evidenced-based systems thinking that is the foundation of public health. We commend the City of Surrey for taking leadership on this important issue, and we look forward to continuing our partnership to improve the safety and well-being of people in Surrey.”***

Shovita Padhi, MD MPH FRCPC

Medical Health Officer and Medical Director  
Fraser Health Authority

***“The carnage from road-traffic crashes is like an epidemic, although it is rarely defined as such despite its widespread occurrence. Too often it is considered an unavoidable cost of mobility when we know that most crashes that result in injuries and deaths are preventable.”***

Megan Oakey

Provincial Manager, Injury Prevention  
BC Centre for Disease Control

***“With more than 70,000 students going to and from schools in a variety of ways, five days a week, road design and safety is a priority for the Surrey School District. The Vision Zero Surrey Safe Mobility Plan is a great initiative to look at the big picture of road safety and it’s a perfect complement to the Safe and Active Schools Program the district and city promote in our schools.”***

Laurie Larsen  
Chairwoman  
Surrey Board of Education

***“The Fire Service responds to many collisions each year, we are encouraged the Vision Zero Surrey plan will work towards fewer intersection collisions and safer roadways for all users. Fire Service staff witness the trauma from intersection and roadway collisions on a daily basis. Reducing the impact on roadway users and first responders is an objective which the Vision Zero plan will assist.”***

Len Garis  
Fire Chief, Surrey Fire Services

***“The Surrey RCMP is a proud partner of the Vision Zero Surrey Safe Mobility Plan. Road safety is an extremely important part of public safety in our communities and our Traffic Services team is dedicated to helping drivers, cyclists and pedestrians make safe, smart choices when using our roadways, sidewalks, and crosswalks. While enforcement plays a role in traffic safety, our collective efforts in prevention and education go a lot further in eliminating traffic accidents and fatalities in our city.”***

Superintendent Shawn Gill  
Community Services Officer  
Surrey RCMP

***“The safe system approach means designing a transportation system where death and serious injuries are almost impossible outcomes.”***

Neil Arason  
Director, Injury Prevention and Healthy Settings BC Ministry of Health

***“Surrey’s Vision Zero road safety plan embodies the safe systems approaches and principles of the leading road safety jurisdictions worldwide. The City is taking a targeted approach to identifying areas within the community that are over-represented with crashes and in particular, crashes involving fatalities and injuries, especially with vulnerable road users. ICBC fully supports Surrey’s ambitious and pragmatic approach in its plan, focussing first on locations where the greatest improvements in road safety can be achieved, and they are a role model for other B.C. communities that wish to develop Vision Zero Road Safety plans of their own.”***

Jerome Atherton  
Senior Manager, Road Safety Policy & Programs ICBC

An average of 20 people are killed in Surrey collisions each year. In addition to the tragedy of road deaths, at least 12,000 people are injured every year. The social costs and impacts of these losses are difficult to measure. Life-changing injuries create a burden on families, friends, communities, the health sector, insurers and social services.

#### The Stark Facts About Surrey's Roads:

**Every hour,**  
1 person  
is injured.

**Every day,**  
crashes cost over  
1 million dollars.

**Every month,**  
more than 1 person  
is killed.

**Every year,**  
injury collisions  
go up 3%

The scale of the personal loss and financial cost of road trauma is unacceptable, and the status-quo must be challenged through data-driven and evidence-led targeted actions. There is an economic and ethical imperative to address this unnecessary loss of life. A step change in approach is paramount and it's why: **Surrey declares itself a Vision Zero city.**

The fundamental message of Vision Zero is that death and injury on city streets are not acceptable and that we will no longer regard serious crashes as inevitable. These tragedies happen in every community in our city, to families from every walk of life; young or old, whether you travel by car, walk or cycle. Put simply, road safety affects us all and it will be our collective action that will save lives. The Vision Zero approach to safe mobility is to eliminate fatalities and serious injuries in our transportation system. It is a fundamental shift in philosophy and approach to road safety from moving cars to moving people, safely. Key principles underpinning Vision Zero begin with acknowledging that traffic fatalities and injuries are largely preventable and that people will make mistakes, but that our transportation system should be designed in such a way these mistakes do not end in death or severe injury. A holistic, integrated approach, adapted from public health frameworks, differentiates Vision Zero from the traditional transportation safety approach.

**Changing the Mindset:** Accountability for road safety has been a shared responsibility between the various layers of government and to lesser extent corporations and non-profit organizations. Often, there is the view that road users are to blame for 'accidents' on the road. Vision Zero creates a shift in mindset from blame to action. Rather than focusing wholly on changing individual behaviours, Vision Zero makes system-wide changes that ensure that the inevitable nature of human fallibility is accommodated within the design of our road networks so that when humans fail, they do not end up dead or catastrophically injured. Collisions are preventable and by changing our mindset, safety will become a precondition for mobility on Surrey's roads.

**Changing the Approach:** While we can train, educate and enforce road users to make fewer errors and take fewer risks, the fact is that we are all human and will make mistakes, but these mistakes should not result in death, injury and catastrophic loss. Surrey will adopt the Safe Systems Approach which incorporates human fallibility into the design of its road networks and safety programs. The four pillars that make Safe Systems a holistic approach are: Safe Roads, Safe Speeds, Safe Road Users, and Safe Vehicles.

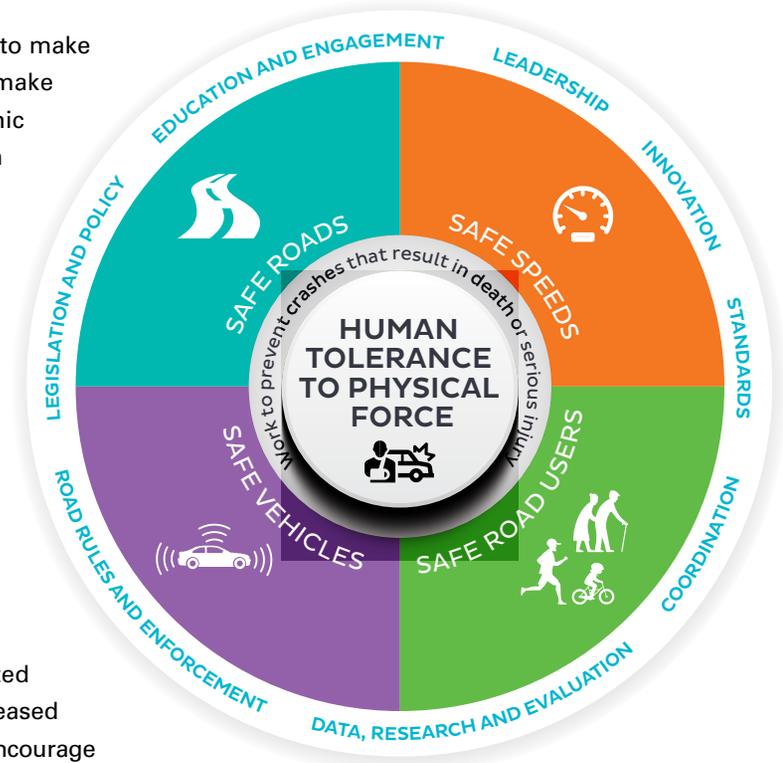
**Focus on Key Issues**

**Vision Zero Surrey’s focus areas include,** ‘vulnerable road users’ who are over represented in the data for death and injury. These are primarily identified as pedestrians, cyclists and motorcyclists. However sub-populations such as youth, seniors and Indigenous, will receive special attention and research will be undertaken to understand why they suffer disproportionately and how we can protect them through tailored programming and specific countermeasures.

High Collision Intersection locations will be reviewed and specific, targeted countermeasures implemented. Aggressive drivers will be subject to increased enforcement and sanctions as well as targeted for education and engagement to encourage behavioural changes that ensure they do not put themselves and others at risk of harm.

The human body is only capable of surviving a certain amount of physical force and that’s why pedestrians, cyclists and motorcyclists are likely to be seriously injured or killed even if struck at the existing urban speed limit. The mass difference between heavy vehicles and all other vehicles and unprotected road users means that any collision has a high likelihood of severe injury or death. These vulnerable road users have the highest burden of injury in Surrey and so we will focus on making these ‘Victims of Harm’ safer.

As much as 65 percent of all injury collisions in Surrey take place on only 5 percent of its roads. This concentrated frequency of collisions at specific high injury locations within the road network will create a focus for our investments. Furthermore, almost 80 percent of injury collisions take place at intersection locations so we have prioritized several high injury intersections to receive immediate and enhanced safety improvements due to their characteristics as ‘Locations of Harm.’



Distracted driving has become the leading cause of traffic collisions in B.C., while impaired driving and speed continue to be key causal factors of collisions resulting in injury and death. While we can build safer roads and educate people on their use, we also must ensure that when people fail to comply to the rules of the road and put themselves and others at risk, they experience consequences. Enforcement is critical to ensuring 'Perpetrators of Harm' receive sanctions and modify their high-risk driving behaviours. We will continue to work with the police as well as invest in technologies that will ensure accountability amongst such drivers whose reckless and selfish behaviours cause death and injury on Surrey roads.

**Approach for Success**

While numerous organizations work diligently to address road safety within their own mandates, none has the mandate or authority let alone the budget for overall responsibility. Road safety is a shared responsibility requiring action from numerous sectors and levels of government. Working in partnership is a foundational element of delivering a comprehensive and effective road safety plan and hence we have formed multi-agency teams to implement Vision Zero work under the guidance of strong leadership from the City of Surrey and its partners. Governance and oversight will be important to ensure a sustained and equitable allocation of resources to tackle the most critical issues.

We have set out to reverse the upward trend in injury collisions in our city and have targeted a minimum 15 percent reduction between 2019 and 2024.

**OUR TARGET**

**A minimum 15 percent reduction in the rate of killed and seriously injured per 100,000 population over five years.\***

**KEY PERFORMANCE MEASURE**

The key performance measure for the Vision Zero Surrey Safe Mobility Plan is the rate of killed and seriously injured per 100,000 population.

**FOCUS AREAS PERFORMANCE MEASURES**

Recognizing that the City of Surrey has a target of Zero KSIs, interim goals are being set:

***A minimum 15 percent reduction in each focus area performance measure over five years:***

1. Rate of pedestrian collisions per 100,000 population\*
2. Rate of cyclist collisions per 100,000 population\*
3. Rate of motorcyclist collisions per 100,000 population\*
4. Rate of intersection killed and seriously injured per 100,000 population\*

*\*Three-year average rate will be used to mitigate random annual fluctuations.*

Additionally, a speed baseline and target is under development.

We will rigorously monitor and transparently report results so we can measure success and change tactics as needed.

A detailed Implementation Plan is being developed. First steps will involve a review of current and planned projects to ensure they proceed in a manner that prioritizes road safety benefits prevents serious injuries and saves lives. Implementation Plan will detail the specific interventions, countermeasures, locations, milestones and budget allocation.

Development of the Implementation Plan will include various city departments and agencies, as well as the partner organizations who together comprise the Vision Zero Surrey Action Team. The City will lead key overarching initiatives, while partner organizations will lead those initiatives that fall within their mandates. The result will be a holistic, coordinated, targeted plan of action and goals that are shared by all.

Innovation, smart technologies and other tools will be leveraged to accelerate our success rate in reducing death and serious injury on our roadways. We must strive for the elimination of harm on our roads and provide the leadership needed to manage, monitor and resource a response to deal with the scale of the problem. We are collaborating with other jurisdictions to learn from their successes and in some cases failures. Tackling road safety in an environment of change has challenges. Surrey is a rapidly growing city, with a population that has increased by approximately 20 percent in the last 10 years. This growth brings with it increased pressures on the transportation system for all modes and demands for more transportation infrastructure and services.

As Surrey continues to grow and mature and as other broader societal changes happen, it is critical that Surrey has established the road safety cultures, data collection systems, organizational structures and partnerships to achieve its Vision Zero targets and objectives.

By reaching out to our communities and engaging them in our road safety programming we will ensure they contribute towards Surrey having Zero people killed and seriously injured on our roads and create an environment where human life is valued above all else in the transportation network. This Vision Zero Surrey Safe Mobility Plan is the City's foundation for ending traffic deaths and injuries on our streets.

The Swedish view that there is an ethical imperative not to accept death and injury as a normal consequence of road use is embodied in our Vision Zero Surrey Safe Mobility Plan.

To do anything less is unacceptable.



In 2017, 21 people were killed in traffic collisions and 14,500 were injured on Surrey roads. Traffic deaths or life-altering injuries are unacceptable and preventable. Even a single death on our streets is one too many. We all have the right to walk, bike, ride transit, and drive on streets that are safe for everyone—no matter who we are, where we are going or how we are getting there.

**Section 7 of Canada's Charter of Rights and Freedoms states that:**

*"EVERYONE has the right to life, liberty and security of the person and the right not to be deprived thereof except in accordance with the principles of fundamental justice."*

**Recognizing this fundamental human right, the City of Surrey acknowledges its obligation to protect the freedom to safely travel across our city free from harm. We must prioritize our most vulnerable road users and protect everyone's right to safe mobility.**

We are committed to eliminating traffic deaths and serious injuries through the implementation of proven strategies and widely recognized Vision Zero principles. Setting the shared goal of ZERO is bold, it's aspirational and it sets in motion a major shift in how we think, plan, prioritize and act. Vision Zero demands a change in mindset where accidents no longer happen and crashes are no longer tolerated.

This plan provides a framework to guide our efforts to improve road safety. The data-driven approach identifies where investments in road safety infrastructure must be targeted to have the maximum impact. The Plan guides cross-sectoral collaboration efforts and sets a baseline from which to measure our progress towards having the safest roads in B.C.

## Set Direction and Guide Investment



### **Our Goal to Move Towards Zero**

Reverse the trend of rising injuries and deaths on Surrey's roads and achieve a minimum 15 percent reduction in the rate of KSI per 100,000 population over the next five years.

### **Target Efforts for Greatest Impact**

Determine and prioritize funding and resourcing for road safety interventions in areas facing the most risk and amongst those most at risk of being killed or seriously injured.

# Introduction



## What is Vision Zero?

The Vision Zero approach to safe mobility is to eliminate death and serious injuries in the transportation system.

No loss of life is acceptable. We shift our philosophy and approach to road safety from the movement of traffic to the safe movement of people. Key principles underpinning Vision Zero begin with acknowledging that traffic fatalities and injuries are largely preventable, and that people will make mistakes, but that our transportation system should be designed in such a way these mistakes do not end in death or severe injury. A holistic, integrated approach, adapted from public health frameworks, differentiates Vision Zero from traditional transportation safety.

This approach was first initiated in countries like Sweden, Norway, and the United Kingdom which now have the lowest rates of motor vehicle crash fatalities in the world. Vision Zero has since gained momentum in many countries, including the United States and more recently, in Canada.

### CORE PRINCIPLES

- **Traffic deaths and severe injuries are acknowledged to be preventable.** Traffic collisions are related to policies, systems and environments that can be improved upon with collective action and political will.
- **Human life and health are prioritized within all aspects of transportation systems.**
- **Human error is inevitable and transportation systems should be forgiving.** Vision Zero builds upon the known threshold at which the human body can withstand a certain level of external trauma without being severely injured or killed.
- **Safety work should focus on systems-level changes rather than simply attempting to change individual behaviour.**  
Vision Zero refocuses attention from the traditional, primarily educational approach aimed at influencing individual behaviour to an “upstream” approach that shapes policies, systems and the built environment.
- **Speed is recognized and prioritized as a fundamental factor in crash severity.** The severity of a traffic injury is directly related to the force of the crash and the resulting impact on the human body. Travel speeds that are appropriate to the context and designed to be safe are a critical foundation of Vision Zero.<sup>1</sup>

## Policy Framework

As a strategic document outlining the overarching approach of the City to move towards Vision Zero, this Plan sets out the Vision, Mission and focus areas for Surrey to achieve the safest roads in British Columbia. In alignment with other City policies and through enhanced strategic partnerships leveraging the broader road safety and public health communities, the City will embrace a Safe Systems Approach<sup>2</sup> as our framework for action.

Surrey’s two guiding policy documents are its Sustainability Charter and Official Community Plan (OCP). In recent years Surrey has also adopted the Transportation Strategic Plan, which recognizes the importance of having safer and healthier communities. This Plan is aligned with these guiding documents to provide a clear direction on a shared vision of a thriving, green, inclusive city.

<b>OVERARCHING PLANS</b>	Sustainability Charter 2.0	Official Community Plan
<b>STRATEGIC PLANS</b>	Transportation Strategic Plan	
<b>SUPPLEMENTAL PLANS</b>	<ul style="list-style-type: none"> <li>• Age-Friendly Strategy for Seniors</li> <li>• Cycling Plan</li> <li>• Social Plan for Wellbeing</li> <li>• Children and Youth Friendly Strategy</li> <li>• BC Coroners Service “A Review of First Nation Youth and Young Adult Injury Deaths: 2010 – 2015</li> <li>• Moving to Vision Zero: Road Safety Strategy Update and Showcase of Innovation in British Columbia (Road Safety BC)</li> <li>• Smart Surrey Strategy</li> </ul>	<ul style="list-style-type: none"> <li>• Walking Plan</li> <li>• Greenways Master Plan</li> <li>• Shade Tree Management Plan</li> <li>• Where the Rubber Meets the Road: Reducing the impact of Motor Vehicle Crashes on Health and Wellbeing in BC</li> <li>• BC Community Road Safety Toolkits (Road Safety BC)</li> <li>• BC Coroners Service Child Death Review Panel: A review of Road-related Pedestrian, Cyclist and Boarder Deaths in Children and Youth 2005 – 2014</li> </ul>

Vision Zero looks different in every community. Factors such as urban growth, population size and diversity, and other socio-economic factors all help to shape policy-makers’ decisions on the implementation of Vision Zero. In Surrey, safe mobility will be central to the planning of our transport system and the continuous reduction of injury crashes in the City will be prioritized. Rather than adopting a ‘one-size-fits-all’ approach, this Plan embodies the principles of Vision Zero while being responsive to Surrey-specific challenges and opportunities.

## The Bigger Picture: Road Safety



Each year,  
**1.3 million**  
people die  
on the world's  
roads.<sup>3</sup>

The World Health Organization designated 2011 – 2020 **The Decade of Action for Road Safety**



Each year,  
**2,000**  
people die  
on Canada's  
roads.<sup>4</sup>

Released in 2016, "Canada's Road Safety Strategy 2025" has the vision **Towards Zero: having the safest roads in the world**



Each year,  
**300**  
people die on  
British Columbia's  
roads.<sup>5</sup>

Released in 2016, an update to British Columbia's Road Safety Strategy is called, **Road Safety Strategy Update: Moving to Vision Zero**



Each year,  
**20**  
people die  
on Surrey's  
roads.<sup>6</sup>

**Vision Zero Surrey: Safe Mobility Plan 2019-2023**

\*Statistics represent an average of multiple years.

Death and injury on our roads ruin lives and causes catastrophic losses to all those involved. Each year, almost 1.3 million people die on the world's roads, and millions more have to live with the long-term adverse consequences of serious injuries sustained in crashes.<sup>7</sup> The often life-altering impacts such as pain, grief, and suffering, related to these incidents spill out well beyond the individual, to their families and communities. With traffic fatalities being the leading cause of death for 15 to 29-year-olds and one of the leading causes of death globally, coupled with the understanding that they are both predictable and preventable, considerable effort is being made to improve safety. This epidemic prompted the World Health Organization to launch the Decade of Action for Road Safety 2011–2020, and in April 2016, the United Nations General Assembly adopted Sustainable Development Goals targeting the reduction of road injuries by 50 percent by 2020.

In Canada, transport injuries represent a major economic burden costing \$4.289 billion in direct and indirect costs in 2010.<sup>8</sup> These costs resulted, in part, from the death of 2,620 Canadians and hospitalization of 28,350. Transport incidents include those involving a variety of means of transportation, such as cars, motorcycles, trucks, buses, boats, airplanes, all-terrain vehicles, bicycles and walking; with collisions involving bicycles, pedestrians, and cars being the most common accounting for over 50 percent of total incidents.<sup>9</sup> The Canadian Council of Motor Transport Administrators (CCMTA) led the development of Canada's Road Safety Strategy 2015—calling for an aspirational goal of having the safest roads in the world—which was then endorsed by The Council of Ministers Responsible for Transportation and Highway Safety.

British Columbia's (BC) transport death rate is higher than the Canadian average, with approximately 300 people dying each year.<sup>10</sup> In 2010, transport-related injuries represented an economic burden of \$658 million for BC, with each hospitalization costing an average of \$22,393.<sup>11</sup> In response, British Columbia published its own Road Safety Strategy in 2011 with a commitment to having the safest roads in Canada.

## Surrey Today

Surrey is one of the fastest growing cities in Canada, and the fastest growing in Metro Vancouver. With a population of over 560,000 in 2017, the City welcomes approximately 1,000 new residents each month. Our population is projected to increase by an additional 250,000 people in the next 30 years. By 2041, one in five Metro Vancouver residents will call Surrey home. Surrey accounts for more than 20 percent of the region’s population growth and has a young and diverse demographic with one third of our population 19 years of age or younger.

At over 316 square kilometres in size, Surrey’s land mass makes it the largest municipality in the region. Home to six distinct communities, the City embraces all people and cultures. The City is working to ensure it is well positioned to create a vibrant business ecosystem that catalyzes the development of jobs, investment, entrepreneurship, and innovation. The City of Surrey continues investing in capital infrastructure to respond to the needs of its growing population. In 2017, the new Economic Strategy was launched to transform Surrey into a regional nexus for commerce and a nationally recognized centre for innovation. The four priority areas include: Attracting Investment to Transform Surrey, Growing Surrey’s Innovation Economy, Building Distinct and Competitive Business Communities, and Creating Jobs and Developing Our Workforce.

To facilitate these growing opportunities, we need a safe and reliable transportation network. Efficient and effective transportation systems are key for manufacturers to import and export their products and components, and for consumers to receive goods and services. Transportation plays a vital role in the continued economic growth of the City. Without safe mobility and a seamless, secure way to transport goods and services, economic growth will be negatively impacted.

There is also a growing recognition of the role that transport planning can play in improving health and quality of life. It includes the health-protective value of increased physical activity and a recognition of the positive social function that streets have in local communities. We recognize the role that transportation has in the health of our residents and we know that an active lifestyle can play a big part in reducing certain illnesses such as Type 2 diabetes, heart disease and strokes. We know that active transportation choices such as walking and cycling can make a contribution to individual health.

The City recognizes safe mobility as the foundation for economic vibrancy and the health and wellness of the community.



Population over  
**560,000**



Largest City  
in the Region  
**316 km<sup>2</sup>**



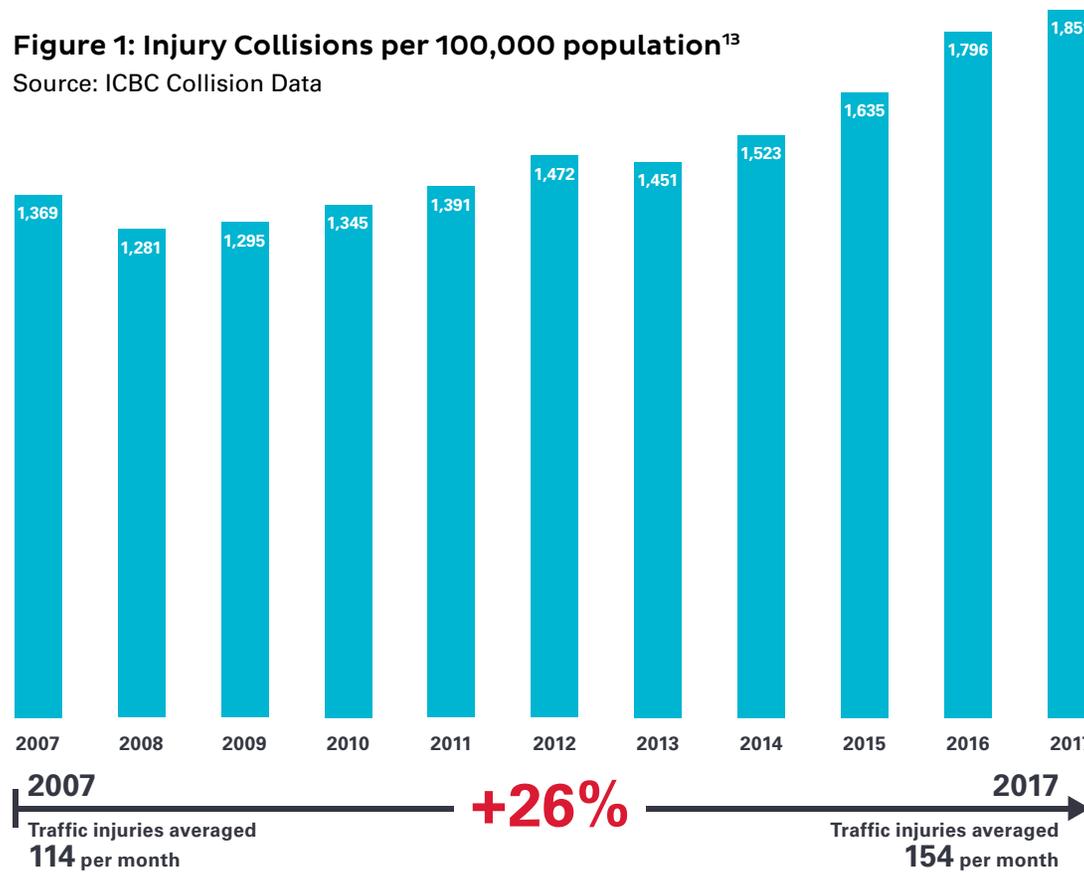
**1/3**  
Population 19 years  
of age or less

# Why Now?

Our growing City means more people, more cars, and more collisions – unless we do something significant. It’s time we reject the notion that death and serious injury on our roads are inevitable. With a 26 percent increase in traffic injuries over the past ten years (See Figure 1), and more traffic fatalities than any other BC municipality, it’s time we work together to reverse these trends and create a Surrey with no one killed or seriously injured on the transportation network.

**Figure 1: Injury Collisions per 100,000 population<sup>13</sup>**

Source: ICBC Collision Data

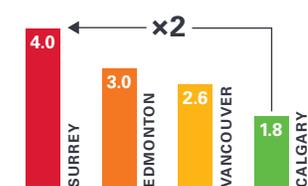


## Surrey's 2013 to 2017 Collision Data<sup>12</sup>



**3%**

Increase in injury collisions **each year**



Traffic Fatality Rate per 100,000 population



On average, one person is injured **every hour** on Surrey's roads

## Identifying the Issues

Vision Zero is a long-term commitment. Making changes to infrastructure and moving the dial on traffic-safety culture takes time. However, we will get there through focused cooperation and shared ownership. Taking a data-driven, evidence-based approach, the Plan integrates a thorough analysis of the available Surrey-specific collision data together with input from residents, communities and stakeholders collected through engagement. We can get to zero by focussing efforts on Surrey's Victims of Harm, Locations of Harm, and Perpetrators of harm, identified through data analysis and community partnership.

## Evidence-Led and Data-Driven

Data is critical to Vision Zero efforts and data quality and specificity are of utmost importance firstly for accurately defining the problem and then in creating targeted interventions to solve it. This requires a coordinated effort to prioritize scarce funding and staffing resources and programmatic efforts. Understanding which locations and which behaviours lead to the most serious injury crashes is critical. This information is balanced with local knowledge about certain areas or behaviours for which collisions go under-reported.

Data and evidence will guide the development of tailored, results-driven, focused and cost-effective engineering, education and enforcement programs. It will inform planning, programs and operational decision making throughout Vision Zero work. Data will also highlight emerging trends and risks to progress towards the Focus Areas targets. A key outcome of this Plan will involve establishing significantly improved data collection, reporting and monitoring systems upon which road safety decisions can be made.

Collision data in Surrey is compiled from various sources including ICBC, the RCMP, Surrey Fire Services, BC Emergency Health Services and Fraser Health. However, there remain gaps in this data due to a variety of factors relating to how organizations collect and organize their data.

Given the importance of collision data for informing road safety decisions, identifying priority areas, and evaluating success, the road safety team is engaged with various stakeholders to improve data accessibility and to add links between data sources. These will enhance our picture of road safety in Surrey and allow for a more detailed understanding of how we can reach Vision Zero.

**Heat Map of Killed and Seriously Injured Collisions<sup>14</sup>**

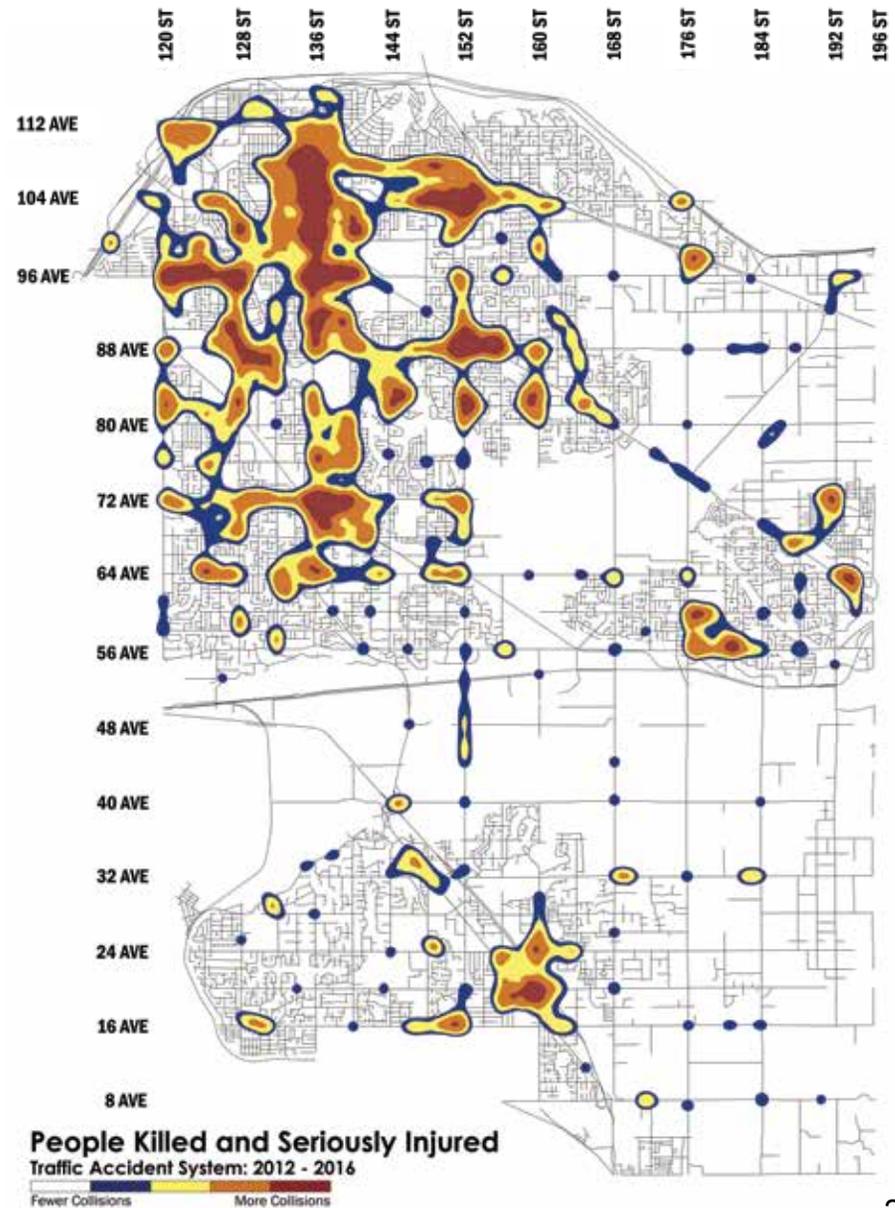
This graphic representation of Surrey’s collision data plotted onto a GIS map of Surrey illustrates the fact that certain areas of the city have a higher frequency of KSI collisions than others.

The darker red locations indicate a higher concentration of KSI collisions and blue locations indicate a lower occurrence.

The concentrated nature of Surrey’s collisions provides us with a clear direction of where the city’s Locations of Harm are and where efforts will need to be focused to have a maximum impact on reducing death and serious injuries.

Analysis from collision data presented on the following pages also shows that:

- Some road users are more likely to be killed or injured in KSI collisions, our Victims of Harm
- Certain dangerous road user behaviours contribute to a large proportion of KSI collisions, our Perpetrators of Harm



## Collision Data

## Victims of Harm

Some road user groups suffer disproportionately in Surrey's killed and seriously injured (KSI) collisions. Pedestrians, cyclists and motorcyclists together are involved in a very small percentage of total collisions, and commuting trips, but yet they account for half of Surrey's KSI collisions (see Figure 2). Road users that lack the protection or enclosure of a vehicle are defined as Vulnerable Road Users. Such road users are over-represented in our KSI collision data, and hence they will be prioritized for intervention.

### Compared to a motorist, in Surrey:<sup>15</sup>



Pedestrians are approximately **42 times** more likely to die in a crash.



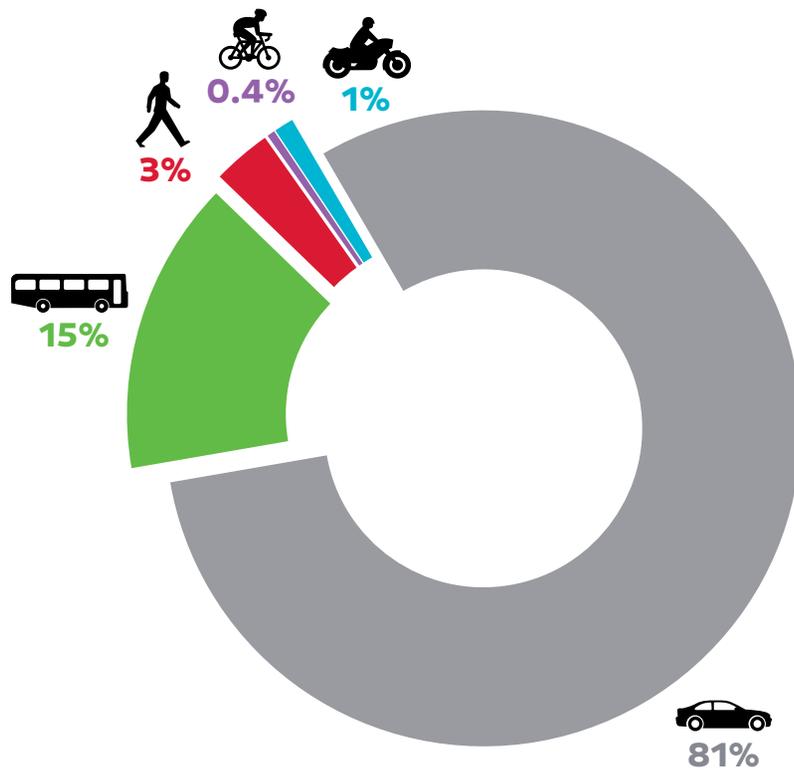
Cyclists are approximately **15 times** more likely to die in a crash.



Motorcyclists are approximately **31 times** more likely to die in a crash.

## Victims of Harm

How we travel in Surrey<sup>16</sup>



How are people killed and seriously injured in collisions in Surrey?<sup>17</sup>

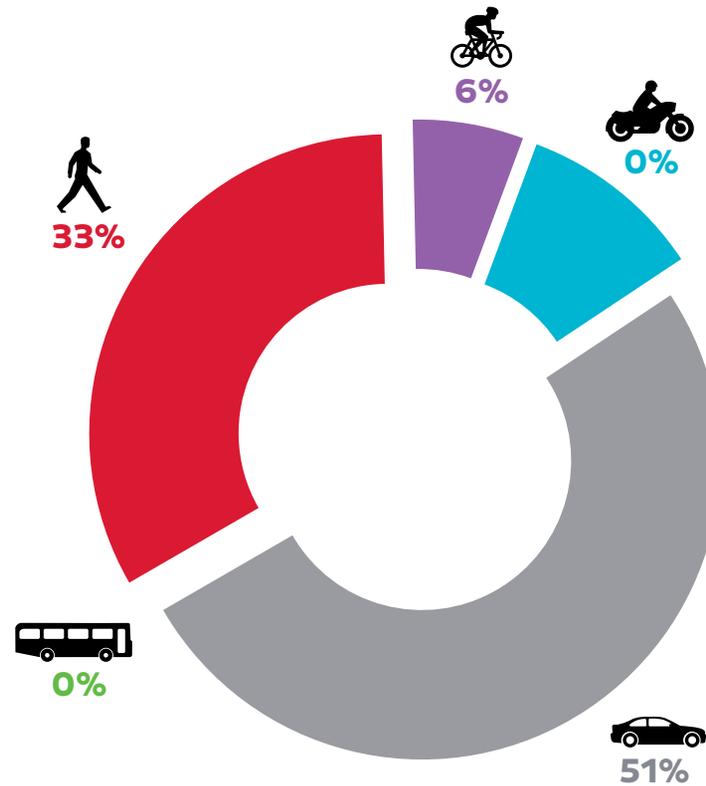
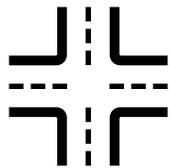


Figure 2. Commuting Mode Share and KSI Collisions by Road User

## Locations of Harm

### Intersections



Surrey’s data shows that close to **80 percent of KSI collisions occur at intersections**.<sup>18</sup> Further, over the past 10 years, **intersection fatal and injury collisions have nearly doubled** from 5,200 in 2008 to 9,200 in 2017.<sup>19</sup> The most common collision types at Surrey’s intersections are rear-end collisions, left turning collisions, and right-angle collisions.

### Communities



Some areas of Surrey experience more collisions than others. Indeed, **1 in 10 fatal and injury collisions** occurs within our City Centre and our five Town Centres.

### Corridors



Our collision data shows a concentration of collisions along certain transportation corridors in Surrey. In fact, our analysis shows that **65 percent of KSI’s occur on just 5 percent of our roads**.<sup>20</sup> Most of the high collision corridors are along Surrey’s high volume arterial roads, such as King George Boulevard, 88 Avenue or Fraser Highway.

## Perpetrators of Harm

Surrey’s collision data also shows that certain road user behaviours tend to increase collision risk and collision severity. Contributing factors are identified by the police following their collision investigation, and are useful for identifying collision prevention priorities. The most common contributing factors tend to involve some type of driver error, with driver distraction currently the most prevalent in Surrey’s KSI collisions (See Figure 3).

**Driver Distraction:** Driver distraction often involves cell phone use while behind the wheel, but distraction can also take many other forms that are equally dangerous. Eating, drinking, stress or being tired can all take our attention away from the road and lead to collisions.

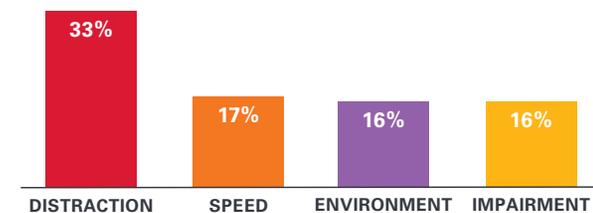
**Speed:** Surrey’s data shows that over one in six KSI collisions involve speeding. Travel speeds are also closely related to collision severity, and so even a small amount over the speed limit can result in much higher collision forces if a collision does occur.

**Environment:** Environmental factors such as weather conditions, road conditions, or the glare from the sunlight can all make driving more difficult. Extra attention is often required in these situations, and environmental factors often combine with other contributing factors towards Surrey’s KSI collisions.

**Impairment:** Impairment, like distraction, can take many forms. While alcohol is the most common, medication or other drugs can also have impacts on our ability to safely operate a motor vehicle. The recent legalization of cannabis poses a challenge for progress made in reducing levels of impairment among drivers.

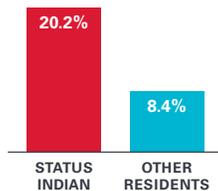
**Figure 3: Contributing factors in Surrey's KSI collisions<sup>21</sup>**

Source: B.C. Traffic Accident System Collision Data



# Inequity of Harm

## Aboriginal People



Data shows that in British Columbia and within the Fraser Health Region, **Indigenous people have more than twice the motor vehicle collision fatality rate of non-Indigenous people.**<sup>22</sup> This data is in line with general injury and mortality trends that show significant disparities between First Nations people and non-First Nation people.



## Youth and Seniors

Surrey’s data shows that both youth and seniors have higher rates of death and serious injury than the Surrey average. Both of these sub-populations have as much as **50 percent more KSI collisions than expected**<sup>23</sup> relative to their share of Surrey’s population.

## Poverty



According to the census data, one in five Surrey residents lives in poverty, with many of these people concentrated in particular neighbourhoods and communities in Surrey.<sup>24</sup> High-level data analysis has revealed that there is an **overlap between Surrey’s collision hot spots, Surrey’s high collision corridors, and Surrey’s low-income communities.**

## Engaging the Community in Creating the Plan

Given that road safety impacts everyone in our community and is a shared responsibility, we reached out to our partners and stakeholders in order to explore opportunities to work together and effect change. While data and evidence drive performance, assessing which needs are greatest requires complementing a data-driven approach with robust community engagement.

## Consultation Process

The consultation process was used to identify key concerns and opportunities for improvement from the perspectives of the stakeholders. Four different groups were included in the process: internal staff from across the City of Surrey; not-for-profit organizations, interest and community groups; Business Improvement Associations (BIAs) representing different neighbourhoods; and organizational-level stakeholders such as RCMP, Surrey Fire Services, the Insurance Corporation of BC (ICBC), Surrey Schools, Fraser Health Authority, Coroners Service of BC, Road Safety BC, Provincial Health Services Authority and BC Injury Research and Prevention.

Three sessions were conducted to engage this diverse group of participants. An analysis of the collision data informed the development of an information-based presentation, communicating key areas of concern for the City of Surrey. The Vision Zero philosophy, its guiding principles and the Safe Systems approach were introduced. Small group discussions were held with facilitators asking questions to elicit reflective and informative responses. One-to-one meetings were held with key stakeholders to foster collaboration in road safety issues and efforts.

In addition to stakeholder sessions and meetings, market research was conducted through City Speaks research community surveys and promoted on social media to engage and solicit residents' opinions regarding road safety. Feedback was valuable in gauging what is important to residents in the Surrey road safety discussion.

Across all platforms and participants, safe mobility for everyone using Surrey's streets was an important issue. Organizational stakeholders provided valuable information in terms of data and opportunities for future collaboration. Community participants and internal staff indicated they learned much about road safety and strategies that should be incorporated moving forward.

The City received clear support for the development and implementation of a Vision Zero approach to safe mobility in Surrey. Serious injury and loss of life on Surrey's roads are not acceptable to participants. A graphic recorder attended two of the stakeholder consultation sessions to collect and visually present the key emerging input (see page 38).

# What We Heard: Community and Stakeholder Engagement Themes



## Collaboration

Road safety is a shared responsibility that requires everyone to work together and do their part. Participants identified action items across the 5 E's (engineering, enforcement, engagement, education and evaluation) and recognized the importance of collaborative programming.



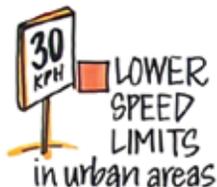
## Vulnerable Road Users

Pedestrians, cyclists and motorcyclists are much more likely to be killed or injured if they are involved in a collision. Concerns were raised about how these road users are prioritized in our engineering, education and enforcement programs.



## Education

Educational messages that connect with people and humanize the collision data are an essential strategy for changing road user behaviour and increasing compliance with traffic laws. Participants frequently mentioned the need to build on our existing education programs.



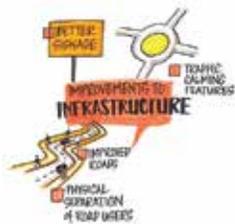
## Speeding

Vehicle speeds are directly related to collision severity, and many participants raised concerns about the lack of enforcement. They were receptive to a transparent automated enforcement program, and 86 percent were willing to accept lower speed limits in order to increase road safety.



### Aggressive Driving Behaviours

Beyond speeding, participants frequently noted other risky behaviours, such as distracted driving and red light running. They were clear that they wanted increased education and enforcement to address these behaviours.



### Infrastructure

The way our transportation infrastructure is designed can influence people’s behaviours as they use it. In particular, concerns were raised about the lack of separation between different road users, poor visibility of vulnerable road users at night or in poor weather conditions, and the influence of road design on high travel speeds.



### Enforcement

Automated and police enforcement are essential components of a road safety program that help to increase compliance with traffic laws. There were frequent requests for increased enforcement and increased penalties for traffic infractions.



### Data and Research

Data and research are necessary to identify road safety priorities and evaluate success. Participants spoke specifically about filling in data gaps, improving data quality, and about ensuring transparency in decision making.



## Ongoing Education and Engagement

Success in delivering the strategic objectives of this Plan relies on a high degree of buy-in, coordination and continued involvement of our stakeholders, and the public, as partners. While this Plan's foundation is a holistic, data-driven and evidence-led approach to improving road safety, it must be complemented by ongoing robust community education and engagement.

We are all in this together. It affects every one of us every day. Vision Zero Surrey requires that we create a culture of good behaviour across all of our communities, individuals and organizations. Doing so requires a city-wide dialogue. It requires education and engagement undertaken in and for the communities we serve. Through ongoing campaigns unified under a common brand we will:

- put Vision Zero on the community agenda by personalizing the issues and solutions;
- shift public perception and establish new expectations regarding road trauma;
- support behaviour change by connecting to our human fallibility;
- improve traveller education by sharing local data; and
- help Surrey rethink how we design our transportation systems and the trade-offs between the choices we all must make.

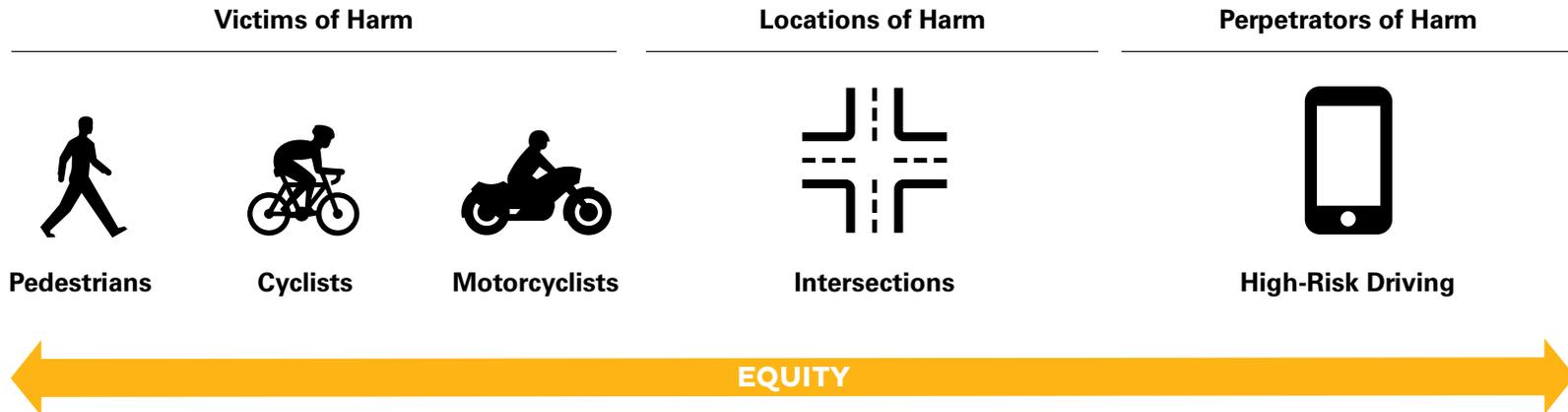


## Our Areas Of Focus

Accelerated Interventions Where They Are Needed Most

A Focus on Priority Locations is at the center of our planning for Vision Zero safety investments. Through an analysis of crash data, we have identified priority intersections and high injury corridors which require specific road safety countermeasures. The health impact and collision data reveal the existence of an unequal burden of injury amongst different road users; with pedestrians, cyclists and motorcyclists having the highest rate of death and serious injury.

When we focus on priority locations and victims of harm, resources go to where they are most urgently needed. Targeted enforcement of high-risk driving behaviours will demonstrate that those who break the rules of the road will be made to account for their irresponsible actions that put at risk innocent lives.



## Equity

Certain subgroups of the population suffer disproportionately on our roads. We will ensure that equity is embedded within our decision-making for each of the focus areas above.

The following pages provide data and consultation feedback specific to these focus areas.

# Pedestrians



Between 2008 and 2017 **2,400** pedestrians were killed or injured on Surrey's roads.<sup>27</sup>

**On average over the past five years, a pedestrian was killed or injured almost every day on Surrey's roads.<sup>25</sup>**

Pedestrian safety is an area of focus because pedestrians are vulnerable road users and are significantly over-represented in motor vehicle fatality data. Concerning data from ICBC shows that pedestrian injuries in Surrey have increased by 35 percent over the last ten years. This was also reflected during the consultation sessions with participants concerned about lighting, gaps in the sidewalk network and the amount of crossing time provided at traffic signals.

However, pedestrian collisions can be prevented. The Canadian Council of Motor Transport Administrators reports that "research findings and experience of other jurisdictions indicate that vast progress could be made to reduce the number of pedestrians killed and injured...if pedestrians were given higher priority and if proven measures were implemented."



During our consultation, Surrey residents told us **"We need to feel safe when we're walking."**

Pedestrians are involved in just **2%** of all traffic collisions but account for **33%** of KSIs.<sup>26</sup>

**"No longer is it acceptable to assume pedestrian injury is inevitable."**<sup>28</sup>

# Cyclists



Between 2008 and 2017 **1,000** cyclists were killed or injured on Surrey's roads.<sup>30</sup>

**On average over the past five years, a cyclist was killed or injured every 3 days on Surrey's roads.<sup>29</sup>**

Survey responses from our CitySpeaks market research indicate that people feel significantly less safe when cycling than when walking or driving, with almost 75 percent of cyclists indicating that they feel unsafe when biking in Surrey. The collision data also shows a 37 percent increase in cyclists killed or injured in Surrey since 2008.

As with pedestrians, there are proven countermeasures that help to protect people when they are biking. These, combined with education and enforcement strategies, will help us make significant progress towards fewer cyclists killed and seriously injured on our roads.



During our consultation, Surrey residents told us **"I'm concerned that drivers don't see me when I'm biking."**

**"Cyclists...in BC have higher rates of fatalities and serious injuries compared to vehicle occupants when measured on a per trip or kilometres travelled basis."<sup>31</sup>**

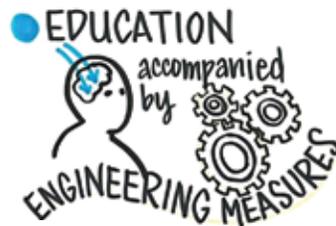
# Motorcyclists



Between  
2008 and 2017  
**750**  
motorcyclists  
were killed or  
injured on  
Surrey's roads.<sup>34</sup>

Motorcyclists are the third member of Surrey's vulnerable road users group. As the existing travel mode data does not include a category for motorcycles, we do not currently know how many motorcycles trips are made in Surrey. However, as with pedestrians and cyclists, motorcycles are over-represented in the collision data with less than 1 percent of all collisions involving a motorcycle, but 10 percent of KSI collisions. Our consultation session was also attended by motorcycle specific stakeholders who raised concerns about their vulnerability on the roads.

**On average over the past five years, a motorcyclist was killed or injured every 4 days on Surrey's roads.<sup>32</sup>**

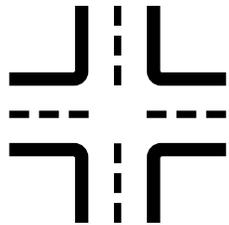


Consultation feedback around motorcycles focussed on the need for education and awareness:

**“We are more vulnerable to gravel on the road, corner clearances, wobbling. We have more to worry about.”**

**“In the months of July and August, when more motorcycles are on the road, it is estimated that there is 1 motorcyclist killed or injured every 2 days in Surrey.”<sup>33</sup>**

# Intersections



In 2017 alone, over **9,000** people were killed or injured at a Surrey intersection.<sup>37</sup>

Fatal and injury collisions at intersections have increased by 4,000 collisions since 2008, with most collisions impacting multiple people and multiple families.

Both consultation input and the collision data supports that intersection locations experience the most potential for conflict between different road users. Surrey’s intersection locations account for:

- 83 percent of pedestrian collisions,
- 84 percent of cyclist collisions,
- 80 percent of motorcycle collisions and
- 78 percent of all fatal and injury collisions.<sup>35</sup>

On average, over the past five years, a fatal or injury collision occurred almost EVERY HOUR at an intersection in Surrey.<sup>36</sup>

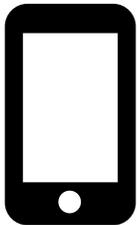


During our consultation, Surrey residents told us:

**“Intersections need to be a focus – most collisions happen at intersections.”**

**“Motor vehicle collisions commonly occur at intersections because there are many potential points of conflict between vehicles, in addition to those between vehicles and pedestrians and other road users.”<sup>38</sup>**

## High-Risk Driving



In Surrey,  
distracted  
driving  
contributes to  
**33%**  
of KSI collisions.<sup>40</sup>

High-risk driving includes speeding, impaired driving, distracted driving and other aggressive road user behaviours. Surrey’s data shows that high-risk driving is a contributing factor in about two-thirds of KSI collisions, with distracted driving the most prominent at 33 percent of KSIs.<sup>39</sup>

High-risk driving was one of the most prominent themes during the consultation sessions with participants commonly identifying distraction and speed as significant issues. While road infrastructure improvements can go a long ways towards improved road safety, consultation participants were clear that increased enforcement was a priority for them in working towards Vision Zero.



During our consultation, Surrey residents told us

**“There should be zero tolerance for the riskiest behaviours.”**

In Surrey,  
speeding  
contributes to  
**18%**  
of KSI collisions.<sup>41</sup>

In Surrey,  
impaired driving  
contributes to  
**16%**  
of KSI collisions.<sup>42</sup>

## Equity

Safe mobility is a basic right, and Vision Zero is based on the premise that all people have the right to move about safely.<sup>43</sup> However, Surrey's collision data shows that some people suffer disproportionately on our roads. This requires us to embody the concept of equity into the work that we do. We will identify communities and populations that are disproportionately impacted by traffic deaths and serious injuries, and prioritize road safety investments in these areas. Doing so will require developing relationships with communities and populations to learn about their specific road safety challenges and deliver programs in partnership.

Using a data-driven and evidence-led approach we will further examine road safety improvements in the city with an equity lens, to target improvements towards those most impacted by KSI collisions and towards communities experiencing more KSI collisions.

***"Centering equity within Vision Zero efforts is vitally important and timely."*** - Vision Zero Network



# Taking Action for Safe Streets



OUR MISSION

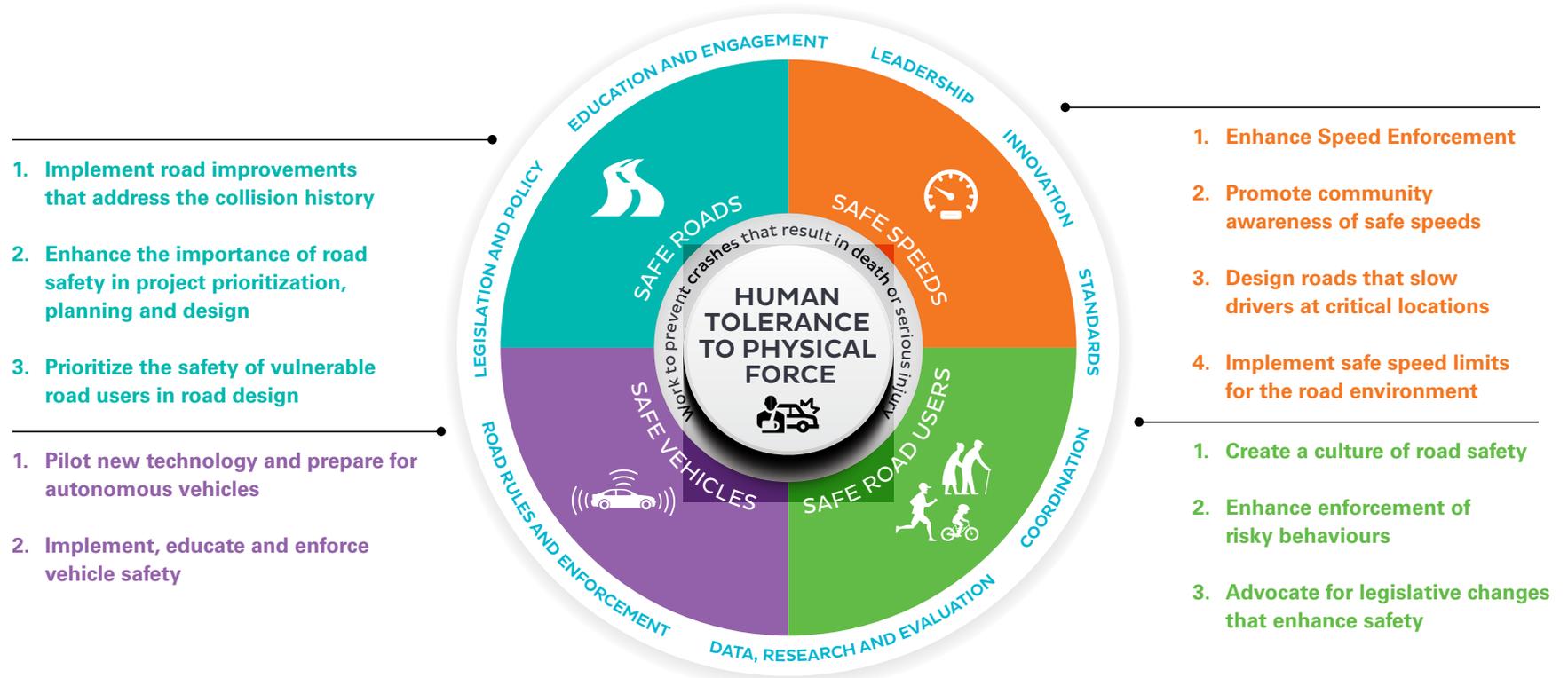
**Working in collaboration with our partners, we will take equitable, data-driven and evidence-based actions to ensure that city resources are spent where they will have the greatest impact on creating safer streets.**

## The Safe Systems Approach

Following an in-depth analysis of various data sources and a review of best practices in other jurisdictions, we will leverage all the resources available to us in order to focus on the key areas identified. To move towards Zero KSI collisions, we will use the recognized Safe Systems Approach to implement road safety interventions. The Safe Systems Approach is a holistic view of the road transport system that considers interactions among roads and roadsides, travel speeds, vehicles and other road users. It is inclusive and considers the safety of all road user groups, including pedestrians, cyclists, motorcyclists, passengers, and drivers.<sup>44</sup>

The following sections feature highlights of some of our planned interventions for each of the safe system's pillars. However, each location is different and requires thorough analysis to match interventions to the particular characteristics of the road safety issues. Additional countermeasures will be tailored to address the road safety concerns of specific locations.

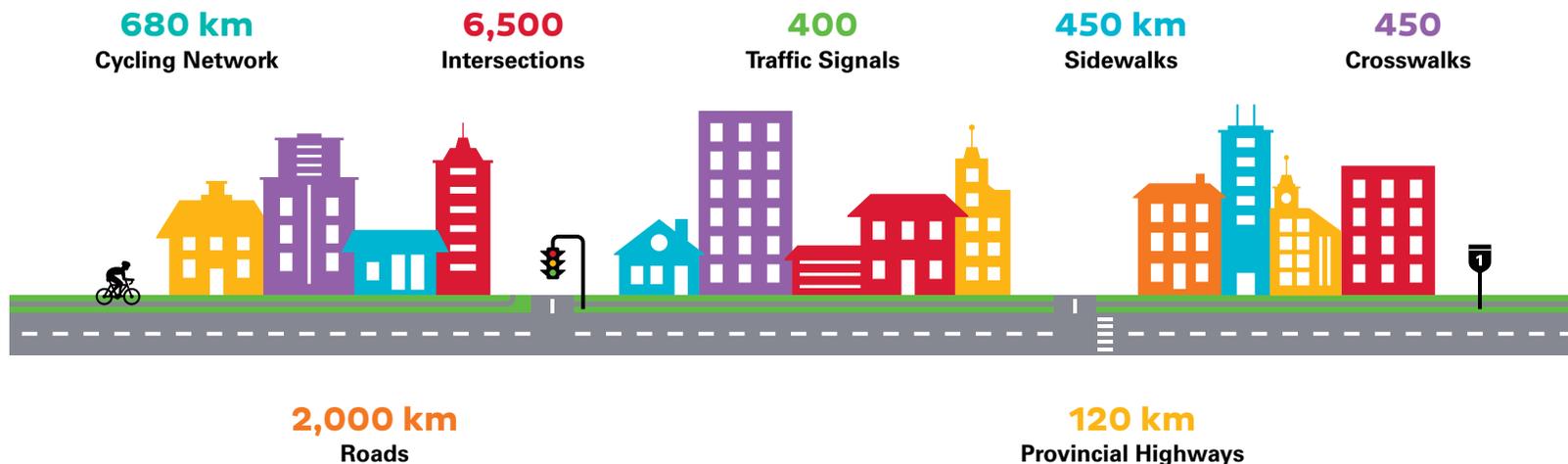
# The Safe Systems Approach



## Safe Roads

In a Safe System, roads are designed to reduce the risk of crashes occurring and the severity of an injury, should a collision occur. Infrastructure incorporates safety features from the outset by segregating different kinds of road users, traffic moving in different directions or at different speeds. Safe roads interventions will reduce the likelihood of high-speed collisions, protect road users from side impact and head-on collision impacts, and focus on the safety of our most vulnerable road users. Safe roads prevent unintended use through design and encourage safe behaviours by users.

Surrey's road infrastructure by the numbers:



# Highlights of our planned Safe Roads Interventions

**Safe Roads Actions for Change:** Implement road improvements that address the collision history; enhance the importance of road safety in project prioritization, planning and design and prioritize the safety of vulnerable road users in road design.



## High Collision Intersection Safety Improvements

We will be upgrading the top 50 high collision locations over the next 5 years. We also regularly review the collision data to prioritize other locations for road safety upgrades. Prioritized locations tend to have a higher frequency of KSI collisions and more collisions involving vulnerable road users.



## Protected Only Left Turn Phase

Protected left turn phases provide a separate set of signal indications for left turning drivers. This separates the movement of pedestrians and oncoming traffic from the movement of left turning vehicles.



## Safe Design Standards

A City's design standards are an important influencer of how streets are designed and built. By reviewing and updating our design standards through the road safety lens, we will incorporate Safe Roads best practices and prioritize our vulnerable road users.



## Smart Right Turn Channels

Channelized right turns increase collision risk and severity due to higher speeds, so we're removing them where possible. Where we can't, we'll build smart right turn channels designed to slow right turning vehicles and improve sightlines. These have been shown to reduce collisions by about 55 percent.<sup>45</sup>



## Priority Areas



Pedestrians



Cyclists



Motorcyclists



Intersections



High-Risk Driving

# Highlights of our planned Safe Roads Interventions

**Safe Roads Actions for Change:** Implement road improvements that address the collision history; enhance the importance of road safety in project prioritization, planning and design and prioritize the safety of vulnerable road users in road design.



## Cycle Tracks

Cycle tracks are bicycle lanes that are physically separated from motor vehicle traffic through a raised curb, bollards or other means.



## Leading Pedestrian Intervals

Leading pedestrian intervals provide pedestrians with a head start at traffic signals before drivers get a green light. They reduce the potential for driver-pedestrian conflict and have been proven reduce vehicle-pedestrian collisions up to 59 percent.<sup>46</sup>



## Rectangular Rapid Flashing Beacons

RRFBs are used at un-signalized crosswalk locations to help improve the visibility of pedestrians. They are push button activated bright amber lights that flash in an irregular pattern.



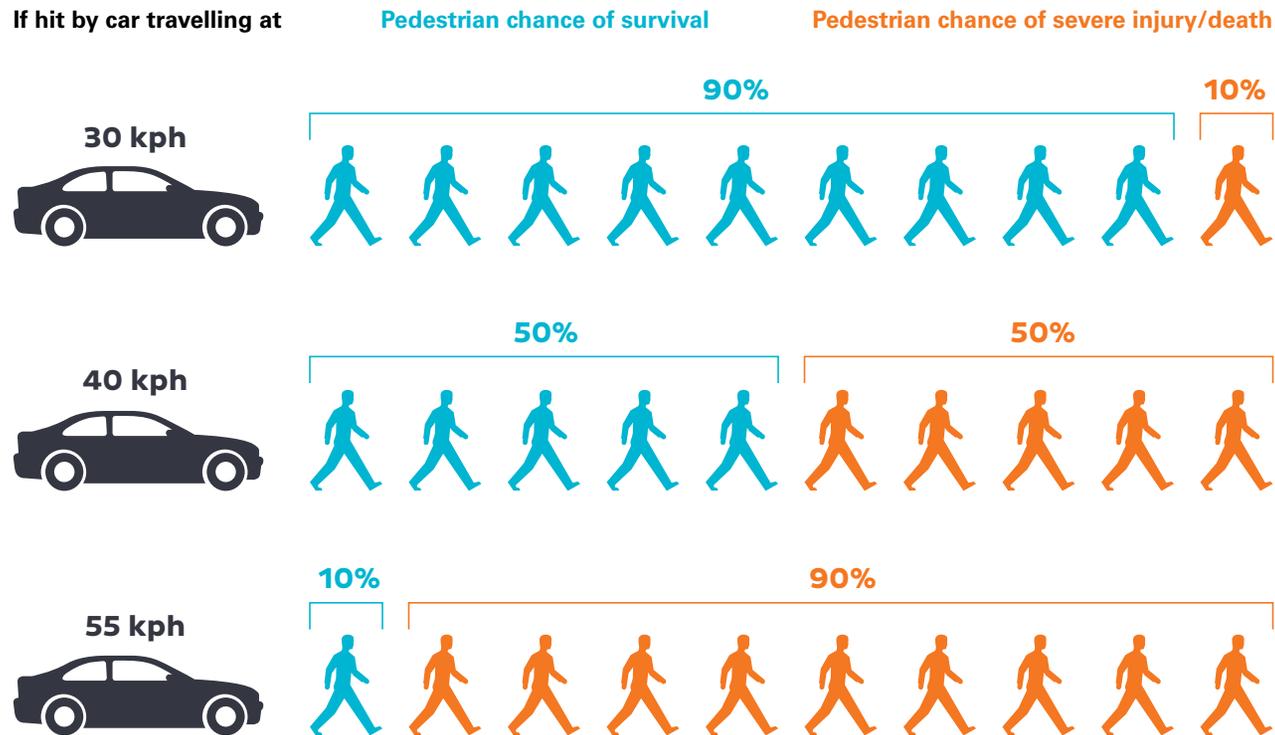
## Roundabouts

Roundabouts only allow one-way traffic around a central island and cars entering the roundabout must yield to cars already in the roundabout. They can improve safety and traffic flow because the shape reduces speed and almost completely eliminates side and head-on collisions. They are highly effective in reducing KSI crashes for motor vehicle occupants, and if designed well also provide safety improvements for vulnerable road users.<sup>47</sup>



# Safe Speeds

Insurance Corporation of BC (ICBC) traffic collision statistics reflect international research which shows that speed is a key factor in motor vehicle collisions. In fact, excessive speed was deemed to be a causal factor in 31 percent of crashes in BC.<sup>48</sup> Even when not deemed causal, higher speed increases the severity of all crashes and the number of killed and seriously injured.



Data: Wramborg (2005)

## Safe Speeds

While safe street design and other infrastructure improvements help towards lowering vehicle speeds, research evidence emphasizes that compliance with speed limits and other traffic laws requires enforcement of the law coupled with suitable sanctions. Enforcement of speed limits, however, can be expensive and dangerous to those monitoring speeds in person. Automated Enforcement (AE) is proven to reduce speeding and other violations, as well as crashes and injuries. Reviews of speed cameras have estimated 20-25 percent reductions in crashes at fixed, visible camera sites and larger reductions with covert enforcement. Some programs in other jurisdictions have resulted in up to 71 percent reduction in fatalities.<sup>49</sup>

The Province of BC's intersection safety camera program has 140 red light cameras distributed in 26 communities. Almost all of Surrey's 32 cameras are located in high injury locations.

In B.C., municipalities and regional districts do not have the jurisdiction to install additional red light cameras or to utilize any type of automated speed enforcement without provincial approval. The City of Surrey supports the use of AE as complementary to the work of the police. While in some jurisdictions, poor public buy-in has stymied adoption of AE, particularly for speed, it should be noted that public support has been strong in jurisdictions with well-designed implementation strategies.

Automated enforcement is proven to reduce KSIs and is successfully used in several Canadian provinces and numerous countries, including the US, Australia, and the UK. Elements associated with successful programs include:

- **No Surprises:** Providing multiple warnings to motorists before entering a zone with AE
- **Revenue Transparency:** Ensuring revenues from AE are strictly dedicated to road safety improvements or returned to safe drivers through lottery systems/reduced insurance premiums
- **Camera Effectiveness:** Selecting high KSI collision sites based on road safety criteria, followed by evaluation audits of AE sites to ensure each is achieving road safety improvements

Our planned Safe Speeds interventions follow.

# Highlights of our planned Safe Speeds Interventions

**Safe Speeds Actions for Change:** Enhance Speed Enforcement; promote community awareness of safe speeds and design roads that slow drivers at critical locations.



## Automated Speed Enforcement

ASE is a technology used to enforce speed limits without putting police officers at risk. It has repeatedly been shown to reduce road deaths, injuries and collisions.<sup>50</sup>



## Speed Limit Review

Speed limits in Surrey are set using a number of factors including road geometry and land use. We will conduct a review of speed limits in Surrey using state-of-the-art software, as appropriate. Speed limit signage will also be reviewed for consistency.



## Speed Humps

Speed humps help to slow drivers down to around 30 km/h on Surrey's local roads. They have also been shown to reduce injury collisions by up to 50 percent.<sup>51</sup>



## Speed Reader Boards

Speed reader boards are interactive signs that detect and display the speed of approaching vehicles. They have been shown to be effective at reducing collisions and reducing vehicle speeds in some situations.<sup>52</sup>



## Safe Road Users

The Safe Road Users pillar addresses human behaviours that contribute to collisions. While we will design and build safe roads to minimize human error, the safe system requires that all road users follow the rules of the road. When road users fail to comply, enforcement of unsafe actions will be ensured by law enforcement.

Safe Road Users work will also focus on ensuring an understanding of laws and signage, and on taking a varied approach to education and engagement of all community members.

Notwithstanding that even the best drivers, riders and walkers will make mistakes or wrong decisions at times, having safe road users who accept their share of responsibility in safe roads for all, is an important part of a safe road system. Being a safe road user involves more than understanding and following the rules of the road, it involves, having a greater awareness of road safety issues, understanding one's abilities and limitations and taking necessary precautions to stay safe.

Our planned Safe Road Users interventions follow.

# Highlights of our planned Safe Road Users Interventions

**Safe Road Users Actions for Change:** Create a culture of road safety; Enhance enforcement of risky behaviours.



### Police Traffic Enforcement

Targeting high-risk driving and ensuring compliance with the rules of the road requires enforcement. High visibility enforcement is proven to have a major impact on high-risk driving behaviours. We recognize the critical importance of our partnership with the law enforcement, and will continue to work with them towards safe road users.



### Annual Road Safety Report

Road safety data will be analyzed and reported out to Surrey citizens ensuring we create a culture of transparency amongst partners and stakeholders. Road safety is everyone's responsibility and only by understanding the impact of our actions can we plan for a future where road deaths and injuries are a thing of the past.



### Road Safety Campaigns

Message-tested content and multi-faceted mediums will be deployed to target high-risk populations and affect culture shift at both the individual and collective levels. New and enhanced education and engagement programs delivered in partnership will be part of the strategy to build a public narrative around safe mobility for all.



### Safe and Active Schools Program

The Safe and Active Schools Program continually promotes safe and active travel to and from school through education, enforcement and engineering improvements. It involves road safety reviews, school travel planning, bicycle training, and the annual Walk and Roll to School Week.<sup>53</sup>



# Highlights of our planned Safe Road Users Interventions

**Safe Road Users Actions for Change:** Create a culture of road safety; Enhance enforcement of risky behaviours.



## Safe Mobility Culture Surveys

The community's traffic safety beliefs, behaviours and attitudes will be surveyed biennially to assess our impact on affecting the necessary shift in road safety culture. Recognizing that the language we use matters in making road safety personal to our audiences, market research will also be used to test our messaging ensuring that it is community-specific.



## Education and Outreach for Priority Audiences

We'll deliver targeted communication and outreach to reach our most vulnerable populations and in 'hotspot' areas, where its needed most. Leveraging data and mapping, we'll connect the community with neighbourhood-specific information, address specific safety issues and promote skills and safe behaviours required for new engineering interventions.



## Partnerships Leveraged To Extend Reach and Impact

Vision Zero Surrey education and engagement efforts will leverage community trusted social service agencies and our partner organizations to ensure that our campaigns are inclusive and equitably delivered.



## Vision Zero Surrey Digital Strategy

Inciting a new Vision Zero Surrey city-wide conversation, requires that partners maximize use of their owned and social media channels. A central Vision Zero Surrey website will be our hub of information. Using highly trackable and measurable web-based media, we will share interactive mapping and videos, support road safety campaigns, talk about our work and create dialogue.



## Safe Vehicles

Safe vehicles that are designed well with the appropriate safety technologies can either prevent a crash or absorb some of the crash forces to help decrease the risk of death and serious injuries. Increasingly, roads and vehicles will be managed within intelligent transport systems relying ever more on driverless (autonomous) vehicles and smart infrastructure. As safety becomes hardwired into vehicle technology and road design, there is potential to further reduce road casualties and deaths.



# Highlights of our planned Safe Vehicles Interventions

**Safe Vehicles Actions for Change:** Pilot new technology and prepare for autonomous vehicles; Implement, educate and enforce vehicle safety.



### Technology to Combat Distracted Driving

Technology already exists that can block incoming emails, text messages and social media updates while a person is driving. Surrey will work with our partners to pilot these technologies.



### Commercial Vehicle Safety and Enforcement

The CVSE promotes compliance of safety regulations within the commercial transport sector, with the goal of improving road safety and protecting public health, the environment and transportation infrastructure. Surrey will work with them and other partners to improve commercial vehicle safety in Surrey.



### Automated Vehicles

While more research is required, automated vehicles have the potential to be a significant contributor to reduced collisions. Surrey will pilot automated vehicles to better understand their impact on road safety.



### Upgrade Traffic Signal Controllers

The traffic signal controller is the computer that controls the traffic signals. Surrey is investigating the use of newer styles of controllers that can send and receive information from vehicles through vehicle to infrastructure (V2I) communication.



### City of Surrey Fleet Vehicles

Surrey employees use fleet vehicles to conduct a variety of work, including road maintenance, snow removal, signage installation, and other work. Through cross-department collaboration, we will work to improve the vehicle safety of the City's fleet vehicles.



# Implementing Vision Zero

## **Framework for Partnerships and Collaboration**

While numerous organizations work diligently to address road safety within their own mandates, none has the responsibility or budget for overall responsibility. It's clear that road safety is a shared responsibility requiring action from the municipality, the police, health sector, community and other road safety stakeholders. In order to successfully implement road safety programs and initiatives, we must work together, be mindful of upcoming challenges and opportunities, and regularly measure progress to ensure we are heading towards our goal of zero.

Indeed, the Safe Systems Approach demonstrates the importance of partnerships between all levels of government, corporations, non-profit organizations and our community.



In partnership with:



Supported by:



## Police

We all have a responsibility to use and share the roads we travel on in a safe and responsible way, mindful of our own safety and the safety of others. The BC Motor Vehicle Act specifies the rules of the road for driving, cycling, and crossing streets, as well as the penalties associated with breaking those rules.

While provincial and municipal authorities have a responsibility to design, implement and maintain a safe road network, Police have a responsibility to use enforcement to increase compliance with laws designed to save lives and reduce injury.

Enforcement is needed to focus on reducing dangerous and aggressive driving behaviours, such as speeding, failing to yield, impaired and distracted driving. The City of Surrey contracts with the Surrey RCMP to provide municipal level police services which play a critical role in enforcing these laws, helping to ensure that roads are safe for everyone. Surrey RCMP is the second largest municipal police force in the province and Road Safety is one of the mandates of its Traffic Section.

The enforcement teams are split into four teams of five members each, responsible for covering all areas of the City during all hours of the day. At times, the limited numbers of RCMP officers dedicated to traffic safety and the broad scope of their responsibilities can limit the availability of proactive enforcement activities. Such enforcement is proven to have a major impact on high-risk driving behaviours such as aggressive, impaired and high speed. The City of Surrey recognizes the critical importance of this partnership will continue to work with police partners to ensure the focus on road safety remains a priority.

## Provincial Integrated Road Safety Units

Funded through an innovative partnership between the Insurance Corporation of B.C, the Province and the Police, these integrated road safety units are dedicated police units focused on road safety and auto crime. While other traffic police combine enforcement with response to calls and crash investigations, the benefits of the Integrated Road Safety Units (IRSU) is that they focus solely on conducting strategic traffic enforcement to reduce KSIs on B.C.'s roads. The mobile enforcement units work closely with other road safety partners to tackle the most serious traffic issues through strategic enforcement, education and presence. These specialized units work across traditional police jurisdictions to improve road safety and provide opportunities for piloting new and innovative enforcement technologies and methods.

## ICBC

The Insurance Corporation of British Columbia (ICBC) is a provincial Crown Corporation mandated to provide universal compulsory auto insurance (basic insurance) to drivers in B.C., with Basic insurance regulated by the BCUC. ICBC also offers various Optional vehicle insurance coverages.

ICBC also provides driver licensing, vehicle registration and licensing, and fines collection on behalf of the Provincial Government.

As an insurance provider, ICBC has an interest in reducing fatalities, injuries and property damage, and therefore takes a proactive role in advocating for road safety programs throughout the Province, including the City of Surrey. ICBC has had a long-standing relationship with the City in terms of funding road improvements and sponsoring a wide range of enforcement and educational activities. ICBC has two road safety and community coordinators specifically assigned to lead road safety efforts in collaboration with Surrey and in its vicinity.

## Fraser Health

Health system partners and municipal governments have many overlapping objectives, including better population health, the prevention of serious injury and death, and increased active transportation. As a result, there are many opportunities for collaboration between Fraser Health and the City of Surrey to work towards a shared vision of zero people killed and seriously injured on our roads, while also improving health through increased walking, biking, and other active transportation modes.

## Surrey Fire Services

The Surrey Fire Service provides emergency response, public assistance, and education to the City of Surrey. In addition to responding to residential and commercial structure fires, hazardous materials calls, a variety of medical emergencies, they are most often the providers of emergency response to road traffic collisions.

Given the competing priorities requiring a police response, they only attend those collisions which result in death or serious injury which is why Surrey Fire Service attend most collision locations requiring an emergency response. Indeed, a formal agreement exists between the fire service and police. In addition to emergency response functions, the Fire service also supports Vision Zero efforts in Surrey through data analytics and the piloting of new technologies.

## Surrey Schools

We partner with Surrey Schools to deliver the Safe and Active Schools Program. Bringing together outreach, education, training and infrastructure upgrades, it promotes active travel, helps families overcome barriers to participation, and improves road safety around Surrey's more than 100 elementary schools. Active trips include walking, cycling, scooting and skateboarding – all forms of person-powered transportation. The program is about making the daily trip to school safe and active through engineering, education, engagement and training for students, schools and the community.

## Education and Engagement

Road safety culture is defined by what individuals, communities and broader society think is normal and acceptable. This is directly related to people's choices on the road since our attitudes influence our decisions. Public support for the programs in this Plan around police enforcement and use of more technology or engineering measures will only be achieved and sustained through accompanying information and advice that:

- Tells people that road safety is a high priority in Surrey and why
- Explains why particular enforcement or engineering measures are being undertaken
- Gives road users the tools and information to be better informed and ultimately be supportive of the Plan

Vision Zero Surrey's education and engagement program will place a strategic emphasis on:

- **Shifting public perception:** road trauma is preventable and unacceptable
- **Altering cultural understanding:** safe mobility is personal, connected to our quality of life and a priority
- **Establishing new expectations:** social norms will be challenged
- **Educating road users:** risks and 'rules of the road' are understood and unsafe behaviours stopped

As with all communications targeting social and public health issues, it is imperative that we build a strong sense of 'why' and what it means to embrace Vision Zero as an essential foundation for success. Our effectiveness will be measured by our ability to shift from traditional thinking and individual campaigns targeting poor behaviours to a personal understanding of how safe roads, safe vehicles, safe speeds and safe people interact to accommodate the vulnerable human and the mistakes we make.

This requires a broad public dialogue coupled with targeted, population-specific engagement. Surrey's program will be built on Surrey data and adopt a tiered approach to its messaging. Strategies will progress from initial building of awareness (Vision Zero umbrella messaging) to familiarity (adding in local, hard data to reinforce road safety as a priority issue) to creating calls for action (identifying Surrey-specific solutions and building support) through to sustaining behaviour change.

## Measuring Success – How Will We Know We are Making Progress?

The safety performance of Surrey's road network will be continuously monitored and several performance measures will be used to assess the success of the Vision Zero Surrey Plan. These measures will serve as key indicators of our progress on implementing a Safe Systems approach and achieving our 5-year goal as we move towards achieving Vision Zero.

### Our Target

**15 percent reduction in the rate of killed and seriously injured per 100,000 population over five years.\***

### Key Performance Measure

The key performance measure for the Vision Zero Surrey Safe Mobility Plan is the rate of killed and seriously injured per 100,000 population.

## Performance Measures and Interim Targets

PERFORMANCE MEASURE	BASELINE	2023 TARGET Minimum 15 % Reduction
<b>Key Performance Measure</b> Rate of killed and seriously injured per 100,000 population <sup>1*</sup>	<b>24.6</b> KSI collisions per 100,000 population	<b>20.9</b> KSI collisions per 100,000 population
<b>Focus Area Performance Measure</b> Rate of pedestrian collisions per 100,000 population <sup>2*</sup>	<b>53.4</b> Pedestrian collisions per 100,000 population	<b>45.9</b> Pedestrian collisions per 100,000 population
<b>Focus Area Performance Measure</b> Rate of cyclist collisions per 100,000 population <sup>2*</sup>	<b>25.0</b> Cyclist collisions per 100,000 population	<b>21.5</b> Cyclist collisions per 100,000 population
<b>Focus Area Performance Measure</b> Rate of motorcycle collisions per 100,000 population <sup>2*</sup>	<b>16.7</b> Motorcycle collisions per 100,000 population	<b>14.3</b> Motorcycle collisions per 100,000 population
<b>Focus Area Performance Measure</b> Rate of intersection killed and seriously injured per 100,000 population <sup>1*</sup>	<b>11.8</b> Intersection KSI collisions per 100,000 population	<b>10.1</b> Intersection KSI collisions per 100,000 population
<b>Future Performance Measures</b> Speeds	In Progress	In Progress

\*Three-year average rate will be used to mitigate random annual fluctuations.

<sup>1</sup>Traffic Accident System Data

<sup>2</sup>ICBC Collision Data

### Effective Interventions

In addition to the indicators outlined above, the impact of road safety improvements and countermeasures will be monitored and evaluated. Baselines will be used to calculate the effectiveness of specific interventions such as intersection improvements or addition of cycle lanes. Before and after collision statistics will be analyzed and reported out to Surrey citizens thereby ensuring we create a culture of transparency amongst partners and stakeholders. Road Safety is everyone's responsibility and only by understanding the impact of our actions can we plan for a future where road deaths and injuries are a thing of the past.



## What's Next

This Plan joins the global move towards Vision Zero to eliminate death and injuries from collisions. Zero is not a target to be achieved by a certain date, rather, an aspiration highlighting the need for the very best road safety outcomes and where no loss of life is considered acceptable. It is called the Vision Zero Surrey Safe Mobility Plan because the freedom to move is fundamental to every aspect of life.

The Vision Zero Surrey Action Team will immediately work to target several 'quick wins' to address critical road safety issues. In parallel to these actions, all partners will align internal and external organizational processes to support the seamless delivery of Vision Zero objectives.

Surrey will begin the journey to Zero by enhancing internal processes and using evidence-led decision making to systematically incorporate road safety into the design and review of capital projects.

A road safety lens will be applied in the critical evaluation of the City's programs. It will be woven into the fabric of how we do business so that we are prioritizing road safety. By proactively considering and implementing safety countermeasures when we build new developments, parks, recreation and other infrastructure, we will save lives.

Institutionalizing and mainstreaming road safety within the City is necessary for the Plan's objectives to be achieved. The City will apply a systems approach through our planning, design, construction and maintenance activities.

A detailed Vision Zero Implementation Plan is being developed as a matter of priority. First steps will involve a review of current and planned projects to ensure they proceed in a manner that prioritizes road safety benefits prevents injuries and saves lives. Our Implementation Plan will detail specific interventions, countermeasures, locations, milestones and budget.

Development of the Implementation Plan will include various city departments and agencies, as well as the partner organizations who together comprise the Vision Zero Surrey Action Team. The City will lead key overarching initiatives, while partner organizations will lead those initiatives that fall within their mandates. The result will be a holistic, coordinated, targeted plan of action and goals that are shared by all.

### **Continuous Improvement and Innovation**

Surrey has consistently been among the top cities in North America for its forward-thinking approach in leveraging technology to achieve continuous improvement and innovation within its programs. The Smart Surrey approach applied to Vision Zero Surrey will involve incorporating best practices and testing new approaches and technologies in defined areas. This will allow the City to then replicate successful approaches and treatments elsewhere enabling significant progress towards achieving Vision Zero across the City.

Preparing for advanced vehicle technologies (connected and autonomous vehicles) by implementing traffic signal, sensor and other intelligent transportation systems (ITS) and monitoring interactions between advanced vehicles, people (driving, biking or walking) and city infrastructure. This will ensure our Vision Zero strategies will be effective in the short term and long term as advanced vehicles become more prevalent on our roadways.

### **Advocacy**

The mandate to deliver road safety is shared amongst all levels of government, corporations, and other groups. The current system for delivering road safety consists of organizations working within the confines of their narrow roles, often in isolation from those whose work is foundational to achieving Vision Zero. The rapidly changing landscape that exists in most urban environments requires policies, legislation and strategies to evolve in ways that accurately respond to current and emerging challenges.

For example, the structures and methods relating to enforcement of dangerous driving behaviours need to be explored in collaboration with local authorities as they are tasked with building safe roads. The governance of new automated technologies and their application within the city sphere is also an area where roles and authority require attention.

## Conclusion

Together we can save lives.

At the heart, Vision Zero refuses to accept the loss of life or the burden of serious injury as the inevitable price of our mobility.

No one wants their family to be hurt on Surrey's streets.

Our only acceptable road trauma goal is zero.

Our vision is bold and aspirational: **'Surrey has Zero people killed and seriously injured on its roads and human life is valued upon all else in our transportation network.'**

Our goal is an achievable and measurable short-term target. We will **'reverse the trend of rising injuries and deaths on Surrey's roads and achieve a minimum 15 percent reduction in injury collisions over the next five years (2019-2023).'**

While we will lead the city towards Zero, it will take equitable, collaborative and sustained approaches to street design, traffic safety enforcement, education and behaviour change to create safe streets for everyone.

## Stay Connected



Stay Informed at

[surrey.ca/visionzero](https://surrey.ca/visionzero)



Ask questions and share feedback

[visionzero@surrey.ca](mailto:visionzero@surrey.ca)



Connect with us on social media

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