2026

Local Road Safety Plan

Long Range Planning - Transportation

Community Development Department

February 2026

CITY OF Vancouver WASHINGTON

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Local Road Safety Plan 2026

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Introduction

The City of Vancouver last completed a Local Road Safety Plan (LRSP) in 2024 which evaluated 2018-2022 crash data to identify trends, high crash locations by intersection and segment, and recommended countermeasures for a few selected high crash locations. Since that time, the City has completed and advanced several projects focused on safety and mobility at these identified locations.

This LRSP 2026 update evaluates crashes on the City's locally controlled streets from 2020-2024, with a focus on crashes that resulted in a fatality or severe injury. The crash data was provided by the Washington Department of Transportation (WSDOT) and has been filtered to include only arterial and collectors where almost all fatal and severe crashes occur, and not local roads which have very low fatal and severe crashes.

Policies and Plans

This LRSP helps to support and advance the work of the:

- Transportation System Plan (2024-2044)
- Complete Streets Policy
- Transportation Improvement Program
- Climate Action Framework
- Strategic Plan (2023-2029)

These foundational policies and documents set the stage for how the City prioritizes and evaluates the transportation networks and multimodal transportation projects for funding and implementation. For example, this 2026 update of the LRSP was needed to meet requirements for the WSDOT Highway Safety Improvement Program, City Safety Program and was previously updated in 2024 per the needs of the U.S. Department of Transportation Safe Streets and Roads For All grant program.

Implementation and Monitoring

This report is intended to be a 5-year analysis to identify high crash intersection and segment locations in the City and provide examples on the process for identifying related countermeasures to address crashes at intersections and roadway segments. This report does not contain a full analysis and countermeasure identification for every top crash intersection or segment location. This report is intended to identify where local resources should be invested based on fatal and severe crashes and where a complete analysis with the most updated crash data details and proven countermeasures will be addressed when a project is initiated and has funding.

Currently, the Transportation System Plan polices, programs and projects are being implemented to increase safety, mobility and access for all modes across the entire transportation network. Future updates to the Transportation System Plan will incorporate safety specific projects and implementation of programs to prevent fatal

and severe crashes at the top crash locations and beyond. These top locations will also be included into existing or new projects in the City's 6-year Transportation Improvement Program, which has its own prioritization criteria and process for moving projects to design and construction, including per funding opportunities and constraints.

Project implementation and monitoring will also occur through the City's Complete Streets Program, evaluating project investments to measure outcomes of multimodal street improvements using quantitative and qualitative data. City-wide, staff regularly monitor safety data and project outcomes to ensure that investments address crashes and improve safety for everyone who travels in and through Vancouver.

Public Involvement

The City is committed to equitable and inclusive public engagement throughout all our transportation programs and projects. This includes project-specific engagement related to roadway design changes and mobility improvements, as well as policy initiatives that apply broadly throughout City departments, and regarding the interconnectivity and accessibility of the transportation network for all users.

This work also includes strategic outreach during different City initiatives, programs, and projects to inquire about roadway safety and community transportation needs. Thus, for this LRSP, engagement has occurred during the past few years as part of the Transportation System Plan update and implementation, community visioning process, Comprehensive Plan update, with ongoing Transportation and Mobility Commission workshops as well as during planning and capital transportation projects.

Transportation Focused Outreach

Transportation System Plan

The 2024-2044 Transportation System Plan , adopted by the City Council in January 2024, was developed through extensive community engagement with an emphasis on reaching those who have not traditionally been involved in community planning. The Transportation System Plan expanded its focus from auto-mobility focused projects to also identify and prioritize walking, rolling, biking and small mobility, transit and freight mobility and accessibility.

The Plan engagement centered on challenges and opportunities to getting around as well as the creation of modal networks and priorities specific to walking, rolling, bicycling, and transit. Outreach efforts used existing events to reach new people where they already gather, including events like the Multicultural Resource Fair at Clark College, the East Vancouver, and Downtown Farmer's Markets, and LULAC Grows Mercado on Fourth Plain Boulevard. In an effort to reduce barriers to participation, participants were provided with free transportation and a stipend for participation for attendees with low vision, people of color, people with disabilities, low-income

individuals, and those living with limited housing options. The engagement process also utilized social media, City newsletters, flyers, videos, phone, and email communications with the goal of soliciting input from a broad array of people on their transportation needs and priorities.

Across all engagement activities, the community placed the highest priority on safety. The other top values for the transportation system included: earth-friendly, reliable travel times, regional connectivity, and affordability.

Transportation and Mobility Commission

The City created a new citizen oversight committee in 2020 to advise staff, City Council and the City Manager on transportation programs, policies, and projects. The Transportation and Mobility Commission (TMC) advises on transportation policy, programs, and project implementation and provides guidance on citywide transportation issues. The TMC is comprised of eleven commissioners with diverse backgrounds and experiences. At their monthly meetings, staff present on and seek feedback about transportation projects, plans, and programs. Commissioners provide input and raise transportation concerns in their neighborhoods and areas of experience. The public is invited to attend these meetings to provide testimony on general transportation topics during the Community Forum portion or as part of project public hearings.

Community Engagement Efforts

Strategic Plan

Vancouver's Strategic Plan helps the City prioritize and invest in community priorities. Every six years, a new plan is developed with community input for short- and long-term needs. The 2023-2029 Strategic Plan identified transportation and mobility as a main focus area to ensure the city has a safe, future-ready and convenient transportation system that offers affordable, climate-friendly options for people to get where they need to be.

Community engagement was a core input in developing this plan, connecting with the community on a wide range of projects, programs, and initiatives. City staff asked community members about a number of topics, including housing, transportation, climate and safety. In these efforts, it was a priority for the City to bolster strategic engagement to ensure a broad range of services valued by underrepresented populations were included. A Strategic Plan Advisory Committee was created to improve communications between the City and a diversity of community members, as well as helping identify community needs, concerns, and opportunities in these main topic areas. The engagement efforts also included City Council workshops, meetings with community-based organizations, and activities with the public to learn more about their future priorities.

City Council Outreach

In an effort to make it easier for community members to communicate and connect with City Council, the Council developed a series of Community Forums in different neighborhoods throughout the city. These forums provide a venue for the public to have direct input with staff and interaction with elected officials to share concerns and learn about projects. Through small-group discussions, community members share their ideas, hear from other community members, and directly engage City Council members in conversation.

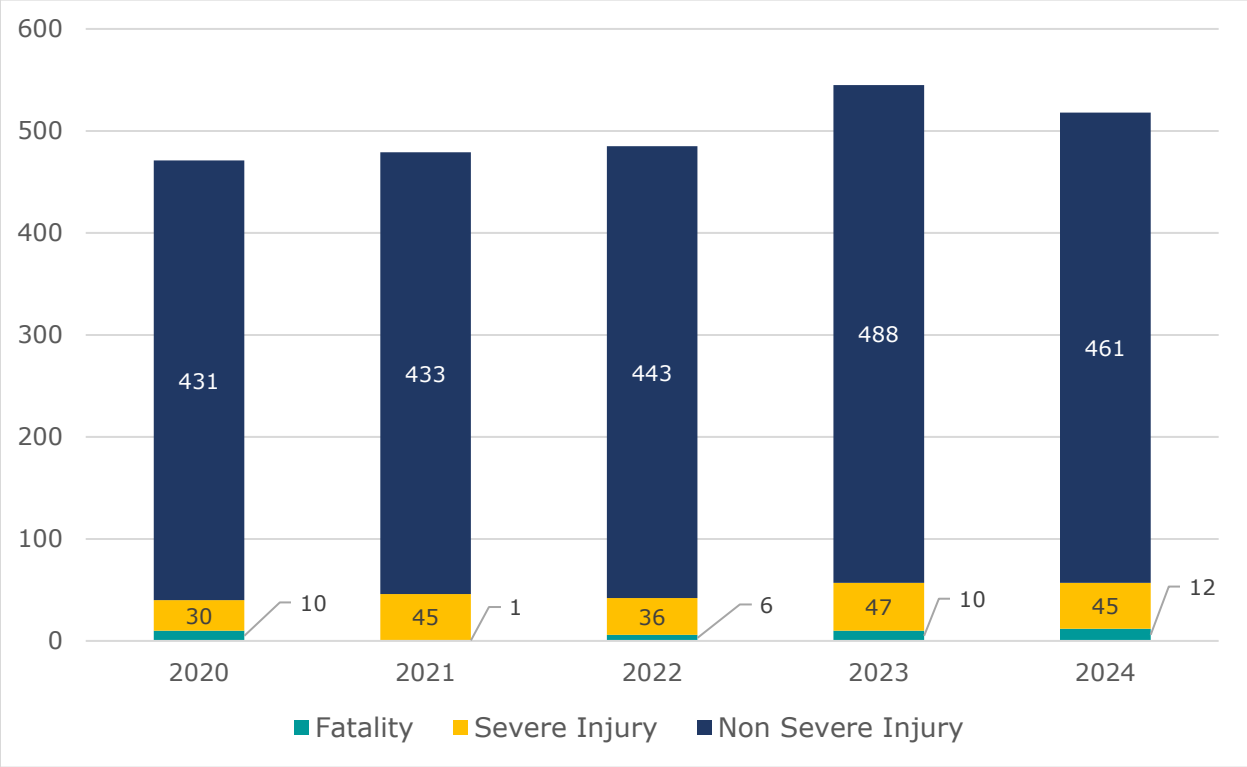
Comprehensive Plan

The Comprehensive Plan, called “Our Vancouver 2045”, is one of our community’s most important tools to help plan for future growth. Engagement activities include public mapping workshops, community conversations, tabling, online story maps with commenting abilities, and community based organization and community engagement liaison led discussions. This will be ongoing throughout the Comprehensive Plan update process to ensure that the public has the opportunity to continuously provide input on transportation needs and priorities related to future growth.

Crash Data Summary

The data in this report reflect crashes on City of Vancouver streets from 2020 through 2024, with a focus on crashes that resulted in a fatality or severe injury. There were 39 fatal traffic crashes in Vancouver from 2020-2024, an average of almost eight per year. In the same period, 203 crashes resulted in severe injury. Fatal crashes peaked in 2024 with 12 fatalities. Severe injury crashes have increased over the course of the five-year period, peaking in 2023 with 47.

Figure 1: Injury Crashes by Year and Most Severe Injury



There were 77 fatal and severe injury crashes involving a pedestrian or bicyclist. Crashes involving pedestrians were more likely to result in a fatality or severe injury than crashes involving other modes (Figure 2). From 2020-2024 in Vancouver, 41% of fatal traffic crashes involved a pedestrian (Figure 3). Pedestrians include people walking and people on personal conveyance devices such as skateboards or wheelchairs. Similarly, between 2020 and 2024, cyclists were involved in 5% of fatal traffic crashes and 9% of severe-injury collisions. Cyclists represent people riding bicycles, tricycles or unicycles.

Figure 2: Severity of Crashes by Mode

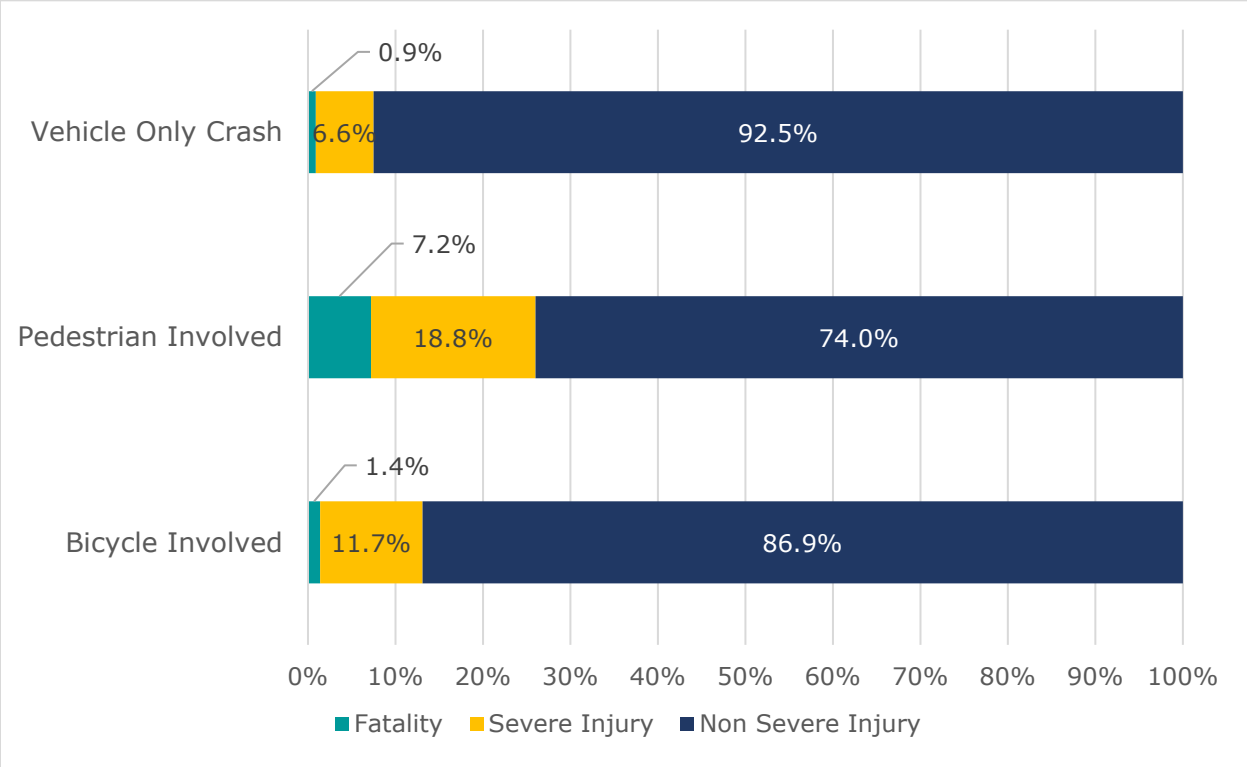
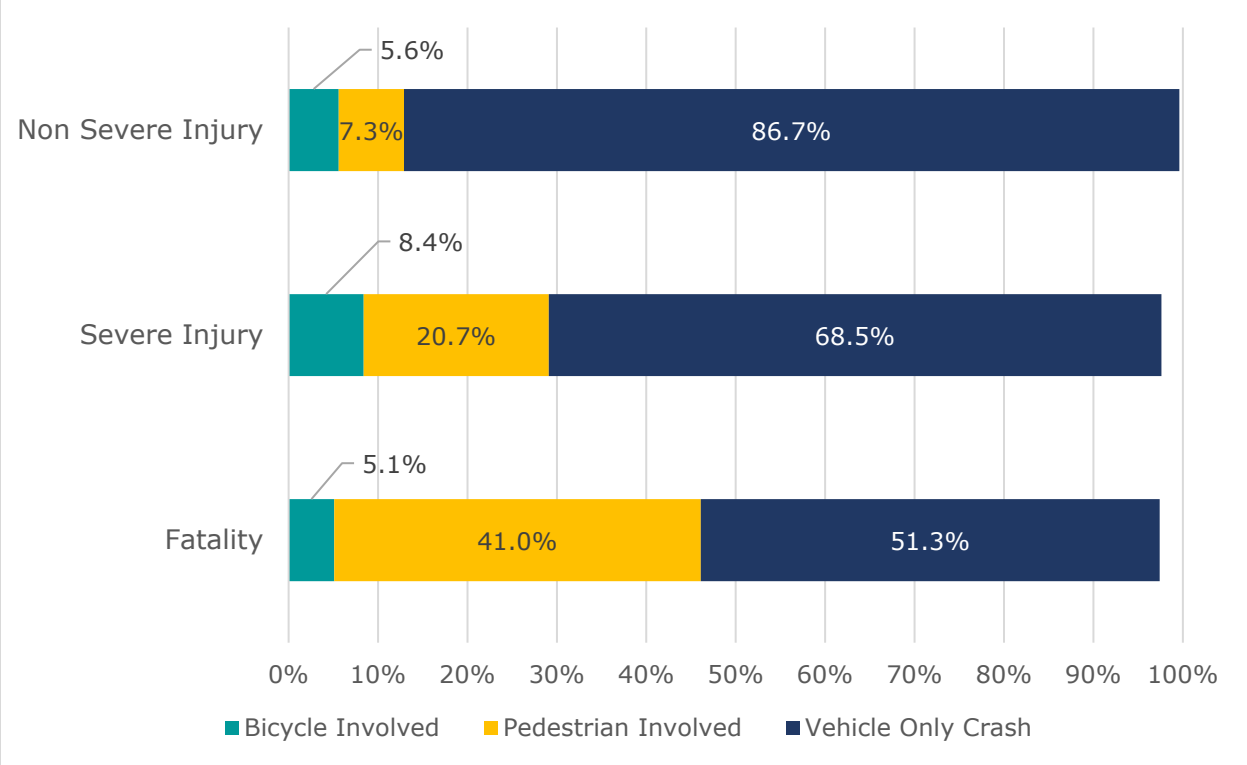


Figure 3: Mode of Crashes by Severity

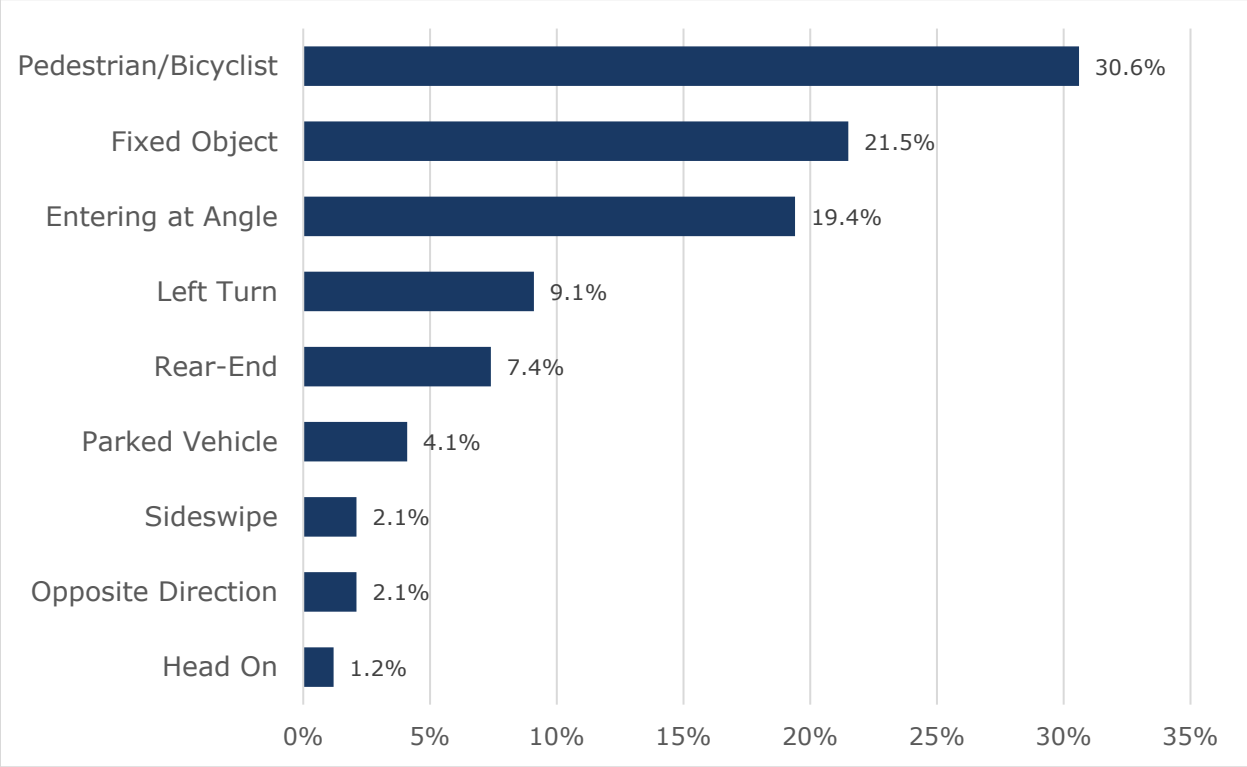


Fatal and Severe Crash Factors

This section examines the most common human and environmental factors associated with fatal and severe crashes in Vancouver between 2020 and 2024. All categories reported in the following figures are taken from crash reports filled out by responding officers at crash scenes.

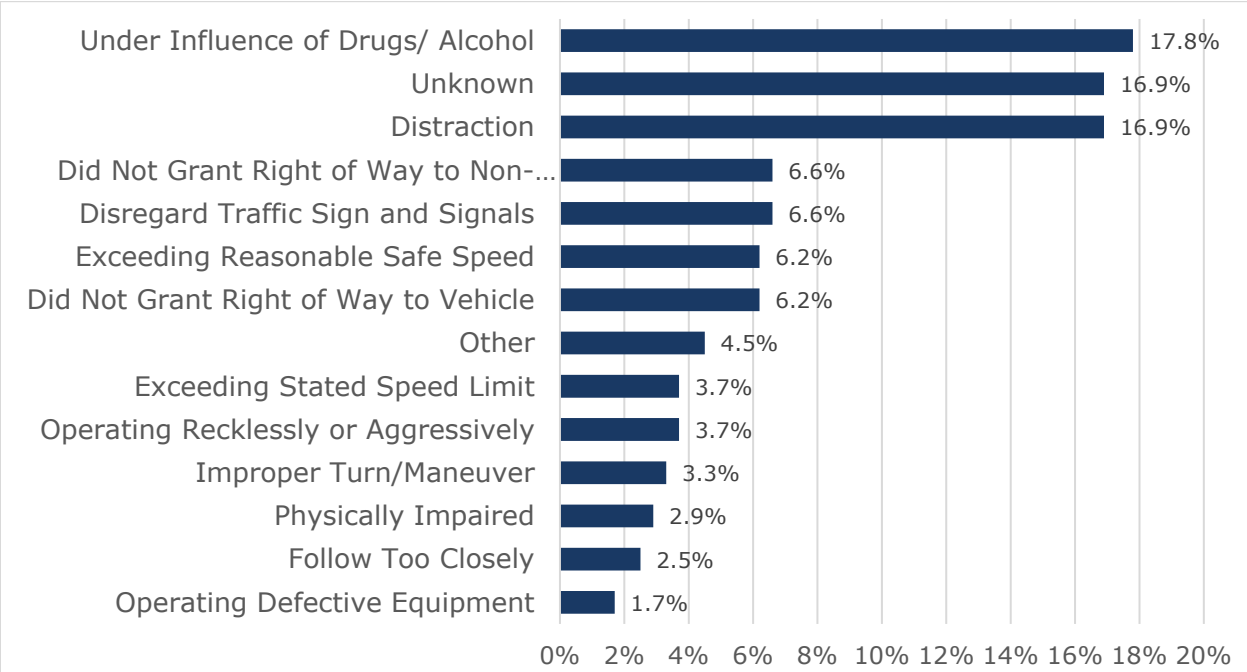
The most common first collision type was involvement with a pedestrian or bicyclist, comprising 31% of all fatal and severe crashes. The second most common was a vehicle fixed object (22%), in which the vehicle collides with an object such as road sign, utility pole, or fence. The third most common was entering at angle (19%). Figure 4 shows the top fatal and severe injury collision types, labeled with the total number of fatal and severe injury collisions and the percent of total in each category.

Figure 4: First Collision Type of Fatal and Severe Crashes



Driving under the influence of drugs or alcohol was the most common contributing factor reported for drivers, present in 18% of fatal and severe crashes. Distraction (17%) was also a common circumstance. Note that a significant portion of crashes did not have a circumstance listed (unknown, 17%). Figure 5 shows the contributing circumstances for drivers involved in fatal and severe crashes.

Figure 5: Driver Contributing Circumstances for Fatal and Severe Crashes



Over 40% of fatal and 20% of severe crashes in Vancouver involved a pedestrian. As shown in Figure 6, the primary contributing factor in pedestrian collisions was "did not grant right of way to vehicle" (21%), followed by distraction (10%). Note that a significant portion of these crashes had an unknown pedestrian circumstance. Additionally, Figure 7 shows the action of pedestrians involved in fatal and severe crashes. The most common, at 34% of the total, was a pedestrian crossing at a non-intersection location with no crosswalk present. An additional 19% occurred at signalized intersections, with 11% involving a pedestrian crossing with the signal and 8% involving a pedestrian crossing against the signal.

Figure 6: Circumstances of Pedestrian Fatal and Severe Crashes

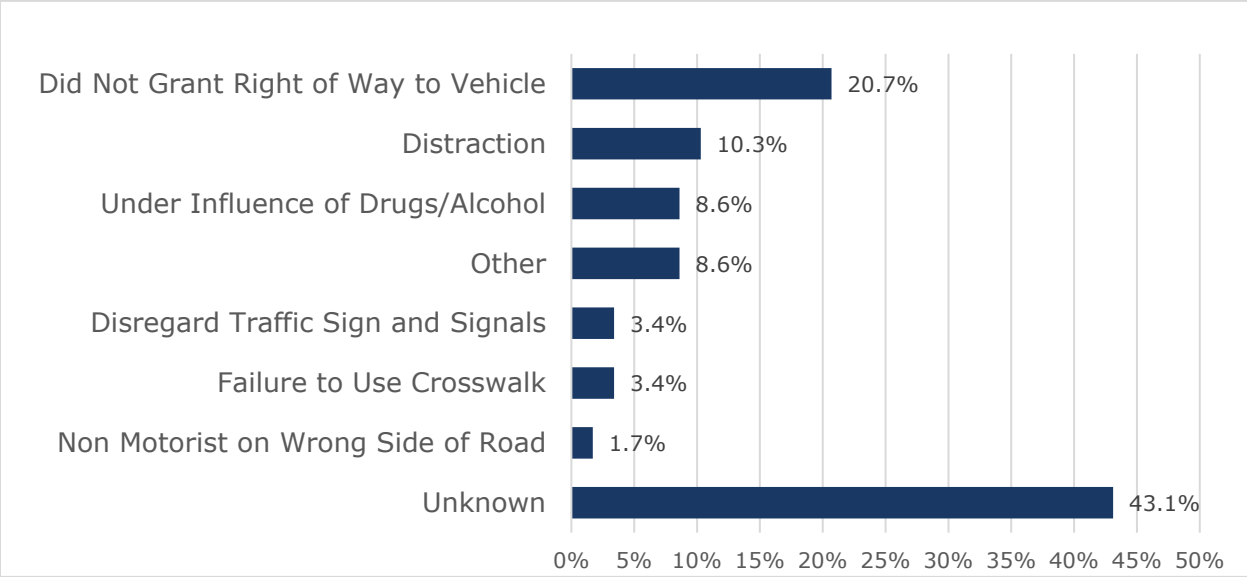
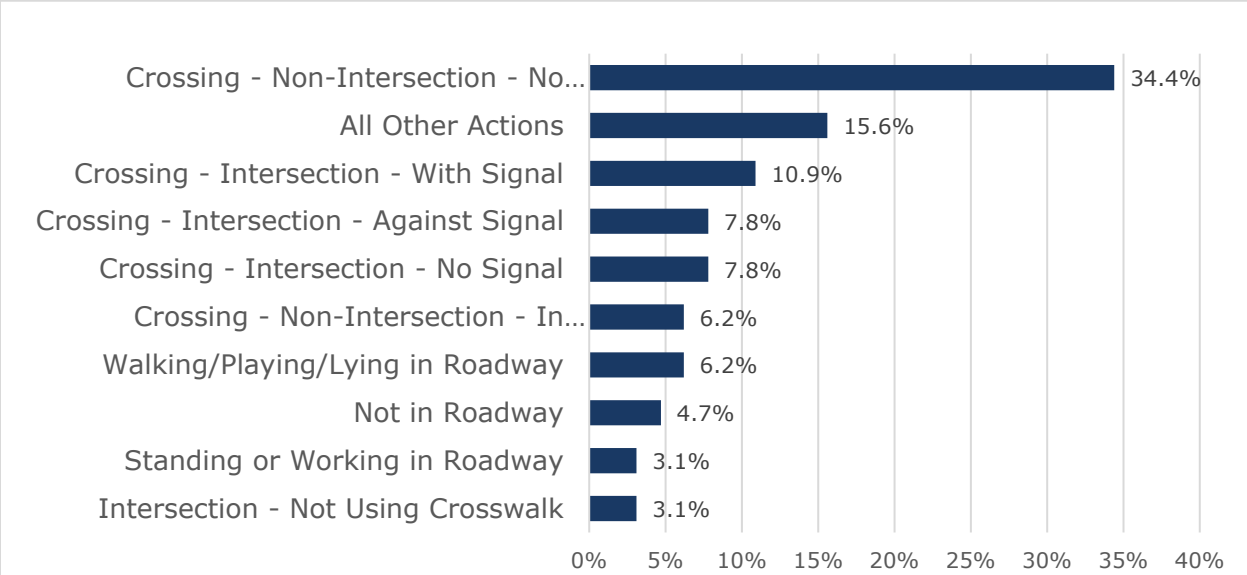


Figure 7: Pedestrian Action of Pedestrian Fatal and Severe Crashes



Environmental and Roadway Factors

Environmental factors in the crash data include roadway surface conditions, lighting conditions, and weather conditions. For all categories of fatal and severe collisions in Vancouver (including those not involving pedestrians), Figure 8 indicates that the majority occurred under clear (62%), overcast (20%), and clear or partly cloudy (6%) weather conditions. Adverse weather conditions comprised the remaining, which largely consisted of rainy conditions (12%). Consequently, the roadway surface was typically dry (Figure 9): 77% of fatal and severe crashes took place on dry pavement, while 23% involved wet or snowy pavement.

Figure 8: Weather Conditions of Fatal and Severe Crashes

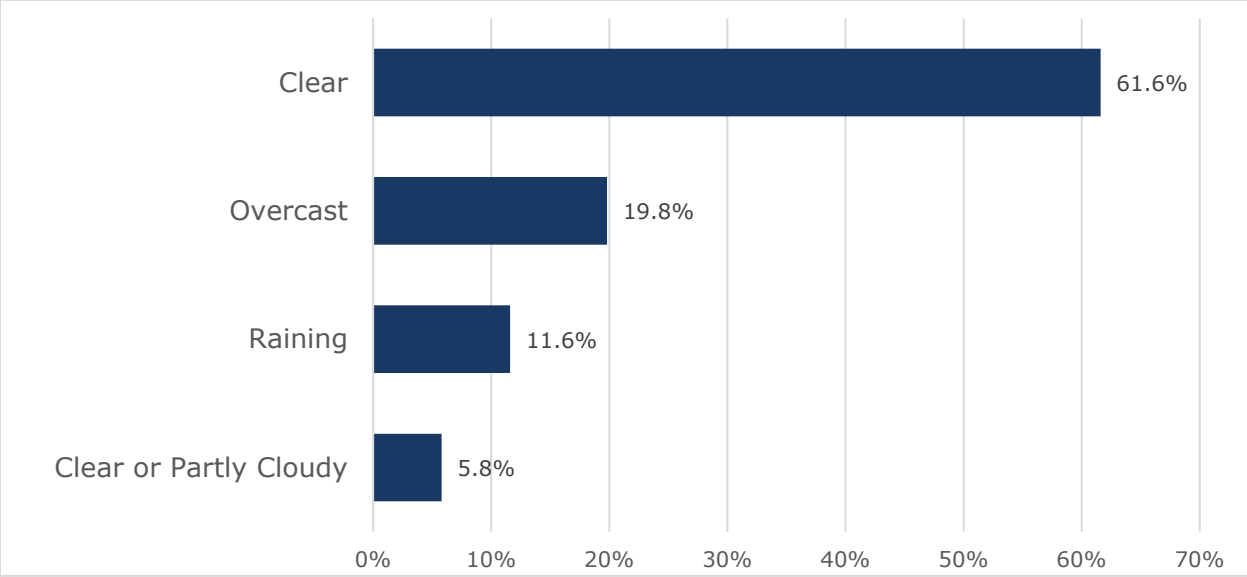


Figure 9: Roadway Surface Conditions of Fatal and Severe Crashes

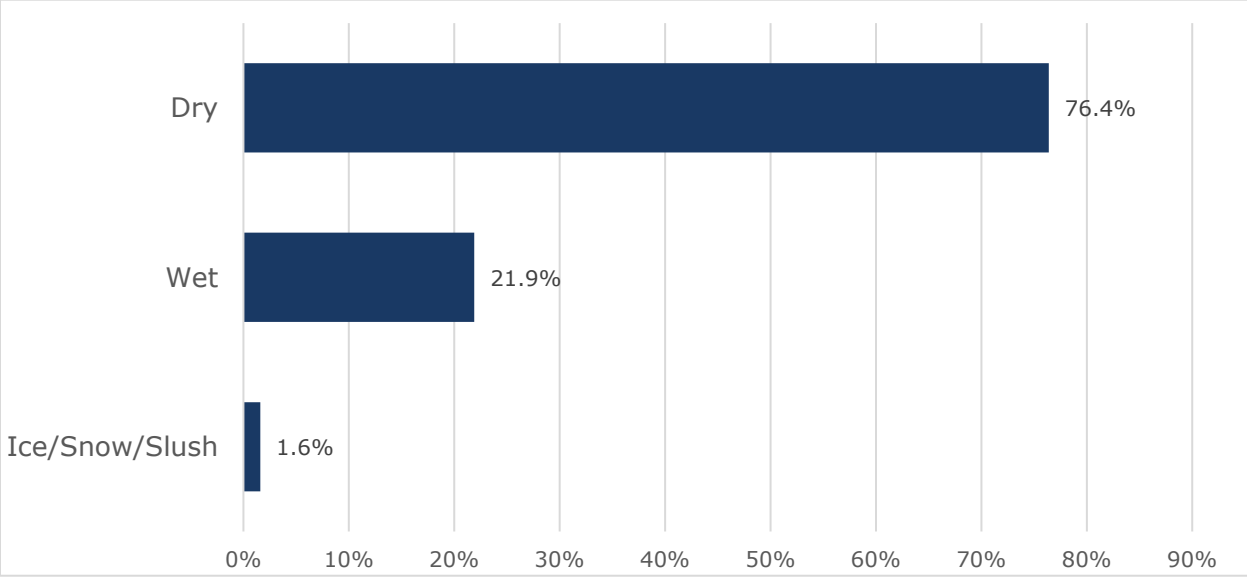


Figure 10 illustrates the distribution of crashes according to the road lighting conditions. Crashes were nearly evenly split between daylight (50%) and dark/dawn/dusk (50%) occurrences. Among crashes that occurred in the dark, most occurred with street lights on (43%). Figure 11 shows the distribution of crashes by time of day. In alignment with the lighting conditions, most crashes occurred between 4 PM and 4 AM (57%).

Figure 10: Light Conditions of Fatal and Severe Crashes

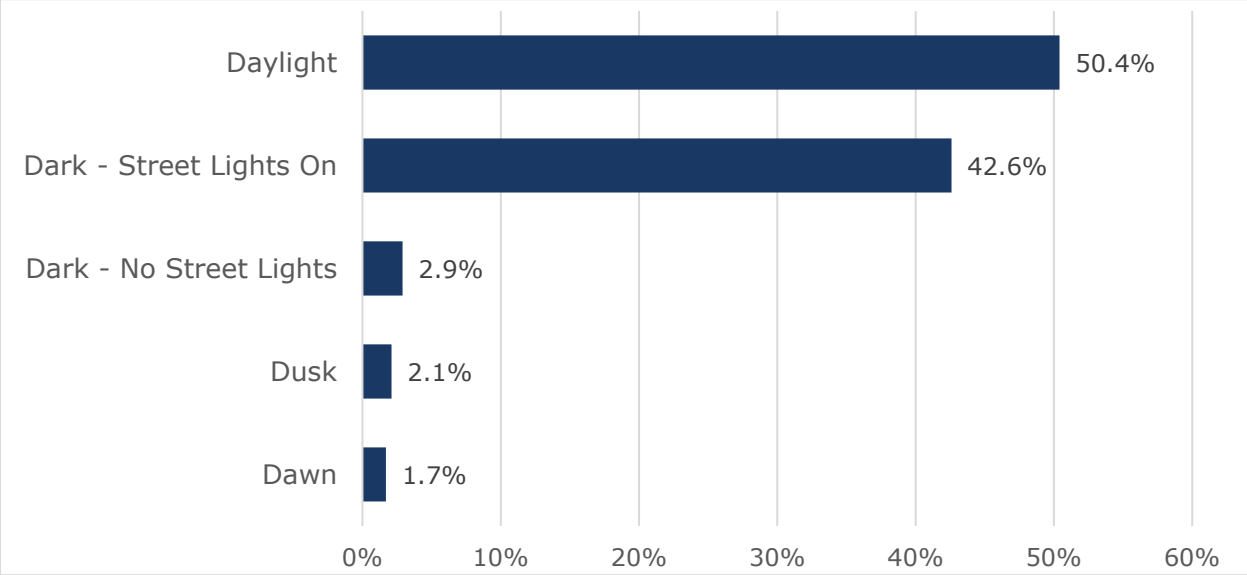
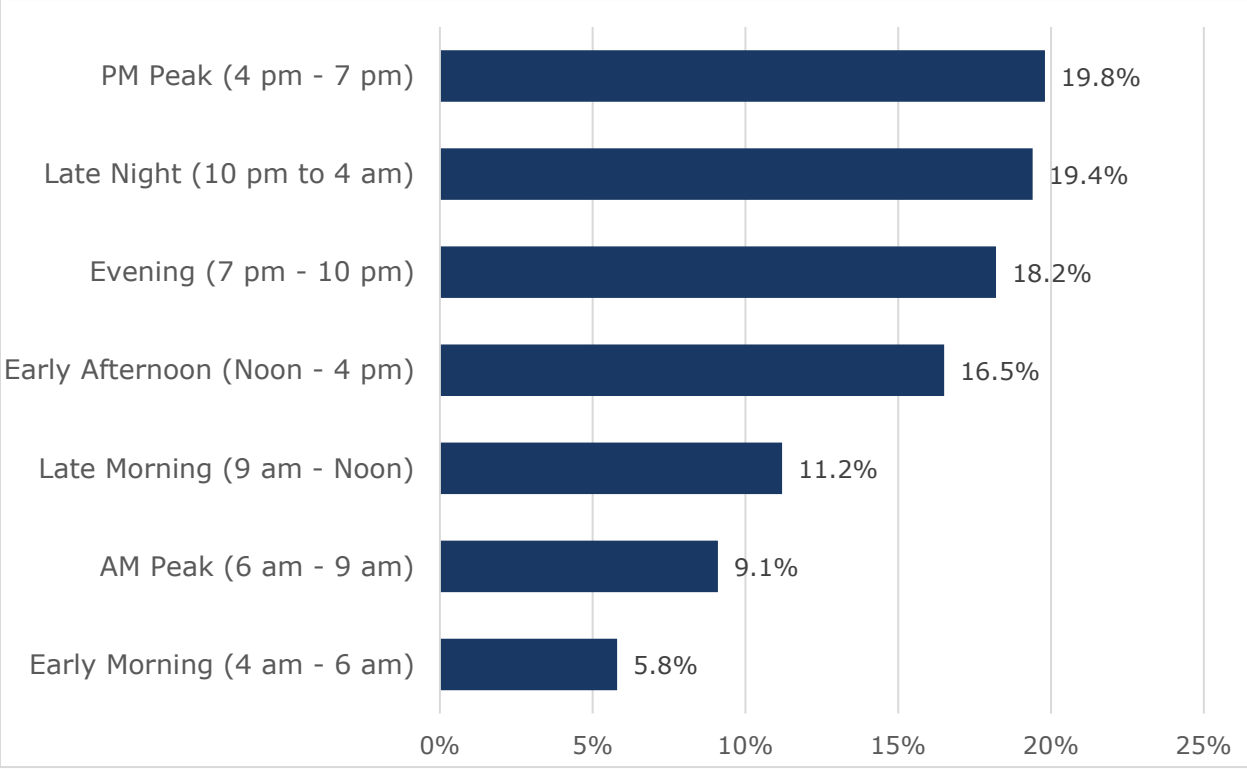


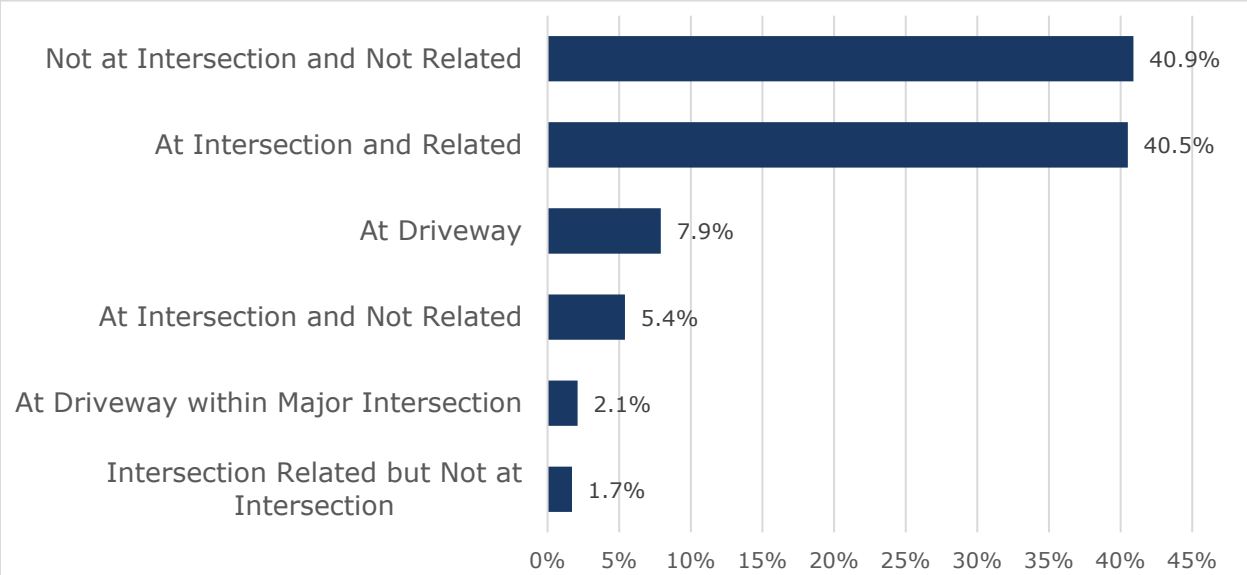
Figure 11: Time of Day of Fatal and Severe Crashes



Roadway Factors

Roadway factors in the crash data include characteristics related to intersections, functional class, and speed limit. Per Figure 12, most crashes occur along segments (41% not at intersections and not related), followed by intersections (41% at intersection and related), and driveways (8%). Among crashes at intersections, most are directly connected to the intersection itself, whereas only a minor proportion occurred within the intersection but were unrelated to its function (e.g. speeding through intersection).

Figure 12: Intersection relationship of fatal and severe crashes



Per Figure 13, the highest occurrence of fatal and severe crashes is observed on principal arterials (34%), followed by minor arterials (23%), major collectors (22%), and other/local roads (21%).

Figure 13: Functional Classification of Fatal and Severe Crashes

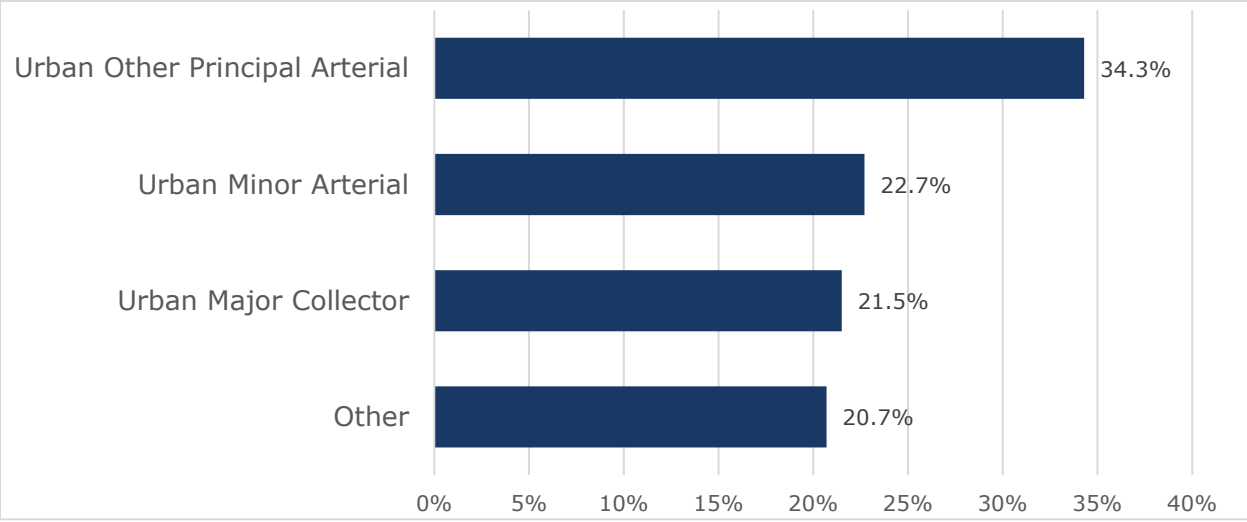


Figure 14 shows the relationship between posted speed and the frequency of fatal and severe crashes. 43% of crashes occur at posted speeds of 25 mph or less, while an additional 55% take place within the range of 30 to 50 mph.

Figure 14: Posted Speed Limit of Fatal and Severe Crashes

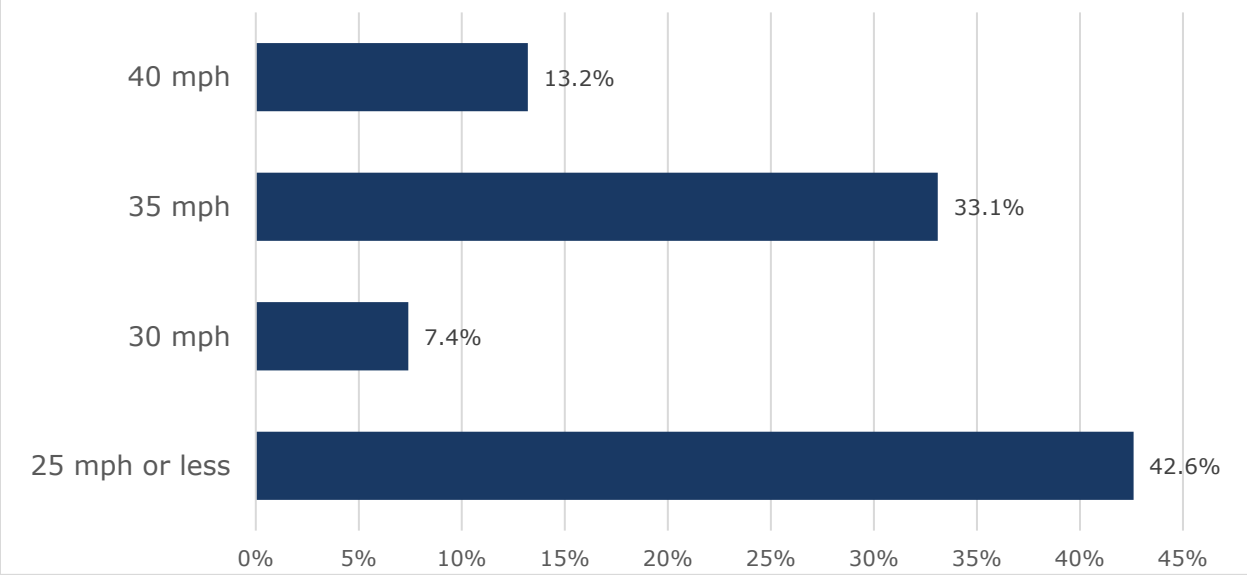
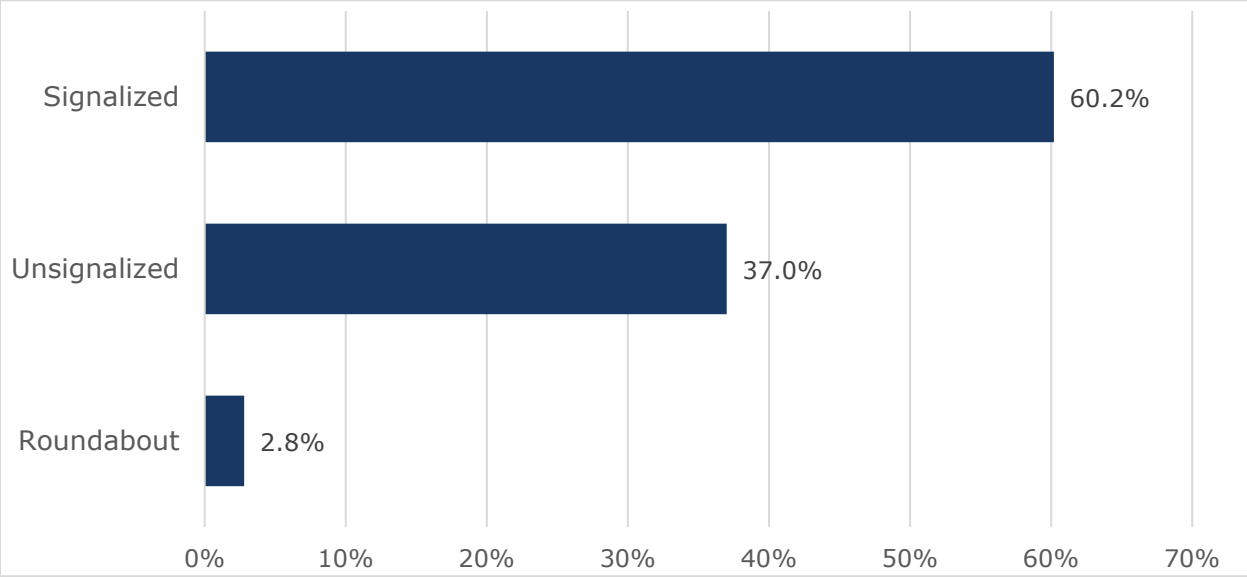


Figure 15 illustrates the types of intersections at which crashes occur. Most crashes happen at signalized intersections (60%), followed by unsignalized intersections (37%), with very few (3%) at roundabouts.

Figure 15: Intersection Type of Fatal and Severe Crashes



Identifying Crash Factors and Locations

The Target Zero Washington State Strategic Highway Safety Plan 2024[1] identifies the statewide highest priority crash factors. This report identifies the top priorities in two tiers. Priority Level One factors occur in at least 25% of total fatality and serious injury crashes, including impairment, distraction, speeding, lane departures, intersections, and young drivers. Priority Level Two factors occur in less than 25% of total fatality or serious injury crashes like heavy truck crashes and pedestrian and bicyclist crashes.

This report focuses on infrastructure investment and uses the Safe System Approach to identify roadway design needs to accommodate for human mistakes and injury tolerances to effectively reduce fatalities and severe injuries for all crash types. Therefore, high crash locations are identified and countermeasures oriented towards infrastructure solutions, as factors such as impairment and distraction can be more directly addressed with programmatic rather than infrastructure solutions.

The top ten crash intersection and segment locations are listed in Table 1 and Table 2 and shown on the maps in Figure 16 and Figure 17.

Locations Over Time

Looking back over the last decade, comparing the 2016-2020 analysis to the most previous 2018-2022 analysis, most of the top intersections changed and almost all of the top segments stayed the same. Now, comparing the 2018-2022 analysis to the 2020-2024 analysis, half the top intersections changed and the majority of the top segments changed. Some of this change in locations for both intersections and segments can be attributed to utilizing data for the same years across analysis periods while some of the changes can be attributed to minor changes in methodology as well as investment in mitigating safety concerns, both infrastructurally and programmatically.

[1] Target Zero is a policy working to reduce all traffic deaths on roadways and specifically believes that here in Washington State, everyone should be able to use the roads without fear of being killed or seriously injured in a crash. The City will develop and adopt its own Vision Zero policy per the 2024-2044 Transportation System Plan, as a commitment to end traffic fatalities and serious injuries on Vancouver streets by 2040.

Table 1: Top Intersections by Crash Weight, 2020-2024

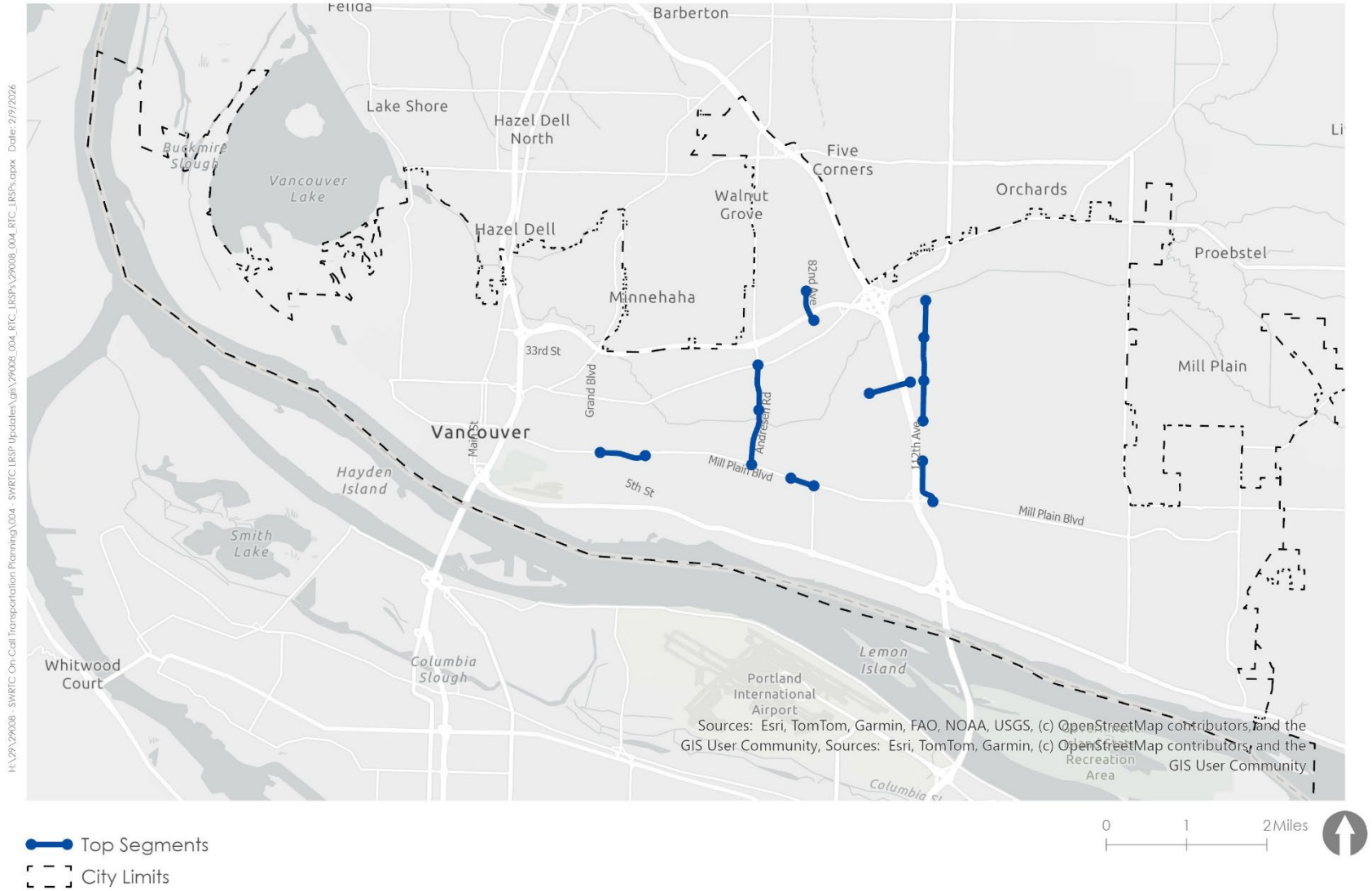
Rank	Intersection	Total Crash Weight/Mile	Previous LRSP
1	N Andresen Rd and E Mill Plain Blvd	85	Yes
2	NE Burton Rd and NE 86th Ave	66	Yes
3	NE Andresen Rd and NE 78th St	63	No
4	NE 112th Ave and NE 18th St	61	Yes
5	NE Andresen Rd and NE Fourth Plain Blvd	59	No
6	NE Gher Rd and NE Coxley Dr	59	No
7	NE Gher Rd and NE Fourth Plain Blvd	57	Yes
8	Grand Blvd and E Mill Plain Blvd	57	Yes
9	NE 121st Ave and NE Fourth Plain Blvd	56	No
10	SE 164th Ave and SE Mill Plain Blvd	56	No

Table 2: Top Segments by Crash Weight, 2020-2024

Rank	Segment	Total Crash Weight/Mile	Previous LRSP
1	NE 112th Ave: NE 28th St to NE 18th St	247	Yes
2	NE Andresen Rd: NE Fourth Plain Blvd to NE 18th St	194	No
3	NE 112th Ave: NE 39th St to NE 28th St	187	Yes
4	NE 112th Ave: NE 49th St to NE 39th St	136	No
5	NE 82nd Ave: NE Vancouver Mall Dr to NE Vancouver Plaza Dr	124	No
6	NE Andresen Rd: E 18th St to E Mill Plain Blvd	123	No
7	NE 112th Ave: NE 9th St to SE Mill Plain Blvd	114	No
8	E Mill Plain Blvd: Grand Blvd to Brandt Rd	110	Yes
9	NE Burton Rd: NE 98th Ave to NE 109th Ave	105	No
10	E Mill Plain Blvd: N Garrison Rd to N Lieser Rd	101	No

Figure 16: Top Ten Intersections by Crash Weight, 2020-2024

Figure 17: Top Ten Road Segments by Crash Weight, 2020-2024



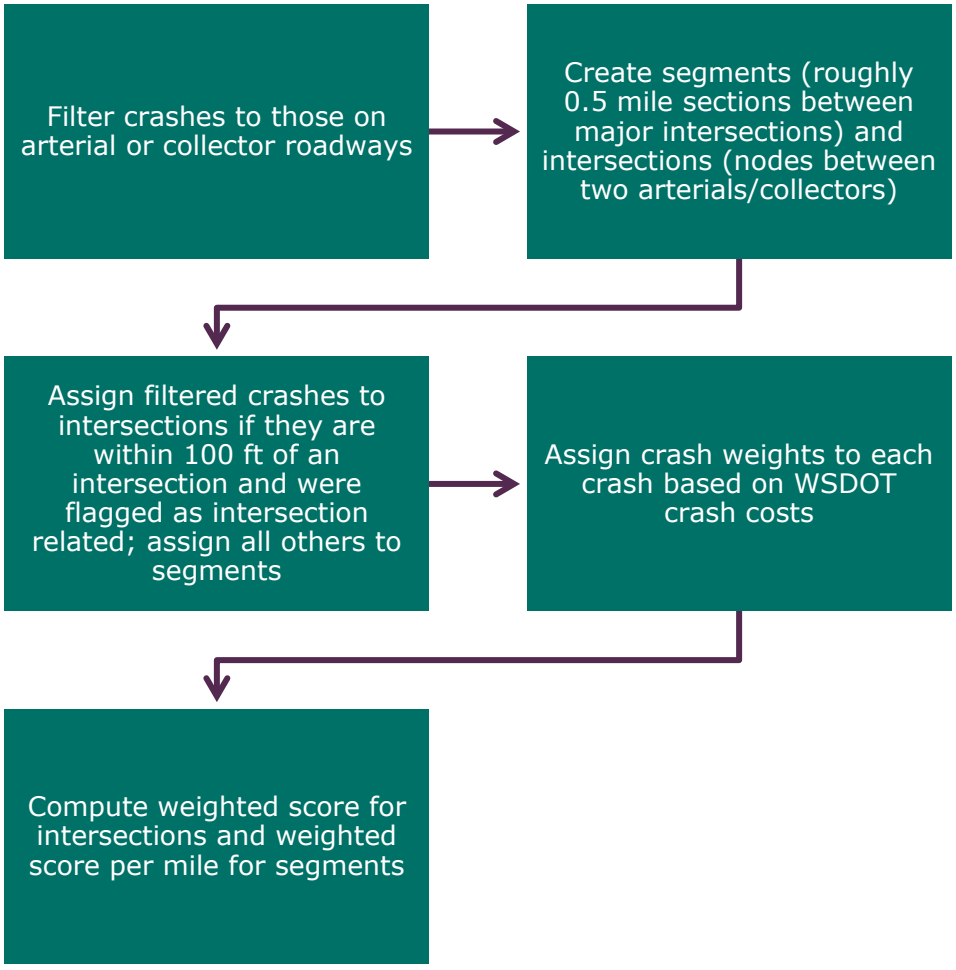
Crash Weight Methodology

The crash weighting analysis focuses on roadway segments and intersections where safety concerns are most prevalent. The analysis includes all city-owned street segments classified as arterials or collectors, as well as intersections where both intersecting streets are classified as arterials or collectors. Local streets were excluded from the analysis, as approximately 80 percent of crashes on city streets occur on arterials or collectors, making these facilities the most relevant for identifying safety priorities.

Crashes were categorized as either intersection-related or segment-related based on their proximity to intersections. Crashes flagged as intersection-related and falling within 100 feet of an intersection were assigned to intersections; all remaining crashes were assigned to the corresponding roadway segments.

To support consistent analysis, arterial and collector roadways were divided into segments of approximately 0.5 miles, generally defined as the sections between major intersections. Intersections were defined as nodes where two arterial or collector streets intersect.

Figure 18: Methodology Flow Chart



Each crash was assigned a weight based on severity, using the relative values from the Washington State comprehensive person-injury unit costs, as documented in the *WSDOT HSIP Implementation Plan, 2025*. More severe crashes, such as those involving fatal or serious injuries, were assigned higher weights to reflect their greater social and economic impacts.

Weighted crash scores were then calculated for each intersection and roadway segment. For intersections, the total weighted score represents the cumulative severity of crashes occurring at that location. For roadway segments, weighted crash scores were normalized per mile to allow for consistent comparison across segments of varying lengths. These weighted scores were used to identify locations with the highest concentration of severe crashes and to help prioritize safety improvements.

Table 3: Recommended Crash Costs by Crash Severity for WA State (HSIP Implementation Plan, 2025)

Crash Severity Level	Comprehensive Person-Injury Unit Cost (rounded to nearest $100)	Crash Weight
K (Fatal)	$4,445,300	24
A (Severe Injury)	$4,445,300	24
B (Evident Injury)	$315,500	2
C (Possible Injury)	$186,000	1
O (Property Damage Only)	$18,600	0

Countermeasures

Countermeasures are determined and used to address fatal and serious injury crashes on the roadways in Vancouver and come from the Target Zero Plan 2024 and Federal Highway Administration's Proven Safety Countermeasures.

To illustrate this practice, one high crash intersection and one high crash segment are detailed in this report with recommended countermeasures to reduce crashes given their specific roadway characteristics and crash types. For each, a table lists potential countermeasures including:

- Target Zero strategy number and description, or other source, if applicable.
- Crash type addressed.
- If the countermeasure is proven or recommended, and Crash Reduction Factor (CRF), detailing likely impact of countermeasure to reduce fatal and serious injury crashes, when available.

Example Countermeasures for Intersections: NE Burton Rd and NE 86th Ave

The intersection of NE Burton Road and NE 86th Avenue is the second highest ranked intersection. Both NE Burton Road and NE 86th Avenue have three motor vehicle lanes (two travel lanes and a center turn lane), and mostly unbuffered bicycle lanes without marking through the intersection. In 2022 the average daily traffic was 9,789 along NE 86th Avenue and 14,391 along NE Burton Road (RTC Traffic Counts). C-TRAN route 30 runs along NE Burton Road and serves eastbound and westbound bus stops a few hundred feet from the northwest and southeast corners of the intersection. There are marked crosswalks across all four legs of the intersection and recently added leading pedestrian intervals (LPIs). Two separate commercial driveways in both the southeast and southwest corners serve a small convenience store and beer/specialty food store, respectively. NE 86th Avenue is currently being studied for opportunities for safer and more comfortably travel for all roadway users, with improvements such as the noted recommended countermeasures below anticipated for implementation with upcoming pavement work as soon as 2027. This study is further analyzing the intersection and confirming the countermeasures from this list to include with the pavement or future implementation project.

Figure 19: Intersection of NE Burton Road and NE 86th Avenue

Table 4: Countermeasures NE Burton Road and NE 86th Avenue Intersection

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
INT.1.2 Install or convert intersections to roundabouts	Crashes at intersections, particularly angle crashes	Proven, CRF of 50 – 100% for fatal and severe crashes
INT.1.10: Install lighting	Crashes after dark	Recommended, CRF 42% for nighttime injury pedestrian crashes at intersections 33-38% for nighttime crashes at rural and urban intersections
INT.1.16 Implement systemic signing, marking, and visibility improvements at intersections	Crashes involving people walking at intersections	Recommended, CRF 5%
INT.3.5 Increase visibility of signals and signs at intersections	Crashes involving people walking or biking	Recommended, CRF 29%
PAB 1.3 Revise design practices to emphasize context and target speed to reflect the needs of people walking and biking	Crashes involving people walking or biking	Recommended
PAB.2.1: Reduce crash exposure safety at pedestrian and bicyclist crossings by investing in and installing refuge islands and raised crossings, and shortening crossing distances with bicycle friendly curb extensions where these crosswalk enhancements are needed	Crashes involving people walking or biking	Proven, Refuge island CRF 56%
PAB.3.3 Invest in and construct more buffered bike lanes, protected separated bicycle lanes, and separated bicycle facilities or	Crashes involving people walking or biking	Unknown

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
shared-use paths, especially in urban areas and adjacent to schools, bus stops, and school walk areas.		
PAB.3.5 At traffic signals, use bicycle signal heads. At intersections install colored bicycle boxes.	Crashes involving people biking	Unknown
NACTO: Intersection treatments such as bike boxes, bike conflict marking through intersection	Crashes involving people biking	Recommended
FHWA: Install pavement markers and striping through intersections	Crashes at intersections	Proven, CRF 10%
FHWA: Crosswalk visibility enhancements including high-visibility crosswalks, advance stop marking, ped-scale lighting	Crashes involving people walking at intersections	Proven CRF of 40% and 42%

Example Countermeasures for Segment: NE 112th Ave from NE 39th St to NE 28th St

The corridor on NE 112th Avenue from NE 39th Street to NE 28th Street is the third highest ranked roadway segment. NE 112th Avenue is a major arterial with two lanes per direction and a center turn lane. The average daily traffic (ADT) on NE 112th Avenue in both directions amounts to more than 23,500 vehicles.[2] The intersection with NE 28th Street has dual turn left turn lanes and does not have bike lanes continue through the intersection. There are multiple commercial driveways along this corridor to access mostly industrial and commercial businesses. The C-TRAN Route 80 runs along this corridor and has three bus stops on 112th Avenue as well as two stops just north of the NE 39th Street intersection. This segment is within the bounds of the 112th Avenue Safety and Mobility Project, which utilizes the identified countermeasures and additional recommendation to provide a framework for safety improvements, which will occur with planned pavement work in this segment as soon as 2026.

[2] AADT (2023) - 112th Ave Existing Conditions Report

Figure 20: Roadway on NE 112th from NE 39th Street to NE 28th Street

Table 5: Countermeasures NE 112th Avenue from NE 39th Street to NE 28th Street Segment

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
INT.1.2 Install or convert intersections to roundabouts	Crashes at intersections, particularly angle crashes	Proven, CRF of 50 – 100% for fatal and severe crashes
INT.1.3 Convert four-lane roadways to three-lane roadways with center turn lane (*road diet*)	Unsafe speed, pedestrian crossing	Proven, CRF 19-47%
INT.1.9: Modify signal phasing to implement a leading pedestrian interval	Crashes involving people walking or biking at intersections	Proven, CRF 13%
INT.1.10: Install lighting / LDX.3.4 Install lighting	Crashes after dark	Recommended, CRF 42% for nighttime injury pedestrian crashes at intersections 33-38% for nighttime crashes at rural and urban intersections
INT.1.13 Optimize traffic signal clearance intervals	Crashes involving people walking at intersections	Recommended, CRF 37%

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
INT.1.15 Implement restricted access to properties/driveways adjacent to intersections using closures or turn restrictions	Crashes involving people walking or biking	Recommended
INT.1.16 Implement systemic signing, marking, and visibility improvements at intersections	Crashes involving people walking at intersections	Recommended, CRF 5%
INT.3.1 Add retroreflective borders to signal back plates	Disregard signal	Proven
INT.3.4 Increase sight distance (visibility) of intersections on approaches	Crashes involving people walking or biking	Recommended
INT.3.5 Increase visibility of signals and signs at intersections	Crashes involving people walking or biking	Recommended, CRF 29%
PAB.1.2 Invest in and construct roadway reconfigurations, roundabouts and other recommended FHWA safety countermeasures specific to pedestrian and bicyclist safety	Crashes involving people walking or biking	Recommended, Roundabout with cycle path 17%
PAB 1.3 Revise design practices to emphasize context and target speed to reflect the needs of people walking and biking	Crashes involving people walking or biking	Recommended
PAB.2.1: Reduce crash exposure safety at pedestrian and bicyclist crossings by investing in and installing refuge islands and raised crossings, and shortening crossing distances with bicycle friendly curb extensions where these crosswalk enhancements are needed	Crashes involving people walking or biking at intersections	Proven, Refuge island CRF 56%

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
PAB.2.2 Invest in and increase the use of rectangular rapid flashing beacons and pedestrian hybrid beacons where these crosswalk enhancements are needed	Crashes involving people walking or biking	Recommended, CRF 69%
PAB.2.3: Increase sight distance and visibility at pedestrian and bicyclist crossings by clearing vegetation, extending crossing times, adding pedestrian and bicyclist leading intervals and/or adding pedestrian scale illumination. At mid-block locations, provide adequate distance between stop bars and the crossing	Crashes involving people walking or biking	Recommended, CRF 5%
PAB.3.1 Invest in and construct separated pedestrian facilities (sidewalks and multi-use paths), especially in urban areas and adjacent to schools, bus stops, and school walk areas	Crashes involving people walking or biking	Proven, Sidewalk CRF 59%
PAB.3.3 Invest in and construct more buffered bike lanes, protected separated bicycle lanes, and separated bicycle facilities or shared-use paths, especially in urban areas and adjacent to schools, bus stops, and school walk areas	Crashes involving people walking or biking	Unknown
PAB.3.5 At traffic signals, use bicycle signal heads. At intersections install colored bicycle boxes	Crashes involving people biking	Unknown
FHWA: Crosswalk visibility enhancements including high-visibility crosswalks, advance stop marking, ped-scale lighting	Crashes involving people walking at intersections	Proven CRF of 40% and 42%

Countermeasure Target Zero Strategy	Crash Type Addressed	Proven / Recommended
FHWA: Corridor access management	Crashes at driveways	Proven, CRF 25-31% for fatal and injury crashes along urban/suburban arterials
LDX.3.5: Install edge lines, especially on curves, where adequate shoulders exist	Fixed object	Recommended, CRF 26%
AB.3.3: Invest in and construct more buffered bike lanes, protected separated bicycle lanes, and separated bicycle facilities or shared use paths, especially in urban areas and adjacent to schools, bus stops, and school walk areas	People biking	Proven, Bicycle lane CRF 30% - 49%