

City of Vancouver Transportation System Safety Analysis

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Vancouver City Council Workshop

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Presentation Overview

- Project Purpose
- Existing Safety Conditions
- Segment Safety Analysis
- Intersection Safety Analysis
- Next Steps

Project Need

- City has never completed a system wide collision safety analysis
- Nationwide collisions and related fatalities continue to increase, with a recent spike in fatalities being the most in 50 years
- WSDOT identified the City has having the highest pedestrian fatality and serious injury rate in the state
- Analysis will start to set the policy foundation for the update of the Transportation System Plan

Project Objectives and Outcomes

Complete a baseline collision analysis in preparation for the Transportation System Plan update and development of the Complete Streets policy performance measures



- **Existing Safety Trends**
- **High Priority Locations**
- **Vancouver Countermeasure Toolbox**
- **Ranked Sites for Improvement**
- **Safety Improvement Implementation Plan**

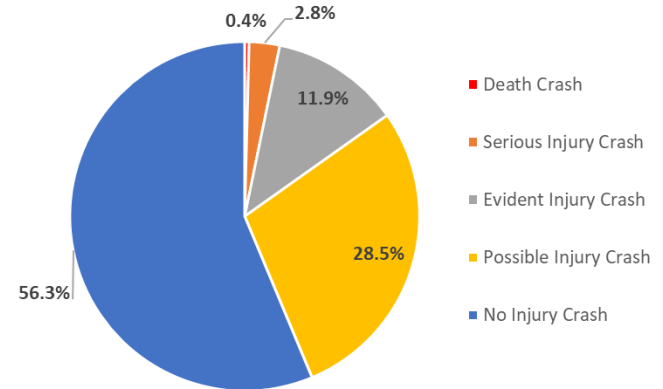
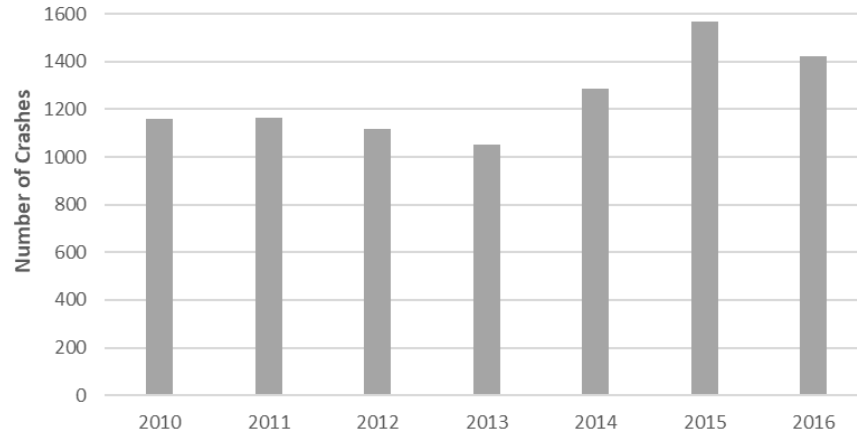
Key Findings

- Speeding, four and five lane roads, and intersections are the most common characteristics associated with collisions
- Young drivers were most frequently involved in collisions
- Distraction/Inattention led to the most collisions
- Distraction, speeding, alcohol and unrestrained occupants led to the most fatalities and serious injuries
- Collisions that involved a pedestrian most frequently resulted in fatalities or serious injuries

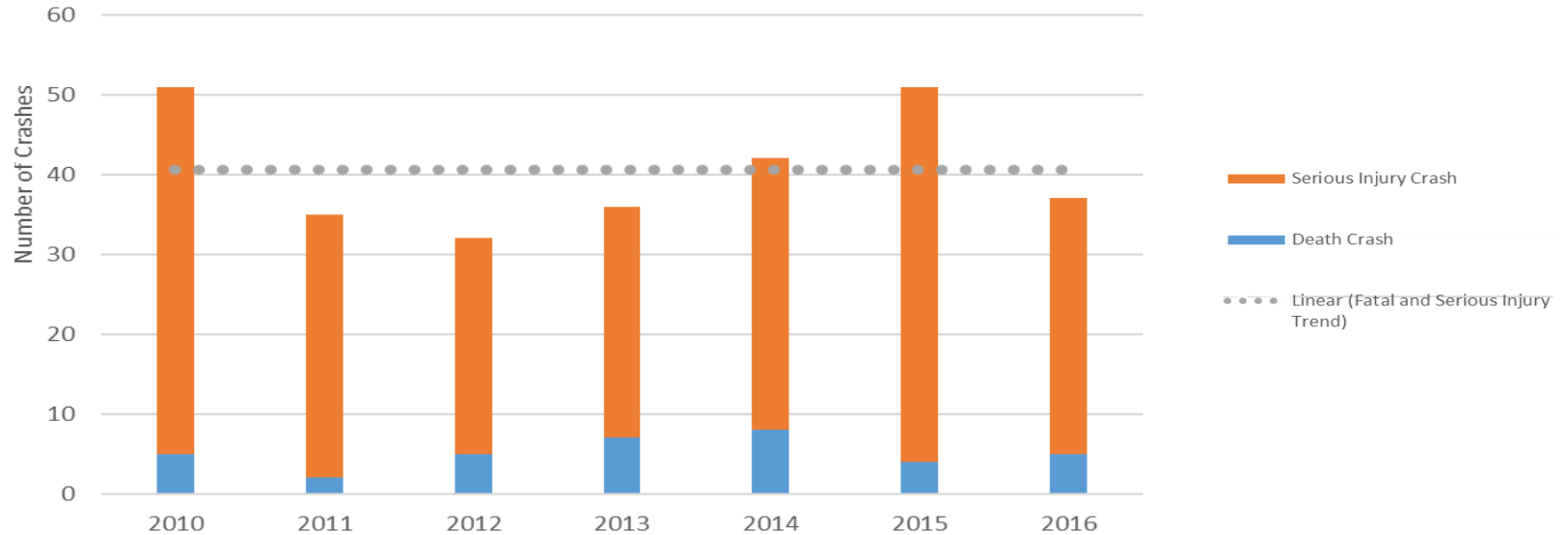
Existing Safety Conditions 2010-2016

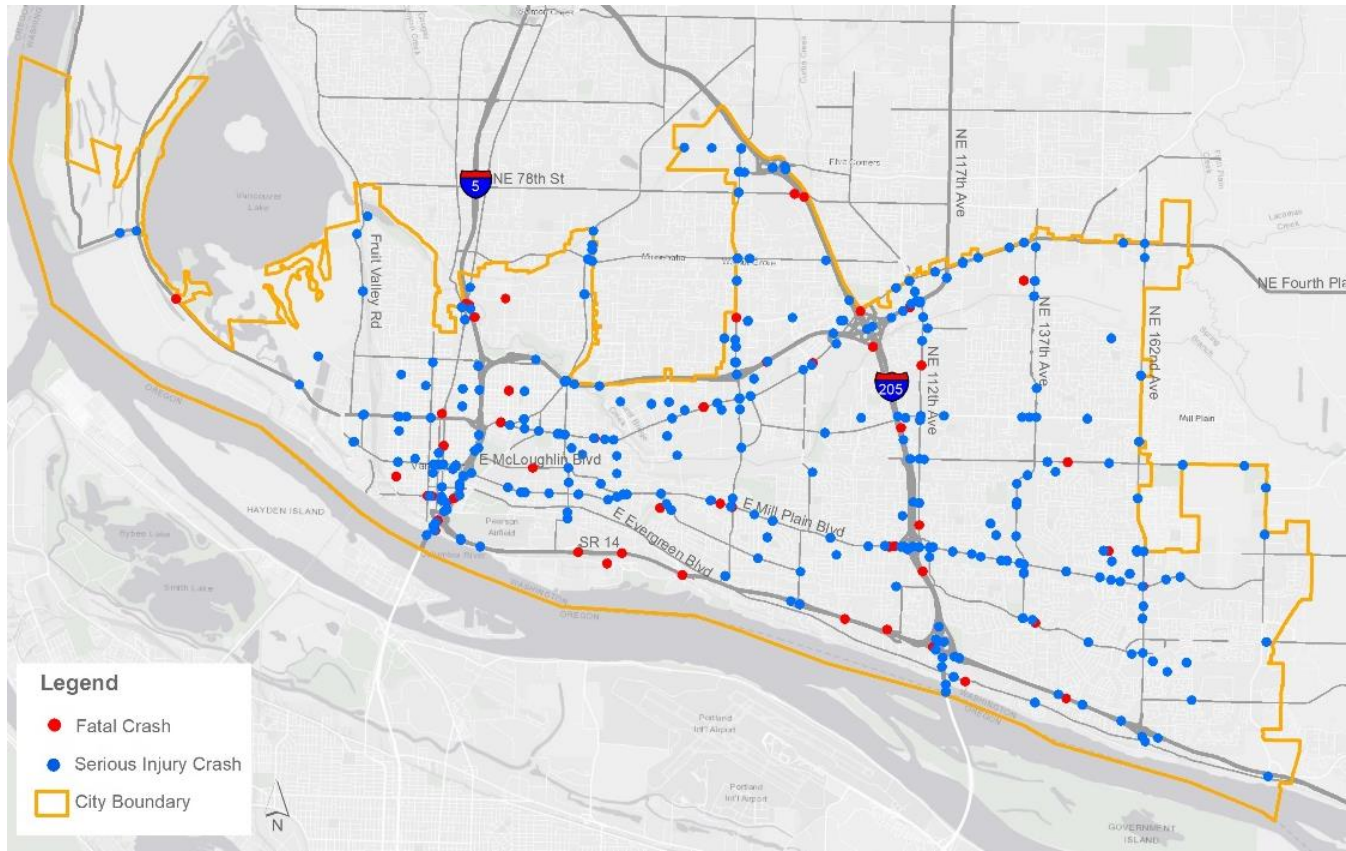
- Analysis based on WSDOT crash data which only includes collisions that a police officer responded to
- Used trend data to compare Vancouver crash factors to the State Strategic Highway Safety Plan to prioritize crash factors
- Priority crash factors were then further analyzed at intersections and segments

Total Number of Crashes



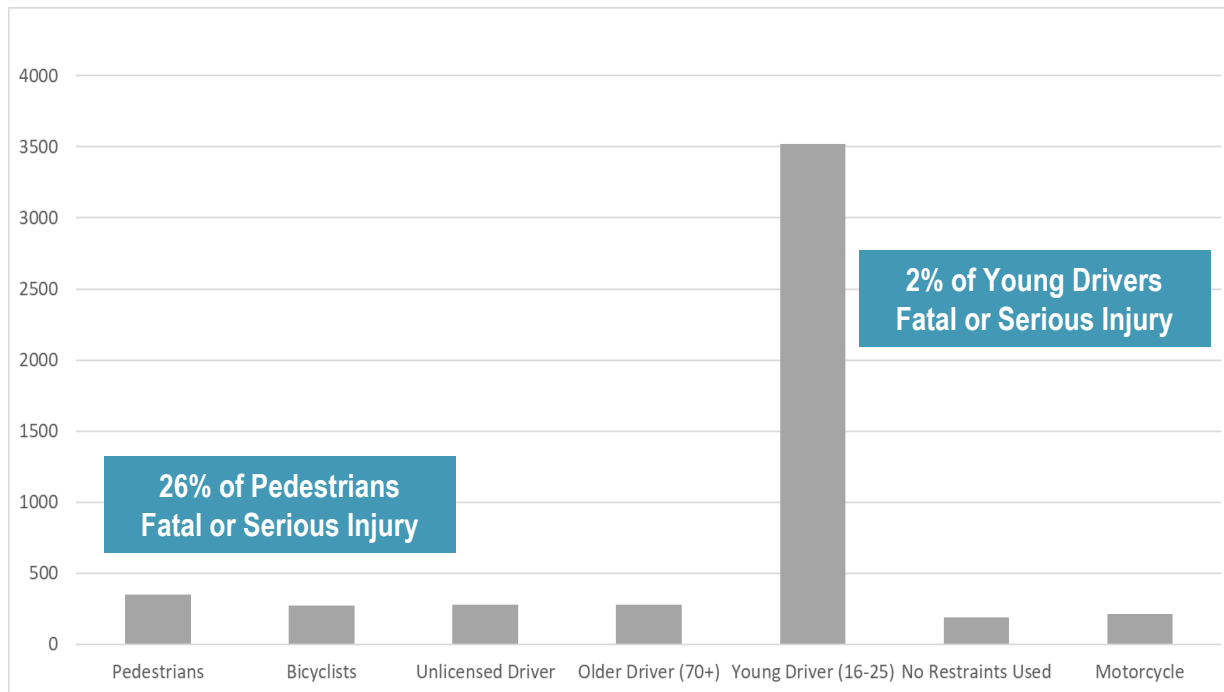
Fatal and Serious Injury Crashes by Year



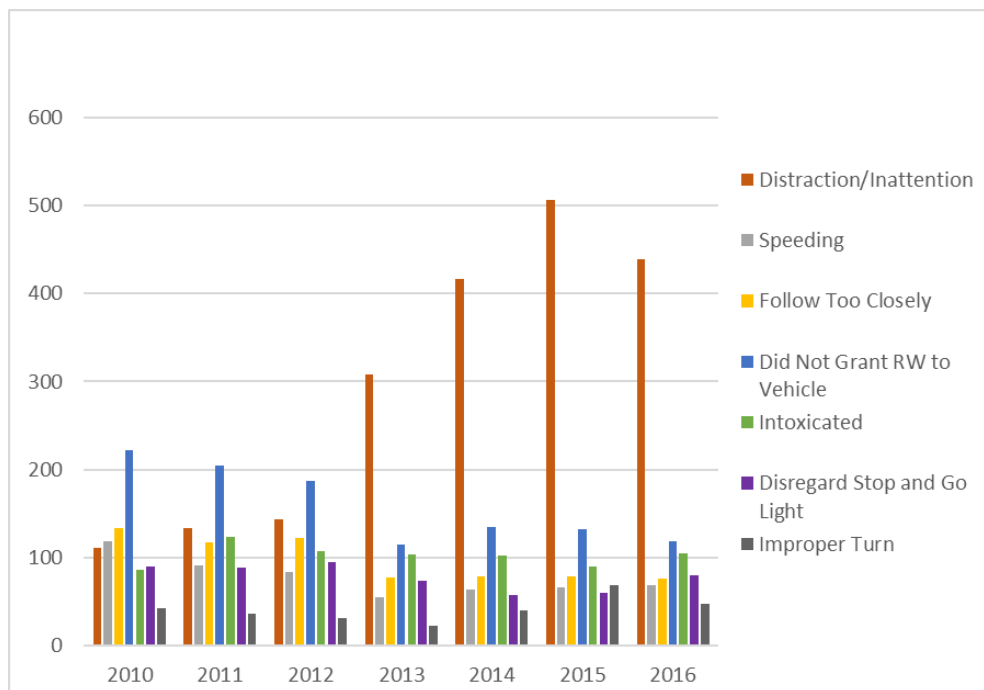


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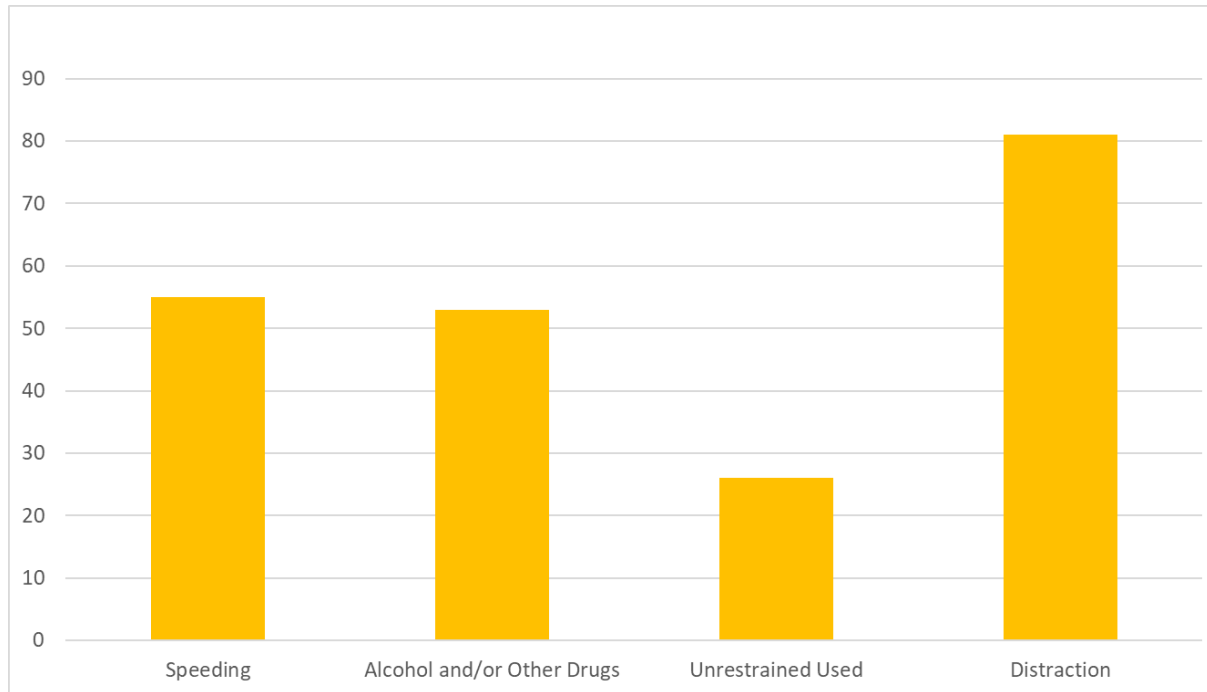
Total Crashes by Road User



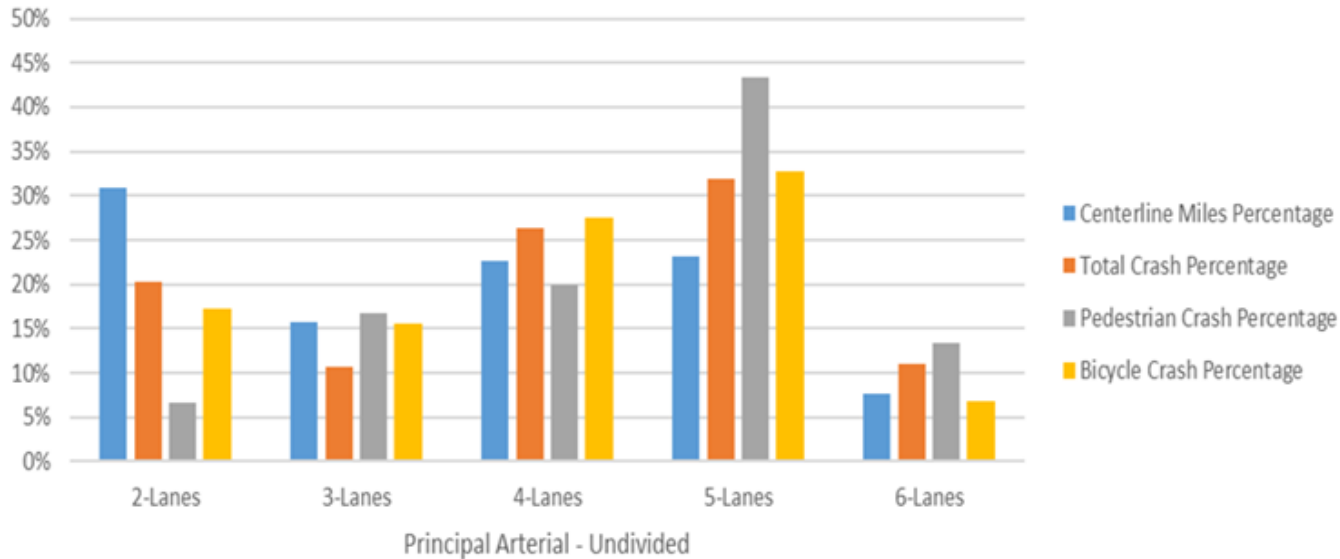
Top Crash Causes by Behavior



Fatal and Serious Injury Crashes by Behavior



Distribution of Crashes by Centerline Mile of Road



Priority Crash Factors

Priority Level One Crash Factors:

Were involved in at least **30%** of the traffic fatalities

Priority Level Two Crash Factors:

Seen in at least **10%** of traffic fatalities or serious injuries in the study

Priority Level Three Crash Factors:

Associated with less than **10%** of fatalities and serious injuries

Behavior	Vancouver Priority	Statewide Priority
Crash Type		
Lane Departure	1	1
Intersection Related	1	1
Road Users		
Pedestrians	1	2
Young Driver (16-25) Involved	1	1
Motorcyclists	2	2
Older Driver 70+ Involved	2	2
Heavy Truck Involved	3	3
Bicyclists	3	3

Crash Analysis for 2012-2016

Systemic

- Evaluate Conditions to Identify Common Risk Factors
- Refined Analysis of Crashes with the Risk Factors
- Consider Physical Locations

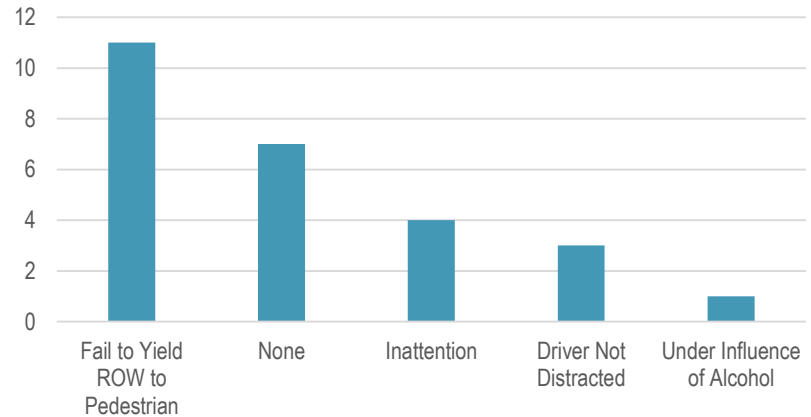
Critical Intersection

- Total Crashes
- Fatal and Serious Injury Crashes
- Pedestrian and Bicycle Crashes

Bicycle and Pedestrian

Analysis showed the primary factors leading to crashes were:

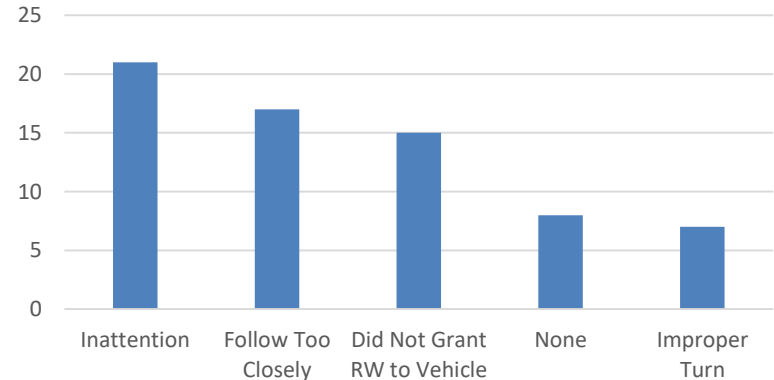
- Failure to yield by drivers, typically when turning
- 4-5 lane principal arterial roadways
- Intersections with a posted speed of 35-40 MPH

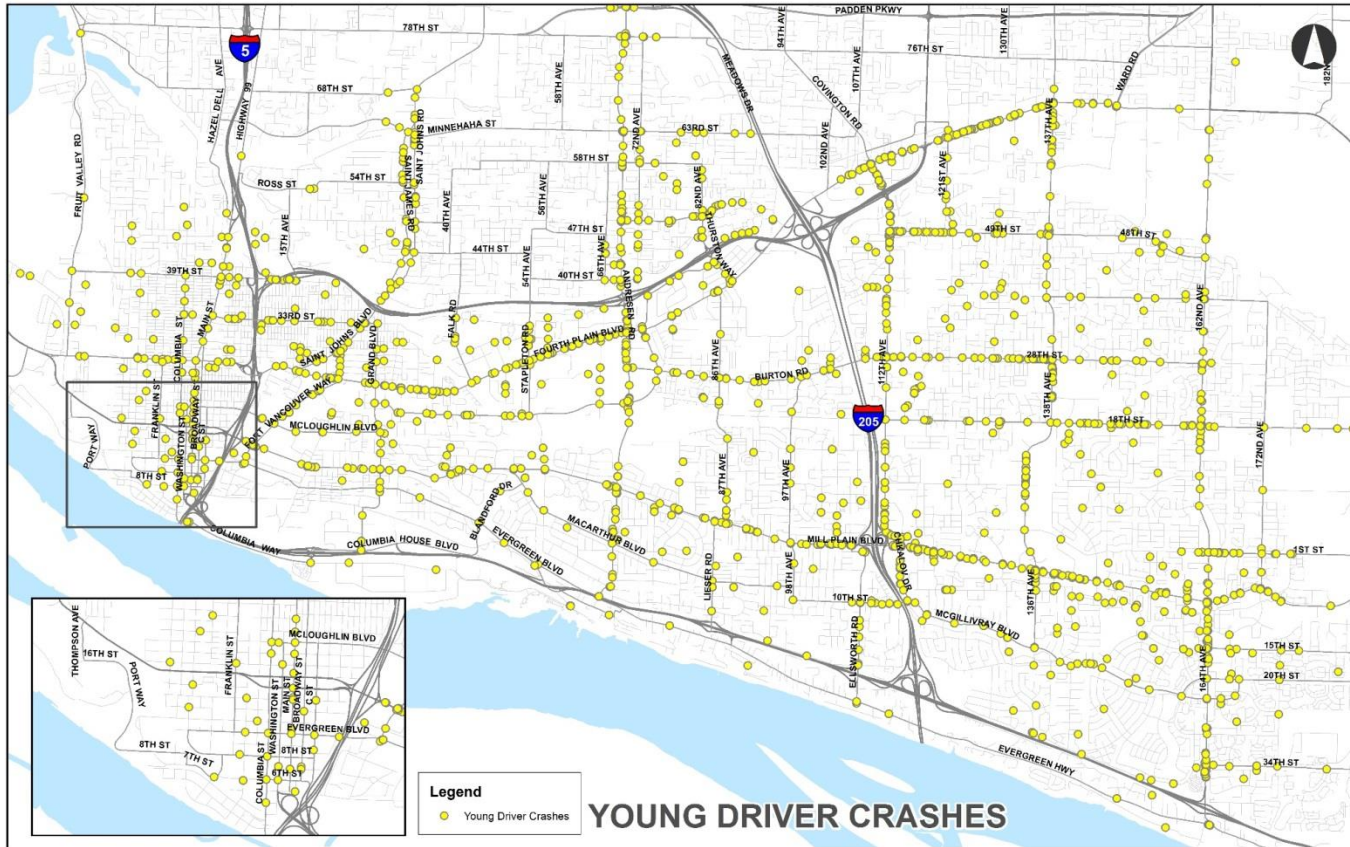


Young Drivers

Analysis showed the primary factors leading to crashes were:

- Failure to yield by drivers, typically when turning
- Signalized intersections during the daytime
- 4-5 lane principal arterial roadways

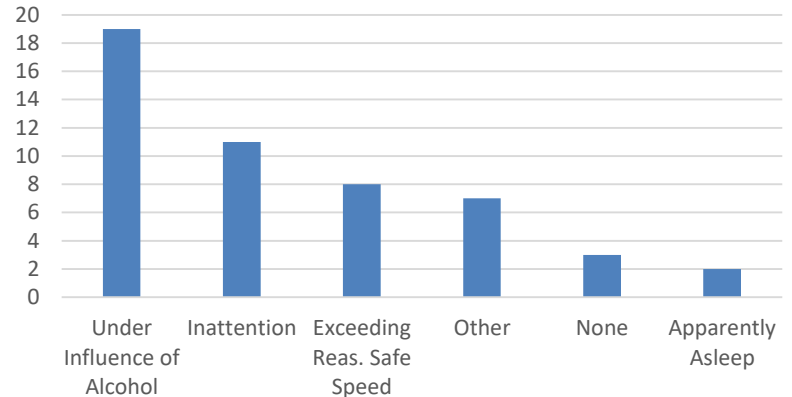




Road Lane/Departure

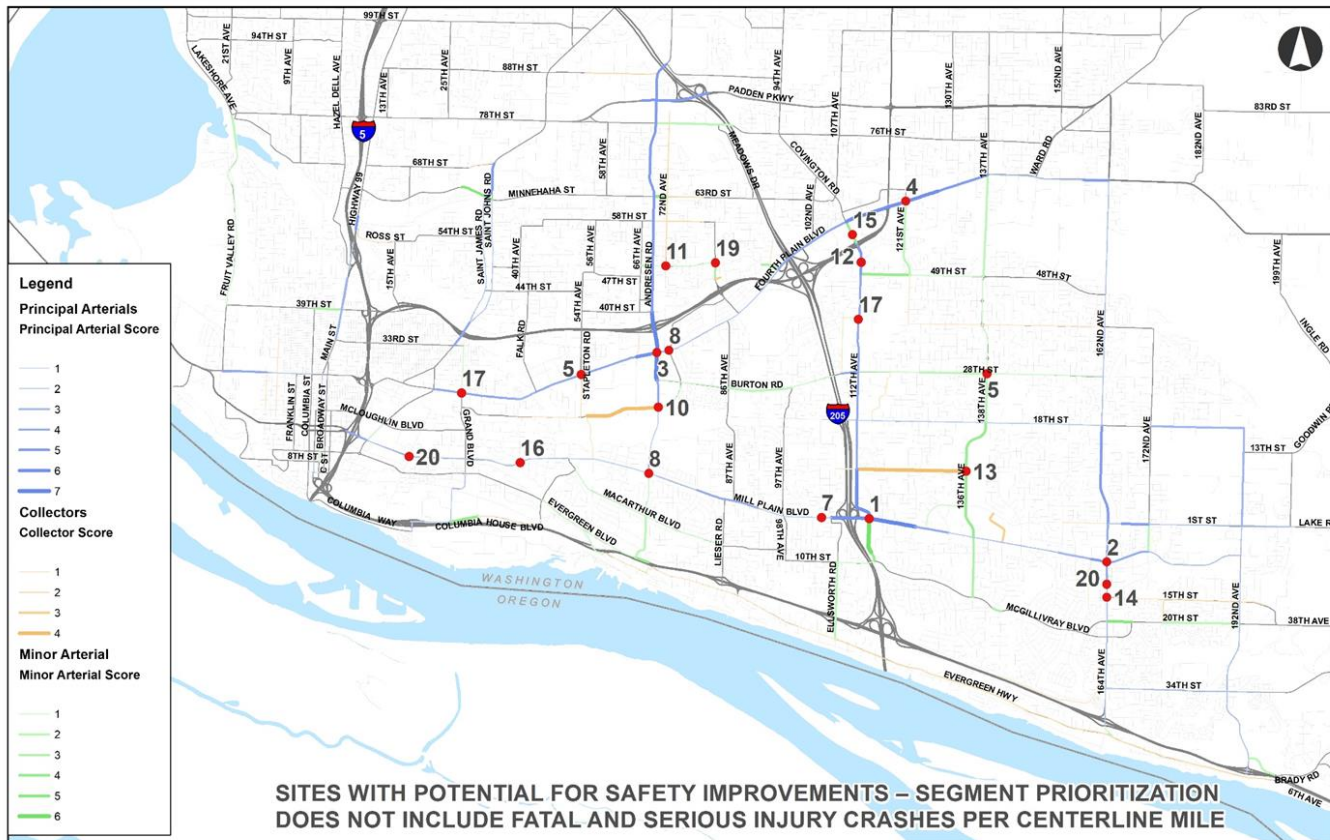
Analysis showed the primary factors leading to crashes were:

- Intersection crashes on 4-5 lane principal arterial roadways
- Segment crashes on undivided collectors with 2 lanes and posted speeds of 20 or 25 miles per hour



Safety Performance Index Top 10 Intersections

Intersection Name	Frequency		Fatal and Serious		Pedestrian and Bike		Combined Index Score	Combined Index Rank
	Crashes	Rank (A)	Crashes	Rank (B)	Crashes	Rank (C)	(A+B+C)	
Mill Plain Blvd / Chkalov Dr	80	1	5	2	7	1	4	1
Mill Plain Blvd / SE 164th Ave	52	3	3	5	7	1	9	2
Fourth Plain Blvd / Andresen Rd	78	2	3	5	6	3	10	3
Fourth Plain Blvd / 121st Ave	41	8	3	5	2	24	37	4
NE 28th St / NE 138th Ave	41	8	1	27	3	11	46	5
Fourth Plain Blvd / Stapleton Rd	27	21	2	14	3	11	46	5
Mill Plain Blvd / SE 104th/105th Ave	40	10	1	27	3	11	48	7
Mill Plain Blvd / Andresen Rd	28	18	1	27	4	8	53	8
Fourth Plain Blvd / Burton Rd	24	28	2	14	3	11	53	8
NE 18th St / Andresen Rd	30	16	1	27	3	11	54	10



Evaluation

Intersections

- Mill Plain and Chkalov
- Fourth Plain Blvd and NE 121st Avenue
- NE 28th Street and NE 138th Avenue
- SE 164th Avenue and SE 15th Street
- Stapleton and Fourth Plain
- Mill Plain and 164th

Segments

- Fourth Plain Blvd - Ft. Vancouver Way to Falk
- Andresen Road (Burton to 47th)
- NE 9th Street (NE 112th Avenue to NE 136th Avenue)
- E 18th Devine to Andresen

Draft Countermeasures

Improve bicycle and pedestrian facilities	Modify intersection controls and features
Improve corridor access management	Improve safety of children who walk/bike to school
Manage roadway speeds through facility design	Increase enforcement of pedestrian laws
Improve young driver education and intervention	Align roadway speeds with adjacent land use
Modify existing yellow flashing arrows	Improve driver compliance with traffic control devices
Reduce speeding through enforcement	Set appropriate speed limits
Enforce compliance with drinking laws	Improve data and performance measures

Policy Questions

Upcoming Transportation Plan update will allow for broader community discussion regarding potential policy changes such as:

- Should the design of our streets change to reflect trends we are seeing in the collision analysis
- How can we retrofit existing streets to improve safety for all system users
- Should we prioritize more vulnerable system users to provide safer mobility and accessibility

Next Steps

- July/August – Finalize report including recommendations for priority crash locations
- August/September – Initiate Transportation System Plan update
- September 10th – Complete Streets City Council workshop

Questions and Discussion

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