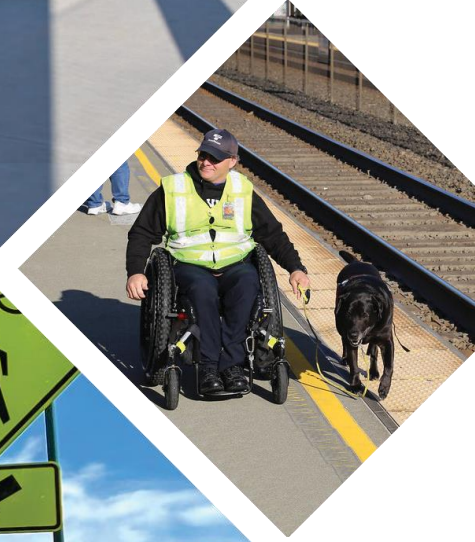




Puget Sound Regional Council

REGIONAL SAFETY SUMMIT

Safety Data Presentation



Washington State Progress, targets and Vulnerable Road Users

Recognizing Safety Opportunities

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WSDOT

June 29, 2023

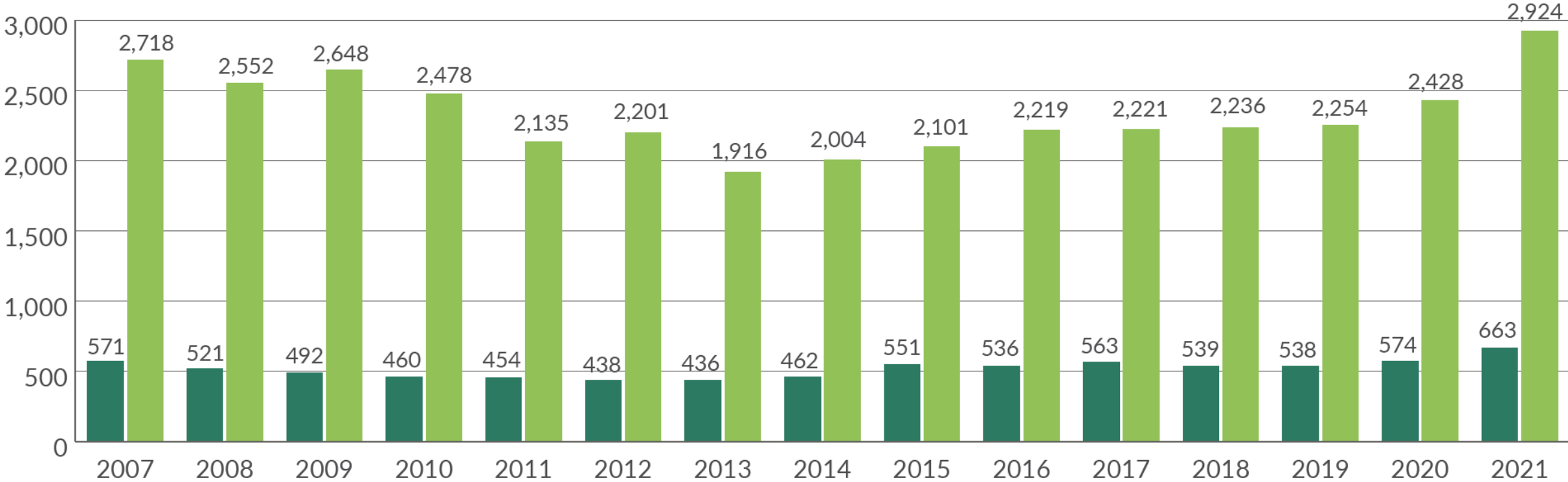
Fatalities and serious injuries continue to increase on Washington roads from a low in 2013

2007 through 2021; Statewide traffic fatalities and serious injuries on public roadways

Fatalities & serious injuries

1 Fatalities

2 Serious Injuries



Data source: WSDOT Crash Data and Reporting Office; the Coded Fatal Crash System (CFC), Washington Traffic Safety Commission.

MAP-21 Safety Performance Measures

MAP-21 Required Performance Measures

- No. 1 - Number of fatalities on all public roads
- No. 2 - Number of fatalities per 100 million vehicle miles traveled on all public roads
- No. 3 - Number of serious injuries on all public roads
- No. 4 - Number of serious injuries per 100 million VMT on all public roads
- No. 5 - Number of non-motorist fatalities and serious injuries on all public roads
(e.g. bicyclists and pedestrians)

Targets for Measures No. 1-3 must also be reported to the National Highway Traffic Safety Administration by July 1 of each year. They must be numerically identical targets to those reported for MAP-21 compliance on August 31 as part of the Annual HSIP Report.

MAP-21 Special Rules

Numeric targets are not required, but states must report performance in these two categories, and show improvement compared to the baselines they set:

- Fatality rate on High Risk Rural Roads
- Number of fatalities and serious injuries of drivers and pedestrians age 65 and older on all public roads
- Vulnerable road users greater than 15%

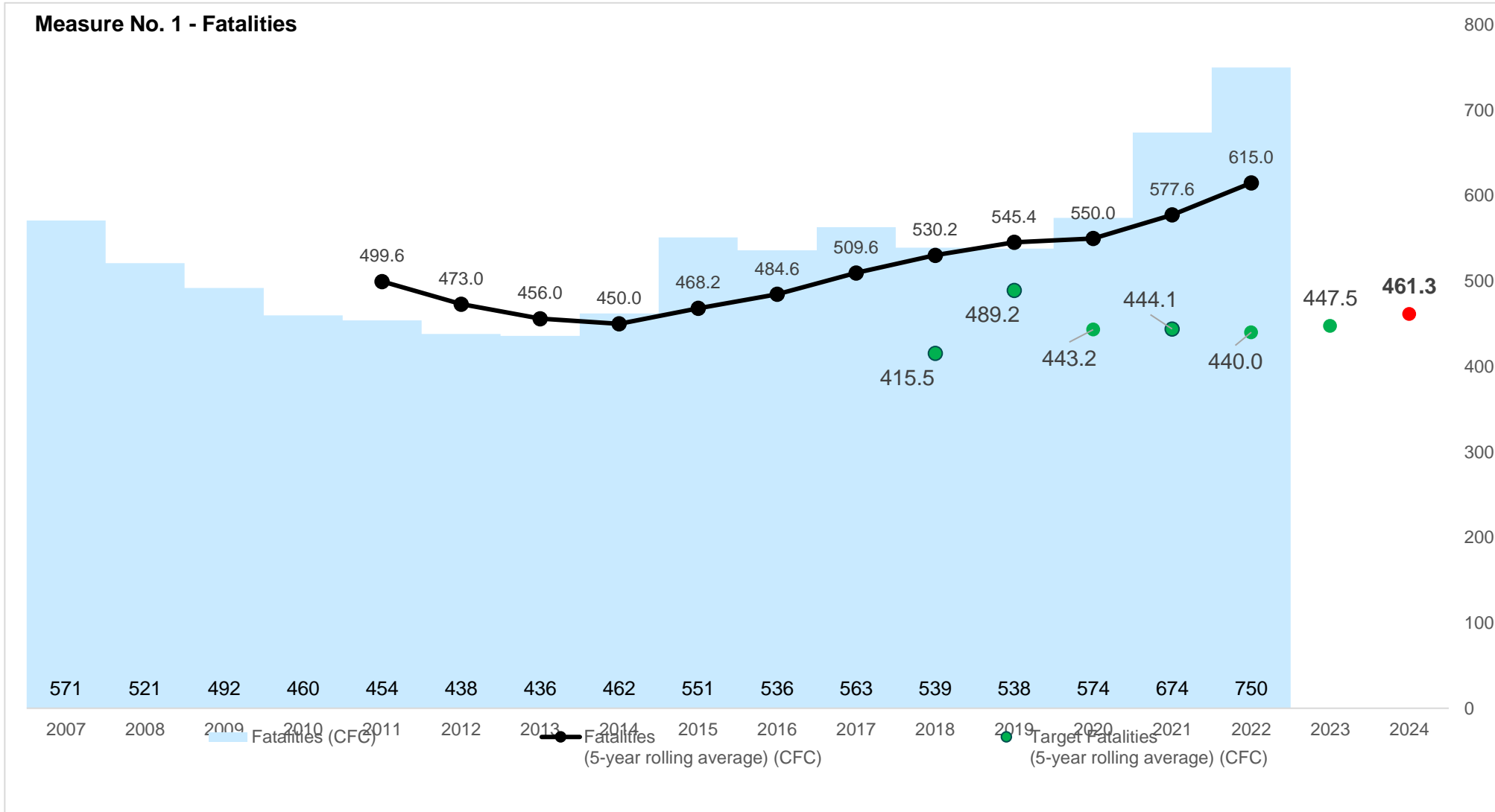
Federal progress assessment

Summary of significant progress for MAP-21 Safety Performance Measures

Performance measure	2018-2022 rolling average: Target	2018-2022 rolling average: Outcome	2016-2020 rolling average: Baseline	Target/Baseline Met?	Significant Progress Made?
Number of fatalities	440	615.00	550	No/ No	No
Rate of fatalities per 100 million VMT on all public roads	0.735	1.049	0.919	No/ No	
Number of serious injuries	1819	2585.8	2271.2	No/ No	
Rate of serious injuries per 100 million VMT on all public roads	3.042	4.412	3.797	No/ No	
Number of non-motorized fatalities and serious injuries	464.6	620.8	581.6	No/ No	

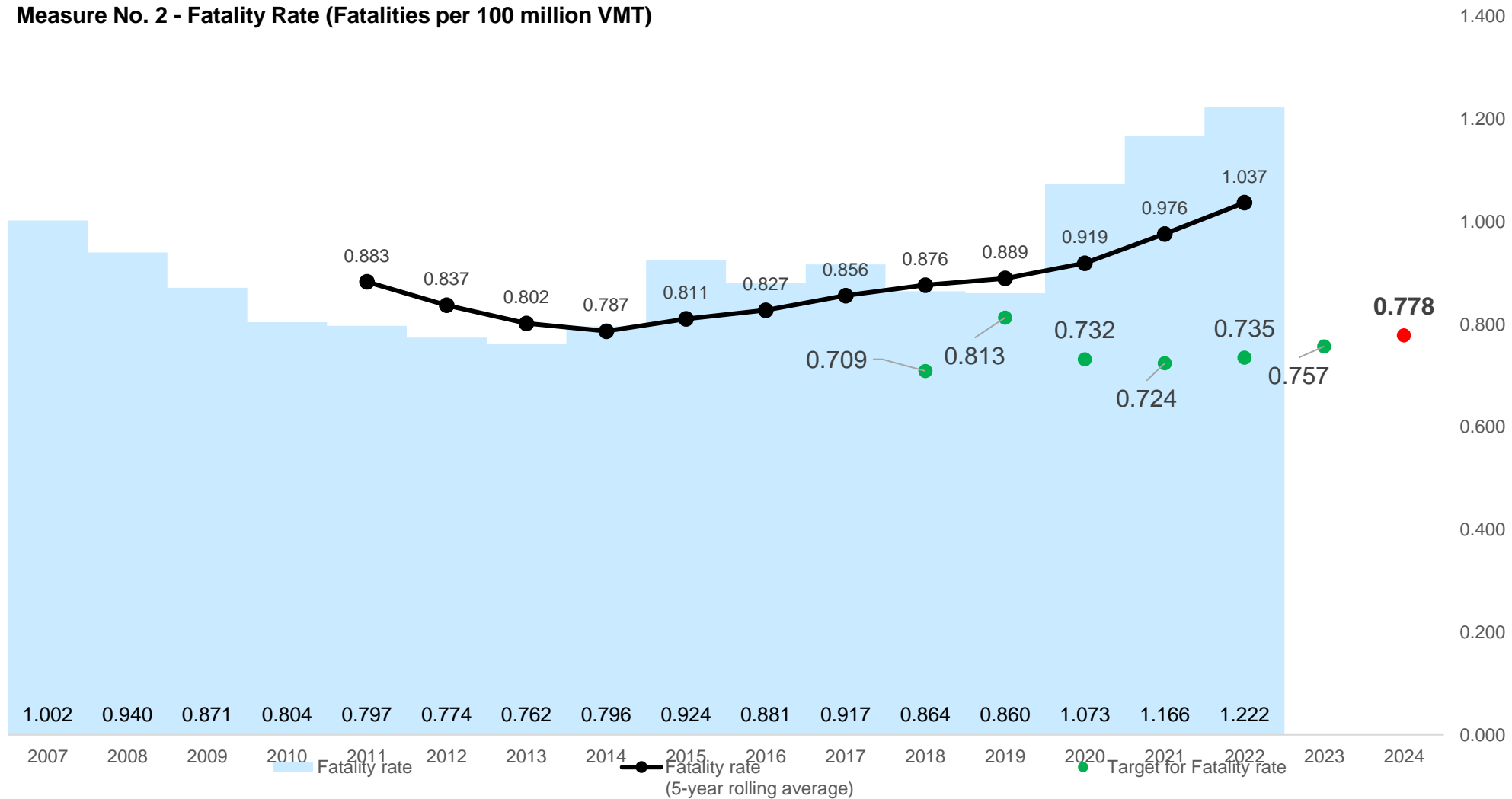
NOTE. Fatalities are from the WTSC Coded Fatality Files (2022 Preliminary), and the suspected serious injuries are from the WSDOT Engineering Crash Datamart (2022 year-end snapshot)

Fatalities



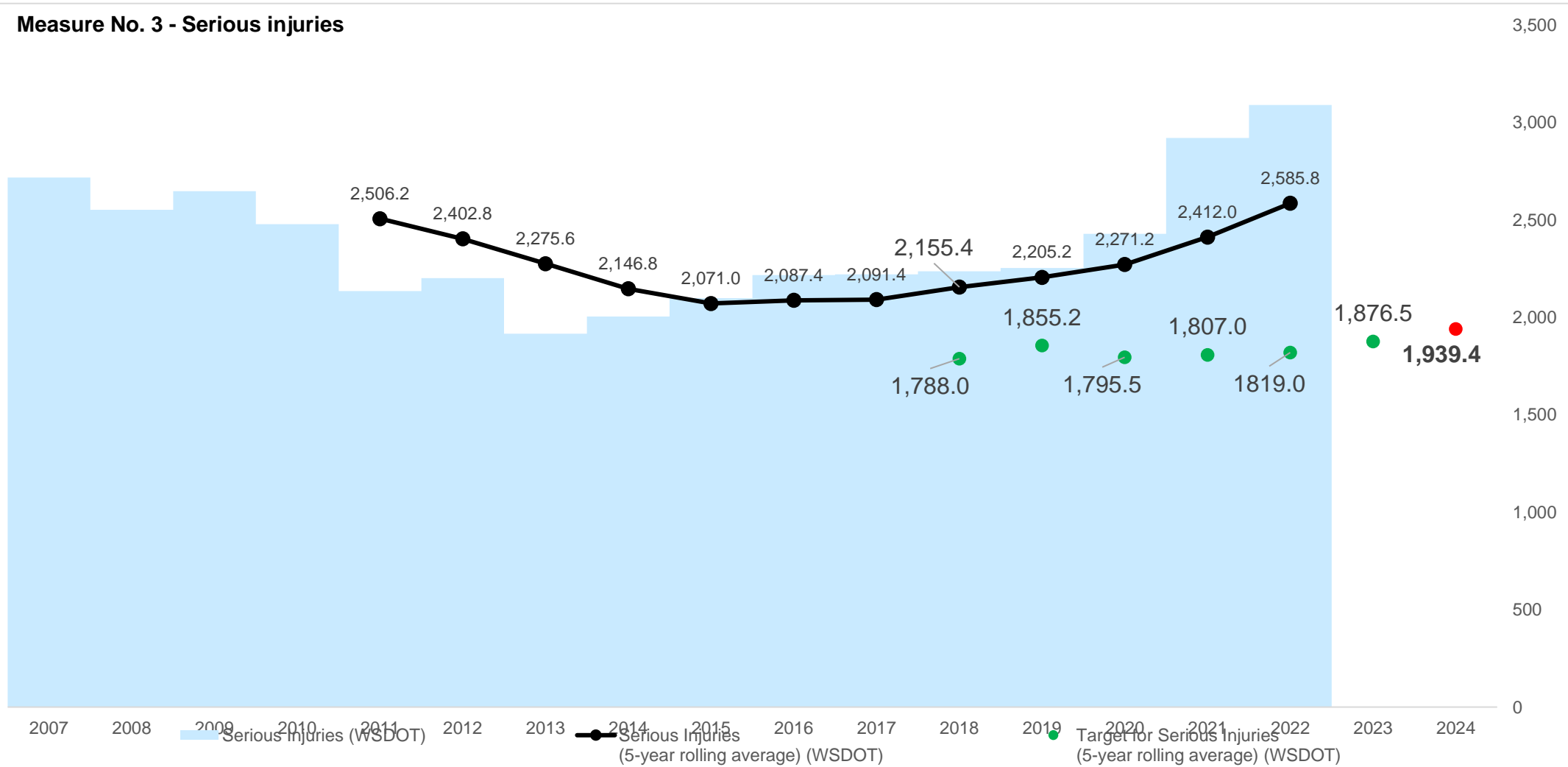
Fatality Rate

Measure No. 2 - Fatality Rate (Fatalities per 100 million VMT)



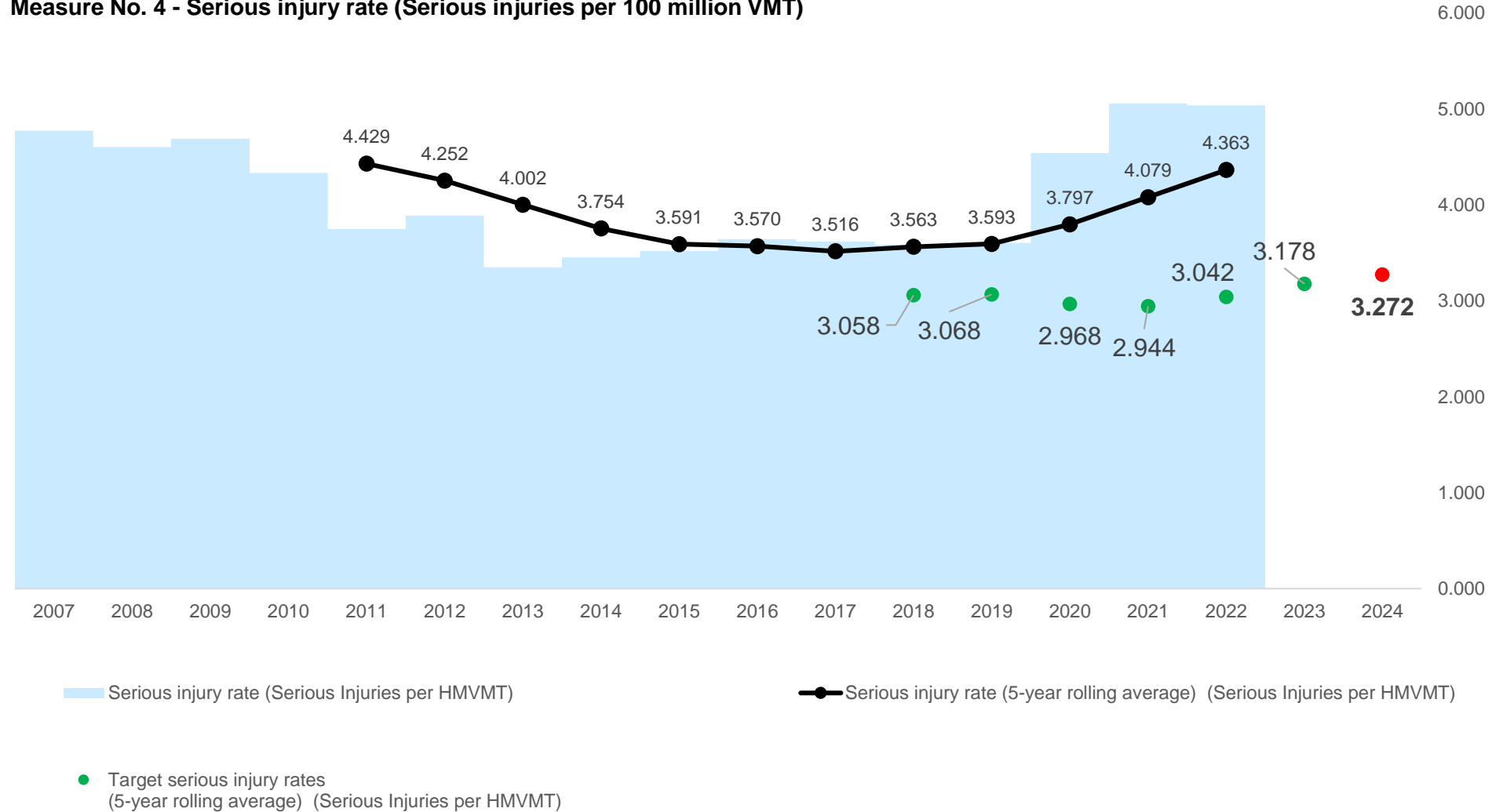
Serious Injuries

Measure No. 3 - Serious injuries



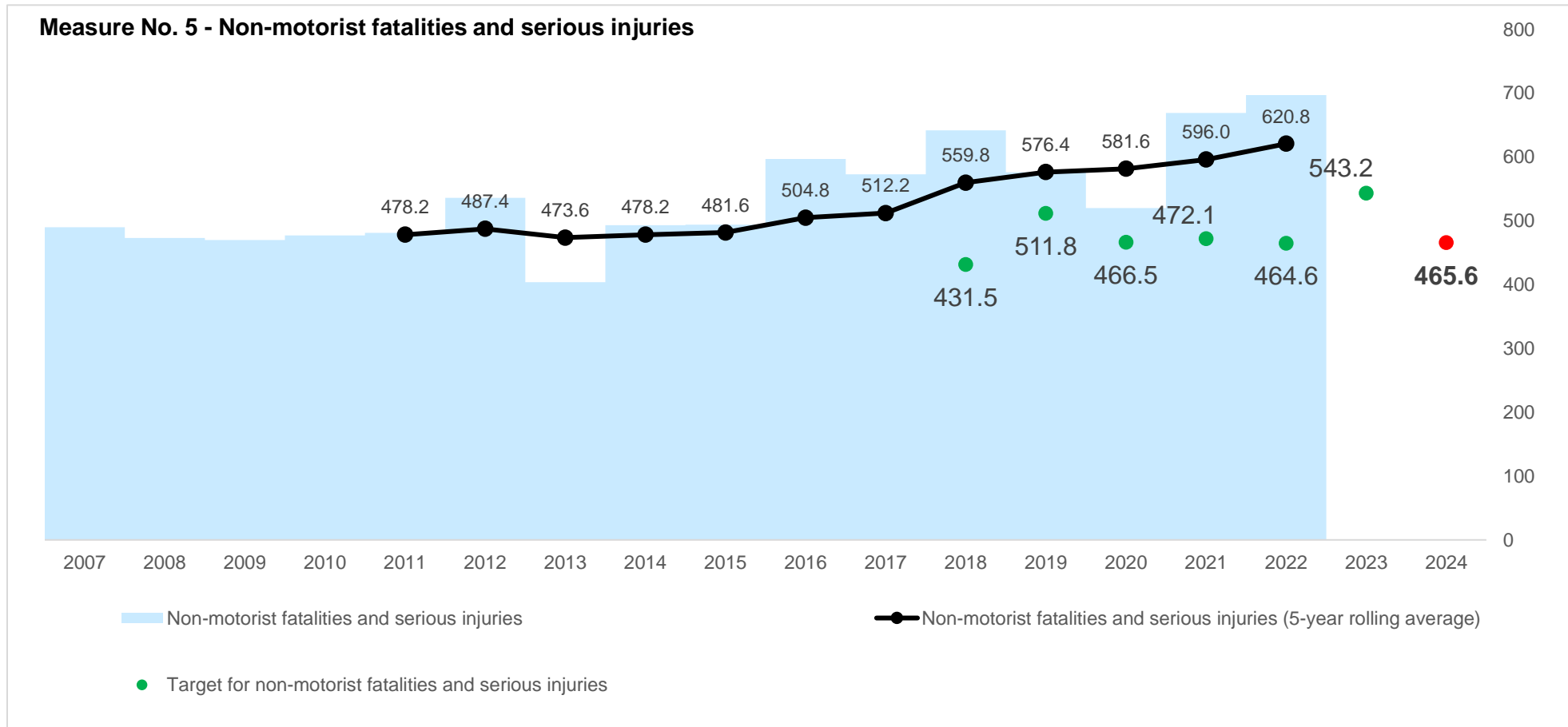
Serious Injury Rate

Measure No. 4 - Serious injury rate (Serious injuries per 100 million VMT)



Active Transportation Fatalities and Serious Injuries

Non-motorist fatalities



Vulnerable road user assessment

- Federal requirement for states with > 15% total fatalities and serious injuries
- Assess crashes involving pedestrians and bicyclists that were killed or seriously injured (aka VRU crashes)
- Goal: assess performance, identify areas for analysis, identify potential strategies to reduce/prevent

Assess performance

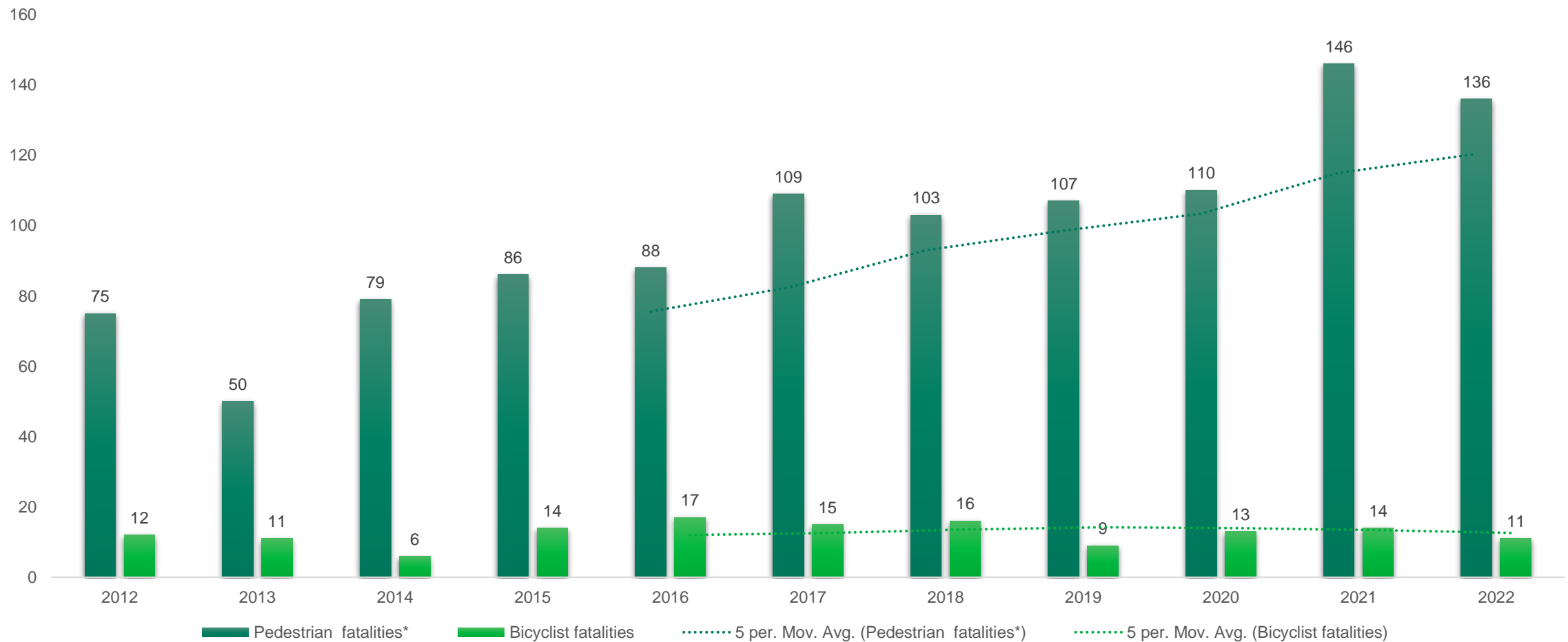
Identify areas for analysis

Identify strategies to reduce/prevent

- FHWA Guidance - [link](#)

General performance

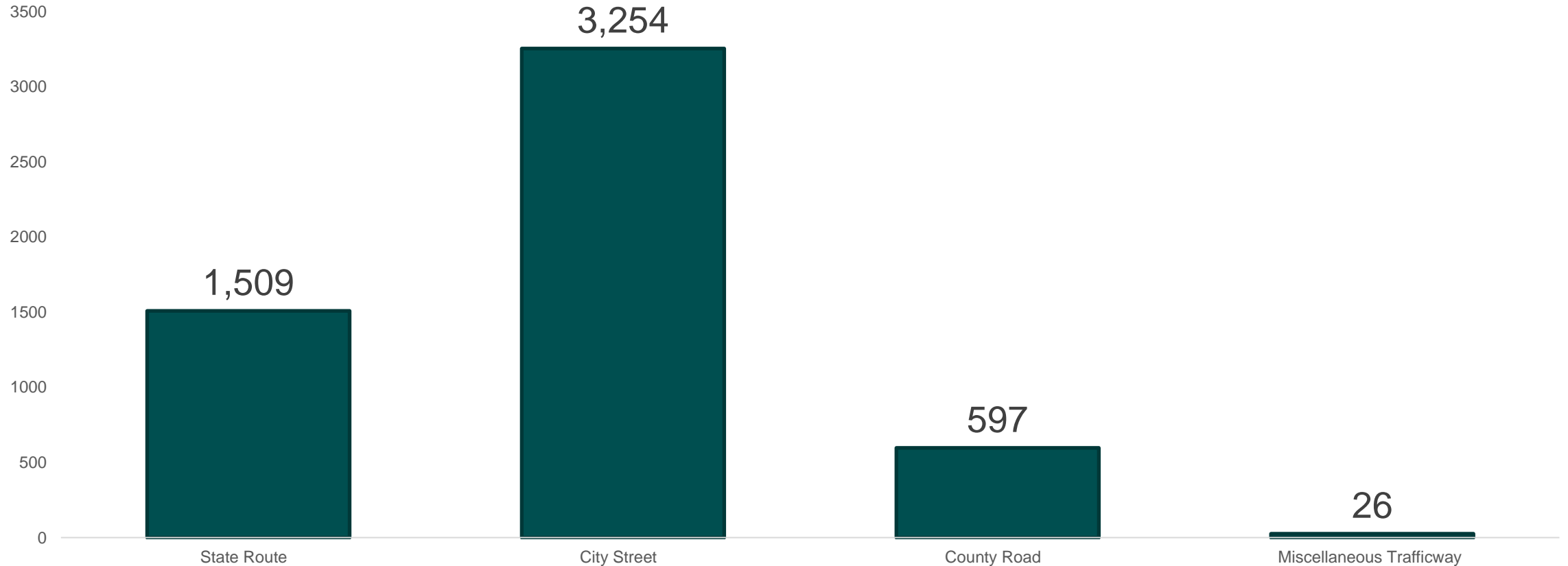
Pedestrian and Bicyclist Fatalities



Source: Preliminary fatality data from Coded Fatality Files (WTSC) (Dec 2022)

VRU Fatal and Serious Injury Crashes

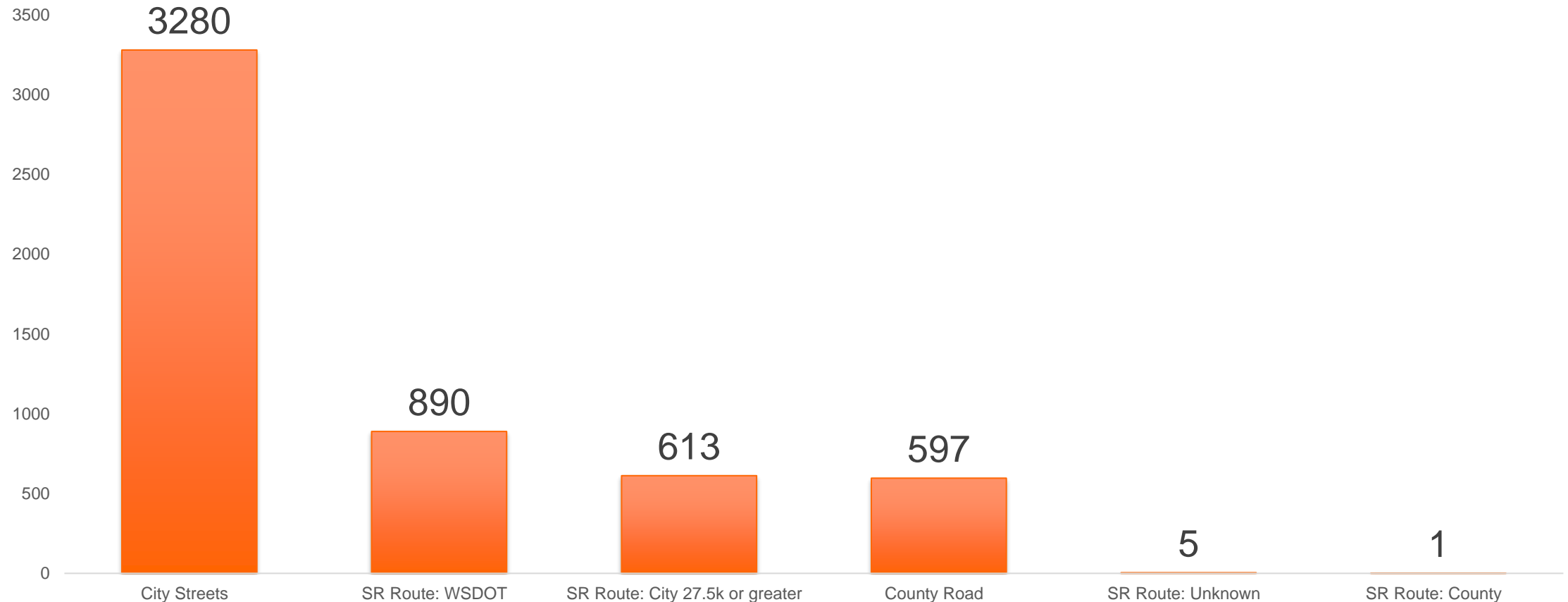
Distribution across route types



Crashes between 2012 and 2021 (10 years) within which at least one pedestrian or bicyclist was killed or seriously injured. *Source:* WSDOT Engineering Crash Datamart, 2021-year end.

VRU Fatal and Serious Injury Crashes

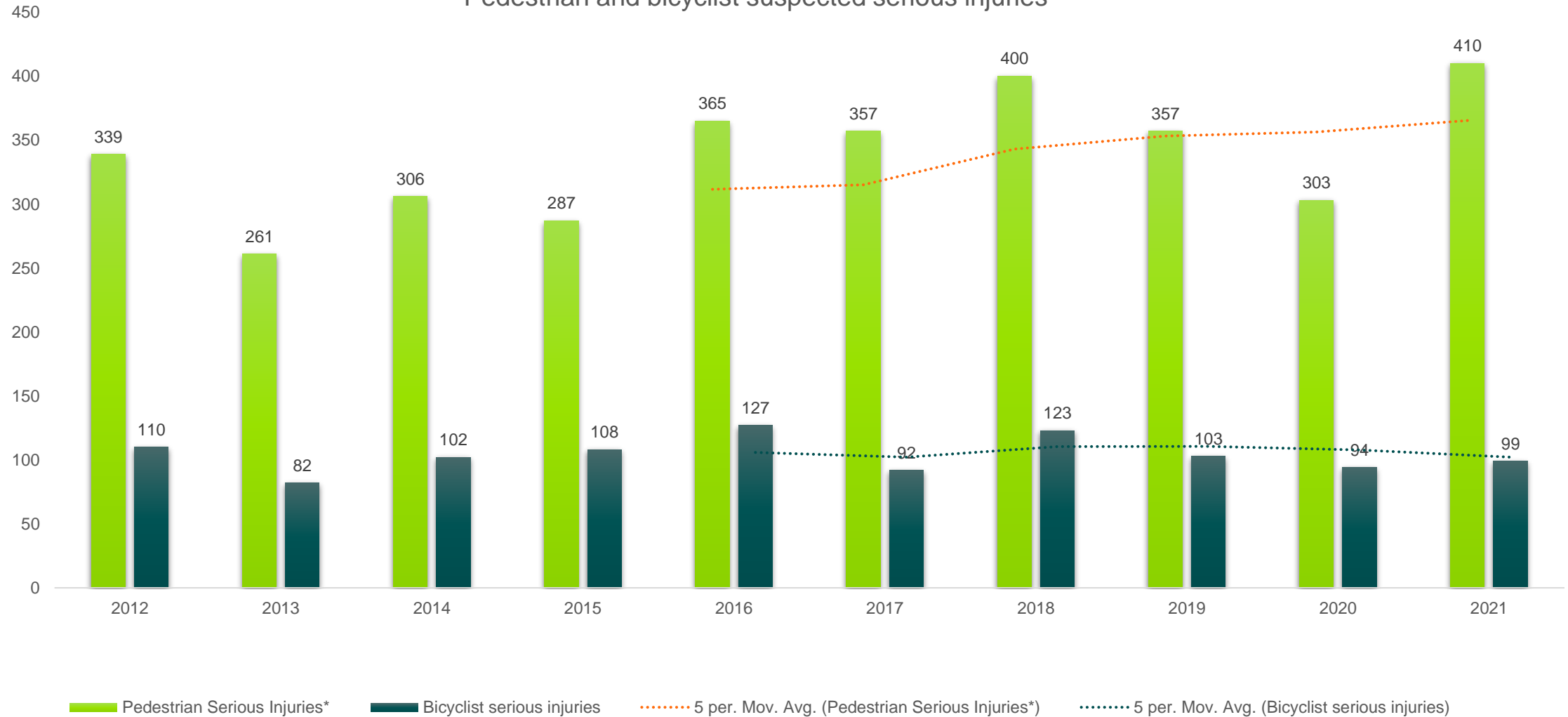
Distribution across ownership



Crashes between 2012 and 2021 (10 years) within which at least one pedestrian or bicyclist was killed or seriously injured. *Source:* WSDOT Engineering Crash Datamart, 2021-year end.

General performance

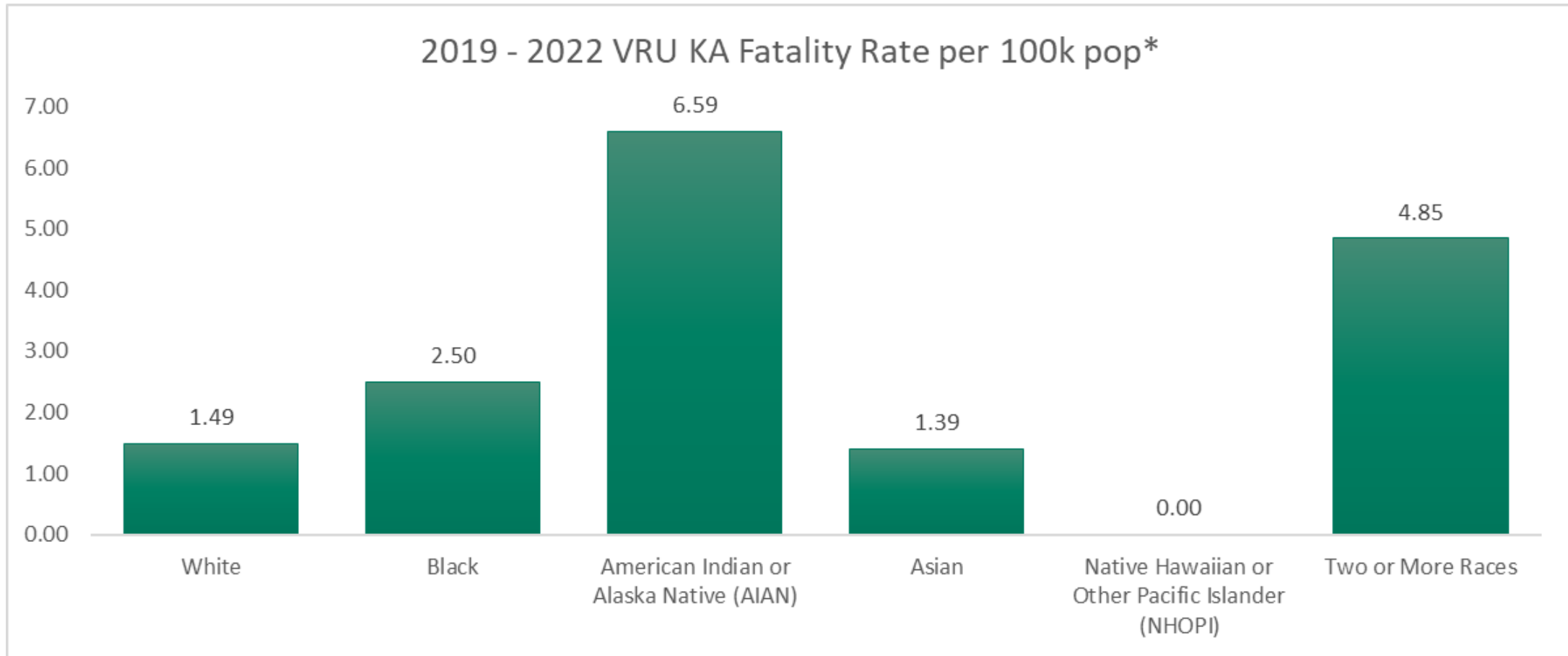
Pedestrian and bicyclist suspected serious injuries



Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

Race

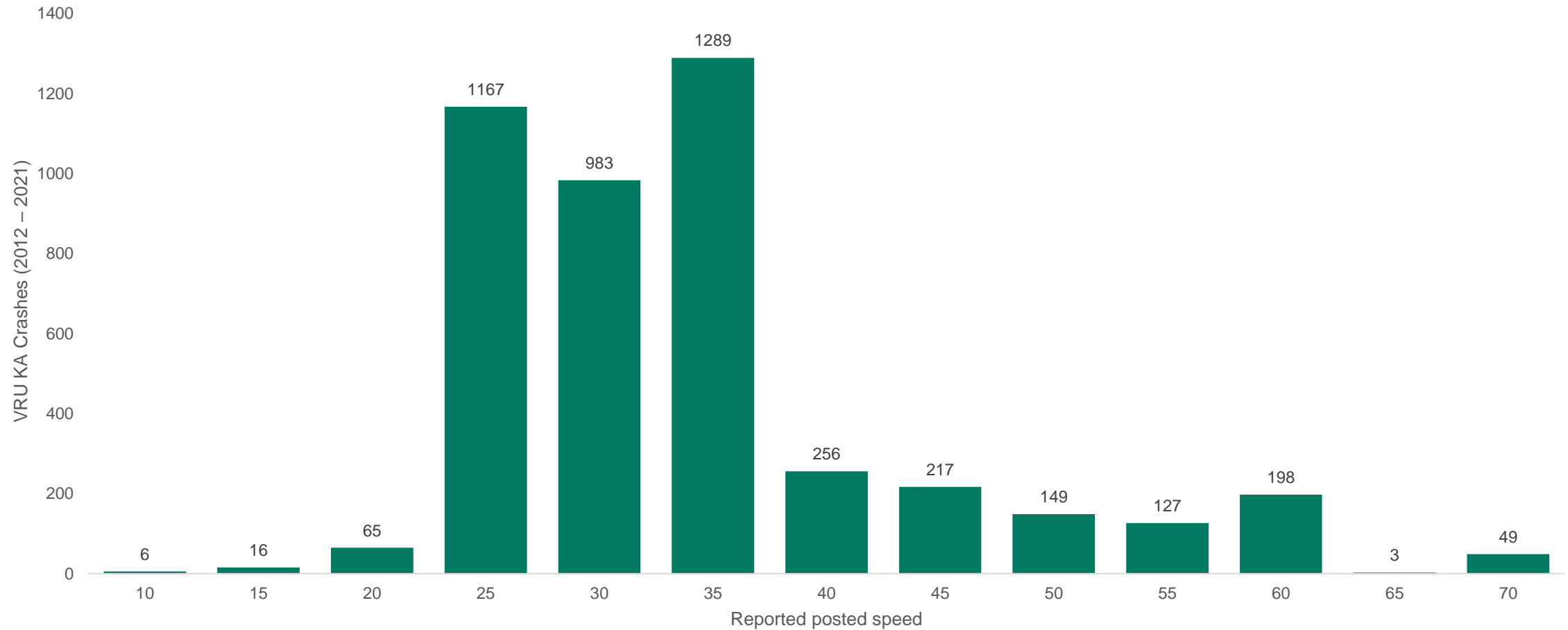
2019-2022 Pedestrian and Bicyclist Fatalities



Sources: Preliminary fatality race data from Coded Fatality Files (WTSC) (May 2023); 2020 population estimates from Office of Financial Management, State of WA ([link](#)) (Dec 2022). Fatality rate calculated using the average fatality count from 2019 through

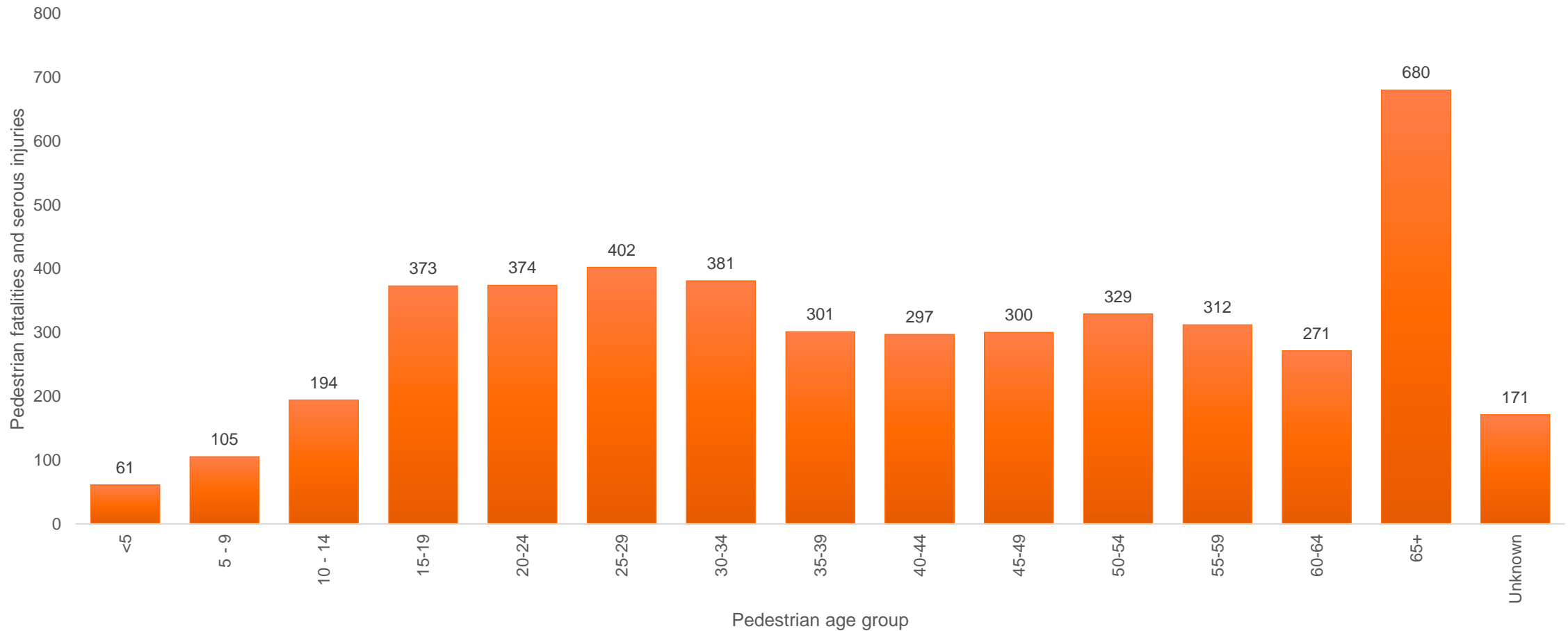
Posted speeds

2012-2021 – Crashes involving ped/bike killed/seriously injured



Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

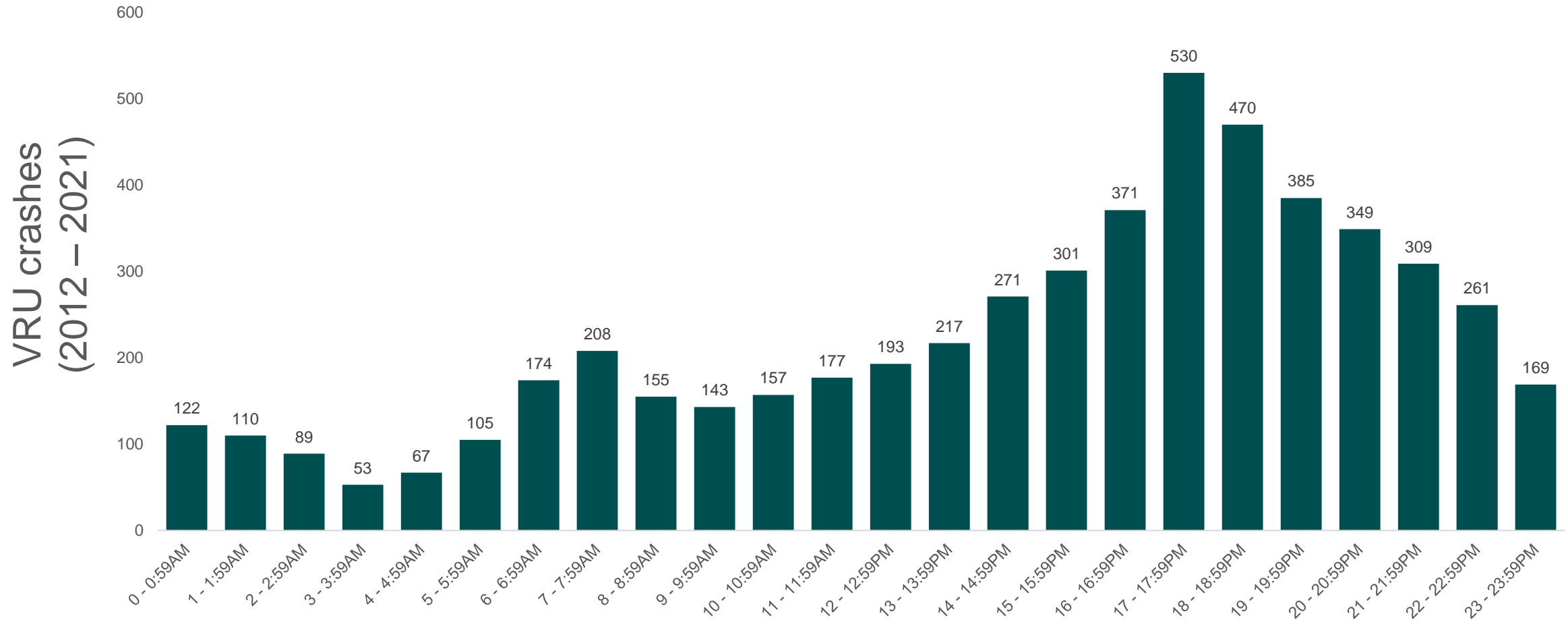
Pedestrian ages



Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

When: time of day

All days



Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

VRU Crash types: Pedestrians

DRAFT

Pedestrian crash type	VRU Crash count	Percent
No signal/traffic control: Pedestrian Xing Not Crossing at Xwalk & MV Straight	829	19.62
No signal/traffic control: Pedestrian Xing at Xwalk & MV Straight	499	11.81
At signal: Pedestrian Xing & MV Turning Left	356	8.43
At signal: Pedestrian Xing at Xwalk & MV Straight	346	8.19
Pedestrian Walking in Roadway(not crossing) & MV Straight	312	7.38
No signal/traffic control: Pedestrian Xing & MV Turning Left	181	4.28
Standing or Working in Roadway	177	4.19
Not in Roadway	166	3.93
At signal: Pedestrian Xing & MV Turning Right	121	2.86
Pedestrian Walking on Shoulder (not crossing) & MV Straight	114	2.7
No signal/traffic control: Pedestrian Xing & MV Turning Right	69	1.63
Pushing or Working on Vehicle	43	1.02
At signal: Pedestrian Not Crossing at Xwalk & MV Straight	36	0.85
Other	976	23.1

Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

VRU Crash types: Bicyclists

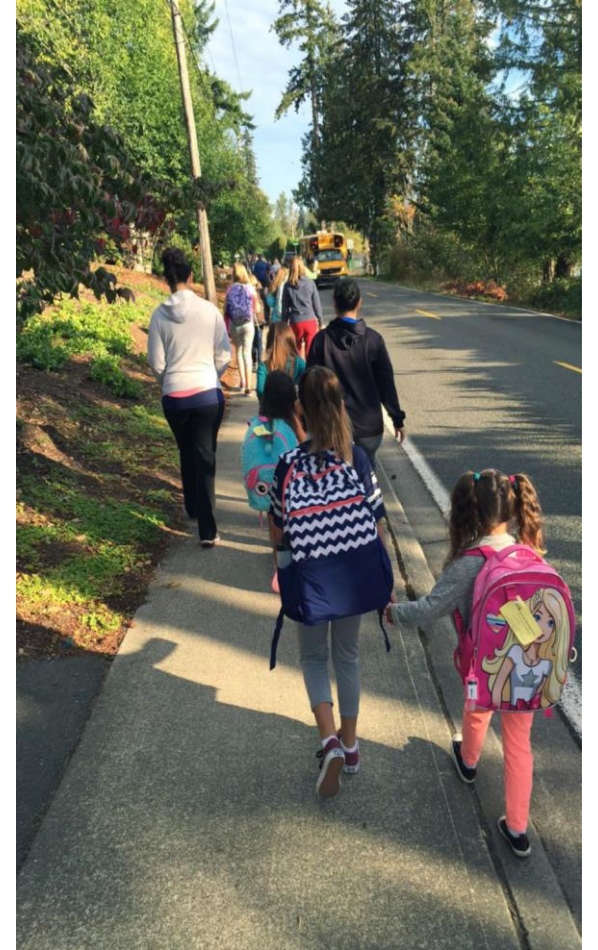
DRAFT

Bicyclist Crash Type	VRU crashes	Percent
No signal/traffic control: Bicyclist Crossing and MV Going Straight	193	16.65
Bicyclist riding along roadway and MV Drv 1 turning left	166	14.32
Bicyclist riding along roadway and MV Drv 1 going straight	131	11.3
Bicyclist riding along roadway and MV Drv 1 not going straight or turning left or right	77	6.64
Bicyclist riding along roadway and MV Drv 1 turning right	75	6.47
At signal: Bicyclist Crossing and MV Going Straight	73	6.3
Bicyclist turned into path of vehicle, same direction, MV going straight	71	6.13
Bicyclist riding along shoulder and MV Drv 1 going straight	55	4.75
Bicyclist turned into path of vehicle, opposite direction, MV going straight	34	2.93
No signal/traffic control: Bicyclist Crossing and MV Turning Right	23	1.98
At signal: Bicyclist Crossing and MV Turning Left	22	1.9
At signal: Bicyclist Crossing and MV Turning Right	22	1.9
No signal/traffic control: Bicyclist Crossing and MV Turning Left	22	1.9
Bicyclist riding along designated bike route and MV Drv 1 going straight	21	1.81
Other	174	15.01

Source: Crash data from WSDOT Engineering Crash Datamart, Year-end snapshot 2022, May 2022.

Data Gaps and Challenges

- Crash reporting does not distinguish between different crash types for vulnerable road users
- Limited data on walking and biking facilities and volumes
- Both are valuable in selecting crash prevention strategies



Equity & sociodemographic factors being investigated

- WA DOH Environmental Health Disparities Score v.2.0
- USDOT Transportation Disadvantaged Score (DAC)
- CDC Social vulnerability index (SVI)
- Climate and Economic Justice Screening Tool (CEJ) - Transportation Score
- USDOT Areas of persistent poverty (APP) used in RAISE grant program
- USDOT Historically Disadvantaged Community (HDC) used in RAISE grant program
- Census demographics
 - Under age 5
 - Ages 65 and over
 - Percentage disabilities
 - Percentage non-white
- Tribal areas
- School density
- Transit stop density
- Transit route mileage density

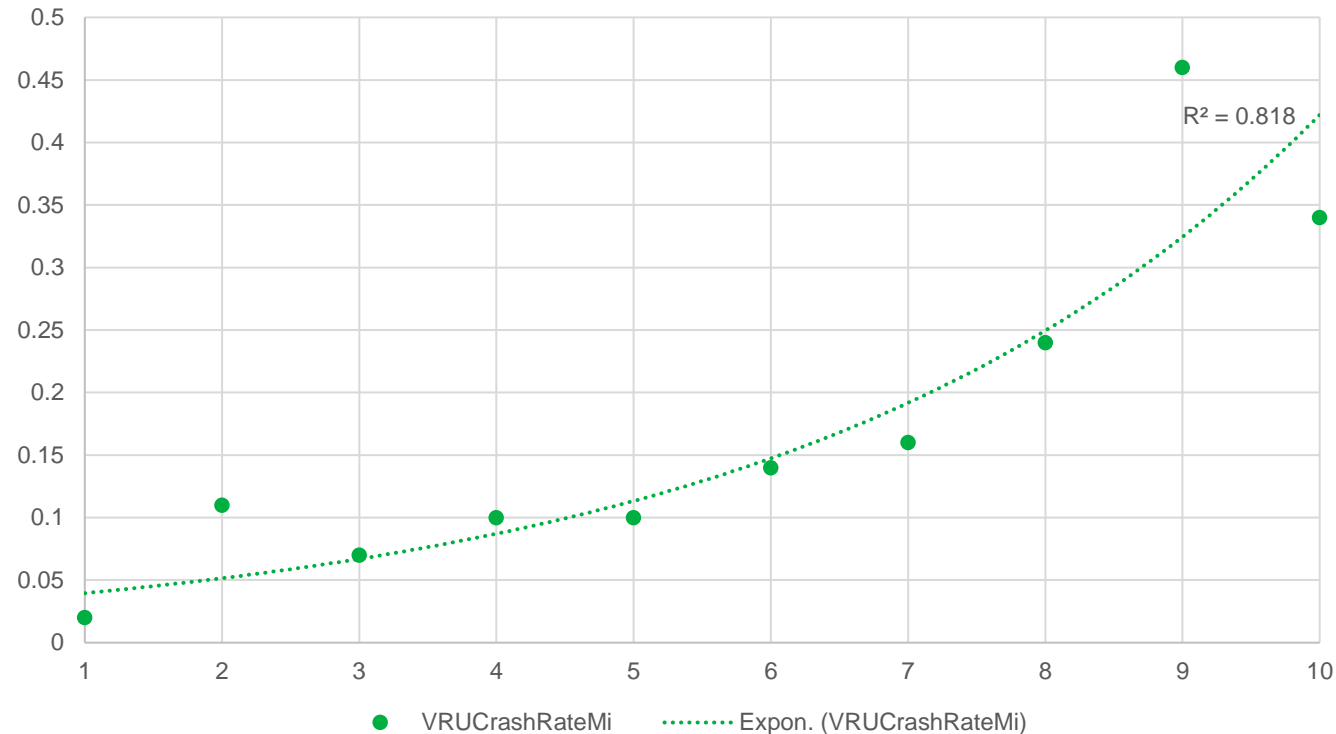
Variables used in location identification

- Areas of Persistent Poverty (RAISE)
- Tribal lands
- Social Vulnerability Index (CDC)
- Environmental Health Disparities Index (WA DOH)
- Disadvantaged Communities score (USDOT)
- Census tracts data: active transportation use
 - School density
 - Transit stop density
 - Transit route mileage density

For state routes

The VRU DEI score correlates well with VRU fatal and serious injury crash density

WSDOT VRUDEI Score and VRUCrashRateMi



State highway network

Some interim findings

- VRU fatal and serious injury (KA) crashes on state highways
 - Predominantly urban
 - Urban arterials
 - More than 2 lanes
 - Speed limits up to 45mph
 - Within population centers
 - Within urban growth areas and within 2 miles of urban growth areas
 - Within cities of 27.5k or more population
- For VRU KA pedestrian crashes on state routes:
 - 80.2% occurred within 1mi of schools
 - 64.7% occurred within 1000ft of transit stops
- For VRU KA bicyclist crashes on state routes:
 - 72.8% occurred within 1mi of schools
 - 56.9% occurred within 1000ft of transit stops

Thank You

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State Safety Engineer

WSDOT

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PSRC Safety Trends

June 29, 2023



Puget Sound Regional Council

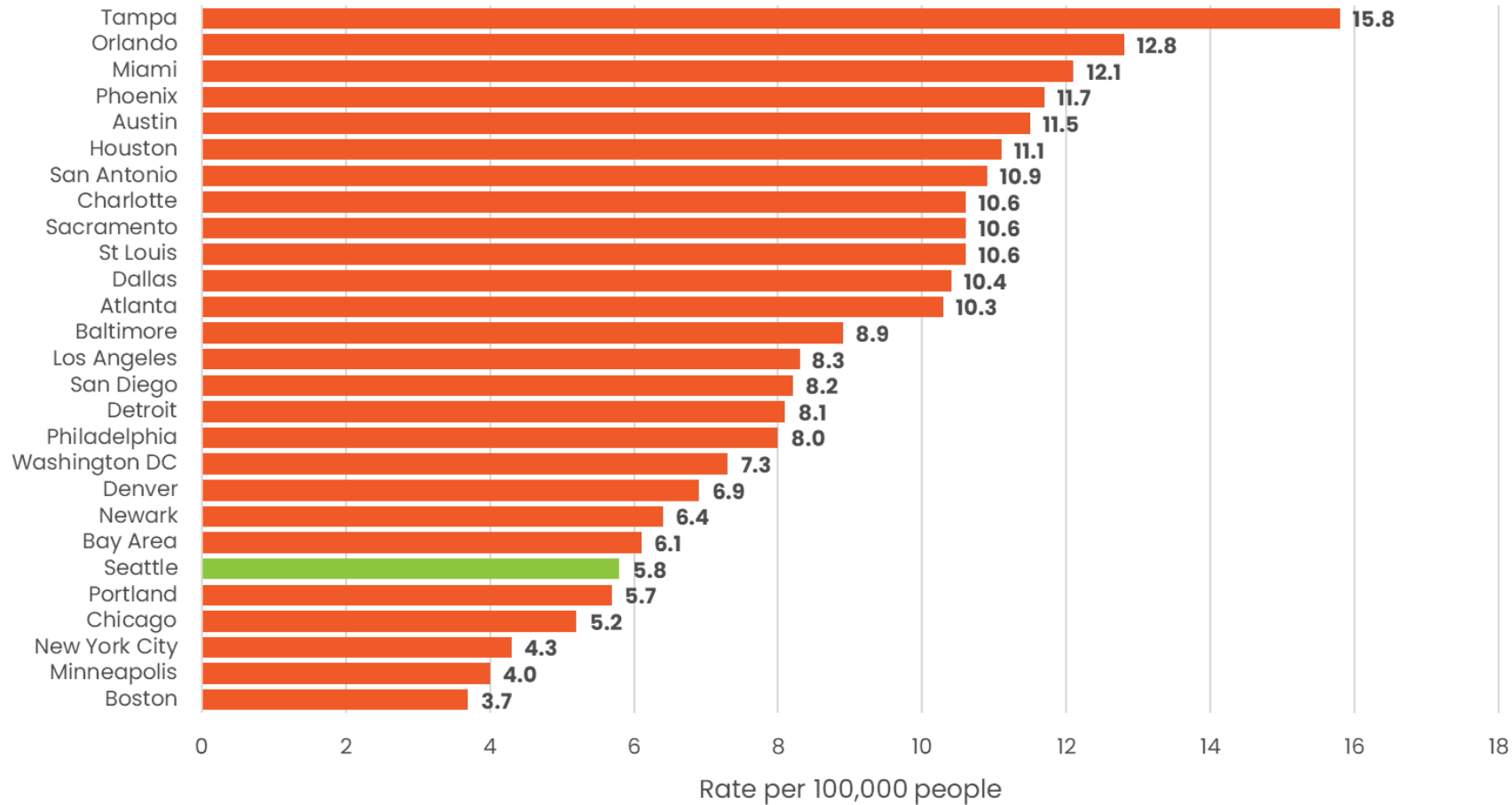


We are leaders in the region to realize equity for all. Diversity, racial equity and inclusion are integrated into how we carry out all our work.

psrc.org/equity

We are one of the “safer” metropolitan regions

Traffic Related Deaths per 100,000 People: 2021

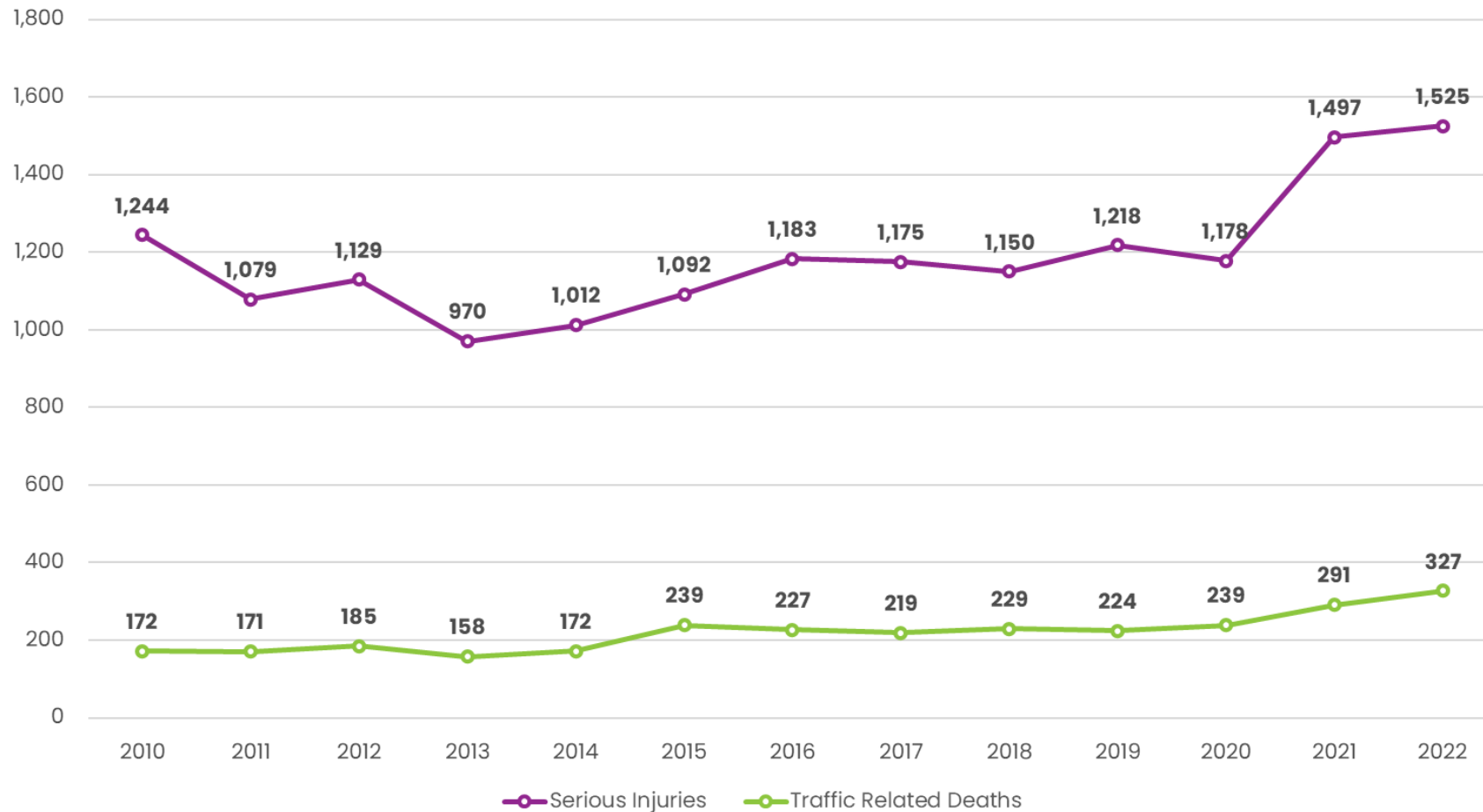


Collision Data Source: National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS) Data

Population Data Source: US Census Bureau American Community Survey (ACS) 5-year data Table B03002

But Traffic Related Deaths are increasing

Annual Traffic Related Deaths & Serious Injuries

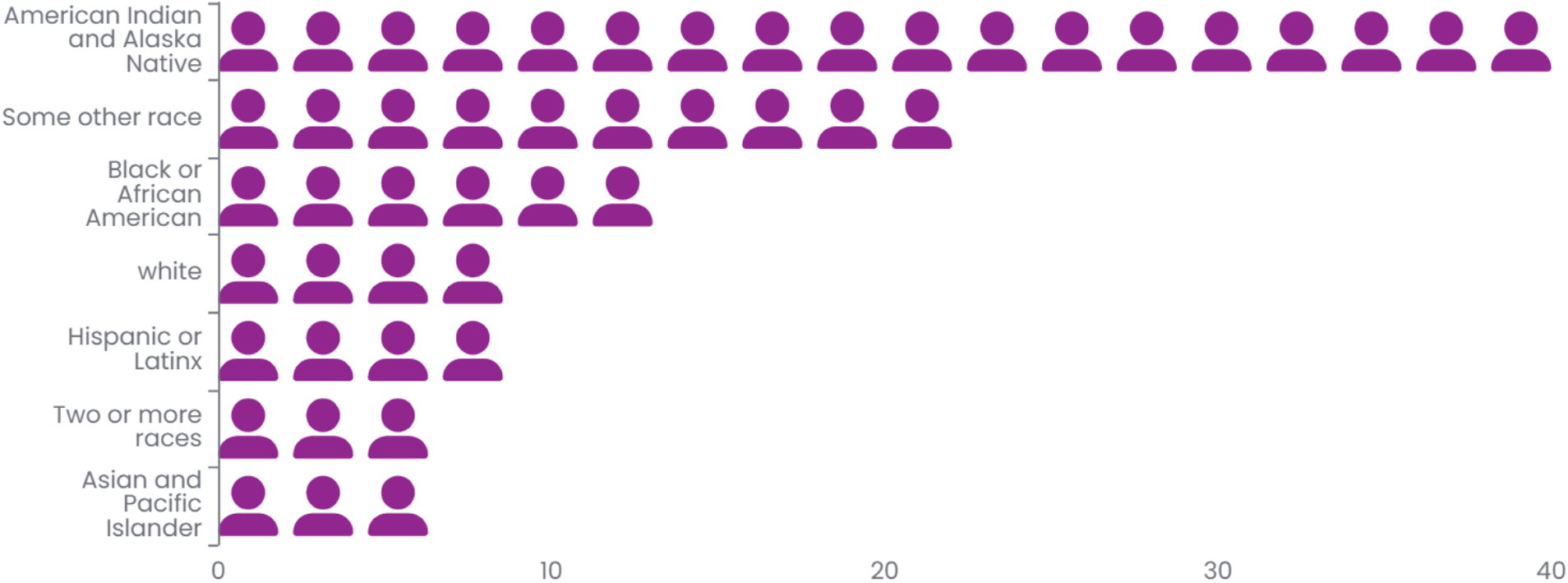


Fatal Collision Source: Washington Traffic Safety Commission Coded Fatality Files (2022 Preliminary)

Serious Injury Data Source: Washington State Department of Transportation, Crash Data Division, Multi-Row data files (MRFF)

Traffic Deaths Disproportionally Impact People of Color

Traffic Related Deaths



Fatal Collision Source: Washington Traffic Safety Commission Coded Fatality Files (2022 Preliminary)

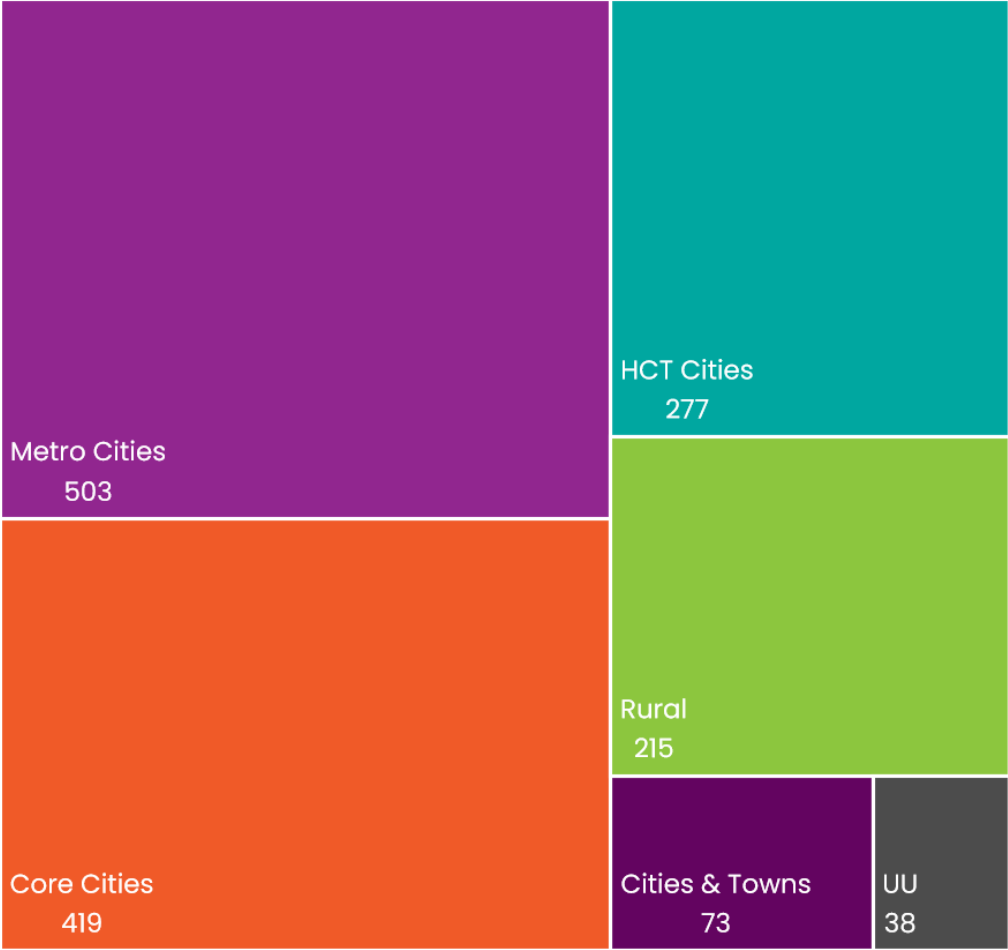
Population Data Source: US Census Bureau American Community Survey (ACS) 5-year data Table B03002

Safety is both an Urban & Rural issue

Traffic Related Deaths: 2022



Serious Injuries: 2022



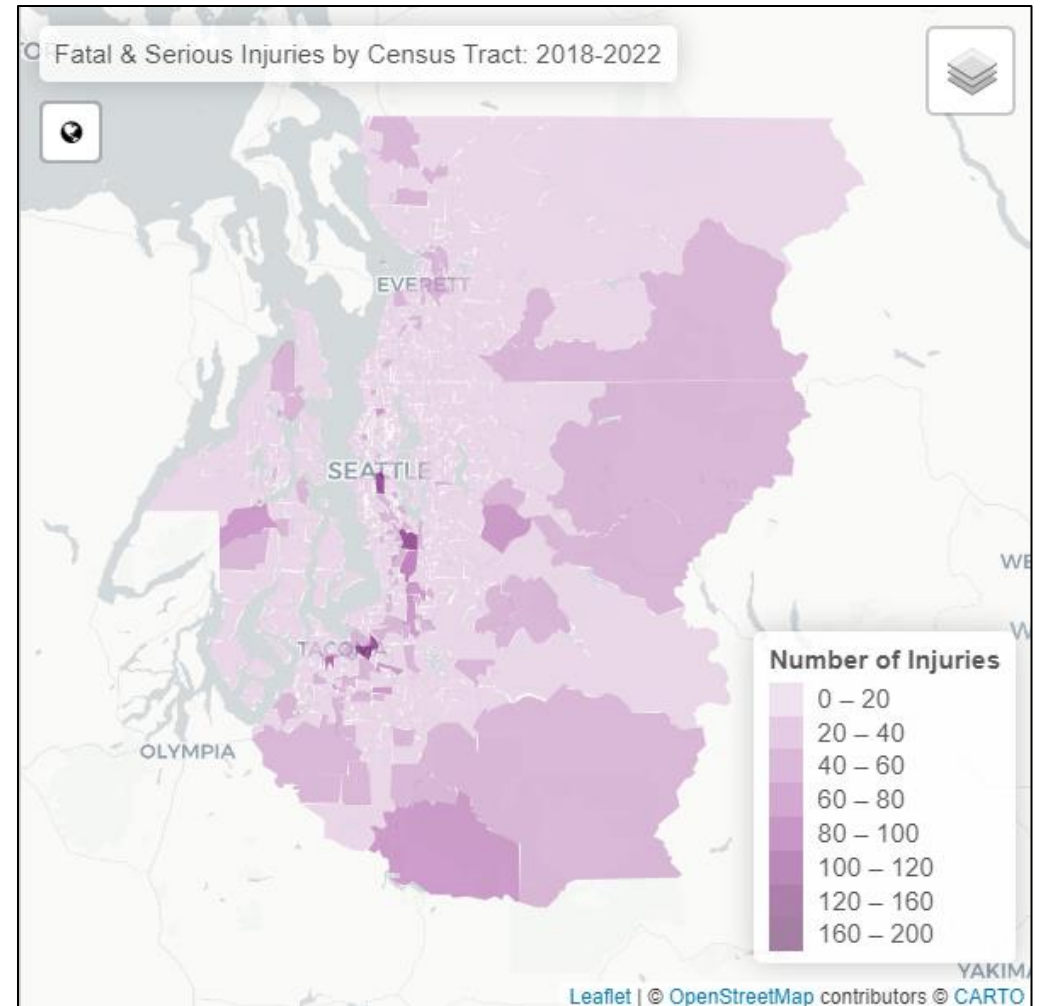
Fatal Collision Source: Washington Traffic Safety Commission Coded Fatality Files (2022 Preliminary)

Serious Injury Data Source: Washington State Department of Transportation, Crash Data Division, Multi-Row data files (MRFF)



Every City is affected

77 of 82 places had at least one serious or fatal collision since 2018

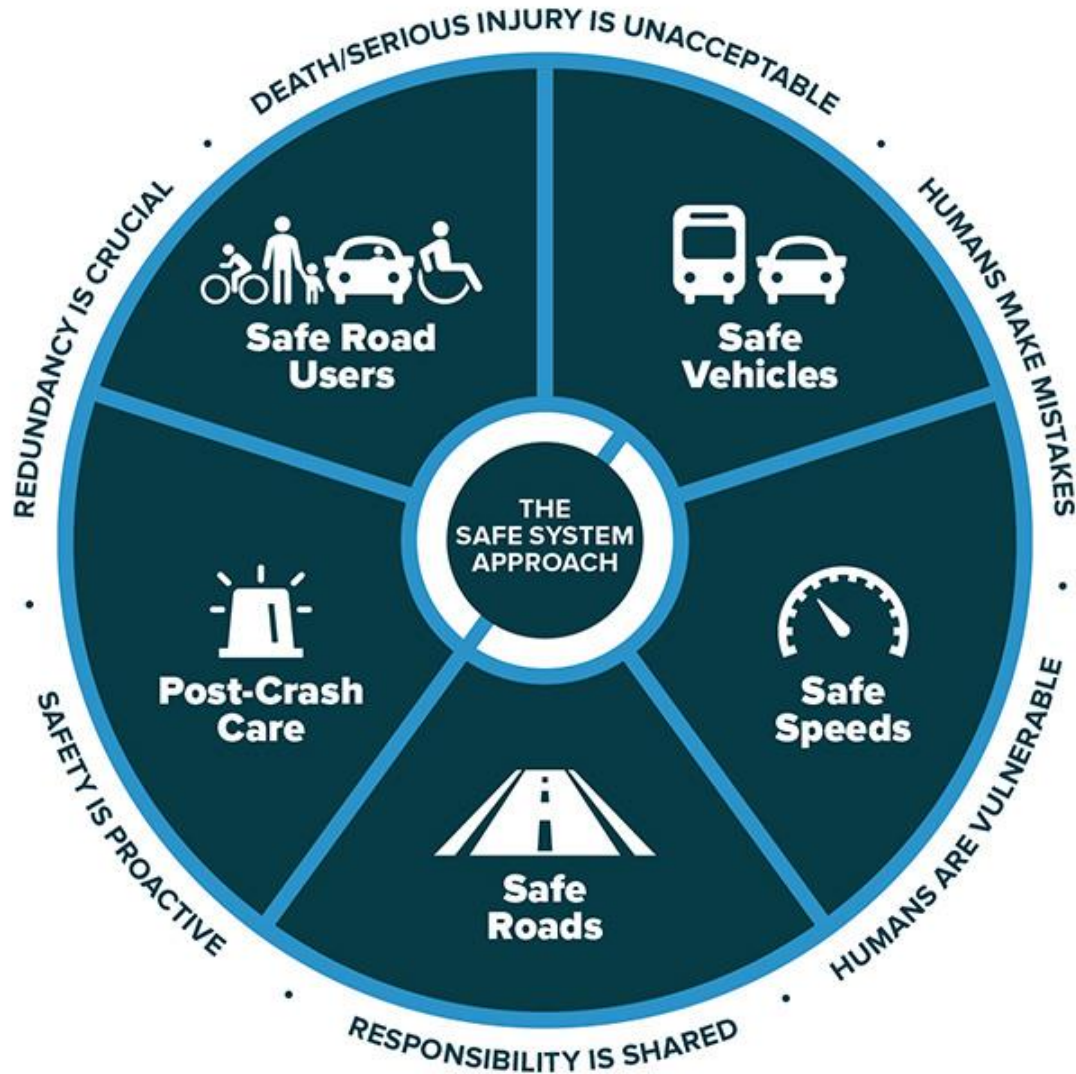


Fatal Collision Source: Washington Traffic Safety Commission Coded Fatality Files (2022 Preliminary)

Serious Injury Data Source: Washington State Department of Transportation, Crash Data Division, Multi-Row data files (MRFF)



We are all in this together



Safety is everyone's responsibility

- Collisions occur everywhere but the context matters
- Solutions consider both behavior and infrastructure
- Breakouts this afternoon are focused on hearing from you to help inform both regional and local safety planning





Thank You!

Craig Helmann

Director of Data
chelmann@psrc.org



Puget Sound Regional Council