

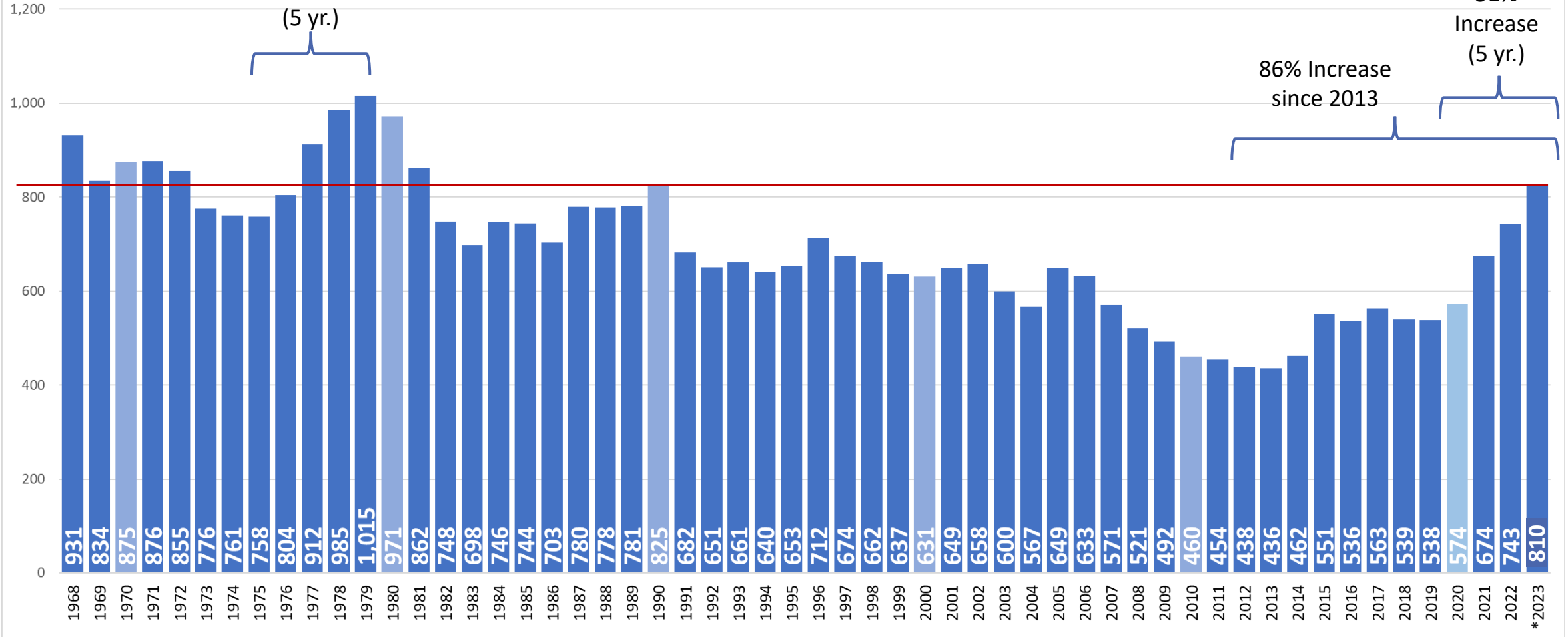


# TARGET ZERO AND THE SAFE SYSTEM APPROACH TO TRAFFIC SAFETY

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Washington Traffic Safety Commission

# Washington State Traffic Fatalities 1968 - Present

Source: WTSC Historical Counts, CFC Files



\*2023 data is an unofficial estimate, incomplete, subject to change.

# 2023

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416 fatalities involving an alcohol/drug *impaired driver* – a 63% increase since 2019

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251 fatalities involving a *speeding driver* – a 65% increase since 2019

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160 *pedestrians* killed – the highest on record

---

142 *motorcyclists* killed – the highest on record

---

136 fatalities involved a *distracted driver*, the highest number since the distracted driving law was passed in 2017

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# UNDERINVESTMENT IN COMMUNITIES CONTRIBUTES TO DISPROPORTIONATE IMPACT OF TRAFFIC FATALITIES

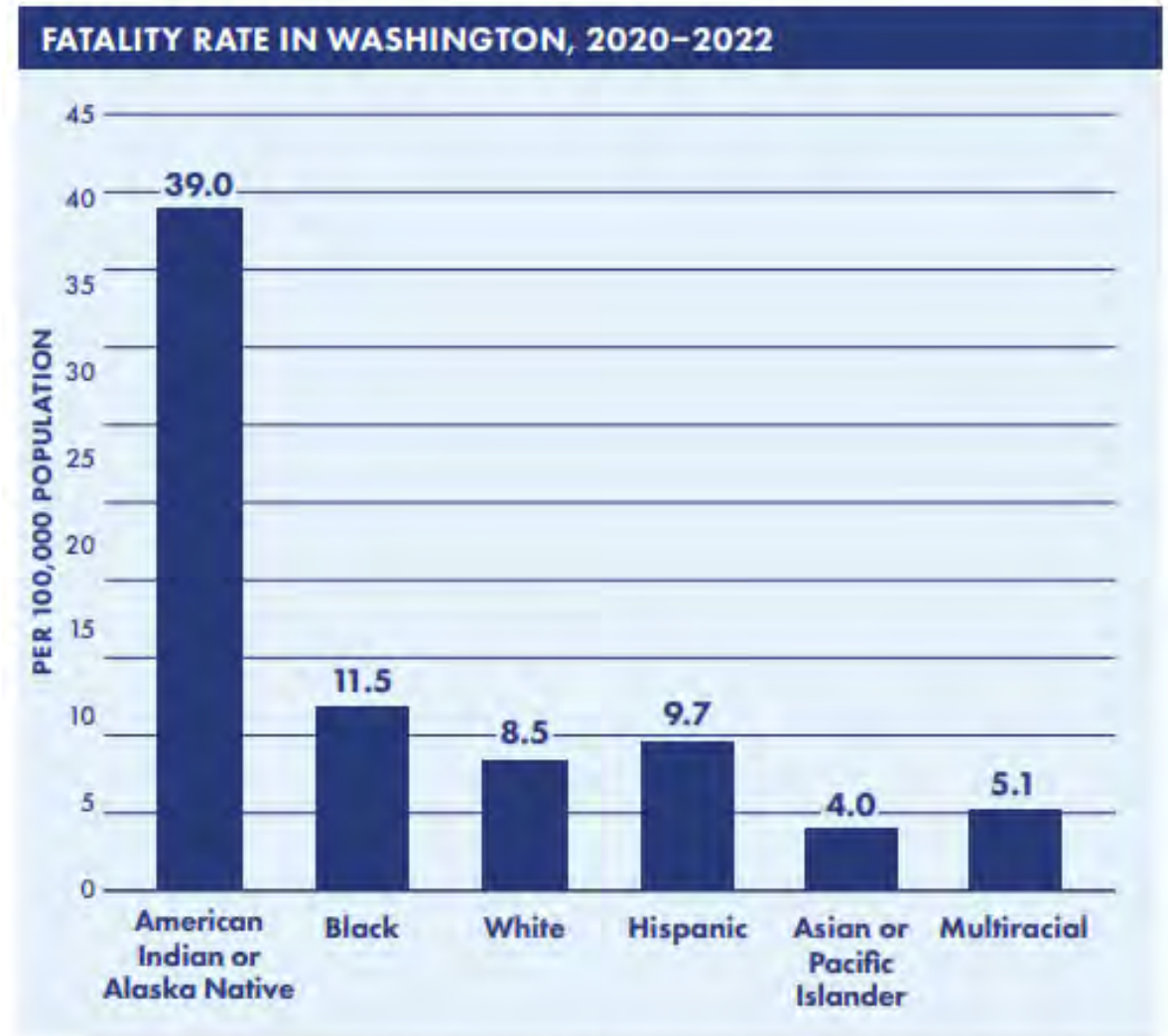


FIGURE 4. FATALITY RATE PER 100,000 POPULATION BY REPORTED RACE IN WASHINGTON, 2020-2022

# WASHINGTON STRATEGIC HIGHWAY SAFETY PLAN 2024



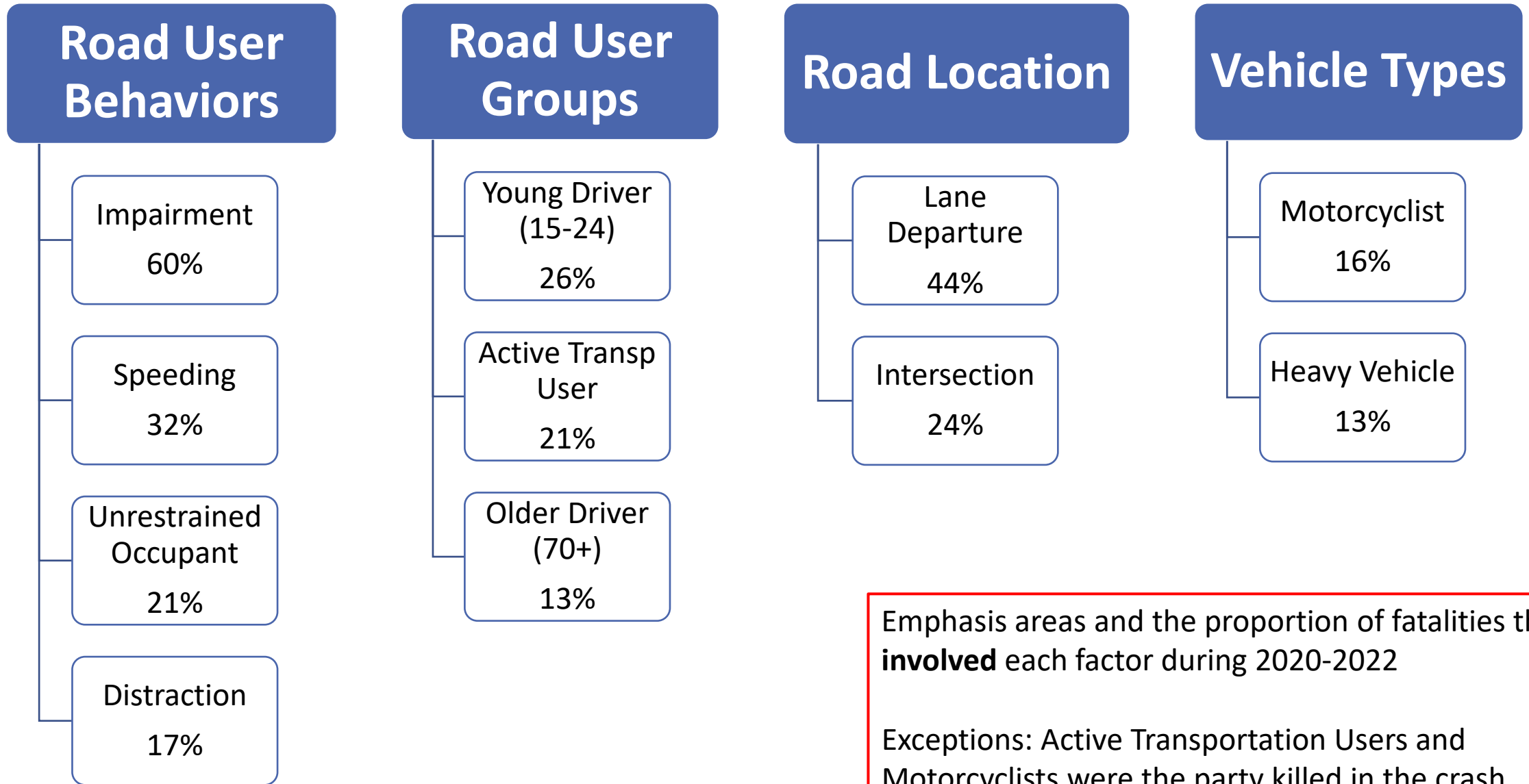
# TARGET ZERO PLAN (SHSP), 2024

[TARGETZERO.COM](https://targetzero.com)

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# TARGET ZERO PLAN EMPHASIS AREAS (2020-22 data)



Emphasis areas and the proportion of fatalities that **involved** each factor during 2020-2022

Exceptions: Active Transportation Users and Motorcyclists were the party killed in the crash.

# COMMUNITY INPUT



- Local intercept surveys and interviews in South Seattle, South King County, and Yakima County
- Listening sessions with Community Based Organization staff, volunteers, and constituents – multiple counties
- Listening sessions and government-to-government outreach with Tribal Nations
- Presentations to MPOs/RTPOs
- Feedback sessions on draft with city/county engineers and planners



# SHARED RESPONSIBILITY

All parties within the system—including government at all levels, private industry (e.g., vehicle manufacturers, consulting firms, etc.), nonprofit/advocacy organizations, the healthcare system, first responders, researchers, landowners, and individual road users—are vital to preventing fatalities and serious injuries on Washington’s roadways.



# SAFE SYSTEM APPROACH

The SSA involves six *overlapping and integrated* elements that provide layers of safety.

We cannot rely on just one element alone to prevent death and serious injury.



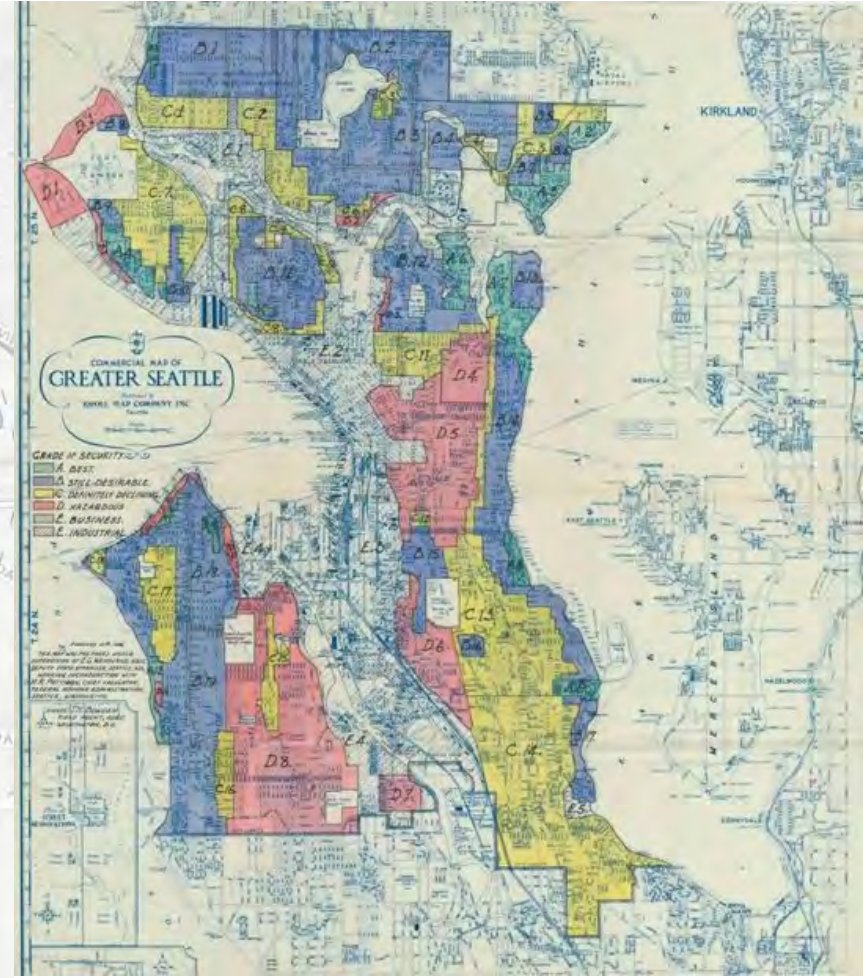
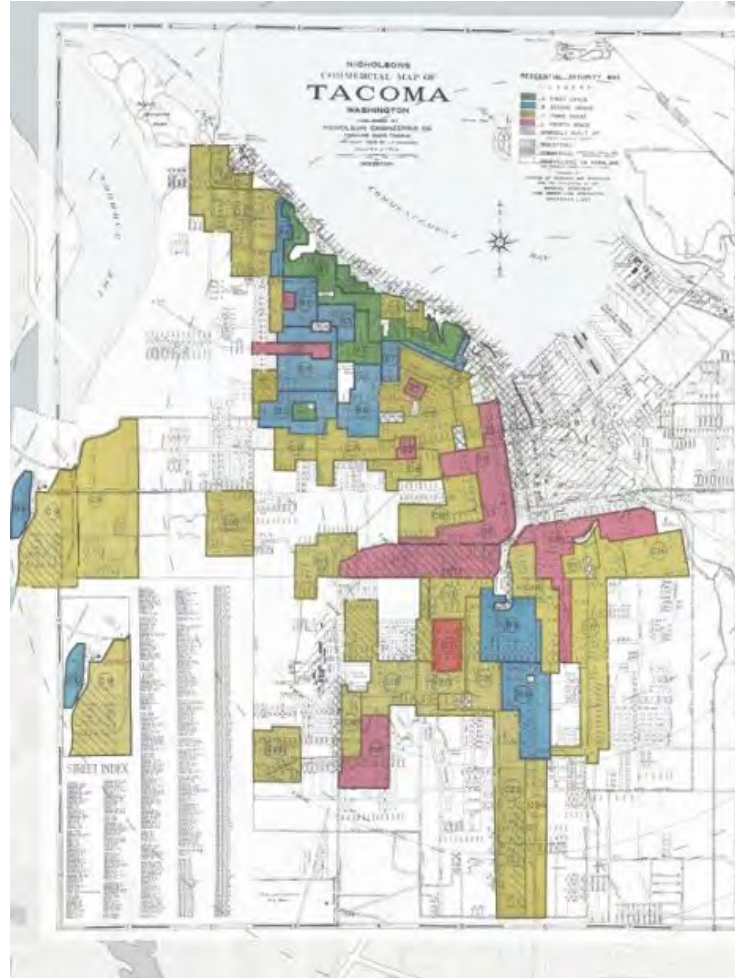
# SAFER LAND USE

NEW

<https://www.tac-atc.ca/wp-content/uploads/prm-vzss-e.pdf>

- Safer Land Use enables reduced car use and shortens travel distances, both of which reduce crash exposure.
- Safer land use planning addresses the interactions between properties, roads, and facilities for walkers, rollers, transit, and commercial and other vehicles.
- It is important to consider and plan where people live in relation to where they need to travel and how they will get there safely.

SAFER LAND USE  
PLANNING CAN HELP  
REDUCE DISPARITIES  
THAT RESULTED  
FROM HISTORICAL  
PATTERNS OF  
HOUSING  
SEGREGATION (E.G.,  
REDLINING) AND  
UNDERINVESTMENT.



# SAFER ROADS

“Safer roads” include the network of facilities that allow people to travel using all modes, alone or in combination: walking, rolling, transit using, and driving.

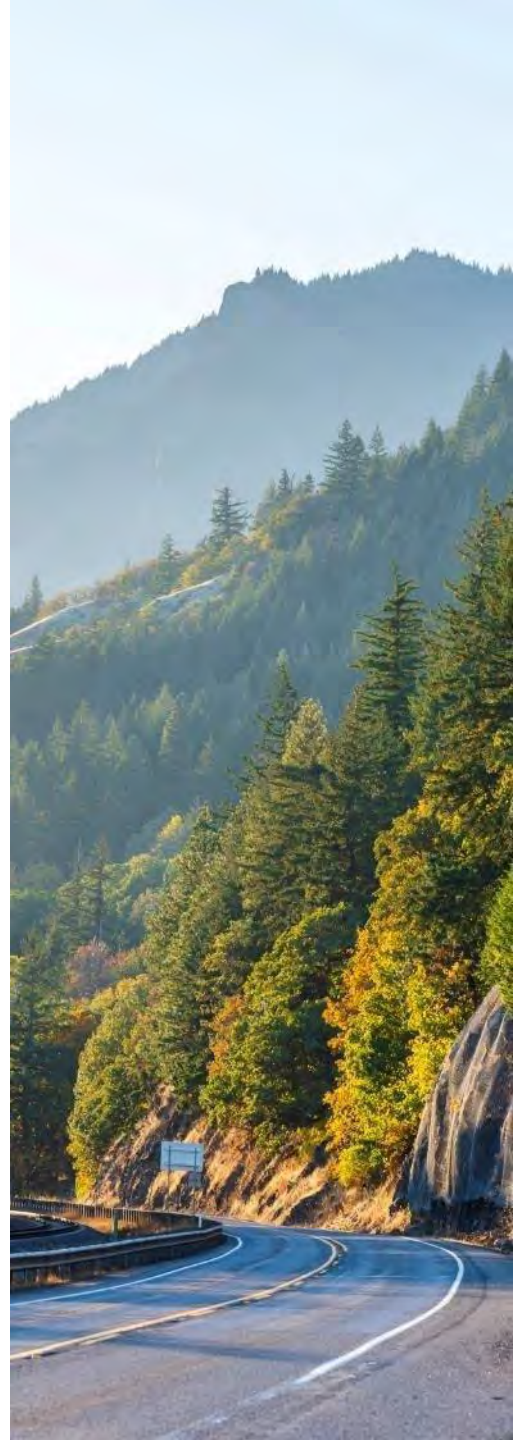
- Safer roads help **manage speeds** and **minimize conflicts** between users.
- Users are separated in space and time.



Roundabouts decrease fatalities ~90% compared to intersections where stop signs or traffic signals were previously used for traffic control

# SAFER ROAD TREATMENTS RANGE FROM SIMPLE TO COMPLEX

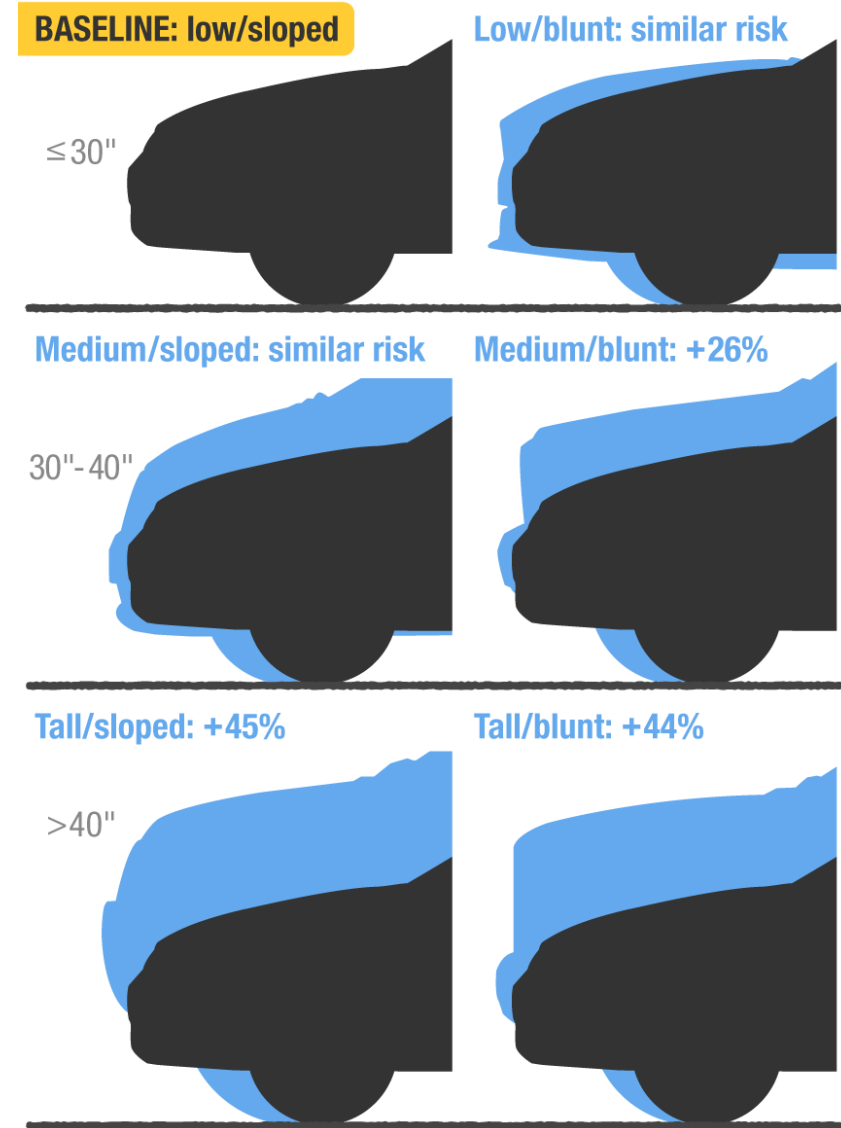
- Wider, brighter edge lines
- Rumble strips, raised medians/barriers, center lane hardening
- High friction surface treatment
- Wider shoulders
- Separated/buffered bike lanes and walking paths
- Pedestrian-scale lighting
- Turn calming; turn limits
- ‘Daylighting’ intersections (bump-outs, moving fixed objects and parked cars)
- Crosswalk visibility (beacons, markings, ped scale lighting)
- Leading pedestrian interval signals
- Roundabouts
- Road diet (fewer, narrower lanes)



# SAFER VEHICLES

Safer vehicles better protect drivers, passengers, and everyone outside of the vehicle. Safer vehicles help to avoid collisions in the first place and help minimize injury when collisions occur.

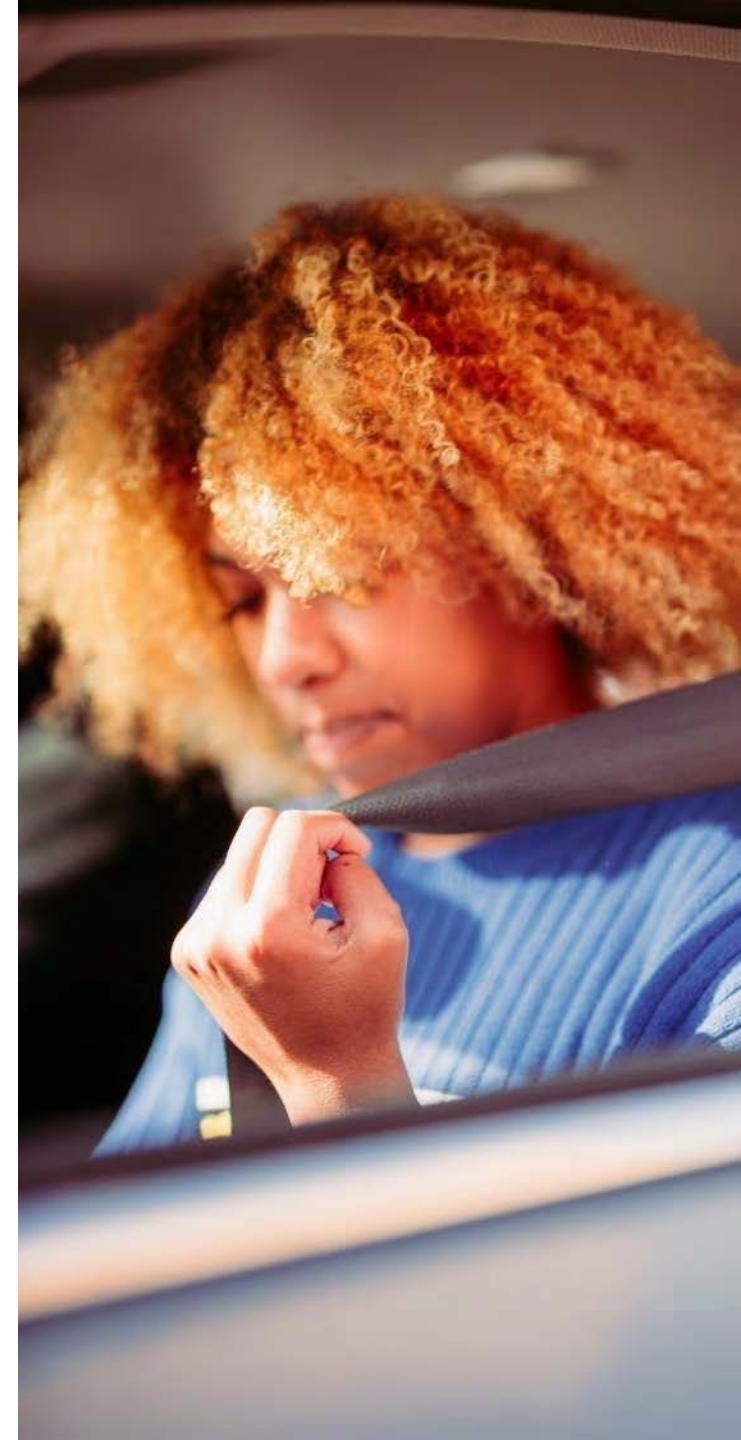
(Primarily regulated by federal agencies, but drivers choose which vehicle to purchase.)



Graphic from IIHS (2023), "Vehicles with higher, more vertical front ends pose greater risk to pedestrians"

# SAFER VEHICLES

- Brakes, tires, and systems maintained.
- Collision avoidance: anti-lock brakes, automatic braking, ADAS, etc.
- Reduce crash forces and manage angles based upon:
  - Mass
  - Height
  - Speed
- Features to support safe driving:
  - Good visibility
  - Reduce speeding (active or passive speed limiters)
  - Prevent impaired driving (detect alcohol or other impairment)
  - Reduce distractions for the driver





# SAFER SPEEDS

Speed is the *primary factor that increases or decreases the force* of a crash.

*Force increases exponentially with speed.*

Driver speed also impacts their field of vision and the time it takes to brake or react to a possible collision.



Dangers of Higher Speeds:

- Increased stopping distance/time
- Loss of control in emergency maneuvers
- Limited field of vision (Vision narrows by filtering out visual information on the periphery. Driver focuses ahead.)
- Force increases exponentially: an increase of speed by 50% (40 to 60 mph) results in a 125% increase in crash force.

# SAFER SPEEDS

*Actual speeds* determine the seriousness of a crash. Reducing speeds involves a number of strategies across SSA elements:

- ❖ Self-explaining roads that prompt drivers to travel at lower speeds (narrower lanes, narrower roads, roundabouts)
- ❖ Deterrence and enforcement: Limits are set based upon safety and enforced by officers and cameras that are conspicuous to all drivers
- ❖ Drivers are educated on the dangers of speed and encouraged to follow posted speeds by friends, family, employers, and others
- ❖ Vehicles are designed to travel at safe speeds and may prohibit extreme speeds.



# SAFER ROAD USERS

- Everyone benefits from *learning and following the rules of the road* and giving each other space.
- Safer road users understand risks and *avoid behaviors that increase risk* (likelihood and severity).
- Safer road users are *focused, patient, and sober*.
- Road users *respond to safety cues* and reminders from the environment (signs, signals, road design).
- Take basic safety precautions (seatbelt, helmet, child safety seat)



# POST-CRASH CARE

Timely response to a crash scene and trauma care can prevent death or permanent injury.

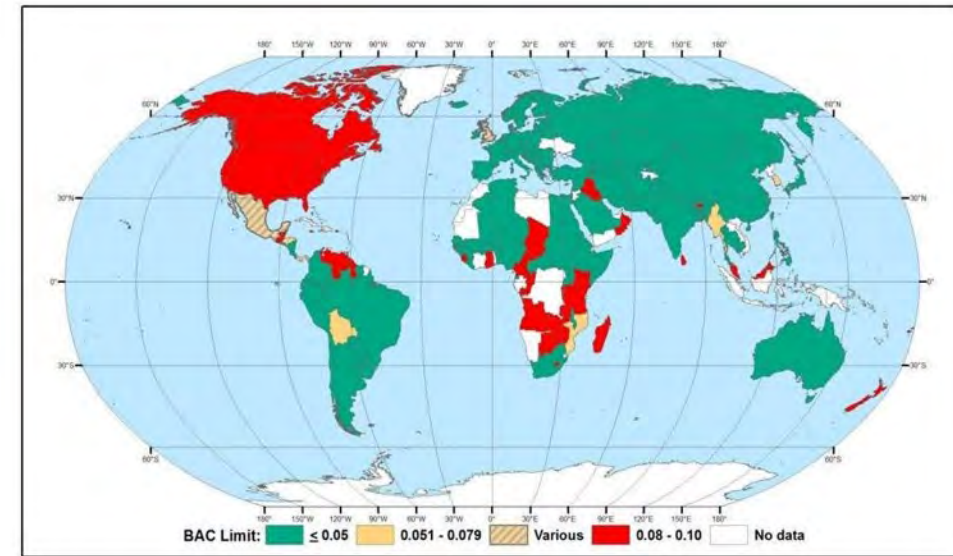
First responders also manage a scene to prevent additional collisions and collect data to inform all elements.



# POLICY RECOMMENDATIONS TO SUPPORT TARGET ZERO



# REDUCE IMPAIRED DRIVING: 0.05% BAC *PER SE* LIMIT



Adopt the *per se* 0.05 percent Blood Alcohol Concentration limit for driving.

- Already adopted in 75% of countries (0.05 or lower)
- Provides broad deterrence to prevent DUI
- Reduces fatalities (avg. **-11%**) by encouraging planning for sober travel (rideshare, taxi, bus, sober driver, etc.)
- Unlikely to adversely impact businesses, law enforcement, or courts

# SAFER SPEEDS

- Set speed limits based upon safety for road context (rather than 85<sup>th</sup> percentile)
- Design streets and roads for calming
- Automated enforcement that is conspicuous and predictable
- Highly visible officer enforcement



# DRIVER EDUCATION



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- Increase affordability to lower-income young drivers (scholarships, subsidized programs)
- Increase access to underserved areas by expanding instructor training and certification
- Eventually expand training requirements for new drivers 18-24 years



# FUND COMPLETE STREETS

Funding for projects to include:

- Protected trails/sidewalks
- Protected bike lanes
- Vulnerable road user crossings that are well-marked and lighted and reduce/eliminate blind spots



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# SAFER VEHICLES

Track data at the state level on the relationship between vehicle size and fatal crashes, particularly in those involving a vulnerable road user fatality. Consider incentives for smaller/safer vehicle purchases.



# ADDRESS IMPAIRMENT FOR OTHER DRUGS

- Revisit *per se* limits for cannabis and illicit drugs that are impairing
- Develop testing capacity for impairing drugs other than cannabis, such as roadside oral fluid testing (screens for presence of major impairing drugs: cannabis, cocaine, opiates, and stimulants)

# ENFORCEMENT TO REDUCE IMPAIRED DRIVING

- Increase dedicated, trained patrol officers to identify, stop, and arrest impaired drivers
  - WTSC supports overtime at the state, county, and city levels
  - WTSC has funded dedicated DUI officers in select departments (Yakima, Spokane)
  - WTSC has a pilot project to improve ignition interlock compliance
  - Working collaboratively to reduce toxicology lab backlog

# TARGET ZERO PLAN 2024



## Project Sponsors

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# NEW TOOLS: TELEMATICS DATA

## Michelin Mobility Intelligence:

V85 Speeds

Braking Behavior Severity

Acceleration Behavior Severity

Speeding (avg/risk)

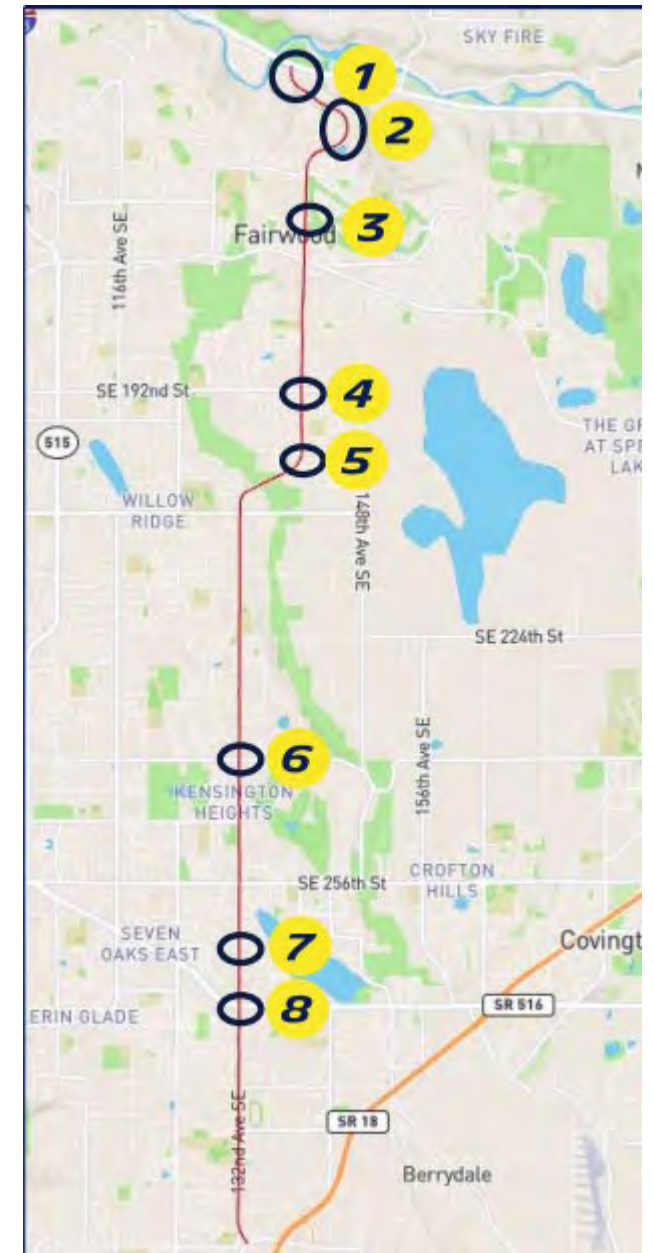
VRU Crash Risk

Crashes per time period

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Total risk score

<https://wtsc.wa.gov/data-collaborations/>



Renton: 140<sup>th</sup> Ave SE

# TELEMATICS: CAMBRIDGE

- Distraction
- Phone use by time
- Minutes of distraction per hour
- Speeding by road type and posted speed

<https://wtsc.wa.gov/data-collaborations/>



Speed Limit	10 to 15 mph over	15 to 20 mph over	20+ Over
25	88%	11%	2%
30	87%	11%	2%
35	87%	11%	2%
40	81%	16%	3%
45	80%	16%	3%
50	86%	12%	2%
55	44%	49%	7%
60	50%	48%	2%
65	47%	47%	5%
70	95%	5%	<0.5%

Table 1: The percent of speeders in each excess speed band by speed limit.

If we normalize the speeding vehicles by total time spent on a functional class by all cars in the dataset, speeding rate is similar across all but residential roads, with highways not surprisingly showing the most.

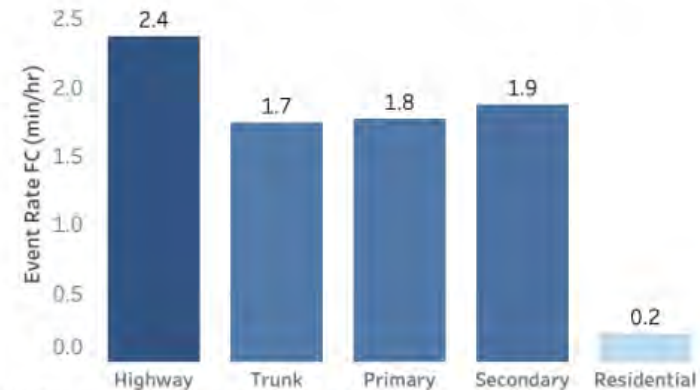


Figure 29. Speeding rate (minutes per hour of driving) per functional class shows speeding is ubiquitous on all but residential roads.

Speeding data: Statewide by posted speed and road type

# Questions



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