Achieving Vision Zero Through the Safe System Approach

City Council Transportation Committee

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SAFER STREETS FOR SEATTLE

Seattle Department of Transportation

Our Vision, Mission, Values, & Goals

Seattle is a thriving equitable community powered by dependable transportation. We're on a mission to deliver a transportation system that provides safe and affordable access to places and opportunities.

Core Values & Goals:

Equity, Safety, Mobility, Sustainability, Livability, and Excellence.

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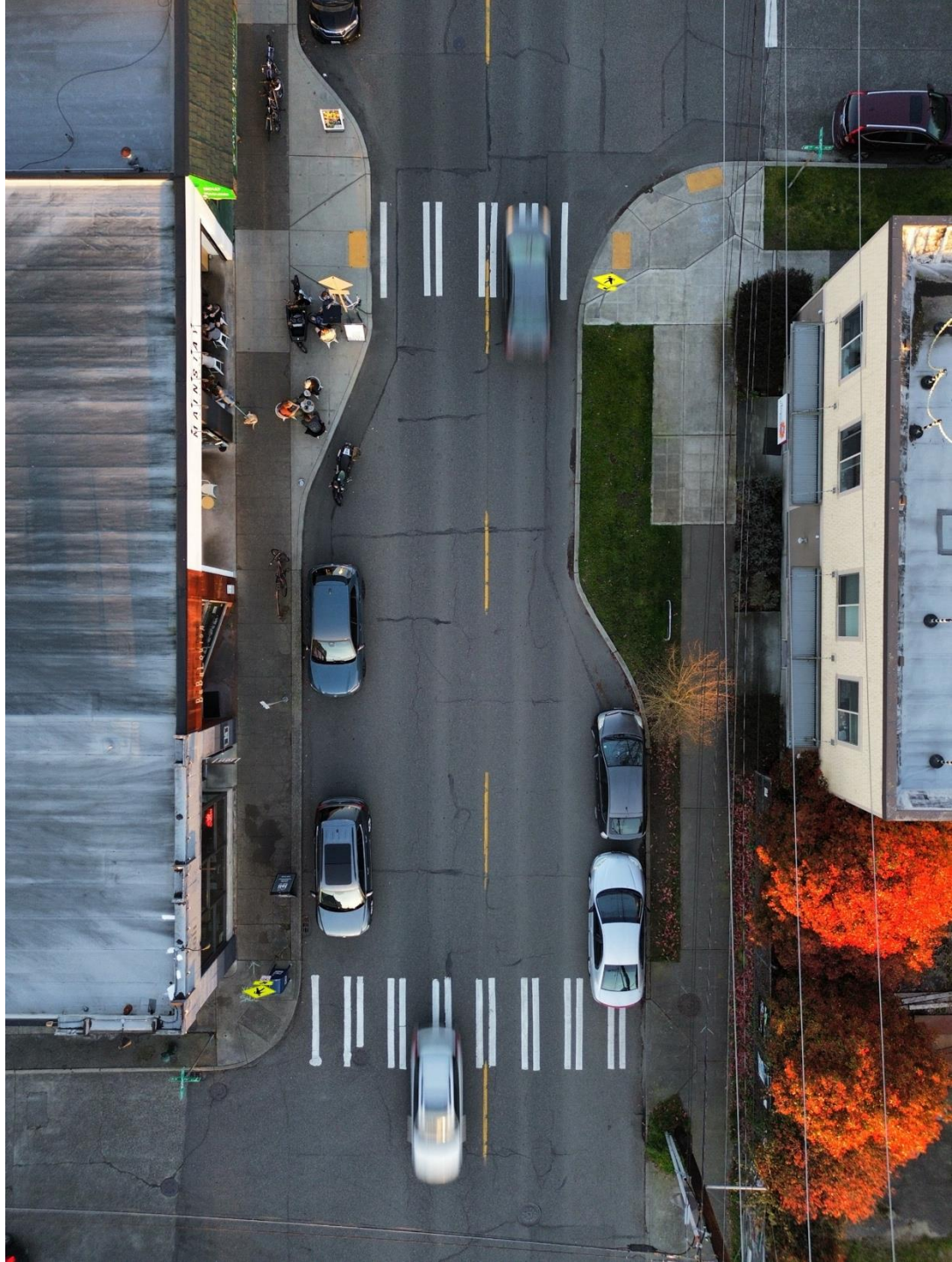
Presentation Overview

- Safe System Approach and Vision Zero Overview
- Safe System Elements and Design Hierarchy
- Key Vision Zero Trends
- Vision Zero Action Plan
- Major 2025 Actions



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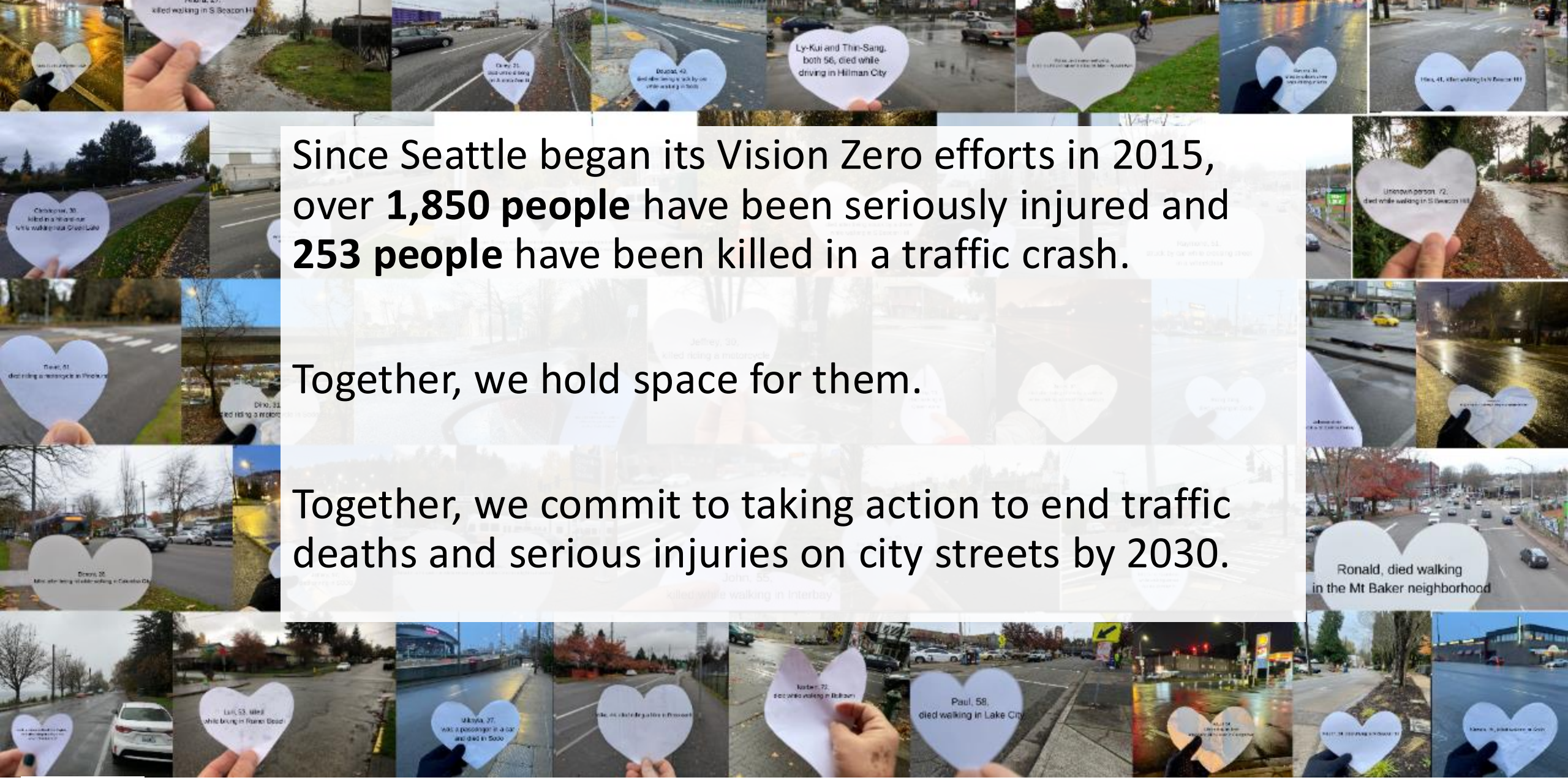

Since Seattle began its Vision Zero efforts in 2015, over **1,850 people** have been seriously injured and **253 people** have been killed in a traffic crash.

Together, we hold space for them.

Together, we commit to taking action to end traffic deaths and serious injuries on city streets by 2030.

Vision Zero

Seattle's goal to end traffic deaths and serious injuries on city streets by 2030

- Vision Zero framework historically based around “Five E’s” (engineering, enforcement, education, encouragement, evaluation)
- Shifting towards the Safe System Approach to broaden our focus and address safety from multiple angles

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The Safe System Approach

- In 2022, USDOT adopted a new paradigm to address roadway safety
- This paradigm approaches safety from multiple angles and includes multiple layers of protection to:
  - Reduce the likelihood of crashes
  - Reduce harm when crashes do occur
- The Safe System Approach has been successful internationally, including in Sweden, Norway, and Australia

Six Guiding Principles of the Safe System Approach

1) Death and serious injuries are unacceptable
2) Humans make mistakes
3) Humans are vulnerable
4) Responsibility is shared
5) Safety is proactive
6) Redundancy is crucial

Elements of the Safe System Approach

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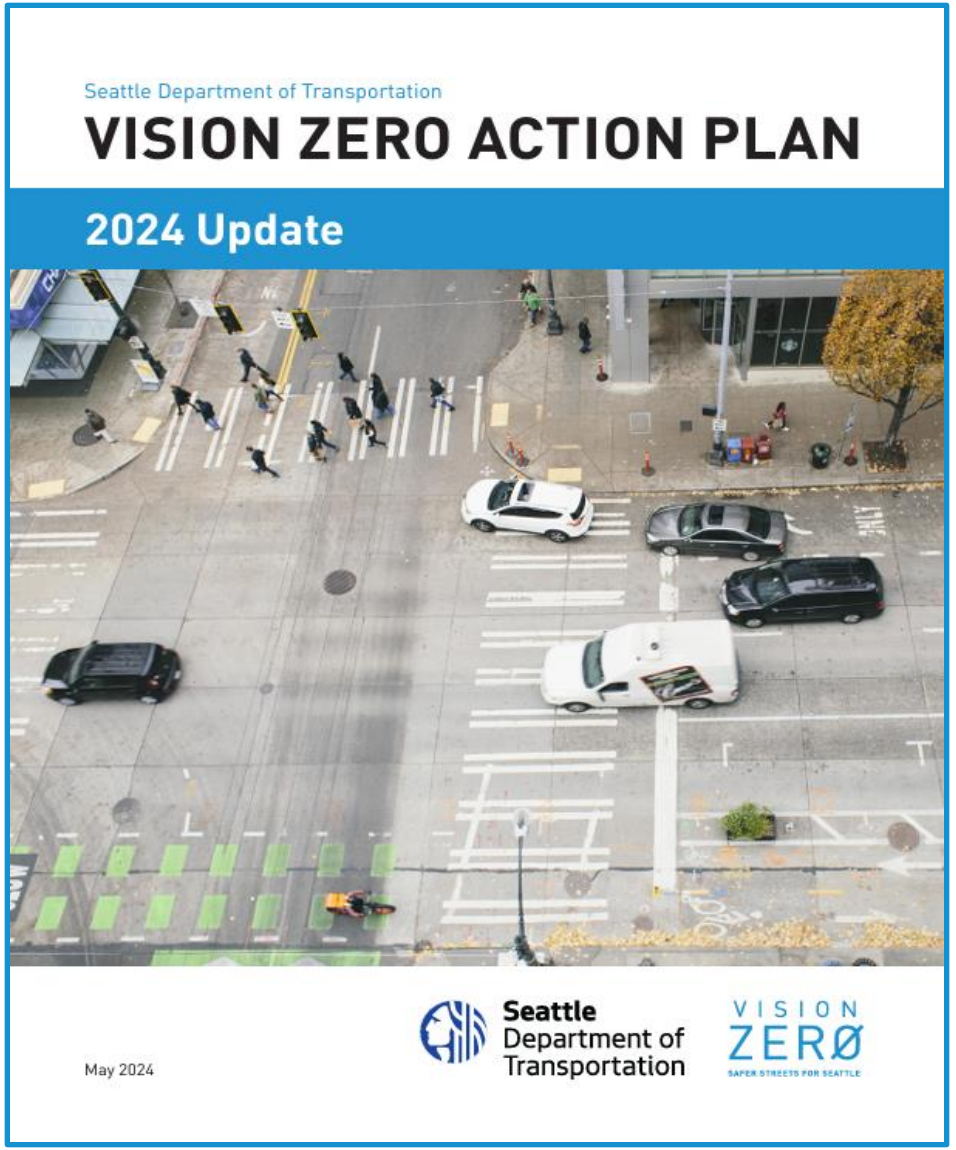
2024-2026 Vision Zero Action Plan

- Roadmap reducing the number and severity of crashes
- Establishes a proactive **3-year strategy**
- Based on Safe Systems Approach
- Over 20 broad strategies and 80 specific and measurable actions touching all of SDOT
- Annual tracking in progress



Safer Streets

Safer streets are those that mitigate human mistakes, are self-enforcing by design, encourage safe travel behaviors, protect the most vulnerable users, and reduce potential for high severity crashes.

Key Strategies:

- Integrate **safety improvements into all capital projects** and in coordination with agency partners
- Advance **responsive safety treatments** at **crash-prone locations**
- Accelerate and **proactively** implement **proven safety treatments** (LPIs, NTOR, road reconfiguration, protected turns, enhanced crossings, bike lanes, etc.)
- Deliver **Safe Streets for All projects**
- Develop an **industrial-focused Vision Zero** initiative
- Improve **dedicated facilities for people** walking, rolling, biking, and taking transit

Safer Streets – Past Projects

Leading pedestrian intervals have been expanded to approx. 80% of all signals

- 48% decrease in turning vehicle pedestrian crashes
- 34% decrease in serious injury/fatal pedestrian crashes

Safety improvements for all travel modes were installed on the NE 65th St corridor in Roosevelt in 2019

- 63-67% reduction in crashes

Dedicated left turn signals were added to address the high collision location at 6th Ave & James St in 2021

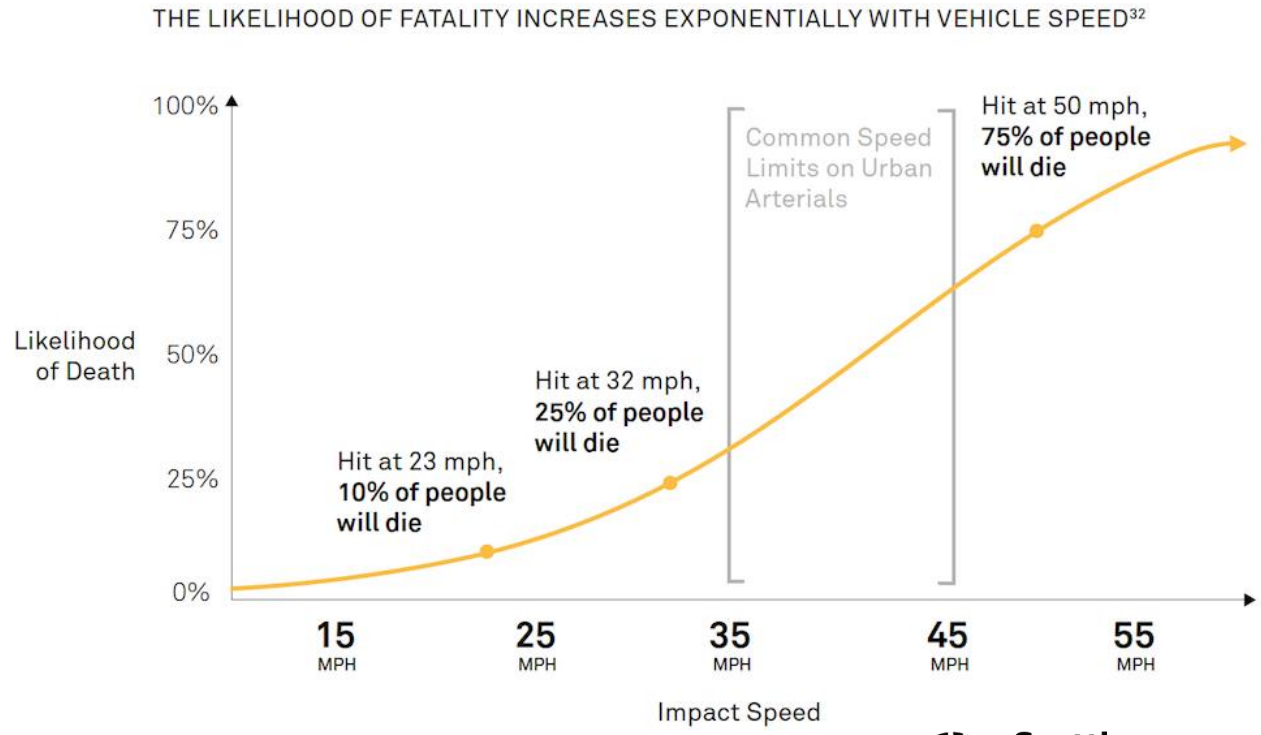
- 76% reduction in crashes

Safer Speeds

Speed is a leading determinant of the severity of crashes. A pedestrian's chance of surviving a crash decreases significantly with faster vehicle speeds.

Key Strategies:

- Continue to apply **context-sensitive speed limit reductions** on City and State-operated arterials
- Encourage slower speeds using **traffic calming treatments and road reconfigurations**
- Equitably explore **traffic safety cameras** on high-speed and crash-prone corridors



Source: NACTO; AAA Foundation for Traffic Safety

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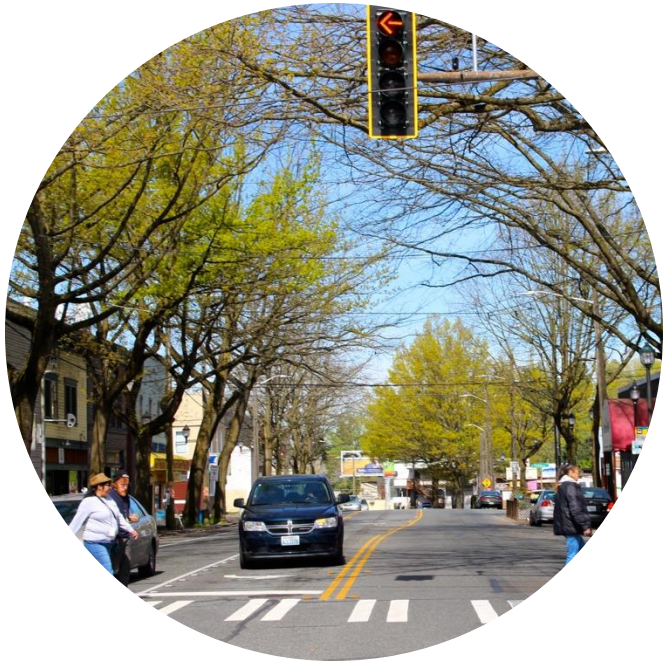
Safer Speeds – Past Projects

Citywide speed limits were reduced to 25 MPH on most arterial streets and 20 MPH on non-arterials

- 20-40% reduction in crashes when implemented in urban villages as a pilot



Safety improvements, including a road diet, were added to the Rainier Ave S corridor

- 28-52% reduction in speeding

Arterial traffic calming was added to Boyer Ave E

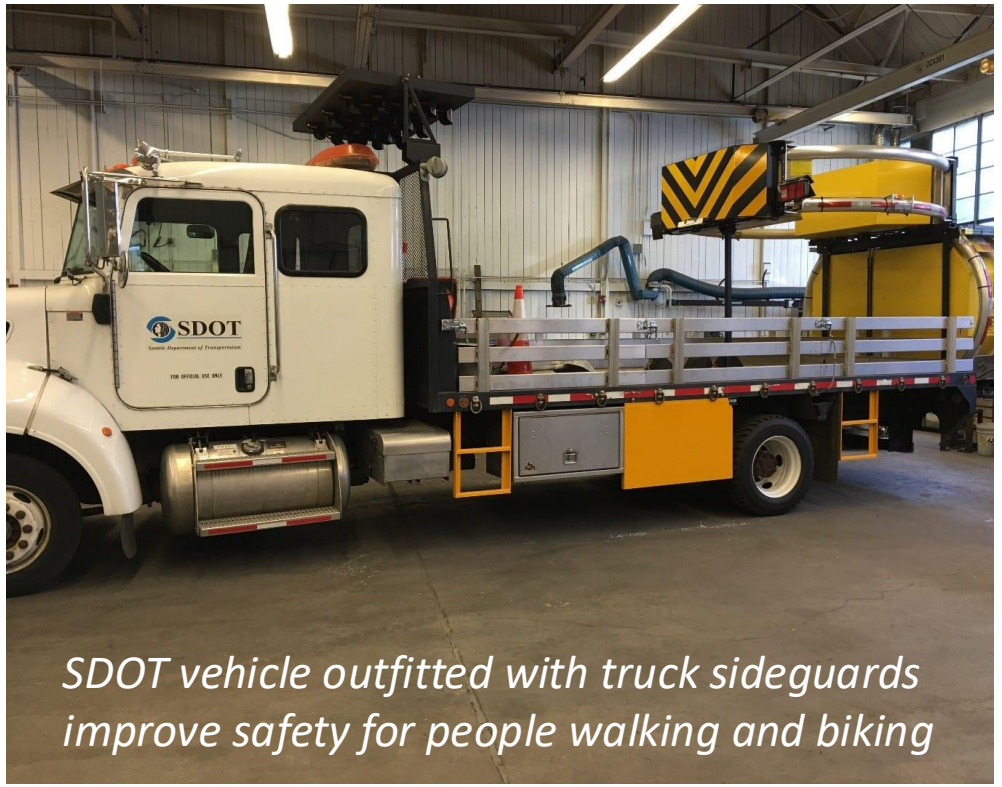
- 2-22% reduction in speeding

Safer Vehicles

The size and weight of vehicles, as well as availability of vehicle safety systems, plays a major role in the likelihood and severity of crashes.

Key Strategies:

- Pilot new **safety features on City fleet vehicles**, such as vulnerable road user detection, truck sideguards, and intelligent speed assistance
- Explore opportunities to **influence regulations** around vehicle size, weight, and safety standards as well s autonomous vehicles



SDOT vehicle outfitted with truck sideguards improve safety for people walking and biking

Safer People

Encourage people who use our transportation system to practice safe and responsible travel behaviors and empower people to engage with us on how we can advance safety on their streets.

Key Strategies:

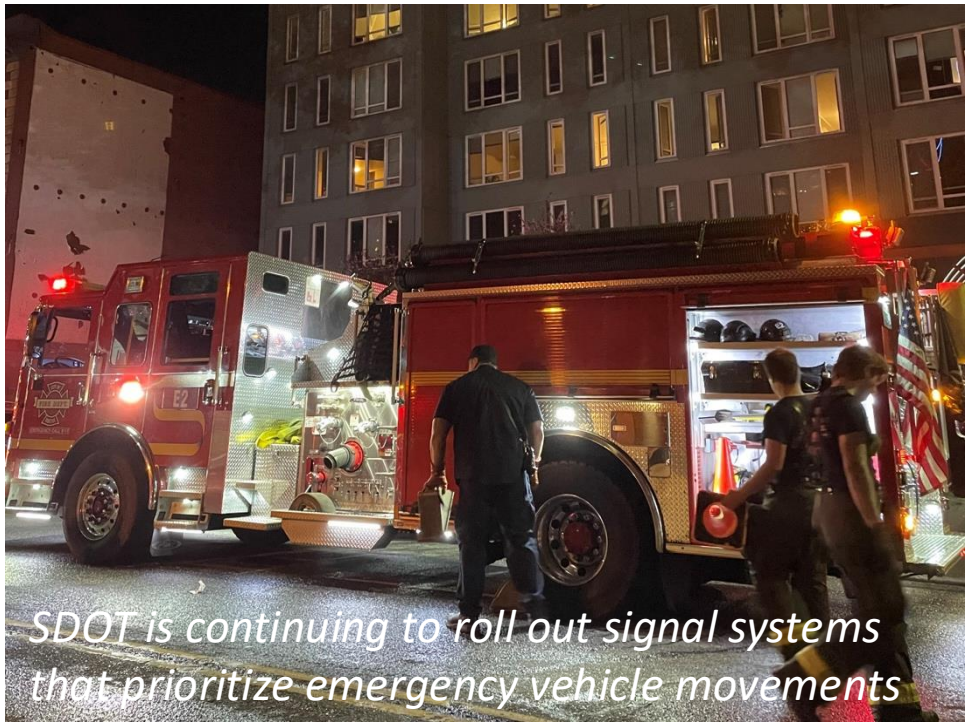
- Expand and evaluate focused safety **education and encouragement campaigns**
- **Engage vulnerable users** in the planning of safety improvements
- Improve **safety data transparency** and use community suggestions to inform the prioritization of projects

Post-Crash Care

Post-crash care focuses on improving the survivability of people involved in crashes with timely access to medical services as well as implementing effective traffic incident management, data collection at the crash site, and effective follow-up responses.

Key Strategies:

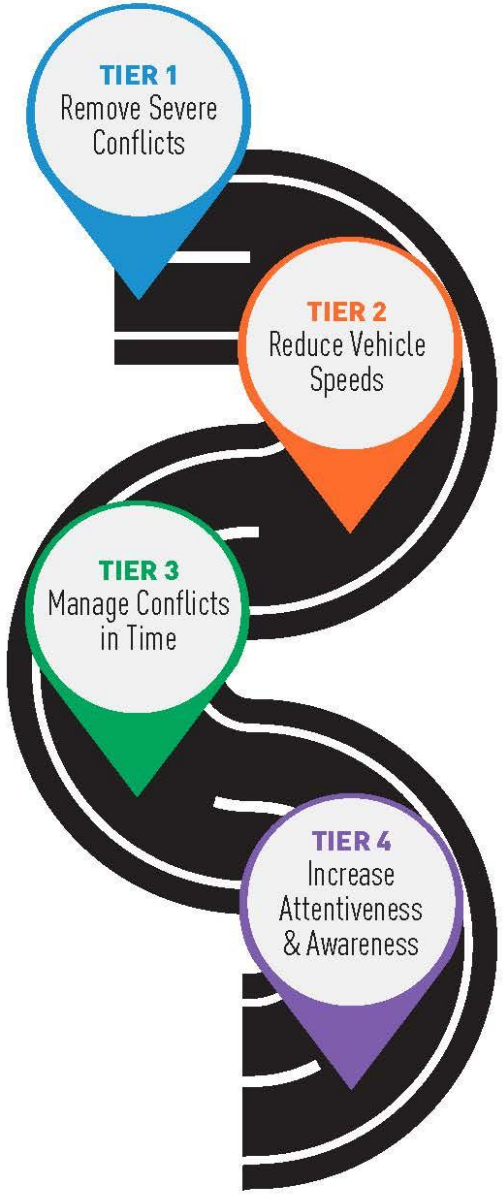
- Implement **signal technology upgrades for emergency vehicles** to improve response times
- Partner with SPD and SFD to improve **data collection at crash sites,** emergency vehicle response times and other strategies



SDOT is continuing to roll out signal systems that prioritize emergency vehicle movements

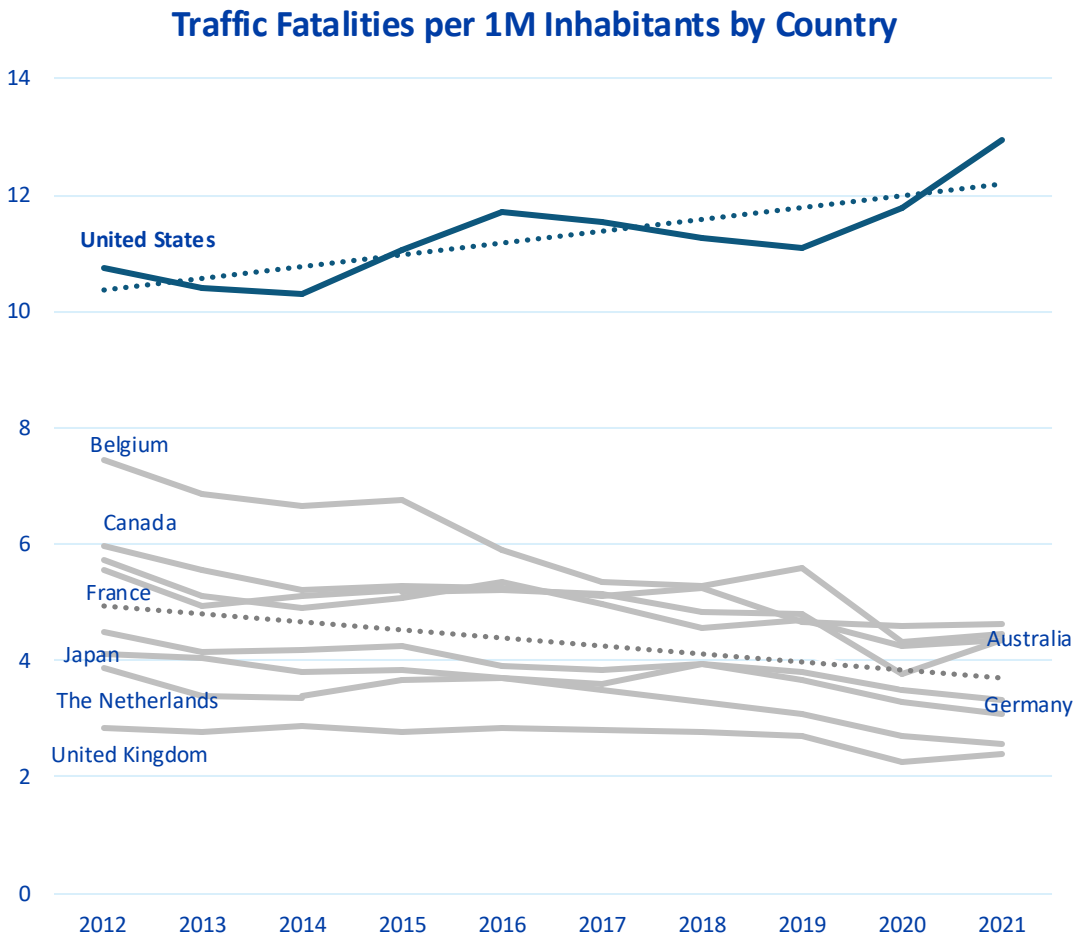
Safe System Roadway Design Hierarchy

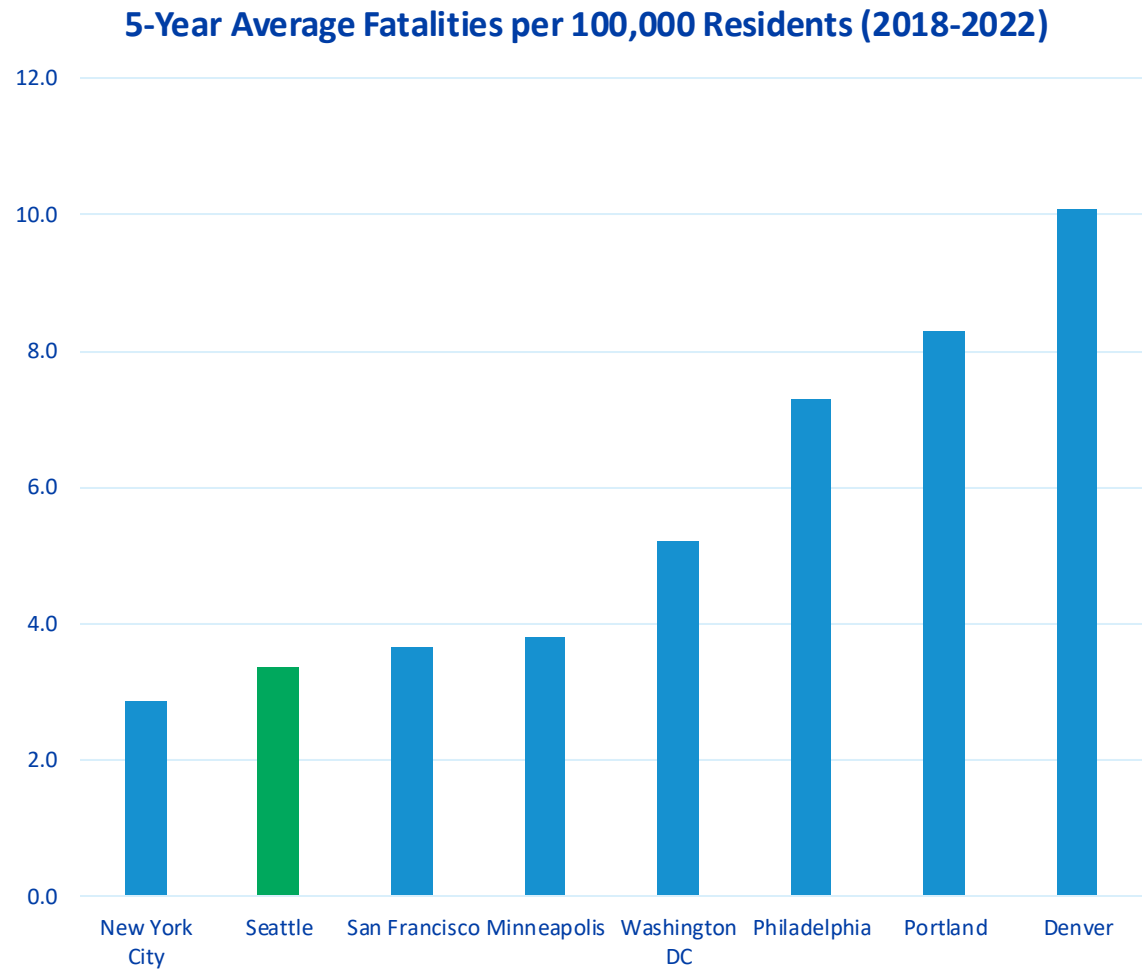
- Design treatments ranked based on effectiveness and alignment with Safe System principles
- Prioritize treatments that eliminate conflicts by making physical changes to the roadway



SAFE SYSTEM
Roadway Design Hierarchy

Roadway Safety is a National Issue





Source: OECD Road Accident Database; peer city Vision Zero reports and data dashboards

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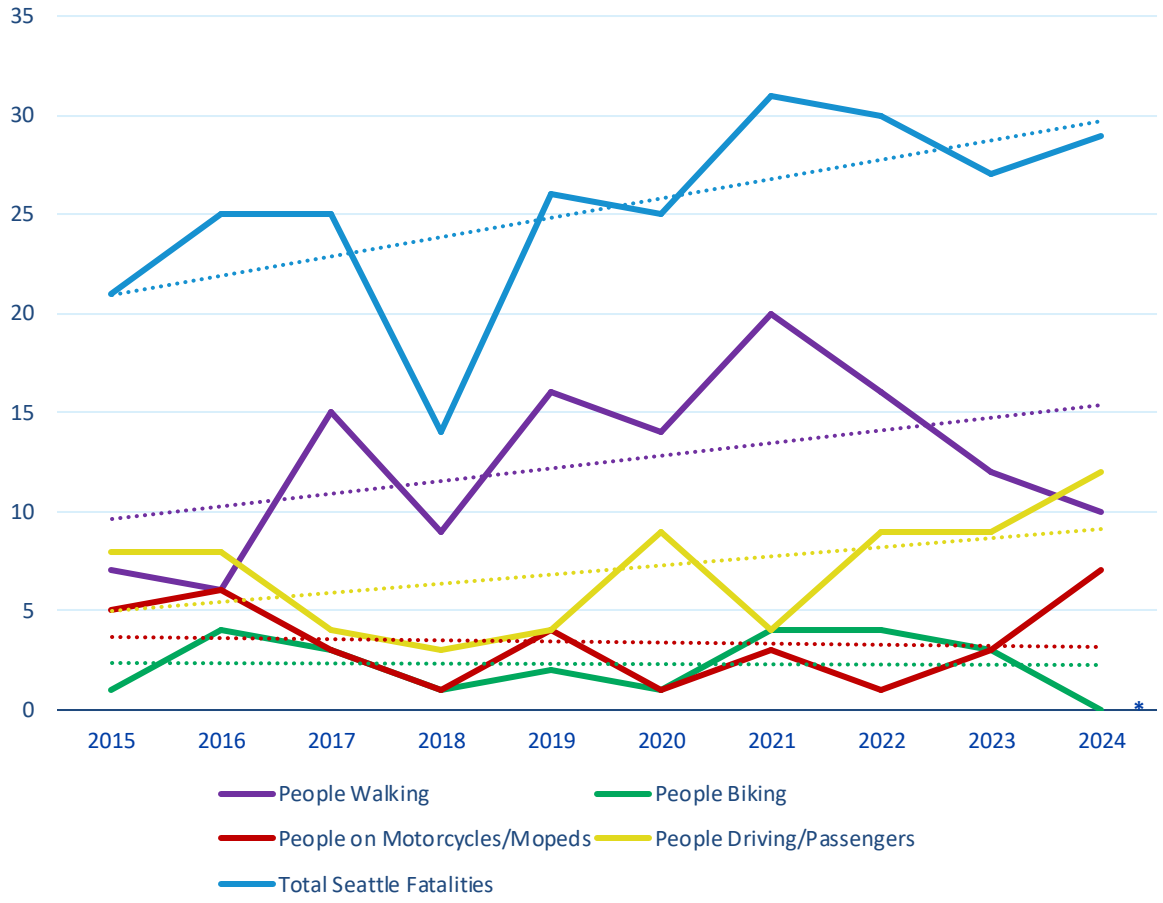
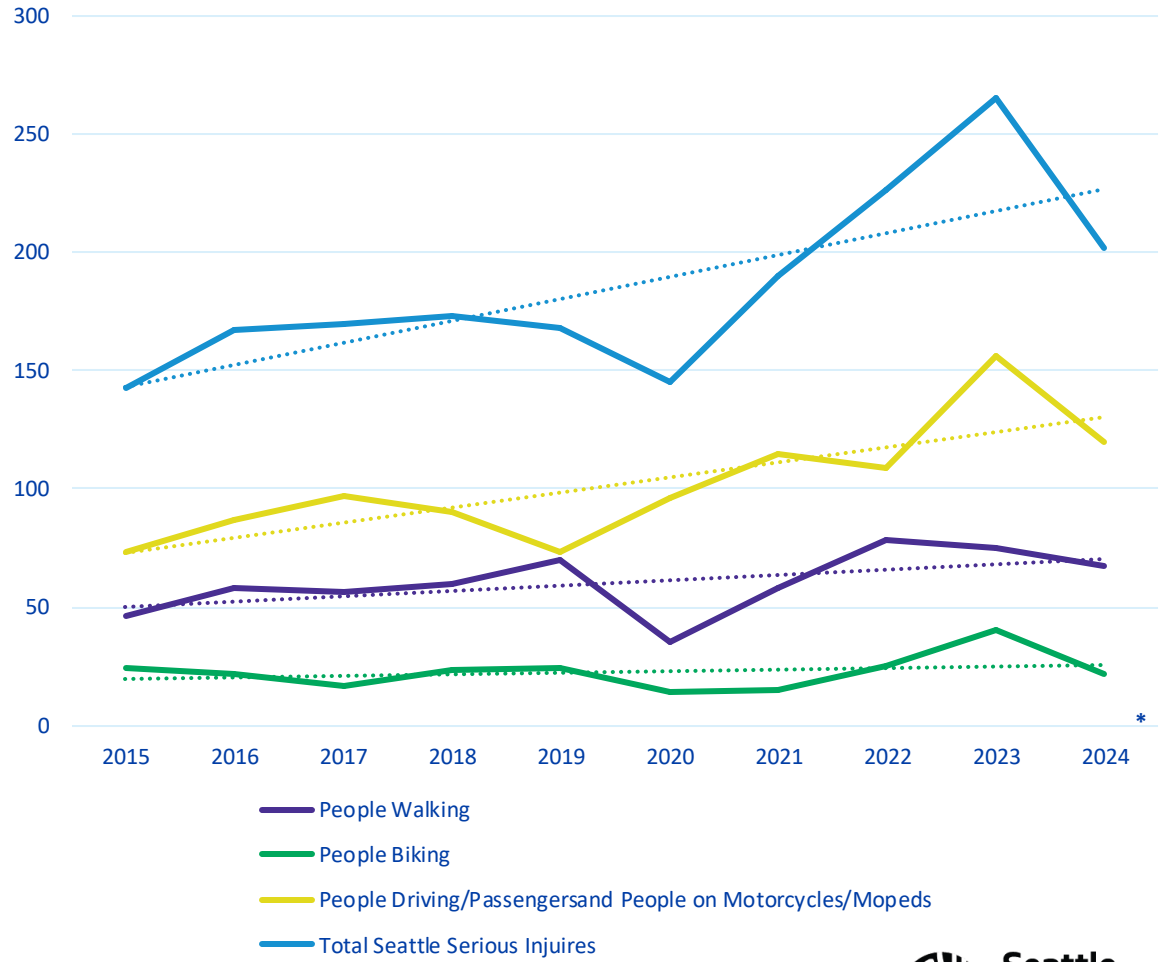
Collision Trends on Seattle's Streets

Lives Lost on Seattle Streets



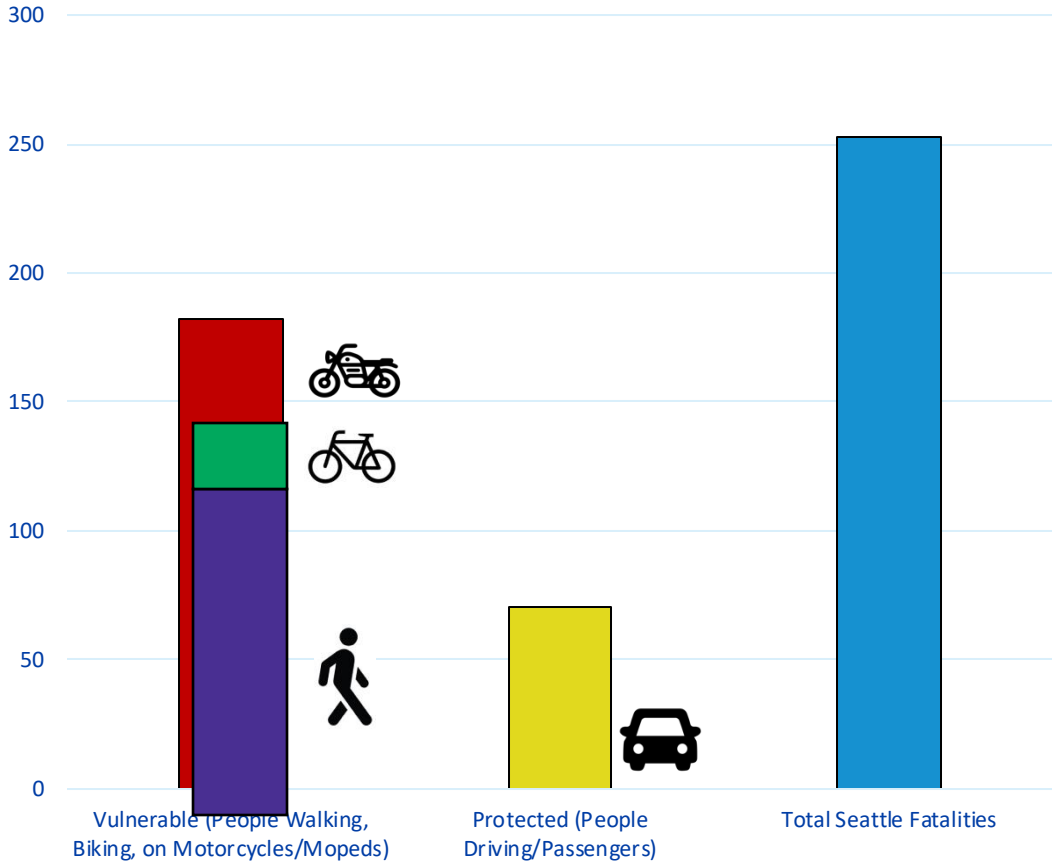
Serious Injuries on Seattle Streets



* Collision figures from 2024 are still preliminary and are subject to change

Impact on Vulnerable Users

Total Lives Lost (2015-2024)

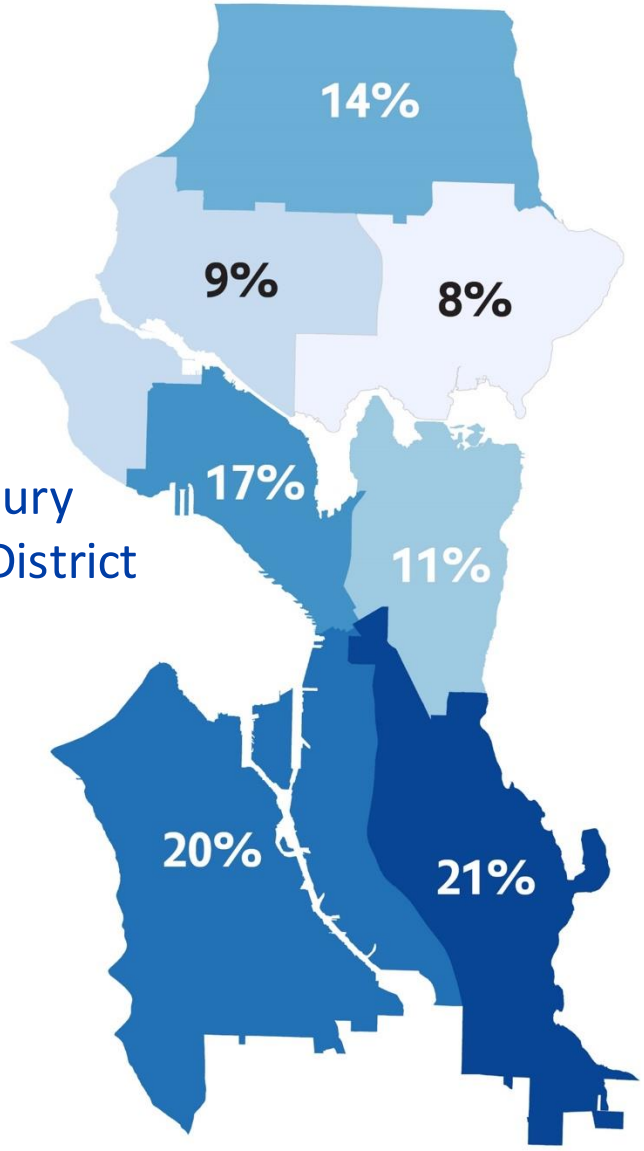


Lives Lost on Seattle Streets by Level of Protection

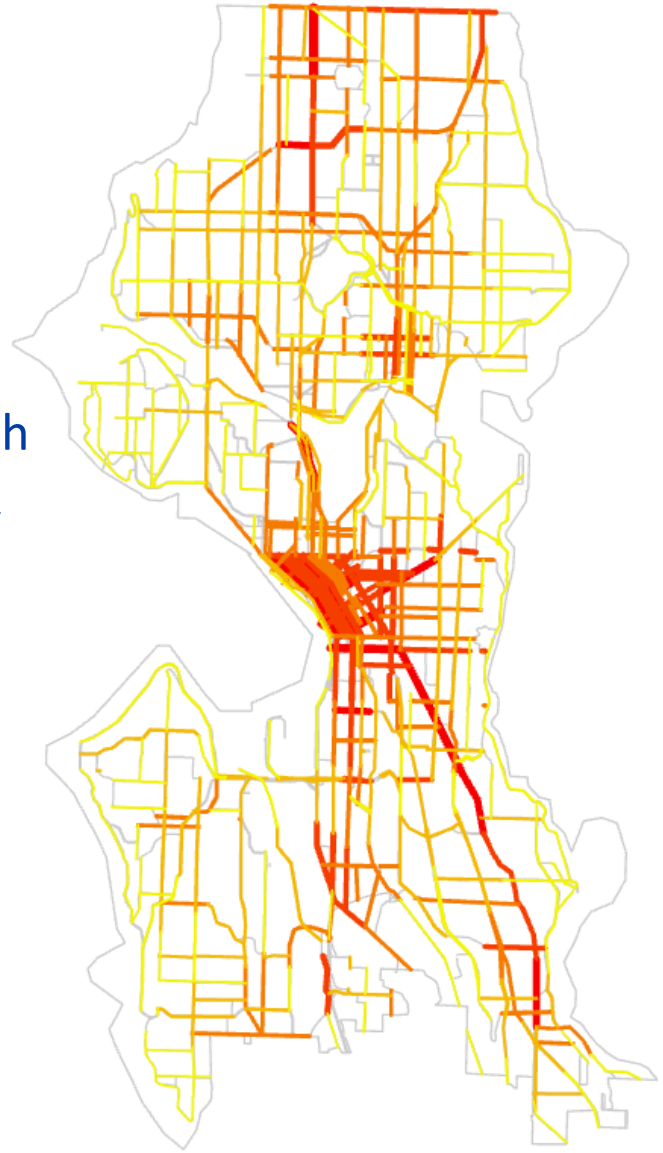
* Collision figures from 2024 are still preliminary and are subject to change

Where are these Crashes Occurring?

Share of 2020-2024 Fatal and Serious Injury Crashes by Council District



Vision Zero High Injury Network



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Three Prongs to Vision Zero Program Investments

Responsive Safety

Use data from past collisions to inform new safety strategies

- High Collision Locations
- Safety Corridors

Proactive Safety

Scale up delivery of effective safety treatments and deploy them where they will have the greatest impact

- Invest in Proven Safety Countermeasures recommended by FHWA. Ex: LPI, Speed Management, Enhanced Crossings etc.

Capital Project Partnerships

Conduct safety evaluations for all capital projects and develop safety improvements in priority locations

- Capital Project Partnerships
- Grant Projects
- SS4A Partnerships

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Proven Safety Countermeasures

https://highways.dot.gov/safety/proven-safety-countermeasures

Appropriate Speed Limits for All Road Users

Leading Pedestrian Interval

Road Diets (Roadway Reconfiguration)

Bicycle Lanes

Lighting

Medians and Pedestrian Refuge Islands in Urban and Suburban Areas

Crosswalk Visibility Enhancements

Rectangular Rapid Flashing Beacons (RRFB)

Pedestrian Half Signals

Walkways **and Sidewalks**

Roundabouts

Wider Edge Lines **and Narrow Lanes**

Arterial Traffic Calming

Enhanced Delineation for Horizontal Curves

Speed Safety Cameras

Backplates with Retroreflective Borders

Dedicated Left- and Right-Turn Lanes at Intersections **and Dedicated Turn Phasing**

Yellow Change Intervals

No Turn on Red

Hardened Centerlines

Intersection Daylighting

Turn Calming

Raised Pavement Markers

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Focus Proven Safety Countermeasures

Leading Pedestrian Intervals

No Turn on Red

Dedicated Turn Phasing

Intersection Daylighting

Enhanced Pedestrian Crossings

Road Reconfigurations

Corridor Lighting

Arterial Traffic Calming

Major 2025 Actions

- Start strong in delivering **key safety projects** using funds from the new 2024 Transportation Levy
- Continuation of design for safety projects funded by $25.6M **Safe Streets for All grant** and construction of locally-funded projects
- Expansion of **automated traffic safety camera** program
- Expansion of **research-backed safety treatments**, including head-start walk signals, protected turn phasing, and enhanced pedestrian crossings

Vision Zero Investment within the Levy

2024 SEATTLE TRANSPORTATION LEVY

The 2024 Transportation Levy allocated $70M to Vision Zero investments over 8 years. 2025 Levy-specific investments include:

- Start construction on two safety redesign projects
  - S Henderson St – MLK Jr Way S to Seward Park Ave S (2nd highest category on High Injury Network)
  - N 130th St Phase 1 - Stone Ave N to 1st Ave NE (2nd highest category on High Injury Network)
- Start planning or design on 6 other safety corridors
- Start construction on 10 Arterial Traffic Calming corridors
  - Investments include implementing speed cushions, narrow travel lanes, parking lane lines, intersection daylighting, median islands, radar speed signs, edge lines, chevrons etc.
- Start construction on over a dozen High Collision Locations
  - Investments include signs and markings upgrades, signal upgrades, new signals, median islands etc.
- Continue implementing Leading Pedestrian Intervals (LPIs)
  - LPIs or Pedestrian Head Start are now at 80% of signalized intersections citywide

From the entire SDOT Team:

Thank you!

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