

Oregon Department of Transportation

OREGON TRANSPORTATION SAFETY ACTION PLAN

SEPTEMBER 2026

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01

EXECUTIVE SUMMARY



01

Every year in Oregon, hundreds of people die and thousands are seriously injured on public roads. Every life lost or forever changed is one too many. Behind every statistic is a parent, child, friend, or neighbor, and behind every fatal crash is a community left to grieve.

A SAFER FUTURE FOR OREGON

The Oregon Transportation Safety Action Plan is about changing the road safety story. It is a collective roadmap to a different future where everyone arrives safely, every day, in every community. This plan builds on Oregon's past efforts in road safety and transportation planning, while recognizing the increase in fatalities and serious injuries over the past decade and embracing bold commitments for the future.



REDUCE FATALITIES AND SERIOUS INJURIES BY 30% BY 2035.



ACHIEVE ZERO FATALITIES AND SERIOUS INJURIES BY 2050.

THIS IS AN AMBITIOUS YET ACHIEVABLE VISION, BUT ONLY IF WE WORK TOGETHER.

HOW THE TRANSPORTATION SAFETY ACTION PLAN WORKS

The TSAP strengthens Oregon's existing transportation safety efforts by learning from the status of implementation activities from the 2021 plan and by responding to recent increases in fatalities and serious injuries with renewed urgency and updated tools. The plan is data-driven and presents actions that consider past challenges, current successes, and emerging opportunities. Key differences from previous versions of the TSAP include:

- **Built on the Safe System Approach.** Instead of expecting people to be perfect, the Safe System Approach designs roads and develops transportation policies so that the system reduces mistakes, and when mistakes do occur, they do not cost lives. This encourages shared responsibility among road users and transportation professionals to improve safety outcomes. Oregon has added a sixth element to the traditional Safe System Approach. Safer Land Use Planning reflects how communities can be built to encourage safe travel.
- **Accountable to the needs of all people in Oregon.** Some communities experience higher transportation safety risks due to systemic, geographic, and economic factors. This plan takes a comprehensive approach, using safety data and community partnerships to prioritize strategic actions with the greatest effect.
- **Data-Driven Emphasis Areas Tiers.** This plan sorts the emphasis areas into two tiers. Tier 1 is reserved for the crash factors and road users most often present in fatal and serious injury crashes. Tier 2 includes emphasis areas with recent increases in fatal and serious injury crashes, and areas of state or national focus.
- **Changing our traffic safety culture.** Building on shared community beliefs and norms around seat belt use, child safety restraints, and alcohol- and drug-involved driving, this plan seeks to make risky behaviors such as speeding and distracted driving socially unacceptable. It also reinforces shared expectations that people look out for one another and act in ways that help everyone use the transportation system safely.
- **Action-oriented.** The plan uses crash data to identify the problems, and most of the content in this document focuses on practical, strategic actions. Each action addresses one or more core behaviors or causes of fatal and serious injury crashes, and provides a path to implementation.
- **Performance monitoring of safety outcomes.** Implementation and accountability measures make this plan more than words. It is a working program with clear responsibilities, funding pathways, and transparent reporting and accountability, resulting in evaluation of outputs and outcomes.

THE FOCUS: EMPHASIS AREAS AND ACTIONS

The TSAP identifies emphasis areas that reflect the crash factors and road users most often present in fatal and serious injury crashes.

TSAP TIER 1 EMPHASIS AREAS

The TSAP Tier 1 Emphasis Areas reflect the most commonly reported attributes in Oregon's fatal and serious injury crashes. Our strategic actions will first focus on these areas of demonstrated need, since doing so will help us meaningfully reduce the number of fatalities and serious injuries.



ROADWAY DEPARTURE | INTERSECTIONS | SPEEDING | ALCOHOL AND OTHER DRUGS

Improving these crash attributes will have broad, overarching, multimodal benefits. For example, improving intersection safety and addressing speeding will improve safety for all road users, including bicyclists and pedestrians.

TSAP TIER 2 EMPHASIS AREAS

The TSAP Tier 2 Emphasis Areas have shown recent increases in fatal and serious injury crashes or are a state and national area of focus.



AGING DRIVERS (AGES 65+) | YOUNG DRIVERS (AGES 15-20) | MOTORCYCLISTS | DISTRACTED DRIVING



UNRESTRAINED OCCUPANTS | PEDESTRIANS & BICYCLISTS (VULNERABLE ROAD USERS) | MEDIUM & HEAVY TRUCKS

IMPLEMENTATION

The TSAP turns vision into action through a clear five-year Implementation Plan:

- **Coordinate with Governor-appointed Committees.** Coordinate with the Oregon Transportation Safety Committee and the Governor's Advisory Committee on Driving Under the Influence of Intoxicants. These committees provide ongoing input to Oregon road safety programs, engage with safety partners, and help inform statewide safety planning, implementation, and evaluation.
- **Focus on actions**, connecting life-saving strategies to tactical activities. Strategic actions that address the most common contributors to fatal and serious injury crashes—roadway departure, intersections, speeding, and alcohol and/or other drugs involved—will be prioritized for immediate implementation.
- **Review progress** to establish accountability for implementation teams. This will be led by ODOT and the Oregon Transportation Safety Committee.
- **Measure safety outcomes** aligned with federal rules and Oregon's Transportation Plan. These include fatal and serious injury crashes and system-level activities (e.g., policy changes, program implementation) to improve transportation systems.

CALL TO ACTION

This Plan is more than a policy requirement. It is about making Oregon a safer place to travel. The TSAP integrates multiple road safety strategies, supports coordinated action across communities, and helps create a prosocial traffic safety culture in which risky driving is not tolerated and people actively help each other stay safe.

Achieving zero fatalities and serious injuries requires shared responsibility from state and local agencies, Tribal governments, traffic law enforcement, public health partners, businesses, advocacy organizations, and every person in Oregon who uses the transportation system. It is also designed with the understanding that resources are limited. Funding levels can severely affect statewide efforts to provide a safe system, so transportation leaders must analyze tradeoffs to make every investment count.

THE CONCLUSION IS SIMPLE: TOGETHER, WE CAN SAVE LIVES AND MAKE OREGON'S VISION OF A SAFE TRANSPORTATION SYSTEM A REALITY.

We can build communities where everyone can travel safely. This Plan gives us the roadmap. Now we must take the journey together.



02

INTRODUCTION



02

The Transportation Safety Action Plan (TSAP) is Oregon's Strategic Highway Safety Plan. It establishes guiding principles, selects data-supported emphasis areas, and identifies actions to eliminate fatalities and serious injuries on all public roads.

The TSAP aligns with the Oregon Transportation Plan's statewide goals, guides safety investments, coordinates partners, and ensures compliance with the Federal Highway Administration's plan requirements.

The TSAP is guided by the Oregon Transportation Plan, which establishes Oregon's long-range transportation vision and policy framework. The 2023 update to the Oregon Transportation Plan prioritizes safety alongside climate and resilience for all Oregonians, with safety as the highest priority. The TSAP is the implementation framework for safety, refining the high-level Oregon Transportation Plan policies into measurable actions.

The TSAP connects with Oregon's other statewide safety programs, including the Highway Safety Improvement Program, the Triennial Highway Safety Plan, the Highway-Railway Crossing Safety Action Plan, and the Commercial Vehicle Safety Plan. It also aligns with recent local, Tribal, and regional TSAPs developed across Oregon under state and federal grant programs, including the U.S. Department of Transportation Safe Streets and Roads for All program.

Together, these planning efforts form a coordinated, networked approach that enables Oregon to invest in federal, state, Tribal, and local resources to save lives and prevent serious injuries.

UPDATING THE TSAP NOW

Since the adoption of the 2021 TSAP, Oregon road fatalities and serious injuries have continued to increase. In recent years, the state has faced new and intensifying challenges:

- **Fatal crash rate has increased.** Oregon's rank among U.S. states for road fatalities per 100 million vehicle miles traveled dropped from 12th best in 2010 to 43rd in 2024.[1]
- **Rising fatalities among pedestrians and bicyclists.** This is especially prevalent in urban areas and along high-speed arterials.
- **Speeding-related crashes.** These contribute to increased crash severity across the system.
- **Increasingly complex alcohol and drug involvement issues.** Impaired road user crashes involve alcohol, cannabis, other drugs, or a combination of these.
- **An aging population.** Crashes involving drivers age 65 and older represent a growing proportion of fatal and serious injury crashes. These road users have a lower physical ability to survive bodily trauma.
- **Concerns regarding fairness in safety outcomes.** Historic underinvestment and development patterns have contributed to higher transportation safety risks in some geographic areas. Addressing these challenges will require actions that close safety gaps and support safer, more sustainable land use and travel patterns.
- **Transportation funding challenges.** Current and anticipated funding challenges in Oregon are widespread among transportation agencies, law enforcement, and other safety partners. Limited resources can hinder progress on strategic actions, leading to long-term safety implications.

Oregon has embraced modern Safe System practices from the U.S. Department of Transportation and other countries, including the addition of Safer Land Use Planning as a sixth element of its Safe System Approach. The TSAP builds upon lessons from previous safety plans, aligns with the Oregon Transportation Plan, and incorporates feedback from safety partners, Tribal governments, local governments, and the public to chart a stronger path toward zero fatalities and serious injuries.

Another reason for this year's update is a federal requirement. Within the Highway Safety Improvement Program implementing rules under 23 CFR § 924.9(a)(3)(i), States must complete a Strategic Highway Safety Plan update no later than five years from the previous approved version.

1 State of the Transportation System, Oregon Department of Transportation, May 2026.



VISION AND GOALS

The Oregon Transportation Plan vision statement reads, “Oregon’s transportation system supports all Oregonians by connecting people and goods to places in the most climate-friendly, equitable, and safe way.” Its policy objective, Save Lives, affirms that safety takes precedence anytime it may conflict with other Oregon Transportation Plan goals.

The TSAP advances Oregon’s long-term safety vision and establishes an ambitious yet achievable interim goal:

INTERIM GOAL: REDUCE FATALITIES AND SERIOUS INJURIES BY 30% BY 2035.

VISION: ZERO FATALITIES AND SERIOUS INJURIES BY 2050.

These goals align with the Oregon Transportation Plan’s 2050 planning horizon and the federal requirement for performance-based safety objectives. The interim goal establishes the near-term trajectory toward the 2050 vision. Achievement of these goals will be supported through specific five-year targets, active and annual monitoring, and continuous evaluation (see CHAPTER 8. PERFORMANCE EVALUATION).

PLAN ORGANIZATION

This plan is structured to lead the reader from foundational concepts through the identification of needs, and ultimately toward implementable actions that save lives and prevent serious injuries.

CHAPTER 1. EXECUTIVE SUMMARY
Summarizes the problem, casts the vision, and describes how the TSAP works.

CHAPTER 2. INTRODUCTION
Describes the purpose and need for this Plan now, the vision and goals, and the TSAP's organization.

CHAPTER 3. FOUNDATION: GUIDING PRINCIPLES
Describes the six guiding principles and their importance within the Plan.

CHAPTER 4. TRANSPORTATION SAFETY PROBLEM IDENTIFICATION
Shows the crash history and trends, including common factors, contextual patterns, and emerging issues.

CHAPTER 5. EMPHASIS AREAS
Elevates certain crash contributors that are most common in fatal and serious injury crashes or that have had the greatest proportional increase over the past decade.

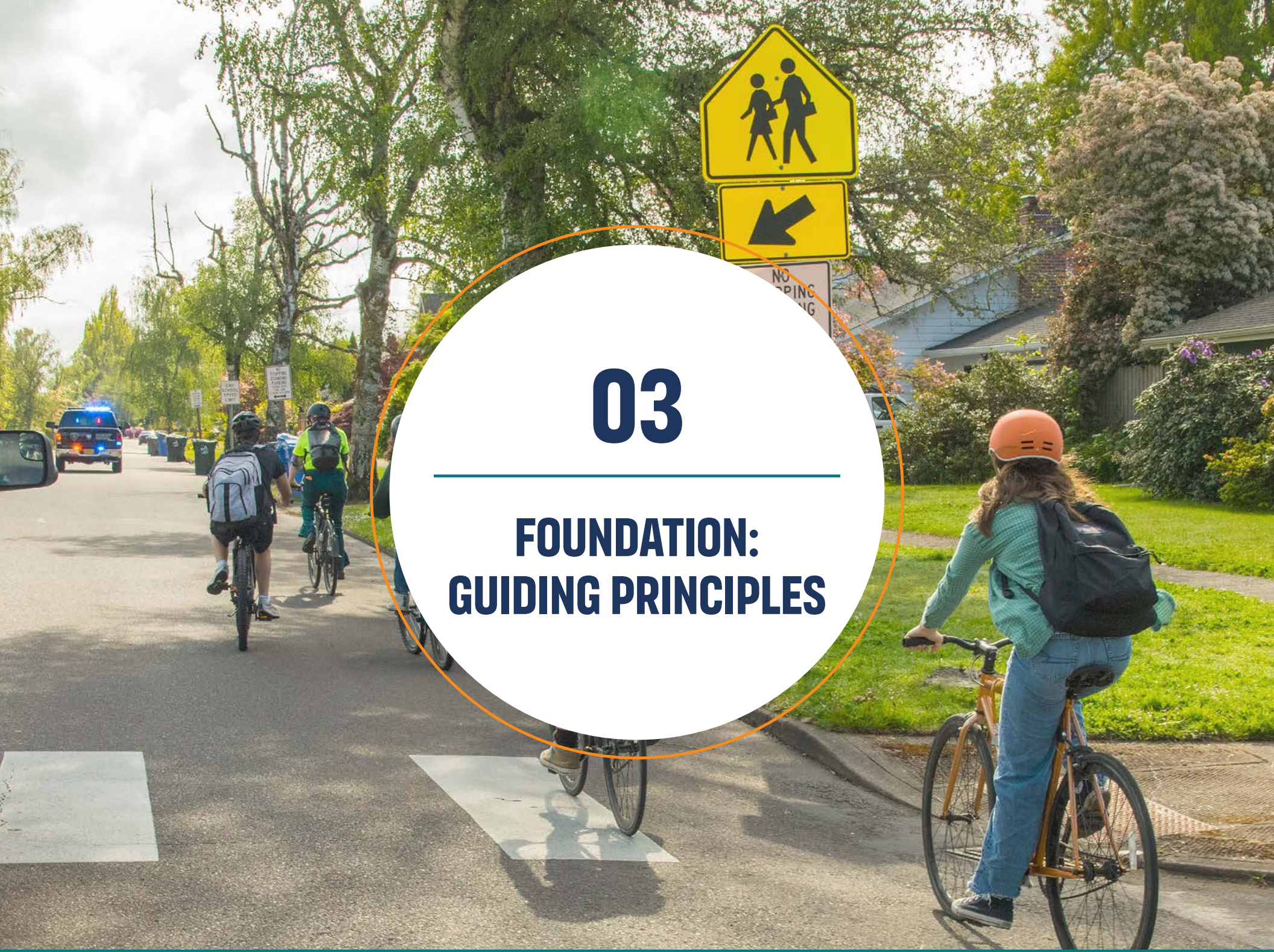
CHAPTER 6. STRATEGIC ACTIONS
Provides a full description of 30 actions focused on meeting the Plan's goals.

CHAPTER 7. IMPLEMENTATION
Describes a plan of action and implementation structure, implementation teams, and strategic action monitoring and evaluation.

CHAPTER 8. PERFORMANCE EVALUATION
Describes Oregon's relevant planning processes, federal safety performance measures, and details on reporting and transparency.

CHAPTER 9. CONCLUSION
Summarizes the Plan and calls for action to save lives and prevent serious injuries in Oregon.

APPENDICES
Vulnerable Road User Safety Assessment, description of federal process requirements, acknowledgment of who developed this Plan, and findings of compliance with Oregon's statewide planning goals.



03

FOUNDATION: GUIDING PRINCIPLES

The TSAP is built on six guiding principles, developed in coordination with the Oregon Transportation Plan and endorsed by TSAP safety partners. These principles define how Oregon will pursue its safety vision and serve as a lens for decision-making at every level.

TABLE 1. OREGON TRANSPORTATION PLAN GUIDING PRINCIPLES

	GUIDING PRINCIPLE	DESCRIPTION
01	**SAFETY TAKES PRECEDENCE**	Safety is prioritized above other objectives in transportation decision-making. When conflicts arise between safety and throughput, or safety and convenience, the safety outcome (defined as reduced fatalities and serious injuries) takes precedence.
02	**INCORPORATE THE SAFE SYSTEM APPROACH**	The Safe System Approach recognizes that the transportation system becomes safer when we examine how all parts of the system interact to support and strengthen every aspect.
03	**PROMOTE TRAFFIC SAFETY CULTURE**	Traffic safety culture moves beyond raising awareness to actively shaping shared beliefs, social norms, and peer expectations that support safer road user behavior. It promotes a culture of shared responsibility, where people feel empowered to act for their own safety and to help others stay safe. This shared responsibility extends to all who use, design, manage, and operate the transportation system.
04	**PROVIDE SAFE AND SECURE SYSTEMS**	Oregon's transportation system must feel and be safe for everyone, including their personal security and comfort, regardless of how they travel.
05	**LEVERAGE DATA AND TECHNOLOGY**	Oregon will ground its decisions in data analysis and performance monitoring of safety outcomes to guide investments, recognizing data limitations by also incorporating community experience to understand safety risks and needs. New technologies will be deployed strategically to support data availability and the operation of a safe system.
06	**INVEST STRATEGICALLY**	Resources are limited, so Oregon will prioritize strategies that offer the greatest potential to reduce fatalities and serious injuries. The TSAP supports prioritization of safety activities through the tiering of the emphasis areas.



GUIDING PRINCIPLE 1: SAFETY TAKES PRECEDENCE

The Oregon Transportation Plan describes how transportation decisions are made with consideration for safety:

"People can get where they need and want to go safely. User needs and facility design are aligned based on the context of the surrounding built environment. This allows agencies to design and manage the transportation system in a way that emphasizes safety over comfort or speed, while enabling technological solutions to mitigate effects of distracted driving and other safety challenges. No loss of life is acceptable, and efforts are focused on saving lives and preventing serious injuries."

Transportation professionals prioritize safety above other objectives in decision-making. Inevitably, other considerations, such as throughput and motorist convenience, will be included in the process. When that occurs, safety is prioritized over other factors. This principle ensures that trade-offs are made transparently and consistently, in line with Oregon's commitment to reduce road fatalities and serious injuries to zero.

GUIDING PRINCIPLE 2: INCORPORATE THE SAFE SYSTEM APPROACH

The Safe System Approach recognizes that the transportation system becomes safer when we examine how all system elements interact to support and strengthen one another. It is the organizing framework for the Plan, reflecting a fundamental shift: instead of relying solely on perfect road user behavior, we understand humans make mistakes, so the system is designed to prevent these human errors from causing death or serious injury. This means reducing mistakes and preventing crashes where possible, and reducing crash forces when crashes occur, while still recognizing road users' responsibility to keep themselves and others safe.

The Safe System Approach aligns all parts of the transportation system rather than relying on a single solution. Safer Land Use Planning supports development patterns that reduce exposure to high-risk travel conditions. Safer Roads reduce crash severity by designing streets that account for human mistakes. Safer Speeds lower crash forces and give road users more time to react. Safer Road Users encourage safe behavior across all modes. Safer Vehicles use technology and regulation to prevent crashes and reduce harm. Post-Crash Care improves survival and recovery after crashes occur. These overlapping layers of protection are required to prevent fatalities and serious injuries.



FIGURE 1. OREGON'S SAFE SYSTEM APPROACH

CORE PRINCIPLES OF OREGON'S SAFE SYSTEM APPROACH

The Oregon Safe System Approach is based on six principles, as illustrated on the previous page in **FIGURE 1** and described below.

DEATH/SERIOUS INJURY IS UNACCEPTABLE

While no crashes are desirable, the Safe System Approach prioritizes eliminating crashes that result in death and serious injuries.

HUMANS MAKE MISTAKES

People will make mistakes that lead to crashes, but the transportation system can be designed to minimize their occurrence and reduce the resulting harm. We can design, build, operate, and maintain a safer transportation system so that when mistakes happen, there are fewer severe consequences.

HUMANS ARE VULNERABLE

The human body has limited tolerance to crash forces; therefore, it is critical to design and operate a transportation system that accommodates human vulnerabilities.

RESPONSIBILITY IS SHARED

Road owners and system designers hold primary responsibility to plan, design, build, operate, and maintain a safe transportation system. Managers, policymakers, law enforcement, vehicle manufacturers, and first responders all share responsibility for safety outcomes. Road users are responsible for complying with transportation system rules and laws.

SAFETY IS PROACTIVE

Professionals should identify and mitigate parts of the transportation system that are predicted to increase crash risk, rather than waiting for crashes to occur and reacting afterward. Improvements must extend across the entire network, not just at isolated hot spots.

REDUNDANCY IS CRUCIAL

Reducing risks requires strengthening all parts of the transportation system so that, if one aspect fails, the other parts still protect users. Multiple layers of protection reduce the chance of fatal and serious injury outcomes. For example, for speeding-involved crashes, education can emphasize the risks of speeding, policymakers can set appropriate speed limits, engineers and planners can build infrastructure to reduce operating speed, culture can lessen the value of speed, and emergency services can quickly respond when crashes occur. All safety partners must work together to achieve a safe system.

OREGON'S SAFE SYSTEM APPROACH ELEMENTS

While the U.S. Department of Transportation guidance identifies five core Safe System Approach elements, Oregon has adopted a sixth: Safer Land Use Planning. This reflects Oregon's recognition that where and how we build our communities directly affects transportation safety outcomes.

	ELEMENT	EXPLANATION
	**SAFER PEOPLE**	Developing and implementing policies, programs, and projects that encourage safe behavior and protect all road users.
	**SAFER VEHICLES**	Leveraging vehicle technologies and designs to prevent crashes and protect occupants and vulnerable road users from harm.
	**SAFER ROADS**	Designing roads to minimize conflicts between road users, managing speeds, and mitigating for human error.
	**SAFER SPEEDS**	Managing speeds consistent with crash survivability and contexts like roadway functional class and adjacent land uses.
	**POST-CRASH CARE**	Ensuring rapid, effective emergency responses to reduce injury severity.
	**SAFER LAND USE PLANNING** (OREGON'S ADDITION)	Supporting compact, mixed-use land development patterns, connectivity, and access management to reduce conflicts between road users and promote safe multimodal travel.

Each strategic action in this TSAP is tagged with one or more Safe System Approach elements, making it clear which system aspect is being addressed (see **CHAPTER 6. STRATEGIC ACTIONS**).



ELEMENT 1. SAFER PEOPLE

Road user decisions and actions play a major role in both the likelihood and severity of crashes. Alcohol, other drug involvement, and drowsiness reduce fitness to drive by slowing reaction times and hindering judgment. Other risky behaviors are related to user convenience, such as speeding, running a red light, or crossing away from marked crosswalks.

Traffic laws are designed to set rules and consequences for all people who travel on Oregon roads and streets. Education about additions, edits, and amendments to traffic laws is required so that all road users understand their responsibilities and expectations for keeping themselves and others safe.

Road user behavior is shaped not only by enforced laws, but also by social values and norms. While traffic laws set formal expectations, road user behavior is also shaped by perceptions of social acceptability. For example, communities may share informal expectations about safe neighborhoods that keep vehicle operating speeds low, while freeway drivers may assume speeding is normal, creating social pressure to exceed legal limits.

A positive traffic safety culture is built through shared responsibility, community expectations, and a social environment that encourages safe behaviors and reduces risk for all road users. Education programs for all road users communicate the laws that must be followed and the skills required for safe road use; these are reinforced through public education, workplace training, and specialized vehicle instruction. Enforcement supports safety by reinforcing traffic laws through visible policing, penalties, and interventions, while the responsible deployment of automated enforcement systems can provide consistent deterrence.

The ODOT Transportation Safety Office plans and implements education and outreach programs to improve the safety of all who travel in Oregon. They work with a broad range of partners at the state and local levels, as well as special interest groups, to select grant projects. The office's coordination and technical assistance support Oregon's safety goals to eliminate road fatalities and serious injuries.



ELEMENT 2. **SAFER VEHICLES**

Vehicle design is shaped by many goals, including efficiency, comfort, recreation, business needs, and occupant safety. Ideally, vehicles and related regulations support safe operation and reduce both the likelihood and severity of crashes through proven safety features and emerging technologies. However, some design trends and policy gaps can increase crash risk and disproportionately increase harm in certain contexts. For the sake of the TSAP, vehicles include cars, trucks, buses, motorcycles, bicycles, scooters, and emerging electric vehicles, such as e-bikes, e-scooters, and other modes of travel.

Federal safety regulations and vehicle design improvements have historically focused on protecting vehicle occupants, with less emphasis on reducing harm to people outside the vehicle. Many vehicles can travel well above posted speed limits, and standard in-vehicle controls that limit speed to safe or legal levels are not yet common. Increased vehicle mass also increases crash forces. For example, larger light-duty trucks with taller, more box-shaped front ends can reduce a driver's ability to see objects directly in front of the vehicle and can increase injuries to pedestrians and cyclists by striking them higher on the body. For motorcyclists, high speeds combined with limited stability and protection increase vulnerability in crashes.

Improving vehicle safety will require continued advancements in design, technology, and policy. Emerging features (such as improved pedestrian detection in automatic braking systems, substance and drowsiness detection that can prevent vehicle operation, and speed limiters) could meaningfully reduce serious injuries and fatalities if standardized. Safety ratings should also evolve to reflect a more comprehensive view of risk, considering not only drivers and passengers but also road users outside the vehicle who are exposed to crashes. While state authority over vehicle safety regulations is limited, states can influence outcomes through driver and rider education, licensing and endorsement requirements for larger vehicle types, and by encouraging government agencies and private companies to select vehicle sizes and trip options that match real-world needs.



ELEMENT 3. **SAFER ROADS**

Roadway design under the Safe System Approach focuses on reducing conflicts among all road users, including drivers, transit operators, motorcyclists, pedestrians, bicyclists, and e-micromobility device users. Because conflicts are unlikely to be fully eliminated, transportation infrastructure should be designed to accommodate human error and human injury tolerance by reducing both likelihood and severity of a crash should one occur. This includes separating users by mode and speed, allocating dedicated space and time for movement, improving visibility, and designing the trajectories of conflicting road users to flatten crash angles.

Traditional roadway design relied on road users to perceive, process, and respond correctly to sometimes complex conditions. Safer road design shifts more of that responsibility to the transportation system itself. Roads should be legible, self-explaining, and self-enforcing, so that the design communicates the expected behavior and makes safe choices easier and more intuitive.

Self-enforcing designs play a key role in reducing fatal and serious injury crashes by managing speeds and reducing energy transfer. Speed influences both the likelihood of avoiding a crash and the amount of energy transfer if it occurs. Design features such as lane narrowing, curb extensions, median islands, raised crossings, roundabouts, protected bicycle facilities, access management, and improved intersection geometry can help align operating speeds with the surrounding land use context and the needs of all road users.

Safety investments should prioritize the systemic deployment of proven countermeasures across locations with shared risk factors, rather than waiting for fatal or serious injury crashes at a single hot spot. Targeted site-specific treatments can supplement this approach if an acute need is identified.

The Safer Roads element is closely tied to the other Safe System elements:

SAFER SPEEDS. Roadway geometry and traffic calming help produce operating speeds appropriate to the context.

SAFER ROAD USERS. Clear, predictable designs reduce confusion and support safer behavior by all users.

SAFER VEHICLES. Roadway design can complement vehicle safety technology by improving signing and markings, enhancing visibility, and managing conflicts.

POST-CRASH CARE. Safer design can support emergency access and reduce the severity of injuries that first responders must address.

SAFER LAND USE PLANNING. Road design can support shorter trips, safer access to transit, and safer walking and bicycling.

ELEMENT 4. SAFER SPEEDS

Lower vehicle operating speeds improve driver awareness, provide more time and distance to react and stop, and reduce the severity of injuries when crashes occur. Higher vehicle speeds increase crash risk by narrowing drivers' field of vision and increasing the distance traveled during reaction time and the distance required to stop. Additionally, higher vehicle speeds make it harder for other road users to judge gaps and respond safely.

Because crash forces increase with vehicle speed, speed management is fundamentally a biomechanical safety strategy: lower operating speeds reduce kinetic energy, improve survivability, and give all road users more time to avoid conflicts. Self-enforcing geometric design is the primary tool for achieving safer operating speeds. Lane width, the presence of sidewalks or bike lanes, and the overall look and feel of a road signal to drivers what travel speed is appropriate. Safe speeds are further reinforced by the surrounding land use context, clear and consistent signage, driver and rider education, shared social expectations, and enforcement. Regulations limit the speed of other vehicles, too, including bicycles, and e-micromobility devices.

Aligning road design and speed limit setting with the surrounding context reduces both crash likelihood and injury severity.

ELEMENT 5. POST-CRASH CARE

Post-crash care is the final layer of defense, supporting crash victims when all other safe system elements have failed. Timely and effective emergency medical response saves lives and reduces injury severity. Many crash-related deaths occur after the initial incident rather than at the scene. Therefore, rapid response by trained personnel, prompt stabilization, and timely transport to appropriate medical facilities are critical to improving survival outcomes. Post-crash care also includes immediate first aid, forensic crash analysis, coordinated traffic incident management to protect responders and the public, and roadway clearance to prevent secondary crashes.

In Oregon, emergency medical services and trauma systems are intentionally developed, regulated, and coordinated to ensure emergency medical services providers are well-trained, properly equipped, and ready to operate efficiently to save lives. The Oregon Health Authority's Emergency Medical Services Program oversees these efforts and tracks emergency response data, which helps planners continually improve care quality, coverage areas, and response performance. Transportation agencies and road owners can provide emergency stopping areas, such as shoulders, pull-outs, and roadsides, to allow first responders to safely provide post-crash care. Safety partners, including traffic law enforcement, first responders, and agency planners and engineers, can collect and share crash history and emergency medical data to support one another.



ELEMENT 6. SAFER LAND USE PLANNING

Transportation safety begins with how communities are planned and developed. By embedding safety considerations into land use policy and practice, Oregon can proactively reduce crash risk while advancing broader goals for all people who travel throughout Oregon.

Oregon has more than 50 years of experience in land use planning and understands that land use plays a fundamental role in transportation safety by shaping how and where people travel. The location, density, and mix of development influence travel behavior, trip length, and overall exposure to crash risk. By integrating land use and transportation decisions, communities can reduce the likelihood and severity of crashes while supporting safer travel for all users, particularly pedestrians, bicyclists, and transit riders.

Oregon is among the first states to recognize Safer Land Use Planning as a core element of its Safe System Approach. While traditional elements focus on the transportation system itself, land use decisions establish the underlying conditions that determine how much people need to travel and how they interact with the system. As a result, land use is foundational to reducing fatalities and serious injuries through better-planned transportation networks.

A key value linking land use and safety is that fewer and shorter trips reduce exposure to potential crashes by reducing per capita vehicle miles traveled. Compact, mixed-use development patterns enable people to meet daily needs closer to home, reducing reliance on long vehicle trips. This supports walking, biking, and transit use in an environment that reduces or eliminates interactions with motor vehicular traffic.

Land use influences safety outcomes through four primary dimensions: development density, land use mix, street connectivity, and urban design. Each of these shapes travel patterns, operating speeds, and the frequency and severity of conflicts between road users.

- **Development Density:** Higher-density areas concentrate activity, reduce vehicle speeds, and support shorter, more efficient trips. Compact development encourages multimodal travel and more predictable traffic conditions.
- **Land Use Mix:** Integrating housing, employment, retail, and services reduces the need for single-purpose trips and supports walking and biking. Mixed-use areas are associated with fewer vehicle trips and lower overall driving demand.

- **Street Connectivity:** Well-connected street networks provide more direct routes, distribute traffic more evenly, and can reduce motor vehicle speeds. When paired with well-designed intersections, connectivity can improve safety while maintaining access and mobility.
- **Urban Design and Site Planning:** Design elements such as sidewalks, protected bike lanes, crossings, and building placement help clarify how different users share space. Parking strategies and site layout can influence traffic volumes and visibility, further affecting safety outcomes.

Oregon has advanced the integration of land use and safety through coordinated policies and programs, including the Transportation Planning Rule, metropolitan planning requirements, and the Urban Growth Boundary framework. These efforts encourage compact development, multimodal access, and reduced dependence on driving. Additional tools, including access management policies and context sensitive roadway design, help align land use patterns with safer operating speeds and roadway conditions.[1]



1 ODOT Highway Design Manual

GUIDING PRINCIPLE 3: PROMOTE TRAFFIC SAFETY CULTURE

As social beings, people tend to adopt behaviors consistent with the values, norms, and expectations of their communities and cultures. Traffic safety culture is the shared set of values, beliefs, and expectations that shape how people and institutions think about and practice road safety. These shared beliefs influence how people use our roadways and how agencies prioritize safety within the transportation system.

THERE ARE TWO COMPLEMENTARY WAYS TO IMPROVE TRAFFIC SAFETY CULTURE: **POSITIVE** AND **PROSOCIAL.**

POSITIVE TRAFFIC SAFETY CULTURE

First, we aim to build a positive traffic safety culture in which individuals at risk of crashing adopt behaviors that protect their own safety. A "positive" traffic safety culture is one that expects and reinforces safe behavior choices, which reduce future fatal and serious injury crashes. A culture-based campaign might encourage teen drivers, who are at higher risk of high-speed crashes, to slow down.

PROSOCIAL TRAFFIC SAFETY CULTURE

Second, we foster a prosocial traffic safety culture in which safe individuals encourage safer behavior among others, particularly within their social groups. "Prosocial" means it requires effort that benefits the safety of others, not just ourselves. For example, a culture-based campaign could make it socially acceptable for teen passengers to encourage peer drivers to slow down. Growing a prosocial traffic safety culture enables the Safe System Approach principle of "shared responsibility" for road safety.

Oregon will actively promote a positive and prosocial traffic safety culture to build shared ownership of safety, support adoption of effective safety strategies, and encourage safe road user behaviors—such as wearing seat belts; driving sober, rested, and attentive; and traveling at safe speeds—through public campaigns, education, and peer-to-peer influence.

TYPES OF ROAD SAFETY CAMPAIGNS

Education, Enforcement, and Culture campaigns complement each other and can be integrated to achieve traffic safety goals. ***Education campaigns*** assume safe behaviors rely on awareness and competency. ***Enforcement campaigns*** assume safe behavior depends on rules and incentives. ***Culture campaigns*** recognize that safe behaviors also need to be socially valued and expected.

Whereas education and enforcement campaigns can change individual behavior, culture campaigns aim to normalize behavior change among groups of people who share a social identity. These campaigns can work together to more effectively reach our traffic safety goals.

- Education is needed to raise risk awareness and learn safe behavior. Culture change can then provide the social motivation for collective behavior change.
- Enforcement is needed to establish rules for compliance and external incentives. Culture can also have a role by demonstrating community support for these rules and their enforcement, as well as expressing normative expectations to behave in ways that keep the community safe.

HOW THEY WORK TOGETHER

CULTURE CHANGE creates a social environment that expects and reinforces safe behavior.

EDUCATION builds the knowledge, awareness, and skills people need to make and perform safer choices.

ENFORCEMENT establishes and reinforces operational rules (laws) for behaviors that support system goals.

ENFORCEMENT CAMPAIGNS

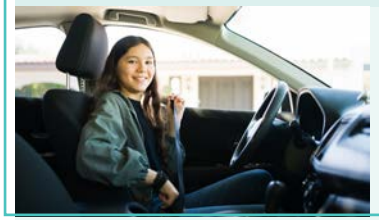
FOCUS: EXPLICIT RULES AND CONSEQUENCES



"Seat belts save lives. Click it or ticket."

EDUCATION CAMPAIGNS

FOCUS: KNOWLEDGE AND AWARENESS



"Teens are twice as likely to be killed in a crash if they don't wear a seat belt."

CULTURE CHANGE CAMPAIGNS

FOCUS: BELIEFS, NORMS, AND SOCIAL MEANING



"Buckle Up. Every Trip. Every Time."

GUIDING PRINCIPLE 4: PROVIDE SYSTEMS THAT ARE SAFE AND SECURE

Oregon's transportation system must feel and be safe for everyone, regardless of how they travel. This includes reducing crash risks and addressing personal security concerns, especially for pedestrians, bicyclists, transit users, and people needing roadside assistance. The system should support independence, confidence, and safe access across all communities and life stages.

A safe and secure transportation system is one that people trust and feel comfortable using every day. Reducing exposure to personal security risks requires careful design and operation of roads, sidewalks, bikeways, transit stops, and other shared spaces. Examples include well-lit crossings and transit stops, clear sightlines, accessible and well-maintained infrastructure, safe crossings that minimize waiting and exposure, and roadway designs that slow motor vehicle traffic where people walk, bike, or access transit or other destinations. When transportation systems are designed with safety and security in mind, people of all ages and abilities are more likely to choose active transportation and transit, supporting road safety and broader community well-being.



GUIDING PRINCIPLE 5: LEVERAGE DATA AND TECHNOLOGY

The use of data, analysis, and technology allows Oregon to shift from reactive responses to proactive, targeted safety strategies. By combining crash data with additional datasets—such as near-miss analysis, connected vehicle outputs, public feedback, vehicle operating speeds, traffic volumes, adjudication data, and road inventory—safety partners can better identify risks before serious injuries or fatalities occur. Technologies such as automated speed enforcement, intelligent transportation systems, enhanced emergency response tools, and modernized crash reporting systems can help address known safety issues while improving efficiency by prioritizing investments to make the greatest difference.

Data analysis also allows evaluation of past safety interventions (e.g., programs, projects, practices, and policies) to determine whether they were effective in addressing the intended safety need.

These tools will be implemented with transparency and accountability, and their effectiveness will be evaluated over time to ensure meaningful reductions in fatalities and serious injuries for all Oregonians. Data will be interpreted with an understanding of its limitations, ensuring decisions reflect both quantitative evidence and qualitative real-world conditions. Leveraging data, analysis, and technology enables continuous learning, allowing Oregon to adapt strategies, prioritize investments, and scale life-saving solutions.

GUIDING PRINCIPLE 6: INVEST STRATEGICALLY

Resources are limited, so Oregon will prioritize strategies with the greatest potential to reduce fatalities and serious injuries. Investments will balance statewide systemic approaches with targeted, proven safety countermeasures at high-crash locations, with a strategic focus on geographic areas where past investment patterns have contributed to higher safety risks. The TSAP supports prioritization of safety activities through the tiering of the emphasis areas.

A systemic safety approach focuses on low-cost safety countermeasures that can save lives and reduce serious injuries statewide. Widespread implementation of these treatments, even on roads that have not yet experienced a fatal or serious injury crash, is a proactive strategy that reduces future risk by addressing known crash types before severe crashes occur. This approach recognizes that the geographic locations of fatal and serious injury crashes shift over time, but the contributors to those crashes are predictable.



04

TRANSPORTATION SAFETY PROBLEM IDENTIFICATION



04

Statewide crash data provides critical insight into Oregon's crash history and informs efforts to improve road safety. While the locations, types, and attributes of past crashes cannot perfectly predict future outcomes, they provide valuable indicators that help safety professionals identify needs, select appropriate treatments, and evaluate the effectiveness of implemented actions.

INTRODUCTION

The TSAP is grounded in a data-driven analysis of crash patterns and contributing factors. Its content is primarily based on an evaluation of 2019-2023 Oregon crash data.[1] This chapter summarizes the findings of that analysis, including trends in crash types, crash severity, crash demographics, and contributing factors.

UNDERSTANDING DATA LIMITATIONS

While the results of this crash analysis provide important insight into transportation safety opportunities, it is essential to recognize the limitations of available data.

Official crash records are based on information provided by responding officers and individuals involved in the crash. As a result, these records may not fully capture all contributing circumstances or event details. In addition, Oregon is a self-reporting state; therefore, many crashes, particularly those without injuries, may go unreported. For reported crashes, it can be challenging to determine the most relevant details, because there is rarely a single cause. Most crashes result from a combination of factors, including human behavior, environmental conditions, road characteristics, vehicle condition, and underlying systems.

1 This crash dataset (2019-2023) was the most recent available at the time of analysis (early 2025). To complete all aspects of the TSAP update in a timely manner, this step must occur early in the process. When 2024 crash data were made available, that dataset was analyzed to identify emerging trends that should influence planning activities.

Despite these and other limitations, reported crash data remains the most consistent and reliable source for understanding crash patterns, identifying contributing factors, and informing strategies to improve road safety.

CRASH INJURY LEVELS

Transportation safety practitioners use a standard framework to describe crash-related injury outcomes. It groups crashes into five levels based on the most severe injury involved, ranging from fatal crashes to no injuries.

- **FATAL INJURY:** A person is killed in the crash or perishes within 30 days as a result of the crash.
- **SUSPECTED SERIOUS INJURY:** Severe injuries, such as broken bones or injuries that require hospitalization.
- **SUSPECTED MINOR INJURY:** Visible but less severe injuries, like cuts or bruises.
- **POSSIBLE INJURY:** No visible injury, but a person reports pain or discomfort.
- **NO APPARENT INJURY:** Results in damage to vehicles or property only.

The scale helps safety professionals understand both the human impact of crashes and where to focus efforts to reduce the most serious injury outcomes. The TSAP is primarily focused on fatal injury and serious injury crashes. Data from other crashes can also inform efforts to prevent future fatal and serious injuries.



CRASH HISTORY AND TRENDS

The number of people killed and seriously injured in traffic crashes in Oregon has increased significantly over the last decade (**FIGURE 2**). From 2014 to 2018, Oregon experienced an annual average of 448 fatalities and 1,739 serious injuries. In contrast, during the COVID pandemic response (2020-2023), fatalities increased by 15 percent (507 to 587) and serious injuries more than doubled (1,590 to 3,710).

This sharp rise in serious injuries, outpacing the increase in fatalities, is one of the most striking findings of this analysis. Moderate injuries also increased, while possible injuries decreased, suggesting a potential shift in injury outcomes. The overall frequency of total crashes has declined during this period.

The difference in rates of increase for fatalities and serious injuries reflects a complex set of underlying factors. Multiple confounding influences may be at play. For example, safety improvements such as enhanced vehicle design and occupant protection systems may reduce the likelihood that a crash results in a fatality, potentially shifting crashes that would have been fatal into the serious injury category. Conversely, increases in travel speeds and crash forces may elevate injury severity because the human body has limitations in sustaining those forces. Therefore, crashes that might previously have resulted only in property damage or minor injuries now appear as serious injury crashes.

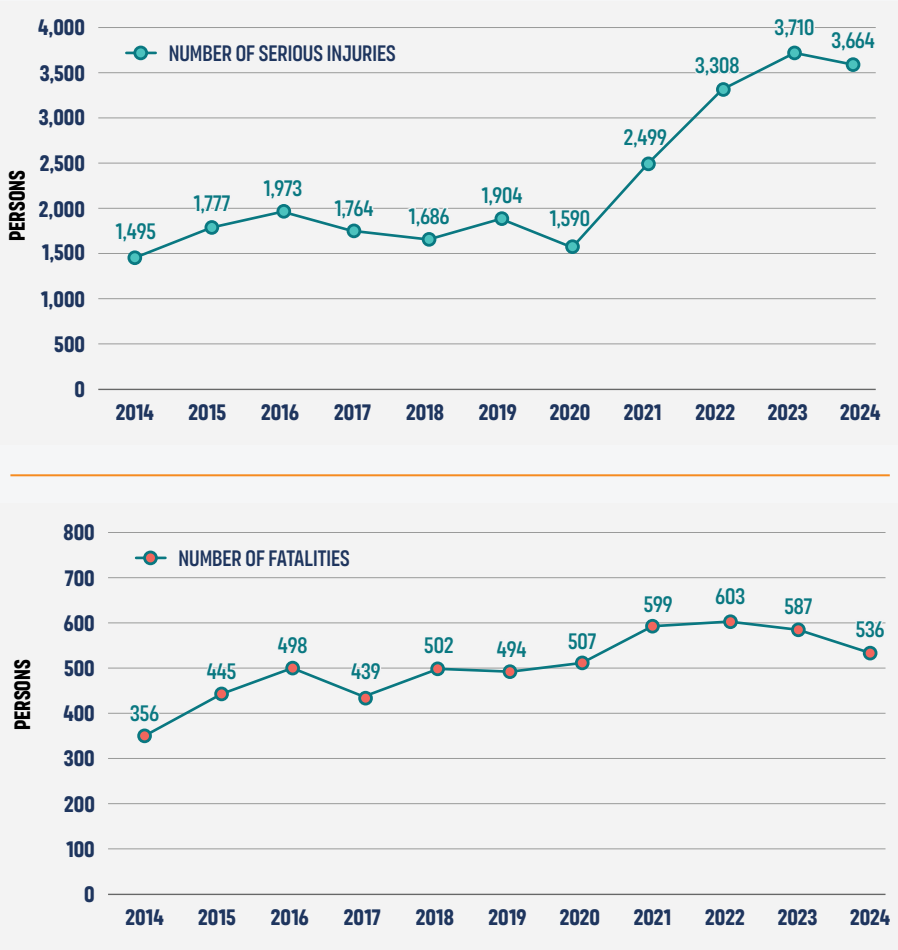


FIGURE 2. FATALITIES AND SERIOUS INJURIES, 2014-2024

COMMON FACTORS IN FATAL AND SERIOUS INJURY CRASHES

One approach to analyzing crashes is to categorize them by "where, why, and who" based on available data. These may include road user behaviors, road user age, vehicle types, and location characteristics (e.g., rural versus urban context, road functional classification, and other road features). To inform the selection of emphasis areas for the TSAP, the analysis focused on both proportions and changes over time:

CRASH FACTORS: PROPORTIONS

Studying the proportion of specific crash factors helps identify behaviors, location types, and road user groups that are overrepresented (i.e., occurring more frequently than expected) in fatal and serious injury crashes. Prioritizing these areas enables safety professionals to allocate limited resources to strategies and countermeasures most likely to reduce severe outcomes. The following percentages highlight the most prevalent contributing factors identified in the proportional analysis.

TABLE 2. PROPORTION OF CRASH FACTORS IN FATAL AND SERIOUS INJURY CRASHES, 2019-2023

MOST COMMON CRASH FACTORS	PROPORTION OF FATAL AND SERIOUS INJURY CRASHES
ROADWAY DEPARTURE	39%
INTERSECTION	38%
SPEEDING	25%
AGING DRIVERS	24%
ALCOHOL AND/OR OTHER DRUGS INVOLVED	23%

Crash events can have more than one crash factor. This is why the numbers add up to more than 100%.

CRASH FACTORS: CHANGES OVER TIME

Systems thinking requires analyzing road safety performance trends over time rather than only relying on a single snapshot. The total number of fatal and serious injury crashes in Oregon increased by 44 percent between the 2014-2018 and 2019-2023 five-year periods. However, several crash attributes increased at levels significantly higher than the overall growth. These trends may indicate emerging safety concerns or behavioral shifts that warrant targeted and timely intervention. The following factors experienced increases greater than the overall 44 percent change of all fatal and serious injury crashes.

TABLE 3. INCREASE IN CRASH FACTORS IN FATAL AND SERIOUS INJURY CRASHES, 2019-2023

GREATEST CRASH FACTOR INCREASES	INCREASE IN NUMBER OF FATAL AND SERIOUS INJURY CRASHES
DISTRACTION	116%
UNRESTRAINED OCCUPANTS	68%
AGING DRIVERS	54%
MEDIUM OR HEAVY TRUCKS	53%
INTERSECTION	52%
ALCOHOL AND/OR OTHER DRUGS INVOLVED	50%
SPEEDING	49%
YOUNG DRIVERS INVOLVED	45%

TABLE 4 presents a comparison of the 2014-2018 and 2019-2023 datasets.[1] For each selected attribute, the table displays the number of fatal and serious injury crashes associated with that attribute during each period, the current proportion of total fatal and serious injury crashes, and the percent increase in crashes between the two timeframes.

TABLE 4. 2014-2018 AND 2019-2023 FATAL AND SERIOUS INJURY CRASH ATTRIBUTE COMPARISON

CRASH ATTRIBUTE	NUMBER OF FATAL AND SERIOUS INJURY CRASHES		2019-2023 PROPORTION OF FATAL AND SERIOUS INJURY CRASHES	2014-2018 TO 2019-2023 INCREASE*
	2014-2018	2019-2023		
ROADWAY DEPARTURE	3,888	5,299	**39%**	36%
INTERSECTION	3,413	5,201	**38%**	**52%**
SPEEDING	2,251	3,360	**25%**	**49%**
AGING DRIVERS (65+) INVOLVED	2,082	3,196	**24%**	**54%**
ALCOHOL AND/OR OTHER DRUGS INVOLVED	2,121	3,179	**23%**	**50%**
YOUNG DRIVERS (15-20) INVOLVED	1,350	1,962	14%	**45%**
MOTORCYCLE INVOLVED	1,364	1,903	14%	40%
CRASHES INVOLVING DISTRACTED DRIVERS	806	1,737	13%	**116%**
ALCOHOL INVOLVED (NO DRUGS)	1,335	1,680	12%	26%
UNRESTRAINED OCCUPANTS INVOLVED	900	1,513	11%	**68%**
PEDESTRIAN	926	1,171	9%	26%
MEDIUM OR HEAVY TRUCK INVOLVED	527	805	6%	**53%**
BICYCLE	333	381	3%	14%
WORK ZONE INVOLVED	121	173	1%	43%
SCHOOL BUS OR SCHOOL ZONE INVOLVED	68	74	1%	9%

*__Bold__: *The attribute increased more than the overall increase in fatal and serious injury crashes (44%) between the 2014-2018 and 2019-2023 study periods.*

1 The 2014-2018 crash data was pulled from the 2021 Oregon Transportation Safety Action Plan and may not perfectly match a current query of that same dataset.

CONTEXTUAL PATTERNS

GEOGRAPHY

Fatal and serious injury crashes are not evenly distributed across Oregon. The geographic distribution of these crashes reflects regional differences, with ODOT Region 1 being predominantly urban, Regions 4 and 5 being primarily rural, and Regions 2 and 3 containing a balanced mix of urban and rural areas (see **FIGURE 3**). Statewide, 58 percent of fatalities and serious injuries occurred in urban areas, while 42 percent occurred in rural areas.

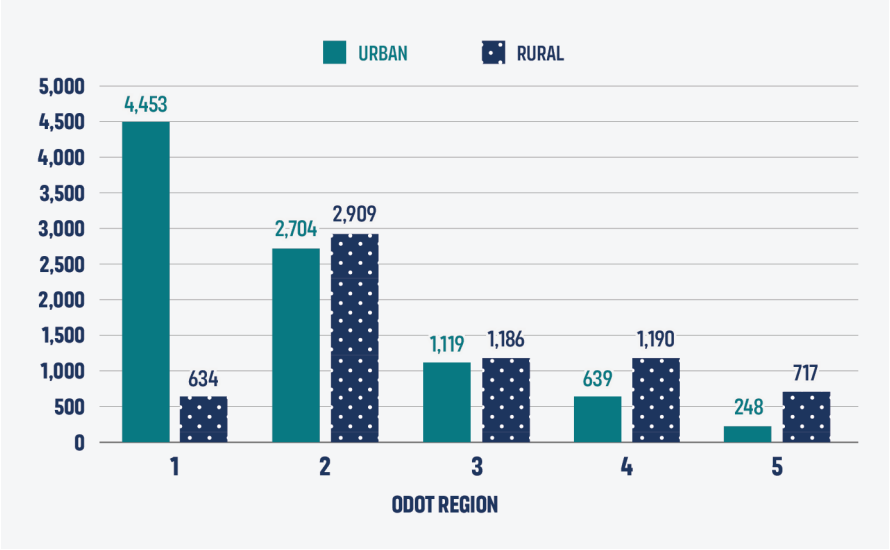


FIGURE 3. FATALITIES AND SERIOUS INJURIES BY ODOT REGION AND URBAN/ RURAL CONTEXT, 2019-2023

ROAD OWNER

Approximately half of all fatal and serious injury crashes occur on state highways, with the other half occurring on local roads (including county roads and city streets). When comparing to the overall mileage across the state, the data indicates that 49% of fatal and serious injury crashes occur on just 15% of the statewide centerline mileage.

TABLE 5. FATAL AND SERIOUS INJURY CRASH AND MILEAGE PROPORTION BY ROAD OWNER

	FATAL AND SERIOUS INJURY CRASH PROPORTION	STATEWIDE CENTERLINE MILEAGE PROPORTION
STATE HIGHWAYS	49%	15%
COUNTY ROADS	22%	63%
CITY STREETS	29%	22%

Basing this on statewide centerline miles, not lane miles, can affect the results. The proportion of crashes and mileage on state highways can be attributed to the prevalence of multi-lane facilities on state highways and city streets. Similarly, **TABLE 5** does not factor in vehicle miles traveled, which tend to be higher on state highways and local roads.

TRIBAL LANDS TRANSPORTATION SAFETY

Oregon is home to nine federally recognized Tribes, each with its own transportation networks, cultural priorities, and community needs. Tribal lands often include rural highways, interchanges, and community centers where safety risks are compounded by higher speeds, limited pedestrian facilities, and longer emergency response times.

Crash data on Tribal lands indicate that Tribal communities experience disproportionately high rates of fatal and serious injury crashes by population. These disparities reflect historic underinvestment, structural inequities, and the critical need for strengthened collaboration among Tribes, the State of Oregon, and federal partners. The TSAP addresses these challenges by ensuring that strategies developed in partnership with Oregon's Tribes are scaled statewide, resourced fairly, and monitored consistently.

Tribal safety strategies are aligned with the TSAP's six guiding principles, with emphasis on:

- **Fairness:** Prioritizing safety for communities that have been underserved and underinvested historically.
- **Safe System Approach:** Addressing systemic risks on rural highways, community connectors, and urbanizing Tribal areas.
- **Traffic Safety Culture:** Respecting cultural differences while promoting shared responsibility by involving communities in the process of developing campaigns that reflect their local needs and shared experiences.
- **Shared Data and Accountability:** Supporting the integration of Tribal crash data into Oregon's statewide safety system.

Tribal and Indigenous road safety is both a matter of fairness and shared responsibility. By scaling practices identified in Tribal safety plans, such as the Confederated Tribes of the Umatilla Indian Reservation safety action plan, Oregon can strengthen systemic safety, expand low-cost countermeasures, enhance protections for vulnerable road users, and ensure that Tribal data and priorities are fully integrated into the statewide safety system.

The TSAP commits to sustained partnerships, targeted funding, and shared accountability with Oregon's Tribes, recognizing **two important realities**:

- Tribal members use the system of state and local roads, so statewide programs benefit them.
- Tribal roads are traveled by all Oregonians, so making these roads safer contributes to safer travel for all.

CLOSING TRANSPORTATION SAFETY GAPS

Not all communities experience transportation safety equally. Fatal and serious injury crashes are more concentrated in places where people face greater barriers to safe travel. These patterns often reflect historical differences in infrastructure investment, road design, enforcement practices, and access to safe active transportation options. Addressing these conditions helps ensure that safety improvements reach the places where they are needed most so that everyone can travel safely.

HOW SAFETY GAPS ARE ADDRESSED IN THE TSAP

The 2026 TSAP considers the needs of all travelers throughout the plan:



Data and Analysis: Crash data are analyzed across geography, demographics, and road user type wherever possible.



Action Development: Strategic actions are designed to reduce the highest safety risks and address patterns of overrepresentation in crash outcomes by aligning with emphasis areas.



Funding: Investment prioritization considers areas with historic underinvestment.

APPLYING SAFETY STRATEGIES WHERE THEY ARE MOST NEEDED

Examples of how the TSAP applies safety strategies to improve outcomes for all Oregonians include:



Ensuring automated enforcement programs are transparent, strategically deployed, and that generated revenues are reinvested locally for road safety purposes.



Partnering with Tribal governments to expand crash data sharing, implement road improvements, and install culturally significant safety signage.



Prioritizing vulnerable road user safety investments in communities with historically higher crash rates.



05

EMPHASIS AREAS



05

Emphasis areas provide the framework that guides Oregon's transportation safety priorities, focusing resources, partnerships, and policy attention on the crash types, behaviors, and road environments most associated with fatal and serious injury crashes.

As described in Chapter 4, the TSAP emphasis areas were identified through an analysis of the 2019-2023 crash dataset, combined with extensive partner interviews, committee input, and feedback received during public engagement. This approach ensures that Oregon's safety priorities are informed by both quantitative trends and the documented experience of local agencies, Tribal governments, traffic law enforcement, behavioral safety experts, freight and rail partners, and vulnerable road user advocates who participated in the development of the TSAP update.

Emphasis areas are intentionally broad and overlapping because road safety outcomes are shaped by a complex system of interacting factors, and no single crash type or behavior occurs in isolation. For example, speed influences roadway departure crashes, alcohol and drug involvement overlaps with unrestrained occupants, and distraction contributes to both intersection and vulnerable road user crashes.

OREGON'S TRANSPORTATION SAFETY GOAL IS UNIVERSAL:

REDUCE FATAL AND SERIOUS INJURY CRASHES FOR EVERYONE WHO USES THE TRANSPORTATION SYSTEM.

Achieving the goal of zero fatal and serious injury crashes requires recognizing that safety risks vary across the state due to roadway design, travel patterns, geography, and infrastructure conditions. The emphasis areas help identify where risks are greatest so that strategies and actions can be applied where they will have the greatest impact while improving safety statewide.

The TSAP supports prioritization of safety activities by organizing the emphasis areas into two tiers to reflect alignment with the Oregon Transportation Plan and account for two key considerations: the proportion of crashes by attribute and emerging trends in crash history.

OREGON TRANSPORTATION PLAN POLICY DIRECTION

"With limited resources, Oregon must strategically invest in the transportation system. The Oregon Transportation Plan identifies the need to focus dollars on eliminating fatalities and serious injuries, maintaining lifeline routes and key corridors, sustaining transit service, and adding critical connections for biking, walking, and rolling. As additional funds become available, focus can expand to broader maintenance and heightened transportation system resilience, increasing active transportation connections, and improving overall safety."

THE OREGON TRANSPORTATION PLAN DEFINES SEVERAL TIERS FOR STRATEGIC INVESTMENTS, TWO OF WHICH ARE MOST APPLICABLE TO THE TSAP.

OREGON TRANSPORTATION PLAN: TOP TIER

- Address fatalities and serious injuries.
- Maintain and preserve critical assets, key corridors, and critical lifeline routes.
- Add critical bikeway and walkway connections in "high need locations," such as transportation-disadvantaged areas, and near schools, shopping centers, employment hubs, medical facilities, transit connections, and downtown areas.
- Preserve current public transportation service levels and maintain a state of good repair for vehicles and facilities.

OREGON TRANSPORTATION PLAN: SECOND TIER

- Address contributing factors and reduce the severity of crashes and safety incidents.
- Maintain the broader transportation system and assets.
- Complete the active transportation network.
- Improve the efficiency, frequency, and reliability of public transportation services.
- Enhance the efficiency and capacity of existing transportation infrastructure and facilities through operational improvements, excluding the addition of new through lanes, to support the movement of people and goods.

The TSAP supports prioritization of safety activities through the tiering of emphasis areas. The two tiers are identified and described below.

TSAP TIER 1 EMPHASIS AREAS

- Crash attributes with the highest proportion of fatal and serious injury crashes and greatest increases over the past decade (2014-2018 vs 2019-2023).
- Alignment with Oregon Transportation Plan top-tier criterion: address fatalities and serious injuries.
- Improving these crash attributes will have broad and overarching multimodal benefits (i.e., improving intersection safety and speeding will improve outcomes for bicyclists and pedestrians).



ROADWAY DEPARTURE | INTERSECTIONS | SPEEDING | ALCOHOL AND OTHER DRUGS

TSAP TIER 2 EMPHASIS AREAS

- Other crash attributes with a high proportion of fatal and serious injury crashes.
- Crash attributes with significant increases over the past decade (2014-2018 vs 2019-2023).
- Alignment with Oregon Transportation Plan second-tier criterion: address contributing factors, reduce crash severity, and complete the active transportation network.
- Compliance with the federal mandate to develop a Vulnerable Road User Safety Assessment.



AGING DRIVERS (AGES 65+) | YOUNG DRIVERS (AGES 15-20) | MOTORCYCLISTS | DISTRACTED DRIVING



UNRESTRAINED OCCUPANTS | PEDESTRIANS & BICYCLISTS (VULNERABLE ROAD USERS) | MEDIUM & HEAVY TRUCKS

Each emphasis area description that follows outlines the scope of the problem, recent crash trends, and the key characteristics associated with severe outcomes. Together, they provide a comprehensive view of the systemic safety issues currently affecting Oregon's transportation network.

Four emphasis areas experienced significant changes to fatalities and serious injuries between 2023 and 2024. Each is described under the relevant figure (e.g., Figure 4 on the following page).

ROADWAY DEPARTURE

Roadway departure crashes occur when a vehicle leaves its travel lane; most roadway departures result in a vehicle striking a fixed object, rolling over, or entering opposing traffic. These crashes account for 39% of all fatalities and serious injuries on Oregon roads.

Roadway departure crashes can result in fatal or serious injuries due to higher travel speeds, roadside hazards, head-on crashes with opposite-direction traffic, and limited opportunities for recovery once a vehicle leaves the roadway. Contributing factors include momentary inattention, alcohol or other drugs, fatigue, excessive speed, weather conditions, and roadway design features that provide little margin for error.

These crashes are most common on rural highways and two-lane roads, where narrow shoulders, horizontal curves, and unforgiving roadsides increase the likelihood that a single mistake results in a fatality or serious injury.



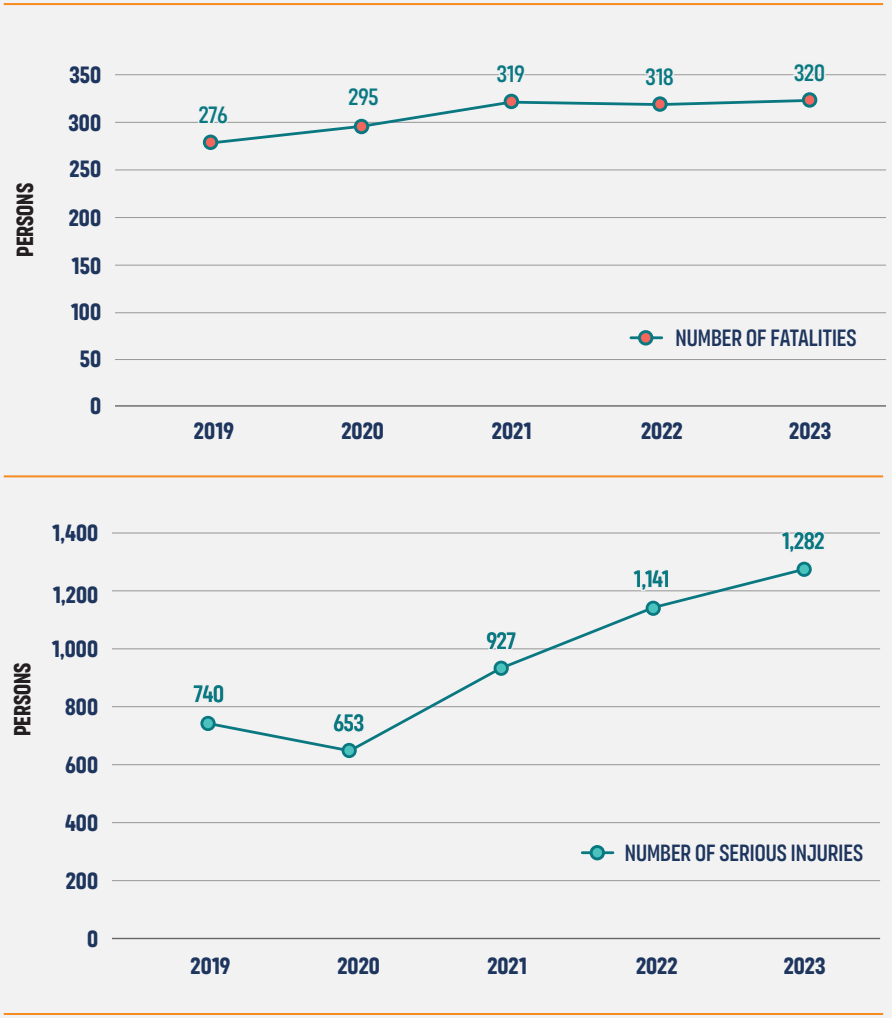


FIGURE 4. PEOPLE KILLED AND SERIOUSLY INJURED IN ROADWAY DEPARTURE CRASHES, 2019–2023

Roadway Departure saw a reduction in 2024, with 275 fatalities and 1,119 serious injuries reported.

ROADWAY DEPARTURE

TOP CONTRIBUTING FACTORS
TO ROADWAY DEPARTURE FATAL & SERIOUS INJURY CRASHES

- ALCOHOL AND/OR OTHER DRUGS
- TOO FAST FOR CONDITIONS
- RECKLESS / OTHER IMPROPER DRIVING
- CROSSED CENTERLINE
- DRIVER INATTENTION



KEY RISK CONCENTRATIONS

- Rural residents, including Tribal communities, face elevated risk for roadway departure crashes due to roadway characteristics, and longer emergency response times can increase the injury severity outcomes of these crashes. Fixed objects such as trees, utility poles, drop-offs, and embankments are frequently involved, further elevating the risk of serious injuries.
- Lighting conditions also contribute to the likelihood of roadway departure crashes, as reduced visibility and driver fatigue can increase the likelihood of a driver departing their lane. Roadway departure crashes often overlap with other emphasis areas, particularly speeding, alcohol and/or other drugs involved, and distraction, underscoring the interconnected nature of crash risk across Oregon's transportation system.

INTERSECTIONS

Intersections are locations where multiple road users, travel modes, and movements converge, creating potential conflict points. In Oregon, 38% of fatal and serious injury crashes occur at intersections.



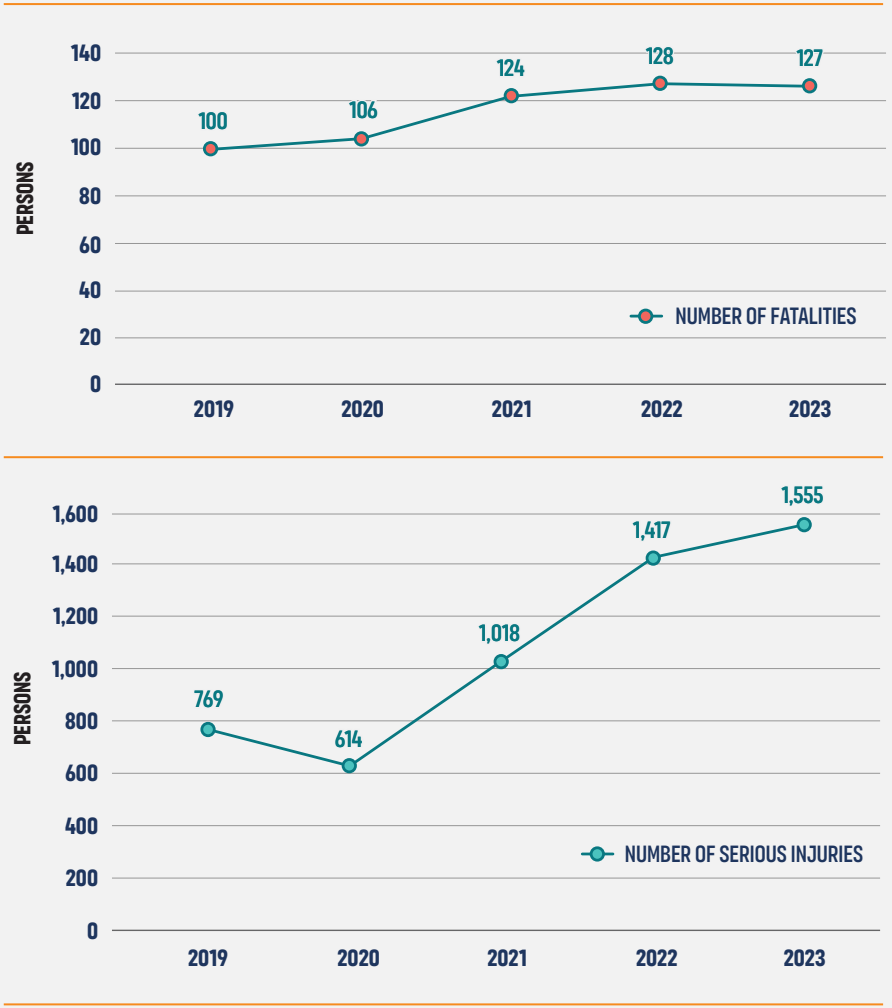


FIGURE 5. PEOPLE KILLED AND SERIOUSLY INJURED IN INTERSECTION CRASHES, 2019-2023

Intersections saw a decrease in fatalities and an increase in serious injuries in 2024, with 119 fatalities and 1,641 serious injuries reported.

INTERSECTIONS

Intersection crashes often involve turning movements, crossing conflicts, failure to obey a traffic control device, or failure to yield. Injury risk increases at intersections with higher traffic volumes, multiple lanes, or higher operating speeds, where the consequences of road user errors are amplified. Intersections are used by drivers, pedestrians, bicyclists, and other road users, making them locations where conflicts are most likely, particularly when design or operational complexity exceeds what users can safely navigate. Vulnerable road users can face greater risk at intersections because longer crossing distances, signal timing, and turning conflicts can increase exposure to vehicle movements. Failure to yield (which often results in left turn and angle crashes) is the most common contributor to fatal and serious injury crashes at intersections.

HIGHWAY-RAIL GRADE CROSSINGS

Highway–rail grade crossings are critical conflict points between Oregon's roadway and rail systems, requiring deliberate design, operations, and maintenance to prevent crashes. Responsibility is shared among ODOT, railroads, and local road authorities. Oregon's Highway–Railway Crossing Safety Action Plan[1] guides risk-based crossing improvements, while the Oregon State Rail Plan[2] establishes broader rail policy and investment priorities, including eliminating or improving at-grade crossings where feasible. Strong coordination among these partners is essential to prevent train-vehicle conflicts and maintain safe multimodal connections.

1 Oregon Highway-Railway Crossing Safety Action Plan

2 Oregon State Rail Plan

TOP CONTRIBUTING FACTORS
TO INTERSECTION FATAL & SERIOUS INJURY CRASHES

- FAILURE TO YIELD
- DISREGARDED SIGNAL
- ALCOHOL AND/OR OTHER DRUGS
- DRIVER INATTENTION
- PASSED STOP SIGN
- FAILURE TO AVOID VEHICLE AHEAD

KEY RISK CONCENTRATIONS

- Urban arterials with multi-lane approaches.
- Rural crossroads, particularly uncontrolled and stop-controlled intersections.
- Locations with complex geometry, high turning volumes, or limited sight distance.

SPEEDING

Speeding is defined as exceeding the speed limit or driving too fast for conditions. Speed influences both the likelihood of a crash and the severity of resulting injuries. Vehicle speed affects a driver's ability to perceive hazards and react accordingly. Higher speeds also significantly increase crash forces, particularly affecting pedestrians and cyclists, who have minimal physical protection. In Oregon, approximately one-quarter of fatal and serious injury crashes involve speeding.

Motor vehicle speed is influenced by more than individual driver behavior. Roadway design, land use context, and posted speed limits all affect how fast drivers travel and how forgiving the system is when errors occur. Speed is a central factor influencing crash outcomes across all emphasis areas. For vulnerable road users, even small increases in vehicle speed substantially increase the risk of fatalities or serious injuries, reinforcing the importance of road designs and speed management strategies that support survivable travel speeds.



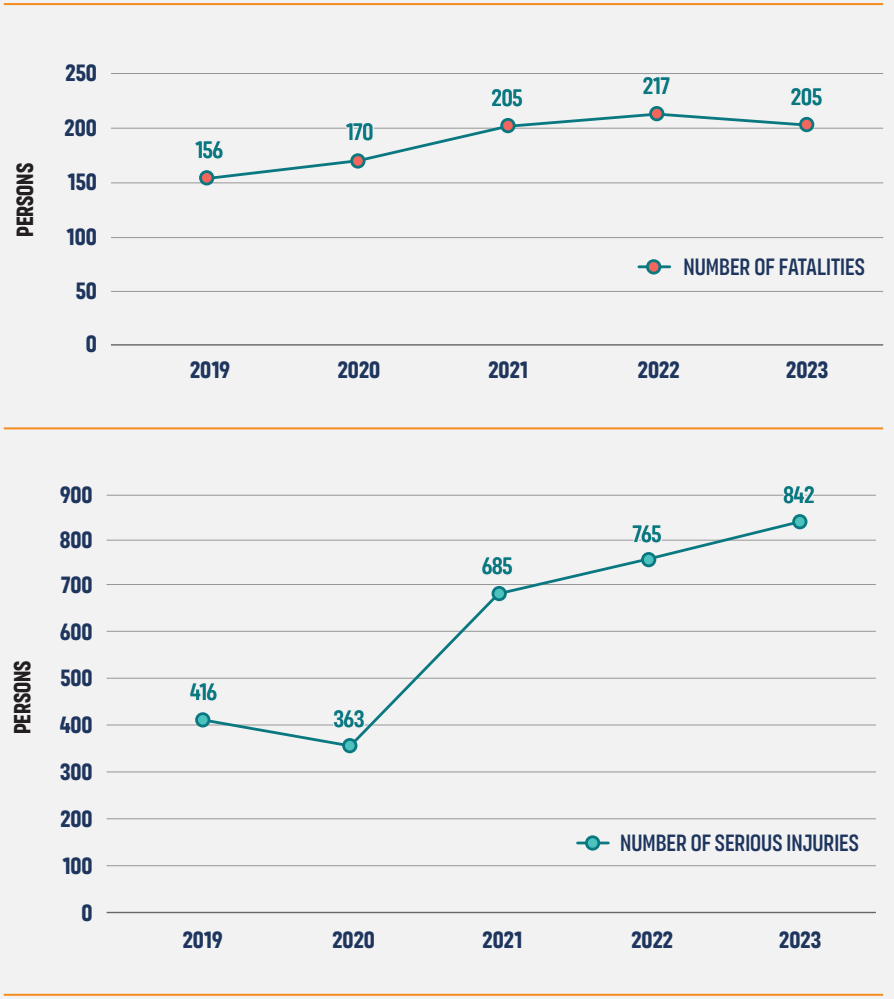


FIGURE 6. PEOPLE KILLED OR SERIOUSLY INJURED IN SPEEDING CRASHES, 2019-2023

SPEEDING

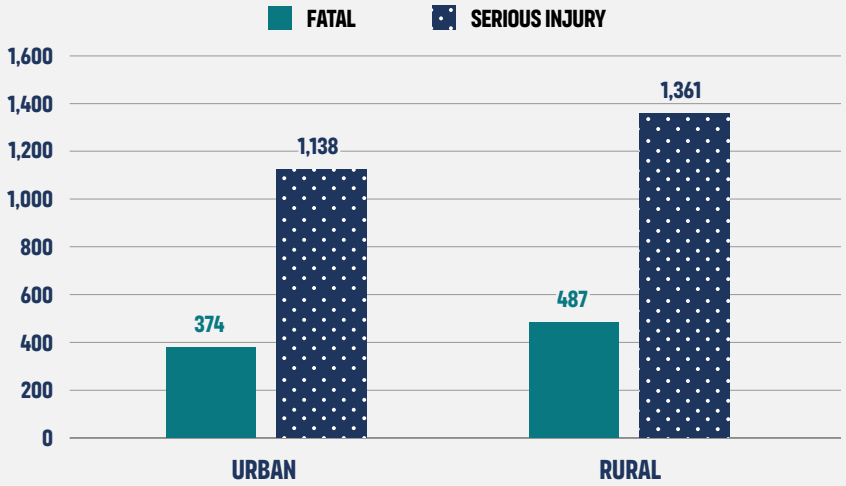


FIGURE 7. SPEEDING FATAL AND SERIOUS INJURY CRASHES BY CONTEXT, 2019–2023

Fatal and serious injury crashes involving speeding in Oregon are more common on higher-speed arterials and rural highways, where long travel distances and roadway design features can encourage faster driving. However, these crashes also frequently occur in urban areas, particularly along arterial streets.

KEY ISSUES

- Within each context, higher speed roadways, such as Urban Arterials (35-45 mph) and Rural Highways (55+ mph), experience the highest number of fatal and serious injury crashes.
- Speeding commonly overlaps with other risky behaviors, like unrestrained occupants and alcohol and/or other drugs involved.
- Rural-to-urban transition zones feature rapid changes in speed limits, creating increased risk.
- State and local police staffing limitations have reduced the ability to proactively patrol for speeding.

ALCOHOL AND/OR OTHER DRUGS INVOLVED

Alcohol and other drugs reduce a road user's ability to perceive hazards, make safe decisions, and respond in time to avoid a crash. In Oregon, nearly one in four fatal and serious injury crashes involves alcohol and/or other drugs.

Although substances are often associated with drivers, these crashes can include alcohol and/or drug use by pedestrians and bicyclists. Substance use increases the likelihood of risky behaviors, diminishes situational awareness, and raises the probability that a crash will result in serious injury or death.



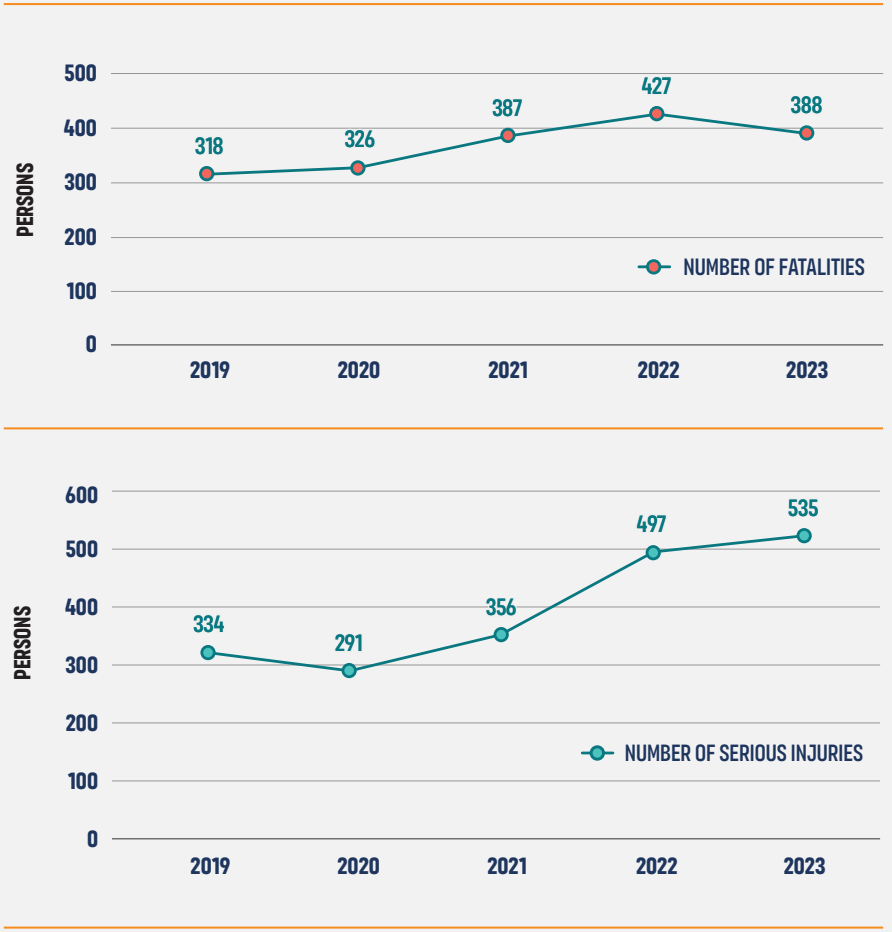


FIGURE 8. PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES INVOLVING ALCOHOL AND/OR OTHER DRUGS, 2019-2023

Alcohol and/or other drugs saw a decrease in fatalities and an increase in serious injuries in 2024, with 359 fatalities and 539 serious injuries reported.

ALCOHOL AND/OR OTHER DRUGS INVOLVED

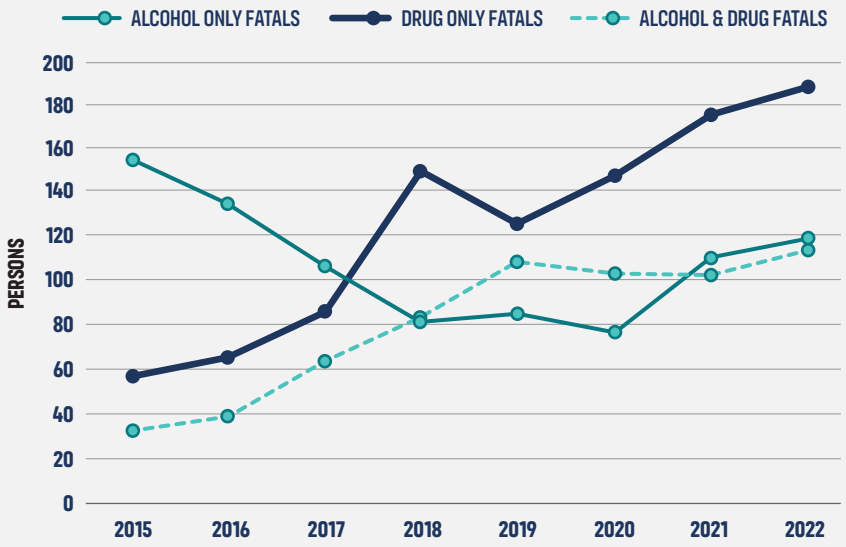


FIGURE 9. ALCOHOL AND DRUG INVOLVED FATALITIES, 2015-2022

In Oregon, trends in impaired driving have changed over recent years. According to the Oregon Impaired Driving Strategic Plan, fatalities in crashes involving drugs only (other than alcohol) have surpassed alcohol-only-involved fatalities from 2015 to 2022. Fatalities involving polysubstance (at least one participant identified as using both alcohol and drugs) nearly quadrupled (see **FIGURE 9**).

According to the TSAP-focused analysis of fatal and serious injury crashes from 2019 to 2023, alcohol remains the most involved substance in fatal and serious injury crashes, though other drugs also contribute. Cannabis has been increasingly detected in recent years, correlating with its legalization for recreational use in 2015. Alcohol and/or other drugs-involved crashes in Oregon are more likely to occur at night and on weekends and often coincide with other risk factors, such as speeding and unrestrained occupants.

KEY ISSUES

- Drug involvement and polysubstance involvement are contributing to an increasing number of fatal and serious injury crashes.
- Polysubstance use complicates detection, enforcement, adjudication, and treatment efforts.
- Alcohol and/or other drug involvement often overlaps with other risky behaviors, including unrestrained occupants and speeding.

UNDERSTANDING SAFETY RISKS

Traffic laws regarding alcohol and other drugs apply equally to every road user. Agencies should focus enforcement on unsafe behavior and demonstrated crash risk, monitor for bias or unjustified disparities, and pair enforcement with access to prevention, treatment, and safe transportation options.

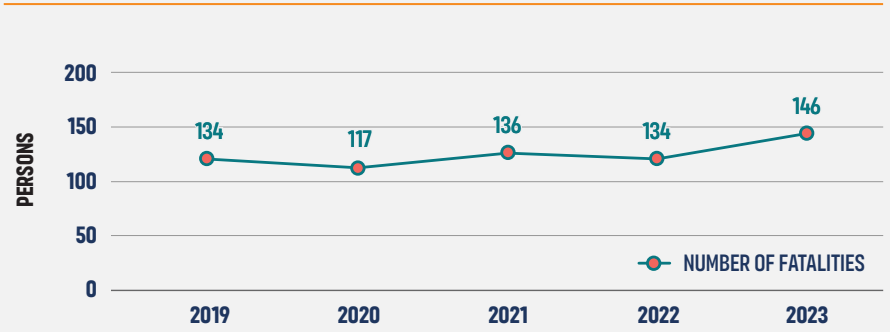
AGING DRIVERS

As Oregon's population continues to age, crashes involving older drivers account for a growing share of crashes. Drivers aged 65 and older are involved in nearly one-quarter of Oregon's fatal and serious injury crashes.

Major population shifts in Oregon toward the oldest age groups are projected by 2035, with the 75-84 age group expected to increase by 35% and the 85+ age group by 91%, compared to 2020.[1]

1 Population and Demographic Outlook, Oregon Office of Economic Analysis





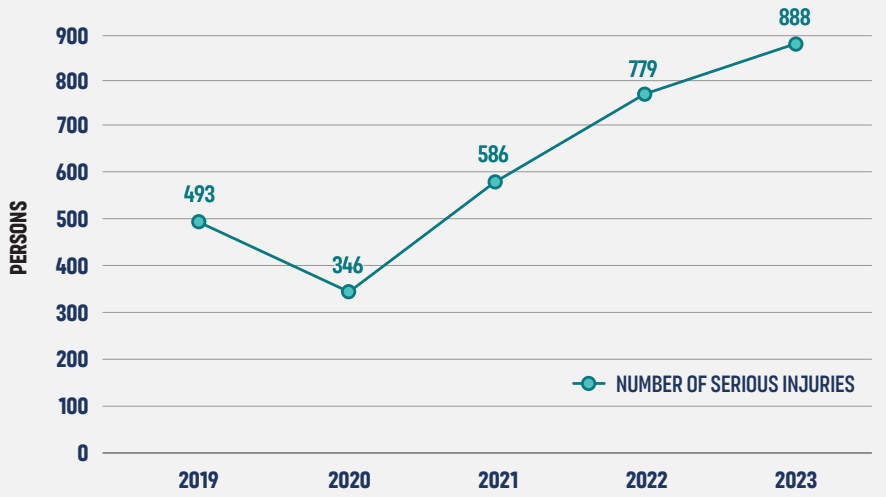


FIGURE 10. PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES INVOLVING AGING DRIVERS, 2019-2023

AGING DRIVERS

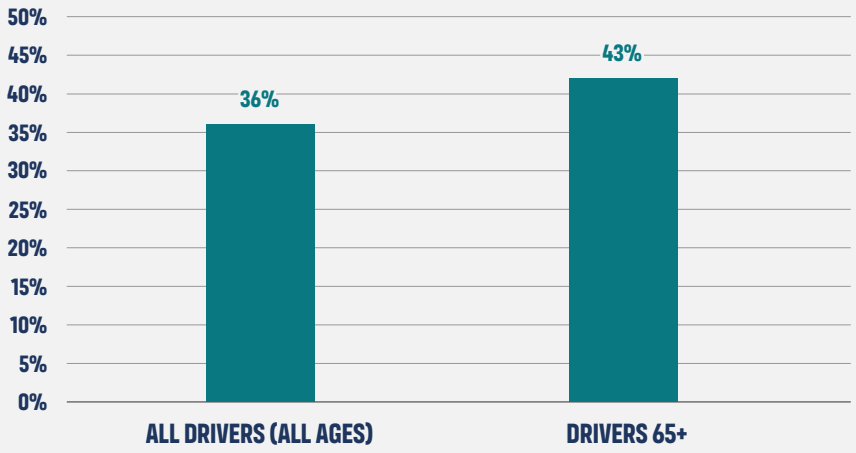


FIGURE 11. OREGON SHARE OF FATAL AND SERIOUS INJURY CRASHES OCCURRING AT INTERSECTIONS, 2019-2023

While older drivers generally engage in fewer risky behaviors, age-related changes in vision, reaction time, and physical resilience increase their vulnerability to injury in crashes. Complex driving environments can further challenge older drivers, increasing crash risk in certain situations.

Aging drivers are more likely than other road users to be involved in intersection crashes. Factors such as visual complexity, signal timing, and high decision-making demands can increase crash risk, particularly when navigating turning movements. When crashes occur, older road users are more likely to suffer serious or fatal injuries due to physical fragility.

KEY ISSUES

- Left turn and intersection crashes are overrepresented among aging road users.
- Age-related medical and physical impairments, including vision, cognition, and slower reaction time, can reduce safety.
- Rural and lower-income older adults often have fewer mobility alternatives than their urban counterparts, increasing their reliance on personal vehicles.

YOUNG DRIVERS (15-20)

Young drivers face an elevated crash risk due to inexperience, greater susceptibility to distraction, and a higher likelihood of engaging in riskier behaviors. In Oregon, 14 percent of fatal and serious injury crashes involved drivers aged 15-20, and these crashes have more than doubled since 2020.

Crash risk is particularly high during the early years of independent driving, when young drivers are still developing hazard recognition, decision-making skills, and safe driving habits. In addition, because many youth are waiting until they are over 18 to apply for a driver's license, an increasing number of young drivers do not have the classroom or behind-the-wheel training that is required for drivers younger than 18.



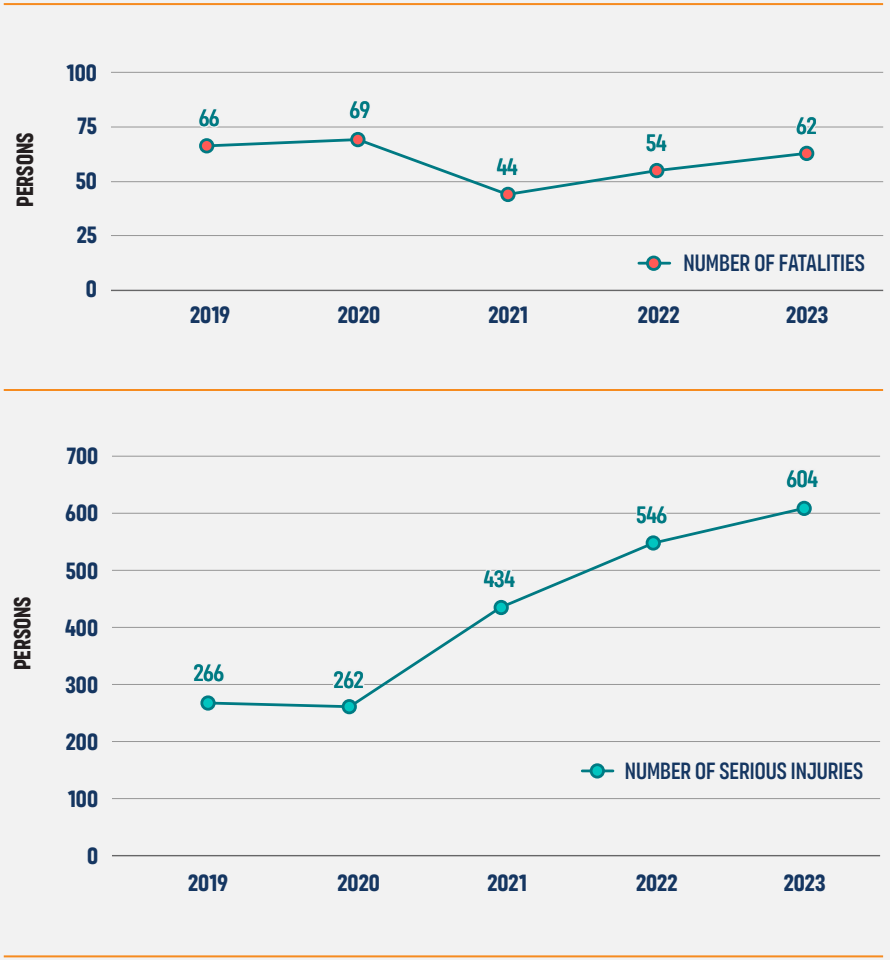


FIGURE 12. PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES INVOLVING YOUNG DRIVERS, 2019-2023

YOUNG DRIVERS (15-20)

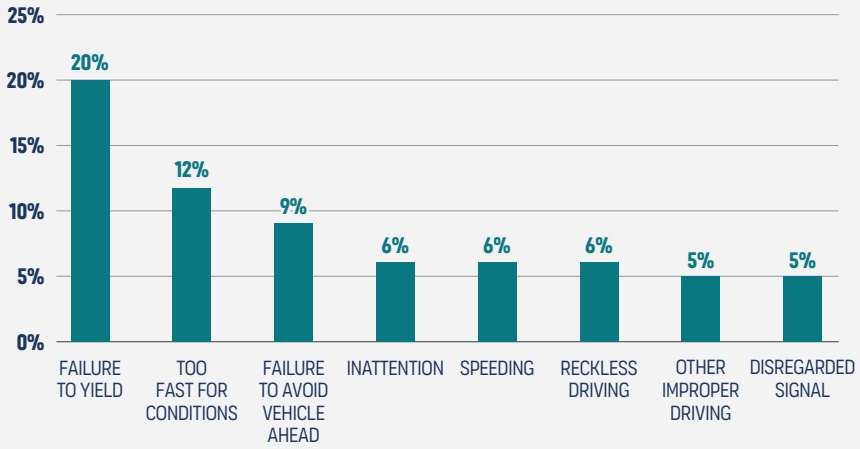


FIGURE 13. FACTORS CONTRIBUTING TO 5% OR MORE OF FATAL AND SERIOUS INJURY CRASHES INVOLVING YOUNG DRIVERS, 2019-2023

Crashes involving young drivers are more likely to occur at night and when peers are in the vehicle. Risky behaviors like speeding, driving too fast for conditions, reckless driving, and distraction are commonly reported factors in fatal and serious injury crashes involving young drivers.

Novice driver education is not mandatory in Oregon. Potential training providers can be prevented from operating in many rural, Tribal, and lower-income communities due to delivery costs and lower demand in these areas. Other challenges include instructor shortages and inclement winter weather, which cause some providers to offer formal programs for only a few months of the year.

This limited access leads many families to opt out of formal driver education, resulting in higher crash and conviction rates among teens who do not take a course.

KEY ISSUES

- Inexperience with hazard recognition and decision-making.
- Higher prevalence of distraction and speeding behaviors compared to drivers 21 years old and older.
- Nighttime driving and peer passengers increase crash risk.
- Requirements for, and access to, driver education and training vary by age, geography, and income levels.

MOTORCYCLISTS

Unlike occupants of passenger vehicles, motorcyclists lack structural protection such as a vehicle body, seat belts, and airbags. Even minor roadway hazards or small errors in judgment can lead to serious injuries or fatalities.

Between 2019 and 2023, motorcycle-involved crashes accounted for 14% of all fatal and serious injury crashes in Oregon, representing a 40% increase compared to the prior five-year period.

Motorcycle safety must be considered within the broader context of Oregon's most prevalent crash factors. Systemwide risk factors—including speed-related crashes, alcohol/drug involvement, roadway departure, and intersection conflicts—disproportionately affect motorcyclists due to their exposure, limited physical protection, and reduced margin for error.

KEY ISSUES

- Roadway maintenance and surface quality, including gravel, striping visibility, and pavement conditions, can significantly affect motorcyclists' ability to safely navigate the road.
- Speeding and other high-risk riding behaviors, including extreme speeding and risk-taking, can compound these challenges.
- Alcohol and/or other drug involvement (by motorcyclists or other road users) frequently overlaps with fatal and serious injury motorcycle crashes.

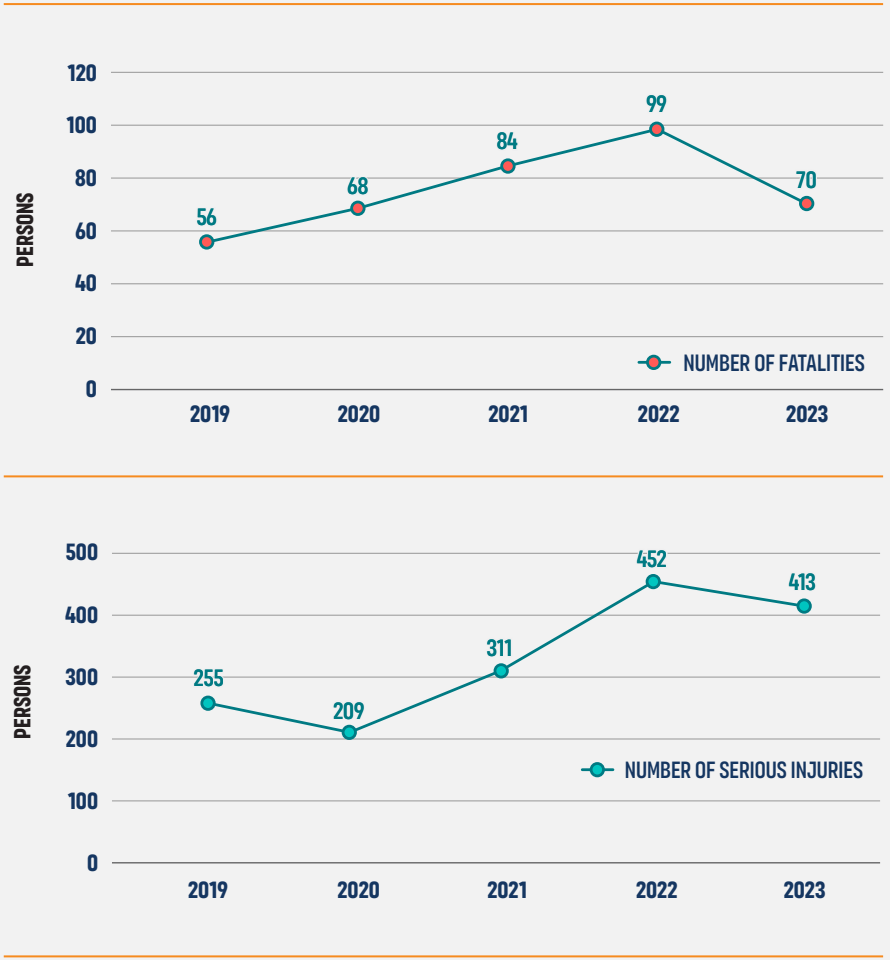


FIGURE 14. MOTORCYCLISTS KILLED AND SERIOUSLY INJURED IN CRASHES, 2019-2023

DISTRACTED DRIVING

Distraction occurs when a driver diverts attention from driving to something unrelated that requires their eyes, ears, brain, or hands.

Officer- and participant-reported crash data underrepresents distraction, as it is difficult to document without direct eyewitness evidence; typically, drivers will not readily admit to being distracted. Nonetheless, reported distraction-involved fatal and serious injury crashes in Oregon more than doubled between 2014-2018 and 2019-2023.



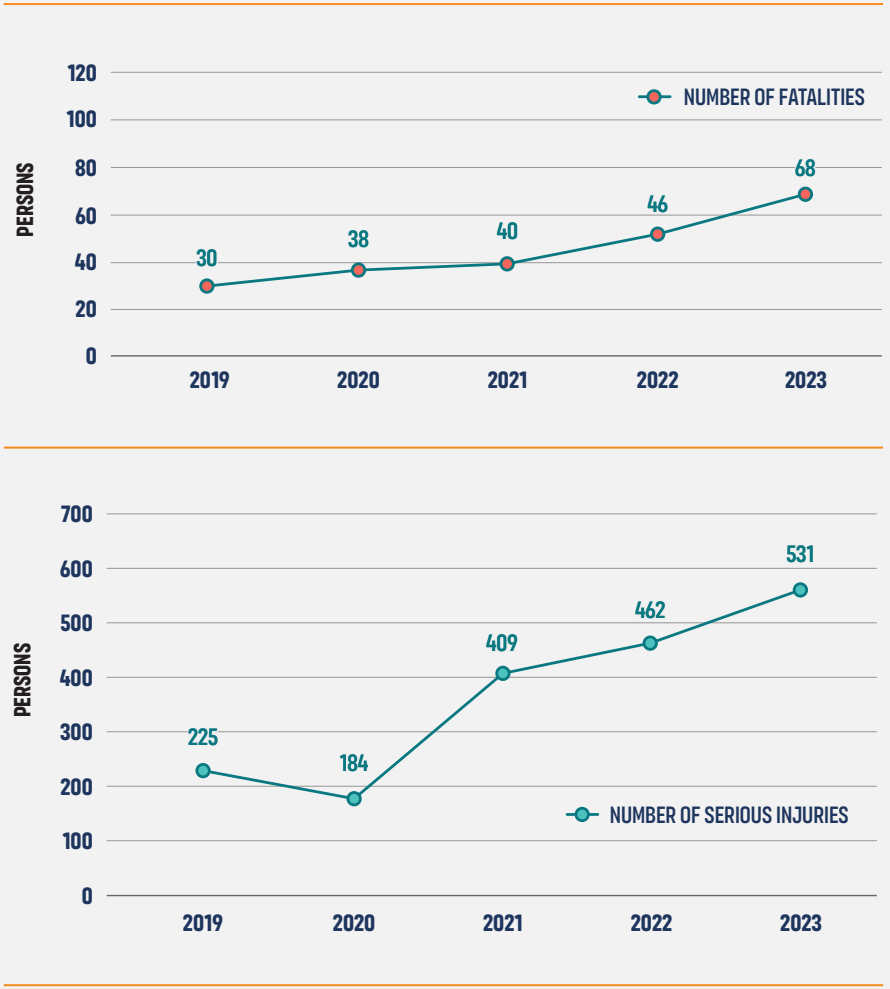


FIGURE 15. PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES INVOLVING DISTRACTED DRIVING, 2019-2023

Distracted driving saw a decrease in fatalities and an increase in serious injuries in 2024, with 57 fatalities and 531 serious injuries reported.

DISTRACTED DRIVING

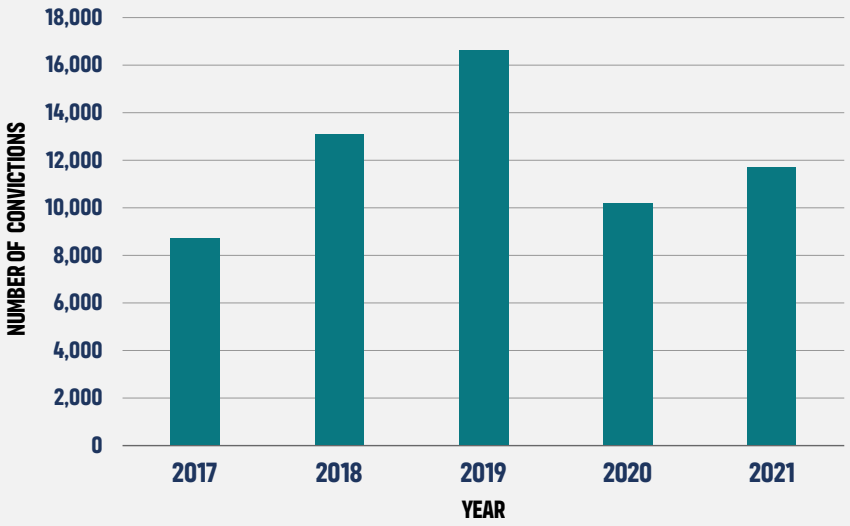


FIGURE 16. OREGON CONVICTIONS FOR USING A MOBILE ELECTRONIC DEVICE WHILE DRIVING

Most distractions involve a combination of these types, including both a physical component (eyes, ears, or hands) and a mental component. Distraction diverts attention from the critical task of safely navigating the transportation system. The widespread use of mobile devices has increased opportunities for distraction by all road users.

There are four primary types of driver distraction:

- **Visual**: Looking at something other than the road.
- **Auditory**: Hearing something unrelated to driving.
- **Manual**: Manipulating something other than the steering wheel.
- **Cognitive**: Thinking about something other than driving.

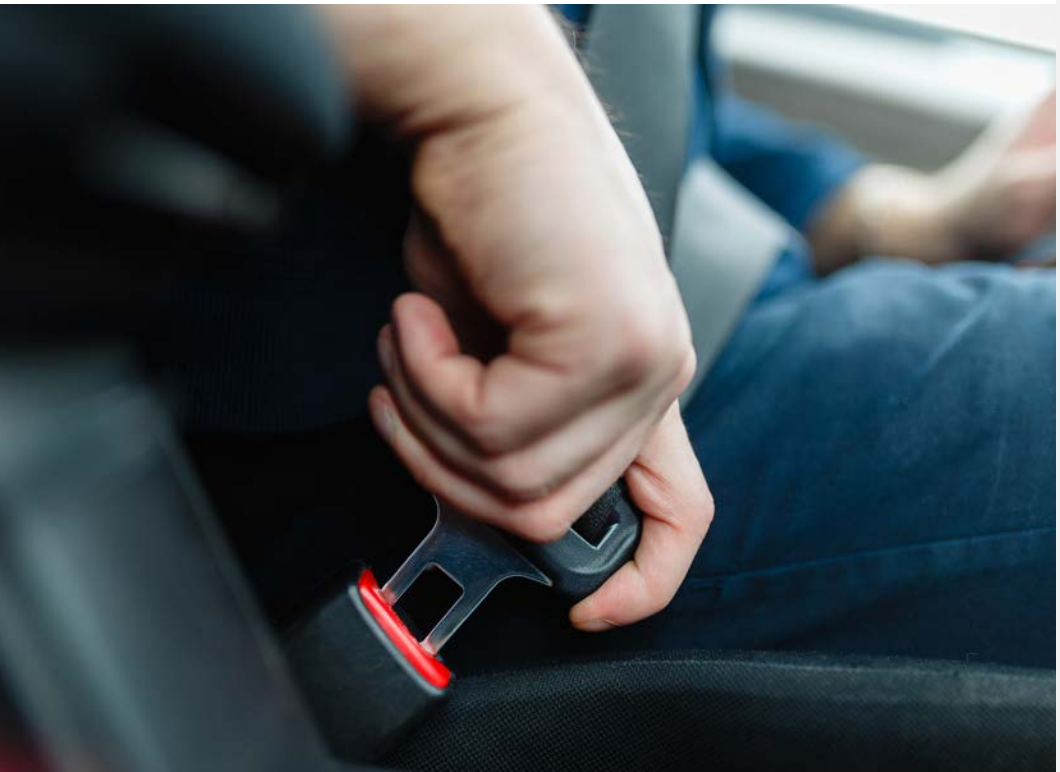
KEY ISSUES

- **Mobile devices:** Texting, app use, and phone calls remain the primary sources of documented distraction.
- **In-vehicle technologies:** Emerging risks include touchscreens, video watching, and other in-vehicle entertainment.



UNRESTRAINED OCCUPANTS

Seat belt use and child restraint system use are the most effective ways to protect occupants from serious injury or death in a crash. Despite this, unrestrained occupants are disproportionately represented in Oregon's fatal and serious injury crashes when compared to restrained occupants.



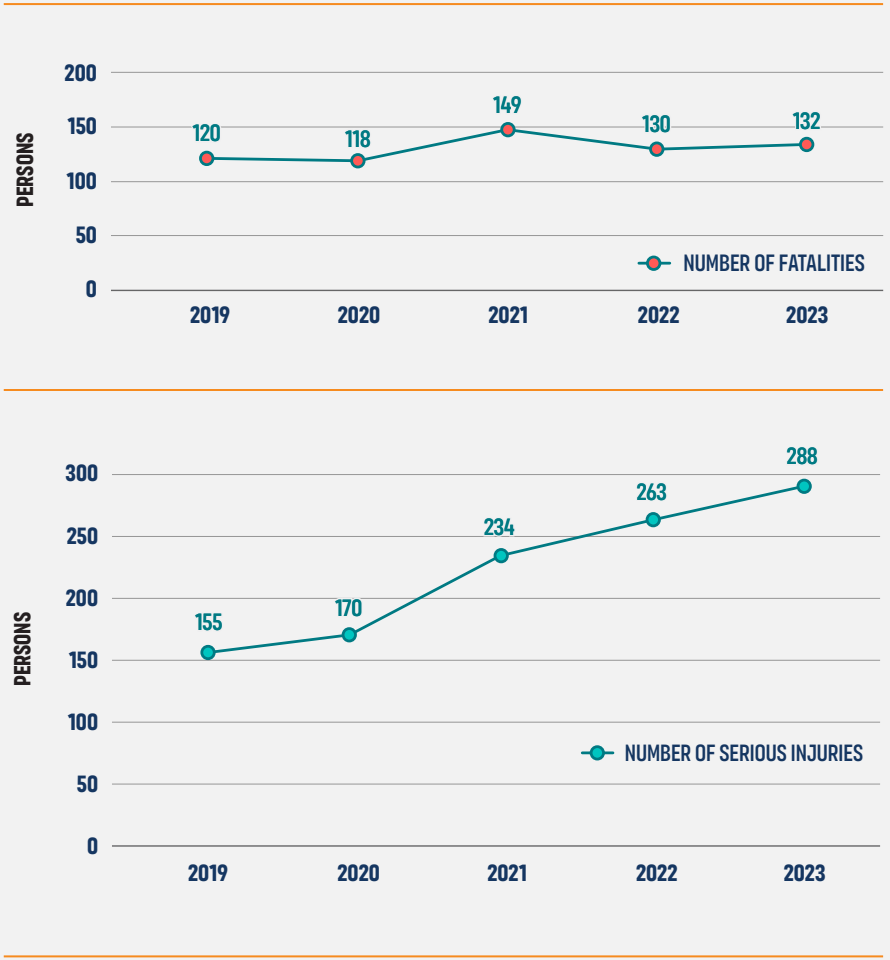


FIGURE 17. UNRESTRAINED OR IMPROPERLY RESTRAINED PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES, 2019-2023

UNRESTRAINED OCCUPANTS

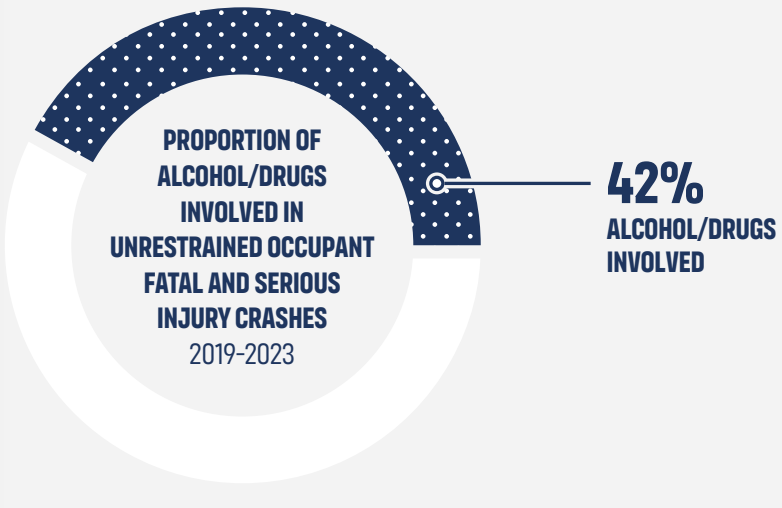


FIGURE 18. PROPORTION OF UNRESTRAINED OCCUPANT FATAL AND SERIOUS INJURY CRASHES THAT ALSO INVOLVED IMPAIRMENT, 2019-2023

Unrestrained and improperly restrained occupant crashes are more common in rural areas and at night. These crashes frequently involve other risky behaviors. Approximately 42 percent of crashes where an unrestrained occupant was killed or seriously injured also involved alcohol and/or other drugs.

Oregon's observed seat belt usage is high: 97% for front-seat drivers and front-outboard passengers in 2022.[1] By comparison, unrestrained and improperly restrained occupants were reported in over 11% of fatal and serious injury crashes.

1 NHTSA Traffic Safety Facts, Seat Belt Use in 2024 - Use Rates in the States and Territories

KEY ISSUES

- Rural crashes have particularly high rates of unrestrained fatalities.
- Young drivers and young passengers exhibit lower seat belt use rates compared to other age groups.
- The number of unrestrained and improperly restrained occupants being killed and seriously injured in crashes has increased by more than 45% since 2020.

PEDESTRIANS & BICYCLISTS

Pedestrians and bicyclists are among the most vulnerable road users due to the lack of physical protection. In Oregon, pedestrian and bicyclist fatalities and serious injuries have more than doubled over the past decade, reflecting national trends. Many of these crashes occur on roadways designed primarily for motor vehicle travel, where higher speeds, higher vehicle volumes, and limited bicycle and pedestrian infrastructure increase both exposure and crash severity. These conditions can occur in both urban and rural contexts, but are most common on urban arterial roads.

On average, 88% of all fatal and serious injury pedestrian and bicycle crashes occur in urban areas in Oregon. Pedestrian and bicyclist-involved crashes occur more frequently in areas where pedestrian infrastructure is incomplete or where high-speed roads pass through densely developed communities. These conditions are more common in areas that have historically received less investment in pedestrian infrastructure.

The Vulnerable Road User Safety Assessment, located in **APPENDIX A**, provides a comprehensive evaluation of bicycle and pedestrian safety trends in Oregon.



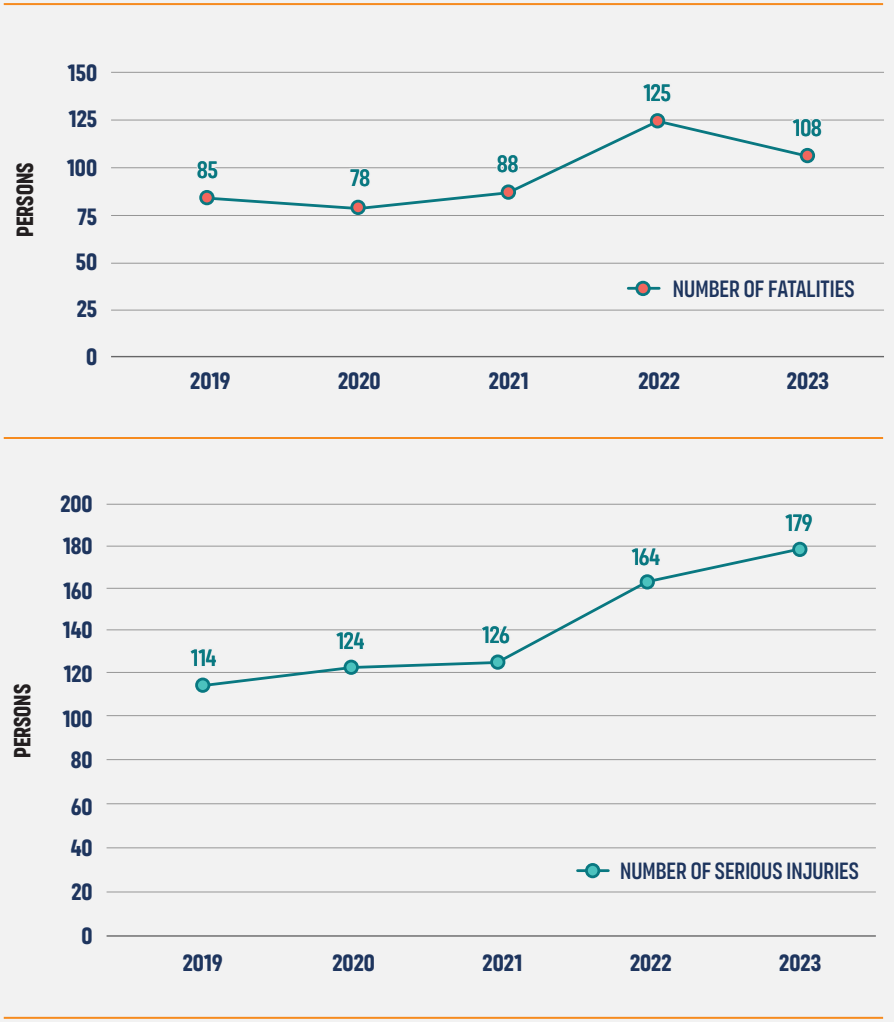


FIGURE 19. PEDESTRIANS KILLED AND SERIOUSLY INJURED IN CRASHES, 2019-2023

PEDESTRIANS & BICYCLISTS

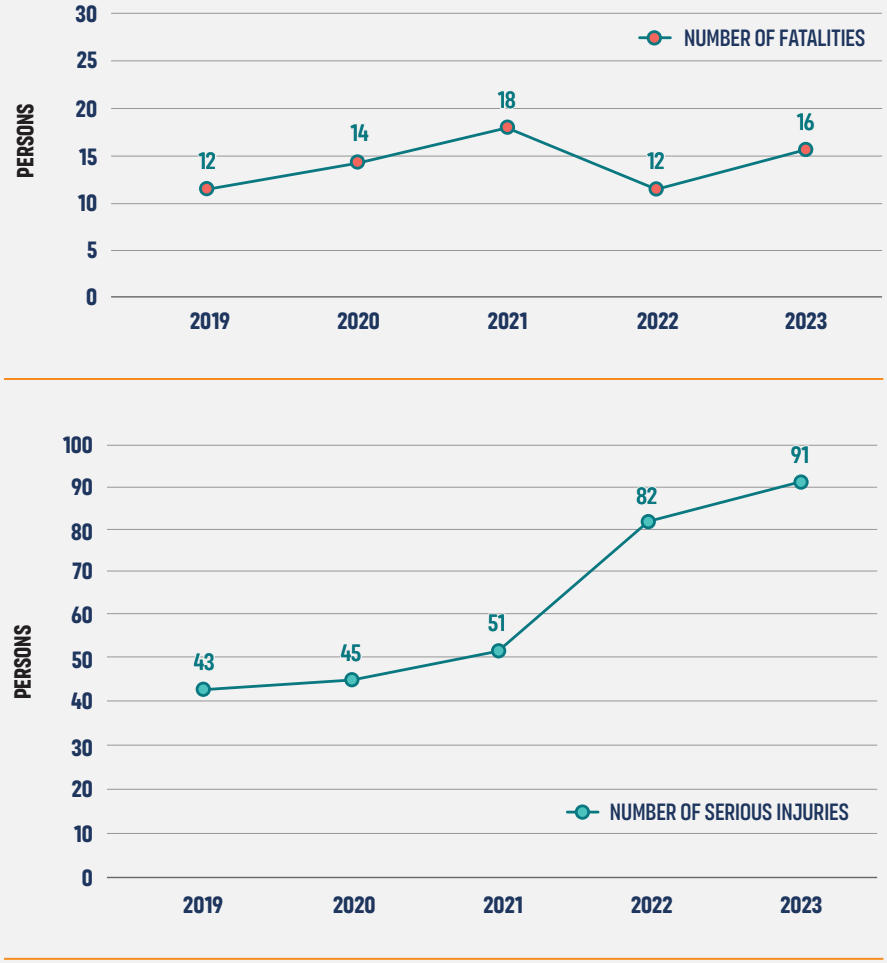


FIGURE 20. BICYCLISTS KILLED AND SERIOUSLY INJURED IN CRASHES, 2019-2023

KEY ISSUES

- **Vehicle speeds:** Speed is the primary risk factor, as the survivability of pedestrians and bicyclists drops sharply at speeds above 25 mph.
- **Vehicle design:** Increased overall size, weight, and hood height of motor vehicles lead to increased risk of pedestrian injuries in crashes.
- **Urban arterials:** High volume roads with long distances for people to cross are overrepresented in pedestrian- and bicyclist-involved crashes.
- **Bicyclist crash locations:** Crashes frequently occur at intersections and driveways, where turning conflicts are common.
- **Types of bicycles and e-micromobility devices:** The emergence of e-bikes, e-scooters, and other e-micromobility devices is rapidly changing how we collect data, evaluate trends, and address vulnerable road user safety.

MEDIUM & HEAVY TRUCKS

Medium and heavy trucks, which include large pickup trucks, vans, delivery trucks, box trucks, school and transit buses, and long-haul delivery trucks[1], are essential to Oregon's economy and supply chain. At the same time, their size, weight, and operational characteristics create unique safety challenges. The physics of heavy vehicles, including longer stopping distances, a wider turning radius, and greater mass, can lead to more severe injuries when crashes occur.

From 2019 to 2023, crashes involving medium or heavy trucks accounted for 805 fatal and serious injury crashes, representing approximately 6% of all such crashes statewide. Compared to the previous five-year period, medium and heavy truck-involved fatal and serious injury crashes increased by 53%.

1 Oregon DEQ



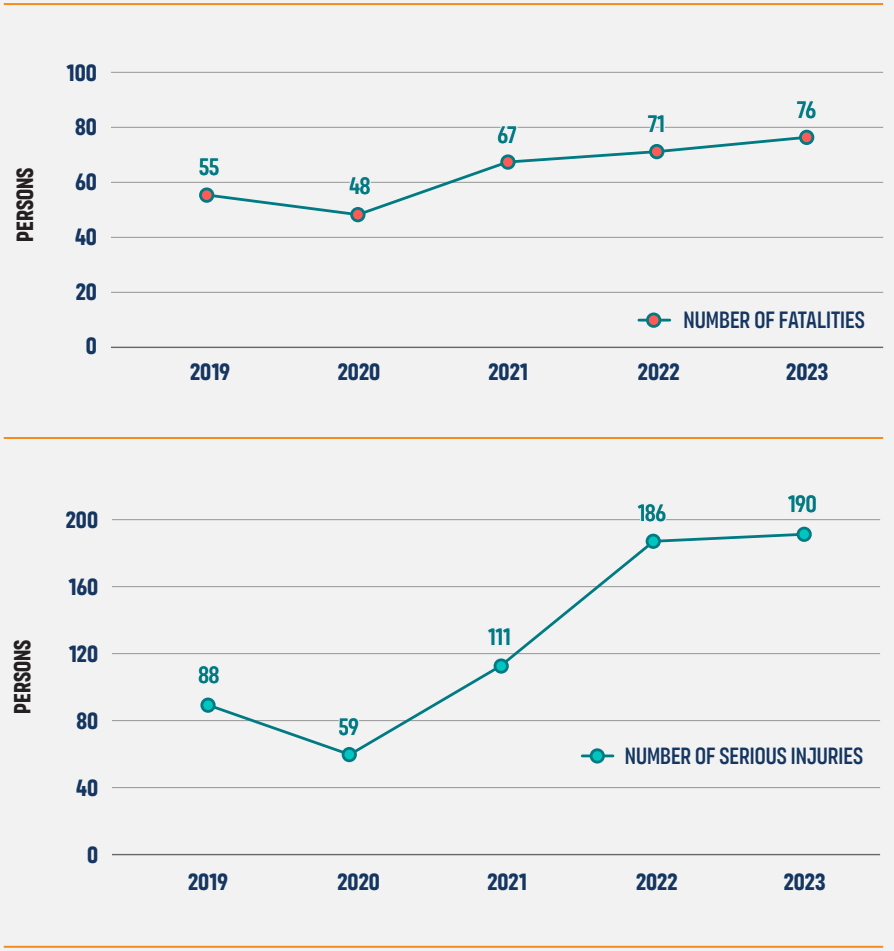


FIGURE 21. PEOPLE KILLED AND SERIOUSLY INJURED IN CRASHES INVOLVING MEDIUM AND HEAVY TRUCKS, 2019-2023

MEDIUM & HEAVY TRUCKS



Passenger Vehicle Driver Behaviors. In a substantial share of truck–passenger vehicle crashes, the passenger vehicle driver's behavior was reported as a contributor to the crash. Common actions included:

- Cutting in front of trucks in congested conditions.
- Passing on the right or lingering in truck blind spots.
- Underestimating truck stopping distance.
- Distracted or impaired driving around heavy vehicles.

Increase in Medium-duty Operations. The recent increase in delivery services has led to more medium-duty operations. Additionally, some Commercial Driver's License holders have lost their licenses due to drug or alcohol violations, leading them to seek medium-duty carriers for employment where a Commercial Driver's License is not required.

KEY ISSUES

- Passenger vehicle driver behavior around trucks, including cutting off trucks, blind spot conflicts, and underestimating stopping distances.
- Electronic log manipulation and false records of duty status, which can conceal actual driving or rest time and enable drivers to exceed federal hours of service limits.[1]
- Driver fatigue and truck parking shortages,[2] particularly along rural corridors and near urban centers. Truck drivers spending more than 8 hours traveling are twice as likely to be involved in a roadway crash; longer working hours can cause sleep deprivation, disrupted sleep patterns, and general fatigue.[3]
- Urban freight delivery challenges, including constrained lanes and inadequate or misused delivery zones.

1 Commercial Vehicle Safety Alliance, False Records of Duty Status and Electronic Logging Device Tampering

2 Oregon Commercial Truck Parking Study: Final Report

3 Insurance Institute for Highway Safety, Large Trucks Overview

CHAPTER CONCLUSION

This chapter lays out the key challenges shaping road safety in Oregon. Fatalities and serious injuries stem from identifiable patterns in behavior, infrastructure, and broader system conditions. By organizing these contributors into emphasis areas, the Plan takes a data-driven approach to identify opportunities to improve them.

With that foundation in place, the next chapter shifts from understanding the problem to advancing solutions. It introduces strategic actions, which are targeted, evidence-based activities that address multiple emphasis areas. They bring together proven countermeasures, policy approaches, and program investments that, when applied consistently and collectively, can result in measurable safety improvements and real-world results.





06

STRATEGIC ACTIONS



06

While crash patterns help identify the problems, meaningful improvements depend on the response of transportation safety professionals, partners, and the general community. These actions reflect proven safety countermeasures and evidence-based strategies, emerging issues, system-level policy and funding changes, and scalable programs that can be implemented statewide.

As responsible stewards of public funds, Oregon's safety leaders have identified these 30 strategic actions as the top priorities for the next five years. These actions are designed to accelerate progress toward reducing fatal and serious injury crashes on all roads, across all jurisdictions, and for all road users.

The actions are aligned with the Safe System Approach and address all its principles and elements. Some focus on infrastructure and road design. Others strengthen behavioral strategies, enforcement, policy frameworks, multi-agency and community partnerships, communication, and engagement. Together, they reflect the reality that road safety progress requires coordinated effort among all safety partners to recognize overlapping benefits.

Reducing fatal and serious injury crashes in Oregon demands both immediate interventions and long-term systemic change. The actions in this chapter provide a focused roadmap for the next five years. By aligning funding, design, enforcement, education, public health, communication, and engagement strategies around these 30 actions, Oregon can make measurable progress toward a safer transportation system for everyone.

While the goal is safety for everyone, crash risks and transportation conditions are not experienced equally across Oregon. Geographic context, road design, economic conditions, and transportation access influence safety outcomes. The strategies in this chapter support a universal goal while enabling targeted solutions where risks are greatest.

Following are the 30 TSAP strategic actions, each of which addresses one or more emphasis areas (see **FIGURE 22**) and aligns with one or more Safe System Approach elements (see **FIGURE 23**).

1. **EXPAND USE OF ROUNDABOUT INTERSECTION DESIGNS.** Emphasize the selection of roundabouts for intersection traffic control.
2. **IMPROVE SIGNALIZED INTERSECTION SAFETY.** Standardize and prioritize safety-focused signal operations—such as leading pedestrian intervals, protected turn phasing, and no turn on red—at high-risk signalized intersections.
3. **PRIORITIZE LOW-COST INFRASTRUCTURE COUNTERMEASURES.** Prioritize low-cost systemic and proactive countermeasures based on crash risk, exposure, and road characteristics, in addition to crash history.
4. **ADVANCE AUTOMATED ENFORCEMENT.** Advance data-driven automated enforcement through legislative action, ensuring statewide implementation and reducing administrative barriers and burdens.
5. **REDUCE VEHICLE SPEEDS.** Implement data-driven infrastructure countermeasures to reduce vehicle speeds at locations where speed contributes to fatal and serious injury crashes.
6. **EXPAND YOUNG DRIVER EDUCATION.** Expand and implement driver education, awareness, and advocacy programs to improve safe driving by young and novice drivers.
7. **REDUCE BLOOD ALCOHOL CONCENTRATION LEGAL LIMIT.** Revise state law governing alcohol and other impairing substances, including lowering the legal Blood Alcohol Concentration limit to 0.05%.
8. **IMPROVE MAINTENANCE OF TRAFFIC CONTROL DEVICES.** Maintain devices, markings, and signs related to safety at the highest level required to meet the needs of road users with the greatest visibility or navigation challenges.
9. **STRENGTHEN WORK ZONE SAFETY FOR ALL ROAD USERS AND WORKERS.** Develop a resource and training that describe how traffic management plans, temporary traffic control, and system maintenance can affect the safety of road workers and the traveling public.
10. **IMPROVE SAFETY AND SECURITY AT HIGHWAY REST AREAS.** Maintain and upgrade rest areas to ensure road safety and personal security for all travelers.
11. **EXPAND SPEED MANAGEMENT DESIGN POLICIES.** Expand infrastructure design policies related to speed management.
12. **IMPLEMENT CONTEXT SENSITIVE DESIGN ON ARTERIALS.** Prioritize implementation of context sensitive design elements on arterial roads with the greatest safety risk for all road users.
13. **STREAMLINE DUII ARREST PROCESS.** Streamline the Driving Under the Influence of Intoxicants (DUII) arrest process by developing consistent statewide protocols.
14. **EXPAND IGNITION INTERLOCK DEVICES.** Expand use of ignition interlock devices, compliance monitoring, and oversight as part of the Driving Under the Influence of Intoxicants (DUII) adjudication process.

15. **EXPAND DRUG DETECTION TRAINING.** Expand law enforcement training and education on drug involvement detection.
16. **INCREASE SUBSTANCE MISUSE PREVENTION.** Prioritize cross-agency funding and prevention programs to reduce substance misuse in communities that are severely impacted by crashes involving alcohol and/or other drugs.
17. **IDENTIFY VULNERABLE ROAD USER SAFETY NEEDS.** Refine and combine findings from multiple statewide assessments to consistently identify vulnerable road user safety needs on local roads and state highways.
18. **SECURE VULNERABLE ROAD USER SAFETY FUNDING.** Prioritize and secure federal, state, and local funding for safety countermeasures and initiatives focused on vulnerable road users.
19. **DEVELOP GUIDANCE FOR ELECTRIC MICROMOBILITY DEVICES.** Establish a statewide task force to develop policy and guidance regarding electric micromobility devices, including e-motos.
20. **PROVIDE YOUTH SAFETY EQUIPMENT.** Provide safety equipment for youth and low-income individuals, including child restraints, bicycle helmets, and reflective gear.
21. **SUPPORT CHILD PASSENGER SAFETY TECHNICIANS.** Recruit, train, and retain Certified Child Passenger Safety Technicians statewide.
22. **EXPAND AGING DRIVER PROGRAMS.** Expand aging driver safety and mobility programs, including partnering with interested organizations and planning for “driving retirement.”
23. **EDUCATE ON ROAD USER INTERACTIONS.** Increase training and education for all road users about how to safely interact with other road user types, including medium and large trucks, motorcycles, pedestrians (including road workers), bicyclists, and micromobility users.
24. **ENHANCE GRADUATED DRIVERS LICENSE RESTRICTIONS.** Enforce, enhance, and extend Graduated Drivers License restrictions for novice drivers.
25. **ENCOURAGE DISTRACTION-FREE DRIVING PROGRAMS.** Encourage distraction-free driving programs for public and private employers.
26. **ADD OR ELEVATE SAFETY AS A FUNDING CRITERION.** Incorporate measurable safety criteria with meaningful weighting in transportation project selection processes statewide.
27. **MONITOR SAFETY-RELATED EVENTS AND POLICY CONCERNS.** Monitor trends, current events, and concerns from elected and appointed officials related to transportation safety initiatives.
28. **SUPPORT LOCAL SAFE COMMUNITIES PROGRAMS.** Fully fund and sustain Safe Communities Programs and similar state-level initiatives to advance community-based traffic safety statewide.
29. **IMPROVE SAFE TRAVEL OPTIONS.** Expand access to safe travel options through land use, transit, rideshare, and other programs.
30. **DEVELOP A ROAD SAFETY COMMUNICATION GUIDE.** Develop a communication guide for ODOT regions, local agencies, Safe Community Coordinators, and other safety partners when reporting on crashes, road safety efforts, proven safety countermeasures, and engagement opportunities.

The figure below illustrates how each TSAP strategic action addresses multiple emphasis areas. For example, dark green shows that emphasis area as the action's primary purpose.

FIGURE 22. TSAP ACTIONS AND EMPHASIS AREAS

	ACTION	ROADWAY DEPARTURE	INTERSECTIONS	SPEEDING	ALCOHOL AND/ OR OTHER DRUGS	AGING DRIVERS	YOUNG DRIVERS	MOTORCYCLISTS	DISTRACTED DRIVERS	UNRESTRAINED OCCUPANTS	PEDESTRIANS & BICYCLISTS	MEDIUM & HEAVY VEHICLES
1	EXPAND USE OF ROUNDABOUT INTERSECTION DESIGNS		Primary	Secondary		Indirect	Indirect	Indirect		Indirect	Indirect	Indirect
2	IMPROVE SIGNALIZED INTERSECTION SAFETY		Primary	Indirect		Indirect	Indirect	Indirect	Indirect		Primary	Indirect
3	PRIORITIZE LOW-COST INFRASTRUCTURE COUNTERMEASURES	Primary	Primary	Indirect		Secondary	Secondary	Secondary			Primary	Secondary
4	ADVANCE AUTOMATED ENFORCEMENT	Primary	Primary	Primary	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect	Indirect
5	REDUCE VEHICLE SPEEDS	Secondary	Secondary	Primary		Indirect	Indirect	Secondary			Secondary	Secondary
6	EXPAND YOUNG DRIVER EDUCATION	Indirect	Indirect	Secondary	Secondary		Primary	Indirect	Secondary		Indirect	Indirect
7	REDUCE BLOOD ALCOHOL (BAC) LEGAL LIMIT	Indirect		Secondary	Primary			Indirect		Secondary	Indirect	
8	IMPROVE MAINTENANCE OF TRAFFIC CONTROL DEVICES	Primary	Primary	Indirect	Secondary	Primary	Secondary	Secondary	Secondary	Indirect	Secondary	Secondary
9	STRENGTHEN WORK ZONE SAFETY FOR ALL ROAD USERS AND WORKERS	Primary		Primary		Secondary	Secondary	Secondary	Secondary		Secondary	Secondary
10	IMPROVE SAFETY AND SECURITY AT HIGHWAY REST AREAS	Secondary				Primary	Primary	Primary				Primary

PRIMARY PURPOSE SECONDARY PURPOSE INDIRECT BENEFIT DOES NOT APPLY

	ACTION	ROADWAY DEPARTURE	INTERSECTIONS	SPEEDING	ALCOHOL AND/ OR OTHER DRUGS	AGING DRIVERS	YOUNG DRIVERS	MOTORCYCLISTS	DISTRACTED DRIVERS	UNRESTRAINED OCCUPANTS	PEDESTRIANS & BICYCLISTS	MEDIUM & HEAVY VEHICLES
11	EXPAND SPEED MANAGEMENT DESIGN POLICIES											
12	IMPLEMENT CONTEXT SENSITIVE DESIGN ON ARTERIALS											
13	STREAMLINE DUII ARREST PROCESS											
14	EXPAND IGNITION INTERLOCK DEVICES											
15	EXPAND DRUG DETECTION TRAINING											
16	INCREASE SUBSTANCE MISUSE PREVENTION											
17	IDENTIFY VULNERABLE ROAD USER SAFETY NEEDS											
18	SECURE VULNERABLE ROAD USER SAFETY FUNDING											
19	DEVELOP GUIDANCE FOR ELECTRIC MICROMOBILITY DEVICES											
20	PROVIDE YOUTH SAFETY EQUIPMENT											
21	SUPPORT CHILD PASSENGER SAFETY TECHNICIANS											

PRIMARY PURPOSE SECONDARY PURPOSE INDIRECT BENEFIT DOES NOT APPLY

	ACTION	ROADWAY DEPARTURE	INTERSECTIONS	SPEEDING	ALCOHOL AND/ OR OTHER DRUGS	AGING DRIVERS	YOUNG DRIVERS	MOTORCYCLISTS	DISTRACTED DRIVERS	UNRESTRAINED OCCUPANTS	PEDESTRIANS & BICYCLISTS	MEDIUM & HEAVY VEHICLES
22	EXPAND AGING DRIVER PROGRAMS											
23	EDUCATE ON ROAD USER INTERACTIONS											
24	ENHANCE GRADUATED DRIVERS LICENSING REQUIREMENTS											
25	ENCOURAGE DISTRACTION-FREE DRIVING PROGRAMS											
26	ADD OR ELEVATE SAFETY AS A FUNDING CRITERION											
27	MONITOR SAFETY-RELATED EVENTS AND POLICY CONCERNS											
28	SUPPORT LOCAL SAFE COMMUNITIES PROGRAMS											
29	IMPROVE SAFE TRAVEL OPTIONS											
30	DEVELOP A ROAD SAFETY COMMUNICATION GUIDE											

PRIMARY PURPOSE SECONDARY PURPOSE INDIRECT BENEFIT DOES NOT APPLY

The figure below illustrates how each TSAP strategic action aligns with one or more Safe System Approach elements.

FIGURE 23. TSAP ACTIONS AND SAFE SYSTEM APPROACH ELEMENTS

	ACTION	SAFER PEOPLE	SAFER ROADS	SAFER SPEEDS	SAFER VEHICLES	SAFER LAND USE	POST-CRASH CARE
1	EXPAND USE OF ROUNDABOUT INTERSECTION DESIGNS		■	■			
2	IMPROVE SIGNALIZED INTERSECTION SAFETY	■	■				
3	PRIORITIZE LOW-COST INFRASTRUCTURE COUNTERMEASURES		■	■			
4	ADVANCE AUTOMATED ENFORCEMENT	■		■			
5	REDUCE VEHICLE SPEEDS	■	■	■		■	
6	EXPAND YOUNG DRIVER EDUCATION	■		■			
7	REDUCE BLOOD ALCOHOL (BAC) LEGAL LIMIT	■					
8	IMPROVE MAINTENANCE OF TRAFFIC CONTROL DEVICES	■	■	■	■		
9	STRENGTHEN WORK ZONE SAFETY FOR ALL ROAD USERS AND WORKERS	■	■	■			■
10	IMPROVE SAFETY AND SECURITY AT HIGHWAY REST AREAS	■	■				
11	EXPAND SPEED MANAGEMENT DESIGN POLICIES	■	■	■		■	
12	IMPLEMENT CONTEXT SENSITIVE DESIGN ON ARTERIALS		■			■	
13	STREAMLINE DUII ARREST PROCESS	■					
14	EXPAND IGNITION INTERLOCK DEVICES	■			■		
15	EXPAND DRUG DETECTION TRAINING	■					

	ACTION	SAFER PEOPLE	SAFER ROADS	SAFER SPEEDS	SAFER VEHICLES	SAFER LAND USE	POST-CRASH CARE
16	INCREASE SUBSTANCE MISUSE PREVENTION	■					
17	IDENTIFY VULNERABLE ROAD USER SAFETY NEEDS	■	■			■	
18	SECURE VULNERABLE ROAD USER SAFETY FUNDING	■	■			■	
19	DEVELOP GUIDANCE FOR ELECTRIC MICROMOBILITY DEVICES	■		■	■		
20	PROVIDE YOUTH SAFETY EQUIPMENT	■			■		
21	SUPPORT CHILD PASSENGER SAFETY TECHNICIANS	■			■		
22	EXPAND AGING DRIVER PROGRAMS	■					
23	EDUCATE ON ROAD USER INTERACTIONS	■					
24	ENHANCE GRADUATED DRIVERS LICENSING REQUIREMENTS	■					
25	ENCOURAGE DISTRACTION-FREE DRIVING PROGRAMS	■			■		
26	ADD OR ELEVATE SAFETY AS A FUNDING CRITERION	■	■	■	■	■	
27	MONITOR SAFETY-RELATED EVENTS AND POLICY CONCERNS	■	■	■	■	■	
28	SUPPORT LOCAL SAFE COMMUNITIES PROGRAMS	■	■	■			■
29	IMPROVE SAFE TRAVEL OPTIONS	■	■			■	
30	DEVELOP A ROAD SAFETY COMMUNICATION GUIDE	■	■	■	■	■	■

ACTION 1: EXPAND USE OF ROUNDABOUT INTERSECTION DESIGNS

Emphasize the selection of roundabouts for intersection traffic control.

1 PRIMARY EMPHASIS AREAS

Intersection

2 SECONDARY EMPHASIS AREAS

Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Roundabouts are a proven safety countermeasure that significantly reduces the number and severity of conflicts between road users at an intersection by minimizing vehicle speeds and impact angles. This action will expand and formalize the use of Intersection Control Evaluations in Oregon's project development and safety review processes, with a policy emphasis on prioritizing roundabouts where feasible, given their demonstrated ability to reduce fatal and serious injury crashes.

WHY IT IS IMPORTANT

Intersections are common locations for fatal and serious injury crashes because they combine complex movements, different modes of travel, and split-second decisions—all in one place.

Roundabouts are highly effective at reducing fatal and serious injury crashes by lowering vehicle speeds and eliminating high-severity conflicts. Smaller roundabouts, in particular, encourage slower operating speeds and can improve safety performance. An important design consideration is accommodating larger vehicles, such as medium and heavy trucks, buses, and emergency vehicles. Properly designed truck aprons and other design elements can accommodate larger vehicles while encouraging slower speeds for all drivers.

This action strengthens and formalizes Intersection Control Evaluations statewide while clearly supporting the expanded application of roundabouts where feasible, given their demonstrated safety benefits.

ACTION 1: EXPAND USE OF ROUNDABOUT INTERSECTION DESIGNS

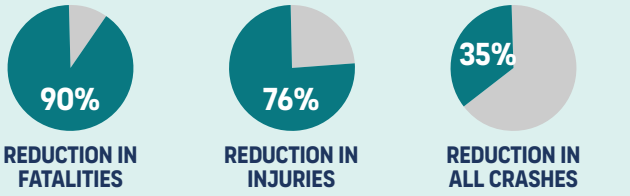
CHALLENGES AND SOLUTIONS

Expanding the use of intersection control evaluations requires staff capacity, technical expertise, and consistent analytical procedures. These evaluations rely on accurate and timely data, including multimodal traffic counts and reported crashes, which are not readily available for every intersection.

Because roundabouts may feel unfamiliar or intimidating to some drivers, especially aging and novice drivers, implementation will include public education and outreach. Coordinating with aging driver outreach efforts will help improve understanding and acceptance and reinforce safe navigation practices. Clear guidance in the form of signs and pavement markings, as well as adequate street lighting, can make it easier and more comfortable for aging drivers to navigate roundabouts.

Beyond aging and novice drivers, community opposition to roundabouts remains a barrier to implementation. Building trust and support will require expanded education and outreach on the safety benefits and proper use of roundabouts. It is equally important to implement roundabouts at appropriate locations, based on intersection control evaluations, and to ensure the designs truly accommodate all modes of travel.

ROUNDABOUT SAFETY BENEFITS





Slower vehicular speeds are safer for vulnerable road users

Eliminates right-angle and head-on crashes



URBAN CONSIDERATIONS

- Can be right-sized and designed for a variety of contexts, from neighborhood streets to interchanges.
- Roundabouts are particularly effective for slowing speeds and shifting driver expectations in urban-rural transition zones.
- Consider vulnerable road user needs: protected bicycle facilities, separated pedestrian and bicycle crossings, and crossing geometry that supports low speeds and yielding.

RURAL CONSIDERATIONS

- Designs should accommodate potentially higher proportions of medium and heavy trucks, farm equipment, and oversized loads.
- Fewer space constraints and availability of right-of-way can reduce costs compared to urban roundabouts.
- Roundabouts on high-speed approaches must be designed with adequate deflection on the approaches to reduce approaching vehicle speeds.

ACTION 2: IMPROVE SIGNALIZED INTERSECTION SAFETY

Standardize and prioritize safety-focused signal operations—such as leading pedestrian intervals, protected turn phasing, and no turn on red—at high-risk signalized intersections.

1 PRIMARY EMPHASIS AREAS

Intersection, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Speeding, Aging Drivers, Distraction, Young Drivers, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

This action focuses on operational signal timing strategies, not road reconstruction. While signal timing policies already exist, the goal is to prioritize phasing changes that reduce fatal and serious injury conflicts. Examples include dilemma zone protection, protected left-turn phasing, leading pedestrian intervals (which give pedestrians a head start), protected turn phases, and restricting turns on red where and when conflicts are common.

Implementation will prioritize high-risk roads and may be integrated into intersection control evaluations. Operational improvements can be implemented quickly and scaled across multiple locations.

WHY IT IS IMPORTANT

Signal timing and control decisions directly influence where and how road users interact, particularly at intersections and crossings. Safety-focused phasing reduces severe turning conflicts, especially for vulnerable road users. Signal timing improvements can also enhance accessibility for people with disabilities by improving crossing predictability and visibility for people with mobility, visual, or cognitive limitations.

This action can be applied broadly and adjusted over time without requiring major reconstruction. When paired with consistent policies, signal operational strategies can deliver safety benefits at many locations and support more predictable interactions among drivers, pedestrians, and bicyclists.

ACTION 2: IMPROVE SIGNALIZED INTERSECTION SAFETY

CHALLENGES AND SOLUTIONS

Implementing signal operational strategies requires coordination among signal owners and operators and may necessitate policy updates to ensure changes are applied consistently. It also depends on staff capacity and technical capability to evaluate existing operations, identify appropriate treatments, retime signals, and maintain performance over time.

Constraints can include signal hardware limitations, the need to purchase new equipment, detection quality, maintenance needs, and tradeoffs between safety and delay. Some operational changes can affect traffic progression or travel time, which may require additional communication and partner coordination, especially on corridors with transit, freight, or high peak-period demand.

These challenges can be mitigated through standardized statewide guidance, training and technical assistance for local agencies, integration of safety review into routine retiming cycles, targeted hardware upgrades, and partner engagement to balance safety and mobility objectives.

URBAN CONSIDERATIONS

- Reduces conflicts at high-volume, multimodal intersections.
- Supports corridor-level safety through consistent, safety-focused signal timing.
- Pedestrian-only phasing can enhance safety in high-pedestrian environments.

RURAL CONSIDERATIONS

- Improves safety at higher-speed intersections and town gateways.
- Enhances predictability where sight distance and speed differentials increase crash risk and severity.

Leading Pedestrian Intervals increase pedestrian visibility and reduce conflicts with turning vehicles at signalized intersections. Federal Highway Administration's guidance includes a 3–7 second head start for pedestrians to reduce conflicts with turning vehicles and potentially reduce pedestrian crashes by 13%.[1]

Protected left-turn phasing provides left-turning vehicles with a dedicated signal phase during which oncoming traffic and pedestrians are held. By separating these movements in time, it eliminates conflicts between turning vehicles, through traffic, and pedestrians crossing the street.

No right turn on red means drivers are not allowed to turn right at an intersection when the traffic signal is red. This reduces conflicts between turning vehicles and pedestrians crossing with the walk signal.

1 FHWA Leading Pedestrian Interval

ACTION 3: PRIORITIZE LOW-COST INFRASTRUCTURE COUNTERMEASURES

Prioritize low-cost systemic and proactive countermeasures based on crash risk, exposure, and road characteristics, in addition to crash history.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

Aging Drivers, Young Drivers, Motorcyclists, Medium and Heavy Trucks

INDIRECT BENEFIT EMPHASIS AREAS

Speeding

SAFE SYSTEM APPROACH



SUMMARY

Low-cost systemic countermeasures are proven treatments that can be applied broadly across many locations with similar risk characteristics, rather than only at a single high-crash site. Oregon will use consistent, data-driven screening aligned with ODOT's Crash Reduction Factor Manual to identify high-risk road types and corridors. Examples often include signing, pavement marking, enhanced delineation, improved crossings, lighting, and other cost-effective treatments that reduce the risk of fatalities and serious injuries.

WHY IT IS IMPORTANT

Systemic countermeasures are one of the most efficient ways to reduce fatal and serious injury crashes across Oregon's road network. A risk-based approach allows Oregon to address severe crash potential proactively, particularly in areas where road conditions, speeds, or travel patterns create elevated risks. Systemic countermeasures are scalable, cost-effective, and can be implemented quickly across state and local systems.

For example, Oregon's weather patterns (including fog and rain) make high-visibility pavement marking especially valuable to reduce roadway departure crashes.

ACTION 3: PRIORITIZE LOW-COST INFRASTRUCTURE COUNTERMEASURES

CHALLENGES AND SOLUTIONS

A key challenge is identifying where systemic countermeasures will provide the greatest benefit using consistent screening criteria and high-quality data. Because systemic approaches focus on risk patterns (not just crash history), agencies must have tools and processes to screen the network, select priority road types, and confirm that countermeasures match the context.

Another constraint is delivering treatments at scale while maintaining quality and long-term performance. Even low-cost improvements require design decisions, coordination, procurement, installation, and ongoing maintenance, and those needs can strain staff capacity, especially when multiple jurisdictions and road owners are involved.

These challenges can be mitigated through standardized screening tools, bundled project delivery, integration of exposure data, technical assistance for local agencies, and dedicated systemic funding to ensure consistent statewide deployment.

URBAN CONSIDERATIONS

- Deploys proven treatments across arterials and collector roads with frequent conflict points.
- Addresses recurring multimodal risk patterns at a network level.

RURAL CONSIDERATIONS

- Targets higher-speed corridors where crashes are less frequent but more severe.
- Applies cost-effective treatments broadly at curves, intersections, and similar high-risk segments.

Stop-controlled Intersections. A package of low-cost countermeasures can reduce fatal and injury crashes at rural intersections by 27%.[1]

Signalized Intersections. Adding retroreflective borders to traffic signal backplates can reduce total crashes by 15%.[2]

Roadway Departure. Shoulder rumble strips provide a 36% reduction in run-off-the-road fatal and serious injury crashes; centerline rumble strips provide a 44% reduction in head-on fatal and injury crashes.[3]

1 FHWA Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections

2 FHWA Backplates with Retroreflective Borders

3 FHWA Rumble Strips and Safety Management

ACTION 4: ADVANCE AUTOMATED ENFORCEMENT

Advance data-driven automated enforcement through legislative action, ensuring statewide implementation and reducing administrative barriers and burdens.

1 PRIMARY EMPHASIS AREAS

Intersection, Roadway Departure, Speeding

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants, Alcohol and/or other Drugs Involved

SAFE SYSTEM APPROACH



SUMMARY

Automated enforcement includes speed safety cameras and red-light-running cameras to detect violations and issue citations without an officer present. These systems improve compliance with traffic laws, reduce high-risk driving behaviors, and provide consistent enforcement—particularly where traditional enforcement is limited. This action calls for legislative and policy changes to expand statutory authority for automated enforcement to rural jurisdictions and streamline administrative requirements, including citation processing, program reporting, and technology deployment standards.

Site selection must be based on crash history, high-injury networks, and documented risk factors. Evaluation metrics will include reductions in speed-related crashes, red-light running crashes, and fatal and serious injury crash outcomes at treated locations, with a focus on school zones, active work zones, and intersections.

WHY IT IS IMPORTANT

Speeding and red-light running are major contributors to fatal and serious injury crashes. Automated enforcement supports a Safe System Approach by reducing reliance on individual enforcement encounters, encouraging safer driving, and reinforcing consistent expectations for driver behavior. Combined with engineering, education, traditional enforcement, and policy strategies, it helps create safer travel environments for all road users.

ACTION 4: ADVANCE AUTOMATED ENFORCEMENT

CHALLENGES AND SOLUTIONS

Automated enforcement programs must comply with Oregon's legal and policy framework, which governs where and how these tools may be used. Establishing programs requires coordination among state and local agencies, investment in equipment and data systems, and administrative capacity to process citations and oversee the program. Public trust and acceptance may also present challenges if the programs are viewed as revenue-driven rather than safety-focused.

These challenges can be mitigated through clear legislative authority, standardized statewide guidance, having a political champion, and dedicated funding for equipment and administration. Deploying based on safety risk and distributing revenue to transportation safety needs will lead to automated enforcement programs that build public trust and improve safety outcomes in Oregon communities.

URBAN CONSIDERATIONS

- Urban areas typically have higher pedestrian, bicyclist, and e-micromobility travel, so managing motor vehicle speeds and reducing red-light running help protect vulnerable users.

RURAL CONSIDERATIONS

- Rural areas also have some signalized intersections and experience higher motor vehicle speeds, so supplementing traffic law enforcement efforts with automated systems can help provide consistent coverage statewide.

Speed safety cameras can **reduce fatalities and serious injuries by 20–37%** when implemented as part of a broader speed management program.[1]

Beaverton's red light cameras resulted in a 41% reduction in injury crashes at the equipped intersections.[2]

1 NHTSA Countermeasures that Work: Speed Safety Camera Enforcement

2 Photo Red Light Report to the Legislature, City of Beaverton, 2025

ACTION 5: REDUCE VEHICLE SPEEDS

Implement data-driven infrastructure countermeasures to reduce vehicle speeds at locations where speeding contributes to fatal and serious injury crashes.

1 PRIMARY EMPHASIS AREAS

Speeding

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists, Motorcyclists, Medium and Heavy Trucks

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Young Drivers

SAFE SYSTEM APPROACH



SUMMARY

This action prioritizes infrastructure treatments that reduce operating speeds in locations where data shows speeding is a contributing risk factor. Examples include lane narrowing, curb extensions, raised crossings, road diets, vertical deflection, and other design features that influence driver behavior. Infrastructure treatments complement enforcement strategies, including automated speed cameras, but focus on creating lasting design-based solutions.

WHY IT IS IMPORTANT

Vehicle speed strongly influences both crash likelihood and injury severity, particularly for pedestrians and bicyclists. Using road design to support safe speeds reduces the likelihood that dangerous speeding becomes the norm, especially in locations where high speeds can contribute to fatal and serious injury crashes.

Infrastructure countermeasures help create more self-enforcing road environments and reduce reliance on ongoing enforcement alone. By targeting high-risk corridors and documented speeding-related crash locations, Oregon can proactively reduce severe crash outcomes.

ACTION 5: REDUCE VEHICLE SPEEDS

CHALLENGES AND SOLUTIONS

Infrastructure speed countermeasures often require design decisions that account for safety, drainage, maintenance needs, emergency response access, and operations for freight and transit. Some treatments are easier to implement on local streets than on state highways or high-volume arterials where constraints may include limited right-of-way, traffic capacity concerns, and existing design standards. Implementation may face resistance, particularly in rural areas where higher operating speeds are common.

Costs and implementation timelines vary widely depending on the treatment type and location context. Some countermeasures can be delivered quickly through pavement marking and low-cost construction, while others require more extensive design, public engagement, utility work, or paving coordination. Ongoing maintenance and winter operations also need to be considered, especially for treatments that affect snow storage, plowing, or pavement conditions.

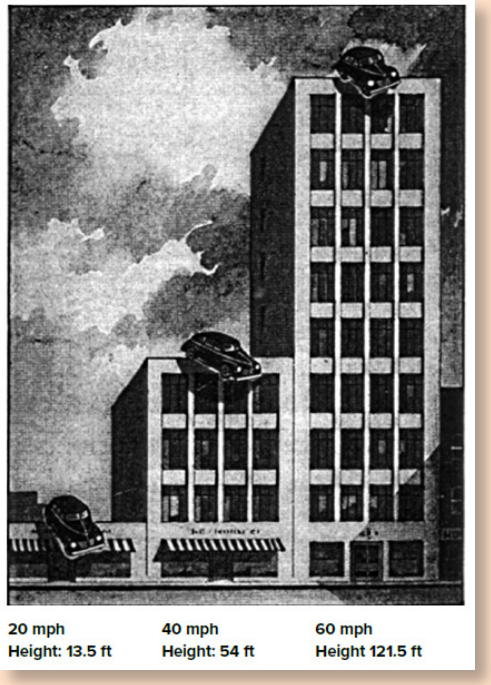
URBAN CONSIDERATIONS

- Supports safer operating speeds on arterials and collectors where frequent access points, crossings, and turning movements increase conflict risk.
- Prioritizes corridors where pedestrian, bicycle, and transit activity exposure is high.

RURAL CONSIDERATIONS

- Targets community gateways, transition zones, state highways through population centers, and higher-risk locations where operating speeds change abruptly.
- Focuses on rural high-risk sites (curves, intersections, approaches to towns) where speed contributes to severe crash outcomes.

The force of impact of a vehicle traveling at different speeds is illustrated by showing the vehicle falling off buildings of different heights.[1]



1 *Man and the Motor Car*, 1936

ACTION 6: EXPAND YOUNG DRIVER EDUCATION

Expand and implement driver education, awareness, and advocacy programs to improve safe driving by young and novice drivers.

1 PRIMARY EMPHASIS AREAS

Young Drivers

2 SECONDARY EMPHASIS AREAS

Speeding, Alcohol and/or other Drugs Involved, Distraction

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

Education and awareness efforts for young and novice drivers include communication, training reinforcement, and community-based messaging designed to reduce high-risk driving behaviors by new drivers. Effective advocacy programs often collaborate with schools, families, and community partners, leveraging trusted messengers to increase knowledge and encourage safer choices.

WHY IT IS IMPORTANT

Young and novice drivers face elevated crash risk because their driving experience is still developing and their judgment in complex or high-speed situations is limited. Education and awareness programs provide earlier reinforcement of safe behaviors like seat belt use, speed choice, attention management, and avoiding alcohol and/or other drugs while driving. Peer-to-peer programs can build a traffic safety culture in which friends feel empowered to ask one another to drive safely (e.g., encouraging passengers to wear seat belts or asking a driver to slow down).

Building safer norms early can influence long-term driving behavior and reduce preventable crashes across a driver's lifespan. Well-designed programs also complement licensing requirements and enforcement by strengthening understanding of expectations and risks before a crash occurs.[1]

1 "The State of Driver Education: A Review of Recent Driver Education Studies," Association of National Stakeholders in Traffic Safety Education, 2024.

ACTION 6: EXPAND YOUNG DRIVER EDUCATION

CHALLENGES AND SOLUTIONS

Participation in formal driver education varies due to cost and availability, so not all new drivers receive the same level of instruction or reinforcement. Additionally, certified instructors are not available in all geographies, with notable gaps in rural areas.

Messaging to young drivers is complicated and costly, and its effectiveness depends on tailoring content to youth audiences as well as to the adults who influence their driving behavior, including parents and caregivers.

Sustaining awareness and advocacy programs requires stable funding, strong partnerships, and regular updates to ensure materials and content remain relevant. Coordination across schools, community organizations, public health partners, and transportation safety agencies can be resource-intensive, especially when programs must address multiple related issues, such as distraction and safe driving in work zones.

URBAN CONSIDERATIONS

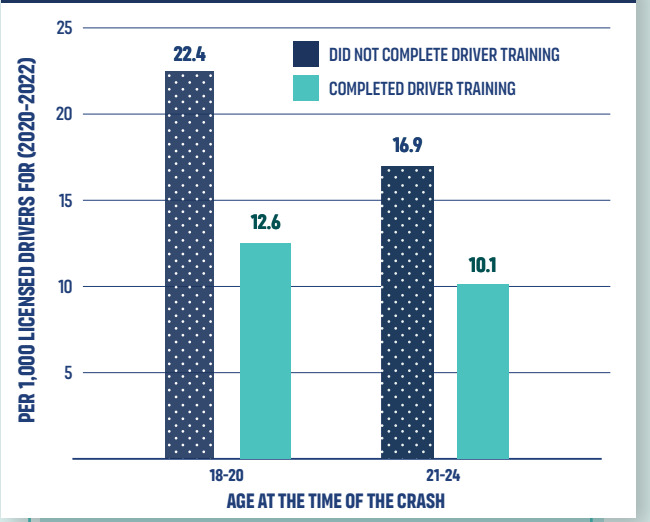
- In urban areas, messaging should emphasize safe decision-making in dense traffic conditions, intersections, and environments with pedestrians, bicyclists, e-micromobility users, and transit users.

RURAL CONSIDERATIONS

- Rural road safety should focus on higher-speed driving environments, passing behavior, dark conditions, wildlife, and navigating horizontal curves.

A Washington State study shows significant differences in fatal and injury crash involvement based upon completion of a driver education course.[1]

CRASH RATES BY DRIVER TRAINING COMPLETION STATUS [2]



Novice drivers licensed at age 18-20 with no driver training prior to licensure had a 78% higher rate of fatal and injury crash involvement, compared to same-age drivers who had completed driver training. Even slightly older drivers (age 21-24) who lacked driver education showed a difference; crash rates were 67% higher compared to their peers who had completed a course.

1 Washington State Target Zero Plan, 2024

ACTION 7: REDUCE BLOOD ALCOHOL CONCENTRATION LEGAL LIMIT

Revise state law governing alcohol and other impairing substances, including lowering the legal Blood Alcohol Concentration limit to 0.05%.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved

2 SECONDARY EMPHASIS AREAS

Speeding, Unrestrained Occupants

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Motorcyclists, Pedestrians and Bicyclists

SAFE SYSTEM APPROACH



SUMMARY

A 0.05% Blood Alcohol Concentration law lowers the legal blood alcohol concentration per se limit for driving (currently 0.08%), increasing the range of alcohol involvement that is considered illegal. This is the most common limit for driving around the world and the level at which scientists have determined that individuals are too impaired to drive safely (i.e., the point at which a driver's risk of crash involvement has doubled).

WHY IT IS IMPORTANT

Alcohol and drug involvement contribute to a significant share of fatal and serious injury crashes, increasing both the likelihood of a crash and the severity of outcomes. Lowering the Blood Alcohol Concentration limit strengthens deterrence by reinforcing that physical and cognitive effects begin well before 0.08%, and that driving after drinking carries serious consequences.

ACTION 7: REDUCE BLOOD ALCOHOL CONCENTRATION LEGAL LIMIT

CHALLENGES AND SOLUTIONS

Changing alcohol and/or other drug-involved driving statutes involves legislative action, strong leadership, and coordination among transportation safety partners, law enforcement, courts, and public health agencies. Statutory revisions can take time to move through the legislative process, and different partners may have varying views on how changes would affect safety outcomes, enforcement workload, and court processes. Resistance, particularly from the alcohol industry, is likely and will require proactive partner engagement.

A phased strategy with early public education can frame the change as a generational safety shift. Lessons from other states and countries should inform implementation.

Implementation also depends on consistent messaging, training, and operational readiness after laws change. Agencies may need updated procedures, public information campaigns, and alignment across jurisdictions so enforcement and adjudication remain clear and consistent statewide. Emphasis on repeat offenders may also require expanded systems for monitoring, treatment coordination, and compliance follow-up.

URBAN CONSIDERATIONS

- Strengthens deterrence in high-traffic and nightlife areas.
- Promotes consistent enforcement across jurisdictions.

RURAL CONSIDERATIONS

- Addresses high-severity alcohol-involved driving crashes on higher-speed roads.
- Reinforces deterrence where travel distances are longer and options may be limited.

World Standard: 84% of the world's population lives in countries with BAC limits of 0.05% or lower, including 0.03% in Japan and 0.02% in parts of the European Union.[1] [2]

Success in Utah: In the first 12 months after the 0.05% Blood Alcohol Concentration law was in effect, the state saw a **14.7% reduction in the crash rate involving a driver with Blood Alcohol Concentration greater than 0.05%.**[3]

1 World Health Organization Global Status Report on Road Safety, 2023.

2 Washington State Target Zero Plan, 2024

3 Evaluation of Utah's .05 BAC Per Se Law, 2022

ACTION 8: IMPROVE MAINTENANCE OF TRAFFIC CONTROL DEVICES

Maintain devices, markings, and signs related to safety at the highest level required to meet the needs of road users with the greatest visibility or navigation challenges.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Intersection, Aging Drivers

2 SECONDARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved, Distraction, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Pedestrians and Bicyclists

INDIRECT BENEFIT EMPHASIS AREAS

Speeding

SAFE SYSTEM APPROACH



SUMMARY

Traffic control devices include signs, pavement markings, traffic signals, and other road features that provide guidance, warnings, and regulatory information to road users for safe navigation. Maintaining these assets is essential to ensure that prior safety investments remain visible, functional, and effective over time. This action commits to measuring traffic control devices against performance standards and addressing deficiencies.

Road users with the greatest navigation challenges are aging drivers, people with vision or cognitive limitations, those using adaptive devices, and all road users during inclement weather conditions. Applying universal design principles improves clarity and predictability for all users.

WHY IT IS IMPORTANT

Safety investments only deliver benefits when they remain visible and credible. Faded striping, damaged signs, or malfunctioning electrical equipment can reduce road user awareness and increase the likelihood of errors that contribute to crashes.

Prioritizing maintenance protects prior investments, supports universal design, and strengthens consistent communication. These are foundational elements in reducing fatal and serious injury crashes across Oregon.

ACTION 8: IMPROVE MAINTENANCE OF TRAFFIC CONTROL DEVICES

CHALLENGES AND SOLUTIONS

Maintenance needs are ongoing and can be difficult to fund consistently, especially when agencies are balancing maintenance needs with new capital projects. Signs and markings require routine inspection and replacement cycles, and maintaining performance across different road types requires a coordinated asset management approach.

Weather, wear, crashes, vandalism, vegetation, and winter maintenance can degrade devices and markings at different rates across the state. Without consistent standards, inventories, inspection cycles, and staffing capacity, agencies may struggle to maintain safety assets at the level needed to preserve effectiveness and road user compliance.

These challenges can be mitigated through standardized statewide performance standards, asset management integration, risk-based prioritization, and dedicated funding for the preservation of safety-critical assets.



Nighttime crash rates are higher than daytime crash rates, partly due to reduced visibility, making proactive maintenance especially important in dark conditions.[1]

URBAN CONSIDERATIONS

- Maintains clear lane guidance, intersection operations, and crosswalk visibility in high-volume, complex environments.
- Supports safe turning, merging, and multimodal operations through well-maintained markings and signs.

RURAL CONSIDERATIONS

- Enhances visibility on higher-speed roads, especially at night and in adverse weather. Reduces roadway departure risk by keeping curve warnings, edge lines, road surface, and roadside areas (e.g., shoulders, clear zones) maintained.

1 FHWA Minimum Sign Retroreflectivity Requirements

ACTION 9: STRENGTHEN WORK ZONE SAFETY FOR ALL ROAD USERS AND WORKERS

Develop a resource and training that describe how traffic management plans, temporary traffic control, and system maintenance can affect the safety of road workers and the traveling public.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Speeding

2 SECONDARY EMPHASIS AREAS

Pedestrians and Bicyclists, Aging Drivers, Young Drivers, Motorcyclists, Distracted Driving, Medium and Heavy Trucks

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Work zones temporarily alter roadway geometry, traffic patterns, speed limits, and access. Conditions can change by day or work phase, leading to potential safety risks from queues, lane shifts, changes to pavement friction, road debris, vertical transitions, and disrupted routes.

This action will develop materials that apply a Safe System lens throughout work zone planning, design, construction, maintenance, and operations. Agencies, contractors, and utility companies should assess safety risks, then prioritize removing severe conflicts, managing speed, providing physical separation, maintaining accessible routes, and adding warning messages for road users.

WHY IT IS IMPORTANT

Work zones are necessary to maintain and improve Oregon's transportation system, but they can introduce unexpected conditions for travelers and workers. A single mistake can have severe consequences where workers are close to moving traffic, queues form on higher-speed approaches, or travel paths shift.

The Safe System Approach recognizes that people make mistakes and that responsibility is shared among agencies, contractors, utilities, workers, vehicle operators, and travelers. Consistent practices can identify potential issues before work begins, support timely changes as field conditions evolve, and apply lessons from individual projects to future standards, training, and practices.

ACTION 9: STRENGTHEN WORK ZONE SAFETY FOR ALL ROAD USERS AND WORKERS

CHALLENGES AND SOLUTIONS

Construction and maintenance work is carried out across many crews, contractors, and jurisdictions, creating variability in practices and expectations. A resource must be practical and targeted so it can be used in daily decision-making, including when time and staffing are limited, and work is being performed under urgent conditions.

Integrating new safety procedures into routine practices may also require updates to training, specifications, and inspection checklists. For example, some work zone conditions that are manageable for passenger vehicles (loose gravel, uneven pavement joints, temporary plates) can pose greater risks to other road users like motorcyclists.

URBAN CONSIDERATIONS

- Maintain direct and accessible routes for people walking, bicycling, and rolling, along with access to transit stops. Separate workers on foot from moving traffic and work vehicles.
- Coordinate adjacent projects, curb use, and signal operations. Use lower speeds, physical separation, time-based phasing, and active traffic management to reduce the potential for work zone crashes.

RURAL CONSIDERATIONS

- Address higher approach speeds, limited sight distance, long queues, medium and heavy trucks, narrow shoulders, and limited detour options.
- Plan for longer emergency response times and limited communications, and maintain emergency access.

MOTORCYCLIST SAFETY IN WORK ZONES

FHWA Synthesis on Roadway Geometry, Pavement Design, and Pavement Construction and Maintenance Practices offers recommendations to support motorcyclist safety during construction and maintenance:

- **Surface Quality and Continuity.** Minimize surface transitions, milled surfaces, and uneven pavement.
- **Friction Consistency.** Eliminate sudden friction reductions caused by pavement markings, patches, or steel plates.
- **Clean up Debris.** Sweep loose gravel, debris, and construction residue during work and after completion.

1 Synthesis on Roadway Geometry, Pavement Design, and Pavement Construction and Maintenance Practices, FHWA, 2021

ACTION 10: IMPROVE SAFETY AND SECURITY AT HIGHWAY REST AREAS

Maintain and upgrade rest areas to ensure road safety and personal security for all travelers.

1 PRIMARY EMPHASIS AREAS

Aging Drivers, Young Drivers, Motorcyclists, Medium and Heavy Trucks

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Alcohol and/or other Drugs Involved

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Rest area safety upgrades include improvements that increase personal security, lighting, sightlines, accessibility, and facility condition so travelers can rest safely. Rest areas support road safety by reducing fatigue-related risk and providing safer places to stop.

The Oregon Travel Information Council manages 39 rest areas at 25 locations in Oregon. The Council collaborates with community leaders, industry partners, and regional businesses, and it bases its rest area management on the needs of motorists and the communities which exist nearby.[1]

1 Oregon Travel Information Council

WHY IT IS IMPORTANT

Facility condition and perceived security influence whether travelers choose to use rest areas, stop at less safe locations, or fail to stop when they should, thereby affecting overall travel safety.

Rest areas serve a broad mix of users, including long-distance travelers, families, and commercial drivers. Maintaining safe, functional rest areas supports safe travel behavior and complements Oregon's broader safety priorities by reducing conditions that can contribute to fatal and serious injury crashes.

ACTION 10: IMPROVE SAFETY AND SECURITY AT HIGHWAY REST AREAS

CHALLENGES AND SOLUTIONS

Maintaining and upgrading rest areas requires predictable funding and long-term asset management, especially for facilities with aging infrastructure. Improvements may involve electrical upgrades, lighting, restroom rehabilitation, accessibility, drainage, and site visibility changes, which can require design and construction coordination beyond routine maintenance.

Rest areas also face operational challenges, including vandalism, staffing limitations, and maintaining cleanliness and usability over time. New technologies, including security camera systems, can improve personal security at rest areas.

URBAN CONSIDERATIONS

- Urban rest areas experience higher visitor volume and are sometimes placed near interchanges and commercial or residential development, reinforcing the need for personal security strategies and regular maintenance.

RURAL CONSIDERATIONS

- Rural rest areas may be the only safe option on long-distance corridors to aid fatigued drivers, making personal security especially important.

REST AREA SERVICES

The Oregon Travel Information Council rest area teams provide important services:[1]

- On-site staff to check and address safety issues
- Enough fuel to reach the nearest gas station
- Coordination of incident response with law enforcement, ODOT, and emergency teams
- Non-profit organizations provide free coffee



1 Oregon Travel Information Council

ACTION 11: EXPAND SPEED MANAGEMENT DESIGN POLICIES

Expand infrastructure design policies related to speed management.

1 PRIMARY EMPHASIS AREAS

Speeding

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists, Motorcyclists

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Speed management design policies are guidelines and decision-making standards that shape road design to support safe, context-appropriate travel speeds. These policies influence choices like lane widths, roadside design, intersection geometry, horizontal curve warning signs, and multimodal design treatments that affect how fast people drive. This action commits to updating design standards, so road geometry, lane widths, intersection design, and cross-sections support safe, context-appropriate speeds from the outset and embed Safe System Approach design principles.

WHY IT IS IMPORTANT

Road design has a major influence on operating speeds, and speed is a core driver of crash severity. Embedding speed management into policy ensures safety is built into projects early, rather than corrected later. Consistent design standards create predictable, self-enforcing road environments and support long-term, generational change in how roads function. This includes improving alignment among design speed, operating speed, and posted speed limit.

ACTION 11: EXPAND SPEED MANAGEMENT DESIGN POLICIES

CHALLENGES AND SOLUTIONS

Expanding design policies requires coordination across agencies and disciplines to ensure changes are clearly defined and consistently applied. Policy updates often involve revisiting long-standing standards, incorporating research and safety performance evidence, and ensuring compatibility with state and federal guidance where applicable.

Oregon's laws and rules require following national best practices such as the FHWA Speed Limit Setting Handbook so speed limits match driver expectations; improve safety, predictability, and compliance; bolster public trust; and reflect the road context.

Implementation also requires training and internal process updates so new standards influence everyday project decisions. Some locations may require tradeoffs between speed management goals and other project constraints such as right-of-way limits, freight movement needs, emergency response expectations, or environmental considerations. Consistent application across project types and jurisdictions can take time to establish.

SPEED LIMIT SETTING

A speed zone investigation is the most reliable way to determine whether a posted speed is appropriate, but ODOT's limited staffing means investigations can take time.

ODOT is developing proactive screening methods to identify road segments—especially downtown areas that may qualify for 20 mph statutory business district speeds—where lowering speed limits can be done more efficiently.

URBAN CONSIDERATIONS

- Aligns road design decisions with land use context and multimodal activity.
- Promotes safer arterial cross-sections where speeding and severe crashes are common.

RURAL CONSIDERATIONS

- Addresses high-severity risk on higher-speed corridors and at community transitions.
- Applies consistent speed-supportive design principles on rural corridors where small differences in design can influence operating speeds and crash severity.

ACTION 12: IMPLEMENT CONTEXT SENSITIVE DESIGN ON ARTERIALS

Prioritize implementation of context sensitive design elements on arterial roads with the greatest safety risk for all road users.

1 PRIMARY EMPHASIS AREAS

Intersection, Speeding, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Young Drivers, Motorcyclists

SAFE SYSTEM APPROACH



SUMMARY

Context sensitive design elements match the surrounding environment and address safety needs. These contexts include land use, road user activity, and desired speed. The elements can include treatments that support safer operating speeds and safer crossings, such as lane width adjustments, median treatments, pedestrian crossing improvements, protected intersections, and other design strategies.

WHY IT IS IMPORTANT

Arterials are often overrepresented in fatal and serious injury crashes because they combine higher vehicle speeds, frequent conflict points such as intersections and driveways, and different modes of travel. This is particularly important in local communities, including along state highways that also serve as “Main Street” within cities, towns, and villages.

Prioritizing context sensitive design focuses investments where crash risk is highest and where design choices can directly influence crash frequency and severity.

ACTION 12: IMPLEMENT CONTEXT SENSITIVE DESIGN ON ARTERIALS

CHALLENGES AND SOLUTIONS

Arterial roads often serve many functions at once, including mobility, freight movement, transit operations, and access to homes and businesses. Implementing context sensitive design elements involves trade-offs among space allocation, operational performance, and corridor priorities, especially in constrained right-of-way or where there are strong expectations for travel time and vehicle throughput.

Design changes may also require new or updated policies and consistent guidance to ensure context sensitive elements are applied predictably across projects and jurisdictions. Oregon's Highway Design Manual is the key reference for design standards, and strengthening context alignment across projects may require updates to standard practices, training, and project development processes.

URBAN CONSIDERATIONS

- Prioritizes safer arterial design in areas with more pedestrians, bicyclists, transit stops, and turning movements where crash exposure and complexity are high.
- Supports safer speeds and safer crossings in land use contexts where arterials function as both community streets and cross-city travel corridors.

RURAL CONSIDERATIONS

- Focuses on improvements in rural town centers, corridor transition areas, and rural arterials with a high risk of severe crashes, particularly where operating speeds may not match the surrounding context.
- Supports design choices that improve safety where arterials serve both through travel and local access, often with limited crossing opportunities and higher crash severity risk.

TSAP ALIGNMENT WITH THE OREGON TRANSPORTATION PLAN

OBJECTIVE MO.5

Tailor transportation solutions to the local context, allowing for different solutions to achieve OTP goals in rural, suburban, and urban communities.

POLICY MO.5.1

Apply a context and performance-based approach to planning and designing roadways to integrate flexibility, enhance intermodal connections, and improve user experience and safety.

ACTION 13: STREAMLINE DUII ARREST PROCESS

Streamline the Driving Under the Influence of Intoxicants (DUII) arrest process by developing consistent statewide protocols.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Intersection, Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Electronic search warrant procedures are standardized processes that allow law enforcement to request and obtain warrants digitally, often to support time-sensitive DUII investigations. This action establishes standardized statewide procedures, including clear steps, roles, and documentation to ensure warrants are processed efficiently, lawfully, and consistently.

Additional measures to improve hospital blood draw practices and reduce delays in toxicology testing can strengthen case processing and prosecution outcomes. Statutory language was updated in 2025 to support these improvements, and the Oregon State Police is moving toward implementation of a law enforcement phlebotomy program.

WHY IT IS IMPORTANT

Alcohol and other drugs remain major contributors to fatal and serious injury crashes. Timely, lawful evidence collection strengthens DUII case outcomes and supports accountability. Standardized processes improve fairness, reduce delays, increase confidence in enforcement, and reinforce deterrence.

ACTION 13: STREAMLINE DUII ARREST PROCESS

CHALLENGES AND SOLUTIONS

Streamlining electronic warrant procedures requires coordination across law enforcement agencies, courts, prosecutors, and technology systems that may vary across Oregon's 36 counties. There is currently no statewide ownership or centralized system, and local variations in court workflows can make it difficult to apply a single standardized process statewide without adaptation or phased implementation.

Legislative advocacy and a clear policy champion will be needed to address legal complexity and to support coordinated statewide adoption. Technology reliability, training needs, and after-hours court access can also affect performance. Staff must be equipped to adhere to consistent documentation requirements and timelines, and agencies may need to update policies, templates, or systems to reduce delays and improve consistency across DUII investigations.

Blood alcohol concentration decreases at approximately 0.015% per hour, meaning **delays in collection can significantly reduce measurable evidence of effect.**[1]

URBAN CONSIDERATIONS

- Improves efficiency and consistency in high-volume jurisdictions.
- Reduces delays across complex court and agency systems.

RURAL CONSIDERATIONS

- Supports timely DUII investigations where travel distances and after-hours access are limited.
- Provides standardized tools for smaller agencies with limited staffing.

1 Knowledge on Alcohol Exiting the System Timeline

ACTION 14: EXPAND IGNITION INTERLOCK DEVICES

Expand use of ignition interlock devices, compliance monitoring, and oversight as part of the Driving Under the Influence of Intoxicants (DUII) adjudication process.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Intersection, Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Ignition interlock devices are breath-based vehicle controls that prevent a vehicle from starting if alcohol is detected on the driver's breath. They are commonly used as DUII sanctions and monitoring tools to reduce repeat alcohol-involved driving. This action intends to strengthen statewide use, address statutory loopholes, improve compliance, and establish clearer oversight of installers and monitoring systems.

WHY IT IS IMPORTANT

Repeat alcohol-involved driving presents a high risk for fatal and serious injury crashes. Interlock devices reduce that risk by preventing alcohol-involved driving before a trip begins. The devices reduce reoffending during the post-adjudication period.

Repeat offenders and high blood alcohol concentration (over 0.15%) offenders represent a high-risk group because repeated driving under the influence of substances indicates persistent unsafe behavior.[1] Strengthening legal tools and focusing on repeat offenders can reduce preventable severe crashes by discouraging repeat violations and supporting more effective intervention strategies.

While the technology is effective, outcomes depend on consistent enforcement, compliance monitoring, and accountability. Broader compliance can reduce the number of alcohol-involved drivers on the road and support safety goals.

1 NTSB, Actions to Reduce Fatalities, Injuries, and Crashes Involving the Hard Core Drinking Driver

ACTION 14: EXPAND IGNITION INTERLOCK DEVICES

CHALLENGES AND SOLUTIONS

Expanding interlock use and ensuring compliance require coordination among courts, the Driver and Motor Vehicle Services Division, treatment providers, vendors, and enforcement agencies. Current gaps include inconsistent sentencing practices, weak compliance tracking, limited oversight of installers, and resource constraints (including staffing of the oversight agency, Oregon State Police). Legislative revisions may be required to clarify requirements and close loopholes. Compliance can also be affected by cost, limited installation locations, service availability, and ongoing fees.

Oregon can address these challenges by establishing clear statewide compliance metrics and reporting standards, strengthening oversight of certified installers, supporting enforcement, and monitoring capacity to ensure requirements are upheld.

URBAN CONSIDERATIONS

- Supports large-scale implementation with greater availability of certified installers.
- Reinforces consistent compliance monitoring in higher population jurisdictions.

RURAL CONSIDERATIONS

- Addresses high-severity alcohol-involved crashes on high-speed roads.
- Requires expanded access to installation and service locations to ensure compliance.

Ignition interlocks reduce **repeat alcohol-involved driving offenses by 70%** while installed.[1]



1 Increasing Alcohol Ignition Interlock Use, CDC, 2024

ACTION 15: EXPAND DRUG DETECTION TRAINING

Expand law enforcement training and education on drug involvement detection.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Intersection, Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Drug involvement detection involves recognizing and documenting drivers influenced by substances other than alcohol, including prescription medications, cannabis, and other drugs. This action aims to expand access to consistent, high-quality training and establish measurable participation targets to support training for drug recognition experts across both urban and rural jurisdictions.

This includes increasing access to training for standard field sobriety testing, advanced roadside impaired driving enforcement, and drug recognition experts. The action supports cross-sector education among law enforcement, prosecutors, and toxicologists, and advancement of emerging drug detection technologies.

WHY IT IS IMPORTANT

Drug involvement contributes to fatal and serious injury crashes, and increasing detection capability strengthens Oregon's ability to address this growing safety concern. Strengthening detection capability and training improves investigation quality, case outcomes, and deterrence.

Stronger drug involvement detection complements broader driver behavior strategies and supports statewide progress toward fewer fatal and serious injury crashes.

ACTION 15: EXPAND DRUG DETECTION TRAINING

CHALLENGES AND SOLUTIONS

Drug-involved driving is more complex to identify than alcohol involvement because signs can vary widely by substance, dosage, and individual response. Training requires specialized content, ongoing refresher courses, and consistent protocols so officers are prepared to accurately identify the influence of drugs and document observations effectively.

Participation can be limited by staffing shortages, budget constraints, travel costs, and workload, particularly in rural areas. Partnerships with prosecutors and courts are also important, so training aligns with evidentiary needs and case requirements, especially when toxicology timelines and lab capacity affect the adjudication process. Funding for statewide drug detection training programs can address these concerns.

URBAN CONSIDERATIONS

- Improve consistency in high population jurisdictions with diverse drug-involved driving cases.

RURAL CONSIDERATIONS

- Strengthen enforcement where crashes are more severe and training access is limited.

In a national study, 56% of drivers seriously injured or killed in crashes **tested positive for drugs.**[1]

TABLE 6. MOST COMMON DRUGS IN ROAD CRASHES BY TOXICOLOGY REPORTS, 2023[2]

SUBSTANCE DETECTED	SHARE OF SUSPECTED DRUG-INVOLVED DRIVER SAMPLES
THC	57%
METHAMPHETAMINE	40%
NORFENTANYL	18%
FENTANYL	17%
DESPROPIONYL FENTANYL	10%

1 Alcohol and Drug Prevalence Among Seriously or Fatally Injured Road Users, NHTSA, 2022

2 Oregon Impaired Driving Strategic Plan, 2024

ACTION 16: INCREASE SUBSTANCE MISUSE PREVENTION

Prioritize cross-agency funding and prevention programs to reduce substance misuse in communities that are severely impacted by crashes involving alcohol and/or other drugs.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved

2 SECONDARY EMPHASIS AREAS

Roadway Departure, Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Intersection, Aging Drivers, Pedestrians and Bicyclists, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Substance misuse and dependency prevention includes coordinated strategies that reduce the likelihood of harmful substance use through early intervention, education, treatment connections, and supportive community programs. A cross-agency prevention focus emphasizes shared ownership across public health, education, transportation safety, and community partners. Priority will be given to areas with higher frequencies or rates of alcohol and other drug-involved crashes.

WHY IT IS IMPORTANT

Substance misuse is a root cause of fatal and serious injury crashes that involve alcohol and/or other drugs, and the risk extends to emerging drugs and other impairing substances.

Prevention-oriented programs strengthen safety outcomes by reducing the number of drivers influenced by alcohol and/or other drugs before enforcement or adjudication is needed. A coordinated prevention focus supports long-term reductions and complements the broader statewide safety framework established in Oregon's TSAP.

ACTION 16: INCREASE SUBSTANCE MISUSE PREVENTION

CHALLENGES AND SOLUTIONS

Cross-agency prevention efforts require alignment among organizations with different missions, funding sources, timelines, and performance measures. Coordinating roles and responsibilities can be time-intensive, especially when prevention programs span schools, workplaces, public health systems, behavioral health providers, and community-based organizations.

Sustained investment is also difficult when prevention benefits may be longer-term and harder to measure using traditional transportation safety metrics. Data sharing, confidentiality constraints, and uneven service availability across Oregon can make it challenging to deliver consistent prevention programming statewide, particularly in communities with limited treatment or behavioral health capacity.

Solutions can include integrating transportation safety efforts with public health and behavioral health systems, focusing advocacy and funding in communities most impacted by alcohol and/or other drug-involved crashes, and establishing measurable prevention indicators across agencies.

URBAN CONSIDERATIONS

- Prevention through schools, employers, healthcare partners, and community networks.
- Targets areas with higher traffic volumes and frequent conflict points.

RURAL CONSIDERATIONS

- Addresses risk where long travel distances and limited services increase driving reliance.
- Promotes cross-agency coordination to expand outreach and treatment access.

Health and Transportation: Making the Connection.
The Oregon Department of Transportation and the Oregon Health Authority's Public Health Division work collaboratively to identify, develop and promote connections between public health and transportation, and to find shared goals and ways to support one another. These agencies participate in each other's primary planning documents, the State Health Improvement Plan and the Oregon Transportation Plan.[1]

1 Health and Transportation: Making the Connection

ACTION 17: IDENTIFY VULNERABLE ROAD USER SAFETY NEEDS

Refine and combine findings from multiple statewide assessments to consistently identify vulnerable road user safety needs on local roads and state highways.

1 PRIMARY EMPHASIS AREAS

Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Statewide vulnerable road user safety assessments identify patterns of risk using crash history, road characteristics, and exposure indicators. Some assessments focus on infrastructure considerations, while others address programmatic needs. Combining findings requires aligning methods to compare vulnerable road user risk consistently across state highways and local road systems.

WHY IT IS IMPORTANT

Consistent identification of vulnerable road user safety needs influences project prioritization, investment decisions, and statewide accountability. A combined approach reduces the likelihood that vulnerable road user risks on local roads are overlooked simply because methods are inconsistent or datasets vary across jurisdictions.

Oregon's TSAP framework is intended to apply to "all roads, across all agencies," and a unified vulnerable road user identification method supports that expectation.

ACTION 17: IDENTIFY VULNERABLE ROAD USER SAFETY NEEDS

CHALLENGES AND SOLUTIONS

Different assessments use different datasets, definitions, and methods to identify vulnerable road user safety needs, making it difficult to compare results. Standardizing approaches may require agreement on how to define vulnerable road user risk, measure road user exposure, and interpret crash history alongside road characteristics.

Local and state agencies rely on different tools and decision processes, so a unified approach (e.g., a vulnerable road user Road Safety Audit program) could be developed and would require training and technical support to ensure results are usable in project selection.

The popularity of e-micromobility has grown quickly in Oregon, with access to shared devices such as e-bikes and e-scooters. These devices provide new travel options but also introduce safety concerns. **ACTION 19** will establish a statewide task force to develop related policy and guidance.



URBAN CONSIDERATIONS

- On city-owned facilities, this action supports consistent prioritization on arterials and collectors, and associated intersections, where severe outcomes often occur for people walking and bicycling.

RURAL CONSIDERATIONS

- In rural areas, vulnerable road user usage is not as well understood, but it can sometimes be pinpointed to specific crossings, community gateways, or highway segments near town centers. Additionally, higher-speed vehicle travel increases the risk of serious injury or death for bicyclists and pedestrians.

ACTION 18: SECURE VULNERABLE ROAD USER SAFETY FUNDING

Prioritize and secure federal, state, and local funding for safety countermeasures and initiatives focused on vulnerable road users.

1 PRIMARY EMPHASIS AREAS

Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

Intersection

INDIRECT BENEFIT EMPHASIS AREAS

Speeding, Aging Drivers, Young Drivers

SAFE SYSTEM APPROACH



SUMMARY

Vulnerable road users travel by modes not protected by an external vehicle structure: walking, bicycling, and using accessibility and micromobility devices. Countermeasures that focus on vulnerable road users, both roadway infrastructure and programmatic, are intended to reduce crash risk and injury severity for these users.

FHWA defines a vulnerable road user as "a nonmotorized road user, including pedestrians and bicyclists, who lacks the physical protection of a vehicle shell." [1]

1 FHWA Vulnerable Road User Assessment Guidance

WHY IT IS IMPORTANT

Fatal and serious injury crashes involving pedestrians, bicyclists, and micromobility users remain a statewide priority and align closely with Oregon's broader safe system goals. Prioritizing funding for vulnerable road users increases the likelihood that effective countermeasures will be implemented where the most severe outcomes have occurred and people are most exposed to risk.

Federal guidance emphasizes proven countermeasures that enhance safety for all road users in both rural and urban environments. Directing funding toward strategies that focus on vulnerable road users aligns Oregon's investment with countermeasures known to reduce fatalities and serious injuries.

ACTION 18: SECURE VULNERABLE ROAD USER SAFETY FUNDING

CHALLENGES AND SOLUTIONS

Funding programs and eligibility requirements differ across federal, state, and local sources, and vulnerable road user projects may compete with other transportation needs that are easier to scope or deliver. Data limitations, including a lack of pedestrian and bicyclist volume data and the reality that many vulnerable road user-involved crashes go unreported, make data-driven decision-making difficult.

A focus on vulnerable road user-specific funding (such as active transportation plans) helps elevate the need for high-quality vulnerable road user crash and volume data, as do set-aside funds from other programs like the All Roads Transportation Safety program.

Safety improvements for vulnerable road users require strong local alignment to be successful, particularly in locations where land use, transit access, and vulnerable road user crossing demand interact with motor vehicle throughput and access needs. A consistent funding strategy requires clear priorities for site selection, a shared understanding of what "vulnerable road user-focused" means across contexts, and a practical pathway to move from planning to implementation.

See **APPENDIX A**, Vulnerable Road User Safety Assessment, for a diagnosis of safety risk for vulnerable road users, evaluation of relevant existing policies and design practices, and a data-driven strategy to reduce pedestrian and bicyclist fatalities and serious injuries.

URBAN CONSIDERATIONS

- In urban contexts, this action supports implementation in dense networks where pedestrians and bicyclists are more common, and exposure is high across many corridors and intersections.

RURAL CONSIDERATIONS

- Rural strategies can focus on locations where crossing opportunities are limited and where vulnerable road user activity is known, such as near town centers and schools.

ACTION 19: DEVELOP GUIDANCE FOR ELECTRIC MICROMOBILITY DEVICES

Establish a statewide task force to develop policy and guidance regarding electric micromobility devices, including e-motos.

1 PRIMARY EMPHASIS AREAS

Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Young Drivers, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

The popularity of e-micromobility has grown quickly in Oregon, including the use of e-bikes and e-scooters. These additional travel options change how Oregonians move, especially in urban areas. E-motos are emerging motorized devices that can operate at higher speeds than typical e-bikes and may not fit neatly into existing definitions for e-bicycles, mopeds, or motorcycles. Establishing a statewide task force creates a formal mechanism to coordinate agencies and partners and develop consistent policy direction and guidance.

WHY IT IS IMPORTANT

Evolving e-micromobility devices introduce new safety risks as speeds, mass, and operating environments change faster than policies and infrastructure can keep pace. A coordinated statewide effort can reduce confusion about where e-micromobility devices can legally operate, what equipment requirements apply, and what safe behavior looks like for riders and other road users.

Consistent statewide guidance also supports proactive safety rather than waiting for crashes to increase before acting. Clear direction on policy, data collection, enforcement tools, and education supports more effective local implementation and stronger safety outcomes as these devices become more common.

ACTION 19: DEVELOP GUIDANCE FOR ELECTRIC MICROMOBILITY DEVICES

CHALLENGES AND SOLUTIONS

Agency roles and authority differ across Oregon, and e-micromobility devices touch multiple systems at once, including transportation safety, vehicle code definitions, traffic law enforcement, public health, schools, and road operations. Aligning definitions, responsibilities, and statewide expectations takes sustained coordination, especially when device types and usage patterns evolve quickly.

Consistent guidance must also account for competing needs such as safety, access, enforcement practicality, and rider education. Policy development can be slowed by limited data on e-micromobility crashes and usage, uncertainty around where and how devices are used (legally and illegally), and varying perspectives across communities about appropriate regulations and infrastructure expectations.

To address these challenges, solutions can include establishing consistent safety guidance for device regulation, operation, and road infrastructure, improving crash and usage data collection, piloting infrastructure treatments where appropriate, and coordinating rider education and enforcement strategies.

URBAN CONSIDERATIONS

- Urban areas experience e-micromobility devices interacting with other users, including pedestrians, bicyclists, motorcyclists, and motor vehicle drivers. Regulation alignment among jurisdictions will be important as e-micromobility devices are owned and used across city limits.

RURAL CONSIDERATIONS

- In rural areas, policy and education approaches must address longer travel distances and the road infrastructure available for these emerging road uses.

TABLE 7. TRANSPORTATION DEVICE COMPARISON[1] [2]

DEVICE	TYPICAL SPEED	WHERE USED	REGULATION
BIKE	10–20 mph	Bike lanes, roads	State Defined
E-BIKE	20–28 mph	Bike lanes, roads	State Defined
E-SCOOTER	15–20 mph	Bike lanes, streets	State and Locally Defined
E-MOTO	30–60+ mph	Unclear	Undefined
MOTORCYCLE	30–100+ mph	Roads only	State Defined

1 Source: Transit and Micromobility, FHWA, 2021

2 Electric propulsion maximum speeds are statutorily defined in Oregon (20 mph for Class 1 and 2; 28 mph for Class 3). The speeds shown are typical ranges, not statutory.

ACTION 20: PROVIDE YOUTH SAFETY EQUIPMENT

Provide safety equipment for youth and low-income individuals, including child restraints, bicycle helmets, and reflective gear.

1 PRIMARY EMPHASIS AREAS

Pedestrians and Bicyclists,
Unrestrained Occupants

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Intersection

SAFE SYSTEM APPROACH



SUMMARY

Safety equipment distribution programs provide child restraints, bicycle helmets, and visibility gear to increase protection for vulnerable road users, including children. These programs are often delivered through community partners and targeted distribution efforts.

WHY IT IS IMPORTANT

Visibility gear reduces crash likelihood by improving detection of bicyclists, especially in low-light conditions. Proper use of child restraints reduces crash severity, as do safe, correctly used bicycle helmets.

Providing safety equipment supports safety outcomes by reducing cost barriers for families who may otherwise go without critical protective devices. These programs pair distribution with education, strengthening consistent use and long-term protection.

ACTION 20: PROVIDE YOUTH SAFETY EQUIPMENT

CHALLENGES AND SOLUTIONS

Programs depend on stable supply, funding, storage, and distribution networks, so equipment is available where and when families need it. Eligibility rules and outreach strategies must be clear and accessible, especially for families who may not be connected to traditional services or who face language, transportation, or scheduling barriers.

Distribution alone is not enough if the equipment is used incorrectly. Many items, especially child restraints, require education and fitting support. Programs often rely on partnerships with safety educators and certified technicians to ensure correct installation and use, which adds to staffing and coordination needs.

Helmets reduce the risk of **head injury by 48%, traumatic brain injury by 53%, facial injury by 23%**, and **fatal injury by 34%**.

Children who bike without wearing a helmet have a **3-fold higher risk of serious head injury** compared to helmeted bicyclists.[1]

URBAN CONSIDERATIONS

- Urban areas support distribution through schools, clinics, and community organizations that serve larger and more diverse populations.

RURAL CONSIDERATIONS

- In rural areas, visibility challenges can be greater, injury outcomes may be more severe, and there may not be a culture of safety equipment use. More education and engagement may be needed to encourage usage.

1 Statement on Bicycle Safety and the Promotion of Bicycle Helmet Use, ACS, 2023

ACTION 21: SUPPORT CHILD PASSENGER SAFETY TECHNICIANS

Recruit, train, and retain Certified Child Passenger Safety Technicians statewide.

1 PRIMARY EMPHASIS AREAS

Unrestrained Occupants

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Certified Child Passenger Safety Technicians are trained professionals who provide education and hands-on assistance to ensure child restraints are correctly selected, installed, and used. Technician networks support community events, inspections, and targeted distribution programs.

WHY IT IS IMPORTANT

Correct child restraint use is a proven injury prevention strategy, and technician support increases the likelihood that seats are used properly.

While coverage is strong in the Willamette Valley, gaps remain along the coast and in central and eastern Oregon. This action strengthens statewide access through targeted recruitment, training, and retention strategies.

Building a stronger technician network also reinforces the effectiveness of equipment distribution programs and improves safety outcomes for families who need support beyond written instructions. A strong technician network increases consistency, quality, and accessibility of child passenger safety education across Oregon.

ACTION 21: SUPPORT CHILD PASSENGER SAFETY TECHNICIANS

CHALLENGES AND SOLUTIONS

Recruitment and retention can be difficult because certification requires time, training, and ongoing recertification. Agencies and partner organizations may face staffing limitations that reduce availability for technicians to attend training, host events, or provide appointment-based fitting support.

Geographic coverage is another constraint. Technician access varies across the state, and rural communities may have fewer technicians and fewer regular inspection opportunities. Program coordination requires consistent scheduling, outreach, and support to keep technicians active and ensure communities know how to access services.

Oregon will evaluate technician development and retention, provide incentives and support for recertification, and target recruitment in coastal and central/eastern Oregon communities.

Nearly half of child restraints **are installed incorrectly**.[1]



URBAN CONSIDERATIONS

- Expands technician availability in higher-population areas where demand for inspections and seat checks can be continuous.
- Supports broader event-based and appointment-based services through established clinics, hospitals, and community organizations.

RURAL CONSIDERATIONS

- Expands coverage in underserved areas.
- Supports regional training models and mobile or event-based services that reduce travel barriers for families.

1 NHTSA Urges Parents and Caregivers to Make Sure Car Seats Are Installed Correctly

ACTION 22: EXPAND AGING DRIVER PROGRAMS

Expand aging driver safety and mobility programs, including partnering with interested organizations and planning for "driving retirement."

1 PRIMARY EMPHASIS AREAS

Aging Drivers

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

Aging driver programs include education, screening, and planning tools that promote safe mobility for older adults, in cooperation with their caregivers. These programs often focus on safe driving practices, self-assessment, transition planning, and strategies to reduce risk while maintaining independence.

Education can include awareness of Advanced Driver Assistance System features and how to use them effectively. Programs also promote "driving retirement planning" to help families prepare for safe transitions when driving is no longer appropriate, including using transit and rideshare options.

WHY IT IS IMPORTANT

Older adults are a growing share of Oregon's population. Supporting safe mobility reduces crash risk while preserving independence and quality of life. Engaging trusted partners such as vehicle dealers, mechanics, healthcare providers, churches, and senior programs expands program reach and credibility. Helping families plan early reduces abrupt mobility loss and allows Oregonians to continue to live productive, high-quality lives into old age.

ACTION 22: EXPAND AGING DRIVER PROGRAMS

CHALLENGES AND SOLUTIONS

Aging driver programs require strong coordination across transportation agencies, public health partners, healthcare providers, senior services, advocacy groups, and community organizations. Aligning roles and responsibilities across multiple partners can take time, especially when programs span education, mobility planning, and referrals to other services.

Some older drivers may be reluctant to engage due to concerns about losing independence. Effectiveness improves when programs are paired with practical mobility alternatives, such as walking, biking, transit use, and ridesharing.

URBAN CONSIDERATIONS

- Connect older adults with mobility options like transit and rideshare in urban areas and help older drivers navigate new or complex road designs and interactions with other modes like bicyclists, pedestrians, and other micromobility users.

RURAL CONSIDERATIONS

- Build local and regional coordination where service networks are limited, non-vehicular options are fewer, and travel distances are longer.

Oregon's aging drivers are projected to increase significantly (2020 to 2035):[1]

- Age 75-84 by 35%
- Age 85+ by 91%

ODOT Driver and Motor Vehicle Services provides a list of Motor Vehicle Collision Prevention Courses, and in some cases, drivers 55 years of age and older may qualify for an insurance discount upon completion.[2]

1 Population and Demographic Outlook, Oregon Office of Economic Analysis

2 Motor Vehicle Collision Prevention Courses

ACTION 23: EDUCATE ON ROAD USER INTERACTIONS

Increase training and education for all road users about how to safely interact with other road user types, including medium and large trucks, motorcycles, pedestrians (including road workers), bicyclists, and micromobility users.

1 PRIMARY EMPHASIS AREAS

Motorcyclists, Medium and Heavy Trucks, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

Young Drivers, Aging Drivers

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Safe interaction education provides practical guidance for all road users on how to share the road with others using different modes of travel. This includes awareness of large truck blind spots and longer stopping distances, as well as the visibility and movement characteristics of motorcyclists, bicyclists, pedestrians (including road workers), and micromobility users.

WHY IT IS IMPORTANT

Many severe crashes occur when road users misjudge visibility, speed, or the space needs of others, or fail to yield the right of way. Federal safety messaging emphasizes that all road users face different challenges, and that passenger vehicle drivers need practical awareness of blind spots, stopping distance, and turning behavior for medium and large trucks, as well as the movements and visibility characteristics of motorcyclists, pedestrians, bicyclists, and e-micromobility users. Work zones can change the roadway environment in ways road users do not expect, making education on safe travel near workers essential.

ACTION 23: EDUCATE ON ROAD USER INTERACTIONS

CHALLENGES AND SOLUTIONS

Reaching drivers at scale is difficult, especially outside of formal driver education programs, and many people rely on informal learning or outdated assumptions about how other road users behave. This can make consistent statewide education challenging, requiring a clear communications strategy through licensing systems, employers, insurance programs, or online channels.

Content needs to remain current as new mobility devices and e-micromobility options become more common. Training materials must be easily understood, widely accessible, and consistent across agencies, so drivers receive clear expectations for safe passing, yielding, and turning, as well as safe travel through a work zone.

URBAN CONSIDERATIONS

- Reinforces safe interactions in high-density settings where turning conflicts, lane changes, and close spacing occur more frequently.
- Supports safer behavior around transit, delivery vehicles, motorcycles, and micromobility devices operating in constrained corridors.

RURAL CONSIDERATIONS

- Reinforces safe passing behavior and following distance on two-lane highways where speed differentials can increase crash likelihood.
- Supports safer interaction with freight traffic on rural highways where large trucks are more common and shoulders may be limited.

Large trucks require **20–40% longer stopping distances** than passenger vehicles.[1]

Because of its small size, a motorcycle **may look farther away than it is**, and it may be difficult to judge a motorcycle's speed.[2]

1 CMV Driving Tips - Too Fast for Conditions

2 Motorcycle Safety Foundation Quick Tips

ACTION 24: ENHANCE GRADUATED DRIVERS LICENSE RESTRICTIONS

Enforce, enhance, and extend Graduated Drivers License restrictions.

1 PRIMARY EMPHASIS AREAS

Young Drivers

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Speed, Pedestrians and Bicyclists, Distraction, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

The Graduated Drivers License is a phased licensing approach that imposes restrictions on novice drivers during their early driving years, often addressing high-risk conditions such as nighttime driving, passengers, and other exposure factors. The Graduated Drivers License system is designed to reduce crash risk as new drivers gain experience and skills.

WHY IT IS IMPORTANT

Crash risk is highest during the earliest period of independent driving, especially under conditions that increase complexity, such as late-night driving and travel with peer passengers. Strengthening Graduated Drivers License restrictions reduces exposure to those high-risk conditions while driving skills and judgment mature.

Strong Graduated Drivers License policies also provide a clear framework for families, educators, and traffic law enforcement to support safer driving during the most vulnerable period. Combined with education and outreach, improved Graduated Drivers License restrictions can reduce preventable fatal and serious injury crashes involving new drivers.

ACTION 24: ENHANCE GRADUATED DRIVERS LICENSE RESTRICTIONS

CHALLENGES AND SOLUTIONS

Awareness and understanding of Graduated Drivers License restrictions can be uneven among teens and parents. Consistent messaging and reinforcement help new drivers and their families understand the restrictions, increasing compliance.

Enforcement can be constrained by limited resources and competing demands on law enforcement agencies. Updating or extending restrictions may require changes to policy, education materials, and administrative processes to keep requirements clear, practical, and consistently applied across Oregon.

Strong Graduated Driver Licensing systems **reduce fatal crashes among 16-year-old drivers by 20-40%.**[1]

URBAN CONSIDERATIONS

- Supports safer urban driving by limiting high-risk situations, like driving with peers on the weekends.

RURAL CONSIDERATIONS

- Reduces rural road exposure during higher-severity conditions such as nighttime travel on high-speed roads with limited lighting.

1 Graduated driver licensing programs and fatal crashes of 16-year-old drivers: a national evaluation

ACTION 25: ENCOURAGE DISTRACTION-FREE DRIVING PROGRAMS

Encourage distraction-free driving programs for public and private employers.

1 PRIMARY EMPHASIS AREAS

Distraction

2 SECONDARY EMPHASIS AREAS

Medium and Heavy Trucks

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Aging Drivers, Pedestrians and Bicyclists, Motorcyclists, Young Drivers

SAFE SYSTEM APPROACH



SUMMARY

Employer-based focused driving programs can discourage or prohibit phone use and other distractions while employees are driving for work. Employer programs can include expectations for compliance with all related laws, guidelines for safe communication practices, and training to reinforce distraction-free driving behavior.

WHY IT IS IMPORTANT

Distraction is a recognized safety concern, and Oregon continues to invest in education and outreach to reduce distracted driving and improve awareness of the risks. Workplace driving contributes to exposure on Oregon's roads, and reducing distracted driving during work trips can prevent crashes involving employees and the public. Employer programs extend that safety message into day-to-day work travel, where employees may drive frequently and may feel pressure to multitask.

ACTION 25: ENCOURAGE DISTRACTION-FREE DRIVING PROGRAMS

CHALLENGES AND SOLUTIONS

Workplaces vary widely in employees' vehicle miles and trip types, as well as in how communication needs are managed during work hours. Creating a policy that applies consistently across job roles (field staff, delivery drivers, sales, maintenance crews) can be difficult without operational guidance on expectations like scheduling and dispatch procedures.

Compliance and reinforcement also vary depending on organizational culture and leadership follow-through. A policy may exist on paper, but have limited effect if employees still feel pressure to respond immediately to calls, texts, or updates while driving. Training, supervisor support, and practical work process changes often determine whether focused driving programs lead to safer standard practice.

URBAN CONSIDERATIONS

- In urban areas, focused driving helps drivers safely navigate congestion, frequent stops, complex intersections, and a mix of road users such as pedestrians, bicyclists, transit, and micromobility users.

RURAL CONSIDERATIONS

- Rural trips are typically longer and faster, so distractions can lead to lane departures and high-speed crashes.

Oregon Department of Administrative Services provides guidance for State employees regarding mobile device use:[1]

- Employees must comply with all federal and state laws that govern the use of mobile devices.
- It encourages minimal use of mobile devices while in motion, and the use of hands-free mode if necessary to use a device.
- If employees must make or take a call, they should first find a safe place to pull over.



1 Statewide Policy Manual 107-001-016: Mobile Communication Device Usage While Driving

ACTION 26: ADD OR ELEVATE SAFETY AS A FUNDING CRITERION

Incorporate measurable safety criteria with meaningful weighting in transportation project selection processes statewide.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Intersection, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

Aging Drivers, Young Drivers, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

This action commits to incorporating safety as a formal, measurable criterion in statewide transportation investment decisions, with a stronger weighting for fatal and serious injury crash risk factors. Rather than focusing solely on traditional factors such as congestion or asset condition, agencies will evaluate projects using clear safety performance measures, including crash history, crash risk, road characteristics, and expected safety benefits. This framework will provide a flexible approach to help ensure transportation investments consistently contribute to reducing fatal and serious injury crashes.

WHY IT IS IMPORTANT

Project selection decisions shape the transportation system for decades. Without measurable, consistently weighted safety criteria, funding decisions may not align with goals for reducing fatal and serious injury crashes. Applying safety consistently across capital programs strengthens accountability and improves alignment between funding decisions and safety outcomes.

ACTION 26: ADD OR ELEVATE SAFETY AS A FUNDING CRITERION

CHALLENGES AND SOLUTIONS

Adding safety criteria to project selection requires clear definitions, reliable data, and consistent scoring methods that apply across different project types. If criteria are unclear or applied inconsistently, project outcomes may be difficult to compare, and safety benefits may be harder to document and communicate.

Balancing safety with other priorities, such as road condition, congestion, freight mobility, and economic development, can be complex. Agencies may also need internal process changes, staff training, and updated evaluation tools to ensure safety is integrated early and consistently in decision-making.

Oregon will commit to defining standardized, measurable safety scoring criteria and/or increasing the weighting of safety in project evaluation frameworks, with an emphasis on fatalities and serious injuries. It will consider incorporating crash risk modeling and link scoring to proven safety countermeasures. Agencies may be required to update their evaluation tools and staff training to ensure consistent application.

URBAN CONSIDERATIONS

- Prioritizes projects that reduce multimodal conflicts and speed-related risk in dense areas.
- Supports consistent selection of capital projects that address safety risks.

RURAL CONSIDERATIONS

- Ensures safety needs on higher-speed rural corridors remain competitive for funding, even when total crash counts are lower but crash severity is disproportionately high.
- Focuses on severity reduction where systemic risk factors such as curves, intersections, and limited recovery space are present.

ODOT is designing a new process to identify capital investments, creating a 10-year plan that will be used to develop projects and program funds when ready. The Capital Investment Plan will directly feed into the Statewide Transportation Improvement Program. Investments will come from asset-related information, plans and studies, and Area Commissions on Transportation lists. Concepts will be prioritized to advance outcomes that include safety.

ODOT is developing the first version of the Capital Investment Plan throughout 2026. The CIP will be treated as a living document with annual updates.

ACTION 27: MONITOR SAFETY-RELATED EVENTS AND POLICY CONCERNS

Monitor trends, current events, and concerns from elected and appointed officials related to transportation safety initiatives.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Intersection, Speeding, Alcohol and/or other Drugs Involved, Aging Drivers, Pedestrians and Bicyclists, Distraction, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

Trend monitoring tracks public attention, emerging issues, policy developments, and legislative opportunities that can affect transportation safety priorities. It supports timely action for advancing safety initiatives and changes to state laws or local ordinances through recommendations to elected and appointed officials.

WHY IT IS IMPORTANT

Transportation safety improvements often depend on sustained public support and enabling policy conditions. Staying aware of trends and emerging opportunities increases the likelihood that Oregon can advance proven strategies when public attention, partner alignment, or legislative momentum creates a practical path forward. Proactive monitoring supports quicker alignment among safety partners when an opportunity arises, strengthening the ability to advance changes that reduce fatal and serious injury crashes.

ACTION 27: MONITOR SAFETY-RELATED EVENTS AND POLICY CONCERNS

CHALLENGES AND SOLUTIONS

Transportation safety priorities often compete with other urgent issues. Monitoring trends requires dedicated capacity to track developments, maintain relationships with partners, and translate awareness into concrete opportunities such as outreach campaigns, legislative proposals, or coordinated advocacy support.

Transportation safety professionals should build the case for legislative action, understand legislative concerns, and address those concerns through recommendations. Pursuing opportunities requires careful coordination so messaging is accurate, consistent, and aligned with Oregon safety priorities without overextending staff capacity or creating conflicting positions across agencies.

URBAN CONSIDERATIONS

- Urban areas can have more frequent high-profile policy activities to track and predict, requiring timely alignment among multi-level partners (city, regional, state).

RURAL CONSIDERATIONS

- Rural safety needs may receive less consistent visibility despite high crash severity outcomes, and these efforts require coalition building spanning larger geographies.

ESTABLISH ROBUST INSTITUTIONAL GOVERNANCE

According to the International Transport Forum's Safe System Approach in Action, establishing robust institutional governance is a key component of the safe system framework.[1]

Institutions are required to organize government intervention covering research, funding, legislation, regulation, and licensing, and to maintain a focus on delivering improved road safety as a matter of national priority.

1 The Safe System Approach in Action, International Transport Forum, 2022.

ACTION 28: SUPPORT LOCAL SAFE COMMUNITIES PROGRAMS

Fully fund and sustain Safe Communities Programs and similar state-level initiatives to advance community-based traffic safety statewide.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved, Distraction, Speeding, Unrestrained Occupants

2 SECONDARY EMPHASIS AREAS

Aging Drivers, Pedestrians and Bicyclists, Young Drivers

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Motorcyclists, Medium and Heavy Trucks

SAFE SYSTEM APPROACH



SUMMARY

Local Safe Communities Programs bring together local partners to identify transportation safety priorities and advance strategies that reduce fatal and serious injury crashes. These programs often focus on outreach, training, driver education, coordination, emergency response, and the implementation of locally relevant safety priorities.

Community-based programs are particularly effective at addressing behavioral crash factors such as the use of alcohol and/or other drugs, distracted driving, child passenger safety, and speeding – key contributors to fatal and serious injury crashes. This action commits to sustained funding across Oregon, with resources aligned to local safety conditions, program capacity, and documented risk factors.

WHY IT IS IMPORTANT

These programs help connect statewide safety priorities to community-level conditions and needs. Local partners often have direct insight into where safety problems occur, and which strategies are realistic and implementable given local road contexts, staffing, and resources.

Stable funding ensures continuity, strengthens community partnerships, and supports measurable reductions in high-risk driving behaviors. A legislative champion and consistent funding strategy are critical to sustaining progress statewide.

ACTION 28: SUPPORT LOCAL SAFE COMMUNITIES PROGRAMS

CHALLENGES AND SOLUTIONS

Local programs rely heavily on consistent staffing, cross-agency coordination, funding, and sustained community engagement. When these efforts depend on limited staff time or short-term funding, maintaining momentum and keeping partners actively involved can be difficult, especially as leadership or priorities change over time.

Capacity varies widely across Oregon communities, and smaller jurisdictions may have limited ability to initiate or sustain local safety work without technical assistance. Aligning local efforts with statewide funding requirements, performance measures, and available implementation pathways can also take significant coordination and support.

Potential performance measures for Safe Communities Programs may include the number of fully funded local programs statewide, geographic distribution of funding, reduction in alcohol-related and distracted driving crashes, and improvements in seat belt use.

URBAN CONSIDERATIONS

- Coordinates multi-agency efforts across complex transportation networks.
- Aligns education, enforcement, and infrastructure in high-crash corridors.

RURAL CONSIDERATIONS

- Builds capacity where staffing is limited.
- Provides regional coordination and tailored strategies reflecting rural travel patterns, severity risk, and the long distances required for emergency response.

LANE COUNTY: SAFE LANE COALITION[1]

The Safe Lane Transportation Coalition is a collaborative group working to reduce fatalities and serious injuries in Lane County. The Coalition believes behavior change methods and techniques are vital tools to decrease the number of preventable deaths and serious injuries caused by risky driving behavior, so they focus on three areas:

1. Speed Reduction
2. DUII Prevention
3. Safety Education and Outreach



1 Safe Lane Coalition

ACTION 29: IMPROVE SAFE TRAVEL OPTIONS

Expand access to safe travel options through land use, transit, rideshare, and other programs.

1 PRIMARY EMPHASIS AREAS

Alcohol and/or other Drugs Involved, Aging Drivers, Young Drivers, Pedestrians and Bicyclists

2 SECONDARY EMPHASIS AREAS

Speeding

INDIRECT BENEFIT EMPHASIS AREAS

Roadway Departure, Intersection, Unrestrained Occupants

SAFE SYSTEM APPROACH



SUMMARY

Safe travel options encompass transportation choices beyond driving, including public transit, rideshare, on-demand services, walking and bicycling networks, and supportive land use patterns that reduce trip distances. Expanding access improves safety by reducing exposure to high-risk driving situations and increasing safe mobility for people of all ages and abilities.

WHY IT IS IMPORTANT

Access to safe travel options reduces dependence on driving and can lower exposure to high-risk driving conditions, particularly for young drivers, older adults, non-drivers, and people who are influenced by alcohol and/or other drugs. Safe options help reduce high-risk travel on dark, long-distance, or high-speed corridors.

This is a long-term systemic shift. While land use and transit changes occur over decades, incremental steps—such as service coverage and subsidized safe ride programs—can deliver measurable safety benefits. Increased transit density and "safety in numbers" effects can further improve outcomes.

ACTION 29: IMPROVE SAFE TRAVEL OPTIONS

CHALLENGES AND SOLUTIONS

Expanding access to travel options requires coordination among transportation agencies, local governments, transit providers, community partners, and private industries. Feasibility depends on land use patterns, funding availability, and service coverage, and implementation timelines can be long, particularly when tied to development patterns or infrastructure investments.

Sustaining programs can be challenging in areas with low population density, limited operating funds, or constrained local resources, including staff and funding. Travel options need to be reliable, affordable, comfortable, and accessible to be used regularly; this often requires ongoing investment in system operations, not just a single project.

These challenges can be addressed through regional coordination, flexible funding that supports operations, phased implementation, pilot programs in areas with limited transportation options or elevated safety risks, and scalable service models such as on-demand transit.

The POINT, Oregon's Intercity Transit Service, provides a safe, affordable, and environmentally friendly alternative. The POINT is funded by state and federal sources and operates four routes connecting rural communities with urban centers.[1]

ODOT's Transportation Options Program supports travel choices such as carpools, vanpools, biking, transit, and telecommuting. Get There Oregon/Get There Connect is a free online trip-planning, ride-matching, and metrics-tracking tool for commuters that supports travel choices.[2]

1 Oregon's Intercity Transit Service

2 Get There Connect For Commuters

URBAN CONSIDERATIONS

TRANSIT	• Increased transit frequency and reliability • Bus Rapid Transit
WALKING	• Connected sidewalk networks • Protected bike lanes • E-micromobility
SHARED MOBILITY	• Carshare Programs • Rideshare partnerships
LAND USE STRATEGIES	• Mixed-use zoning to shorten trip distances • Transit-oriented developments • Reduced parking requirements

RURAL CONSIDERATIONS

TRANSIT	• Dial-a-ride services • On-demand van services • Volunteer driver programs
WALKING	• Sidewalks in small towns • Shoulders and roadside space
SHARED MOBILITY	• Employer-based vanpools • Rural carpool matching programs • State-supported rideshare platforms
LAND USE STRATEGIES	• Safer community main streets • Town-center design that reduces in-town driving • Better pedestrian access in small towns

ACTION 30: DEVELOP A ROAD SAFETY COMMUNICATION GUIDE

Develop a communication guide for ODOT regions, local agencies, Safe Community Coordinators, and other safety partners when reporting on crashes, road safety efforts, proven safety countermeasures, and engagement opportunities.

1 PRIMARY EMPHASIS AREAS

Roadway Departure, Intersection, Speeding, Alcohol and/or other Drugs Involved, Aging Drivers, Pedestrians and Bicyclists, Distraction, Young Drivers, Motorcyclists, Medium and Heavy Trucks, Unrestrained Occupants

2 SECONDARY EMPHASIS AREAS

None

INDIRECT BENEFIT EMPHASIS AREAS

None

SAFE SYSTEM APPROACH



SUMMARY

A communication guide provides consistent language, templates, and best practices for describing crashes, injury outcomes, safety investments, and countermeasures in a clear, accurate, and aligned way. It supports public-facing communication that reinforces safety priorities, considers statewide messaging, and avoids confusing or misleading information.

WHY IT IS IMPORTANT

Public understanding affects long-term support for safety investments, including road design changes, enforcement strategies, and policy updates. Clear communication improves transparency, strengthens trust, and supports consistent expectations for road user behavior across the state.

Accurate reporting and messaging also influence how safety problems are interpreted. Strong communication can reinforce the reality that serious crashes are preventable and that proven countermeasures reduce the risk of fatalities and serious injuries. Consistency across agencies strengthens statewide alignment around Oregon's safety priorities, and a flexible framework allows for custom messaging that speaks to local needs.

ACTION 30: DEVELOP A ROAD SAFETY COMMUNICATION GUIDE

CHALLENGES AND SOLUTIONS

Local agencies vary widely in communications staffing, resources, and experience translating technical safety work into clear public messaging. A single guide must be flexible enough to work across large cities, smaller jurisdictions, and partner organizations while still providing consistent core messaging and definitions.

Adoption can be uneven without training and reinforcement. Communication practices may be influenced by local media norms, community expectations, and sensitivity around serious crashes, which can make standardized messaging difficult to apply in real time. Updating the guide over time will be important as safety priorities, countermeasures, and terminology evolve.

URBAN CONSIDERATIONS

- Urban areas need to consider coordinated messaging across interconnected transportation systems.

RURAL CONSIDERATIONS

- In rural parts of the state, many jurisdictions lack dedicated communications staff; developing templates and style guides can help these agencies and other partners participate.

WHY WE SAY 'CRASH' NOT 'ACCIDENT.' PORTLAND BUREAU OF TRANSPORTATION

When we use the word "accident" rather than "crash," we're implying that a collision was somehow inevitable...but that doesn't align with [Portland Bureau of Transportation's] goal of making Portland streets safe for everyone.[1]

Crashes are often preventable, and risk can be **reduced through systemic interventions.**

1 Portland Bureau of Transportation Blog, March 2023



07

TSAP IMPLEMENTATION



07

Within the TSAP, the emphasis areas and actions identify short-term (five-year) safety needs and practical solutions, while the plan as a whole establishes a long-term vision of reaching zero fatalities and serious injuries by 2050.

The TSAP provides the framework, and upcoming implementation efforts will move Oregon toward its stated goals.

This approach reinforces that transportation safety is a shared responsibility for all Oregonians and helps make the Plan implementable. Continued coordination and collaboration will strengthen implementation efforts and support ongoing evaluation of policies, programs, and projects.

This chapter will introduce a framework for implementation, tracking, evaluation, and reporting. In the near term, the TSAP actions offer immediate opportunities to reduce fatalities and serious injuries and can help inform policy and program development, project selection, and decision-making across all jurisdictions.

BY PROVIDING A CLEAR FRAMEWORK, THE TSAP EQUIPS OREGON'S SAFETY PARTNERS WITH THE TOOLS NEEDED TO TURN ACTIONS INTO MEASURABLE RESULTS.

FUNDING PATHWAYS

Implementation links each action to appropriate funding sources, recognizing that resources are limited and must be prioritized. Key funding sources include:

- **Highway Safety Improvement Program:** Administered in Oregon through the All Roads Transportation Safety program, the Highway Safety Improvement Program is the primary federal source for systemic and hotspot safety infrastructure improvements for state, city, county, and Tribal roads.[1]
- **National Highway Traffic Safety Administration Section 402 and 405 Grants:** Support education and enforcement campaigns.[2]
- **Safe Streets and Roads for All:** Supports local comprehensive safety action plans, supplemental planning, demonstrations, and capital projects to improve safety.[3]
- **Surface Transportation Block Grant:** Flexible funding for multimodal safety projects.[4]
- **Tribal Transportation Program & Bureau of Indian Affairs Safety Funds:** These programs are delivered through direct coordination between the Tribes and federal program offices. Additionally, ODOT conducts a Tribal consultation process for statewide transportation plans and the State Transportation Improvement Program.[5]
- **Private Partnerships:** Insurers, employers, and industry groups for road safety and fleet safety initiatives.
- **State & Local Resources:** For staffing, training, and discretionary projects, as well as education, enforcement, and adjudication.
- **Health-related Funding (Federal and State):** Post-crash care, substance misuse treatment, and active transportation programs.

1 ODOT All Roads Transportation Program

2 NHTSA Highway Safety Grant Programs

3 USDOT Safe Streets and Roads for All Grant Program

4 FHWA Surface Transportation Block Grant Program

5 FHWA Tribal Transportation Program Safety Fund

STRATEGIC ACTION MONITORING AND EVALUATION

Action monitoring and evaluation help ensure actions are being assigned to responsible parties, appropriate data are collected regarding those actions' completion, and a feedback loop is maintained. This process allows leadership and partners to stay informed, supports mid-course corrections during implementation, and ensures future TSAP updates are informed by evaluation results. Implementation progress will be reported to the Oregon Transportation Safety Committee each year.

Multiple entities play a role in implementing the TSAP to reduce crash frequency and severity. TSAP actions will be led and tracked by several state agencies and other partners, including the following:

- **Oregon Transportation Safety Committee:** Provide oversight and policy leadership for road safety actions.
- **ODOT Transportation Safety Office:** Lead statewide coordination, annual reporting, and technical assistance.
- **ODOT Traffic Engineering Section:** Administer the Highway Safety Improvement Program.
- **ODOT Regions:** Lead on systemic and hotspot engineering treatments and project delivery. Lead implementation of consistent Safe System work zone practices for all road users, road workers, and responders, in coordination with ODOT's statewide work zone program and project partners.
- **Governor's Advisory Committee on Driving Under the Influence of Intoxicants:** Provide ongoing input to Oregon road safety programs, engage with safety partners, and help inform statewide safety planning, implementation, and evaluation.
- **Local Governments & Regional Planning Organizations:** Adopt relevant TSAP actions in Transportation System Plan updates, develop and apply a local agency safety toolkit, develop and implement safety-related policies and guidance, and pursue safety funding.
- **Tribal Governments:** Lead safety planning and implementation on Tribal lands; collaborate with ODOT on data and projects.
- **Oregon State Police & Local Law Enforcement:** Lead targeted, equity-conscious enforcement and support for automated enforcement.
- **Oregon Health Authority and Emergency Medical Services Providers:** Promote post-crash response improvements, trauma system coordination, substance misuse coordination, and data sharing.
- **Private and Nonprofit Partners:** Encourage employer fleet safety programs, distracted-driving pledges, insurer incentives, and community-based safety campaigns.



08

PERFORMANCE EVALUATION



08

The TSAP is intended to create a framework and list of expectations to hold safety professionals and relevant agencies accountable. To achieve the long-term vision of zero fatalities and serious injuries by 2050, along with an interim goal of a 30% reduction by 2035, it must establish a clear performance framework that informs decision-making, monitors progress, and evolves as conditions change.

ODOT consistently tracks the performance of its transportation programs, providing updates through annual reports.

- **The Oregon Triennial Highway Safety Plan.** This plan sets annual performance goals, and progress is evaluated and documented in the Annual Report, in alignment with National Highway Traffic Safety Administration requirements.
- **The Highway Safety Improvement Program Annual Report.** The Highway Safety Improvement Program Annual Report is prepared to satisfy federal reporting requirements and provide documentation for the related Federal grant year for Federal Highway Administration funding programs.
- **Oregon Transportation Plan Monitoring.** The TSAP aligns directly with the Oregon Transportation Plan's Chapter 7.6 performance monitoring framework.

Performance and reporting in the TSAP:

- Aligns directly with the Oregon Transportation Plan monitoring system.
- Meets FHWA Strategic Highway Safety Plan requirements, including the five federal safety performance measures.
- Commits to an annual review and a five-year update cycle, ensuring accountability and continuous improvement.

OREGON'S RELEVANT PLANNING PROCESSES

Following are the relevant safety-focused planning processes that must align with the TSAP.

TRIENNIAL HIGHWAY SAFETY PLAN

The Transportation Safety Office's core monitoring activity is a process in which each behavioral safety program manager uses the most recent available data to set performance goals for the upcoming three-year period. The purpose of the performance plan is to demonstrate the potential impact of funds, staff time, and programs on behavioral safety outcomes. Performance measures incorporate elements of the Oregon Benchmarks, Oregon Transportation Safety Action Plan, and nationally recognized measures. Both long-range and short-range measures are utilized and updated annually.

The Annual Report explains what funds were spent and how the Transportation Safety Office fared on annual performance measures. It reports on the accomplishments and challenges experienced during the fiscal year, considering funds controlled by the Transportation Safety Office. This is the office's most comprehensive and established procedure for monitoring progress. In addition, program managers conduct independent investigations and monitoring visits throughout the year when questions or issues arise or new data becomes available.

HIGHWAY SAFETY IMPROVEMENT PROGRAM ANNUAL REPORT

ODOT's Traffic Engineering Section is required to submit an annual Highway Safety Improvement Program report to the Federal Highway Administration by August 31 of each year. The report outlines progress in delivering safety projects, evaluates their effectiveness, and assesses the extent to which these improvements have contributed to reducing fatalities and serious injuries.

ODOT is responsible for evaluating and reporting on project effectiveness by analyzing project costs, before-and-after crash data, and other relevant information. Using crash modification factors, ODOT assesses whether each project achieved its intended safety outcomes.

OREGON TRANSPORTATION PLAN MONITORING

The TSAP aligns directly with the Oregon Transportation Plan's Chapter 7.6 performance monitoring framework:

- Safety indicators are a core component of OTP's statewide dashboard.
- TSAP-specific indicators will be reported as complementary measures.
- Annual TSAP/OTP reports will be integrated, minimizing duplication and providing clearer, more transparent updates on statewide progress for policymakers and the public.

FEDERAL SAFETY PERFORMANCE MEASURES

The 2016 FHWA Final Rule on National Performance Management Measures established five safety performance measures for federal aid highway programs:[1]

1. **Number of fatalities**
2. **Rate of fatalities per 100 million vehicle miles traveled**
3. **Number of serious injuries**
4. **Rate of serious injuries per 100 million vehicle miles traveled**
5. **Number of non-motorized fatalities and serious injuries (pedestrians + bicyclists)**

PERFORMANCE TARGET REQUIREMENTS

Each of the five FHWA safety performance measures must have an annual target. These targets are established using a five-year rolling average and apply to all roads, regardless of ownership or functional classification.

The number of fatalities, the fatality rate, and the number of serious injuries are also included as performance measures in the Oregon Triennial Highway Safety Plan to satisfy NHTSA requirements. The Federal Rule requires that these three measures (numbers 1, 2, and 3 above) have identical targets in both the State Strategic Highway Safety Plan and Triennial Highway Safety Plan. In addition, the Strategic Highway Safety Plan is designated as the primary mechanism for coordinating these shared performance measures.

NHTSA PERFORMANCE MEASURES

The Oregon Triennial Highway Safety Plan identifies the following performance measures, which satisfy the NHTSA performance measure requirements.

- Fatalities
- Serious Injuries
- Fatalities per 100 million vehicle miles traveled
- Rural fatalities per 100 million vehicle miles traveled
- Unrestrained passenger vehicle occupant fatalities
- Fatalities involving a driver with a BAC over the state limit
- Drug-involved fatalities
- Speeding-related fatalities
- Pedestrian fatalities
- Bicyclist fatalities
- Motorcyclist fatalities and unhelmeted motorcyclist fatalities
- Drivers age 20 or younger involved in fatal crashes
- Fatalities and serious injuries involving a distracted driver
- Deficiencies in the Strategic Traffic Records Plan
- Fatalities and serious injuries involving equipment issues
- Roadside fatalities on interstate or non-interstate freeways
- Observed seat belt use for passenger vehicles, front seat outboard occupants

1 Federal Register, National Performance Management Measures: Highway Safety Improvement Program Final Rule. 2016.

TSAP PERFORMANCE MEASURES

The Oregon TSAP performance measures (consistent with NHTSA and FHWA requirements) are shown in **TABLE 8**.

TABLE 8. TSAP PERFORMANCE MEASURES

PERFORMANCE MEASURES	PERFORMANCE MEASURE REQUIRED BY NHTSA*	REQUIRED BY FHWA IN PERFORMANCE MEASURES FINAL RULE
1 FATALITIES	●	●
2 FATALITIES/100M VMT	●	●
3 SERIOUS INJURIES	●	●
4 SERIOUS INJURIES/ 100M VMT		●
5 NONMOTORIZED FATALITIES + SERIOUS INJURIES		●
SPECIAL RULES		
RURAL ROAD SAFETY		●
OLDER DRIVER + PEDESTRIAN SAFETY		●

*"*Traffic Safety Performance Measures for State and Federal Agencies*," National Highway Traffic Safety Administration, DOT HS 811 025, Washington, D.C., 2008.*

Results for these performance measures are reported through the Highway Safety Improvement Program Annual Report submitted to the Federal Highway Administration and the Oregon Triennial Highway Safety Plan Annual Report submitted to the National Highway Traffic Safety Administration. Once targets are established, states must demonstrate progress toward achieving them in the applicable annual reports.

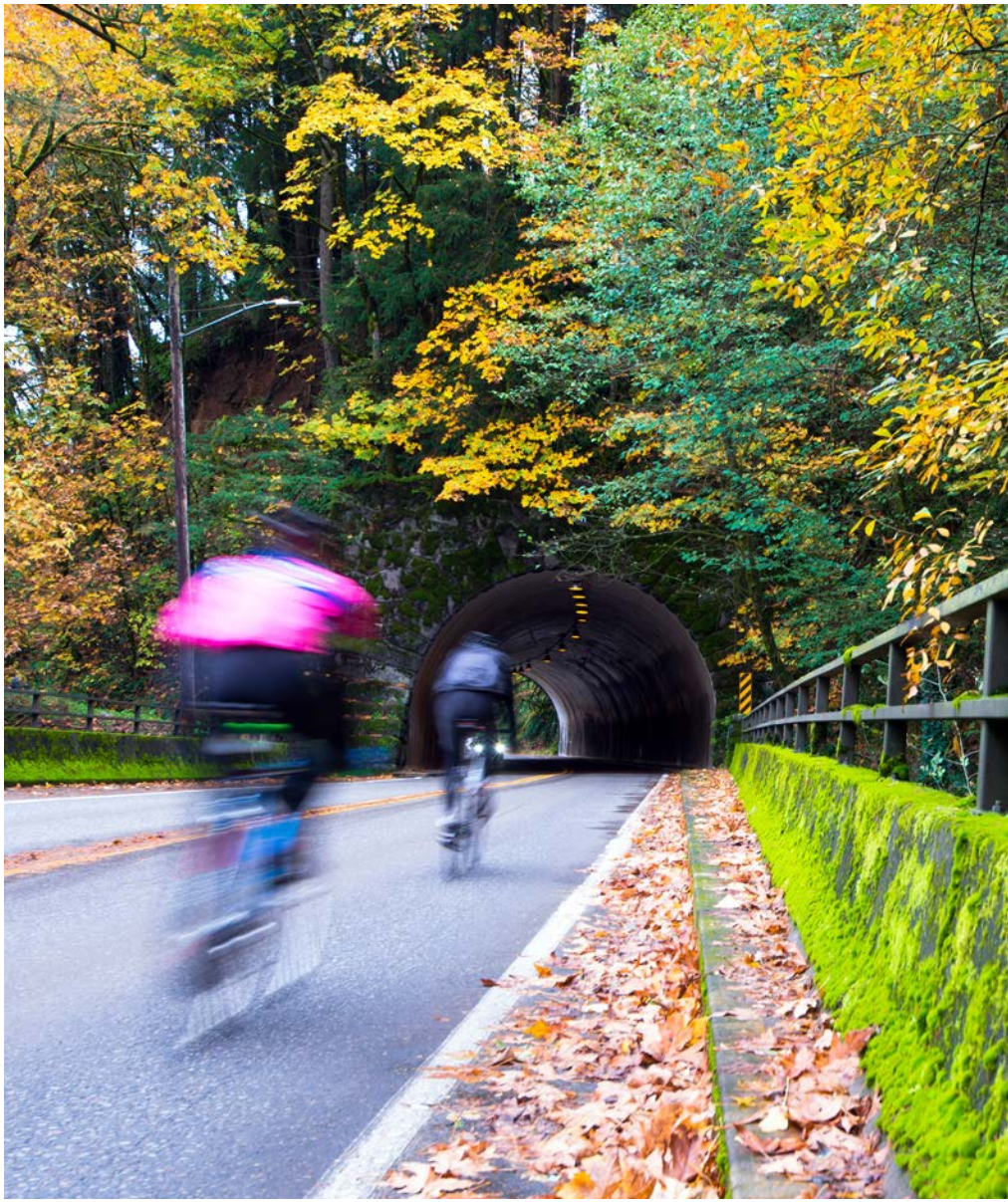
For safety performance, a state is considered to have made significant progress if it meets at least four of the five targets or if the actual outcome is better than the baseline performance for the year prior to the establishment of the target. If a state does not meet these criteria, it must obligate all Highway Safety Improvement Program funds exclusively to highway safety improvement projects and submit a Highway Safety Improvement Program Implementation Plan.

The Federal Rule also requires metropolitan planning organizations to establish safety performance targets. Metropolitan planning organizations may adopt the state's targets or set targets specific to their planning area. Like the state targets, metropolitan planning organization targets apply to all public roads within their boundary. States and metropolitan planning organizations are expected to coordinate to ensure alignment and consistency.

Oregon has adopted a 1% reduction in its 2027 first-year target (based on the five-year average of 2020-2024 data) for the fatality-based safety performance measures, compared to the 2026 TSAP baseline (based on 2019-2023 data). Oregon has adopted a "hold constant" target in its 2027 first-year target for the serious injury-based safety performance measures, including nonmotorized fatalities and serious injuries.

TABLE 9. OREGON SAFETY PERFORMANCE TARGETS

PERFORMANCE MEASURES	2026 TSAP BASELINE PERIOD (2019-2023)	2027 FIRST YEAR TARGET PERIOD (2020-2024)
FATALITIES (1% REDUCTION)	558	552
FATALITY RATE PER 100M VMT (1% REDUCTION)	1.56	1.55
SERIOUS INJURIES (HOLD CONSTANT)	2,602	2,602
SERIOUS INJURY RATE PER 100M VMT (HOLD CONSTANT)	7.22	7.22
NONMOTORIZED FATALITIES AND SERIOUS INJURIES (HOLD CONSTANT)	315	315



SPECIAL RULES

In addition to these five primary safety measures, federal regulations require states to monitor additional categories under these Special Rules provisions:

RURAL ROAD SAFETY

The Moving Ahead for Progress in the 21st Century Act introduced the High Risk Rural Roads Special Rule. A High Risk Rural Road is defined as "any roadway functionally classified as a rural major or minor collector or a rural local road with significant safety risks, as defined by a state in accordance with an updated State Strategic Highway Safety Plan."

The Special Rule further stipulates that, "If the fatality rate on rural roads in a state increases over the most recent two-year period for which data are available, that state shall be required to obligate funds in the next fiscal year for projects on high-risk rural roads in an amount equal to at least 200 percent of the amount of funds the state received for fiscal year 2009 for high risk rural roads." Based on the 2019-2023 data, the Special Rule is currently in effect.

OLDER DRIVERS AND PEDESTRIANS SAFETY

Federal legislation defines Older Drivers and Pedestrians as individuals "65 years of age and older." The Older Drivers and Pedestrians Special Rule is triggered if the rate of traffic fatalities and serious injuries for this group increases over the most recent two-year period for which data are available. When this occurs, states "shall be required to include strategies to address the increase in those rates." Federal Highway Administration guidance provides additional details on calculating the combined crash rate and determining applicability.

In Oregon, this Special Rule applies because the five-year average of fatalities and serious injuries for aging drivers and pedestrians has increased on a per capita basis. As a result, the TSAP update incorporates strategies to reduce fatalities and serious injuries among drivers and pedestrians 65 years old and older.

VULNERABLE ROAD USER SAFETY

Beginning in 2023, all States are required to complete a Vulnerable Road User Safety Assessment (23 U.S.C. 148(l)(1)) and include it as part of their State Strategic Highway Safety Plan (23 U.S.C. 148(a)(13)(G)). A State's Vulnerable Road User Safety Assessment should be included in its Strategic Highway Safety Plan as an appendix. The outcomes from the Vulnerable Road User Safety Assessment quantitative analysis and program of projects or strategies should be incorporated into relevant emphasis areas and actions, as appropriate, and implemented through State and local planning procedures.

See **APPENDIX A** for the Vulnerable Road User Safety Assessment, which aligns with the TSAP.

EVALUATION PROCESS

The TSAP commits to an annual implementation review. Implementation progress will be reported publicly to the Oregon Transportation Safety Committee. Reporting may include:

- Review of strategic action progress.
- Comparison of annual crash data to baselines and the status of achieving performance targets.
- Program evaluation that highlights gaps, challenges, and near-term course corrections.
- Delegation to topically designated committees (e.g., Governor's Advisory Committee on Driving Under the Influence of Intoxicants, Speed Zone Review Panel), with an expectation for those committees to report to the OTSC annually.

UPDATE CYCLE & FHWA PROCESS APPROVAL

Federal regulations require FHWA's oversight of the process and regular updates.

- The TSAP will undergo a formal update at least once every five years, in accordance with Federal Highway Administration requirements.
- The update process must receive Federal Highway Administration approval and will be documented in advance, including steps such as partner consultation and data analysis methods.
- Oregon commits to an inclusive update process that ensures the perspectives of Tribes, local governments, metropolitan planning organizations, safety advocates, and the public are fully integrated.



09

CONCLUSION

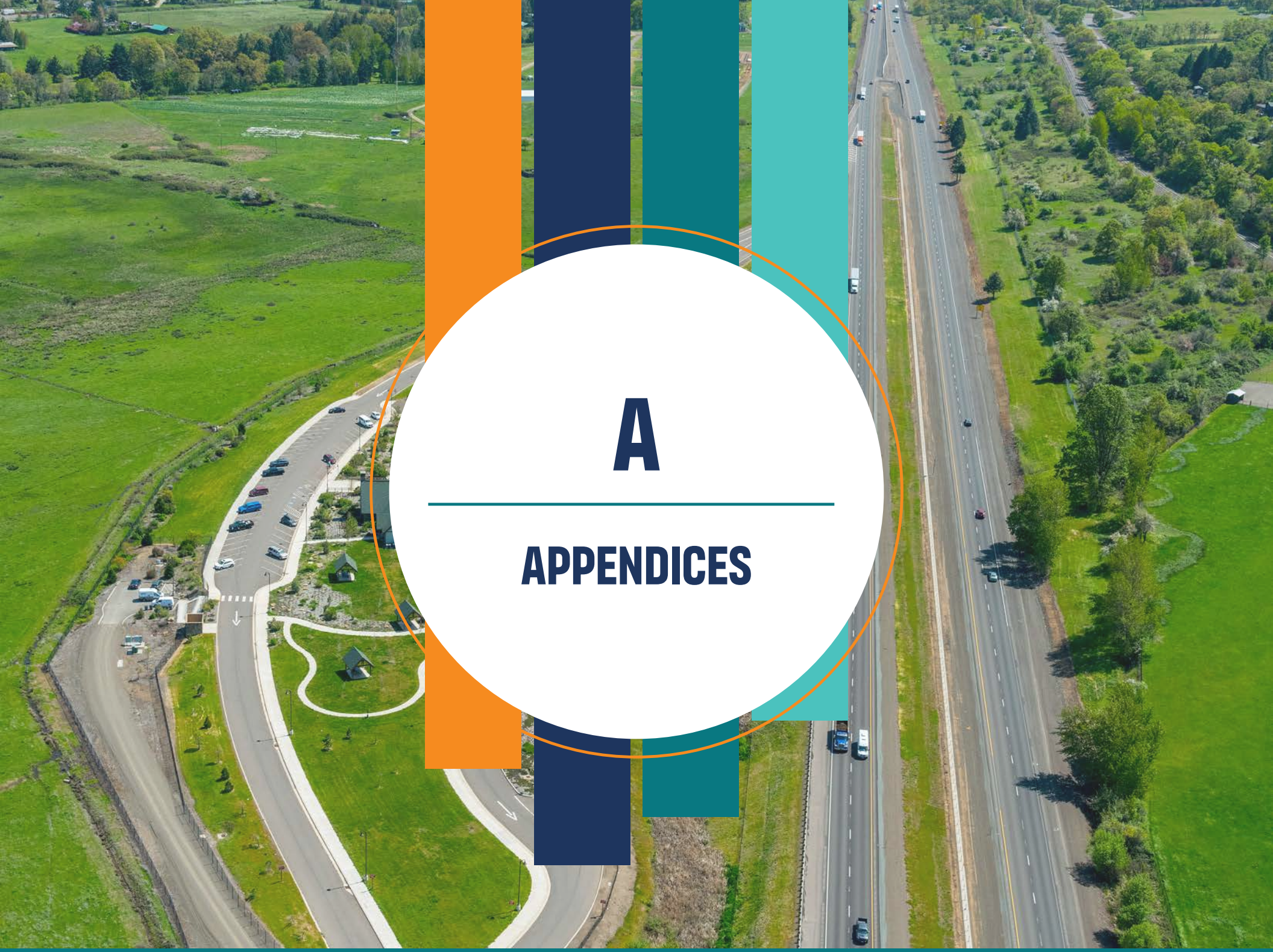
The Oregon Transportation Safety Action Plan establishes a clear, statewide commitment to eliminating fatalities and serious injuries across the transportation system.

Grounded in data, informed by partner input, and aligned with national best practices, the TSAP sets a long-term vision supported by strategic actions. At its core is the recognition that traffic deaths are preventable, and that achieving zero fatalities and serious injuries is both a necessary and attainable goal.

Reaching this outcome requires coordinated action across agencies, disciplines, and communities. Safety is shaped by the combined efforts of transportation professionals, traffic law enforcement, emergency responders, policymakers, other safety partners, and system users. The TSAP provides a framework to align these efforts through clearly defined emphasis areas, strategic actions, and performance measures, while also recognizing the need to address disparities so that all Oregonians and visitors benefit from safety investments.

Ultimately, success will depend on implementation. Safety must be integrated into decision-making across planning, programming, design, operations, and maintenance. Investments should be data-driven and focused on proven strategies that reduce both the likelihood and severity of crashes. Ongoing monitoring and evaluation will be critical to refining approaches and ensuring resources are directed where they can achieve the greatest impact.

Sustained commitment, strong partnerships, and accountability at all levels will be essential. With continued focus and collaboration, Oregon can make meaningful progress toward a transportation system where every person arrives safely at their destination. Together, we can make a difference.



A

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APPENDIX A:

OREGON VULNERABLE ROAD USER SAFETY ASSESSMENT

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1. INTRODUCTION AND BACKGROUND

All States are required to develop a Vulnerable Road User Safety Assessment as part of their Highway Safety Improvement Program in accordance with 23 U.S.C. 148(l). Oregon's Transportation Safety Action Plan (TSAP) serves as the state's Strategic Highway Safety Plan, and this Vulnerable Road User Safety Assessment is an appendix to the 2026 TSAP.

The Vulnerable Road User Safety Assessment assesses safety performance for vulnerable road users and outlines the state's current and upcoming efforts to improve their safety in accordance with federal law. It must be data-driven, incorporate the Safe System Approach, and comply with guidance issued by the Federal Highway Administration (FHWA). The FHWA expects State and local governments to use the Vulnerable Road User Safety Assessment findings and recommendations to adjust project selection criteria and make other changes to guide investments to improve the safety of vulnerable road users. The Vulnerable Road User Safety Assessment updates and builds upon the vulnerable user actions identified in the 2026 Oregon TSAP and the safety goal and objectives of the 2023 Oregon Transportation Plan. The Vulnerable Road User Safety Assessment will continue to be revised with each TSAP update.

Oregon's Vulnerable Road User Safety Assessment describes the current state of safety for people walking and bicycling in the state and assesses safety in high-risk areas by considering crash history and risk factors associated with increased crashes. It encourages safety partners and the public to implement a program of projects or strategies – based on the Safe System Approach – to reduce the frequency and severity of crashes involving vulnerable road users.

1.1 WHAT DOES VULNERABLE ROAD USER SAFETY MEAN?

The term "vulnerable road user" is used to describe a person who is unprotected by an outside shield like a car or truck when traveling. They are considered "vulnerable" because they have a greater risk of injury in any crash with a vehicle and therefore need protection against such crashes through safer system designs. Vulnerable road users can include (but are not limited to): a pedestrian; a roadway worker[1]; a person operating a wheelchair or other personal mobility device, whether motorized or not; a person operating an electric scooter or similar device; and a person operating a bicycle or other nonmotorized means of transportation.[2]



[1] https://www.oregon.gov/odot/safety/pages/work-zone.aspx

[2] Position/Policy Statement: Vulnerable Road Users, National Safety Council, 2018. https://www.nsc.org/getattachment/d5babee6-582d-4e66-804f-8d06f9b021a4/t-vulnerable-road-users-147

For this safety assessment, a vulnerable road user is defined by the Federal Highway Administration as "a nonmotorist such as a pedestrian, bicyclist, other cyclist, person on personal conveyance or an injured person who is, or is equivalent to, a pedestrian or pedalcyclist."

> **VULNERABLE ROAD USER**
>
> "A NONMOTORIST SUCH AS A PEDESTRIAN, BICYCLIST, OTHER CYCLIST, PERSON ON PERSONAL CONVEYANCE OR AN INJURED PERSON WHO IS, OR IS EQUIVALENT TO, A PEDESTRIAN OR PEDALCYCLIST."
>
> FEDERAL HIGHWAY ADMINISTRATION

For the remainder of this assessment the term "people walking" will be used to refer to pedestrians, including people using a wheelchair or other medical personal mobility device, as well as people walking unassisted. The term "people biking" refers to cyclists, including people riding unassisted and electric-assisted bicycles and tricycles. The term "person on personal conveyance" is used to describe a person using any other non-motorized means of transportation such as skateboards, scooters, and e-scooters. Furthermore, the Vulnerable Road User Safety Assessment must include a quantitative analysis of vulnerable road user fatalities and serious injuries which have specific definitions as outlined in the Model Minimum Uniform Crash Criteria guidelines.[3]

1.2 VULNERABLE ROAD USERS IN THE UNITED STATES AND IN OREGON

National Vulnerable Road User Safety. Vulnerable road users have accounted for a growing share of all United States roadway fatalities in recent years. In 2023, 7,314 people walking and 1,166 people biking were killed in traffic crashes nationally.[4] This represents a 3.7% decrease in pedestrian deaths and a 4.4% increase in bicyclist deaths compared to 2022.[5]

Oregon Vulnerable Road User Safety. In Oregon, from 2019 to 2023, vulnerable users constituted 18.3% of fatalities in Oregon. There were 124 vulnerable road users who died in traffic crashes in 2023 in Oregon, which is a slight decrease from the historic high of 137 in 2022.

Vulnerable User Safety Compared to Overall Roadway Safety Performance. Total traffic deaths in Oregon saw a significant jump in 2021 after the COVID-19 pandemic, increasing from roughly 500 deaths per year (2018-2020) to roughly 600 deaths per year (2021-2023). However, vulnerable user fatalities have steadily increased from 97 in 2019 to 124 in 2023. Preliminary 2024 data indicate a decrease, with 105 reported vulnerable road user deaths.

Progress Toward Meeting Safety Performance Targets. Safety Performance Management is part of Federal Highway Administration's (FHWA) Transportation Performance Management program, which FHWA defines as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals. FHWA has established safety performance measure

[3] MMUCC Guideline (transportation.gov) 4th edition

[4] https://www-fars.nhtsa.dot.gov/Main/index.aspx

[5] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813705

requirements for the purpose of carrying out the Highway Safety Improvement Program and assessing fatalities and serious injuries on all public roads. As noted in the Final Rule on the safety performance measures, “State [departments of transportation] and [metropolitan planning organizations] will be expected to use the information and data generated as a result of the new regulations to inform their transportation planning and programming decision-making and directly link investments to desired performance outcomes. FHWA expects that the new performance measures outlined in this rule will help State DOTs and MPOs make investment decisions that will result in the greatest possible reduction in fatalities and serious injuries.”[6] One of the five performance measures state departments of transportation are required to report to FHWA annually focuses on vulnerable road users: Number of Non-motorized Fatalities and Non-motorized Serious Injuries.[7]

United States Department of Transportation’s Safety Performance Management Final Rule establishes the process for ODOT to select and report their safety targets, and the process that FHWA will use to assess whether ODOT has met or made significant progress toward meeting safety targets. According to the FHWA State Highway Safety Report for Oregon, the state did not meet or make significant progress toward its targets in any of the five performance areas, including non-motorized fatalities and serious injuries. This has been the case for the past eight reporting years.[8]

Federal law places requirements on states that have not met or made significant progress toward meeting safety targets. The Safety Performance Management Final Rule requires Oregon to spend a minimum amount of funds on safety projects in future years and submit a Highway Safety Improvement Program Implementation Plan to FHWA describing actions the state will take to improve performance.

Beginning in 2021, the Vulnerable Road User Safety Special Rule also requires that in states where vulnerable road users make up 15% or more of annual traffic fatalities, the state must spend at least 15% of its highway safety funds on projects that address the safety of vulnerable users. In 2023, Oregon experienced 124 vulnerable user fatalities, which is 21.1% of the 587 fatalities recorded that year.[9]

1.3 FAIRNESS AND VULNERABLE ROAD USER SAFETY

Fairness in transportation seeks to achieve safe outcomes for all road users by identifying and addressing the systemic conditions that create higher risks for some communities, and by prioritizing strategies that respond to those differences. Economically and socially impacted communities, including those with limited economic resources and areas experiencing systemic barriers to safe and reliable transportation are overrepresented in vulnerable road user crashes. These disparities are influenced by a combination of systemic factors, including limited access to safe transportation options, historic underinvestment in infrastructure, and inequitable land use patterns that affect conditions for people walking and biking. As a result, these communities experience a disproportionate share of risk,

[6] Federal Register : National Performance Management Measures: Highway Safety Improvement Program

[7] State Safety Performance Targets, USDOT. https://safety.fhwa.dot.gov/hsip/spm/state_safety_targets/

[8] State Highway Safety Report (2023) - Oregon. https://www.fhwa.dot.gov/tpm/reporting/state/safety.cfm?state=Oregon

[9] ODOT Crash Data Viewer. https://www.oregon.gov/odot/Data/Pages/Crash-Data-Viewer.aspx

which underscores the need for targeted interventions and policies to address these systemic conditions and improve road safety for all.

As highlighted in Oregon's TSAP, areas with the highest number of people with limited economic resources and higher proportions of historically underrepresented racial and ethnic populations experience pedestrian injury rates nearly three times higher than areas with the lowest number of these populations. The Community Risk Index[10] was incorporated into the analysis to further address transportation-related disparities, focusing on fatal and serious injury crash rate (per 100k population) as described in Section 2.2. It is important to note that this crash-based analysis is distinct from the subsequent risk-based analysis discussed later in the document.

Identifying a range of complex, systemic, and historical factors that influence the safety of people walking and biking is crucial. The analysis and strategies in this Safety Assessment underscore the need for safety improvements to support communities experiencing high-risk transportation conditions in Oregon.

1.4 SAFE SYSTEM APPROACH CONSIDERATIONS

The 2023 Oregon Transportation Plan calls for a safe system approach to safety, with the goal to "enable safe travel for all people, regardless of their age, ability, race, income, or mode of transportation." The Safe System Approach starts with the belief that it is unacceptable to allow deaths and serious injuries to occur on the surface transportation system. It also acknowledges that road users are human beings who sometimes make mistakes, and those mistakes may lead to crashes. Therefore, safety must be addressed proactively through systems that create conditions and redundancies reducing the likelihood of a mistake or crash resulting in death or serious injury. The Safe System Approach is described in detail in TSAP Chapter 3 Foundation: Guiding Principles.

1.5 SAFETY AS A PUBLIC HEALTH ISSUE

Socioeconomic and health disparities influence risk and outcomes in crashes involving vulnerable road users. Differences in health outcomes are shaped by broader social and environmental conditions, including access to health care, safe infrastructure, and community resources, which can affect mobility and exposure to risk. In addition to these conditions, people walking and biking are more exposed to traffic-related risks than occupants of motor vehicles, increasing the likelihood of severe injury in a crash and directly impacting public health.

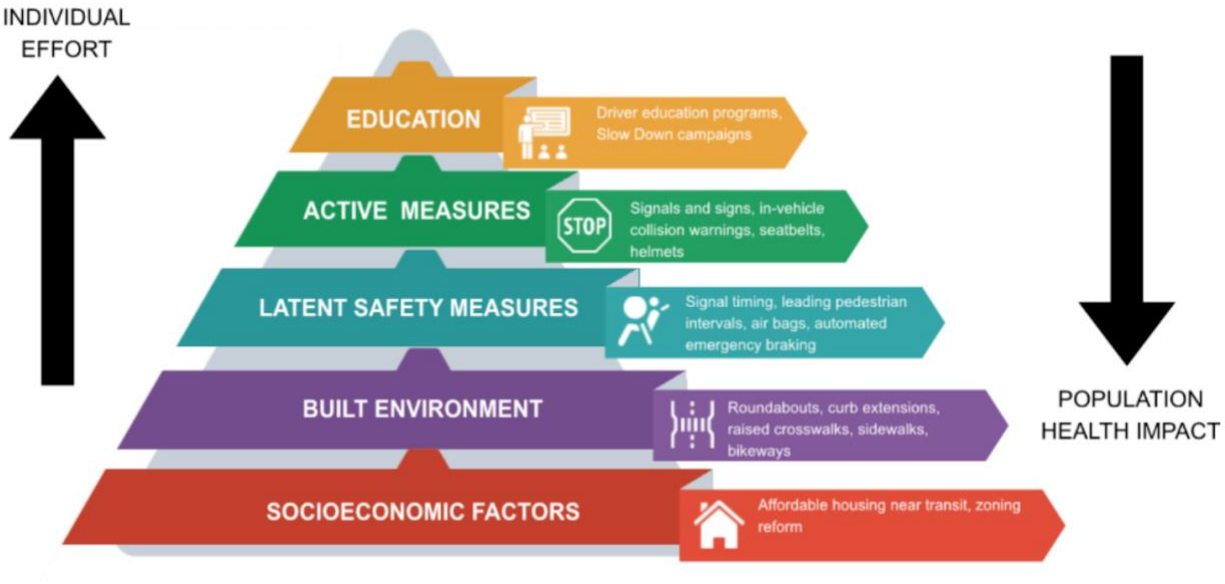
The public health field has adopted a health impact pyramid to understand which interventions, countermeasures, and strategies have the greatest impact on community change. This type of model can also be applied to changes in transportation safety culture.

The pyramid shown in Figure 1[11] applies the health impact model to the types of interventions, strategies, and countermeasures that are implemented to prevent fatal and severe traffic crashes. The base of the pyramid consists of broader societal changes, such as income and educational attainment

[10] Community Risk Index, Oregon DOT
[11] The Safe System Pyramid: A new framework for traffic safety, Transportation Research Interdisciplinary Perspectives, 2023. https://www.sciencedirect.com/science/article/pii/S2590198223001525

and street design. Moving up the pyramid, the interventions become more targeted toward groups or individuals. This includes things such as enforcement, education, and marketing. These have been shown to be effective but can require more effort because the intervention is at an individual rather than community-wide level. All levels of the pyramid are important points of change and express the need to have a multi-layered approach to creating safety strategies.

FIGURE 1. TRANSPORTATION SAFETY PYRAMID



1.6 COORDINATION WITH OTHER OREGON TRANSPORTATION EFFORTS

Addressing the safety of vulnerable road users through a multifaceted, collaborative, and comprehensive approach is essential to provide safe transportation options for everyone. The United States Department of Transportation's National Roadway Safety Strategy commits the department to respond to the current crisis in traffic fatalities by "taking substantial, comprehensive action to significantly reduce serious and fatal injuries on the Nation's roadways." The strategies outlined in the Vulnerable Road User Safety Assessment align with and support relevant nationwide actions of the United States Department of Transportation as well as Oregon's policy and modal plans.

In Oregon, the following statewide modal and topical plans include declarations, strategies, and implementing actions related to vulnerable road user safety. These plans (and others in Oregon) are integrated as illustrated in Figure 2.

FIGURE 2. INTEGRATED TRANSPORTATION PLANNING[12]



Oregon Transportation Plan. The 2023 Oregon Transportation Plan commits to "enable safe travel for all people, regardless of their age, ability, race, income, or mode of transportation" with an objective to "Implement a holistic, proactive approach to system safety that eliminates the occurrence of people being killed or seriously injured on the transportation system by anticipating human mistakes and recognizing the vulnerability of people on the road." Implementing actions related to vulnerable road users are many, including the following:

- Plan, design, construct, operate, and maintain the transportation system to reduce speed differentials on roadways; provide context-appropriate physical and temporal separation between different modes of travel.
- Reduce the potential severity of crashes in the event of user error by applying proven countermeasures, including lighting, physical separation, staggered signal phasing, and context-specific speed management techniques.
- Adopt safety messaging across all agencies to reflect human fragility and the principles of a Safe System approach so that transportation safety is integrated into everyday decision-making for the public (individual drivers, passengers, and people walking, rolling, and biking).

Transportation Safety Action Plan (TSAP). The 2026 Oregon Transportation Safety Action Plan, which serves as Oregon's Strategic Highway Safety Plan, states that "Oregon envisions no fatalities or serious injuries on Oregon's transportation system by 2050." The safety of people walking and rolling is

[12] Oregon Transportation Plan. https://www.oregon.gov/odot/planning/pages/plans.aspx

an emphasis area in the TSAP, and several actions are focused on making Oregon safer for vulnerable road users.

Strategic Action Plan. The Strategic Action Plan is focused on "accelerating the development of a transportation system that is modern, reliable, and serves all Oregonians in an efficient, environmentally responsible, and safe manner." Improving safety is a core focus within this plan.

Oregon Bicycle and Pedestrian Plan. The 2016 Oregon Bicycle and Pedestrian Plan provides a decision-making framework for walking and biking efforts in the State within the context of the overall transportation system. It includes a declaration to "…an evaluation and revision of Oregon's approach to safe walking and biking facilities to eliminate deaths and serious injuries." It includes dozens of implementing actions, including the following:

- Provide education and outreach to school children about walking and biking options and how to safely use those modes and develop safe walking and biking connections to schools.
- Build and maintain partnerships with local jurisdictions, schools and education districts, the Oregon Department of Education, the Oregon Health Authority, and local transportation options providers through collaborative efforts to endorse, promote and implement Safe Routes to School Programs.
- Improve pedestrians' and bicycle users' perceived safety by supporting personal security.
- Promote training curricula for traffic engineers, planners, developers, and other transportation officials to conceptualize, design, and achieve a system that safely accommodates a multitude of transportation uses and users and provides viable transportation options.

Oregon Transportation Options Plan. The 2015 Oregon Transportation Options Plan "envisions a safe, affordable, and efficient transportation system for Oregon residents, employees, and visitors." It casts a vision of "Oregon communities [that] are prosperous, enjoyable, and healthy places to live; places where people of all ages and abilities benefit from active, shared transportation options." Actions include the following:

- Raise awareness of the availability of transportation options through the integration of road safety education for all modes into the classroom and through lifelong learning, including traffic diversion programs and community programs such as Safe Routes to Schools, driver education, licensing renewals, and community cycling workshops.
- Promote training curricula for traffic engineers, planners, developers, and other transportation officials to conceptualize, design, and achieve a system that safely accommodates a multitude of transportation uses and users and provides viable transportation options.
- During project development look for opportunities that encourage efficient multimodal travel and maximize system safety.

Oregon Public Transportation Plan. The 2019 Oregon Public Transportation Plan update provides a long-range vision and policy framework to help shape the public transportation system over the next 25 years, considering emerging statewide trends, opportunities, and challenges. Key initiatives include the following:

- *Public Transportation Plan Integration.* Promote an effective, efficient, and seamless public transportation system, building on the need to plan together.

- *Regional and Intercity Service.* Provide public transportation service between cities and regions and connect Oregon communities to other states.
- *Public Transportation Technology.* Include tools that enable more efficient operations and provide real-time travel information to riders, while monitoring how new services may or may not serve all populations, including people with disabilities.

Oregon Statewide Transportation Strategy. The 2013 Oregon Statewide Transportation Strategy is a state-level scenario planning effort that examines all aspects of the transportation system, including the movement of people and goods, and identifies a combination of strategies to reduce greenhouse gas emissions. The Statewide Transportation Strategy identifies a variety of effective greenhouse gas emissions reduction strategies in transportation systems, vehicle and fuel technologies, and urban land use patterns to address the impacts of climate change. Implementing actions relevant to vulnerable road users include the following:

- Constructing appropriate bicycle and pedestrian facilities, including safe and convenient crossings.
- Using educational materials and special signing to change driving practices.
- Developing incident response and motorist assistance programs.

Oregon Highway Plan. The Oregon Highway Plan, most recently amended in 2023 and slated for a full update in 2027, defines policies and investment strategies for Oregon's state highway system for the next 20 years. It further refines the goals and policies of the Oregon Transportation Plan and is part of Oregon's Statewide Transportation Plan. Related actions include the following:

- Address pedestrian and bicycle access issues and design concerns when designing grade-separated crossings.
- Continually improve safety for all users of the highway system using solutions involving engineering, education, enforcement, and emergency medical services.
- Whenever safety improvement is the stated objective of the project, include goals and a process to evaluate the outcome and further refine the project selection and solution process.

2. VULNERABLE ROAD USER SAFETY PERFORMANCE

The Vulnerable Road User Safety Assessment includes an assessment of safety performance for vulnerable road users. The Oregon Department of Transportation (ODOT) performed quantitative analyses of vulnerable road user fatalities and serious injuries, using relevant crash data and considering demographics at the locations of those crash events.

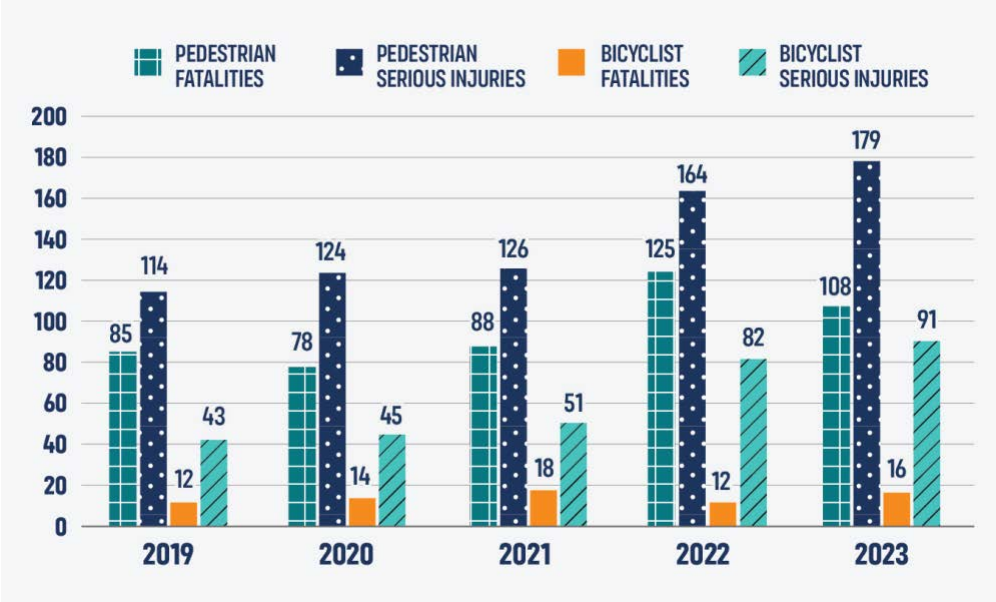
ODOT analyzed human behavior and contributing factors, systemic gaps, factors such as lighting condition and posted speed limit, and a series of other risk factors as described below. Further details regarding the analysis methodology are available in the technical memos developed in support of this assessment.

2.1 VULNERABLE USER HISTORICAL CRASH TRENDS

After a gradual 30-year decline, traffic fatalities involving people walking are at a 40-year high nationally. Oregon mirrors these national trends. In the five-year period between 2005 and 2009, an average of 47 people walking were killed in traffic crashes each year in Oregon. In comparison, between 2019 and 2023, an average of 97 people walking were killed in traffic crashes each year, a 106% increase.

In the five-year period between 2019 and 2023, a total of 484 people walking and 72 people bicycling were killed in vehicle crashes on Oregon roadways (see Figure 3). Another 707 people walking and 312 people bicycling sustained serious injuries during that period. This section describes some of the most notable vulnerable road user safety trends.

FIGURE 3. PEDESTRIAN AND BICYCLIST FATALITIES AND SERIOUS INJURIES, OREGON, 2019-2023



2.2 CRASH TRENDS - SAFER PEOPLE

The Safe System Approach[13] encourages safe, responsible behavior by all road users and road owners to create conditions that enable everyone to reach their destination unharmed. To evaluate human behavior trends related to vulnerable user safety and social determinants of health safety outcomes, ODOT evaluated contributing factors and participant error data associated with crashes.

2.2.A CONTRIBUTING FACTORS BASED ON CRASH REPORTS

Drivers, pedestrians, and bicyclists are safer when they comply with traffic laws and use roadway facilities correctly. The Safe System Approach to roadway safety emphasizes that humans make mistakes and the need to proactively build systems that reduce the likelihood that these mistakes result in fatal or serious injury crashes. Contributing factors are often identified during crash investigations and can help inform the selection of appropriate safety treatments. They include a wide range of conditions, actions, or events that, when combined, increase the likelihood of a crash occurring.

Contributing factors can relate to several elements of the system, including road user behaviors and infrastructure. Behavior-related contributing factors may include activities like speeding, distracted driving, impaired driving, or failure to obey traffic laws. Other factors include road conditions, weather, time of day, and design or mechanical issues with a vehicle. For example:

- Separation of modes: Bicyclists and pedestrians are safer when they are separated from motor vehicles. When facilities are not separated, there is dense traffic, or visibility is limited, pedestrians might walk in the roadway, or bicyclists may opt to ride on sidewalks or against the direction of traffic.
- Crossing locations: The likelihood of a crash increases when crossing locations are limited and/or when pedestrians and bicyclists cross at locations not intended for crossing.

Errors are a subset of contributing factors and refer to mistakes or incorrect actions made by a person involved in the crash. In general, they represent deviations from safe and appropriate road user actions that directly contributed to the crash. Common errors include running a red light, failing to yield the right of way, making an improper lane change, or following too closely. Errors coded in the crash data are based on law enforcement crash records; this information helps inform strategies to support safer behaviors. It is important to note that more than one participant in a crash may commit more than one error in a crash.

Crashes involving vulnerable road users can result from a variety of contributing factors and errors, both by the road users themselves and by other participants. Common contributing factors and error codes in these crashes may include:

- Failure to Yield Right of Way (Failure to Stop or Yield): This error can occur when one road user does not give the appropriate right of way to another road user when required by traffic laws.

[13] This assessment uses the US Department of Transportation Safe System Approach elements for organization and alignment. The TSAP includes a sixth element not addressed here (Safer Land Use) but detailed in Chapter 3. Foundation: Guiding Principles.

- Distracted Driving: Drivers using mobile phones, adjusting in-car systems, or engaging in any form of distracted driving can collide with vulnerable road users.
- Speeding: Motorists exceeding the speed limit or traveling too fast for road conditions may have reduced reaction time and stopping distance, increasing the risk of striking vulnerable road users.
- Alcohol/Drug Involvement: This refers to a state when a person's physical or mental abilities are diminished or restricted, rendering them less capable of performing certain tasks or functions in a safe manner; this most often includes alcohol and/or drugs.

Table 1 below shows the primary contributing factors reported in Oregon crashes between 2019 and 2023 that involved a vulnerable road user fatality or serious injury. The percentages show the proportion of all assigned contributing factors for fatal or serious injury vulnerable road user crashes. These factors come from cause, error, and/or event codes derived from police reports which include accounts from the person driving and any witnesses. It is important to note that these reports may not include the account of the vulnerable user who was seriously injured or killed.

As shown, road users failing to yield contribute to approximately 54% of fatal and serious injury crashes involving people bicycling and to approximately 41% of fatal and serious injury crashes involving people walking. Other common contributing factors include non-motorists illegally in the roadway[14] (48% of fatal and serious injury crashes involving people walking and 16% of fatal and serious injury crashes involving people bicycling) and non-motorists identified by the reporting officer/witness as not visible or wearing non-reflective clothing[15] (36% of fatal and serious injury crashes involving people walking and 16% of fatal and serious injury crashes involving people bicycling).

TABLE 1. PRIMARY CONTRIBUTING FACTORS IN VULNERABLE USER FATAL & SERIOUS INJURY CRASHES

CONTRIBUTING FACTOR	% OF PEDESTRIAN F&SI	% OF BICYCLIST F&SI
DID NOT YIELD RIGHT-OF-WAY	40.6%	54.4%
NON-MOTORIST ILLEGALLY IN ROADWAY	47.7%	15.8%
NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHING	35.6%	16.1%
DISREGARDED TRAFFIC SIGNAL	9.4%	11.7%

Although there are additional factors involved (not included in this table), none of these were identified as contributing significantly to fatal and serious injury crashes involving vulnerable road users in Oregon. It is important to note that the low occurrence of speeding, inattention, or other behaviors being

[14] Non-motorists illegally in roadway include VRUs who violated Oregon State laws. Some examples include crossing a freeway (except from a disabled vehicle), suddenly stepping into the roadway causing a hazard, etc.

[15] Although there is no legal requirement for people walking or biking to wear high-visibility or reflective clothing, this has been included as an option on police crash reporting forms in Oregon because it is helpful for law enforcement to determine whether a driver had a reasonable amount of time (based on speed, lighting, geometrics, etc.) to identify a person in the roadway and avoid a crash.

cited as contributing factors to crashes may be because people involved in a crash are unlikely to self-report such behavior. Underreporting can make it challenging to gather accurate data and statistics on the prevalence of these factors which are needed to diagnose and implement effective safety treatments.

Road User Distraction. Distraction includes driving, walking, or biking while engaging in another activity that diverts the road user's attention away from safely navigating the transportation system. The proliferation of cell phones and other mobile electronic devices has led to increased distractions. Available data and anecdotal evidence indicate that distraction is a significant traffic safety concern. Distraction can be a difficult element to include in the crash report, because it relies on a witness testimony or a road user's self-reporting. Table 2 below shows the average yearly proportion of fatal and serious injury crashes that involve a vulnerable user and report distraction between 2019 and 2023.

TABLE 2. PROPORTION OF FATAL AND SERIOUS INJURY CRASHES THAT INVOLVE A VULNERABLE ROAD USER AND REPORT DISTRACTION, 2019-2023

FATAL AND SERIOUS INJURY CRASHES	AT LEAST ONE DISTRACTED ROAD USER
INVOLVING A PERSON WALKING	10.0%
INVOLVING A PERSON BIKING	10.6%

Road User Alcohol and/or Drugs Involved. Fatal and serious injury crashes involving people walking or biking are affected by alcohol and/or other drugs, both for motor vehicle drivers and people walking or biking.

As shown in Table 3, crash reports indicate that 34% of fatal and serious injury crashes that involve a person walking also include at least one road user affected by alcohol or other drugs; for fatal and serious injury crashes involving a person biking, more than 14% included alcohol and/or other drugs involved.

TABLE 3. PROPORTION OF FATAL AND SERIOUS INJURY CRASHES THAT INVOLVE A VULNERABLE ROAD USER AND REPORT ALCOHOL AND/OR OTHER DRUGS INVOLVED

FATAL AND SERIOUS INJURY CRASHES	AT LEAST ONE INVOLVED ROAD USER (ALCOHOL AND/OR OTHER DRUGS)
INVOLVING A PERSON WALKING	34.0%
INVOLVING A PERSON BIKING	14.5%

2.2.B OVERREPRESENTATION BY THE COMMUNITY RISK INDEX

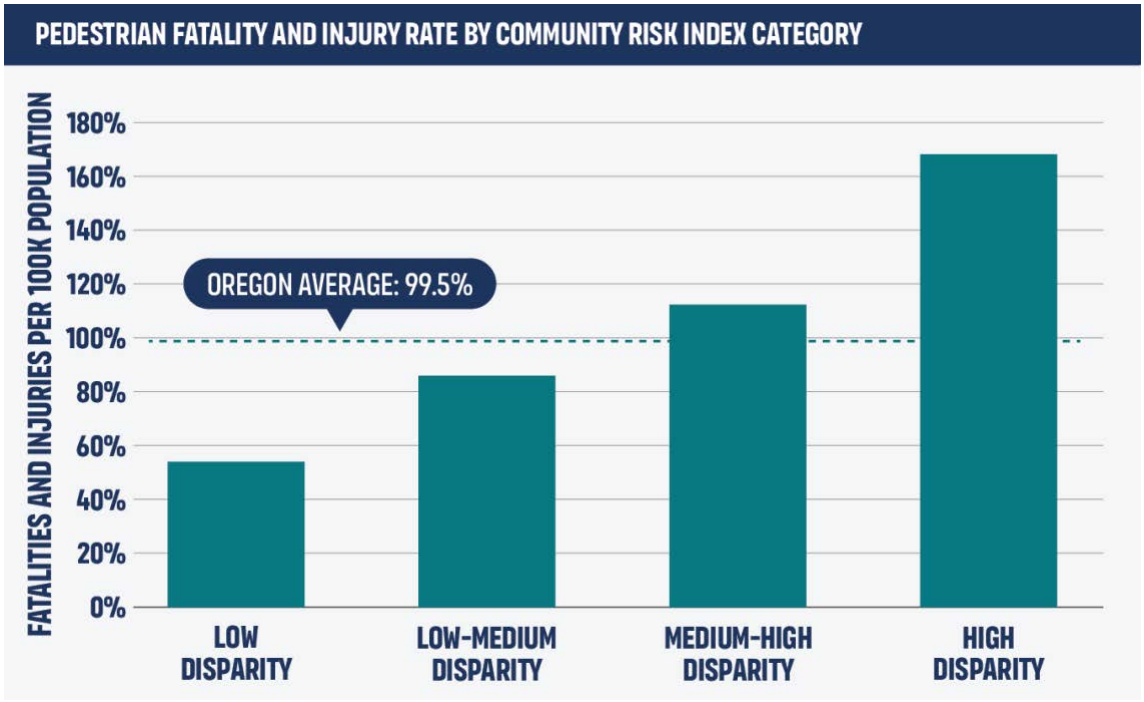
The Community Risk Index is a measure of disparities in transportation outcomes, focusing on communities experiencing economic and social inequities in Oregon. It serves as a decision support tool, assisting agency staff in identifying areas with higher level of disparity, thereby aiding in the allocation of transportation resources to reduce these disparities. The Community Risk Index is informed by socio-demographic data from the U.S. Census Bureau's American Community Survey. More information about the Community Risk Index is available on the ODOT website.[16]

Community Risk Index Values are categorized as:

- Low Disparity.
- Low-Medium Disparity.
- Medium-High Disparity.
- High Disparity.

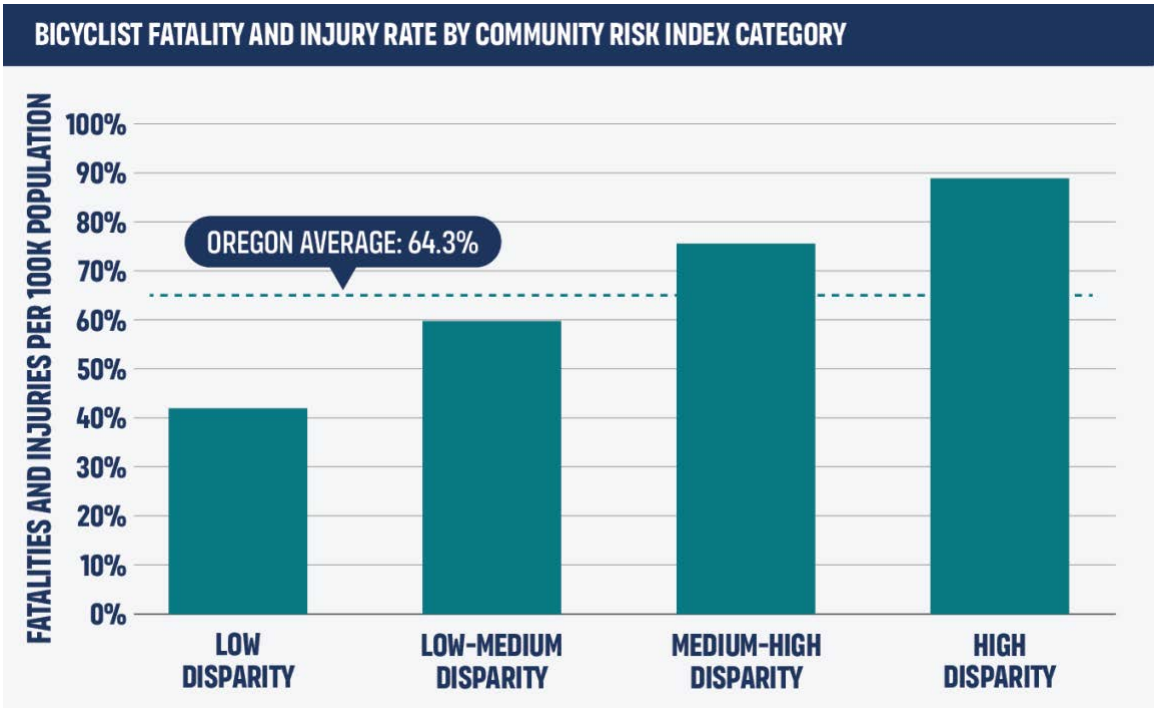
Figure 4 and Figure 5 show the pedestrian and bicyclist fatalities and severe injuries per 100,000 population for each Community Risk Index disparity level. Based on the analysis, medium-high and high disparity areas have a higher number of fatalities and severe injuries per population compared to low and low-medium disparity areas.

FIGURE 4. PEDESTRIAN OVERREPRESENTATION ANALYSIS BY COMMUNITY RISK INDEX



[16] Social Equity, Oregon Department of Transportation. https://www.oregon.gov/odot/equity/pages/about.aspx

FIGURE 5. BICYCLE OVERREPRESENTATION ANALYSIS BY COMMUNITY RISK INDEX



2.2.C OVERREPRESENTATION BY RACE AND ETHNICITY

Table 4 shows the number of fatalities by race and ethnicity group during the five-year period from 2019 to 2023 using data from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System. Population data is based on the 2021 U.S. Census Bureau dataset.[17] Of the total 545 fatalities reported in the Fatality Analysis Reporting System dataset, Black or African Americans and American Indians or Alaska Natives are the most over-represented in fatal crashes compared to the total population.[18]

TABLE 4. VULNERABLE ROAD USER FATALITIES BY RACE AND ETHNICITY, 2019-2023

RACE / ETHNICITY	NUMBER OF VRU FATALITIES	VRU FATALITIES PROPORTION	POPULATION (ESTIMATE)[19]	POPULATION PROPORTION
WHITE (NON-HISPANIC)	408	75%	3,138,802	74%
HISPANIC	64	12%	512,544	12%
TWO OR MORE RACES	4	1%	177,908	4%

[17] https://www.census.gov/quickfacts/OR?
[18] Understanding Pedestrian Crash Injury and Social Equity Disparities in Oregon, Project SP 841, Phase I Analysis. Oregon DOT. https://www.oregon.gov/odot/Programs/ResearchDocuments/SPR%20841Injuries-Equity.pdf
[19] Population is estimated using the race percentage and the total population of all races using parameters from this website: https://www.census.gov/quickfacts/OR?

RACE / ETHNICITY	NUMBER OF VRU FATALITIES	VRU FATALITIES PROPORTION	POPULATION (ESTIMATE)[19]	POPULATION PROPORTION
ASIAN, ASIAN AMERICAN, OR OTHER PACIFIC ISLANDER ALONE	9	2%	232,975	6%
BLACK OR AFRICAN AMERICAN ALONE	14	3%	97,426	2%
AMERICAN INDIAN OR ALASKA NATIVE ALONE	26	5%	80,482	2%
OTHER RACE OR UNKNOWN	20	4%	0	0%
TOTAL	545	100%	4,240,137	100%

2.3 CRASH TRENDS - SAFER ROADS

The Safe System Approach encourages transportation infrastructure design that prioritizes safety for the traveling public and accommodates human mistakes and injury tolerances to reduce the severity of crashes that do occur. To evaluate environmental and roadway design elements related to the safety of vulnerable users, reported roadway condition data associated with vulnerable user crashes was analyzed.

2.3.A INTERSECTIONS AND SEGMENTS

Location on the road has a different potential impact for vulnerable road user type—pedestrian or bicyclist—related to fatalities and serious injuries. Roadway segments tend to be the primary location for crashes involving pedestrians (Table 5). Roadway segments account for 60% of pedestrian fatalities and serious injuries, while intersections account for 40%. Conversely, bicyclists face a higher risk at intersections. Intersections account for 61% of fatalities and serious injuries to bicyclists, while roadway segments account for 39%.

TABLE 5. VULNERABLE USER FATALITIES AND SERIOUS INJURIES BY LOCATION TYPE

ROAD USER	% OF F&SI AT INTERSECTIONS	% OF F&SI ON SEGMENTS	TOTAL
PEDESTRIAN	40%	**60%**	100%
BICYCLIST	**61%**	39%	100%

2.3.B LIGHTING CONDITIONS

Navigating the transportation system can be more challenging at night for all road users, including people walking and rolling. As shown in Table 6 below, 67 percent of fatal and serious injury crashes involving people walking occur in dark, dawn, or dusk conditions. Crashes involving people biking exhibit different characteristics, with only 26 percent occurring in dark, dawn, or dusk. Understanding

these differences is challenging without accounting for factors such as exposure (e.g., the number of bicyclists and miles traveled under both daylight and dark conditions), making it difficult to establish a cause-and-effect relationship.

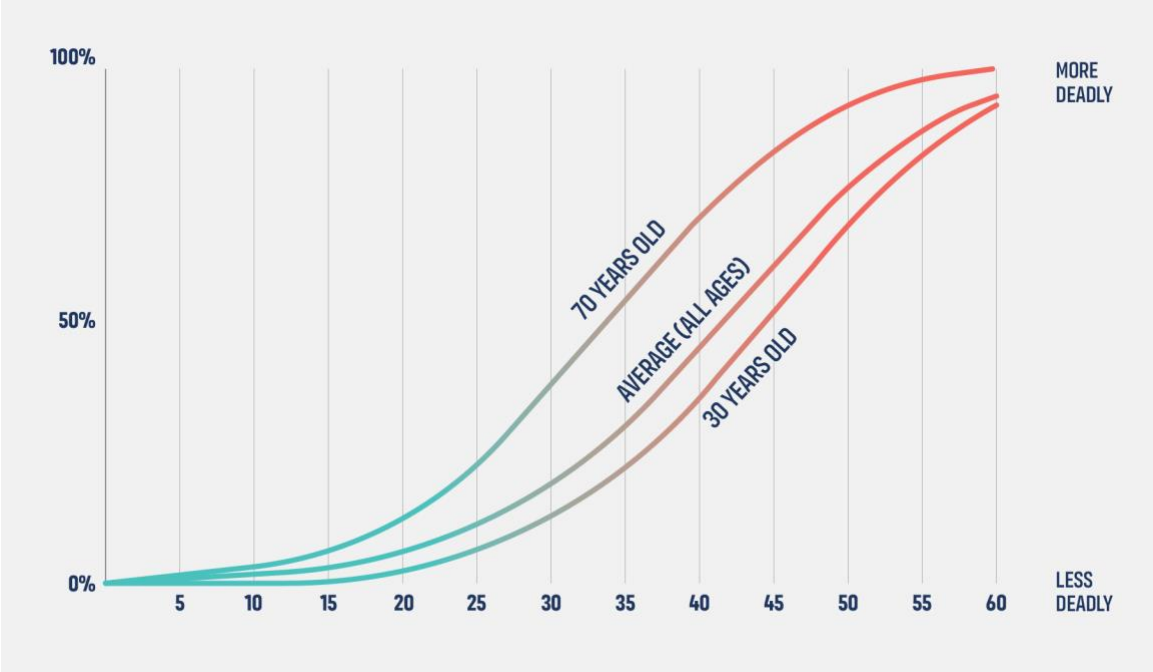
TABLE 6. OREGON VULNERABLE USER FATALITIES AND SERIOUS INJURIES BY LIGHTING CONDITION

ROAD USER	DARK	DARK (WITH LIGHTS)	DAWN/DUSK	DAY
PEDESTRIAN	24%	**37%**	6%	33%
BICYCLIST	8%	13%	5%	**74%**

2.4 CRASH TRENDS - SAFER SPEEDS

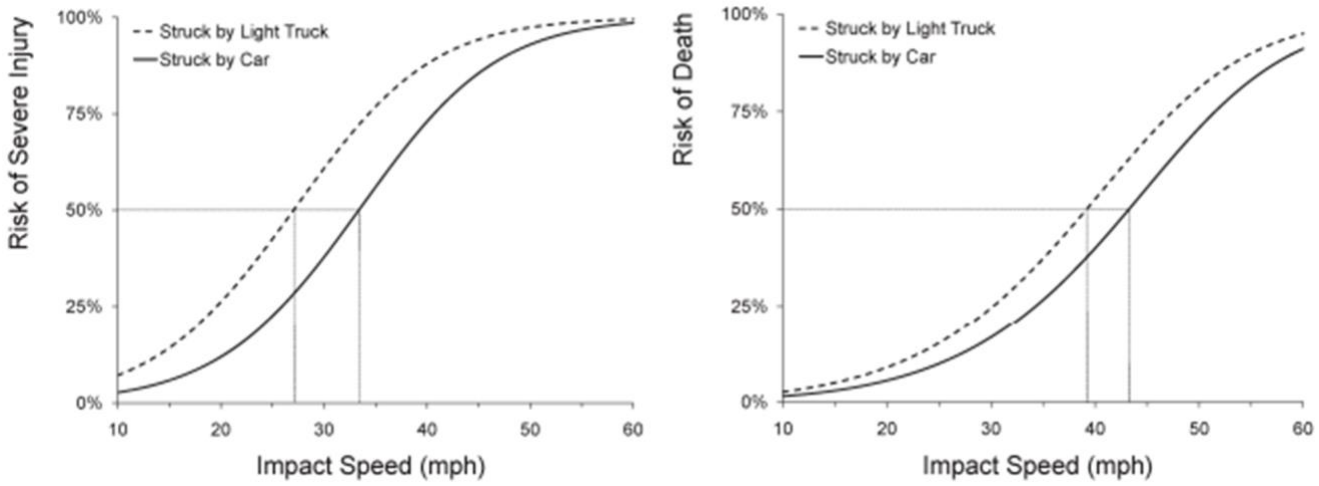
The probability of a vulnerable user being seriously injured or killed in a crash increases as vehicle speed increases. Survivability at different speeds is further influenced by socio-environmental factors such as a person's age or health. For example, as illustrated in Figure 6, a 30-year-old has a 50% chance of being killed in a crash with a car traveling 45 mph, while a 70-year-old has a 50% chance of being killed in a crash with a car traveling 35 mph.

FIGURE 6. RISK OF PEDESTRIAN-VEHICLE FATALITY BY VEHICLE OPERATING SPEED AND PEDESTRIAN AGE



The size, type, and design of the vehicle involved in a crash further influence the impact of speed on vulnerable user crash outcomes. As illustrated in Figure 7, the probability of a vulnerable user being seriously injured or killed in a crash increases even more rapidly as the speed and size of vehicles increase.

FIGURE 7. RISK OF SEVERE INJURY OR DEATH BY VEHICLE TYPE

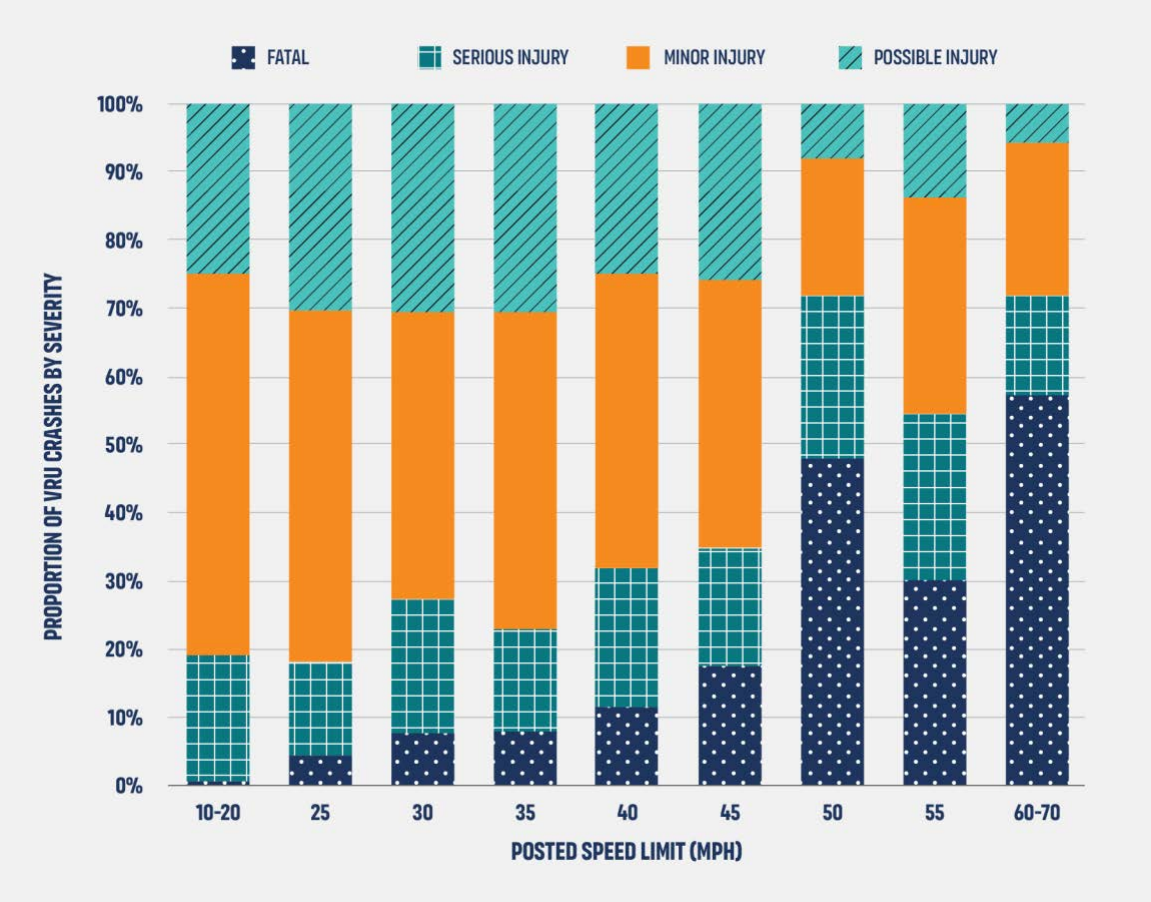


To evaluate trends related to speed and vulnerable user safety in Oregon, ODOT evaluated posted speed limits and vulnerable user crash data.

Vulnerable User Crash Severity by Posted Speed Limit. Figure 8 below shows the number of vulnerable user fatalities and injuries on roadways by posted speed limit,[20] which serves as a rough estimate for relative motor vehicle operating speed. It is important to note that the posted speed limit is available on state highways but is not consistently reported for local roadways. Of the vulnerable road user crashes studied, approximately 30% did not include a posted speed limit and are not reflected in Figure 8.

[20] Speed limit data collected from the law enforcement crash reports for each reported crash.

FIGURE 8. PROPORTION OF VULNERABLE ROAD USER CRASHES BY INJURY SEVERITY AND POSTED SPEED LIMIT, OREGON, 2019-2023



The figure demonstrates that higher posted speed limits are correlated with greater severity. For example, at posted speed limits of 45 mph and higher, very few possible injuries or minor injuries were reported.

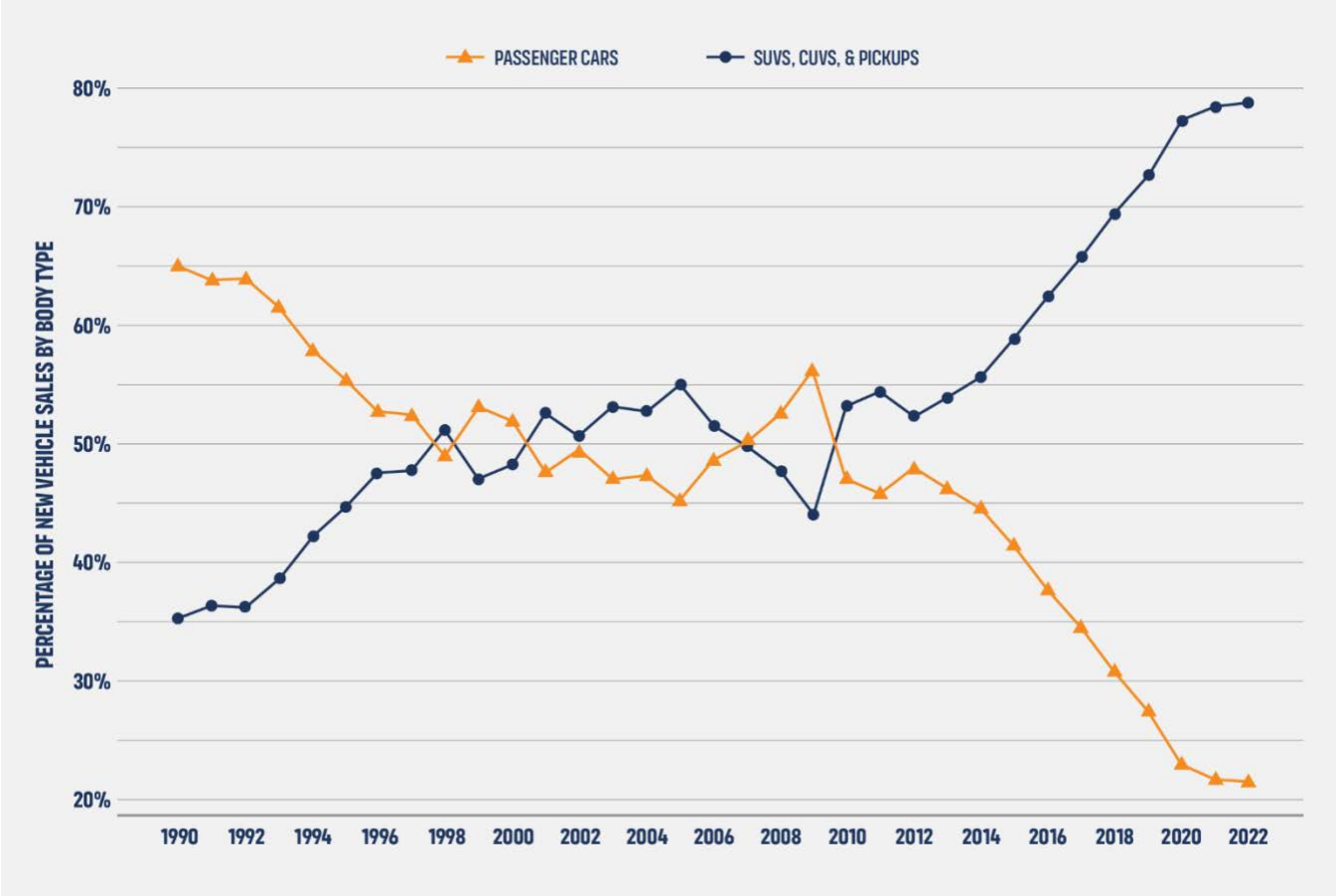
2.5 CRASH TRENDS – SAFER VEHICLES

Vehicles are designed and regulated to minimize the severity of crashes – primarily focused on the vehicle's occupants. Unfortunately, some changes to vehicle design may increase the safety risk to vulnerable road users outside vehicles. As vehicles increase in weight and size, often reflecting consumer preferences and accommodating features such as expanded protective zones for occupant safety and space for electric batteries, the likelihood of a pedestrian or bicycle crash leading to fatal or serious injuries also rises. Larger, heavier vehicle designs also often require structures that can obstruct a driver's view of vulnerable users when making turns or backing up, increasing the likelihood of a crash.

The average weight of passenger vehicles has grown, with the average vehicle up 6% in total weight, with pickup trucks up 30% compared to pickups of the 1970s. Since 2010, the percentage of new

vehicle sales in the U.S. that are light trucks (sport utility vehicles, crossover utility vehicles, and pickups) has increased from approximately 53% to nearly 80% of all sales (Figure 9).

FIGURE 9. VEHICLE SALES BY BODY TYPE, 1990-2022



Source: Bureau of Transportation Statistics (Table 01-17)

At the aggregate level, sport utility vehicles and pickup trucks are linked to an increase in overall traffic injury among vehicle occupants and vulnerable road users. Without significant efforts directed towards safer vehicles, this trend is likely to continue.

2.6 CRASH TRENDS - POST-CRASH CARE

The Safe System Approach promotes increasing crash survivability through expedited access to emergency medical care, while creating a safe working environment for vital first responders and forensic teams investigating the scene.

Humans have a limited tolerance to crash forces, necessitating swift action when a crash occurs. This is particularly important for vulnerable users because the initial impact with a motor vehicle is likely to cause personal injury. The "Golden Hour" in the context of post-crash care refers to the critical period following a traumatic injury, such as a roadway crash, when the likelihood of a positive outcome is highest if the injured person receives prompt and effective medical treatment within the first 60 minutes after the injury occurs.

At the state level, Oregon's trauma system ensures that high-quality community resources are available to respond to individuals who are traumatically injured by establishing an integrated statewide system, including trauma regions and designated trauma care hospitals.[21]

Within the Oregon Health Authority, the Emergency Medical Services and Trauma Systems Section administers Oregon's emergency medical services data.[22] The Oregon Emergency Medical Services Information System is Oregon's prehospital emergency medical services data system. Oregon Emergency Medical Services Information System includes emergency medical service agency and personnel licensing, emergency medical service agency prehospital patient care reporting, and hospital trauma registry reporting. All licensed transporting emergency medical service agencies submit patient care reports electronically to this central repository.

FIGURE 10. MEDIAN RESPONSE TIME BY ODOT REGION

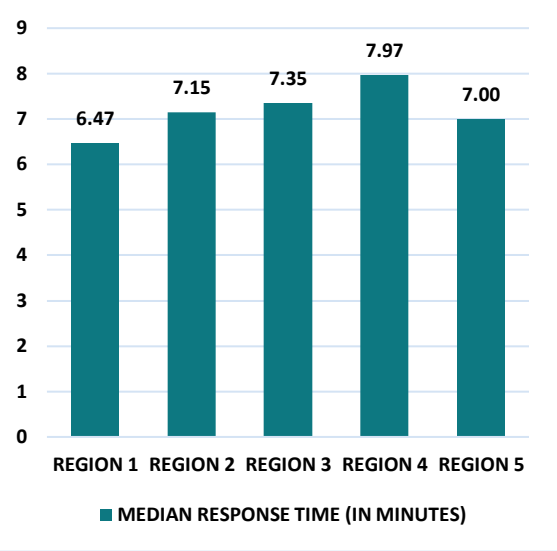
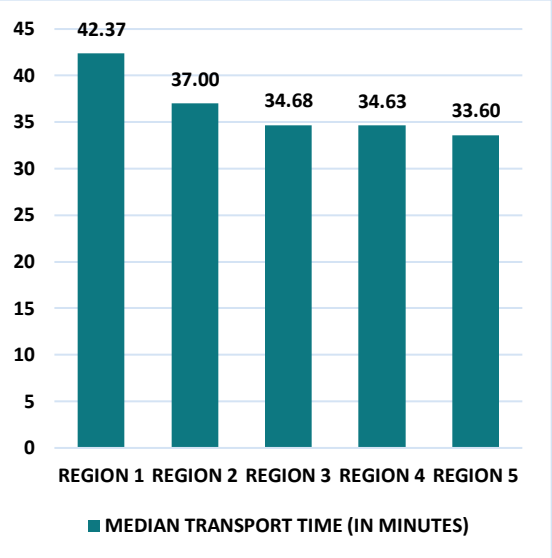


FIGURE 11. MEDIAN TRANSPORT TIME BY ODOT REGION



The efficiency of emergency medical services plays a critical role in ensuring the well-being of those involved in roadway crashes. Median response and transport time vary by region. Varying terrain and population densities pose unique challenges for emergency response teams. In densely populated urban areas, factors such as traffic congestion and street layout complexity can affect how quickly emergency services can reach the scene. On the other hand, in rural or remote regions, where

[21] Oregon Health Authority : The Oregon Trauma and Tertiary Care Program : Trauma Systems : State of Oregon
[22] Oregon EMS Data Strategic Plan, 2022-2024

distances are often greater and road conditions may be less predictable, emergency responders face a different set of challenges.

3. IDENTIFYING HIGH-RISK AREAS

The Highway Safety Improvement Program requires States to identify hazardous locations, sections, and elements that constitute a danger to all users, including vulnerable road users. In addition, as part of the quantitative analysis of vulnerable road user fatalities and serious injuries, States must identify areas as high-risk to vulnerable road users. The identification of high-risk locations used the same methodology as outlined in the 2023 Vulnerable Road User Safety Assessment, but with newer data. All other assumptions and calculations were unchanged.

3.1 DEFINITIONS

The following definitions are assumed for purposes of the Oregon Vulnerable Road User Safety Assessment. The terms can be combined to describe various outputs of the data-driven methodology (e.g., the "High-Injury Network" includes the specific roadway segments, intersections, or corridors that have a high number of Vulnerable Road User fatalities and serious injuries).

- **Risk Factor**: Elements identified as contributors to future vulnerable road user-involved crash risk, including the potential for future crash events and the potential for severe outcomes.
- **High-Risk**: Locations or facility types exhibiting the greatest number of vulnerable road user risk factors.
- **Network**: Specific roadway segments, intersections, or corridors.
- **High-Injury**: Locations or facility types exhibiting the greatest frequency of vulnerable road user fatalities and serious injuries.
- **Area**: A geographic region (e.g., a county, city, or sub-area of a city).
- **Facility Type**: A roadway segment or intersection with a roadway characteristic or combination of characteristics (e.g., suburban 5-lane arterial with a posted speed greater than 30 mph).

3.2 HIGH-RISK AREA SCORING

To identify high-risk areas, ODOT analyzed all public roadways in Oregon for the presence of risk factors and the frequency of crashes involving people walking or biking during the five-year period from 2019-2023. The following sections highlight how the risk score and crash score were calculated to identify high-risk areas.

Risk Score. The risk score was calculated using thirteen risk factors as shown below:

1. **Equity,** Medium-High or High (all segments).
2. **Functional Classification**, Minor Arterial or Major Collector (all segments).
3. **Annual Average Daily Traffic,** Between 10,000 and 40,000 (all segments).
4. **Schools,** Within 1 mile (all segments).
5. **Transit Stops,** Within 0.1 miles (all segments).
6. **Posted Speed Limit,** Greater than or equal to 35 mph (State highways only).
7. **Number of Lanes,** Greater than or equal to 2 lanes per direction (State highways only).
8. **Traffic Signals,** Within 0.5 miles (State highways only).
9. **Access Density,** Greater than or equal to 40 access points per mile (State highways only).
10. **Bike Lane,** No bike lane (urban State highways only).
11. **Sidewalk,** No sidewalk (urban State highways only).
12. **Shoulder Width,** Less than or equal to 6 ft (rural State highways only).
13. **Street Lighting,** No street lighting (ODOT Region 1 State highways only).

For this assessment, each roadway segment received 1 point for each present risk factor. Due to the limited availability of data (e.g., State highways versus non-State highways), and differing applicability of some of the risk factors (e.g., rural versus urban areas), some risk factors were only applicable to certain types of segments.

In summary, the total number of applicable risk factors was as follows:

1. Urban State highways in ODOT Region 1: 12.
2. Urban State highways in all other ODOT regions: 11.
3. Rural State highways in Region 1: 11.
4. Rural State highways in all other ODOT regions: 10.
5. Non-State highways: 5.

To provide a fair comparison among the five roadway categories, a normalized risk score was calculated for each segment by dividing the total number of risk factors present by the total number of applicable risk factors. For example, a non-State highway was evaluated for five risk factors and the total number of present risk factors was then divided by five. The value was then multiplied by 100 to represent a percentage of the total evaluated risk.

Crashes Per Mile Score. The crash score was calculated using the historical five-year crash data from 2019 to 2023. Vulnerable Road User crashes per mile were calculated, and the segments were distributed into several bins representing quartiles.

- Segments with 0 crashes received 0%.
- 1st quartile group received 25%.
- 2nd quartile group received 50%.
- 3rd quartile group received 75%.
- 4th quartile group received 100%.

Total Score. The total score was calculated using a combination of Crashes Per Mile Score and Risk Score. Because there was not a straightforward way to weight either of the two scores, ODOT combined risk factors and crash data to provide a comprehensive evaluation of safety. The risk score focuses on addressing root causes and reducing risk, while the crashes per mile score offers insight into current safety performance. Historically, traditional safety analyses have relied solely on crash history, which is not the best way to identify high-risk areas, especially for vulnerable road user crashes, given the small sample size of crash data. Therefore, ODOT created multiple combinations of weighting the risk score and crash score, and upon assessing each approach, decided on the following weighting: **80% Risk Score + 20% Crashes Per Mile Score.**[23]

Risk factors can capture trends and patterns not evident in crash history, especially when analyzing crashes involving vulnerable road users. ODOT decided to use an 80% weighting for the risk score because it places a stronger emphasis on proactively addressing risk factors, which can lead to long-term safety improvements for vulnerable road users.

The risk weighting factors utilized in the analysis were initially established using high-level statewide data that was accessible at the time. These factors serve as a foundational framework for prioritizing safety risk and treatments and provide an important starting point in our commitment to enhancing road safety for vulnerable users. It is important to acknowledge that vulnerable road user safety is a complex matter influenced by various factors that may not be fully captured in this comprehensive dataset. In addition, there may be unique challenges and characteristics that influence the nature of road safety risks for vulnerable road users not captured in current datasets. For example, in rural regions and in Tribal areas, vulnerable road users may need to travel longer distances to access essential services like schools, health care facilities, and stores, increasing their exposure to road risks.

To ensure the applicability and relevance of our safety strategies, continuous and in-depth analysis into the risk factors and associated weighting is necessary. Ongoing updates will allow us to refine the weighting factors, ensuring that they align with the specific requirements of safety analysis. Incorporating new and updated research findings as they become available will enable us to keep our safety initiatives optimally effective and responsive to evolving road safety challenges. In addition, collaborative engagement with local partners, including community members, safety experts, and transportation decision makers, can provide the necessary data and inputs to fine tune the risk factor analysis. This approach ensures that safety assessments are not only data-driven but also focused on the specific needs and concerns of facilities and areas, ultimately leading to more effective and targeted safety strategies. Incorporating other datasets that consider factors not accounted for in crash data

[23] ODOT analyzed several different weights for crash history and risk factors, including 50% of each. This 80%/20% decision will be re-evaluated in the future based on its effectiveness to identify safety needs.

helps create a more robust means to identify potential locations that could benefit from safety treatments.

3.3 VULNERABLE ROAD USER HIGH-RISK AREAS

To identify high-risk areas, ODOT applied its statistical methodology on all public roadways in Oregon. In this process, four interactive layers were created, which allowed for the identification of high-risk areas within an ArcGIS webmap[24] as follows:

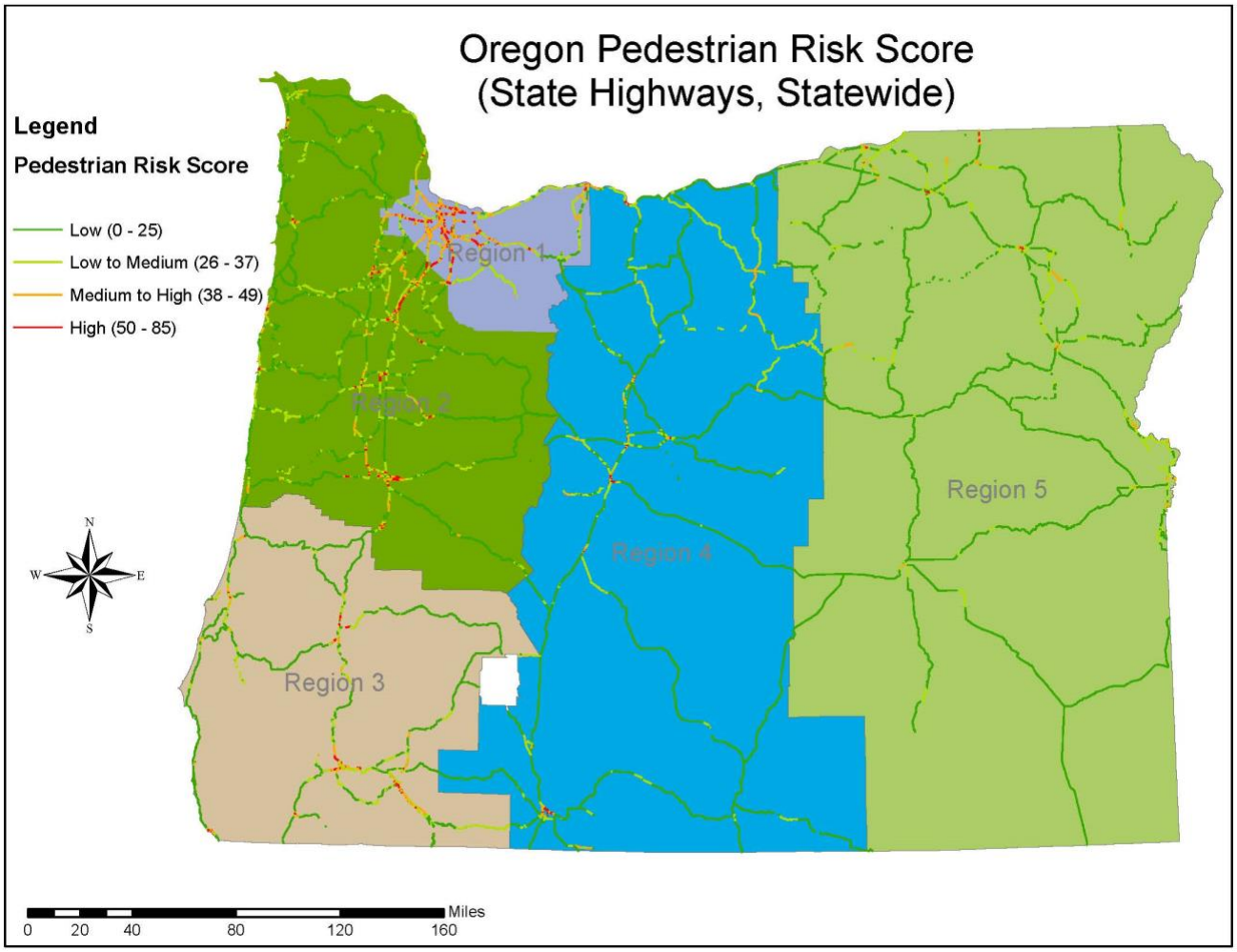
- State Highways, People Walking.
- State Highways, People Biking.
- Non-State Highways, People Walking.
- Non-State Highways, People Biking.

The interactive webmap tool's primary purpose is to assist in identifying high-risk areas for any target facilities within a given jurisdiction or geographic region. Users have the capability to apply filters based on area type (rural/urban), functional classification, county, city, any risk factor, and crash history.

Figure 12 illustrates the risk of pedestrian crashes on all state highway roadways in Oregon.

[24] 2023_ODOT_VulnerableRoadUser_Interactive Map (arcgis.com)

FIGURE 12. OREGON VULNERABLE ROAD USER RISK SCORE, PEDESTRIANS, STATE HIGHWAYS, STATEWIDE



Upon review of statewide data across the four primary categories mapped, ODOT identified the jurisdictions with the highest number of roadway miles designated High-Risk under this methodology. Also included is the proportion of that city's system that scored High-Risk.

State highways within cities play a pivotal role in the transportation infrastructure, connecting urban and suburban areas while serving as vital arteries for both local and long-distance travel. They facilitate the movement of people, goods, and services, often serving as the backbone of a city's transportation network. While providing connectivity and convenience, state highways within cities are often higher-speed facilities that present unique challenges for ensuring safety for all road users. Table 7 through Table 10 summarize jurisdictions with the greatest high-risk areas for state highways and non-State highways.

TABLE 7. JURISDICTIONS WITH GREATEST MILEAGE OF HIGH-RISK AREAS FOR PEDESTRIANS, STATE HIGHWAYS

	HIGH-RISK MILEAGE (MI)	TOTAL STATE MILEAGE (MI)	PROPORTION HIGH-RISK
TOTAL	189.38	6,638.79	2.9%
CITY			
PORTLAND	15.89	79.36	20.0%
SPRINGFIELD	8.40	17.81	47.2%
SALEM	5.90	29.84	19.8%
MCMINNVILLE	5.41	7.99	67.7%
ALBANY	5.10	13.08	39.0%

TABLE 8. JURISDICTIONS WITH GREATEST MILEAGE OF HIGH-RISK AREAS FOR PEDESTRIANS, NON-STATE HIGHWAYS

	HIGH-RISK MILEAGE (MI)	TOTAL CITY MILEAGE (MI)	PROPORTION HIGH-RISK
TOTAL	1,362.22	19,434.27	7.0%
CITY			
PORTLAND	275.34	469.92	58.6%
SALEM	111.11	227.56	48.8%
EUGENE	80.59	206.18	39.1%
BEAVERTON	76.46	121.81	62.8%
GRESHAM	56.32	89.41	63.0%

TABLE 9. JURISDICTIONS WITH GREATEST MILEAGE OF HIGH-RISK AREAS FOR BICYCLISTS, STATE HIGHWAYS

	HIGH-RISK MILEAGE (MI)	TOTAL STATE MILEAGE (MI)	PROPORTION HIGH-RISK
TOTAL	205.24	6,638.79	3.1%
CITY			
PORTLAND	10.53	79.36	13.3%
SPRINGFIELD	8.33	17.81	46.8%
GRANTS PASS	6.25	15.93	39.2%
MCMINNVILLE	5.84	7.99	73.1%
SALEM	5.76	29.84	19.3%

TABLE 10. JURISDICTIONS WITH GREATEST MILEAGE OF HIGH-RISK AREAS FOR BICYCLISTS, CITY STREETS

	HIGH-RISK CITY MILEAGE (MI)	TOTAL CITY MILEAGE (MI)	PROPORTION HIGH-RISK
TOTAL	1,359.45	19,434.27	7.0%
CITY			
PORTLAND	274.92	469.92	58.5%
SALEM	109.51	227.56	48.1%
EUGENE	79.86	206.18	38.7%
BEAVERTON	76.86	121.81	63.1%
GRESHAM	55.96	89.41	62.6%

These four separate studies and associated maps led to a subset of cities with the most high-risk mileage. There are several rural and Tribal areas that are considered high-risk, as well as other cities that exhibited high-risk safety needs. Rural communities present unique challenges and characteristics that influence the nature of road safety risks for vulnerable road users. In rural regions and Tribal areas, vulnerable road users may need to travel longer distances to access essential services such as schools, health care facilities, and stores, increasing their exposure to road risks. While some strategies may be applicable in both urban and rural contexts, ODOT will continue to collaborate with local partners to identify and address vulnerable road user safety needs in those areas as well.

4. SUMMARY OF CONSULTATION

Development of the 2026 Vulnerable Road User Safety Assessment was informed by an extensive, multi-phase consultation process conducted as part of the broader TSAP update. ODOT integrated vulnerable road user-focused discussions into existing TSAP engagement activities to ensure alignment with statewide safety priorities and to reduce duplication of effort.

Consultation began with a series of partner interviews conducted in 2025. These included representatives from local jurisdictions, MPOs, public health, law enforcement, Tribal governments, and advocacy organizations. Discussions highlighted recurring themes related to pedestrian and bicyclist safety, including the need for safer infrastructure on high-speed corridors, improved crossings, and stronger coordination between land use and transportation decisions. Partners also emphasized the importance of addressing systemic risk factors such as speed, impairment, and roadway design, particularly in communities experiencing disproportionate safety outcomes.

Building on these early insights, ODOT convened a Steering Committee and broader group of safety partners to guide development of the TSAP and Vulnerable Road User Safety Assessment. Steering Committee meetings included representation from MPOs, counties, cities, state agencies, advocacy groups, and federal partners. Discussions consistently reinforced the importance of reducing speeds, investing in pedestrian and bicycle infrastructure, and addressing safety needs across both urban and rural contexts. Participants also emphasized the need to close safety gaps affecting historically underserved communities and to ensure that safety investments reflect the needs of all road users.

Interactive workshops with Steering Committee members and safety partners provided additional opportunities to refine vulnerable road user-related emphasis areas and strategies. During these sessions, participants reviewed data alongside lived experience and local knowledge to identify key risks and potential solutions. For example, discussions highlighted the overlap between intersection safety and vulnerable road user risk, the role of speed management in reducing injury severity, and the importance of maintenance and visibility for pedestrian and bicycle facilities. Participants also stressed the value of combining infrastructure, education, enforcement, and policy approaches to achieve meaningful safety improvements.

A final round of engagement in February 2026 brought together Steering Committee members and partners to review and provide feedback on proposed safety actions, including those directly affecting pedestrians, bicyclists, and other vulnerable users. Breakout discussions were held. Participants called for clearer action language, stronger emphasis on evaluation and data, and greater attention to emerging issues such as micromobility. Also underscored was the importance of coordinated implementation across agencies and the need to acknowledge differences between safety challenges in rural and urban areas.

Several consistent themes emerged that directly informed the Vulnerable Road User Safety Assessment:

- The need to reduce vehicle speeds through design, policy, and enforcement.
- The importance of safe and connected pedestrian and bicycle infrastructure, particularly at intersections and along high-risk corridors.
- The value of integrating land use and transportation planning to support safer travel patterns.
- The importance of equity-focused investments to address disproportionate impacts on underserved communities.
- The need for coordinated, multi-agency implementation, including partnerships with local jurisdictions and community organizations.

These themes shaped both the identification of high-risk areas and the development of recommended strategies included in this assessment. ODOT continues to coordinate with advisory groups and partner organizations. This ongoing coordination supports implementation of vulnerable road user safety strategies and ensures that local knowledge and community priorities remain central to safety decision-making.

Overall, the consultation process for the TSAP provided a robust and inclusive foundation for the Vulnerable Road User Safety Assessment. By leveraging existing engagement efforts and incorporating input from a wide range of partners, ODOT has developed an assessment that reflects both data-driven analysis and the lived experience of communities across Oregon. This integrated approach ensures that the Vulnerable Road User Safety Assessment aligns with federal expectations while remaining grounded in local context and implementation realities.

5. PROGRAM OF STRATEGIES

The Oregon Vulnerable Road User Safety Assessment includes strategies to reduce safety risks to vulnerable road users in areas identified as high-risk and systemically across the state. ODOT took into consideration the input from safety data analysis, the consultation described above, the Safe System Approach, and the Complete Streets Design Model[25].

Although not directly factored into the risk assessment, the strategies were also guided by the principles of the Americans with Disabilities Act, as well as considerations related to Transportation System Access, Temporary Traffic Control, and Access to Transit. All of these considerations contribute to creating a safer and more accessible environment for all road users, particularly those who may be at higher risk due to mobility challenges or other factors. The assessment also reflects a commitment to safety and inclusivity in transportation systems for all Oregonians.

Sources for these vulnerable road user safety strategies include existing Oregon plans and manuals focused on pedestrian and bicyclist safety, other state and local agencies' innovative treatments and programs, and national and international sources. These include the following:

- NCHRP 20-44(13): Oregon Bicycle and Pedestrian Safety Implementation Plan
- FHWA Proven Safety Countermeasures
- National Highway Traffic Safety Administration Countermeasures That Work
- National Highway Traffic Safety Administration New Car Assessment Program
- National Association of City Transportation Officials Urban Street Design Guide
- Oregon Transportation Plan
- Oregon Transportation Safety Action Plan
- Oregon Strategic Action Plan
- Oregon Bicycle and Pedestrian Plan
- Oregon Transportation Options Plan
- Oregon Public Transportation Plan
- Oregon Statewide Transportation Strategy
- Oregon Highway Plan

The strategies and references below are organized by the Safe System Approach elements: Safer People, Safer Roads, Safer Speeds, Safer Vehicles, and Post-Crash Care.

5.1 SAFER PEOPLE

The Safe System Approach addresses the safety of all road users, including those who walk, bike, drive, ride transit, and travel by other modes. An important principle of the Safe System approach is that responsibility is shared. All transportation partners and road users must ensure that crashes do not lead to fatal or serious injuries. The 2026 TSAP includes several actions related to improving vulnerable

[25] Complete Streets | FHWA (dot.gov) Complete streets are planned and designed to accommodate all users including pedestrians, cyclists, transit users, and motorists.

road user safety (listed in **bold**) which are supplemented below with additional proven safety countermeasures and effective strategies.

- **Provide safety equipment for youth and low-income individuals, including child restraints, bicycle helmets, and reflective gear.**
- **Increase training and education for all road users about how to safely interact with other road users, including medium and large trucks, motorcycles, pedestrians (including road workers), bicyclists, and micromobility users.**
- **Fully fund and sustain Safe Communities Programs and similar state-level initiatives to advance community-based traffic safety statewide.**
- Implement a Safe Routes to School Program.
- Implement and promote increased funding for the bicycle safety training in the Safe Routes to School program.
- Work with school districts, state, regional, Tribal, county, and city governments and local education interest groups to evaluate and implement best practices for safety in school zones.
- Expand Driver's Education content to embrace “Road User Education” that includes all modes. Content should include driving safely around bicyclists and pedestrians (e.g., bike lanes, bike boxes, pedestrian hybrid beacons).
- Identify unsafe walking, biking, or driving behaviors that could be addressed through legislation. Identify and pursue legislation to modify these behaviors.
- Coordinate efforts to provide safe crossings and access to public transportation facilities for pedestrians and bicyclists, including people with disabilities.
- Identify and implement appropriate facility design, lighting, and other changes to improve personal security and safety for pedestrians, bicyclists, and transit riders.
- Elevate safety improvements in school zones, work zones, transit stops, and economically and socially vulnerable populations.
- Increase lifelong safety education for all roadway users, transportation facility designers and operators, first responders, and enforcement officers; with particular focus on the transportation safety needs of youth and aging populations.
- Emphasize the safety of people walking, bicycling, and rolling through outreach and education to all system users.
- Expand use of yard signs promoting driver awareness of people walking and bicycling.

This Vulnerable Road User Safety Assessment emphasizes the importance of maintaining and, where possible, expanding these strategies. With ongoing updates to the assessment, it is crucial to consistently reassess and enhance the strategies based on the latest data and using more comprehensive analysis. This will allow for potential refinements to the TSAP implementation plan, enabling a progression towards more promising vulnerable road user safety strategies.

5.2 SAFER ROADS

Designing to accommodate human mistakes and injury tolerances can reduce frequency and severity of crashes involving vulnerable users. It is important to use proactive tools to identify and mitigate risks in the transportation system, rather than waiting for crashes to occur and reacting afterwards. This includes the potential to evaluate and apply surrogate safety measures or leading indicators, such as

near-miss events, that allow for the comparison of safety-related events by acting as proxies for likely crash outcomes.

Oregon's primary source of infrastructure safety solutions is the All Roads Transportation Safety program's Crash Reduction Factors Manual.[26] The Safety Countermeasures List in the ODOT Crash Reduction Factor Manual is developed to provide safety practitioners, intending to use Highway Safety Improvement Program funding, with a list of effective countermeasures appropriate for many common safety issues. The countermeasures presented in this manual are intended to reduce crash frequency or severity on all public roads. These countermeasures represent infrastructure improvements at intersections and along roadways such as the addition of signs, signals, or markings, or a change in roadway design. The safety treatments in this list are those that have been in place for an extended period and/or have proven effective. As new safety research data becomes available, the list will be evaluated to update, add, or remove some safety improvement countermeasures.

The Crash Reduction Factor manual includes a section called "Bike/Ped Systemic" focused on 31 approved infrastructure treatments for improving vulnerable user safety. It also includes other treatments that, while not primarily intended to reduce crashes involving people walking and bicycling, can provide this benefit to vulnerable users. Oregon Department of Transportation and safety partners also refer to the Federal Highway Administration (FHWA) Proven Safety Countermeasures, FHWA's Pedestrian Safety Guide and Countermeasure Selection System, and toolboxes from other state transportation agencies.[27]

The 2026 TSAP includes several actions related to improving vulnerable road user safety (listed in **bold**) which are supplemented below with additional proven safety countermeasures and effective strategies.

- **Prioritize low-cost systemic and proactive countermeasures based on crash risk, exposure, and road characteristics, in addition to crash history.**
- **Prioritize implementation of context sensitive design elements on arterial roads with the greatest safety risk for all road users.**
- **Prioritize and secure federal, state, and local funding for safety countermeasures and initiatives focused on vulnerable road users.**
- **Standardize and prioritize safety-focused signal operations—such as leading pedestrian intervals, protected turn phasing, and no turn on red—at high-risk signalized intersections.**
- Emphasize proven safety countermeasures that minimize conflicts between modes that result in serious injury or death.
- Consider pedestrian-only signal phases to allow exclusive crossing time for pedestrians.
- Enhance lighting at intersections, focusing on pedestrian-scale lighting to improve visibility for vulnerable road users, especially at night. Ensure that lighting fixtures are properly maintained to avoid dark spots.
- Design and construct protected intersections with dedicated spaces for pedestrians and bicyclists, separated from vehicular traffic.

[26] Crash Reduction Factor Manual, Oregon DOT, 2023. https://www.oregon.gov/odot/Engineering/ARTS/CRF-Manual.pdf
[27] For example, Caltrans' Pedestrian Safety Countermeasures Toolbox. https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ped-bike/caltrans-ped-safety-countermeasures-toolbox-a11y.pdf

- Install protected bike lanes and pedestrian refuge islands to improve safety at intersections.
- Add dedicated right-turn signal phases to separate turning vehicles from pedestrian crossings.
- Implement bicycle-specific signals at intersections to improve bicyclist safety.
- Install buffered and separated bike lanes to provide dedicated spaces for bicyclists.
- Create shared-use paths to accommodate both pedestrians and bicyclists, ensuring safe coexistence.
- Mark crosswalks at appropriate locations to indicate pedestrian crossing areas.
- Use warning signs, refuge islands, and flashing beacons to enhance the safety of marked crosswalks.
- Install pedestrian hybrid beacons at high-risk crossings to facilitate safe pedestrian crossings.
- Widen paved shoulders on rural roads to provide safer space for bicyclists and pedestrians.
- Use clear markings to designate paved shoulders as shared-use paths in areas with high pedestrian activity.
- Construct new sidewalks in areas with pedestrian demand and high-risk road user interactions.
- Maintain and repair existing sidewalks to ensure they are safe and accessible for pedestrians.
- Elevate maintenance practices that address potential hazards for vulnerable users, including signalized intersections and sidewalks. Regularly inspect and maintain facilities to ensure their safety and functionality.
- Target safety initiatives and engineering solutions to reduce fatal and serious injury crashes, with a specific focus on vulnerable road users.
- Monitor and evaluate the effectiveness of safety measures to achieve this goal.
- Integrate the Safe System Approach into all transportation projects, emphasizing proven safety countermeasures and physical/temporal separation between modes.
- Elevate the safety of vulnerable road users in project design and implementation.
- Implement urban design strategies that promote safety through visibility and natural surveillance.
- Develop comprehensive databases for vulnerable road user safety data to identify high-risk areas and research new or improved countermeasures.
- Improve security and perceived safety for vulnerable road users through illumination and other improvements, especially at transit stops.
- Advocate for the proactive incorporation of vulnerable road user safety needs in emerging technologies.

In addition to the All Roads Transportation Safety program, ODOT recently updated the Intersection Safety Implementation Plan. The update is based on a data-driven framework for conducting systemic intersection safety analyses aligned with the Safe System Approach (SSA). The main goals of this update include:

- Reducing Conflict Points: the potential for intersection crashes is substantially reduced where conflict points are minimized, especially for vulnerable road users. The best way to achieve this is by separating different modes of transportation whenever possible. Constructing dedicated lanes or pathways for pedestrians, bicyclists, and motorized vehicles can greatly reduce the likelihood of conflicts.
- Improving and Reducing Conflict Angles: Reducing conflict angles at intersections reduces the likelihood of crashes and reduces injury severity if a crash occurs.

- Reducing Approach Speeds: A critical aspect of enhancing intersection safety is the reduction of approach speeds for all modes of transportation. Slower speeds provide more reaction time and reduce the severity of potential crashes, aligning with the Safe System Approach's emphasis on reducing injury severity.
- Improving Visibility: To mitigate the potential for blind spots and improve visibility, the plan focuses on ensuring that all road users have a clear line of sight at intersections.

This Vulnerable Road User Safety Assessment emphasizes the importance of maintaining these strategies and safety treatments. With ongoing updates to the assessment, it is crucial to consistently reassess and refine strategies and safety treatments based on the latest research, data, and updated analytical methods. This will allow for potential refinements enabling a progression towards more promising vulnerable road user safety strategies.

5.3 SAFER SPEEDS

People have limits for tolerating crash forces before death or serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates human vulnerabilities. This is especially true for people walking and bicycling who are not protected by the physical structure and safety devices of motor vehicles. Reducing motor vehicle speeds can accommodate human injury tolerances in three ways: improving visibility, providing additional time for drivers to react when necessary, and reducing impact forces when a crash occurs.

Safer Speeds overlaps with several of the traditional “Es of Safety.” Engineers design roadways and calculate appropriate posted speed limits, and they can add countermeasures on roadways that exhibit higher-than-desired operating speeds. Enforcement partners support regulatory speed limits with presence and (when necessary) corrective actions like warnings and citations. Education partners help the public understand the importance of safer speeds to reduce the number and severity of crashes.

The following are several strategies to address motor vehicle operating speed. The 2026 TSAP includes several actions related to improving vulnerable road user safety (listed in **bold**) which are supplemented below with additional proven safety countermeasures and effective strategies.

- **Advance data-driven automated enforcement through legislative action, ensuring statewide implementation and reducing administrative barriers and burdens.**
- **Expand infrastructure design policies related to speed management.**
- Set appropriate posted speed limits by applying the latest ODOT-approved methods (e.g., basing posted speed limit in urban areas on the 50th percentile speed).[28]
- Consider speed humps or tables, where appropriate, in residential areas, school zones, and high-risk pedestrian locations to reduce vehicle speeds. Pair with clear signage and road markings to enhance visibility.
- Design roundabouts with pedestrian and bicyclist-friendly features, including clearly marked crosswalks, refuge islands, and dedicated bike lanes and implement traffic-calming elements at the approach to roundabouts to reduce vehicle speeds and improve safety.

[28] Updated ODOT Speed Zone setting methodology effective 5/1/20.

- Install speed feedback signs in areas with a history of speeding or high-risk road user interactions.
- Use road diets and lane narrowing as opportunities to add bike lanes or shared-use paths, reduce vehicle speeds, and provide safer crossing opportunities for pedestrians; this creates a safer environment for all road users. Ensure that lane narrowing is implemented in areas with high pedestrian and bicyclist activity.
- Implement left-turn wedges and hardened centerlines at intersections to reduce the risk of conflicts between left-turning vehicles and vulnerable road users.
- Consider opportunities to create a buffer between pedestrians and moving traffic such as street trees.
- Actively manage speeds and reduce speed differentials between roadway users.

This assessment presented an opportunity for a more involved discussion of the Safer Speeds component of the Safe System approach and has emphasized the need to integrate safety and risk assessments that consider directly integrating speed and kinetic energy assessment and management into future safety identification methods.

5.4 SAFER VEHICLES

Vehicles should be designed and regulated to minimize the frequency and severity of crashes, which includes incorporating technological solutions. The vast difference in mass and speed between motor vehicles and vulnerable road users requires additional attention be paid to design and regulations' effects on the safety of road users outside the vehicle.

The Oregon Department of Transportation is currently conducting research regarding factors associated with pedestrian injury severity, with a focus on vehicle design and speed.[29] It assesses the role of vehicle type, weight, and size as well as roadway and road user characteristics in fatal and serious injury crashes involving pedestrians.

The National Association of City Transportation Officials joined local governments and national organizations from across the United States to call on the U.S. Department of Transportation to stop giving 5-star safety ratings to vehicles that are more likely to be involved in crashes where vulnerable road users die.[30]

The following are several strategies related to safer vehicles. The 2026 TSAP includes several actions related to improving vulnerable road user safety (listed in **bold**) which are supplemented below with additional proven safety countermeasures and effective strategies.

- **Maintain devices, markings, and signs related to safety at the highest level required to meet the needs of road users with the greatest visibility or navigation challenges.**
- **Provide safety equipment for youth and low-income individuals, including child restraints, bicycle helmets, and reflective gear.**

[29] Roll, Josh. Vehicle Design and Speed: Factors Associated with Pedestrian Injury Severity in the Pacific Northwest. Submitted to the Transportation Research Board 8/1/23 (Pending Review).
[30] Cities and Organizations Across the Country Call on USDOT to Stop Giving 5-Star Safety Ratings to Dangerous Vehicles, NACTO, August 2, 2023. https://nacto.org/2023/08/02/stop-giving-5-star-safety-ratings-to-dangerous-vehicles/

- **Establish a statewide task force to develop policy and guidance regarding electric micromobility devices, including e-motos.**
- **Encourage distraction-free driving programs for public and private employers.**
- **Incorporate measurable safety criteria with meaningful weighting in transportation project selection processes statewide.**
- The National Association of City Transportation Officials' letter to the National Highway Traffic Safety Administration recommends the following features be included in the vehicle rating system to support the safety of people walking and bicycling.
    - Advanced Driver Assistance System features to sense and protect people outside vehicles.
    - Intelligent speed assistance systems to limit unsafe speeds.
    - Pedestrian protection and crashworthiness/survivability for people outside the vehicle.
    - Direct visibility from the driver's seat, which is related to vehicle size and hood height.

While ODOT lacks influence over vehicle design, this assessment with the analysis of the contributing factors can assist in identifying potential safety measures and treatments that can be implemented to enhance the overall safety of the road environment for vulnerable road users. Additionally, identification of vehicle size and weight issues can help influence ongoing pedestrian severity injury research.

5.5 POST-CRASH CARE

Humans have a limited tolerance for crash forces, prompting swift reactions when a crash occurs. This is particularly important for vulnerable users because the initial impact with a motor vehicle is likely to cause personal injury. The "Golden Hour" in the context of post-crash care refers to the critical period following a traumatic injury, such as a crash, when the likelihood of a positive outcome is highest if the injured person receives prompt and effective medical treatment within the first 60 minutes after the injury occurs.

During this initial hour, medical intervention can be especially effective in stabilizing the injured individual, preventing further complications, and improving the chances of survival and recovery. It is important for emergency medical responders and health care providers to reach the injured person and begin treatment as quickly as possible during the Golden Hour to maximize the chances of a successful outcome.

While the term "Golden Hour" is a widely recognized concept in emergency medicine, it is important to note that the time frame is not always precisely 60 minutes, and the importance of immediate medical attention can extend beyond that period, depending on the nature and severity of the injuries. Nonetheless, the concept underscores the critical importance of rapid response and medical care for trauma victims. When a person is injured in a crash, they rely on emergency first responders to quickly locate them, stabilize their injury, and transport them to medical facilities for further care. The following are several strategies related to post-crash care. The 2026 TSAP includes several actions related to improving vulnerable road user safety (listed in **bold**) which are supplemented below with additional proven safety countermeasures and effective strategies.

- **Maintain devices, markings, and signs related to safety at the highest level required to meet the needs of road users with the greatest visibility or navigation challenges.**

- **Monitor trends, current events, and concerns from elected and appointed officials related to transportation safety initiatives.**
- **Develop a communication guide for ODOT regions, local agencies, Safe Community Coordinators, and other safety partners when reporting on crashes, road safety efforts, proven safety countermeasures, and engagement opportunities.**
- Installing directional signs and mile point markers, especially for vulnerable road users on highways and rural roads, can be critical in guiding responders to a precise crash location.
- Supporting a robust communication network, including cell phone coverage on rural roads and highways, ensures that crashes can be quickly reported to emergency services.
- Improved lighting, especially on urban and suburban roads and highways, can help guide responders to a precise location and provide care quicker.
- Integrate hospital, emergency medical services, and crash data to improve analysis of crashes involving people walking and bicycling that may not be included in the crash database. A comprehensive data integration effort allows for a better understanding of differences in crash severity reported at the scene and by medical professionals.
- Support Incident Management which plays a key role in improving safety for on scene responders and victims.
- Identify opportunities for collaboration with crash reconstruction and forensics to better understand contributing factors and how those factors relate to injury severity.

This Vulnerable Road User Safety Assessment has identified underreporting and injury categorization as important considerations in developing future crash data and risk assessment methods. While ODOT is already engaged with the Oregon Health Authority (OHA) on tracking trauma system outcomes associated with traffic crashes, this Assessment underscores the need to work more closely to consider trauma system data for vulnerable road user crashes, including response times, crash severity (as reported by hospital data), and underreporting.

6. CHALLENGES AND NEXT STEPS

This initial Vulnerable Road User Safety Assessment identified several barriers that, when overcome, will help Oregon DOT and its safety partners continue to make improvements to this assessment and resulting projects and strategies in the future.

6.1 VULNERABLE ROAD USER ASSESSMENT DATA CHALLENGES AND NEXT STEPS

This assessment identified several data-related limitations to analyzing vulnerable road users' safety needs and identifying strategies to reduce the frequency and severity of crashes involving people walking and bicycling. The following is a summary of those issues and potential next steps to address them in the future.

- Lack of comprehensive data on vulnerable road user exposure (e.g., pedestrian and bicyclist volumes) limited the analysis capabilities to identify and evaluate potential risk factors.
    - ***Potential Next Step:*** Continue investigating readily available data such as crowd-source estimates and other tools that collect pedestrian and bicyclist volumes. As more

counters are installed and software developed and improved in the future, a scalable dataset can be used to estimate vulnerable road user exposure.

- Because of time limitations for this effort, land use data was not available for this first analysis.
    - ***Potential Next Step:*** Incorporate land use and zoning data in future activities relating to vulnerable road user safety assessment.
- The underreporting of non-fatal incidents involving people walking and bicycling skews the available crash data, potentially leading to biased analyses.
    - ***Potential Next Step:*** Analyze the extent of underreporting and consider other data sources to mitigate this limitation (e.g., hospital discharge data, crowd-sourced incident reporting).
- This study is limited to the available risk factor datasets, and these data were not available at the same level for all types of roadways.
    - ***Potential Next Step:*** Complete collection of roadway inventory data for all public roads (State highways and non-State highways), including shared use path presence, cycling facilities presence, and presence of lighting.

These data limitations highlight the need for improved data collection strategies and standardized reporting protocols to enhance the understanding, evaluation, and mitigation of risks faced by vulnerable road users.

6.2 OUTREACH AND COLLABORATION CHALLENGES AND NEXT STEPS

The short duration of the project limited the team's ability to conduct multiple engagement and outreach activities to partners and the public. In addition, the timing and effort required for the safety data analysis and determination of high-risk areas did not allow for extensive engagement with those agencies identified in advance of this publication.

Next Steps:

- Continued and enhanced consultation with the previously contacted partners, along with an assessment of who did not participate in the 2026 Vulnerable Road User Safety Assessment but should be included in implementation and future revisions.
- Expand community engagement and partnerships across agencies, jurisdictions, and organizations to better understand and address safety issues.
- Provide training and outreach to disseminate the Safe System approach more broadly.
- The Vulnerable Road User Safety Assessment identified the extent of the vulnerable road user fatality and serious injury problem off the state system. The crash and risk assessment methodology can be applied to local jurisdictions and Tribal governments to allow a focused vulnerable road user safety assessment. Consultation and outreach efforts will be made to make local jurisdictions and Tribal governments aware of this assessment and the ability to apply the methodology to their network and area.
- Develop a partnership engagement plan for implementing the findings from this assessment that focuses on economically and socially vulnerable populations.

- Set up recurring meetings with local and non-traditional partners, such as Tribal partners and public health programs, to implement the partnership engagement plan and to leverage opportunities that support effective changes outlined in this assessment.
- Increase safety funding to address the items listed above.

6.3 IMPLEMENTATION, MONITORING, AND EVALUATION

While much work was accomplished in this Vulnerable Road User Safety Assessment, ODOT will continue to build upon and grow partnerships to help improve capabilities in analysis, problem identification, and project and strategy prioritization to improve safety for vulnerable road users.

While this assessment does not include specific projects (because of limited time, presence of other plans which serve as project identification and implementation, and concerns over data limitations), there are strategies developed and included that can be pursued and aligned with existing and future plans such as the Transportation Safety Action Plan (which serves as the Oregon Strategic Highway Safety Plan) as follows:

- Performance metrics and indicators reflecting safe system objectives.
- Monitoring progress with safe system metrics.
- Evaluation of safety treatments within the safe system context.
- Assessment of existing strategies and implementation efforts focusing on vulnerable road users in the TSAP.

In addition, support for these strategies will continue to be pursued through existing safety programs such as the All Roads Transportation Safety program that administers Highway Safety Improvement Program funding, implementation of the TSAP, and coordination with agencies responsible for the implementation of other related transportation plans.

Monitoring and evaluation of safety output (e.g., infrastructure projects aimed at providing safer options for people walking and biking) and safety outcomes (e.g., the number and severity of crashes involving vulnerable users) will continue through TSAP implementation.

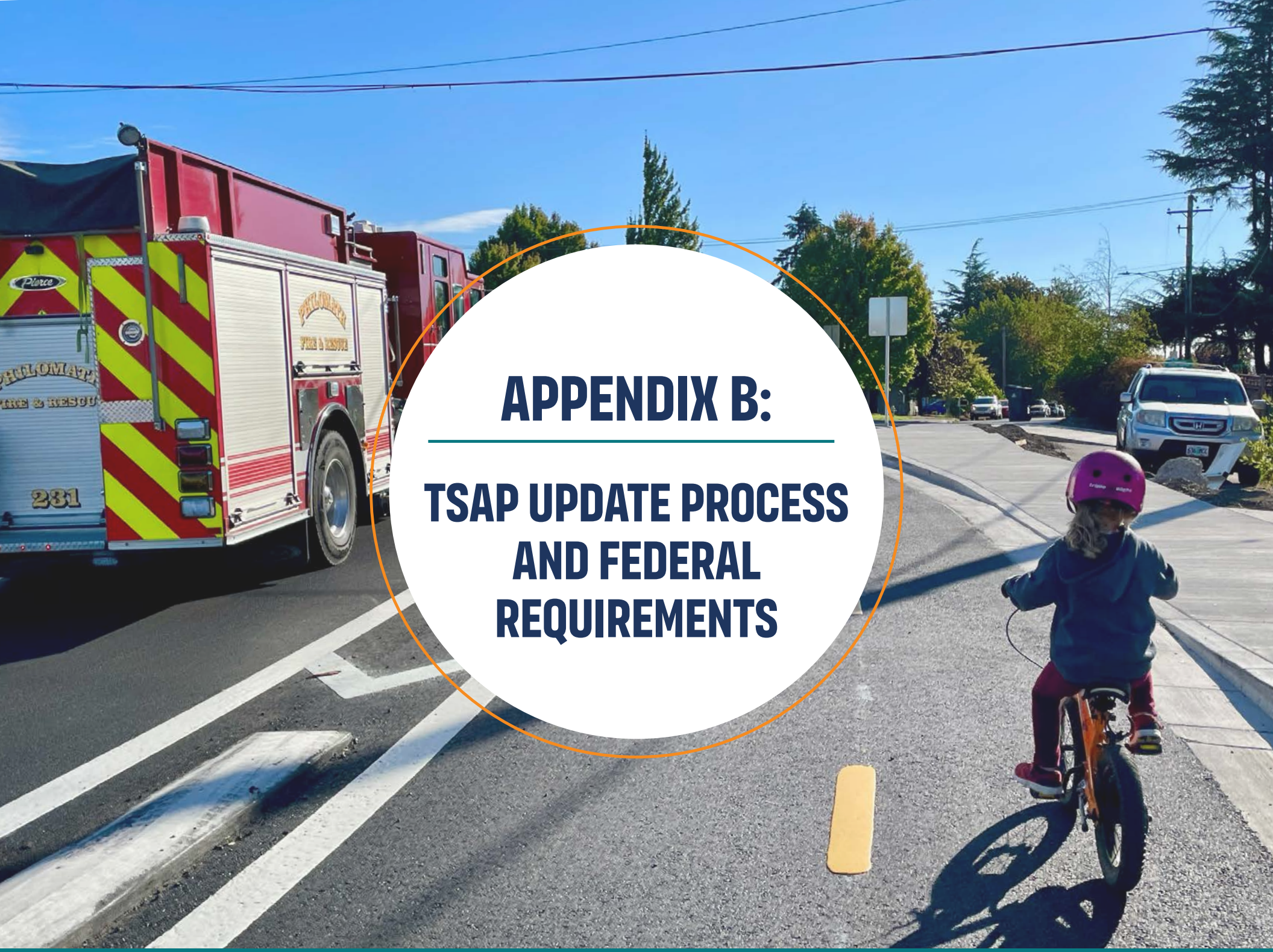
7. CONCLUSION

The Oregon Vulnerable Road User Safety Assessment assesses the safety performance of Oregon roads with respect to people walking and bicycling. It outlines the state's plan to improve the safety of vulnerable road users in accordance with federal law. More than 550 people walking and bicycling in Oregon have been killed in traffic crashes in the past 5 years, and another 1,020 suffered serious injuries during that same period.

Oregon Department of Transportation and its safety partners identified primary contributing factors to vulnerable road user-involved crashes, as well as other factors (related to roadway inventory features and social equity) that correlate with increased probability of future risk of fatal and serious injury crashes. These include posted speed limit, lighting conditions, road users not yielding right-of-way, health equity disparity, and roadway functional classification, among other factors. This assessment

then designated High-Risk Areas based on a combination of crash history and risk factors, identifying geographies and roadway types most at risk for future crashes involving people walking and bicycling.

The Safe System Approach provides a framework for identifying and categorizing a program of strategies to reduce the number and severity of vulnerable road user-involved crashes. Implementation of these strategies will improve safety in the high-risk areas and statewide. This implementation must include progress monitoring, evaluation of effectiveness, and regular updates to continue incorporating new data, new research, and new methods to improve safety for people walking and bicycling in Oregon.



APPENDIX B:

TSAP UPDATE PROCESS AND FEDERAL REQUIREMENTS

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CONCLUSION IX

The TSAP is required to provide a detailed description of the Strategic Highway Safety Plan update process to meet federal requirements outlined in 23 U.S.C. 148. Table B.1 highlights the required elements of the update process and summarizes how they were achieved.

TABLE B.1. MEETING FEDERAL REQUIREMENTS FOR THE TSAP UPDATE

MAP-21 REQUIREMENT	DESCRIPTION OF REQUIREMENT	SUMMARY OF ODOT ACTIVITIES
CONSULTATION PROCESS	The state has conferred with a required list of partners early in the Strategic Highway Safety Plan update process, considered their input prior to decision-making, and routinely informed them about actions taken regarding plan development.	• Conducted interviews with six partner groups, including state, regional, local, Tribal, rail safety, and advocacy partners. • Conducted two surveys (of the public and practitioners) in July 2025 to determine behaviors, attitudes, and recommended actions. • Convened Steering Committee meetings to provide input at key milestones in the TSAP development process. • Held safety partner workshops to gather feedback on emphasis areas, strategies, actions, and performance measures. • Engaged partners through ongoing coordination with advisory groups and partner organizations.
MULTIDISCIPLINARY APPROACH AND COORDINATION	The Strategic Highway Safety Plan is aligned with other transportation plans in the state.	• Reviewed relevant transportation and safety plans to identify applicable strategies and ensure alignment with the TSAP. • Coordinated with agencies responsible for transportation and safety planning in Oregon, including state agencies, metropolitan planning organizations, local jurisdictions, and Tribal governments. • Ensured consistency between the TSAP, Oregon Transportation Plan, Statewide Transportation Improvement Program, Highway Safety Improvement Program, Commercial Vehicle Safety Plan, and Triennial Highway Safety Plan.
DATA-DRIVEN ANALYSIS	The state has used the best available safety data to identify emphasis areas that address safety concerns on all public roads.	• Conducted analysis of statewide fatal and serious injury crash data across all public roads. • Evaluated crash trends, contributing factors, crash types, and geographic patterns to identify key safety risks. • Used data analysis to inform emphasis areas and actions.

MAP-21 REQUIREMENT	DESCRIPTION OF REQUIREMENT	SUMMARY OF ODOT ACTIVITIES
		• Further analyzed bicyclist and pedestrian safety data in support of the Vulnerable Road User Safety Assessment.
PERFORMANCE-BASED PLANNING	The Strategic Highway Safety Plan includes goals and measurable objectives to enable the state to track and monitor the status of plan implementation efforts and progress.	• Established statewide safety goals and measurable objectives aligned with federal performance measures. • Identified targets for fatalities, serious injuries, and rates per vehicle miles traveled, including nonmotorized users. • Incorporated performance measures into the TSAP to support ongoing monitoring and evaluation.
ACTION SELECTION	The Strategic Highway Safety Plan identifies and analyzes highway safety problems and opportunities and includes a list of projects or strategies to reduce or eliminate safety hazards.	• Identified emphasis areas based on crash data and partner input. • Developed actions to address key safety risks and contributing factors. • Incorporated proven safety countermeasures and multidisciplinary approaches across Engineering, Education, Enforcement, and Emergency Medical Services.
IMPLEMENTATION	The Strategic Highway Safety Plan includes a process for the implementation of strategies and projects.	• Expanded implementation to an entire chapter, focusing on 30 strategic actions (“strategies”) to address safety needs. • Established a framework for tracking performance measures and monitoring progress over time. • Conducted ongoing evaluation of safety trends and outcomes. • Used evaluation results to inform future updates to the TSAP.
EVALUATION	The Strategic Highway Safety Plan includes a process to evaluate the effectiveness of implemented strategies.	• Established a framework for tracking performance measures and monitoring progress over time. • Conducted ongoing evaluation of safety trends and outcomes. • Used evaluation results to inform the update to the TSAP.
UPDATE PROCESS	The Strategic Highway Safety Plan is updated on a regular basis to reflect current safety data, trends, and best practices.	• Updated the TSAP using current crash data, partner input, and best practices in transportation safety. • Incorporated lessons learned from previous TSAP implementation.

MAP-21 REQUIREMENT	DESCRIPTION OF REQUIREMENT	SUMMARY OF ODOT ACTIVITIES
		• Established a regular update cycle consistent with federal requirements (not to exceed five years). • Strategic Highway Safety Plan approved by the Governor's highway safety representative.
SPECIAL RULES	The state considers federal special rules related to high-risk rural roads and vulnerable populations when applicable.	• Evaluated safety trends for rural roadways and vulnerable populations, including pedestrians, bicyclists, and aging road users (65+). • Incorporated strategies to address identified risks consistent with federal requirements. • Included emphasis on vulnerable road users consistent with federal guidance.

The following sections describe the update process in greater detail.

CONSULTATIVE PROCESS

Considerable outreach was conducted with required partners (23 U.S.C. 148(a)(11)(A)) and others through survey, interviews, meetings, workshops, and ongoing coordination throughout the TSAP development process. Partner engagement was designed to ensure that a broad range of perspectives informed the identification of safety priorities, emphasis areas, and actions.

COMMITTEES

Steering Committee. The Steering Committee provided technical input at key milestones throughout the TSAP development process, including review of guiding principles, emphasis areas, and actions; and direct alignment with the Oregon Transportation Plan vision and goals. The committee included representatives from state agencies, local jurisdictions, metropolitan planning organizations, Tribal governments, advocacy organizations, and other safety partners.

Project Management Team. ODOT staff and consultant team members met regularly to coordinate technical work, integrate data analysis, and develop plan content. This coordination supported alignment between the TSAP and other transportation and safety planning efforts.

INTERVIEWS AND PARTNER ENGAGEMENT

To understand current safety challenges, opportunities, and implementation considerations, interviews were conducted with a range of safety partners representing transportation, public health, enforcement, and community-based organizations. These discussions provided insight into systemic safety issues, local priorities, and barriers to implementation, and helped inform development of emphasis areas and actions. In addition, a practitioner survey was conducted in July 2025 to solicit additional feedback from safety partners.

WORKSHOPS AND MEETINGS

ODOT convened a series of Steering Committee meetings and safety partner workshops to gather input on TSAP content. These meetings provided opportunities for partners to review data, discuss safety challenges, and provide feedback on proposed actions. Workshop discussions included targeted breakout sessions focused on key emphasis areas, including pedestrian and bicycle safety.

Participants consistently emphasized the importance of speed management, safe infrastructure for vulnerable road users, coordination across agencies, and addressing safety needs in both urban and rural contexts.

COORDINATION

The TSAP serves as the unifying framework for transportation safety planning in Oregon. As part of the update process, relevant state, regional, local, and Tribal transportation and safety plans were reviewed to identify policies and strategies that should be reflected in the TSAP. This review supports consistency across plans and helps maximize the effectiveness of limited resources.

As a topic plan under the Oregon Transportation Plan, the TSAP implements statewide safety goals and informs the development and refinement of other plans. State, regional, Tribal, county, and city plans are expected to align with the TSAP's safety priorities and strategies.

The TSAP was also developed in coordination with agencies responsible for related safety plans and programs, including the Triennial Highway Safety Plan. This coordination supports alignment of strategies, performance measures, and implementation efforts across programs.

DATA-DRIVEN ANALYSIS

Consistent with federal requirements, the TSAP update was supported by a comprehensive analysis of crash data to identify trends in fatalities and serious injuries across Oregon. The analysis included all public roads regardless of ownership and considered factors such as crash type, severity, contributing factors, and demographic characteristics.

Crash data analysis informed:

- Identification and confirmation of emphasis areas
- Development and refinement of strategic actions
- Understanding of systemic risk factors affecting safety outcomes

The time period covered in the data analysis was from 2019 to 2023 and included crashes on all public roads in Oregon, regardless of roadway ownership and maintenance. Many crash categories were identified for further analysis, with the following standing out for consideration as emphasis areas:

- Roadway departure crashes
- Intersection crashes
- Speeding-related crashes
- Alcohol and/or other drugs-involved crashes
- Distracted driving crashes
- Unrestrained occupant crashes
- Vulnerable road user crashes (pedestrians, bicyclists, and other non-motorized users)
- Young driver crashes
- Aging driver crashes
- Motorcyclists involved

- Medium and Heavy Trucks involved

In addition to quantitative analysis, qualitative inputs from partners were used to validate findings and ensure that the TSAP reflects both data and local experience.

PERFORMANCE-BASED PLANNING

The TSAP includes goals and measurable objectives to enable Oregon to track and monitor the status of safety efforts and progress toward reducing fatalities and serious injuries. Consistent with federal requirements, the TSAP addresses the following performance measures:

- Number of fatalities
- Number of serious injuries
- Fatality rate (per 100 million vehicle miles traveled)
- Serious injury rate (per 100 million vehicle miles traveled)
- Number of nonmotorized fatalities and serious injuries

Each performance measure includes a first annual target based on a rolling average. These measures apply to all public roads and are coordinated with the Triennial Highway Safety Plan and HSIP reporting requirements.

STRATEGIC ACTION SELECTION

The TSAP identifies strategic actions ("strategies") within each emphasis area to address key safety risks and reduce fatalities and serious injuries. Strategies were selected based on crash data analysis, partner input, and consideration of proven safety countermeasures.

Consistent with federal guidance, the TSAP incorporates the 4 Es of safety:

- Engineering
- Education
- Enforcement
- Emergency Medical Services

Actions are designed to be implementable across multiple levels of government and to address a range of contributing factors. Many strategies reflect a multidisciplinary approach, recognizing that safety outcomes are influenced by roadway design, user behavior, policy, and system performance.

SCHEDULE TO EVALUATE AND UPDATE SHSP

To evaluate progress and ensure continued compliance with federal requirements, ODOT will conduct ongoing monitoring and evaluation activities. On an annual basis, ODOT will:

- Analyze crash data to assess progress toward safety performance targets
- Coordinate with safety partners on performance measures and target setting

- Review trends related to key safety issues, including vulnerable road users
- Publish safety performance information through required reporting processes
- Monitor implementation of TSAP strategies and actions

The TSAP will be updated on a regular cycle, not to exceed five years from the previous adopted version, in accordance with federal requirements.

SPECIAL RULES

Federal special rules apply when states experience increases in fatalities or serious injuries in specific areas, including high-risk rural roads and vulnerable populations.

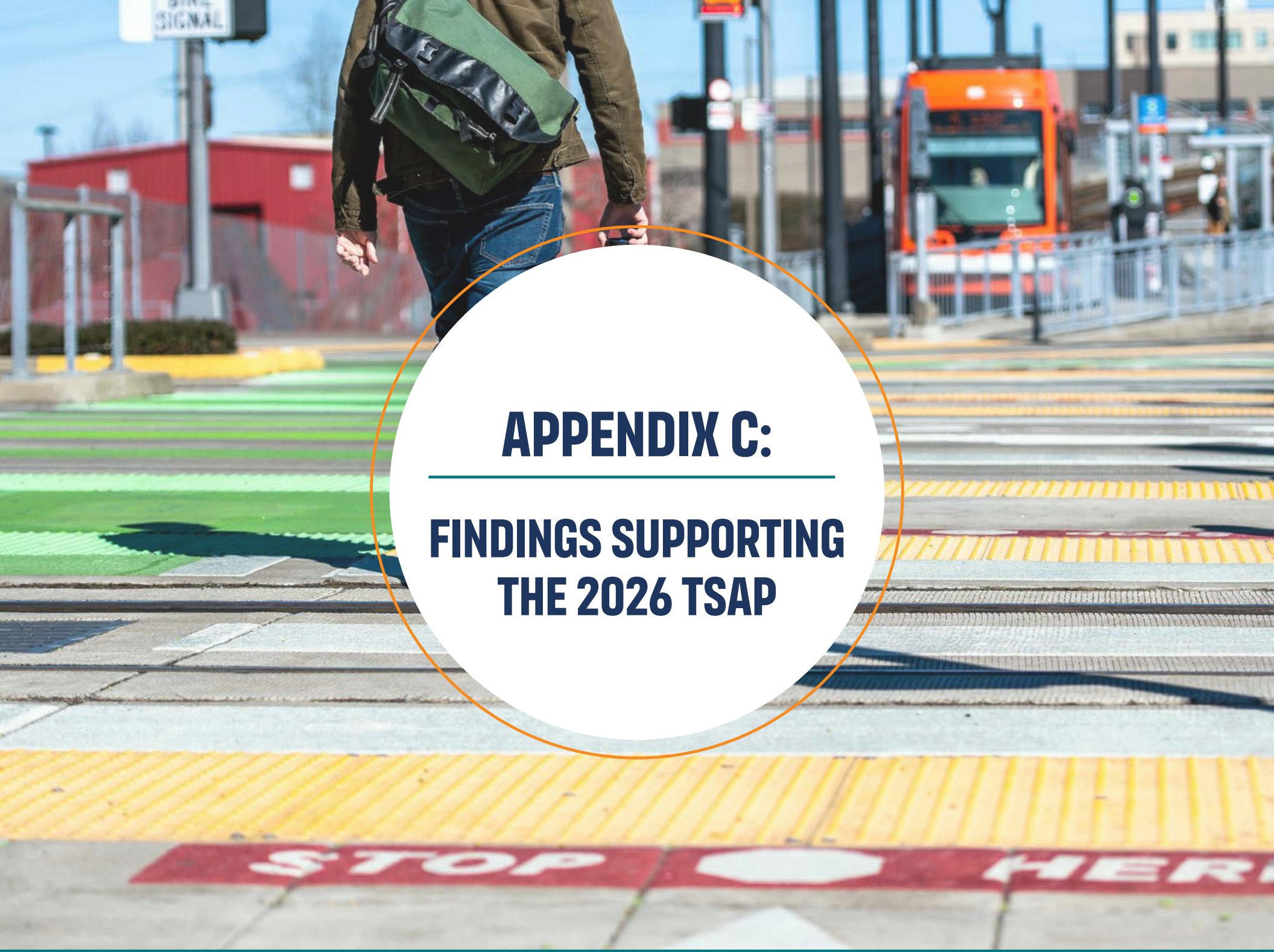
Based on current analysis:

- **High-Risk Rural Roads (HRRR).** Oregon continues to monitor safety performance on rural roadways. Strategies addressing rural roadway safety are included in the TSAP where applicable.
- **Older Drivers and Pedestrians.** Trends related to older road users and pedestrians are evaluated as part of the TSAP update, and strategies are included to address identified safety concerns. The TSAP incorporates actions that respond to these conditions, consistent with federal requirements.

CONCLUSION

Under 23 U.S.C. 148 and 23 CFR Part 924, States must maintain an up-to-date Strategic Highway Safety Plan to remain eligible for Highway Safety Improvement Program funding. The requirements emphasize a data-driven, performance-based approach, supported by coordination across Oregon's agencies and disciplines, and grounded in consultation with a broad range of partners. The Oregon TSAP is intended to guide and align other statewide, regional, Tribal, and local safety plans, ensuring consistency in goals, strategies, and investment decisions.

Equally important, federal guidance requires that Strategic Highway Safety Plans include implementation and evaluation. The TSAP identifies emphasis areas using the best available safety data, applies proven countermeasures as strategic actions, and establishes processes to track progress and update actions over time. Together, these requirements reinforce accountability and continuous improvement, positioning the TSAP as both a compliance document and a strategic framework for reducing fatalities and serious injuries in Oregon.



APPENDIX C:

FINDINGS SUPPORTING THE 2026 TSAP

FINDINGS SUPPORTING THE 2026 TRANSPORTATION SAFETY ACTION PLAN

A. OREGON SAFETY PLANNING BACKGROUND

To implement federal and state requirements relating to transportation and safety programs and traffic safety education, the legislature enacted ORS 802.300 through 802.340, creating a Transportation Safety Committee within the Department of Transportation ("ODOT"), designating as the Governor's representative for highway safety an Administrator for transportation safety ("Governor's Representative") and creating functions and duties for the Transportation Safety Committee, ODOT, the Oregon Transportation Commission, and the Administrator.

Key responsibilities include the preparation of this Transportation Safety Action Plan. Other plans developed by ODOT include the Oregon Transportation Plan, Highway Safety Improvement Program, Triennial Highway Safety Plan, Highway-Railway Crossing Safety Action Plan, and the Commercial Vehicle Safety Plan. These plans utilize robust engagement with the public, Tribal governments, advocacy groups, and others, as documented in the Engagement Summary During Plan Development. In addition, ODOT maintains a comprehensive website of educational safety materials. Safety research is conducted in partnership with the ODOT Research Unit, Portland State University, Oregon State University, the National Cooperative Highway Research Program, and others.

ODOT provides recommendations to the legislature based on the most current data and trends, resulting in the implementation of statewide programs. Examples include statewide programs such as the ignition interlock device, driver education, and vehicle safety (e.g., Oregon law regarding window tinting, towing requirements, safe tire maintenance, etc.). ODOT also reviews applications for transportation safety grants statewide based on crash data, conducted in consultation with, and upon approval by, the Oregon Transportation Safety Committee.

B. FINDINGS OF COMPLIANCE WITH STATE AGENCY COORDINATION AGREEMENT

The Oregon Department of Transportation's State Agency Coordination Agreement requires that the Oregon Transportation Commission adopt findings of fact when adopting final modal system plans (OAR 731-015-0055). Pursuant to these requirements, the following findings and supporting information supplement the Oregon Transportation Commission adoption of the updated Transportation Safety Action Plan.

Coordination Procedures for Adopting Final Topic Plans (OAR 731-015-0055)

1. Except in the case of minor amendments, the Department shall involve the Department of Land Conservation and Development, metropolitan planning organizations, and interested cities, counties, state and federal agencies, special districts and other parties in the development or amendment of a modal systems plan. This involvement may take the form of mailings, meetings, or other means that the Department of Transportation determines

are appropriate for the circumstances. The Department of Transportation shall hold at least one public meeting on the plan prior to adoption.

Findings: The development of the proposed updated Transportation Safety Action Plan was subject to an open and ongoing public and agency involvement process which included the Department of Land Conservation and Development, Tribal governments, metropolitan planning organizations, area commissions on transportation, cities, counties, state and federal agencies, numerous topic advocacy groups, and input from interested citizens. See *Statewide Planning Goal 1: Citizen Involvement, below* for more information.

Development of the Transportation Safety Action Plan is in compliance with and supports Coordination Procedures for Adopting Final Topic Plans.

2. The Department shall evaluate and write draft findings of compliance with all applicable statewide planning goals.

Findings: These findings that accompany the Transportation Safety Action Plan evaluate compliance with all applicable statewide planning goals and are in compliance with the Coordination Procedures for Adopting Final Topic Plans.

3. If the draft plan identifies new facilities which would affect identifiable geographic areas, the Department shall meet with the planning representatives of affected cities, counties, and metropolitan planning organizations to identify compatibility issues and the means of resolving them. These may include:

a. Changing the draft plan to eliminate the conflicts;

b. Working with the affected local governments to amend their comprehensive plans to eliminate the conflicts; or

c. Identifying the new facilities as proposals which are contingent on the resolution of the conflicts prior to the completion of the transportation-planning program for the proposed new facilities.

Findings: The Transportation Safety Action Plan is a topic plan that is part of the Oregon Transportation Plan and does not propose specific new transportation facilities. The Transportation Safety Action Plan is in compliance with the Coordination Procedures for Adopting Final Topic Plans.

4. The Department shall present to the Transportation Commission the draft plan, findings of compatibility for new facilities affecting identifiable geographic areas, and findings of compliance with all applicable statewide planning goals.

Findings: The planned October 2026 Oregon Transportation Commission meeting packet will include all the information as required by this section.

5. The Transportation Commission, when it adopts a final modal systems plan, shall adopt findings of compatibility for new facilities affecting identifiable geographic areas and findings of compliance with all statewide planning goals.

Findings: The Transportation Safety Action Plan does not propose specific new transportation facilities for which compatibility may be assessed. Therefore, findings of compatibility are not

required. Findings addressing the relevant Statewide Planning Goals are set forth in Section C of these findings. Accordingly, this requirement is satisfied. The Department shall provide copies of the adopted final modal systems plan and findings to the Department of Land Conservation and Development, the metropolitan planning organizations, and others who request to receive a copy.

Findings: Per the State Agency Coordination agreement, and customary ODOT practice, the adopted Transportation Safety Action Plan and the Findings Supporting the Transportation Safety Action Plan are to be distributed as an electronic document to the Department of Land Conservation and Development, Metropolitan Planning Organizations, and interested parties from the Transportation Safety Action Plan revision process, and others who request a copy following adoption. The final documents will also be available on the project webpage: https://www.oregon.gov/odot/Safety/Pages/TSAP.aspx

C. STATE LAND USE PLANNING GOALS

The State of Oregon has established 19 Statewide Planning Goals to guide state, regional, and local land use planning. The goals express the state's policies on land use and related topics. The findings below are based on the applicability and content of the Plan. Only the following goals are relevant to the Transportation Safety Action Plan.

Goal 1. Citizen Involvement – The purpose of Goal 1 (660-015-0000(1)) is "To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process."

Findings: Outreach for the Transportation Safety Action Plan was conducted in compliance with OTC Policy 11 – Public Involvement, which establishes public involvement objectives for the development and update of statewide plans, including topic plans, such as the Oregon Transportation Safety Action Plan.

The Transportation Safety Action Plan was built upon continuous engagement with a broad spectrum of partner groups and individuals across Oregon. Refer to the *Record of Outreach During Plan Development* and the *Record of Public Comments during Plan Review* for demonstration of the robust outreach.

Development of the Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 1, Citizen Involvement.

Goal 2. Land Use Planning - The purpose of Goal 2 (OAR 660-015-0000(2)) is "To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions."

Findings: Each local agency's use of the Transportation Safety Action Plan for their future planning is a form of coordination between planning agencies as contemplated by Goal 2. The Transportation Safety Action Plan itself is permissive rather than prescriptive in its Guiding Principles and short-term Actions, which allows for wide variation in specific measures for implementation based on variations in geographic, demographic, and geometric conditions, etc. There are no Guiding Principles in the Transportation Safety Action Plan that require agencies to make amendments to land use plans. It is up to each land use authority to evaluate land use plans and how they might

better align or promote transportation safety. Development of the Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 2, Land Use Planning.

Goal 6. Air, Water, and Land Resources Quality - The purpose of Goal 6 (OAR 660-015-0000(6)) is "To maintain and improve the quality of the air, water and land resources of the state."

Findings: The Transportation Safety Action Plan supports improved air quality in Oregon. Measures promote safe walking and bicycling programs and infrastructure to encourage a shift away from personal vehicle use, lowering total vehicle miles traveled and reducing emissions. Measures promoting roundabouts and intersection management promote roadway efficiencies that reduce idling and stop-and-start speeds for traffic, resulting in a relative reduction of emissions. The Transportation Safety Action Plan does not address water and land resources quality.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 6, Air, Water and Land Resources Quality.

Goal 8. Recreational Needs - The purpose of Goal 8 (OAR 660-015-0000(8)) is "To satisfy the recreational needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts."

Findings: The Transportation Safety Action Plan does not directly address transportation safety in the context of recreational lands, but effective safety programs help create conditions for pedestrians, bicyclists, motorcyclists, and motorists on transportation facilities leading to, or used for, recreational activity. There are no directives in the Transportation Safety Action Plan that require agencies to make amendments to land use plans, however, these improvements can be made near state parks and recreational facilities. The Transportation Safety Action Plan includes actions to improve safety for pedestrians and bicyclists through program and infrastructure investments. In addition, because many recreation sites are located in rural areas, safety improvements on local and rural roads are more likely to appeal to and attract return visits from recreational users. Tourists and recreationists also benefit from effective enforcement and education about seasonal safety conditions, road maintenance, and emergency services.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 8, Recreational Needs.

Goal 9. Economic Development - The purpose of Goal 9 (OAR 660-015-0000(9)) is "To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens."

Findings: The Transportation Safety Action Plan supports economic development by promoting a safe, reliable transportation system. A safe transportation system can provide employees with safe and reliable access to jobs and help attract and retain skilled workers. Safe transportation supports tourism by improving accessibility, boosting traveler confidence, and ensuring stress-free, secure journeys between attractions. A safe system also minimizes economic impacts of recurring congestion and incident-related congestion.

The Transportation Safety Action Plan is in general compliance with and supports Statewide Planning Goal 9, Economic Development.

Goal 10. Housing. The purpose of Goal 10 (OAR 660-015-0000(10)) is "To provide for the housing needs of citizens of the state."

Findings: The Goal addresses housing needs indirectly. The Transportation Safety Action Plan enhances safety for vulnerable road users in residential areas. Safe transit service can increase ridership and reduce the necessity of vehicle ownership, thereby reducing the overall cost burden placed on households, which is a major factor in housing affordability. Creating safe infrastructure for pedestrians and bicyclists on roadways directly supports higher density and walkable areas. Convenient and safe multimodal connections between transit, housing, and land use density create conditions for transit and housing integration.

The Transportation Safety Action Plan is in general compliance with and supports Statewide Planning Goal 10, Housing.

Goal 11. Public Facilities and Services - The purpose of Goal 11 (OAR 660-015-0000(11)) is "To plan and develop a timely, orderly, and efficient arrangement of public facilities and services to serve as a framework for urban and rural development."

Findings: The Goal does not address transportation safety, but improving safety improves the efficiency of the transportation system by reducing incident-related congestion and by supporting the notion that everyone using the transportation system should arrive safely at their destination. The Safe System Approach supports Emergency Medical Services operations by prioritizing post-crash care as a critical pillar of traffic safety, ensuring faster and safer emergency response to reduce fatalities.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 11, Public Facilities and Services.

Goal 12. Transportation - The purpose of Goal 12 (OAR 660-015-0000(12)) is "To provide and encourage a safe, convenient, and economic transportation system."

Findings: The purpose of the Transportation Safety Action Plan is to promote safety for all transportation system modes and all system users. The Transportation Safety Action Plan serves as Oregon's long-range safety topic plan, an element of the Oregon Transportation Plan, and works parallel to other mode and topic plans. The Oregon Transportation Plan includes a section specific to transportation safety, and the Transportation Safety Action Plan further refines this policy framework.

The Transportation Planning Rule OAR 660-012 is the implementing administrative language assuring statewide planning efforts are considered in transportation planning efforts. The majority of the Rule does not apply because the Transportation Safety Action Plan does not include specific projects for safety but identifies opportunities for safety measures on a systemic basis. Similarly, the Transportation Safety Action Plan does not include a financing plan, making most of the Rule not applicable. As required by the rule, the Transportation Safety Action Plan recognizes the importance of addressing safety risks that impact rural areas and makes it clear that coordination among all jurisdictions and safety partners statewide is key to a successful transportation safety program. Also consistent with the Rule, statewide transportation safety needs were identified through thorough data analysis using statewide crash data systems and robust engagement, creating a comprehensive needs assessment for transportation safety in Oregon.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 12, Transportation.

Goal 13. Energy Conservation - The purpose of Goal 13 (OAR 660-015-0000(13)) is "To conserve energy."

Goal 13 states that "land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles."

Findings: The Transportation Safety Action Plan does not directly create land uses or affect energy conservation. However, improving the safety of non-automobile transportation facilities encourages travelers to choose modes other than private vehicles, which may reduce overall transportation energy consumption. More directly, when crashes occur, shortening the time needed to manage, investigate, and clear incidents on busy roadways can reduce idling and stop-and-go traffic backing up in the surrounding area. This, in turn, contributes to lower energy consumption and decreases carbon and other emissions.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 13, Energy Conservation.

Goal 14. Urbanization - The purpose of Goal 14 (OAR 660-015-0000(14)) is "To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities."

Findings: The Transportation Safety Action Plan facilitates safe and orderly rural-to-urban land use transitions by implementing data-driven, scalable actions that manage increasing traffic density, speed differentials, and infrastructure changes. It accommodates urban populations and employment by emphasizing a vulnerable road user framework in urban areas, focusing on protecting pedestrians, bicyclists, and micromobility users. Key actions include aligning roadway design with its surrounding context, dedicating separate bicycle facilities, lowering speeds, etc., with the goal of reducing crash risks, and enhancing livability for all road users, including those who live and work in urban areas.

The Transportation Safety Action Plan is in compliance with and supports Statewide Planning Goal 14, Urbanization.

The following State Land Use Planning Goals do not apply to the Transportation Safety Action Plan:

- Goal 3: Agricultural Lands
- Goal 4: Forest Lands
- Goal 5: Natural Resources, Scenic and Historic Areas, and Open Spaces
- Goal 7: Areas Subject to Natural Hazards
- Goal 15: Willamette River Greenway
- Goal 16: Estuarine Resources
- Goal 17: Coastal Shorelands

- Goal 18: Beaches and Dunes
- Goal 19: Ocean Resources

D. CONSISTENCY WITH OREGON MODAL AND TOPIC PLANS

The Oregon Transportation Plan includes Modal Plans for Highways, Rail, Public Transportation, Bicycles and Pedestrians, and Aviation. It also includes Topic Plans for Freight, Transportation Options, and Safety; as well as incorporates the Statewide Transportation Strategy for greenhouse gas reduction by reference. Each of these plans addresses safety in general terms, and, increasingly, modal and topic plans include specific strategies or actions for improving safety conditions.

The Transportation Safety Action Plan is the "big tent" for transportation safety activities and needs to be broad enough to acknowledge the full range of safety concerns and planned actions that arise in the other plans. All of the plans are required to be consistent with the others. The best case is that the Transportation Safety Action Plan supports the safety agendas of the other plans but, at a minimum, it should not create conflicts with any safety provisions of those adopted plans. In future amendments to the other plans, any new or changed safety provisions will be required to be consistent with the Transportation Safety Action Plan.

Findings: The other modal and topic plans currently in effect were reviewed for their content related to transportation safety. The 2026 Transportation Safety Action Plan was coordinated with staff working on other statewide transportation plans. No inconsistencies or direct conflicts were identified, and no discrete issues in the other plans were identified that had not been raised in the Transportation Safety Action Plan update process. The 2026 Transportation Safety Action Plan is consistent with the Oregon Transportation Plan and other related modal and topic transportation plans that are currently in effect.



APPENDIX D:

ACKNOWLEDGMENTS

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