Salem-Keizer Area Transportation Study

SKATS METROPOLITAN TRANSPORTATION SAFETY ACTION PLAN

Metropolitan Transportation Safety Action Plan

August 2024

Acknowledgments

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Table of Contents

Table of Contents

List of Figures & Tables

Executive Summary

1

"Due to lack of protected crosswalks for bikes and pedestrians, I have been almost struck by cars multiple times. I find that cars do not stop for protected pedestrian crosswalks for bikers and will only stop if I get myself in the crosswalk itself. We need more protection."

—Ray, Age 20-24

As part of the public survey in Spring 2023, we asked residents to share a story about a time they or someone they know felt unsafe (or experienced unsafe conditions) while getting around the Salem-Keizer area and/or why improving transportation safety in the Salem-Keizer area is important to them. The plan includes a small selection of these stories.

To view more, go to https://www.mwvcog.org/transportation/page/metropolitan-transportation-safety-action-plan-mtsap

Executive Summary

The Metropolitan Transportation Safety Action Plan (MTSAP) aims to address the safety needs of all road users within the Salem-Keizer Area Transportation Study (SKATS) metropolitan planning area, encompassing Salem, Keizer, Turner, Aumsville, and adjacent urban areas in Polk and Marion counties, Oregon.

The Process

Developed using the Safe System Approach[1] framework and incorporating elements from the USDOT's Safe Streets and Roads for All (SS4A) program[2], the MTSAP seeks to eliminate crash-related fatalities and life-changing injuries by 2035, with significant reductions by 2030. The MTSAP development commenced in Fall 2022 with crash data collection and trend evaluation, followed by an analysis of locations that may have equity barriers or increased opportunities for crashes. Further analysis and input from partners and stakeholders led to the identification of high-injury networks and case study locations. Public engagement was crucial, ensuring the plan reflected community concerns and experiences. A comprehensive list of safety strategies was compiled and narrowed down to high-priority strategies that can be feasibly applied to address the greatest safety needs. Performance measures were established to evaluate the effectiveness of these strategies over time.

The Safe System Approach guides the MTSAP, emphasizing human vulnerability and shared responsibility. This holistic approach aims to reduce crash likelihood and severity, incorporating proactive and redundant safety measures. The MTSAP addresses safer people, roads, vehicles, speeds, and post-crash care.

WHO WAS INVOLVED?

Two groups were pivotal in developing the MTSAP: a Steering Committee of elected and appointed representatives and a Project Management Team (PMT) comprising staff from ODOT, Marion County, City of Keizer, City of Salem, and Cherriots. Extensive public outreach in the Spring of 2023 involved an online Open House, surveys, focus groups, and interactive maps to gather community concerns and stories related to transportation safety. This input shaped the plan, and further public review was conducted in August 2024.

1 https://www.transportation.gov/NRSS/SafeSystem

2 https://www.transportation.gov/grants/SS4A

ROLE OF THE MPO

As the metropolitan planning organization (MPO) for the Salem-Keizer area, SKATS coordinates regional transportation planning and programming of federal transportation funds. The MPO is mandated by federal law to consider projects and strategies that enhance transportation system safety for all users. SKATS tracks and monitors safety performance targets, analyzes crash data, and prioritizes investments to improve regional transportation safety.

Current State of Safety: Background Context

PREVIOUS SAFETY WORK IN SKATS

SKATS has a history of coordinating with local jurisdictions and ODOT on transportation safety projects. This includes corridor and roadway plans focused on safety improvements. Since 2014, SKATS has annually summarized crash data, now available through an online dashboard. The MPO process for developing long-range plans and the Transportation Improvement Program (TIP) increasingly emphasizes safety projects, leading to numerous implementations funded by federal and local governments.

Understanding Safety Needs

The MTSAP examined fatal and serious injury[1] crash data from 2017-2021, identifying systemic trends such as pedestrian crashes in dark conditions, fixed object crashes on two-lane roads, head-on crashes on urban arterials, and left-turn crashes at intersections. The high injury network (HIN) analysis reveals that 5% of roads account for nearly 40% of traffic deaths, highlighting the need for targeted safety improvements.

PUBLIC OUTREACH

Community input was integral to developing the MTSAP. The first phase involved an online open house, survey, and interactive comment map, with outreach efforts to engage the community. The feedback highlighted safety concerns, unsafe behaviors, and infrastructure needs. A second online open house further refined the plan based on public input.

EQUITY CONSIDERATIONS

The MTSAP recognizes historical inequities in public policy, transportation, health, and the built environment. Marginalized communities, particularly Black, Indigenous, and other people of color (BIPOC), low-income, and disabled individuals, have been disproportionately affected by these decisions. The plan prioritizes improving safety in high disparity areas, improving equitable access to a safe transportation system.

EMPHASIS AREAS

Six emphasis areas guide the MTSAP: intersections, pedestrians, bicyclists, speeding, impairment and distraction, and road user age. These areas reflect common crash contributing factors and community priorities, directing strategies and investments to maximize safety impacts.

1 Consistent with Oregon crash reporting, all injuries are scored on a five-point scale: fatal injury, suspected serious injury, suspected minor injury, possible injury, no injury (also property damage only). Serious injuries are defined as an injury that prevents a person from walking, including severe lacerations, broken limbs, abdominal injuries.

Plan of Action

The MTSAP outlines actionable strategies to eliminate fatal and serious injuries on roadways within the SKATS area. The MPO and member agencies will continue and expand upon the safety work already being done, such as regular maintenance of assets, access management, support for improved emergency response, and engagement with Safe Routes to School programs.

The MTSAP identifies a high injury network where high-priority safety strategies should be implemented to reduce the risk of fatal and serious injury crashes in the Salem-Keizer area. In addition to the high-priority strategies, the plan includes references to several external safety resources as well as 10 case studies that highlight local examples of safety concerns and potential strategies.

PRIORITIZED STRATEGIES

High-priority strategies include installing enhanced pedestrian crossings, median refuge islands, buffered bicycle lanes, street lighting upgrades, leading pedestrian intervals, green pavement markings, narrow lane widths, speed enforcement programs, and improving traffic control visibility. To eliminate fatal and serious crashes over time, the MTSAP advocates for modifications to key policies, processes, and standards. These changes aim to create a "safety first" foundation influencing transportation system planning, design, funding, construction, maintenance, and use. SKATS will also establish an interagency committee to implement this plan and monitor future safety performance.

TRACKING PROGRESS

SKATS will track the implementation and success of the MTSAP's through several output and outcome performance measures. The monitoring of these performance measures will be publicly accessible on the SKATS website, and an established safety committee will review this information annually.

Conclusion

The SKATS Metropolitan Transportation Safety Action Plan represents a comprehensive effort to create a safer transportation system in the Salem-Keizer area. Through collaborative planning, public engagement, and targeted safety strategies, the MTSAP aims to eliminate fatal and serious injuries, ensuring a safer future for all road users.

Purpose & Vision

“Every time I drive, I see distracted drivers and aggressive drivers. Thankfully, I was taught to be a defensive driver and always be aware of my surroundings to avoid several possible accidents. I’m also a wheelchair user and with the increase in pedestrian accidents, I do fear being hit while crossing the street, but do my best to make eye contact before leaving the sidewalk.”

—Erin, Age 35-44

Purpose & Vision

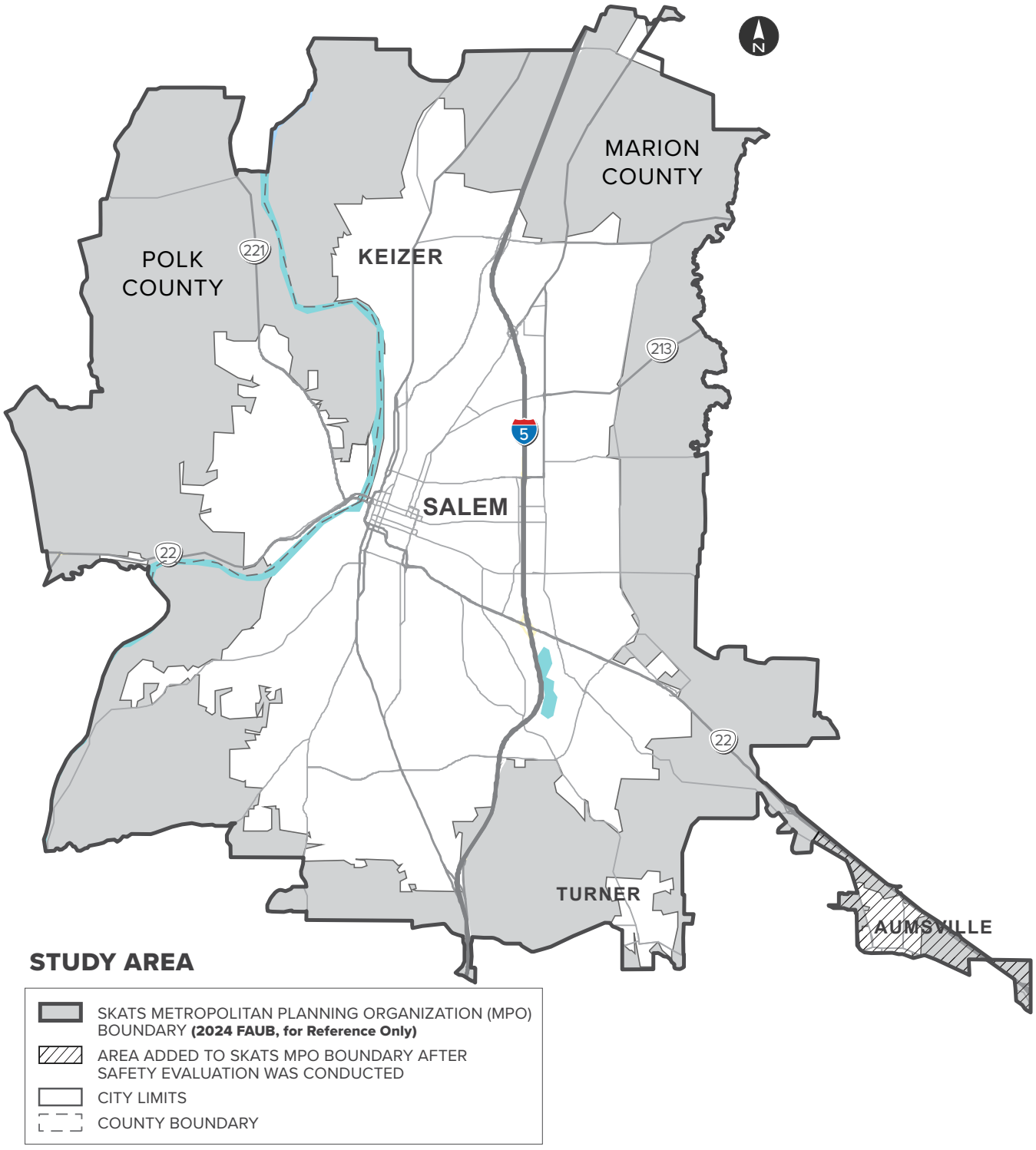
This purpose of this Metropolitan Transportation Safety Action Plan (MTSAP) is to address the safety needs of people who walk, bike, roll, and drive in the Salem Keizer Area Transportation Study (SKATS) metropolitan planning area, including the cities of Salem, Keizer, and Turner, and Aumsville, Oregon, plus adjacent urban areas in Polk and Marion counties.

This purpose of this Metropolitan Transportation Safety Action Plan (MTSAP) is to address the safety needs of people who walk, bike, roll, and drive in the Salem Keizer Area Transportation Study (SKATS) metropolitan planning area, including the cities of Salem, Keizer, and Turner, and Aumsville, Oregon, plus adjacent urban areas in Polk and Marion counties. This plan was developed using the Safe System Approach framework and includes the recommended elements of a comprehensive safety action plan, as developed by the USDOT's Safe Streets and Roads for All (SS4A) program. The SKATS partners are committed to implementing The SKATS partners are committed to implementing the plan's policies, programs, and projects to save lives and prevent life-changing injuries. Thousands of people travel safely to and from work, school, and recreation on a daily basis in the SKATS area. However, many people are still killed or seriously injured while using the transportation system. The MTSAP aims to eliminate these tragedies with the following goal.

The Salem-Keizer Area Transportation Study (SKATS) partners are working together to create the safest transportation system possible and establish a culture of safety where every life counts and one death is too many.

We envision a region with zero crash-related deaths and life-changing injuries by 2035, and a 50% reduction in these crashes by 2030.

FIGURE 1. SKATS METROPOLITAN PLANNING AREA



The Process

"When I moved to Salem 5 years ago, it never occurred to me that I would feel far less safe using my bike for everyday transportation around town than I did in either Chicago or Seattle. But the lack of any coherent bike lanes or other infrastructure, combined with the speeds at which vehicles move through the city have made it so that my bicycle has sadly languished in the garage while I take my car for even short errands and trips around town. Salem appears to be designed to optimize the convenience of moving people through it in cars and trucks, rather than for the safety and health of those who actually live in the city."

—Oren, Age 65+

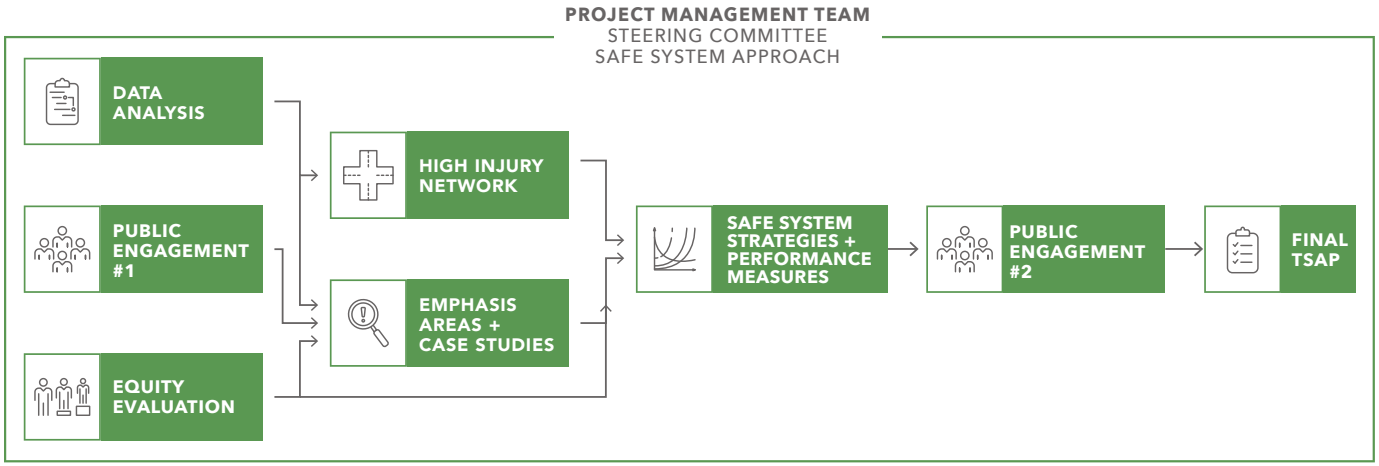
The Process

The development of the MTSAP began in Fall 2022 with crash data collection and an evaluation of trends. An analysis of locations in the Salem-Keizer area where there are barriers to equitable and safe transportation access was also part of the first steps of the plan. This information, combined with valuable input from the public, helped the project team identify the high-injury network, emphasis areas, and case study locations.

A comprehensive list of safety strategies was compiled, which focused on addressing all objectives of the Safe System Approach. The list was narrowed down to a short list of high-priority strategies, which reflect the preferred approaches by the member agencies to improve safety and reduce crashes at high-injury locations. Performance measures were also identified to understand the value of MTSAP efforts over time and whether the strategies are leading to reductions in fatalities and life-changing injuries.

The project team then shared the plan content with the public to make sure it reflected community concerns and experiences.

FIGURE 2. PROJECT PROCESS



Who Was Involved?

Two groups were formed to help develop the MTSAP: a Steering Committee of elected and appointed representatives and a Project Management Team (PMT) that included staff from ODOT, Marion County, City of Keizer, City of Salem, and Cherriots.

To ensure that community input would be part of this plan, an extensive public outreach was conducted in March/April 2023 via an online Open House (that included an online survey completed by 795 persons and an interactive map with 1100 comments) and four focus groups. Details of the public outreach approach and results are included later in this plan. This public input was summarized in documents posted on the project website and – more importantly -- used to shape the plan. When the draft plan was ready for public review, a second online Open House was held in August 2024 to get public feedback on the draft plan.

Role of the MPO

As the metropolitan planning organization (MPO) for the Salem-Keizer area, the Salem-Keizer Area Transportation Study (SKATS) MPO is tasked with coordinating among local governments for regional transportation planning, as well as programming discretionary federal transportation formula funds to projects and programs in the Salem-Keizer area. Under federal law, the scope of the MPO's planning process shall provide for the "consideration of projects and strategies that will increase the safety of the transportation system for motorized and non-motorized users" (23 USC 134 (h)).

MPOs track and monitor safety performance measure targets to help local governments evaluate which safety goals and targets are being met. The MPO planning process is designed to enhance the safety, security, and mobility of all users of the region's transportation system and maintain a variety of plans, reports, initiatives, and studies that identify and promote safety-related goals and outcomes. Staff regularly analyzes crash data by mode, severity, and location to identify emerging trends and prioritize investments. In 2023, SKATS initiated the development of its initial metropolitan transportation safety action plan to create a regional framework for the reduction of deaths and serious injuries across the SKATS area, and to prioritize safety strategies and actions for implementation.

Current State of Safety: Background Context

"I can't walk around my neighborhood with my little kids in the stroller because there are no sidewalks to safely walk on. We are forced to walk in the street where cars and drivers that do not pay attention are driving too fast."

—Stacey, Age 35-44

Prior Safety Projects

What Previous Safety Work Has Been Completed in SKATS?

Prior to development of this safety action plan, SKATS has a long history of coordinating with the local jurisdictions/agencies and ODOT on transportation safety issues, studies, and projects. This includes collaborating with ODOT and the local jurisdictions on corridor, area, or roadway transportation plans where improving transportation safety was either the primary or a complementary objective. Starting in 2014, SKATS developed an annual summary of crash data within the region, migrating that work to an online dashboard documenting crash statistics for the SKATS area. As transportation planners, the SKATS staff advocate for safety projects and enhancements to local transportation projects. The MPO process for developing the long-range Metropolitan Transportation Plan (MTP) and the SKATS Transportation Improvement Program (TIP) evolved with greater emphasis on identifying and safety projects for all modes of travel, making safety the prime criteria during project prioritization and funding. As a result, many projects that improved safety were implemented with the federal funds (and local government match) provided by the TIP: from new sidewalks and bike lanes, enhanced crosswalks, bike paths, new traffic signals and signal upgrades, turn pockets, bus shelters, and the Safe Routes to School program.

PROJECT SELECTION/PRIORITIZATION IN SKATS PLANS (MTP AND TIP)

The process for selecting projects to include in the **SKATS 2050 Metropolitan Transportation Plan (MTP)** involves scoring each project based on ten criteria, including one for safety. While other criteria were scored either as a "0" or "1", the safety criteria can receive a maximum score of "2" if the project would increase the safety of vulnerable road users (people walking or biking). In addition, the SKATS Policy Committee directed that an additional point weighting scheme which reflects the goals of the MTP gives the highest weight to safety projects (4 point multiplier, see Table 1 below).

TABLE 1. CRITERIA AND ADDITIONAL WEIGHTING FOR PROJECT SELECTION IN THE MTP

CRITERIA	WEIGHT / MULTIPLIER
SAFETY	4
ENHANCING TRANSIT SERVICE OR OPERATIONS	3
REDUCING A GAP IN A REGIONAL SYSTEM	3
ADDRESSING A BOTTLENECK	3
CONTIGUOUS TO ADJACENT PROJECT FROM ANOTHER JURISDICTION	1
ALL OTHER CRITERIA (EACH)	1

Similar to the MTP, applications for funding in the SKATS Transportation Improvement Program (TIP) for projects to be implemented over the next 4 years were also scored using criteria with weighting factors. The highest weighted score was applied to safety projects that "strongly supported" the safety goal of the MTP in which a project "Improves safety for vulnerable users or a known location (including safe routes to school projects, buffered/protected bike lanes, enhanced pedestrian crossings, separated facilities (including transit multimodal center)."

SKATS CRASH DASHBOARD

The crash statistics dashboard developed by SKATS includes ODOT supplied crash data from 2007 to 2021 and is updated yearly as new data is provided by ODOT. It is available on the Mid-Willamette Valley Council of Governments website. The dashboard includes tables, charts, and maps to document crash locations, crash trends over time, contributing factors to crashes, injury severity, and many other factors associated with crashes. Summaries of major crash statistics are shown on each page of the dashboard. As an interactive tool, it allows the use of filters to focus on multiple aspects of the crash databases.

SKATS SAFE ROUTES TO SCHOOL PROGRAM

The Salem-Keizer Safe Routes to School (SRTS) program began in January 2020 with a focus on teaching pedestrian safety skills and encouraging safe walking and biking to elementary school students. When schools were closed due to COVID, events were held including free bicycle repair events, outreach at markets and fairs, and developing recommended walking route maps. As students returned to school, encouragement events have included International Walk and Roll to Anywhere/School Day, Walk + Roll Challenges, Ruby Bridges Walk + Roll to School Day, and bike rodeos. In 2023 the program taught pedestrian safety classes during PE classes. A partnership with Cycle Oregon began in Spring 2024 to teach bicycle safety fundamentals at three elementary schools[1].

INVOLVEMENT OF SKATS IN LOCAL GOVERNMENT AND ODOT TRANSPORTATION PLANS AND STUDIES

Over the years, SKATS staff are regularly asked to participate on project teams for a transportation study, plan, project, or program that includes a safety evaluation. Recent examples include participating on the City of Salem's Safer Pedestrian Crossings program and Salem's Winter-Maple Bikeway Plan. SKATS has also provided staff time and federal funds for Salem's and Keizer's Salem Parkway Kroc Center Access Feasibility Study and Keizer's Wheatland Road Multimodal Corridor Plan, and Marion County/Salem's Cordon Kuebler Corridor Plan.

MPO-FUNDED, STATE-FUNDED AND LOCALLY FUNDED SAFETY PROJECTS – AN ABBREVIATED SUMMARY

The local jurisdictions and the MPO often combine their funding sources for safety projects, most frequently to build new sidewalks and bike lanes on regionally significant roadways where they did not exist before. Geographically, safety projects have been funded in Keizer, Turner, Salem (with many projects in northeast Salem[2]) and primarily the

1 Cycle Oregon provided trailers with bikes and helmets for 3-weeks of instruction and provided PE teachers with training to integrate into their individual PE lesson plans.

2 Northeast Salem is a part of the Salem area with the highest levels of transportation disadvantaged population, as documented in *Demographic Profile of Transportation Disadvantaged Populations* produced by SKATS most recently in April 2022. Population

unincorporated urban and rural areas of Marion County that are within the SKATS area. Just a few examples of safety projects using SKATS discretionary funds include enhanced pedestrian safety crossings at multiple locations; new or upgraded signalized intersections (e.g. Lancaster Drive SE at Macleay Rd SE, Fisher Rd NE at Ward Drive NE); buffered bike lanes on Union Street NE; the multi-use path in Wallace Marine Park in west Salem; and a roundabout in Keizer (at Verda Lane NE and Chemawa Road NE).

At the local level, transportation safety projects are included in a local jurisdiction's Capital Improvement Program or in a local bond, or required as consideration for development. The last two City of Salem bonds (2008 and 2022) included significant funding for safety-related projects.

SKATS maintains a long list of locally funded safety projects constructed since the early 1990s. Projects to reduce vehicle crashes include:

- raised medians and access management to limit vehicle turning conflicts
- safety upgrades at railroad crossings
- speed tables and speed humps on local streets to slow vehicles
- radar speed feedback signs
- red-light running and speeding-on-green cameras
- traffic control upgrades
- lowering speed limits;
- travel lane realignments and reallocations to reduce the number or width of vehicle travel lanes to provide bicycle and pedestrian facilities
- changes to vertical curves to improve visibility for drivers
- larger and more reflective traffic signs and signals
- flashing beacons to alert drivers of upcoming traffic signals
- advanced Dilemma-Zone Detection system for trucks

There have also been many projects aimed at improving the safety of bicyclists and pedestrians including:

- new sidewalks and bicycle lanes
- curb extensions that shorten intersection crossing distances
- pedestrian countdown signals added at intersections (with some locations beginning have leading pedestrian intervals)
- median islands at intersections or mid-block for safer pedestrian crossings (especially near schools, parks, and shopping areas) including many with rectangular rapid flashing beacons (RRFB) or similar flashing beacons
- off-street pedestrian paths to schools and parks (e.g., conversion of the Union St railroad bridge for pedestrians and bicycling and the Peter Courtney bridge over the Willamette River, plus their connecting multi-use path)
- separated bike paths and buffered bike lanes

characteristics including race, ethnicity, income, vehicle ownership, age, linguistic isolation, and disability are evaluated. Census tracts with multiple higher than average populations are in northeast Salem. Report available https://www.mwvcog.org/transportation/page/transportation-disadvantaged-reports.

- bicycle signals at signalized intersections
- Salem's Winter-Maple Neighborhood Greenway for bicycling and walking
- ADA-accessible curb ramps installed throughout the region
- New shelters and curb "bulb-outs" at transit stops.

ODOT has implemented several projects in the Salem-Keizer area that have improved safety on state-owned or operated facilities including:

- access management and median barriers to reduce vehicle turning conflicts on Highway 22E (Mission Street) and Highway 221 (Wallace Road)
- median barriers to eliminate head-on collisions on Highway 22E, Highway 221, and I-5
- rumble strips
- enhanced pedestrian crossings and rectangular rapid flashing beacons (RRFB)

ODOT'S ARTS AND SRTS INFRASTRUCTURE PROGRAMS

In 2013, ODOT made federal Highway Safety Improvement Program (HSIP) funds more available to local jurisdictions by creating the All Road Transportation Safety (ARTS) Program. There are four ARTS application types (hot spot, systemic intersections, systemic roadway departure, and systemic bicycle-pedestrian), which is consistent with the Emphasis Areas of Oregon's Transportation Safety Action Plan. Projects are selected based on a cost effective use of the funds for safety improvements addressing fatal and serious injury crashes.

Since 2018, the jurisdictions within SKATS have received numerous ARTS grants. MPO staff compiled a list of 27 ARTS funded projects since 2018, totaling close to $30 million. Of these projects, seven have been completed, 14 have been started, and seven are funded but not yet started. On county roads these include systemic safety projects to reduce roadway departure, rumble strips, curve warning signs, and striping and marking improvements. In Salem and Keizer, this includes signal improvements, intersection upgrades to address a safety hot-spot, and buffered bike lanes. ODOT projects in the SKATS area included signal enhancements, curve warning upgrades, lighting enhancements and rumble strips, and bike/pedestrian enhancements.

Through ODOT's Safe Routes to School infrastructure grant program, the city of Salem and Marion County have received multiple grants to construct new sidewalks and protected crossings near schools. Using funds from ODOT's Enhance program, the City of Salem was able to construct five pedestrian safety crossings in 2019-2020.

Summary of Local Safety Plans, Statewide Laws

Reducing crashes and improving transportation safety for all users has been and continues to be a priority for all the jurisdictions in the SKATS area. The following describes some of the recent and ongoing planning work where transportation is a major element of the work.

Marion County

In 2023, Marion County began work on a Transportation Safety Action Plan. The County also received $500,000 in NHTSA funds (through ODOT) to evaluate crash data, implement Vision Zero software, study impaired driving, hold community sessions on reduction of impaired driving, create driveway safety review with new permits, create a Safely Home program with bars, evaluate roadway safety for public work crews, and incorporate safety concepts into capital projects.

In 2024, Marion County and City of Salem collaborated to complete the Cordon-Kuebler Corridor Plan. The plan examined crashes along the corridor and identified six goals including one for safety: "Provide a corridor that enhances the safety for all transportation modes and users." The plan's recommended projects include widening some segments of the corridor to four travel lanes, but including a raised median, access management, eight locations with new traffic signals, and the option for roundabouts at six intersections. Stop-controlled intersections will be made safer by adding medians and allowing only right-turn movements. Roadway cross sections include separated multi-use paths for biking and walking, with the addition of buffered bike lanes for segment #1 (Hazelgreen Rd).

City of Keizer

Past safety projects in Keizer include the first roundabout within the MPO area, and multiple street upgrades to add sidewalks, bike lanes, and ADA ramps. Recent projects include installing radar speed feedback signs at several locations, pedestrian crossings with rectangular rapid flashing beacons (RRFBs), one on Chemawa Rd in 2023, another planned on Lockhaven Drive at the intersection of McClure Street, and a speed table in front of Cummings Elementary School. The Wheatland Road Multimodal Corridor Plan (approved in 2021) provides a vision and recommendations for a multi-modal corridor to improve walking and biking accessibility and safety on Wheatland Road.

In the next few years, Keizer intends to update their Transportation System Plan and complete the River Cherry Overlay Revitalization Plan to address

transportation safety improvements.[1] In 2024, Keizer is in the process of updating their Neighborhood Traffic Management Program (NTMP) that describes a detailed process for identifying transportation safety issues (particularly speeding) and needs on neighborhood streets and collector streets and develop NTMP solutions for the top ranked locations. Keizer has a Traffic Safety/Bikeways/ Pedestrian Committee that meets monthly to discuss and recommend improvements to make driving, walking, and biking safer in Keizer and to coordinate with Keizer staff, Keizer police, and the public on these issues.

City of Salem

Prior Salem studies have resulted in recommendations and implementation of safety projects. The Central Salem Mobility Study (2013) had multiple recommendations that have since been implemented, such as the Union Street Family Friendly Bikeway, portions of the Winter-Maple Neighborhood Greenway, new buffered bike lanes in downtown, and removal of double turn lanes at multiple intersections.

Due to a noticeable increase in crashes involving pedestrians, in 2017 the city of Salem conducted the Salem Pedestrian Safety Study. In addition to extensive field observations, the study reviewed crash data on Salem city streets (from 2011 to 2016) examining lighting conditions[2], vehicle movements, demographics of drivers and pedestrians, and crash causes. Speeding, driving aggressively, and failing to yield to pedestrians were observed. Another trend was the high number of conflicts with turning vehicles, including impatient drivers with aggressive turning movements through crosswalks.[3] Recommendations included installing mid-block crossings with median islands and rectangular rapid flashing beacons (RRFB); recommendations for intersections included changes to signal timing to protect pedestrians, as well as leading pedestrian intervals; improve roadway and intersection lighting; guidelines for site plan review to align enhanced crossing and access to developments; and education campaigns and targeted enforcement.[4] Site specific improvements for 20 locations were recommended, and many of them either have been implemented or in the process of being implemented.

Also stemming from the Salem Pedestrian Safety Study are two ongoing programs that encourage Salem residents to propose transportation safety measures:

- **Safer Pedestrian Crossing Program** – Residents can propose locations for a pedestrian crossing and view other public requests on a map. Locations that meet eligibility criteria are prioritized on a defined scoring criteria. Projects are funded based on available funding.
- **Neighborhood Traffic Management Plan (NTMP)**, updated in 2023 – Outlines how traffic speeds and volume concerns in residential areas are examined, prioritized, and addressed by the City. Residents can submit a concern, which has an evaluation and prioritization process that uses a point system. Top ranked locations are considered for traffic calming measures such as speed

1 The Keizer TSP update and River-Cherry plan are noted as City Council priorities in the draft City of Keizer Strategic Plan (2024-2028)

2 39% of all crashes occurred in the dark (i.e., times of the day when there is no daylight), but 90% of fatal crashes occurred in the dark. It was noted that the presence of street-lighting is very under-recorded in the ODOT crash database.

3 Their concerns were echoed in the MTSAP online-survey responses.

4 These recommendations are strategies included in the MTSAP.

bumps, speed feedback signs, medians, etc. Twenty-two measures are described in the NTMP.

The City of Salem is preparing to update its local Transportation Systems Plan (TSP), building on the goals and policies adopted through the city's *Our Salem project* (updates of land use zoning) and the transportation actions included in the city's *Climate Action Plan*. Both plans call for a higher density, mixed use urban landscape where destinations are more accessible via walking, biking, or transit with corresponding reductions in vehicle travel. The TSP update will also address new State requirements for transportation and land use planning resulting from the Climate-Friendly and Equitable Communities (CFEC) rulemaking process[1]]. In 2023, the Salem City Council formally adopted a policy that the TSP update **include a commitment to Vision Zero** and set a clear goal of eliminating traffic deaths and serious injuries among all road users over the next 10 years.

In 2024, the City of Salem was awarded a $2.8 million Safe Streets for All (SS4A) grant from the U.S. Department of Transportation to support Salem's Vision Zero program. The grant will help fund various components of the Vision Zero program, including:

- **Salem Vision Zero Plan** – A strategic blueprint focused on implementing safety measures and fostering responsible road behaviors.
- **Residential Neighborhood Speed Limits** – Install 20-mph speed limit signs ("20 is Plenty" in residential neighborhoods, aiming to create safer transportation for all.
- **Speed Radar Enhancements** – Purchase speed radar devices and trailers to inform drivers of new speed limits.
- **Public Education Campaign** – Initiative to educate the community on road safety behaviors and responsible driving, walking, and biking practices.

Red-light cameras and speed-enforcement cameras are safety strategies that more cities in Oregon are using. The City of Salem implemented Photo Red Light cameras in 2009 at three intersections and added three more intersections in 2021. For these six locations, Salem police issued over 10,000 citations annually for red-light running.[2]

All six of the Salem intersections with red-light cameras also have Speed-on-Green cameras that detect vehicles with a speed at 11 mph or greater over the posted speed limit (the most recent two were installed in July 2024). In its first full year (2021) Salem Police issued over 10,000 citations for speeding, and in 2022 issued close to 7,500 citations for speeding, a 25% decrease. This decrease may demonstrate that the Speed-on-Green cameras are having an effect on speeding at these four locations.[3] Salem's 2008 Streets and Bridge Bond constructed safety improvements throughout the city, from 2009 to 2020. A map showing these projects is on the Keep Salem Moving webpage. In 2022, Salem voters passed the Safety and Livability Bond, with $157 million for streets and sidewalks. Among the projects are safety improvement projects including new traffic signals, new sidewalks, bike lanes and separated bike paths, pedestrian safety crossings, and ADA curb ramps.

1 The City of Keizer and Marion County are also required to update their TSPs under the same recently adopted CFEC state rules; their processes have not yet begun but must be completed by 2029. The City of Turner is in the middle of their TSP update with expected adoption by the end of 2024

2 Electronic Traffic Enforcement Program – 2023 Legislative Report, (City of Salem)

3 Automated Speed Enforcement can substantially reduce speeding on a wide range of roads. IIHS studies of cameras on residential roads in Maryland, on a high-speed roadway in Arizona and on city streets in the District of Columbia found that the proportion of drivers exceeding speed limits by more than 10 mph declined by 70%, 88% and 82%, respectively, six to eight months after cameras were introduced (IIHS, 2018a)

Recent ODOT Facility Plans in the SKATS Area to Improve Safety

The Interstate-5 interchange at Brooks is at the north tip of SKATS. In March 2023, Oregon's Transportation Commission adopted the 2022 Brooks Interchange Area Management Plan (IAMP) for the Brooklake Road at I-5 interchange area to address operational and safety issues at the interchange and along Brooklake Road. The grade of Brooklake Road over I-5 is a safety concern as it restricts sight distances. The inadequate capacity of the exit ramps – with vehicle queues occasionally spilling back onto the mainline lanes of I-5 - is another safety concern. The IAMP identified two design options for replacing the current interchange ranging in cost from $60 to $70 million. The IAMP also includes an interim improvement option to be implemented in the near-term (within 10 years) to provide additional storage for the exit ramps; add signals at both exit ramps; and add pedestrian pushbutton signals and sidewalk connections, all of which will address some of the safety issues.

ODOT's Safety Priority Index System (SPIS) identifies roadway segments exhibiting unusually high occurrences of crashes, using a calculated SPIS score based on crash rates, frequency and severity over the prior three calendar years ODOT uses these scores to rank roadway sites (primarily on the state-own roadway system) most likely to benefit from crash reduction countermeasures. Hwy 22W (aka Willamina-Salem) in the vicinity of the intersection of OR 22 and OR 51 has long been a top SPIS site, with a 2022 SPIS score putting it in the top 10% of crash sites statewide. ODOT's Hwy 22 Expressway Plan recommended frontage and backage roads on both sides of the highway, and a new interchange at OR22/OR51 in place of the current at-grade intersection. As of 2024, this interchange plan is being designed and developing an environmental assessment.

Other state highways within SKATS have top 10% and top 5% SPIS sites, and ODOT is planning safety modifications at some of those locations. For example, plans are being developed for projects along sections of Highway 99E (north and south of downtown Salem) coming from a recent Urban Verification Study by ODOT. However, there are other SPIS sites that do not have an engineering solution analyzed.

ODOT Plans and Guidance for Improving Safety

Oregon's 2021 Transportation Safety Action Plan provides the long-term vision of zero deaths and life-changing injuries and provides goals, policies, and strategies to work toward this vision. Four broad emphasis areas were chosen – deterring risky behaviors (impaired driving, unbelted, speeding, and distracted driving); safety treatments at intersections and minimizing roadway departures; protecting vulnerable users of the transportation system (minimizing pedestrian, bicyclist, motorcyclist, and aging road user crashes); and improve systems of data, training/education, supporting law enforcement and emergency responders, and minimize commercial vehicle crashes.

Complementing Oregon's TSAP is ODOT's Blueprint for Urban Design (2019), which has since been fully incorporated into the Oregon Highway Design Manual, and is a comprehensive framework to guide urban design practice for urban projects on the state system. This follows a long history of context sensitive design approaches by ODOT,

formalizing the call for design flexibility to accommodate individual community needs while considering the operations, safety, and design of urban projects.

ODOT provides many other safety-related resources for local agencies, including the Intersection Safety Implementation Plan, the Bicycle and Pedestrian Safety Implementation Plan, the Roadway Departure Safety Implementation Plan, and the Safety Investigations Manual, among others.

Revisions to Oregon Laws on Speed Setting

Speed Zones on Public Roads in Oregon – Setting speeds for public roads in Oregon has evolved over the last 5 years. Current rules for setting speeds for public roads continue to require an engineering study. These studies analyze multiple factors of the roadway including: the speed characteristics of free flowing traffic, crash history, average daily traffic volume, context of the roadway (the type and density of development); the roads functional class; description of pedestrian and bicycle activity (as well as other activities such as skates, scooters, personal assistance devices); presence, type and kind of pedestrian and bicycle facilities; and transit routes or facilities. The engineering study must recommend a speed within the range of recommended speeds that are organized by context and functional class (for example, the "Urban Mix / Arterial" has a range of recommended speeds from 25 mph – 30 mph).

However, the analysis can recommend a speed outside the range of recommended speeds under specific circumstances listed in the rule. This includes if the crash rate for the segment exceeds 150% of the average crash rate for the same functional class of highway within the jurisdiction of the road authority, or there has been more than one fatal or serious injury speed-related crash in the past three years.

In 2021, a new state law (HB 3055) gave all incorporated Oregon cities and two counties the ability to set speed limits on their roads[1]. It is important to note that this law does not allow local agencies to use their own speed limit setting criteria, but instead allows city and county staff to apply ODOT criteria, processes, and policies. Delegation of this authority to set speed limits requires a written application from the city or county to the State Traffic-Roadway Engineer. The process to determine if ODOT will delegate this authority includes ODOT's review of the local authority's initial compliance to speed zoning; if delegation of authority is granted, ODOT may do periodic reviews[2].

1 https://www.klcc.org/transportation/2022-11-30/oregons-cities-can-now-apply-to-control-speed-limits-on-their-own-streets

2 OAR 734-020-0013, (3/10/2022)

Current State of Safety: Crash Data

"I have driven in places all around the world, but Salem has the worst drivers anywhere. They drive with reckless abandon and refuse to lift their right foot to let anyone merge or yield. People have forgotten about common courtesy. It's safer on a racetrack at 150mph than driving to the store around here."

—Rex, Age 65+

Crash Trends

To identify the most appropriate safety projects and strategies, we must first understand where, how, and why crashes are happening on Salem-Keizer area roadways. To do this, we studied reported crash data provided by ODOT. Although the analysis focused on fatal and serious injury crash data from 2017-2021, the plan also considers long-term crash trends for all modes and all severities since 2007 through 2022 (preliminary data).

FIGURE 3. SKATS CRASH TRENDS INFOGRAPHIC

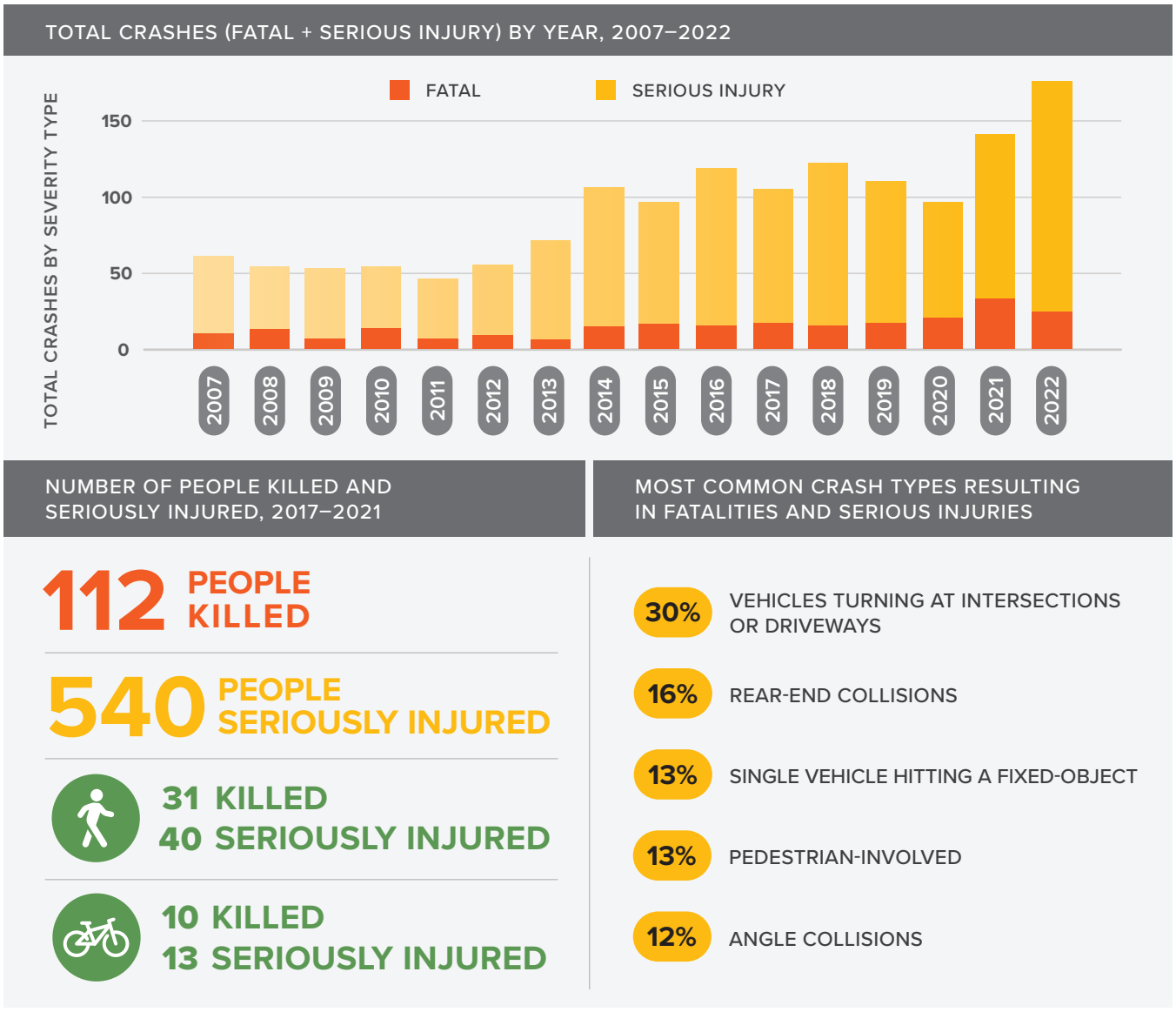


FIGURE 4. 2017-2021 SKATS FATAL AND SERIOUS INJURY CRASH LOCATIONS

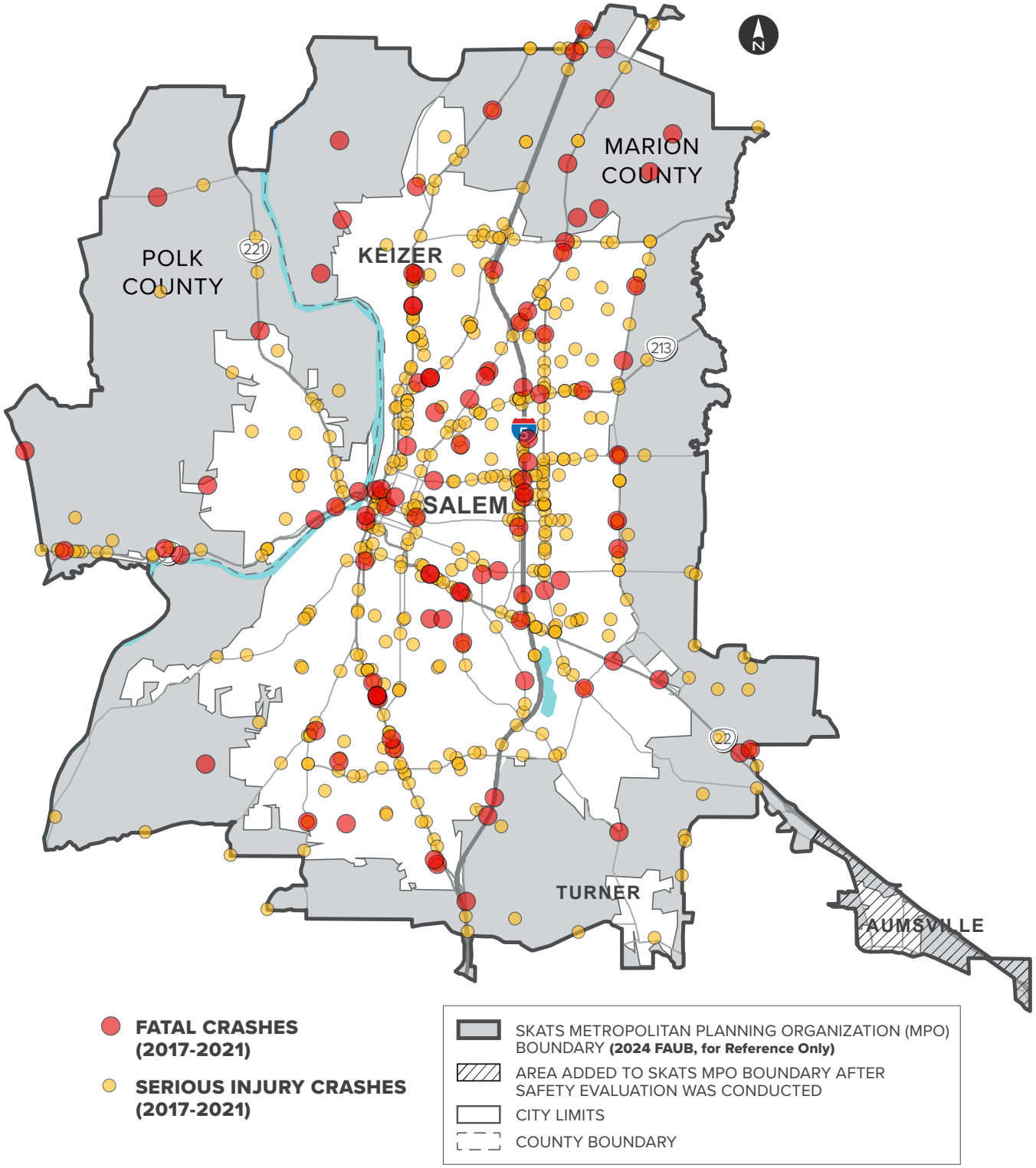


Figure 4 shows the locations of crashes where someone was killed or seriously injured in the Salem-Keizer area. Geographically, these events cover the entire region, affecting people in Salem, Keizer, Turner, and the urban fringes of Marion County. When we talk about improving safety, it is important that we consider everyone who travels through the Salem-Keizer area, whether they are driving to work, walking to lunch downtown, taking a family bike ride to a neighborhood park, or driving a tractor down the road during harvest season.

Comparing crashes that occurred from 2007-2011 to 2017-2021, the number of persons killed and seriously injured more than doubled.

While total crashes increased by 17% (from 14,536 to 17,046) between the two time frames, both the number of people killed and those seriously injured more than doubled during this time. Non-serious injuries increased by 56%. Pedestrians killed or seriously injured increased from 17 to 31 (+82%). Bicyclists killed or seriously injured increased from 2 to 10. For comparison, during that same timeframe the Salem-Keizer area population increased by just 11.5%.

Table 1 highlights the twelve key crash attributes that are more common in fatal and serious injury crashes in the SKATS-area than statewide[1], or that are more likely to result in fatal or serious outcomes[2].

TABLE 2. SUMMARY OF KEY CRASH ATTRIBUTES, 2017-2021 DATA

CRASH ATTRIBUTE	PRESENT IN 10% OR MORE OF FATAL AND SERIOUS INJURY CRASHES (%)?	MORE COMMON LOCALLY THAN STATEWIDE?[1]	MORE LIKELY TO HAVE A SEVERE OUTCOME?[2]
INTERSECTION CRASHES	Yes (47%)	Yes	Yes
SPEED-RELATED CRASHES	Yes (16%)	No	Yes
CRASHES INVOLVING ALCOHOL AND/OR DRUGS	Yes (11%)	No	Yes
CRASHES INVOLVING ALCOHOL ONLY	No (9%)	No	Yes
CRASHES INVOLVING UNRESTRAINED OCCUPANTS	No (3%)	Yes	Yes
CRASHES INVOLVING A YOUNG DRIVER (15-20)	Yes (12%)	No	Yes
CRASHES INVOLVING AN AGING DRIVER (65+)	Yes (15%)	No	Yes
CRASHES INVOLVING PEDESTRIANS INJURED OR KILLED	Yes (13%)	Yes	Yes
CRASHES INVOLVING UNLICENSED DRIVERS	Yes (15%)	No	Yes
CRASHES INVOLVED DISTRACTED DRIVERS	Yes (15%)	Yes	Yes
CRASHES INVOLVING BICYCLISTS INJURED OR KILLED	No (8%)	Yes	Yes
CRASHES INVOLVING MOTORCYCLES	No (7%)	No	Yes

1 Percentage of fatal and serious injury crashes with that attribute is higher in SKATS region than the statewide percentage. Statewide percentage determined based on the 2021 Oregon TSAP.

2 Within the SKATS region, the percentage of fatal and serious injury crashes with that attribute is higher than the percentage of total crashes (all severities) with that attribute.

SYSTEMIC CRASH PATTERNS

Systemic crash trends are those that are repeatedly contributing to fatal and serious injury crashes in the SKATS region. These trends often highlight underlying risk factors that can be treated by implementing low-cost safety solutions on a broad scale. The following four systemic trends were identified using a combination of crash data analysis and input gathered during the first round of public engagement. The systemic trends are listed below and described in the following sections.

1. Pedestrian Crashes in Dark/Dusk/Dawn Conditions on Roadway Segments
2. Fixed Object Crashes on Two-Lane Roads
3. Head-On Crashes on Urban Arterials
4. Left Turn Crashes on Urban Arterials

Pedestrian Crashes In Dark/Dusk/Dawn Conditions On Roadway Segments

From 2017 to 2021, there were 74 total fatal and serious injury crashes involving pedestrians. 43% of these crashes occurred at intersections or driveways, while 57% occurred on road segments at non-intersection locations. Most fatal and serious injury crashes on roadway segments (62%) occurred on urban arterial roadways. About half occurred on two-lane roads, and half occurred on roads with four or more lanes. In addition, 57% of pedestrian-involved crashes occurred in dark, dusk, or dawn conditions on roadway segments. Commonly reported contributing factors included drivers failing to yield to pedestrians and "pedestrian not visible."

PERCENT OF ALL SEVERITY SKATS CRASHES: 0.5%

PERCENT OF FATAL AND SERIOUS INJURY SKATS CRASHES: 4.7%

Fixed Object Crashes On Two-Lane Roads

Fixed object crashes occur when a single vehicle collides with a fixed object such as a curb, utility pole, or median. From 2017 to 2021, there were 91 total fixed object crashes that resulted in fatal or serious injury. Most crashes involved vehicles striking a curb, tree, or ditch. Most fixed object crashes resulting in fatal or serious injury (64%) occurred on two-lane roads. These crashes occurred equally on straight segments and horizontal curves. Risky behaviors were common in these crashes, as 41% involved speeding and 38% involved alcohol or drug impairment.

PERCENT OF ALL SKATS CRASHES: 4.5%

PERCENT OF FATAL AND SERIOUS INJURY SKATS CRASHES: 10.1%

Head-On Crashes On Urban Arterials

From 2017 to 2021, there were 99 total head-on crashes, with 39 resulting in fatal or serious injury. These head-on crashes were often the result of risky behaviors, where 46% of crashes involved speeding and 26% involved alcohol or drug impairment. About 75% of these crashes occurred on two-lane roadways. Fatal and serious outcomes of head-on crashes were more common on urban arterial roadways, where a high percentage of crashes occurred at night (42%) and involved alcohol or drug impairment (33%).

PERCENT OF ALL SKATS CRASHES: 0.6%

PERCENT OF FATAL AND SERIOUS INJURY SKATS CRASHES: 4.2%

Left-Turn Crashes On Urban Arterials

From 2017 to 2021, there were 95 total fatal or serious injury crashes involving left turning vehicles at intersections or driveways. Approximately 80% of crashes occurred at intersections (an even split between signalized and stop-controlled intersections), and 20% occurred at driveways. Approximately 12% of all left-turn crashes involved pedestrians.

The majority of fatal and serious injury left turn crashes (85%) occurred on urban minor arterial or urban principal arterial streets, many of which have high daily traffic volumes combined with dense land use and many access points (street connections and driveways).

PERCENT OF ALL SEVERITY SKATS CRASHES: 11.1%

PERCENT OF FATAL AND SERIOUS INJURY SKATS CRASHES: 14.1%

High Injury Network

A high injury network (HIN)[1] identifies the corridors and intersections that have the highest frequency and severity of crashes. The HIN for the Salem-Keizer area was developed using ODOT crash data from 2017–2021, focusing on motor vehicle crashes resulting in a fatality or serious (life changing) injury and any crashes involving vulnerable non-motorists (pedestrians and bicyclists).

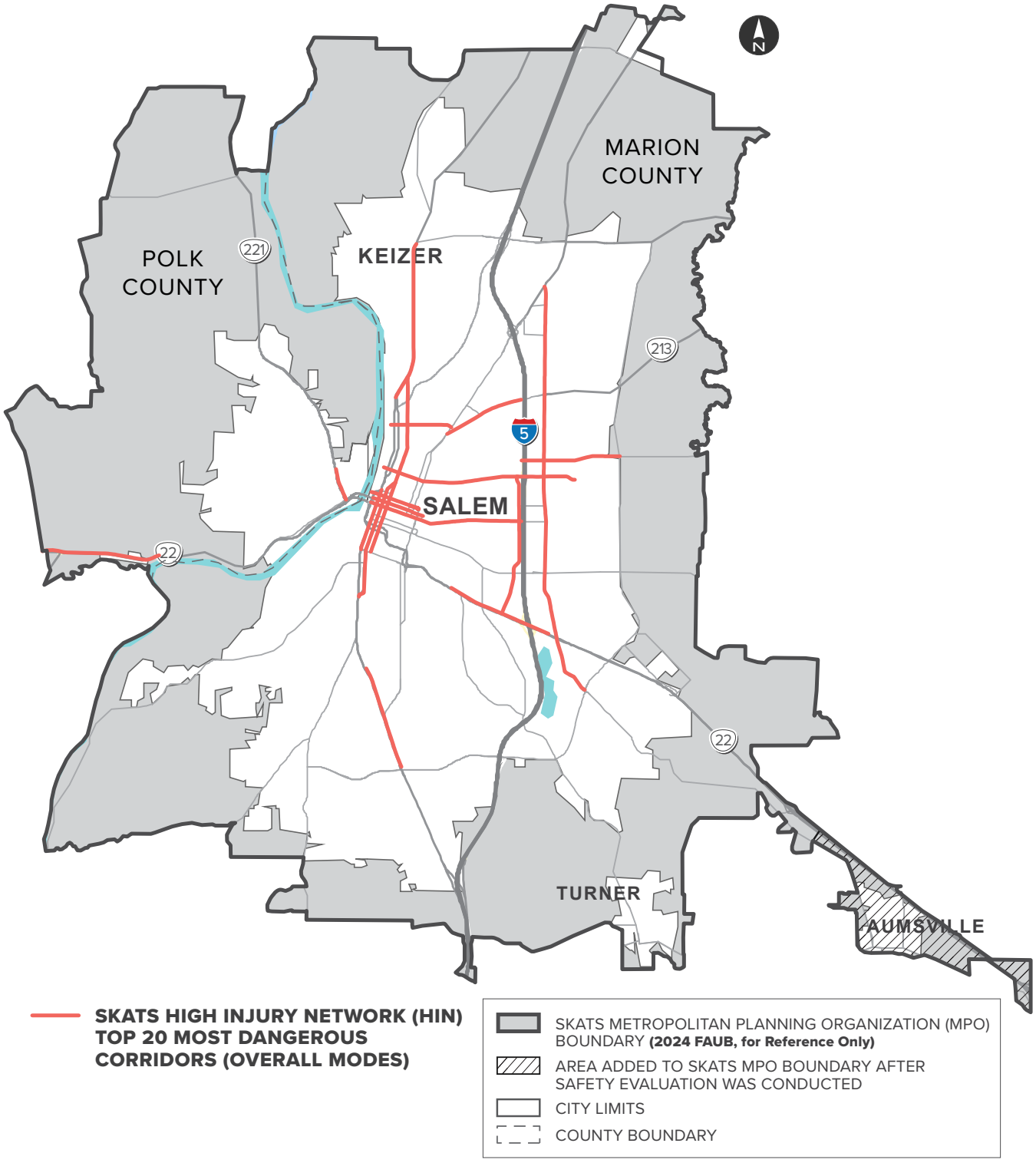
The roadway network was divided into segments and a severity score was calculated based on the number and severity of crashes occurring on each segment. Scores were then normalized based on corridor length, and any corridor segments less than one-half mile in length was excluded from the analysis. The corridors were then sorted by the normalized score in descending order (high to low) for each mode (overall, auto, ped, and bike), and then ranked accordingly.

The 20 corridors on the HIN represent only 5% of Salem-Keizer streets (by segment miles), yet these corridors accounted for nearly 40% of all traffic deaths from 2017–2021, and half of pedestrian-related (52%) and bicyclist-related deaths (50%).

Of all the crashes tracked since 2007, 21% were located on a SKATS high injury corridor (as defined for 2017–2021). Additional detail on the HIN, as well as bicycle and pedestrian specific HINs, can be found online here.

1 https://storymaps.arcgis.com/stories/4173ed025b4a4e1897887c483ba85efb

FIGURE 5. 2017–2021 SKATS TOP 20 HIGH-INJURY CORRIDORS (OVERALL)



Crash Data Comparisons

Understanding where crashes occur in the SKATS area helps us understand the underlying contributing factors and where we should prioritize improvements.

Comparison of Crashes By Road Ownership and Intersection or Non-Intersection

The following statistics are based on the ODOT crash data available in the SKATS crash data dashboard.

- Across all types and severity of crashes, **a majority occurred on state-owned facilities** (consistently in the 55-60% over the last decade). This trend holds true when looking only at fatal and serious injury crashes, too, with approximately 57% occurring on state-owned facilities between 2017–2021. State-owned facilities in the Salem-Keizer area include Interstate-5 and state highways such as Highway 221 (in Polk County), Highway 22 (east and west of the Willamette River) and Highway 99E, which spans the MLK Jr. Parkway, Front Street bypass, Pringle Parkway, and parts of Mission Street.

- However, fatal, and serious injury crashes that involve **speeding** (either by itself or in combination with drugs or alcohol) **occur more often on city streets and county roads** (53% on local or county roads from 2017–2021, which is slightly lower than previous years).

- Roughly half (approximately 47%) of all crashes in the Salem-Keizer area were **intersection-related**, with the remaining 53% occurring on segments or at driveways.

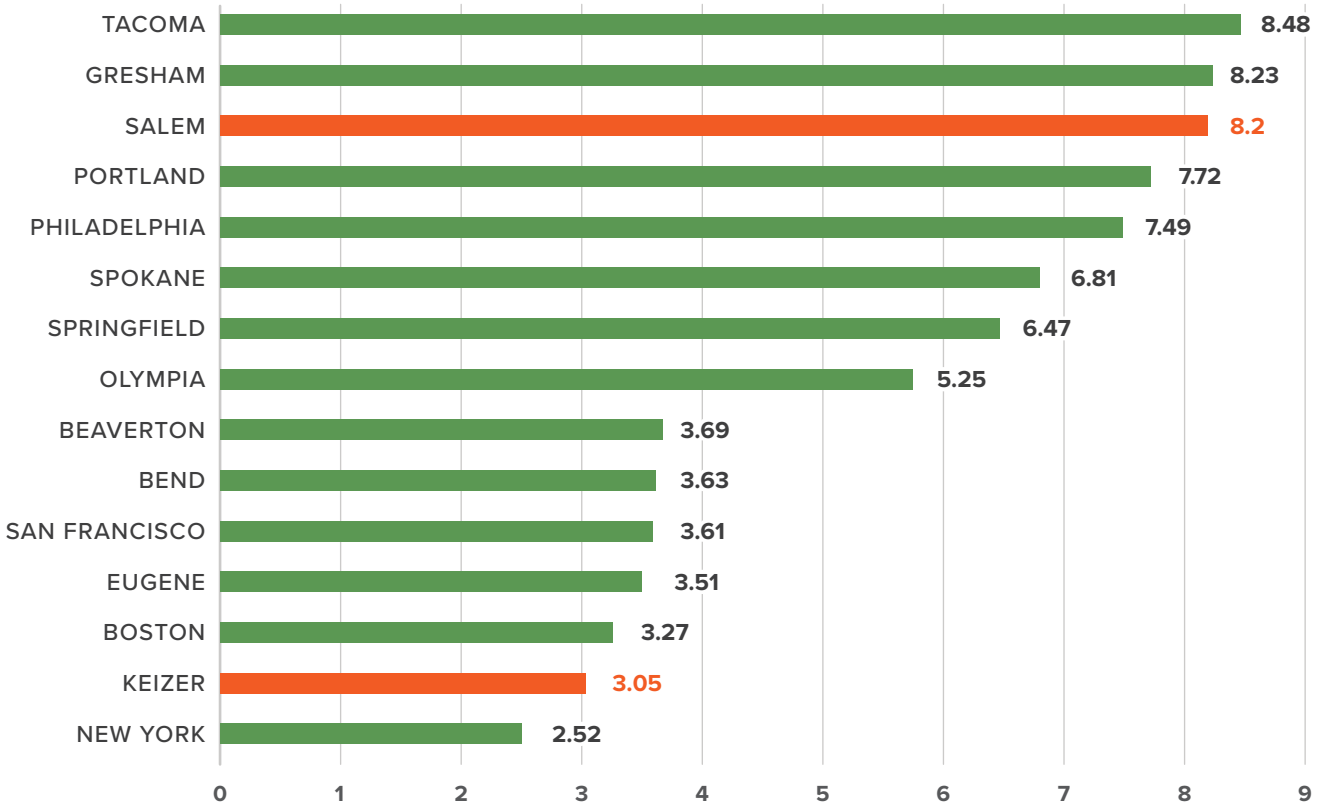
- **Pedestrian and bicyclist** fatalities and serious injuries occurred more often away from intersections (midblock), while non-serious injuries and total crashes were more prevalent at intersections.

Comparison of Local Crash Fatalities to Other Cities in Oregon and U.S.

The National Highway Traffic Safety Administration's (NHTSA) crash database was used to compare persons killed in fatal crashes in nine cities in Oregon and other cities in the U.S., using 2017–2021 crash data[1]. Fatality rates were calculated using total persons killed in crashes per 100,000 population per year.

1 NHTSA data can be summarized at the state, county, and city level but not by urban areas or MPO areas

FIGURE 6. FATALITY RATE COMPARISON



The city of Salem had the second highest fatality rate by population of the eight Oregon cities examined, and the third highest of all 15 cities. By comparison, Keizer has the lowest rate of the Oregon cities and the second-lowest of all 15 cities.

The percent of persons killed in crashes within the Salem city limits on state-owned facilities (47% of all fatalities) was the highest among the eight Oregon cities examined, followed by Bend with 39% of fatalities on state-owned facilities. Eugene (23%) and Portland (35%) both had a lower percentage of their city's fatalities on state-owned facilities. **The high proportion of fatalities on state highways in the Salem-Keizer area highlights the importance of partnering with ODOT to identify and implement safety strategies as we work towards our goal of zero crash-related deaths and life-changing injuries by 2035.**

Understanding Our Safety Needs

"Every day I feel unsafe driving in Salem, and I worry about my kids walking to school. No one uses a blinker in this town and/or always speeding, especially through the school zones and there is hardly ever law enforcement on the roads."

—Julianna, Age 35-44

Safe System Approach

Before developing solutions, it is important to have a guiding framework to shape the direction and focus of the recommended plans, policies, and projects.

A framework for the solutions helps the member agencies prioritize investments, ensure that the solutions will address the key issues, and guarantees that equity has been integrated into every step of the process. The Safe System Approach represents a paradigm shift in road safety philosophy, prioritizing the protection of human life above all else and striving for a future where traffic fatalities and serious injuries are eliminated. It is a holistic, multi-faceted approach that recognizes the vulnerability of road users as humans who make mistakes and aims to not only reduce the likelihood of crashes occurring, but also reduce the resulting kinetic forces to eliminate fatal and serious injuries.

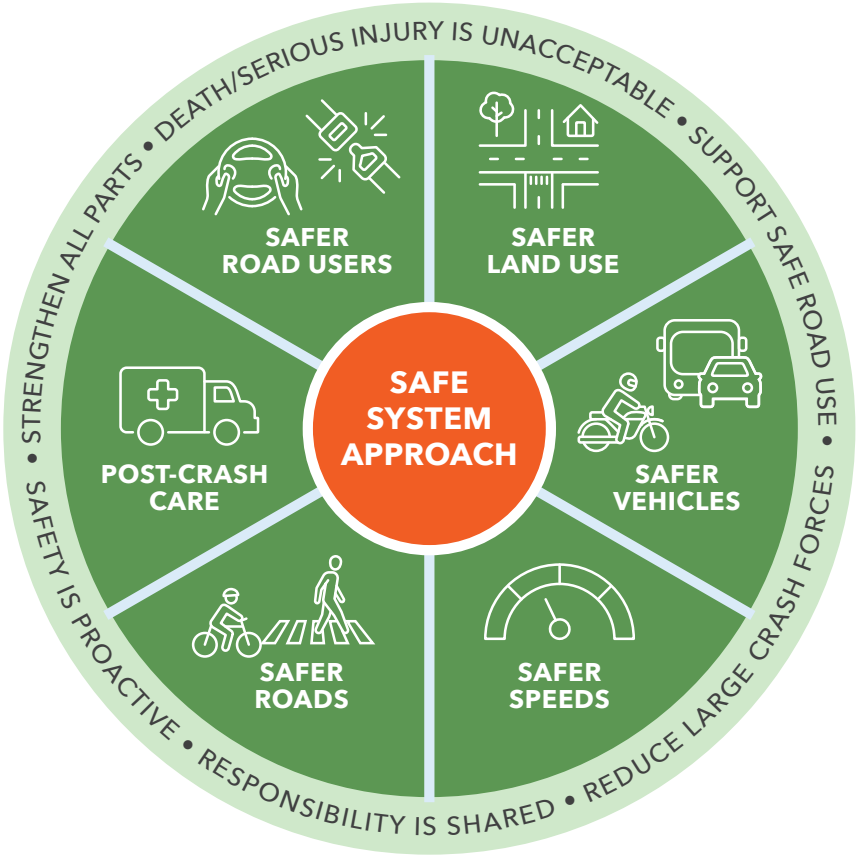
FIGURE 7. THE SAFE SYSTEM APPROACH VS. TRADITIONAL ROAD SAFETY PRACTICES

TRADITIONAL		SAFE SYSTEM
Prevent crashes	→	Prevent deaths and serious injuries
Improve human behavior	→	Design for human mistakes/limitations
Control speeding	→	Reduce system kinetic energy
Individuals are responsible	→	Share responsibly
React based on crash history	→	Proactively identify and address risks

Whereas traditional road safety strives to modify human behavior and prevent all crashes, the Safe System approach also refocuses transportation system design and operation on anticipating human mistakes and lessening impact forces to reduce crash severity and save lives.

The Safe System Approach served as the guiding framework for every stage of this MTSAP. The principles and objectives of the Safe System Approach are outlined on the following page.

FIGURE 8. THE SAFE SYSTEM APPROACH



Safe System Approach Principles

- Humans make mistakes – people will inevitably make mistakes; the transportation system should be designed to accommodate certain types of human errors
- Humans are vulnerable – humans can only tolerate a certain level of forces before serious injury or death occurs; the transportation system should be designed to reflect the physical limits of the human body
- Responsibility is shared – every individual plays an important role in preventing fatalities and serious injuries
- Safety is proactive – utilize proactive tools instead of waiting for crashes to occur
- Redundancy is crucial – if one element fails, the other elements should be robust enough to still protect people

Safe System Approach Objectives

- Safer people – encourage safe and responsible behaviors
- Safer roads – design the transportation system to mitigate for human mistakes, account for injury tolerances, and facilitate safe travel of vulnerable road users
- Safer vehicles – enhance vehicle design and features to prevent crashes and minimize impact forces
- Safer speeds – promote safer speeds in all roadway environments through design, speed limit setting, education, outreach, and enforcement
- Post crash care – enhance the quality and timeliness of emergency services, create a safe working environment for first responders, and prevent secondary crashes

> "IN A WELL-DESIGNED SYSTEM, SAFETY MEASURES MAKE SURE THAT HUMAN FALLIBILITY DOES NOT LEAD TO HUMAN FATALITIES."
>
> – USDOT SECRETARY PETE BUTTIGIEG

Public Outreach

WHAT WE DID

We held two online open house events and three focus group meetings to better understand how safe people feel walking, biking, and rolling in the Salem-Keizer area. We partnered with community organizations, elected officials, news organizations, and social media to advertise the engagement opportunities, and close to 800 community members shared their personal experiences, concerns, and suggestions related to transportation safety.

WHAT WE HEARD

People generally feel safe driving, but feel unsafe walking, bicycling, and rolling, especially crossing busy streets or intersections. People generally feel safe riding the bus, but were split about their feeling of safety when traveling to and waiting at bus stops. Many people are concerned about a lack of enforcement and risky driving behaviors such as speeding, disregarding traffic signs and signals, distraction, aggressive driving, and generally not sharing the road with pedestrians and bicyclists. Over 200 people shared personal stories, many describing experiences being involved in a crash or narrowly avoiding a crash, or generally not feeling safe walking and bicycling. The most common suggestions for improving safety were managing vehicle speeds through enforcement, education, better road design, and lowering speed limits; building more sidewalks, enhanced crosswalks, bicycle lanes and protected or separated bike paths; and making intersections safe for everyone.

HOW WE USED THIS INFORMATION

SKATS staff read each of the 293 additional comments, 234 personal stories, and the nearly 1,200 map comments. The survey results influenced the selection of emphasis areas, and the map comments aided in the selection of the case study locations. The list of high-priority strategies incorporated suggestions from the community for infrastructure, education, and enforcement safety solutions. Not only did the input from the community directly influence this plan, but it also served as an important reminder of how the safety of the transportation system affects every person who lives, works, or travels here.

Additional details about the public outreach efforts and the feedback received is provided below.

In the first phase of the MTSAP work plan, an online open house was created. The purpose of the open house and survey was to share information about the project and to understand the community's experience and safety concerns when traveling in the Salem-Keizer area when driving, walking, biking, or rolling. The online open house included project information, a survey, and an interactive comment map. The online open house was open for public comment from March 8 to April 5, 2023.

The project team informed the community about the online open house through the following outreach efforts:

- 30,000 full-color postcards (in both English and Spanish) mailed to residential households, with oversampling of census tracts of lower-income populations and higher BIPOC populations within the MPO area. Persons completing the survey were entered in a drawing to win one of ten $25 VISA gift cards.
- Stories about the study and open house appeared in four area newspapers: Statesman Journal, Keizer Times, Salem Reporter (online paper) and Westside News
- Half-page ads in two local area newspapers: Westside News, Keizer Times
- A radio interview on KMUZ that was broadcast 3 times and posted on their podcast.
- Created eight 1-minute videos featuring elected officials (Mayor of Salem, Mayor of Keizer, city councilors, two transit district board members, and one school board member) to promote the MTSAP open house and ask persons to share their views by participating in the survey. Two of the videos were in Spanish.
- Videos of elected officials were posted on social media (Facebook, Instagram, YouTube, Nextdoor, LinkedIn.)
- Open House information shared in Community Newsletters (e.g., City of Salem's "Salem Connection")
- Emails sent to key stakeholders

As a result of this outreach, 796 community members participated in the online survey (including five from the Spanish-language version of the survey site). Of those participants, 254 shared their personal stories about transportation safety concerns and experiences. During the online open house, 1,166 comments were collected on the Safety Concern Comment Map. The MPO also hosted three (3) focus group meetings with a total of twenty-one (21) participants. The MTSAP Spring 2023 Outreach Survey Summary includes responses from the survey and the map and examples of stories collected from participants. Some of that information is provided below.

- **Top four** safety concerns: Safety at intersections, speeding, distracted driving, and safety while walking/rolling.
- People **were split** on whether they feel safe walking/rolling. (33% feel safe or very safe, 42% said they feel unsafe or not safe at all, and 12% feel neither safe nor unsafe)
- People **feel unsafe** riding a bicycle (52% feel unsafe compared to 10% feel safe). 28% said they do not bicycle at all.
- People **feel unsafe** crossing a busy intersection

when walking/biking/rolling. The majority (65%) feel somewhat unsafe or not safe

- People generally **feel safe** when driving or riding in a vehicle: 66% feel safe/very safe compared to 19% unsafe.

- People generally **feel safe** riding the bus but were split about their level of safety about getting to and waiting for transit.

- People **feel unsafe** traveling through intersections. (52% feel unsafe versus 27% feel safe).

- People **feel unsafe** when traveling at night (53% feel unsafe) and during bad weather (60% feel unsafe).

- Top four potential strategies: Paved sidewalks where there are none, more enhanced crosswalks, make intersections safe for everyone, and more bike lanes or separated bike paths.

The Survey included an open-ended question: "Do you have anything else to add?" 293 people responded to this question. An analysis of the responses (plus all the responses categorized into groups) are provided in **Appendix XX**. In broad terms, about half the responses were related to unsafe behaviors, as described below:

- **Speeding** was frequently mentioned but also mentioned were red-light running, reckless driving, racing, distracted driving, drivers going through a crosswalk when a pedestrian is in the crosswalk, or drivers in general being a danger to pedestrians or bicyclists.

- To a lesser extent were comments about **unsafe behavior of non-drivers**, such as pedestrians who cross a street while being distracted (e.g., on their phones) or bicyclists not following traffic laws.

- **Education** comments included the need for drivers' training to focus more on safety, requiring traffic education when tickets are given out, and more educational outreach to pedestrians and bicyclists to keep themselves out of danger.

- There were 35 comments recommending **increased traffic enforcement to enforce speed limits, red-light running, and other traffic violations** either by more police presence/ patrols doing traffic enforcement and more ticketing by police and increasing fines. There were also 12 comments supporting greater use of **automated enforcement methods** such as speed feedback signs, red light cameras and speed cameras for ticketing.

The other half of the responses focused on addressing safety through **better infrastructure and planning/design of our streets and communities**:

- 19 comments were about not feeling safe as pedestrians or bicyclists and supporting strategies that protect pedestrians at intersections, providing protected crossings and protected bicycle lanes, and providing more pedestrian crossing time.

- There were 58 comments about **infrastructure solutions**: the need for more sidewalks, safe crossings, protected bike facilities, better or more streetlights, traffic calming, speed bumps, road diets, roundabouts, and better maintenance of sidewalks and bike lanes

- There were 20 comments regarding design, including the need for better street design,

better community design: designing streets to reduce speeding and making the community more pedestrian and bike friendly.

- There were 22 comments identifying a specific road to describe a problem and/or suggestion for addressing the problem.

- The category "Other" is a mixture of comments including infrastructure-related comments; changes to traffic planning; where to allow or restrict bicycling; and support of policies such as "20 is Plenty", Vision Zero, and reducing [missing text?]

Participants were asked if they would "share a story about a time you or someone you know felt unsafe (or experienced unsafe conditions) while getting around the Salem-Keizer area and/or why improving transportation safety in the Salem-Keizer area is important to you?"

234 participants shared their stories; some responses were short but the majority were long and detailed. Many of the stories described a specific incident when the person was in a crash, barely avoided a crash or getting hit by a vehicle, being cut-off, unsafe driving, etc. Below are the major themes from these stories:

- Speeding is a problem.
- Aggressive driving behavior, drivers disregarding signs and signals, and not yielding to pedestrians and bicyclists is a problem.
- Reckless or distracted drivers are a problem; a few noted intoxicated drivers.
- The need for bike lanes/paths, sidewalks, signal, stop sign, maintenance, etc.
- People bike/walk even though it feels unsafe/dangerous.
- Stories about walking and biking and either being struck or almost struck by a vehicle.

COMMENT MAP

The open house also included a comment map where participants could select a geographic location and a category then write a comment or state an area of concern. During the open house, 1,166 comments were collected from 384 people. Of the over 1,100 comments on the map, more than a third (39%) were about walking. Based on the majority of comments, people do not feel safe traveling on bike or walking due to high speeds, aggressive drivers, and poor conditions or overall lack of active transportation infrastructure (bike lanes, sidewalks, and crossings).

SECOND OPEN HOUSE

In August 2024, the draft plan was released for public review as part of the second online Open House was held from August 5 to August 14, 2024. Feedback from the second Open House was assembled and reviewed by both SKATS and DKS staff. <TO BE UPDATED IN LATER VERSION>.

Equity

To truly achieve our safety vision, we must recognize that past decisions in public policy, transportation, health, and the built environment have led to inequities -not just in our community, but across the nation.

Marginalized communities – especially Black, Indigenous, and other People of Color (BIPOC), those living in poverty, and people with disabilities – have been disproportionately affected by these decisions.

To ensure that everyone in the Salem-Keizer area has equitable access to a safe transportation system, we need to:

- Understand how different communities within the Salem-Keizer area are impacted by traffic crashes
- Consider the impacts of land use policy, traffic safety law enforcement, and investments on historically underserved populations
- Improve roads, sidewalks, and transit in communities that have not had enough investment

The United States Department of Transportation (USDOT), as part of the Federal Justice 40 Initiative, has created a Disadvantaged Communities Index Score that combines over forty different indicators in five major categories (transportation insecurity, environmental burden, social vulnerability, health vulnerability, and climate/disaster risk burden) into a single score which then defines Census tracts by levels of disadvantage. This data was retrieved from the Equitable Transportation Community (ETC) Explorer.

Fatal and serious crashes (2017–2021) within the SKATS region were overlaid with the disadvantaged tracts to better understand the relationship between the data and the crash locations.

Figure 8 represents a map of the SKATS MPO with the 2017–2021 fatal and serious injury crash locations, in relation to the disadvantaged census tracts symbolized by levels of the disadvantage index score.

FIGURE 9. 2017–2021 SKATS CRASH LOCATIONS VS. DISADVANTAGED COMMUNITIES INDEX SCORE

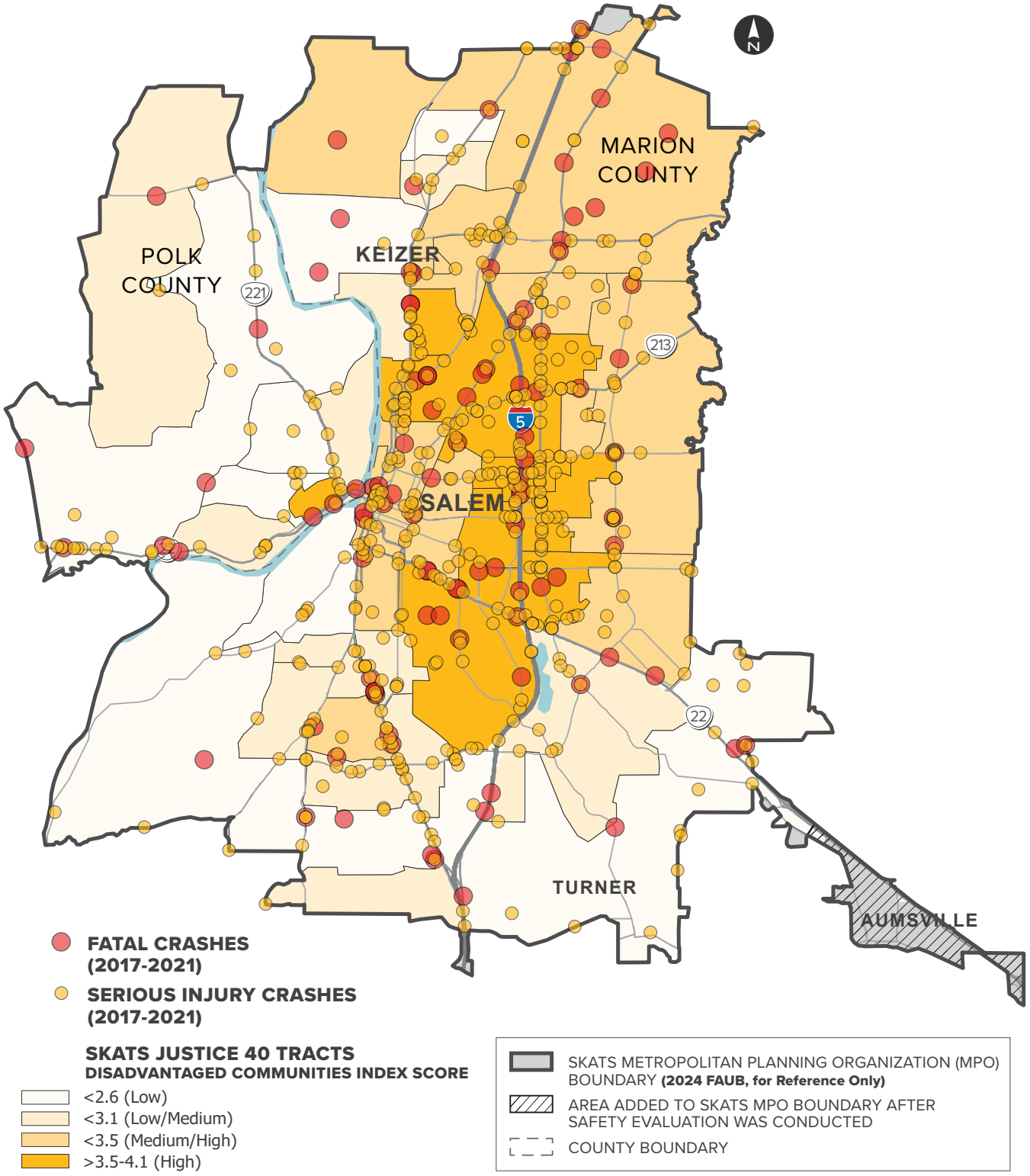
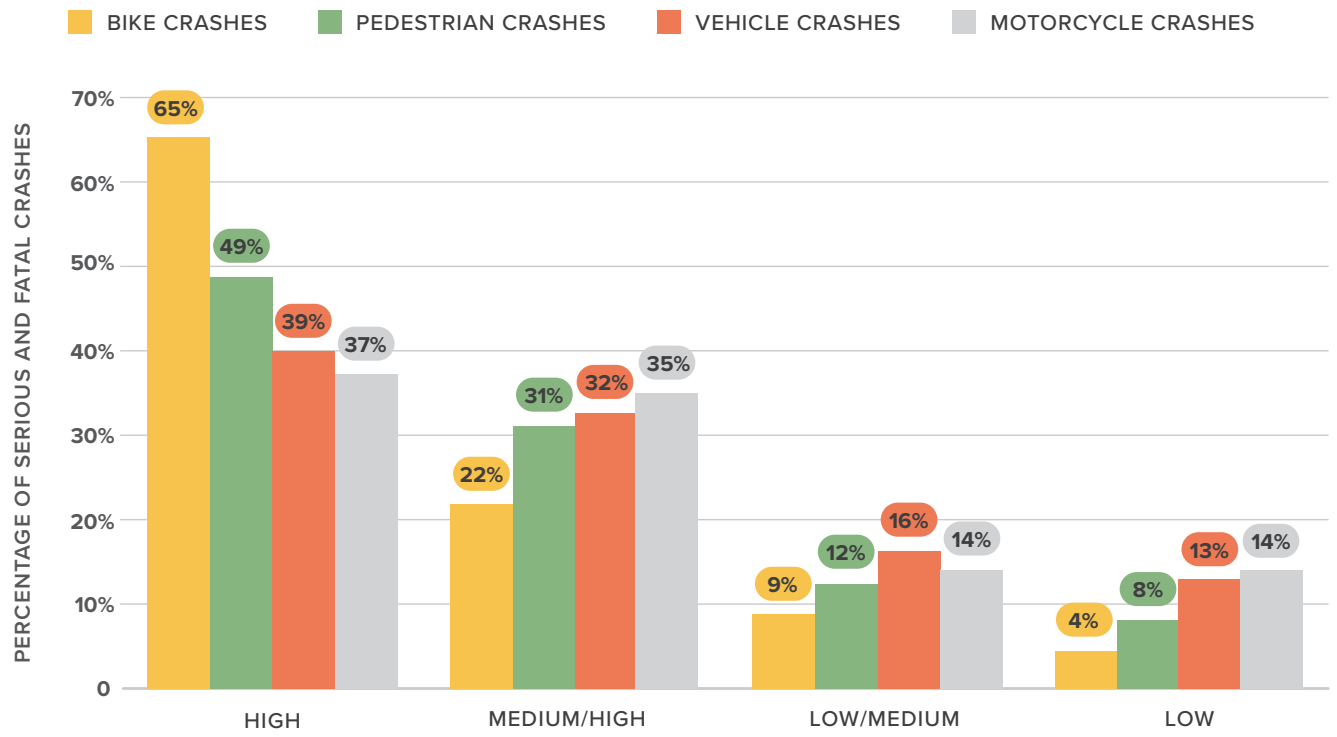


FIGURE 10. JUSTICE 40 DISADVANTAGED COMMUNITIES INDEX SCORE BY MODE TYPE



As shown in **Figure 9**, the highest proportion of fatal and serious injury crashes of all modes occurs in areas with higher proportions of disadvantaged individuals. Over 65% of bicycle-involved crashes and almost half (49%) of pedestrian-involved crashes occur in high disadvantage scored census tracts, while those census tracts comprise just 26% of the Salem-Keizer area population.

There are many reasons why crashes involving vulnerable road users (people walking, biking, and rolling) are more likely to occur in areas of higher equity disparity. There is often a higher number of people walking and biking in higher disparity areas because lower income households may not have access to a personal vehicle and rely on walking, biking, and transit to travel. In addition, the roadways that present the highest risks for pedestrians and bicyclists, like multi-lane urban arterials with high vehicle volumes and higher speeds, are often located in areas of higher equity disparity. Another potential reason for more walking and biking is that the areas in the high and medium/high categories tend to be a mixture of land uses, such as residential and commercial areas in close proximity to each other so biking and walking trips are shorter.

On a national level, investments in transportation improvements in areas of high disparity have historically been under-funded, especially when compared to the increased occurrence and risk of crashes. In the Salem-Keizer area, many recent transportation investments have focused on implementing multimodal projects in higher disparity areas. SKATS and its member agencies are committed to continuing to prioritize safety improvements in these areas, particularly for people walking, biking, and rolling.

Emphasis Areas

The following six safety emphasis areas reflect the most common contributing factors and attributes of crashes resulting in fatal and serious injuries in the Salem-Keizer area, as well as the priorities of the community (gathered through public engagement), the steering committee, and the project management team.

These emphasis areas serve as the focus of this plan and are intended to guide strategies and investments towards those that will make the biggest impact on safety in our community.

APPENDIX A INCLUDES ONE-PAGE CASE STUDY SUMMARIES AT 10 EXAMPLE LOCATIONS IN THE SALEM-KEIZER AREA THAT HIGHLIGHT CRASH TRENDS, ROADWAY CHARACTERISTICS, AND POTENTIAL SAFETY COUNTERMEASURES.

TABLE 3. SAFETY EMPHASIS AREAS

INTERSECTIONS 47% OF ALL CRASHES IN MPO 47% OF FATAL + SERIOUS CRASHES IN MPO	Focuses on crash risks within the functional area of an intersection. Intersections are the primary source of conflicts between road users of all types. Crash severity and patterns vary based on traffic control type, but intersection-related crashes that involve speeding, red-light running, and vulnerable users can result in people being seriously injured or killed. Safe System Strategies: • Separate road users in space and time • Manage conflict points to reduce impact speeds and impact angles • Protect vulnerable road users See case studies #7 and #8 in the Appendix.
PEDESTRIANS 2% OF ALL CRASHES 28% OF FATAL + SERIOUS CRASHES	Focuses on crashes involving someone walking or rolling. Pedestrians are some of the most vulnerable users of a roadway network, and crashes involving pedestrians are more likely to result in a fatal or severe injury than those involving other modes. In addition, many younger and older road users travel on foot, which compounds this vulnerability. Safe System Strategies: • Separate road users in space and time • Manage vehicle speeds to reduce crash forces (kinetic energy transfer) • Establish a safety culture that prioritizes the safety of all road users • Protect vulnerable road users See case studies #3 and #4 in the Appendix.

BICYCLISTS 2% OF ALL CRASHES 4% OF FATAL + SERIOUS CRASHES	Focuses on crashes which involve someone riding a bicycle. Bicyclists are considered vulnerable road users and crashes involving a cyclist can result in severe outcomes. In addition, younger and older road users often travel via bicycle, which compounds this vulnerability. Safe System Strategies: • Separate road users in space and time • Manage vehicle speeds to reduce crash forces (kinetic energy transfer) • Establish a safety culture that prioritizes the safety of all road users • Protect vulnerable road users See case studies #1 and #2
SPEEDING 7% OF ALL CRASHES 34% OF FATAL + SERIOUS CRASHES	Focuses on speeding as a driving behavior that puts the driver and other road users at risk. Speeding not only increases the likelihood of a crash occurring, but also increases the force of a crash exponentially, which can result in more severe injuries, especially when vulnerable road users are involved. Safe System Strategies: • Reduce vehicle travel speeds and speed differentials (difference in travel speed between vehicles or between modes) • Design the built environment to encourage slower speeds • Incorporate layers of redundancy to reduce the likelihood and severity of crashes • Establish a safety culture that prioritizes and requires safe behaviors See case studies #5 and #6 in the Appendix.
IMPAIRMENT AND DISTRACTION 11% OF ALL CRASHES AND 12% OF FATAL + SERIOUS INJURY CRASHES INVOLVED DISTRACTION 6% OF ALL CRASHES AND 25% OF FATAL + SERIOUS INJURY CRASHES INVOLVED IMPAIRMENT (DRUGS OR ALCOHOL)	Focuses on impairment and distraction as driver behaviors that puts the driver, passengers, and other road users at risk. These risky behaviors impair a driver's ability to process and respond to the roadway environment, which increases the chance of a crash occurring. Additionally, impairment is often paired with other risky behaviors, like speeding and not wearing a seatbelt, which increases the risk of a severe outcome. Safe System Strategies: • Incorporate layers of redundancy to reduce the likelihood and severity of crashes • Create a proactive safety culture that prioritizes and requires safe behaviors
ROAD USER AGE 30% OF ALL CRASHES 25% OF FATAL + SERIOUS CRASHES INVOLVED A DRIVER UNDER THE AGE OF 25 17% OF ALL CRASHES 21% OF FATAL + SERIOUS CRASHES INVOLVED A DRIVER OVER THE AGE OF 60	Focuses on crash risks for younger (age 16–25) and older road users (age 60+). Young road users may lack experience and understanding of safety risks when traveling, while aging road users may have physical or cognitive limitations that put them at greater risk for a crash to occur or make them more susceptible to serious injury. Safe System Strategies: • Simplify the road environment to reduce driver workload • Manage conflict points to reduce impact speeds and impact angles • Manage vehicle speeds to reduce crash forces (kinetic energy transfer) • Protect vulnerable road users

Our Plan of Action

"Not specifically, but Lancaster is very unsafe to drive, bike, and be a pedestrian on. I think the best solution is more public transit. There also needs to be a protected bike lane on that street. There is way too much traffic there for the bike lane to be unprotected, and it is incredibly dangerous."

—Paulo

Strategies, Countermeasures, and Examples

Creating an actionable plan that transforms ideas into tangible results is crucial to achieving our goal of eliminating fatal and serious injuries on Salem-Keizer area roadways. In recognition of the limited resources available, it is important to foster accountability, guide resource allocation, and adapt to changing circumstances. The following recommended strategies will help the SKATS MPO and member agencies focus on high-benefit efforts, track progress, and make informed decisions to improve safety in our community.

Several SKATS-member agencies are already improving safety for transportation users by implementing strategies that focus on protecting vulnerable road users, controlling traffic speeds, and providing infrastructure that is in good condition. These are a few of the safety strategies currently in use by the local jurisdictions.

- Conduct regular inspection and maintenance of signs, markings, and traffic control devices
- Implement access management strategies
- Improve emergency vehicle response time through signal preemption
- Install and upgrade street lighting
- Evaluate and upgrade sidewalks
- Install bicycle lanes and protect lanes and paths
- Install green pavement markings for bike lanes and merging areas
- Install curb extensions to reduce road crossing distances
- Support Safe Routes to School programs
- Install pedestrian countdown timers and accessible push buttons at traffic signals
- Install Rectangular Rapid Flashing Beacons (RRFBs) and median refuge islands
- Install dynamic speed feedback signs
- Install traffic calming measures
- Update neighborhood traffic management plans
- Collect and monitor traffic speeds

In addition to the work already being done, one or more member agencies have expressed interest in exploring the following strategies and implementing them in the future.

- Hosting community walk audits with local residents and organizations
- Conducting multi-disciplinary road safety audits at high-risk locations
- Increasing transit frequency
- Studying near-miss crash data
- Regularly reviewing signal timing & maintaining appropriate change intervals and pedestrian walk times
- Implementing automated enforcement of school zone speed limits
- Considering designating protected bicycle lanes as the preferred design for higher speed, higher-volume arterials
- Facilitating younger driver education campaigns focused on safe behaviors

High Priority Strategies

Through a collaborative process, the SKATS member agencies identified a list of high-priority safety strategies that focus on the plan's Emphasis Areas and align with the Safe System Approach. **The intent is for these 16 high-priority strategies to be paired with the High Injury Network, areas serving disadvantaged populations, and areas where the community has expressed safety concerns. A map showing the overlap of these areas is provided in Figure X.**

While not all agencies will be able to implement all of these strategies, this list reflects the MPO's collective commitment to the Safe System Approach and the strategies most likely to reduce the risk of fatal and serious injury crashes in the Salem-Keizer area.

Our understanding of safety strategies, their effectiveness, and best practices for implementation are continually evolving. The following state and federal resources may be useful when identifying safety strategies for a specific location, underlying risk, or crash pattern.

- FHWA Proven Safety Countermeasures
- NHTSA Countermeasures that Work
- USDOT National Roadway Safety Strategy
- ODOT Crash Reduction Factor List

INSTALL RECTANGULAR RAPID FLASHING BEACONS (RRFB)

Emphasis Area(s): Pedestrians

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of pedestrian crashes by 10-56%, depending on roadway characteristics and crossing treatments

Description: Rectangular Rapid Flash Beacons (RRFB) are user-actuated amber LED flashing lights that supplement warning signs at unsignalized intersections or midblock crosswalks. The beacons rest in the dark phase until activated by a push button and then flash in a rapid stutter flash pattern.

RRFBs can enhance safety by increasing driver awareness of pedestrians crossing the roadway. They are most effective when paired with other crossing enhancements, like raised medians and pedestrian lighting, and on roadways with more than one lane per direction. RRFBs should be installed in accordance with local policies, national best practices, and/or engineering studies.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP9, BP10, and BP11).

INSTALL MEDIAN REFUGE ISLANDS

Emphasis Area(s): Pedestrians

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of pedestrian crashes by 26-32%.

Description: Pedestrian refuge islands placed at marked crosswalks at unsignalized intersections or midblock locations enhance safety by providing a physical delineation of the pedestrian space. Depending on the width and design details, these islands can also serve as a refuge area that allows pedestrians to cross the roadway one direction of traffic at a time. Median islands can also allow for additional lighting, signing, or other traffic control devices to be installed in the center of the roadway, which can improve the visibility of the crossing.

The placement of median islands at intersections or near driveways should be considered carefully as they often result in restricted vehicle turning movements.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP8).

INSTALL LEADING PEDESTRIAN INTERVALS AT SIGNALIZED INTERSECTIONS

Emphasis Area(s): Intersections, Pedestrians

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of pedestrian crashes by 37-45%.

Description: Providing a leading pedestrian interval (LPI) gives pedestrians, and bicyclists using the marked crosswalk, the walk signal a few seconds before the motorists get a green indication. This "head start" allows the pedestrian or bicyclist improved visibility as they enter the intersection and begin their crossing maneuver before vehicles start proceeding through the intersection.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP3).

INSTALL PEDESTRIAN COUNTDOWN TIMERS AND ACCESSIBLE PUSH BUTTONS AT SIGNALIZED INTERSECTIONS

Emphasis Area(s): Intersections, Pedestrians

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of pedestrian crashes by up to 70%.

Description: Pedestrian signal heads are traffic signal indications exclusively intended for controlling pedestrian traffic. They consist of the illuminated symbols of a walking person *(WALK)* and an upraised hand *(DON'T WALK)*. Pedestrian countdown timers are pedestrian signal heads that include a countdown during the flashing *DON'T WALK* phase that shows pedestrians the time remaining before the pedestrian phase ends. Accessible push buttons provide an audible message to pedestrians confirming activation as well as noting the start and end of the pedestrian phase, which improves the ability for visually impaired pedestrians to navigate the crossing safely.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP1).

IMPROVE SIDEWALKS AND PEDESTRIAN CROSSINGS NEAR TRANSIT STOPS

Emphasis Area(s): Pedestrians

Safe System Approach Objective(s): Safer Roads

Effectiveness: Installing sidewalks can reduce the risk of pedestrian crashes by up to 20%. Installing enhanced crosswalks can reduce the risk of pedestrian crashes by 15%-37%, depending on roadway characteristics and crossing treatments (e.g., medians, curb extensions, signing, lighting, etc.).

Description: Everyone who uses transit must get to or from a transit stop by walking, biking, or rolling, which means the density of pedestrian traffic is often higher in the vicinity of transit stops. Public transit is one of the safest modes of travel, and increasing the use of transit will reduce the risk of vehicle crashes. Providing continuous sidewalks and enhanced crossings will increase the safety and comfort of people accessing transit, which will also encourage more transit use.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP15, BP16, and BP29).

EXPAND THE NETWORK OF BUFFERED/PROTECTED BIKE LANES AND MULTI-USE PATHS

Emphasis Area(s): Bicyclists

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of bicycle-involved crashes by 47%-74%, depending on roadway characteristics and design treatments.

Description: Expanding the network of protected, buffered, and separated bicycle facilities will create a safer environment for bicyclists to travel for school, work, and recreation. In contrast to standard (non-buffered) bicycle lanes, these facilities provide added separation between vehicle traffic and vulnerable road users. Bicyclists and drivers benefit from the visual and physical separation as it creates a more comfortable and predictable environment. The expansion of the network can also increase ridership. Any bicycle infrastructure should consider local standards and national best practices, such as NACTO design guidance, for designing facilities for all ages and abilities.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP22, BP23, and BP24).

INSTALL GREEN PAVEMENT MARKINGS WHERE BICYCLE LANES CROSS VEHICLE LANES

Emphasis Area(s): Intersections, Bicyclists

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of bicycle crashes in conflict areas by up to 39%.

Description: Green-colored pavement markings are placed on the roadway to enhance visibility of potential conflict areas where vehicle and bicycle travel paths cross. This treatment increases driver's awareness of the potential conflicts and also provides bicyclists with guidance on the preferred travel path through high-conflict areas.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID BP6).

CONTINUE TO SUPPORT SAFE ROUTES TO SCHOOL PROGRAMS AND EVENTS

Emphasis Area(s): Pedestrians, Bicyclists, Road User age

Safe System Approach Objective(s): Safer People, Safer Roads

Effectiveness: Unknown

Description: The continued support of Safe Routes to School (SRTS) programs and events keeps communities safer by educating pedestrians and bicyclists on safe behaviors, as well as the dangers to look out for when using the roadway. Encouraging children to travel on lower-stress routes and ensuring these routes have adequate facilities (e.g., continuous sidewalks, ADA ramps, enhanced crossings, etc.) improve the safety of our most vulnerable road users.

Current SRTS efforts in the Salem-Keizer area include free bicycle repair events, outreach at markets and fairs, International Walk and Roll to Anywhere/School Day, Walk + Roll Challenges, Ruby Bridges Walk + Roll to School Day, and bike rodeos. In 2023, pedestrian safety lessons were provided during PE classes. A partnership with Cycle Oregon began in Spring 2024 to teach bicycle safety fundamentals at three elementary schools in the Salem-Keizer area.

INSTALL OR UPGRADE STREET LIGHTING

Emphasis Area(s): Intersections, Pedestrians, Bicyclists, Road User Age

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of crashes at night by up to 28% on road segments and by 38% at intersections. (These values are for installation of new lighting, not upgrading existing lighting.)

Description: A permanent source of artificial light installed on a segment of roadway or at an intersection that provides greater visibility of the roadway. Intersection lighting allows for greater visibility of the intersection, making signs and markings more visible and helping drivers determine a safe path through the intersection. Pedestrian-level lighting should be considered in urban areas and at enhanced crossing locations, which increases visibility of vulnerable road users. Installation of new lighting and adjustment of lighting levels should be in accordance with local policies and standards and national best practices.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID H29, H30, I1, BP2).

IMPROVE VISIBILITY OF TRAFFIC CONTROL DEVICES (SIGNALS, SIGNS, AND MARKINGS)

Emphasis Area(s): Road User Age; Impairment-Distraction

Safe System Approach Objective(s): Safer Roads

Effectiveness: Reduces the risk of crashes by 15%-42% depending on the treatment location and traffic control type.

Description: Traffic control devices provide regulatory or warning messages to drivers, including (but not limited to) signals and stop signs at intersections, warning signs at curves, speed limit signs, and even pavement markings like centerlines and arrows. Improving the visibility of traffic control devices benefits all road users, allowing them to recognize, process, and respond to warnings and regulatory messages more quickly. This can be particularly beneficial to aging drivers who have longer perception-reaction times and may also have visual impairments. Improving visibility also increases the likelihood that drivers who are impaired, distracted, or speeding will recognize and respond appropriately to these traffic control devices.

Refer to the Oregon Department of Transportation (ODOT) ARTS webpage and the Crash Reduction Factor (CRF) Manual for more information (CRF ID I2, I3, I4, I5, and I6).

NARROW LANE WIDTHS

Emphasis Area(s): Speeding

Safe System Approach Objective(s): Safer Roads

Effectiveness: Research varies – may reduce travel speeds when combined with other treatments, may reduce the risk of crashes in general, may increase the risk of low-severity sideswipe crashes.

Description: According to the Federal Highway Administration (FHWA), wide travel lanes typically result in higher vehicle speeds. Reducing the travel lane width from 12 feet to 9 feet or 10 feet can have a notable effect on lowering travel speeds, especially when combined with other traffic calming treatments. Narrower travel lanes can also provide the opportunity to designate more space for pedestrian and bicycle facilities.

The roadway context (average daily volumes, size of vehicles, posted speed, land use) should be considered before narrowing lane widths to ensure the desired safety benefits.

INSTALL AUTOMATED SPEED ENFORCEMENT (ASE) CAMERAS

Emphasis Area(s): Speeding

Safe System Approach Objective(s): Safer Roads, Safer People, Safer Speeds

Effectiveness: Reduces the risk of crash by up to 54%.

Description: Automated speed enforcement cameras can be used to enforce speed limits as part of a broader speed enforcement program. ASE is not intended to replace traditional speed management strategies but can be used as a supplement to other speed management techniques, like traffic calming and high visibility enforcement campaigns, to alter driver speeding behaviors.

In Oregon, speed enforcement cameras can be operated by a City at traffic signals as long as the cameras comply with ORS 810.434, which states that the City must provide a public information campaign before issuing citations and also must report on the effectiveness, public acceptance, and process every two years. Citations may only be issued to drivers who exceed the posted speed limit by 11 mph or greater.

See the National Highway Traffic Safety Administration (NHTSA) webpage or FHWA Proven Safety Countermeasures webpage for more information about this countermeasure.

IMPLEMENT HIGH VISIBILITY ENFORCEMENT PROGRAMS

Emphasis Area(s): Speeding, Impairment-Distraction

Safe System Approach Objective(s): Safer Roads, Safer People, Safer Speeds

Effectiveness: ★★★★★ (NHTSA Rating)

Description: High Visibility Enforcement (HVE) combines enforcement, visibility elements, and a publicity strategy to educate the public and promote voluntary compliance with the law. Checkpoints, saturation patrols and other HVE strategies should include increased publicity and warnings to the public. HVE incorporates enforcement strategies, such as enhanced patrols using visibility elements (e.g. electronic message boards, road signs, command posts, BAT mobiles, etc.) designed to make enforcement efforts obvious to the public.

See the National Highway Traffic Safety Administration (NHTSA) webpage for more information about this countermeasure.

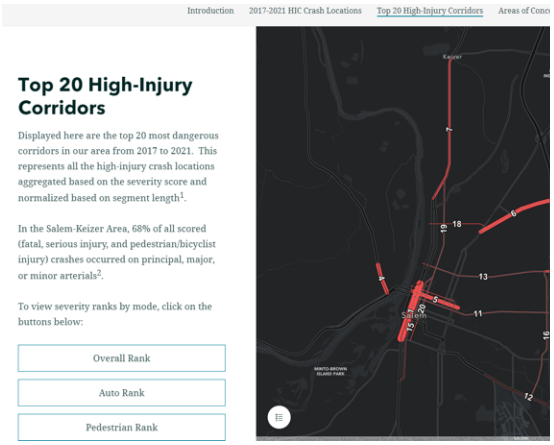
MAINTAIN AND REFINE THE SKATS SAFETY DASHBOARDS AND HIGH INJURY NETWORK MAPPING

Emphasis Area(s): Cross-Cutting – Planning and Collaboration

Safe System Approach Objective(s): Not Applicable

Effectiveness: Not Applicable

Description: SKATS staff have created an interactive dashboard of the region's crash data and a map of the region's High-Injury Corridor (HIC). These tools allow SKATS member agencies access current transportation safety data which can inform decision-making and investments. SKATS commits to maintaining and updating these publicly-available dashboards.



ESTABLISH AN INTERAGENCY SAFETY COMMITTEE

Emphasis Area(s): Cross-Cutting – Planning and Collaboration

Safe System Approach Objective(s): Not Applicable

Effectiveness: Not Applicable

Description: The Interagency Safety Committee would consist of representatives of staff from the SKATS member agencies, elected officials, school districts, emergency response services, community organizations, and transit. This group would be tasked with reviewing data, evaluating performance measures, sharing information, and discussing opportunities for safety improvements with a focus on achieving the Safety Action Plan goal of zero fatalities and serious injuries on Salem-Keizer area roadways by 2035.

CREATE AN EDUCATIONAL CAMPAIGN TARGETING PREVENTION OF RISKY DRIVER BEHAVIORS

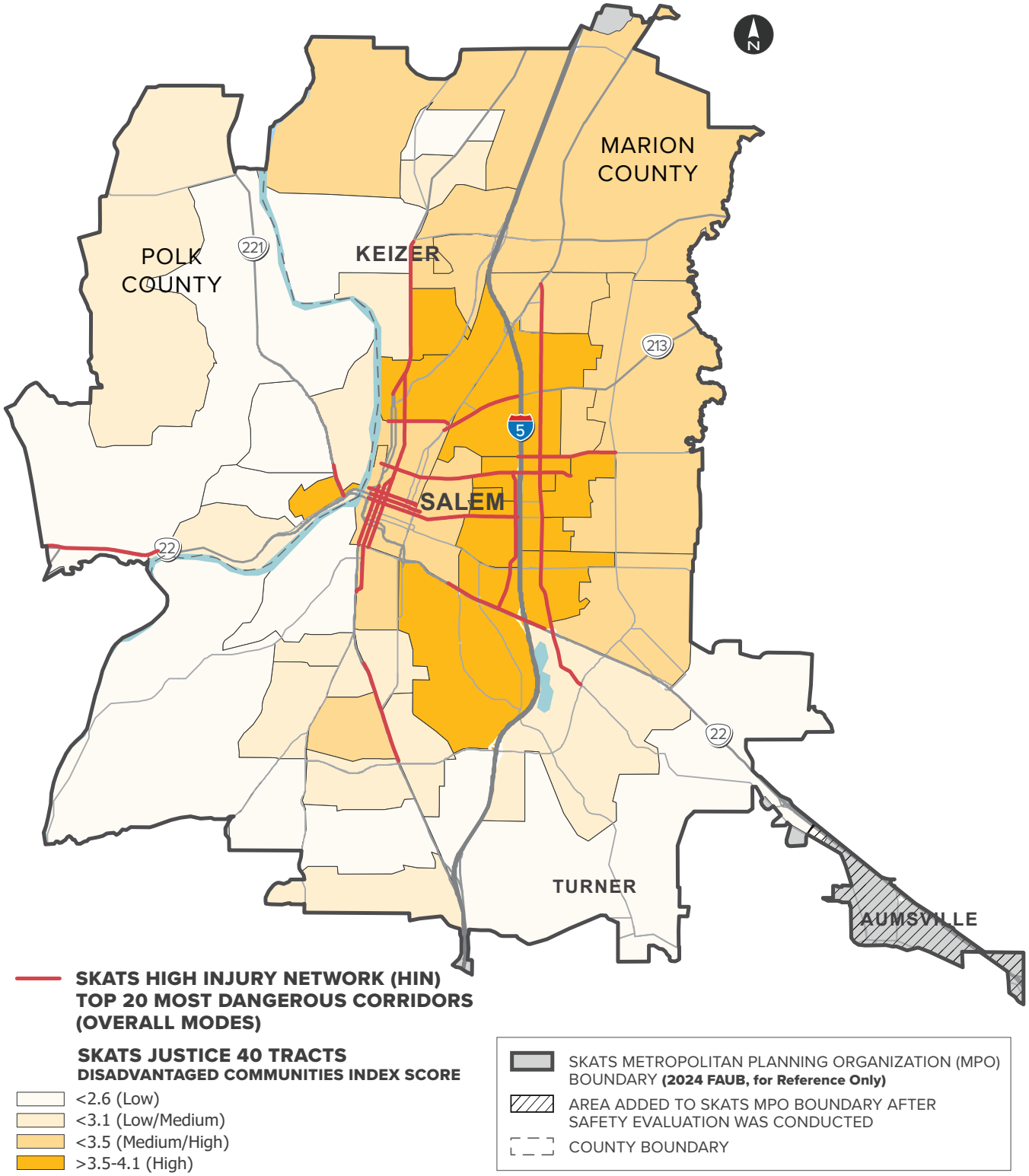
Emphasis Area(s): Impairment-Distraction, Speeding

Safe System Approach Objective(s): Safer People

Effectiveness: Unproven/needs further evaluation

Description: Awareness and educational programs aimed at addressing and reducing risky driving behavior such as speeding, not wearing a seatbelt, driving while intoxicated, drowsy, or distracted, and aggressive driving.
These programs may include media campaigns (TV or radio commercials, social media, etc.), printed materials, educational classes, or other community outreach events.

FIGURE 11. OVERLAPPING PRIORITIES MAP, HIN ON JUSTICE 40



Policies, Procedures, and Standards

In order to eliminate fatal and serious injury crashes in the Salem-Keizer area, we must not only address deficiencies in the existing transportation network, but we must also improve the policies, procedures, and standards that led to those deficiencies in the first place.

Across each agency, there are many opportunities to establish a stronger "safety first" foundation that influences how we plan, design, fund, build, maintain, and use the transportation system.

Each member agency in the Salem-Keizer area relies on numerous policies, procedures, and standards that influence how safety is incorporated into the funding, construction, and maintenance of the transportation system. Many of these already align with the goal of creating a safer transportation system, however there are also many opportunities to better prioritize safety across the region. Similar to our list of high-priority strategies, the following recommendations reflect the five high-priority changes to policies, procedures, and standards that are likely to be the most effective and practical for SKATS and its member agencies to implement in the near term.

Policies

- Modify Traffic Impact Study guidelines to require safety evaluations and establish provisions for private developers to mitigate for safety deficiencies in addition to capacity/mobility
- Establish access management policy that aligns with national best practices for access control, spacing, and design
- Work with agency leadership to establish policies to prohibit risky behaviors while driving for business purposes (e.g., no cell phone use, do not drive impaired or drowsy, drive at or below the posted speed limit, etc.)

Procedures

- Institute a "safety review" of all capital projects to identify low-cost safety enhancements that can be incorporated into designs prior to construction

Standards

- Establish (or modify) street standards to provide adequate street lighting and pedestrian-level lighting at intersections and along segments

Tracking Progress

Moving forward, SKATS will use the following performance measures to track how well the plan is being implemented (output measures) and how effective those efforts are at improving safety (outcome measures).

TABLE 4. OUTPUT PERFORMANCE MEASURES, PROJECTS COMPLETED

	PERFORMANCE MEASURE	BASELINE MEASUREMENT
1	Number of safety projects completed (over the last 4 years) on the High Injury Network	8 projects (6 Primary, 1 Secondary, 1 Other)
2	Number of safety projects completed (over the last 4 years) on the Regional System in Disadvantaged Areas as defined by Justice 40[1]	10 projects (7 Primary, 2 Secondary, 1 Other)
3	Number of bicycle and pedestrian enhancement projects completed (over the last 4 years) within ½ mile of a school	8 projects
4	Number of miles of sidewalks on the regional system (total miles and miles since 2005)	341 miles of sidewalks (as of Nov 2023) 35 miles of sidewalk since 2005

Notes:

Last 4 years: 2020 to 2023 and beginning of 2024

Primary: Safety is the primary focus/intention of the project

Secondary: The project includes safety elements (e.g., completing a sidewalk)

Other: The project indirectly improves safety (e.g., seismic retrogrades)

1 From the Equitable Transportation Community (ETC) Explorer https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/ETC-Explorer---Homepage/

TABLE 5. OUTPUT PERFORMANCE MEASURES, FATALITIES AND SERIOUS INJURIES

	PERFORMANCE MEASURE	BASELINE MEASUREMENT
1	Number of fatalities and serious injuries	112 fatalities 540 serious injuries (2017–2022)
	Number of pedestrian fatalities and serious injuries	31 fatalities 44 serious injuries (2017–2022)
	Number of bicyclist fatalities and serious injuries	10 fatalities 13 serious injuries (2017–2022)
	Number of motorcyclistfatalities and serious injuries	11 fatalities 35 serious injuries (2017–2022)
2	Number of fatal and serious injury crashes attributed to risky behaviors (e.g., speeding, aggressive driving)	237 fatal & serious injury crashes (2017–2022)
3	Number of ODOT 90th and 95th percentile SPIS sites in SKATS region	895 sites (2019 - 2021 data)

In addition to the performance measures listed above, the SKATS MPO also tracks the five Federal Performance Measures for Roadway Safety and the associated targets set by ODOT in the Oregon Statewide TSAP. These performance measures and targets can be viewed here.

Who Is Carrying the Vision Forward?

"Seven years of being a student at North & Parrish, walking home and having to be in the middle of the road at 14th & Center because cars can't see you waiting, there's always so many cars going so fast and you have to be at the mercy of drivers in both directions. Now I am scared for my nephew at that same crosswalk."

—Julisa, Age 35-44

All of us. The Safe System Approach reminds us that every individual who lives, works, or travels in the Salem-Keizer area plays a vital role in creating a safe transportation system. When our shared goal for every trip is to make sure everyone reaches their destination safely, we naturally make safer choices when traveling. We do not drive when impaired, drowsy, or distracted, we follow traffic laws and speed limits, we share the road with others, and we use proper safety equipment like seatbelts, child car seats, and helmets.

Transportation Professionals. Those who plan, design, build, and operate our streets must work together to create a roadway environment that allows for human mistakes and also encourages people to make safe choices when traveling. Staff and leadership at the MPO, cities of Salem, Keizer, Turner, and Aumsville, as well as Marion County and Polk County, will carry our vision forward by prioritizing investments in the high-priority safety strategies. Marion County is actively developing their own TSAP, to be completed in late 2024, and the City of Salem received a Safe Streets and Roads for All grant to develop a Vision Zero Plan and implement strategies to reduce speeds on city streets.

MPO. In accordance with one of the high-priority strategies in this plan, the MPO will establish an interagency transportation safety committee and hold annual meetings to review data and performance measure progress, share information, and discuss opportunities for safety improvements. We, the MPO, will continue to monitor crash data as it becomes available, will track the crash patterns specific to each emphasis area in the MTSAP, and will update the crash data dashboards on an annual basis. We intend to update this plan in 2029, five years from now.

Partners. To reach our goal of eliminating fatalities and serious injuries, we must also continue fostering meaningful partnerships with ODOT, local jurisdictions, agencies and community organizations that share a vested interest in traffic safety. These existing and future partners include, but are not limited to, local police departments, health departments, first responders and hospitals, school districts, and organizations that serve and represent the diverse populations within the Salem-Keizer area.