

Workgroup #3: Finishing HB 2017 Commitments ODOT Follow-up Material

Workgroup Session 1 – October 17, 2024

1. What are the traffic safety concerns with the I-5 Rose Quarter area, and how would the I-5 Rose Quarter Improvements Project address them?

Safety Concerns

Safety is a critical aspect of the I-5 Rose Quarter Improvements Project. I-5 between I-405 and I-84 has the highest crash rate of all urban interstates in the state of Oregon. The existing short weaving distances and lack of shoulders for crash/incident recovery in this segment of I-5 are physical factors that may contribute to the high number of crashes and safety problems. Further, the high volumes of traffic on this segment of I-5 coupled with the existing short weaving distances is a compounding factor for the high crash rate.

Systemic safety screening is a common step many states use to help identify and prioritize locations most likely to benefit from safety improvements. The Safety Priority Index System (SPIS) is a data-driven, systemic safety tool developed and used by ODOT to identify and prioritize roadway segments with the highest potential for safety improvements. SPIS scores are assigned to sites as a function of crash frequency, crash rate, and the severity of the crash (giving a higher score to segments with serious injury and fatal crashes). A higher SPIS score indicates a worse condition from a crash perspective. Nearly 40 percent of the I-5 Rose Quarter Improvements Project Area is on the ODOT top 5 or 10 percent SPIS list.

Crash data from 2011 to 2015 indicate that I-5 between I-84 and the merge point from the NE Broadway on-ramp had a crash rate (for all types of crashes) that was approximately 3.5 times higher than the statewide average for comparable urban interstate facilities. As stated in the project's [Revised Supplemental Environmental Assessment](#), there were 881 crashes on the highway and ramps in the project area between 2011 and 2015. During the study period, there was one fatal crash and eight other crashes resulting in serious injuries on the mainline and ramps combined in the Project Area. This data on crash severity is considered as part of the SPIS score (coupled with crash rate and crash frequency) and is a factor contributing to the project area being in the top 5 to 10 percent SPIS list.

Project Safety Improvements

ODOT applied the American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual (HSM) predictive method for highways and interchanges to estimate the I-5 Rose Quarter Improvements Project's impact on safety. Of all the project's proposed modifications, upgrading shoulders on I-5 to full standard on both sides of the highway in both directions provides the greatest safety benefit.

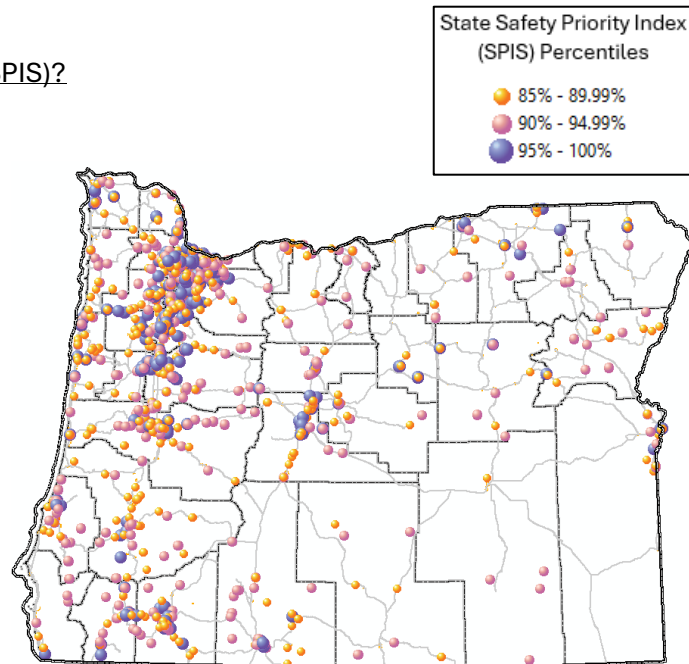
In the project's opening year, with proposed improvements, the forecast shows fewer crashes than existing conditions, providing an overall safety benefit to I-5. If the project were not built, estimates show a 10 percent increase in highway crashes by 2045 as compared to existing conditions. The project would result in enhanced traffic operations, more uniform lane speeds, and reduction in lane changes as compared to the not building the project. The largest safety benefit of the

proposed project results from widening shoulders for the majority of the corridor. Additionally, the project would substantially reduce emergency braking events, which would reduce the incidence of rapid deceleration that can result in rear-end crashes. This is a result of the project's auxiliary lanes that would result in smoother traffic flows and the operational improvements at the existing ramp terminal intersections that would reduce the potential for ramp queueing extending onto the highway, reducing the risk of congestion-related crashes.

2. How does ODOT measure traffic safety impacts and prioritize safety projects?

What is the Safety Priority Index System (SPIS)?

Systemic safety screening is a common step many states use to help identify and prioritize locations most likely to benefit from safety improvements. The Safety Priority Index System (SPIS) is a data-driven, systemic safety tool developed and used by ODOT to identify and prioritize roadway segments with the highest potential for safety improvements. ODOT publishes the annual SPIS reports once a year after the crash data is finalized and checked for quality.



How does ODOT use SPIS?

ODOT utilizes SPIS as its primary tool to flag high-crash locations for further investigation. Every year, ODOT generates reports and uses them to guide investigations and evaluations of roadway safety issues and to prioritize those locations for potential safety improvements. Priorities are typically limited to the top 10% of sites due to resource constraints. The primary focus of the investigation is to identify cost-effective engineering countermeasures to improve safety.

Why is SPIS Important?

SPIS allows for the comparison and ranking of roadway segments across state highways, county roads, and city streets. It offers a consistent, unbiased methodology to prioritize roadway safety using data. With limited funding and resources, this helps prioritize investments to the most critical location regardless of jurisdiction and puts saving lives first.

How are SPIS Scores Calculated?

The SPIS score is calculated based on historic crash frequency, severity, and rate over the previous three calendar years. The higher the SPIS score, the higher the potential for safety improvements in a specific roadway segment. Overlapping roadway segments are common due to the way the data is analyzed so a single location may be reported in multiple segments. This allows for detailed investigation at various segment levels.

Because SPIS uses location based historic crash data, we rely on our safety implementation plans to provide insight on identifying locations likely to benefit from targeted safety countermeasures.

Safety Implementation Plans

Our data shows that our most common crash type in rural areas is roadway departure crashes. For urban areas, the most common crash type is intersection crashes, and pedestrian or bicyclist crashes are sharply rising. Oregon’s Transportation Safety Action Plan guides us to focus on these crash types as “emphasis areas.” ODOT has developed other safety plans to complement SPIS, focusing on these safety emphasis areas.

- **Roadway Departure Safety Implementation Plan:** This plan identifies crash types and locations that specific roadway departure countermeasures are designed to address. It also incorporates a comprehensive application of education and enforcement initiatives targeted at corridors that exhibit a roadway departure crash history associated with certain driving characteristics (crashes involving alcohol, drugs, and/or speed).
- **Intersection Safety Implementation Plan:** This plan applies risk factors to help identify intersections where crashes are more likely to happen in the future. The plan provides a framework for how to conduct analyses, what risk factors ODOT Regions and local agencies can use to identify locations for countermeasures and provides examples for developing valuable project proposals to improve safety at intersections.
- **Pedestrian and Bicyclist Safety Implementation Plan:** This plan applies risk factors (such as number of through and turn lanes, volumes, speed limits) to help identify locations where crashes involving pedestrians and/or bicyclists are more likely to happen in the future. The plan provides a framework for how to conduct analyses, what risk factors ODOT Regions and local agencies can use to identify locations for countermeasures and provides examples for developing valuable project proposals to improve safety for people walking and biking.

Because problem areas develop over time, the safety implementation plans incorporate risk factors in addition to crash history and volume data, providing a comprehensive and targeted approach to safety screening and complementing the findings of SPIS. Our safety implementation plans not only propose safety countermeasures but also include education, enforcement, and systemic changes, offering a more comprehensive view when examined together with SPIS.

Sources:

Tools for Safety Screening: Safety Priority Index System (SPIS) and more
[Oregon Department of Transportation : Highway Safety : Engineering : State of Oregon](#)

3. What is the funding plan for the Interstate Bridge Replacement Program?

Committed and Proposed Funding Sources

► Cost Estimate: \$5 – 7.5 B

	Status	Expected Value
Existing State Funding	Committed	\$100 M
Connecting WA Funding—Mill Plain Interchange	Committed ¹	\$117 M
Move Ahead WA Funding	Committed	\$1,000 M
Oregon Funding Contribution	Committed	\$1,000 M
FHWA Bridge Investment Program Grant	Committed ²	\$1,500 M
USDOT Mega Grant	Committed	\$600 M
Toll Funding	Committed ³	\$1,100 – 1,600 M
FTA New Starts CIG Funding	Prospective	\$900 - 1,100 M
IBR Funding Totals		\$6,317 – 7,017 M

Updated as of 07.12.2023

¹ These funds were deferred to a later date and adjusted for inflation by the Washington State Legislature in the 2023 session.

² Combines \$1 M BIP Planning Grant (2022) and \$1,499 B BIP Construction Grant (2024)

³ Legislative authorization to toll has been secured in both states and toll funding of \$1.24 B has been confirmed by both states at toll rates assumed in the 2023 Financial Plan under a base case financing scenario. Toll rates and policies will be jointly set by the Washington State and Oregon Transportation Commissions.



July 24, 2024