

Congestion Projects: That Benefit Seismic, Preservation & Maintenance

Location – Inside MPOs	Total Cost	Benefit
I-5 SB: Aux lane Wilsonville – or 551 (Boone Bridge)	\$120M	\$30M
I-5: Salem – Albany	\$800M	\$250M
a. I-5: Albany Auxiliary Lanes	\$35M	\$7M
b. I-5: Kuebler – Delaney Added Lane	\$50M	\$15M
OR 34: Van Buren Bridge (Corvallis)	\$60M	\$60M
Beltline: Delta Hwy – River Rd	\$120M	\$50M
Hwy 97: Sun River – La Pine	\$25M	\$5M
Location – Outside MPOs	Total Cost	Benefit
OR38: Scottsburg Bridge	\$40M	\$40M
Interstate 5 Climbing Lanes	\$25M	\$5M
Hwy 97: Klamath Co. Passing Lane	\$10M	\$2M
I-84: N.E. Oregon Winter Ops	\$15M	\$15M

Projects without Benefit to Congestion but High Local Interest

Location	Total Cost	Benefit
OR 22: Center Street Bridge (Salem)	*	\$60M
Southern OR Seismic Triage	*	\$35M

I-5: SB Auxiliary Lane from Wilsonville Rd. Interchange To Wilsonville-Hubbard Highway (Exit 282A) Boone Bridge Widening and Seismic

Purpose:

The purpose of this project is to address congestion on Pacific Highway (I-5) southbound in the Wilsonville area and address seismic needs on the Boone Bridge over the Willamette River. This segment of Pacific Highway (I-5) serves intercity, regional, statewide and interstate mobility. It is a key freight corridor for the west coast of the United States. Pacific Highway and especially Boone Bridge form an important Oregon Seismic Lifeline Route for the Portland metropolitan area. Wilsonville Road provides access to neighborhoods, employment centers and shopping in the southern portion of Wilsonville.



Problem Statement:

Identified needs to be addressed are:

- Evening peak hour and weekend congestion on I-5 in the southbound direction. This segment of I-5 has been experiencing a degradation in trip reliability according to the Region 1 Corridor Performance Report. Speeds for weekday PM hours are averaging 23 mph less than posted speed

(2013-2015 numbers) for a 6 hour period. A calculated buffer index increases the travel time from a free-flow time of 5.5 minutes to approximately 18.9 minutes.

- Lane balance on I-5 southbound. Within a 2 mile stretch there is 6 ramps merging and diverging on I-5: 4 exit and 2 entrance ramps.
- Large volumes merging onto I-5 from Wilsonville Road southbound entrance ramp. The entrance ramp ADT is approximately 11,000. Volumes are correspondingly high on Wilsonville Rd. due to major employers and business related traffic.
- High volumes exiting at the Wilsonville-Hubbard Highway. This exit serves local rural areas but also serves longer distance commutes to the cities of Canby, Hubbard and Woodburn. The exit ramp ADT is approximately 13,000.
- Pacific Highway (I-5) and Boone Bridge is a Priority 1 lifeline route. This structure will require a Phase II seismic retrofit to be serviceable in a Cascadian Subduction earthquake.

Project Scope:

The scope of this proposed project would include design and construction of an auxiliary lane from the southbound Wilsonville Interchange entrance ramp to the Wilsonville-Hubbard Highway exit ramp. The auxiliary lane will require widening of the Boone Bridge structure. Structure improvements would include new deck joints and a deck overlay for both the northbound and southbound sides of the structure. The project would also include seismic upgrades and painting of the existing steel girders.

Project Funding:

A planning level cost estimate has been made of approximately \$120,000,000. This includes contingency, PE and CE.

Project Schedule:

- Work completed to date:
 - Desktop scoping of seismic needs.
 - ODOT Preliminary Design has some desktop scoping for evaluation.
- Timeline:
 - Conceptual level design 2018
 - Environmental Clearance 2020
 - Plans, Specs, Estimate – Early 2022
 - Construction – 2025 – This date is assuming construction funding has been identified.

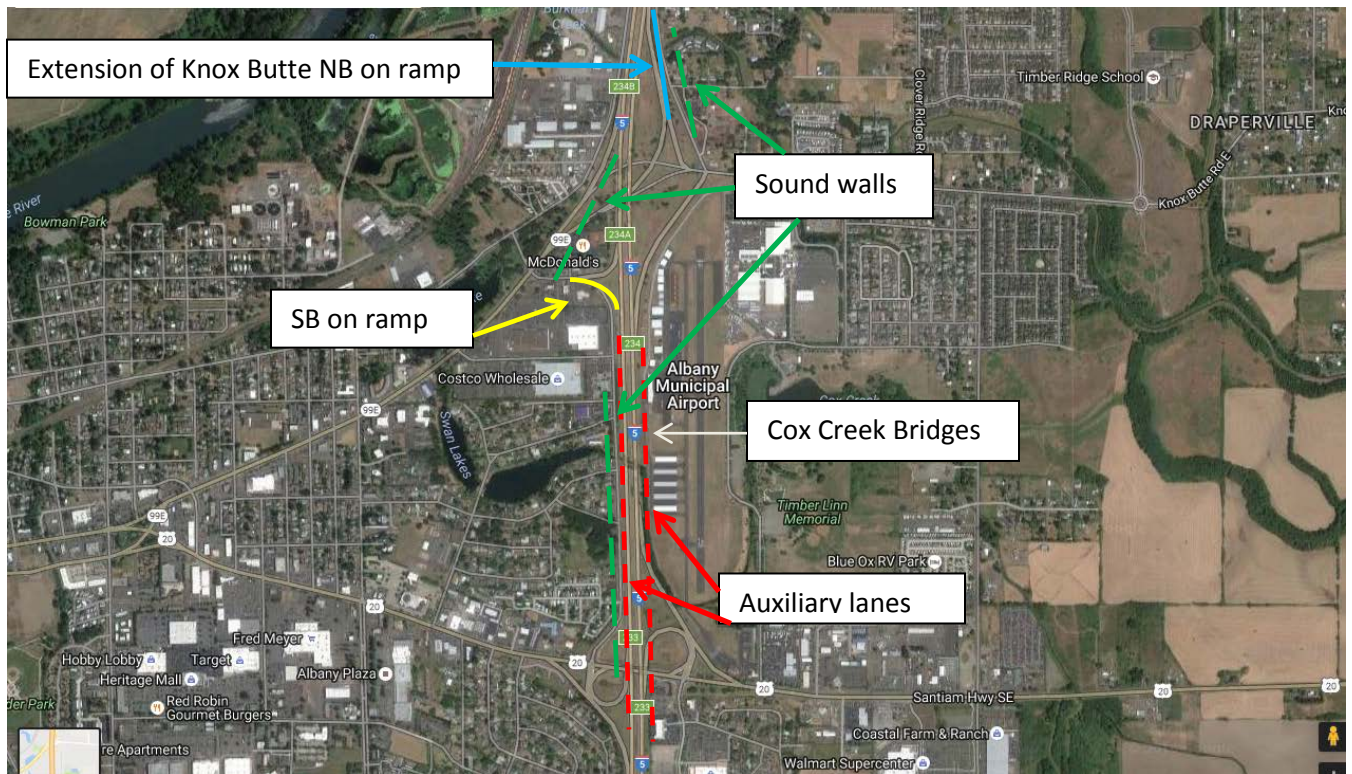
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I-5: Santiam - Viewcrest (MP 233-235)

Purpose:

Traffic on I-5 between Albany and Salem has grown substantially over the past ten years, and truck traffic alone is projected to grow by 40% along this corridor in the near future. This project is the first that is planned to reduce congestion in the area. It will focus on improving operational flow in the Albany area, specifically around the Santiam Highway (MP 233) and Knox Butte (MP 234) interchanges.



Project Scope:

The scope of this project is to improve operational flow and reduce congestion by:

- Adding a southbound on-ramp at Knox Butte, and constructing auxiliary lanes between the Knox Butte and Santiam interchanges, allowing local traffic to move through the area without congesting the traffic flow on the main line
- Extending the northbound on ramp at Knox Butte to relieve congestion and improve safety for merging traffic.
- Construct sound walls to improve noise levels for local residents.
- Reconstruct the Cox Creek Bridges on the main line to ensure structural stability during a seismic event and high water, and improve fish passage.

Project Background

The project was originally developed as an Environmental Assessment (EA) for a larger project to make improvements that will reduce congestion in the Albany to Millersburg corridor of Interstate 5. During development of the EA, a number of stand-alone projects were identified, each addressing a specific traffic problem/issue. The EA was discontinued when FHWA determined that the work could be done without significant effect.

Project Funding:

The project is currently funded with \$2.6 million. This includes contributions of \$200,000 from the city of Albany and \$200,000 from Linn County. The project is currently under development, and plans will be 50% completed in June of 2017. At that time, total project costs will be accurately estimated. The current preliminary estimate is \$35 million.

Project Schedule:

- Work completed to date:
 - The EA completed environmental studies and preliminary engineering designs, including the basic location of the sound walls and potential impacts to environmental resources.
 - Survey has been completed to establish a Digital Terrain Model (DTM) and the project footprint.
 - Nearly all of the work can be completed with ODOT Right of Way (ROW); very little ROW will be needed.
 - Plans will be developed to 50% completion by June of 2017. The team expects to be done with design and ready for bid let in spring of 2019.
 - If construction is funded, the project will be ready to construct in 2019

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I-5: Kuebler Blvd to Delaney Road Widening

Purpose:

The Salem-Keizer urban area is the economic center of the Mid-Willamette Valley in western Oregon and, as the state capital, the political center of Oregon. It serves as a major transportation hub with Interstate 5 (I-5), State Highways 22, 99E, 219, and 221, and several major local roads serving the area. The community is also served by two major rail lines and a municipal airport. It is the major focus for transportation activity in the area – highways connecting to I-5 in the Salem-Keizer area provide direct connections from the Mid-Willamette Valley to the Oregon Coast and central Oregon.

I-5 is the major surface transportation facility not only in Oregon, but the entire west coast of the United States. I-5 connects major population centers in the states of Washington, Oregon, and California, providing access for personal travel and commerce. In Oregon, I-5 serves the Willamette Valley between Portland and Eugene where about 80% of the state's population resides.



Figure I-5 Southbound

Figure I-5 Northbound

Problem Statement:

I-5 is a National Highway System (NHS) route and is also on the state freight system and the National Highway Freight Network. In the area of the project, the 2-lane section of freeway carries almost 58,000 vehicles daily. Of that total, over 22% are single unit and multi-trailer trucks. Due to traffic volumes and grades in the area (5-6% in some locations) which slows large trucks, this section is subject to frequent congestion. Daily traffic in the project area is projected to grow to over 84,000 vehicles by 2040. The proposed project will improve capacity, flow, level of service, average car speed, and density. Further, these benefits will especially be realized by the freight industry as approximately 22% of the fleet through the study area is comprised of medium and heavy trucks.

Project Scope:

The scope of this project is to:

- Add a third travel lane southbound beginning at the Battle Creek Road overcrossing and extending to the Delaney Road interchange including replacement an overcrossing of an off-

ramp to Commercial Street that is not wide enough to accommodate a third travel lane (MP 248.41 – 250.32);

- Add a third travel lane northbound between the Kuebler Boulevard and Delaney Road interchanges including replacement an overcrossing of an off-ramp to Commercial Street that is not wide enough to accommodate a third travel lane (MP 248.41 – 251.53); and
- Replace the Battle Creek Road overcrossing (MP 250.32). It is not currently wide enough to allow three travel lanes on the freeway and has substandard vertical clearance.

Project Funding:

The project is currently funded at \$14,500,000 for preliminary engineering and right of way acquisition. Total project costs through construction are anticipated to be near \$48,000,000. At this time, there is no budget for construction.

Project Schedule:

- Work completed to date:
 - Project scoping
 - Environmental Impact Statement (EIS) and Record of Decision (ROD)
 - Traffic Analysis
 - Public engagement through the Statewide Transportation Improvement Program (STIP) and letters of support from local stakeholders including City of Salem, Marion County, Salem Keizer Area Transportation Study (SKATS) and Mid-Willamette Valley Area Commission on Transportation (MWACT), as well as various freight transport and economic development interests at the local and state level
 - Salem-Keizer MPO (SKATS) adopted the project into their regional transportation system plan
- Timeline:
 - A/E Consultant Contract Award – September 2017
 - Preliminary Engineering and Right of Way Acquisition – November 2017 – December 2020
 - Construction – 2021. This date assumes construction funding has been identified.

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OR34: Van Buren Bridge (Corvallis)

Purpose:

The purpose of this project is to improve congestion in and around downtown Corvallis by expanding the capacity of the Van Buren Bridge.



Project Background

The Oregon 34: Van Buren Bridge (Corvallis) development project, adopted into the 2006-2009 STIP, identified preferred alternatives to address congestion in east Corvallis at the Van Buren Street Bridge. While the development had originally focused on the Van Buren Bridge as the cause of the bottleneck, updated traffic models showed the problem to be more complex and widespread. Improvement of the Van Buren Bridge is an integral part of a broader, long term solution.

Project Scope:

The long term solution involves moving the confluence of OR 99W and US20 to the east side of the river, as well as creating additional capacity on the Van Buren Bridge. This solution will require infrastructure that allows for free flow of traffic at the southern bypass, frontage roads between the bypass interchange and Peoria Road, and a northern bypass that connects the bypass interchange to OR 99W and US20.

The OR 34 Van Buren Bridge project would be the first part of the long-term solution. The project will relocate the existing historic bridge slightly upstream, where it will become a bike and pedestrian bridge under the jurisdiction of the city of Corvallis, and then construct a new two lane bridge on the current alignment.

Project Funding:

Total estimated cost to replace this bridge is \$60 million. The OTC approved \$1.9 million in funding for development in December, 2016.

Project Schedule:

- Project Development to begin in FY 2017
- Construction TBD

Project Contact:

Savannah Crawford, Project Delivery Coordinator

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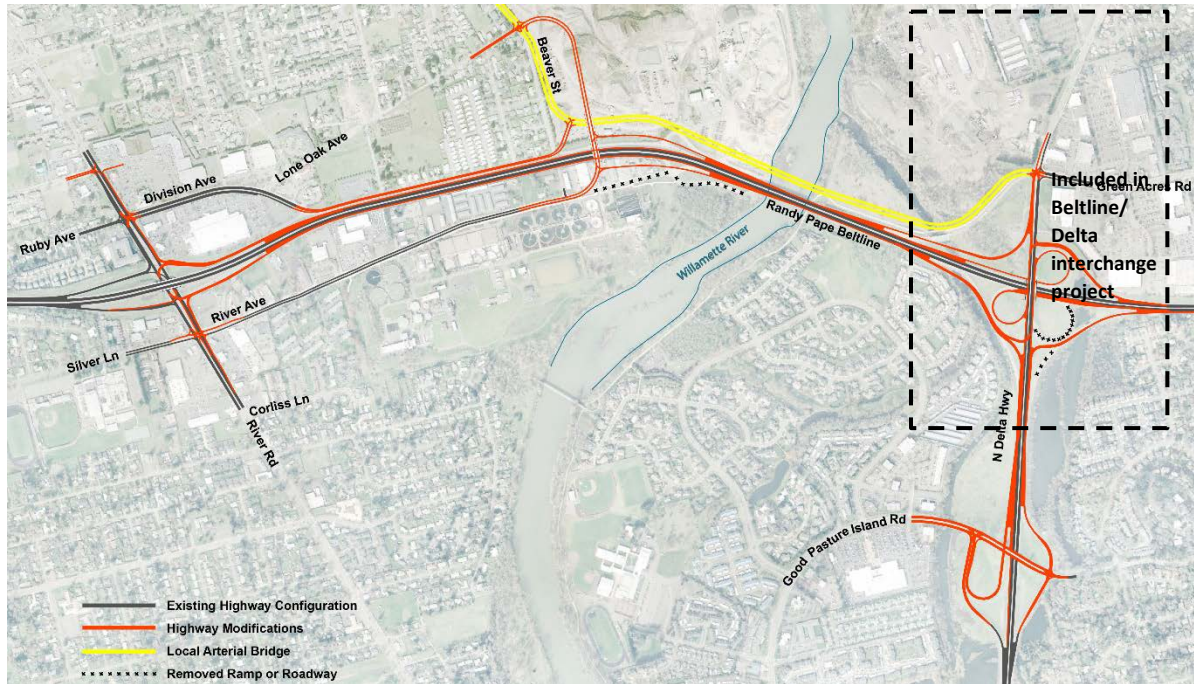
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Beltline Highway: Delta Highway to River Road

Problem Statement:

- This area is one of the most congested places in the Eugene/Springfield area.
- Beltline Highway is the only way to cross the Willamette River in north Eugene.
- Outdated, short entrance ramps and limited space for merging contribute to congestion and safety issues, particularly between the River Avenue/Division Avenue interchange and Delta Highway.



Solution:

The Beltline Highway Facility Plan recommends several projects. Together, these projects would widen the Beltline Highway to three lanes in each direction from River Road to Delta Highway to improve safety and mobility, and add a new local bridge to address multimodal and connectivity needs. These projects could be constructed in phases.

- **Arterial bridge:** A new arterial bridge connecting the Santa Clara neighborhood to Green Acres Road could serve 1,200 westbound vehicles in the evening peak – essentially reducing demand on the Beltline Highway by a full lane. The bridge, located north of Beltline Highway, would divert short, local trips from the highway. The new bridge would support improved transit service making an east-west bus rapid transit line viable. Finally, the bridge would include bike and pedestrian facilities filling a gap in the active transportation system.
- **Highway improvements from River Avenue/Division Avenue to Delta Highway:** A modern interchange at River Avenue/Division Avenue and an auxiliary lane from River Avenue/Division Avenue to Delta Highway would remove a key bottleneck in the highway system. This project could

include replacing the 60 year old Beltline Highway Bridge across the Willamette River, or the replacement of the bridge could be constructed in a separate phase.

- **Highway improvements from River Road to River Avenue/Division Avenue:** An updated interchange at River Road and an auxiliary lane from River Road to River Avenue/Division Avenue would provide space for merging/weaving on the Beltline Highway.

Project Funding:

This project is currently under consultant contract to complete the NEPA (National Environmental Policy Act) evaluation, and identify and estimate cost for independent construction projects. Total project cost is estimated to be between \$215 - \$230 million in 2017 dollars, without right-of-way.

Project Schedule:

Work will begin on the NEPA evaluation after the city of Eugene has approved the project as part of their Transportation System Plan (TSP), which is anticipated in April.

The NEPA analysis, which includes extensive public involvement, will take about 18 months.

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Additional Project Information is available at:

<http://oregondot.org/beltline/>

US 97: Sunriver –La Pine

Purpose:

Highway US 97 is the main north-south transportation corridor through Central Oregon and a critical part of the state's transportation system. Demand continues to increase along this portion of US 97, with annual average traffic rates of over 12,000 vehicles per day. Semi-trucks comprise up to 1/3 of the total traffic. Safety on this two lane section is a growing concern due to limited passing opportunities, increasing traffic volumes, high speeds, congestion, and inclement weather conditions. This section also has a high frequency of animal/vehicle collisions, with over 150 reported deer/elk collisions occurring over a five year period.

This project aims to improve the overall safety and mobility for the freight industry, regional and statewide motorists traveling US 97. It will tie into approximately 15 miles of other recently constructed highway improvements to north of this proposed project creating a more cohesive transportation system along this corridor of U.S. 97 ensuring a critical lifeline route on the east side of the Cascade Mountain Range. in preparation of a Cascadia Seismic event.



Problem Statement:

The major problems currently identified to be addressed are:

- The existing 2-lane highway provides limited passing opportunities which lead to lengthy following times that sometimes result in drivers making passing maneuvers at high speeds in areas with limited sight distances. Between 1/1/2010 and 12/31/2014, there were 80 reported crashes along the 6-mile segment, with 3 fatalities and multiple injuries.
- The intersection of Vandevent Road is also located along this portion of US 97, and provides access to the Deschutes National Forest. The intersection currently operates at a Level of Service E with respect to capacity and was identified in the 2014 Safety Priority Index System (SPIS) as a "Top 10%" SPIS site due to a fatal crash in 2012.
- This portion of US 97 is associated with some of the highest animal/vehicle collisions per mile on the State system, and the surrounding area is located in a critical mule deer migration corridor.

Project Scope:

The scope of this project is to design a 6-mile long, four-lane divided highway improvements along US 97, from the Sunriver Interchange to the United States Forest Service (USFS) boundary. The scope also includes intersection improvements at Vandever and State Park Road. Consideration of wildlife crossing features are proven to reduce animal/vehicle collisions are also included. At this time, the project lacks the funding needed to construct the 6-mile long project.

Project Funding:

The project is currently funded at \$410,000 for preliminary engineering in the 15-18 Statewide Transportation Improvement Plan (D-STIP). The project was recently awarded Federal Lands Access Program (FLAP) construction funds of \$2,686,319.51 for improved access to Vandever Road from US 97.

Construction funding options are as follows:

- Option 1: 4-mile segment, from the Sunriver Interchange to south of Vandever Road. Estimated construction cost is \$15,000,000.
- Option 2: 6-mile segment, from the Sunriver Interchange to the USFS Boundary (Deschutes County Transfer station). Estimated construction cost is \$25,000,000.
- Option 3: 13-mile segment, results in a complete improvement from the Sunriver Interchange to north of La Pine. Estimated construction cost is \$60,000,000.

Project Schedule:

Work completed to date:

- Comprehensive project team, including Deschutes County, USFS, the Oregon Department of Fish and Wildlife (ODFW), Federal Highway Administration (FHWA) developed concept level design (7/2016 through 11/2016)
- Concept-level design for 6-mile segment completed and rendered into 3D visualization for public comment (12/2016)
- ODOT held a physical open house on 2/8/17 and launched an [online open house](#) on 1/25/17, requesting public comment by 2/28/17
- Project team is currently reviewing public input on design options

Timeline:

- Consultant selection – July 2016
- Design Acceptance Phase (DAP) – July 2017
- Final Design – Fall 2018
- Construction – 2019 (This date is assuming construction funding has been identified.)

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OR 38: Scottsburg Bridge Replacement

Background/Issue

Oregon 38 (Umpqua Highway) is a vital route between Interstate 5 and the southern Oregon coast. Although many nearby bridges have been replaced in recent years, the Scottsburg Bridge remains largely unchanged since it was built. Opened in 1929, during an era when most vehicles were small and speeds low, the bridge's narrow lanes and tight corners at both ends are less than ideal for modern traffic.

In recent years, ODOT has focused on maintaining the existing bridge and addressing problems as they arise. Fully repairing the bridge would involve sandblasting and repainting the steel truss,

resurfacing the deck and replacing the deck joints, replacing the concrete railing, repairing the concrete pier caps, replacing the bearings and performing a seismic retrofit of the bridge to better withstand earthquakes. However, such repairs would not address the more fundamental problems with the bridge—the narrow width, sharp approach curves, and low overhead clearance.



Project Scope:

Due to the need for so many repairs and improvements to the existing structure, ODOT believes the construction of a new bridge would be a better long-term investment. A new bridge could better accommodate modern traffic and would be more likely to withstand a large earthquake or other natural disaster than the current structure.



As a result, ODOT is designing a replacement bridge in the event that construction funding becomes available. The new bridge will be designed according to modern standards and built just downstream of the existing structure. Due to the high cost of maintaining two structures, the old bridge would be removed. Most other details of the new bridge have yet to be determined.

Project Funding:

The project is currently funded at \$2.8 million, which covers design and a portion of expected right-of-way costs. Total project costs through construction are anticipated to be about \$40,000,000.

Project Schedule:Work to Date:

- Field survey and geotechnical drilling of the bridge and the surrounding area is complete;
- Preliminary design and environmental permitting for a new bridge have begun; and
- An open house was held in Scottsburg in January 2017.

Timeline:

- Design - Ongoing
- Anticipated Let Date - Late 2018
- Construction - Starting in 2019 (assuming full construction funding is obligated)

Project Contact:

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Interstate 5 Climbing Lanes

Background/Issue

Increasing truck traffic moving through mountainous terrain in the southern section of I-5 is contributing to operational and safety problems. Heavily loaded vehicles on grades of sufficient length result in speeds that impede following vehicles causing an increasing amount of delay and number of serious crashes.

Trucks often have to use shoulders as climbing lanes to prevent congestion on the freeway. In addition to this being against state law, the trucks are in conflict with any disabled motorist parked in the shoulder area.

Region 3 has partially addressed this issue through completed and planned climbing lanes at SB Rice Hill, SB/NB Sutherlin Hill, SB/NB Roberts Mountain, and NB Sexton Pass, but additional I-5 climbing lanes are needed to improve mobility and safety in southern Oregon.

Project Scope:

The project proposes the construction of (1) a southbound climbing lane at Stage Road Pass on I-5 (MP 80.8 - 79.7) and (2) a southbound climbing lane at Smith Road Pass (MP 75.8 - 74.1) to accommodate trucks.

The proposed project will improve mobility and safety on two key segments of I-5 for both freight and general traffic.

The addition of these climbing lanes will allow trucks to avoid slowing in the primary travel lanes, thereby reducing the likelihood of mainline congestion and rear-end crashes. This will allow the shoulder to be used as originally intended - for disabled or emergency vehicles. Operational life will exceed 20 years.

The proposed project is consistent with the *I-5 Truck Passing Lanes Study* and *I-5 Corridor Plan*.

Project Funding:

Total cost for both climbing lanes through construction is estimated at \$25 million. Southbound Smith Hill Pass is estimated at \$15 million and Southbound Stage Road Pass is estimated at \$10 million. No funding has yet been secured for either climbing lanes.



Trucks often occupy both I-5 travel lanes and the shoulder on the passes in southern Oregon



SB Smith Road Pass Climbing Lanes

Project Schedule:Work to Date:

- Initial field surveys and environmental background work for each climbing lane; and
- Draft Design Acceptance Package (DAP) plans developed for the SB Stage Road Pass climbing lane.

Timeline (assuming funding is secured):

- **Design** - Start design in 2019
- **Construction** - Begin construction by 2022

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US97: Passing Lanes

Purpose:

This project aims to improve the overall safety and mobility for the freight industry and travelers on the east side of the Cascade Mountain Range. This project proposes to build a new 2 mile section of passing lanes North of Gilchrist, and extend the existing 1 mile section of passing lanes near the US97/OR138 Jct. Longer sections of passing lanes provide a much improved opportunity for vehicles and freight to pass effectively and safely. By giving people more opportunity to pass slow-moving vehicles, this project would reduce travel times and unsafe passing behavior. This would improve the function of the US 97 corridor and make it a more viable alternative to Interstate 5.



Problem Statement:

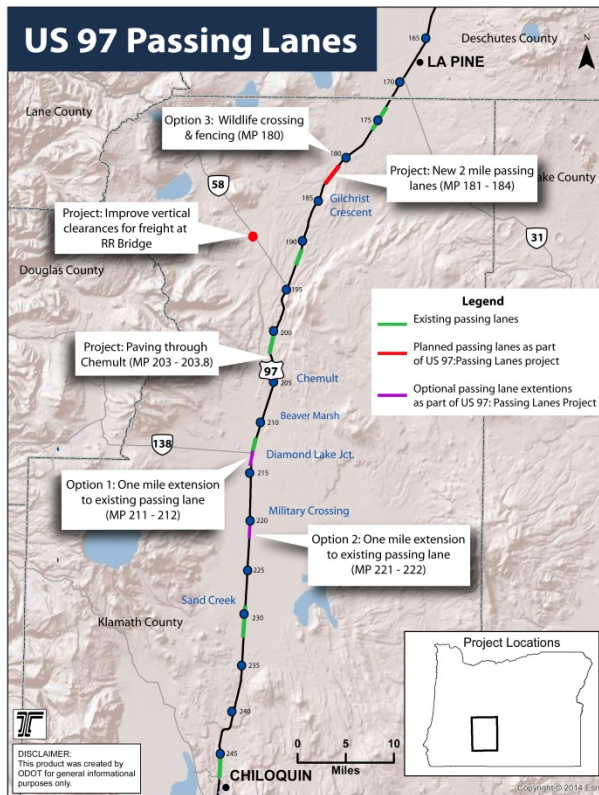
US97 is a critical part of the State's transportation system and is the main north-south transportation corridor through Central Oregon. Overall demand continues to increase along U.S. 97 and it continues to absorb an increasing amount of freight traffic, as well as being a backup route in when the interstate highway is closed. As I-5 becomes busier and more congested, its likely freight traffic will migrate to US 97 in search of a quicker and safer route.

ODOT has invested significantly in improving the US 97 corridor, including constructing the Bend Parkway, the Redmond Reroute and widening the highway to four lanes between Bend and Sunriver. In Klamath County, where traffic volumes are less than in the Bend-Redmond urban area and the highway generally has just one lane in each direction, the primary strategy has been to build passing lanes. Additionally, the US 97 Corridor Strategy envisions adding passing lanes every three to five miles and eventually linking passing lanes into a continuous four lane highway. However, US 97 in Klamath County does not meet this goal of passing lane spacing. This has led to longer lines of vehicles that sometimes result in drivers making unsafe passing maneuvers with high speeds and limited sight distances.

Project Scope:

- Construct a new set of 2-mile long passing lanes (MP 181-184) and consolidate highway access within the passing lanes.
- Repave and correct cross slope through Chemult (MP 203-203.8)
- Improve vertical clearances for freight at Klamath Northern Railroad bridge over OR 58

- Extend existing passing lanes to align with current functional standards



Project Funding:

The project is partially funded at \$9,440,000 for the design and construction. Construction funding options are as follows:

Option 1: Add to the scope of the project the extension of existing passing lanes at MP 211-212. (Add \$4,000,000)

Option 2: Add to the scope of the project the extension of existing passing lanes at MP 221-222. (Add \$4,000,000)

Option 3: Add to the scope of the project the construction of a wildlife undercrossing and fencing near MP 180. (Add \$1,000,000)

		Current Project Funding	\$9,440,000
Funding Options	Description	Option Cost	Total Project Cost
1	Extend passing lanes MP 211-212	\$4,000,000	\$13,440,000
2	Extend passing lanes MP 221-222	\$4,000,000	\$17,440,000
3	Add wildlife crossing MP 180	\$1,000,000	\$18,440,000

Project Schedule:

- Work completed to date:
 - Project Delivery Team has established project goals and initial work required for the design.
 - Field Survey of the project area is complete, which records current geometry, existing conditions and has been used to establish a project footprint.
- Timeline:
 - Design Acceptance - July 2017
 - Bid & Construction – July 2018

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I-84: Northeast Oregon Snow Zone Improvements

Purpose:

I-84 is the primary east-west freight route in Oregon. The flow of freight and people is important to the economy and livability. In Northeast Oregon, I-84 passes through a number of snow zones that are the site of frequent road closures due to weather related incidents or conditions. The improvement of the winter level of service and improvement of winter route reliability has been a priority for Eastern Oregon.

Region 5 is currently engaged in an I-84/I-82 Corridor Planning effort to look at operational improvements and strategies to improve the winter level of service, crash reduction and operational efficiencies between Boardman and the Idaho State Line. Recent snow zone projects have added or will add truck climbing lanes in three locations (Spring Creek WB, Ladd Canyon EB and 3 Mile Hill WB), additional chain up areas between Pendleton and Ontario, Variable Message Sign upgrades on the corridor and a variable speed limit section between Ladd Canyon and Baker City.



WB “View Point” Crash due to weather conditions

Problem Statement:

The major problems to be addressed between Pendleton and La Grande are:

- Weather related crashes by motorists who drive beyond reasonable speeds for the conditions in the snow zone.
- Frequent closures of the freeway between Pendleton and La Grande due to non-compliance with chain restrictions by commercial vehicles, resulting in road blocking spin outs on the grades.
- Safety issues around truck chain up areas when trucks chain up on narrow shoulders or in the outside freeway lane, resulting in crashes with parked vehicles or pedestrians.
- Year-round truck wrecks in the curved section of freeway constrained by the Grande Ronde River and the Union Pacific RR between Hilgard (MP 252) and La Grande (MP 258).
- Multi-vehicle or high severity crashes in localized fog conditions on Cabbage Hill.

Project Scope:

The scope of this project is to develop a series of improvements to address the above conditions.

Features include:

- A weather dependent variable speed limit system to provide motorists a speed limit that is based on measured weather conditions. This system will provide much more road and weather information over the corridor in addition to providing weather dependent speed limits.
- An expanded EB truck chain up area will be constructed prior to the Exit 216 EB off-ramp to provide a safe location to chain trucks and allow the existing 216 interchange to be used to divert unchained vehicle from entering into the Cabbage Hill snow zone.
- Enhance roadway illumination and delineation on Cabbage Hill to improve safety during fog and other limited visibility events.
- Install dynamic curve warning signs between Hilgard (MP 252) and La Grande (258) to address year round truck wrecks in this section of freeway curves.
- Develop and install an Intelligent Transportation System features to improve chain up area efficiency by advising motorists of unoccupied capacity within chain up areas to reduce the risks of chaining outside of established areas.
- Install additional illumination to improve safety at those chain up areas that are not currently illuminated

Project Funding:

The project is currently funded at \$9,953,000 for the features listed above. An additional \$14,868,250 requested from the 2016 FASTLANE program to expand the planned chain up area efficiency upgrade to all chain up areas in the corridor, creating new chain up areas, expanding the limits of the variable speed limit project. Another feature included in the grant is a connected vehicle pilot project to provide road and weather information directly to users including freight, school buses, and transit operators.

Project Schedule:

- Work completed to date:
 - The Corridor Planning project has identified crash patterns and locations.
 - Stakeholder interviews have been held in 3 locations to validate planning findings.
 - A 10% design effort has been completed to verify feasibility of installing the project features.
 - Project design team is formed and working to let a contract in 2018.
 - [A FASTLANE grant](#) has been submitted to USDOT for funding of additional snow zone enhancements.
- Timeline:
 - Corridor plan started May 2016
 - Design – January 2017
 - Bid Opening 2018

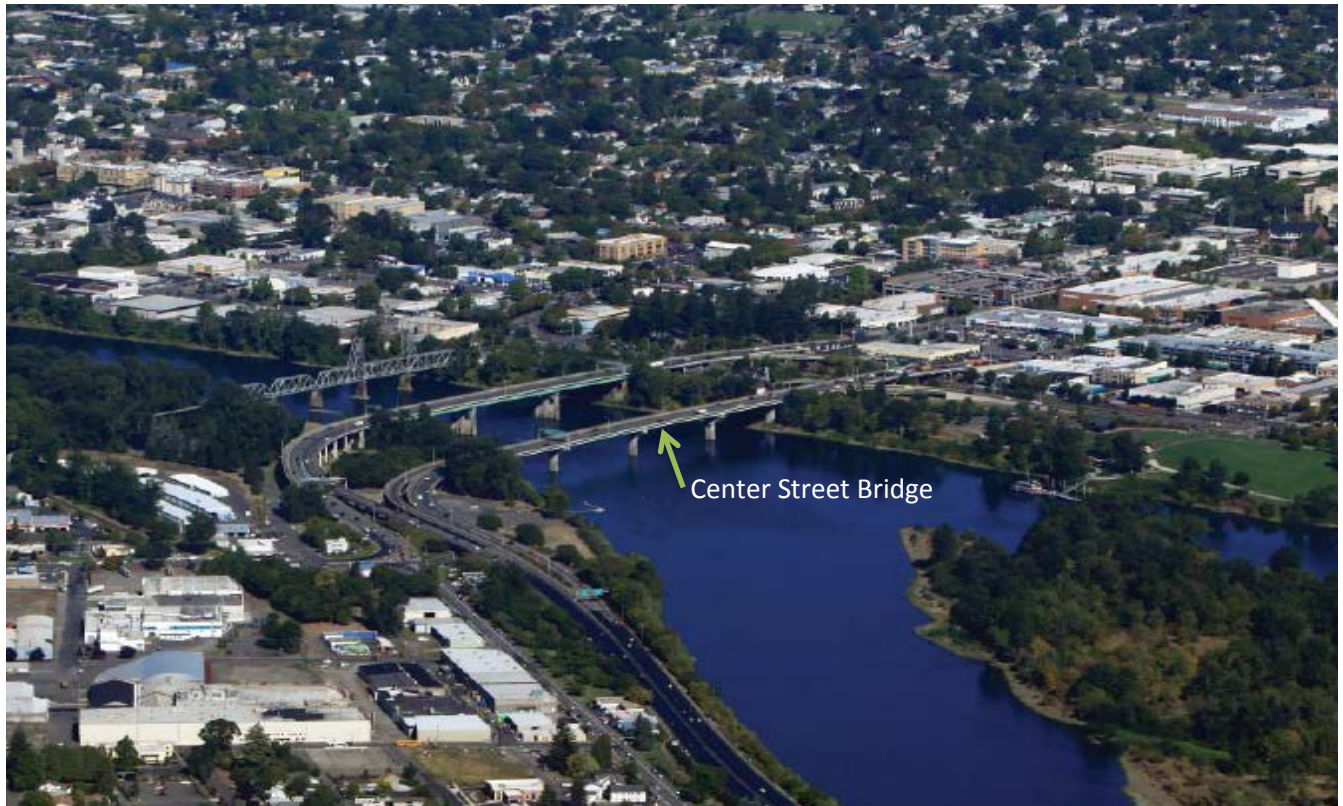
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OR22: CENTER STREET BRIDGE (SALEM)

Purpose:

The proposed project will prepare a plan and cost estimate for completion of the seismic retrofit of the Center Street Bridge such that the bridge would “survive” a major seismic event and continue to provide a functioning crossing of the Willamette River.



Problem Statement:

- The Marion and Center Streets bridges are the only crossings of the Willamette River in the Salem area. The Marion Street Bridge was constructed in 1953, has had only limited updates and regular maintenance, and is in poor condition. The Center Street Bridge was replaced in 1985 and is in relatively good condition. In the event of a major seismic event, it is anticipated that both bridges would be significantly damaged and unpassable. Because of its age and condition, it is believed that seismic retrofit would not be a cost effective solution for the Marion Street Bridge. Seismic retrofit would, however, be appropriate for the Center Street Bridge.
- The project will determine the level and cost of installation of seismic retrofit measures on the Center Street bridge such that it will remain a functional crossing of the Willamette River. Installation of the retrofit measures will ensure that accessibility and connectivity across the river after a major seismic event will be maintained, although not at the current level assuming the Marion Street Bridge will not be in service. This is an important consideration given that most essential services necessary for residents of the West Salem area (including governmental and

medical services) are on the east side of the river and would be inaccessible if both bridges should fail.

Project Scope:

The scope of this project is to seismically analyze the series of structures that constitute the Center Street crossing of the Willamette River and determine retrofit measures for the identified vulnerable elements based on a full (Phase 1 & Phase 2) seismic retrofit approach. The following bridges will be analyzed under this project:

<u>Bridge No.</u>	<u>Bridge Name</u>	<u>Milepost</u>
00123K	Willamette River, Hwy 30 EB (Center St)	25.88
22523	Willamette River, Hwy 30AZ EB Ramp	25.69
22519	Willamette River, Hwy 30 EB Ramp N.	25.88
00123G	Willamette River, EB Hwy 30 Ramp to SB	26.00

The proposed project will develop a general plan and cost estimate for completion of seismic retrofit of the Center Street Bridge such that it would remain a functional crossing of the Willamette River. At this time, there is no budget for final design level plans or construction.

Project Funding:

The project is currently funded at \$200,000 for the delivery of a final Type, Size and Location bridge plan package and final report. The funding breakdown is as follows: SKATS (MTIP funding) - \$179,460, ODOT - \$15,405, and City of Salem - \$5,135. Total project costs through construction are anticipated to be near \$60,000,000.

Project Schedule:

- Work completed to date:
 - Agreement between ODOT, SKATS and City of Salem to partner in the funding of the project.
 - SKATS amended their Transportation Improvement Program to add project and dedicate federal STP funding and ODOT Amended the STIP to add project scheduled to begin in 2017.
 - ODOT Bridge Section has prepared a draft Statement of Work to be incorporated into the A/E Consultant Contract to govern the work on the project
- Timeline:
 - Intergovernmental Agreement Execution - June 2017
 - A/E Consultant Contract Award – September 2017
 - Final Bridge Type, Size and Location Package and Final Report – March 2018

Project Contact:

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Southern Oregon Seismic Triage

Background/Issue:

A major earthquake in the Cascadia Subduction Zone will cause widespread disruption of Oregon's transportation system which will contribute to an unparalleled economic and human catastrophe. Many bridges in southwest Oregon will suffer serious damage or destruction and dozens of unstable slopes and pre-existing deep slides will fail.

The *Oregon Highways Seismic **PLUS** Report* (ODOT, 2014) outlined a statewide program to address seismic vulnerability and mitigate structural deficiencies. The report identified long-term (over multiple decades) mitigation strategies on state highways, including those servicing the Rogue Valley. However, a shorter-term plan is needed to ensure reasonable access to and from the Rogue Valley following a major quake.



Project Scope:

ODOT has developed short-term “*triage approach*” for providing reasonable access to and from the Rogue Valley on two important lifeline routes following a major quake: (1) Interstate 5 (north to Highway 58 and south to the California border) and (2) OR 140 (US 97 to I-5; and OR 140 to I-5 on OR 62).

ODOT staff from Region 3 and Technical Services (Geology and Bridge Units) identified 17 bridges and seven unstable slopes on Interstate 5 and OR 140 that need to be addressed before a major earthquake. These bridges and unstable slopes need to be addressed in the short-term because they will be sustain heavy damage and no reasonable detour routes will be available following a major earthquake. We have allocated these bridges and unstable slopes into three phases:

Phase 1 - All of Highway 140

Phase 1 will address the four bridges and three unstable slopes identified on OR140. Total cost would be about \$5 million.

Phase 2 - Interstate 5 North of Exit 30 (North Medford Interchange)

Phase 2 would address the thirteen bridges and one unstable slope identified north of Exit 30 (North Medford Interchange) on Interstate 5. This would allow reasonable access to and from Oregon's other major population and economic centers. Total cost would be about \$20 million.

Phase 3 - Interstate 5 South of Exit 30

(North Medford Interchange)

Phase 3 would address the three unstable slopes identified south of Exit 30 (North Medford Interchange) on Interstate 5. There are no bridges identified south of Exit 30. Total cost would be about \$10 million.

Project Funding:

Total project cost for all three phases through construction is estimated at \$35,000,000. No funding has yet been secured.

Project Schedule:

Work to Date:

- Identified which bridges and unstable slopes bridges on (1) Interstate 5 (north to Highway 58 and south to the California border) and (2) OR 140 (US 97 to I-5; and OR 140 to I-5 on OR 62) would likely be impacted by a major earthquake; and
- Identified 17 bridges and seven unstable slopes on Interstate 5 and OR 140 that need to be addressed in the short-term before a major earthquake.

Timeline (assuming funding is secured):

- Design - Start Phase 1 design in 2019
- Construction - Begin construction for Phase 1 by 2021
- Design and construction of Phase 2 and 3 will follow

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