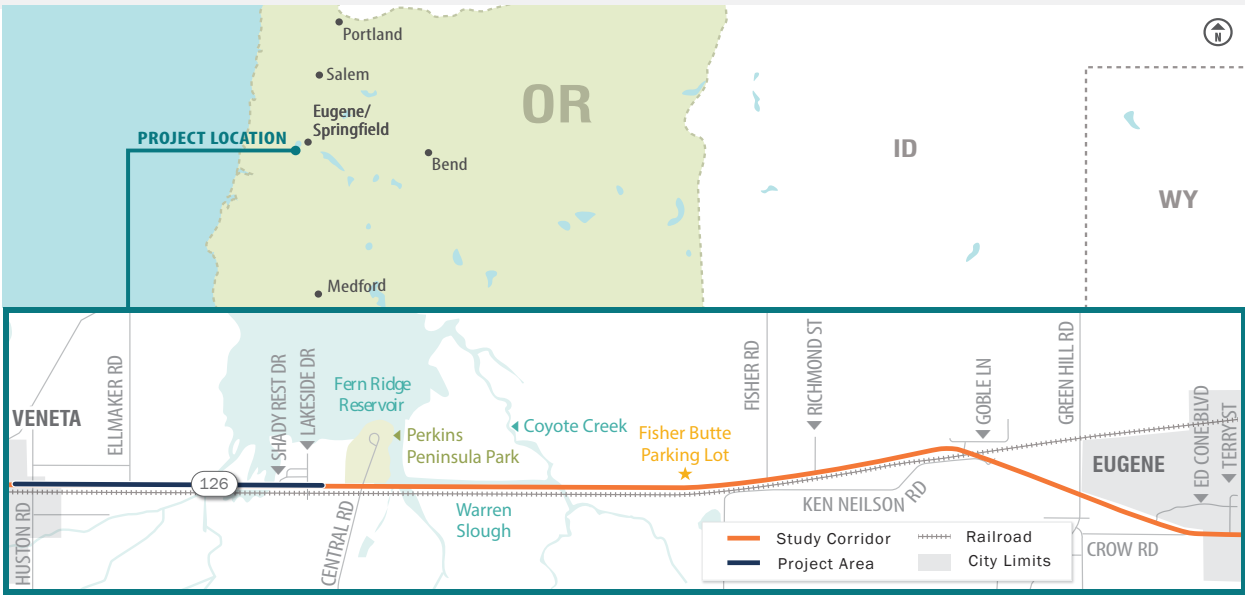
I. PROJECT DESCRIPTION

Project Description and Statement of Work

Oregon Highway 126 (OR126) is part of the National Highway System, designated a Statewide Highway, and a freight route with an average daily traffic (ADT) volume of approximately 15,000 vehicles per day. OR126 is also a seismic lifeline route. Oregon is one of the pacific coastal states that is in peril for a catastrophic seismic event in the foreseeable future. Lifeline routes have been established to convey goods and services from inland Oregon to the coast in the event of an emergency. Lifeline routes are priority routes that the Oregon Department of Transportation (ODOT) will strive to have passable within two weeks of an event.

OR126 connects rural communities along the south-central Oregon coast, the coast range mountains, and foothill areas with the Eugene-Springfield area, providing a critical connection to a regional trauma center and other health care services in Lane County, Oregon. OR126 also provides an important regional connection for recreational users to access Fern Ridge Reservoir and tributary rivers and creeks for boating, wildlife viewing, hunting, and fishing. ***See Figure 1.***

Figure 1. Project Vicinity and Corridor Map

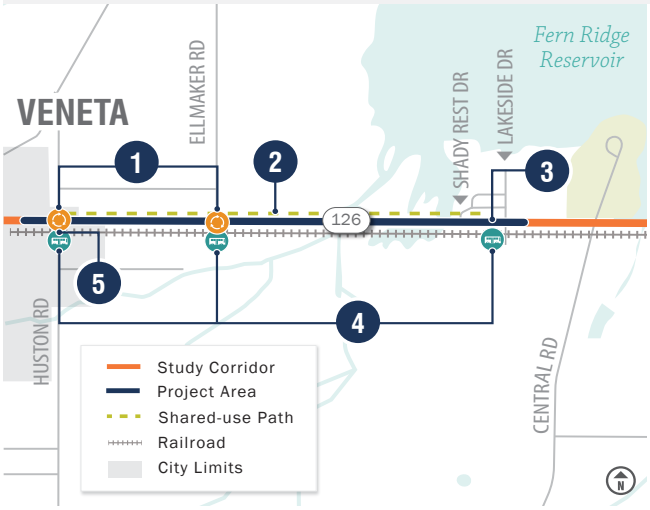


The OR126: Huston Road to Lakeside Drive Project (Project) will provide much needed safety and mobility improvements along a 1.9-mile segment of road on OR126. The project corridor serves as a regional connection for commuters, freight movement, residents, and tourists traveling between Interstate 5 (I-5), Eugene-Springfield, and the Oregon Coast. The rural communities of Veneta and Elmira are closest to the project.

The Project will construct the following elements *(see Figure 2)*:

1. *Two dual-lane roundabouts* at Huston Road and Ellmaker Road intersections along OR126. These roundabouts are 0.75 mile apart and will be connected by a widened four-lane road. The current roadway is two lanes with narrow shoulders.
2. *A separated, shared-use path* located on the north side of the highway from Huston Road east to Lakeside Drive. This approximately 1.9-mile shared-use path will connect Veneta to the small Fern Ridge Reservoir community at Lakeside Drive and Shady Rest Drive. The path will also connect with the Fern Ridge Wildlife Viewing area, providing options for visitors and residents to travel comfortably and safely by walking or biking, thus promoting outdoor recreation and good health.
3. *An eastbound left turn lane* into Lakeside Drive with widened eight-foot shoulders.
4. In conjunction with Lane Transit District (LTD), the Project will provide improved and/or new *transit stops* at Huston Road and Ellmaker Road and Lakeside Drive.
5. *An upgraded crossing of the Coos Bay Rail Line* at Huston Road. This will include Americans with Disabilities Act (ADA)-compliant bicycle and pedestrian crossings of the tracks and integrated signing between the railroad and the highway. There are a limited number of railroad crossings adjacent to roundabouts in the country. Due to safety concerns at this location, we will showcase integrated signing that demonstrates how they function with a roundabout.

Figure 2. Project Area Map



Project Scope Seeking Funding

1. Two dual-lane roundabouts at the Huston Road and Ellmaker Road intersections with OR126, connected by a widened four-lane road.
2. A separated shared-use path located on the north side of OR126 from Huston Road east to Lakeside Drive.
3. An eastbound left turn lane into Lakeside Drive with widened shoulders.
4. Transit stops at Huston Road, Ellmaker Road, and Lakeside Drive.
5. An upgraded railroad crossing of the Coos Bay Rail Line at Huston Road.

Current Design Status

Engineering design of the Project has been completed to a 15% level to establish the project footprint. The footprint allowed identification of environmental resources to the extent needed to complete the technical reports required for National Environmental Policy Act (NEPA) clearance. ODOT anticipates all approvals to be in place for a Documented Categorical Exclusion by the end of 2023. Design of the Huston Road roundabout is ongoing and will be developed to 60% design by November 2023.

Addressing Transportation Challenges

This segment of the OR126 corridor has serious safety concerns, a lack of continuous active transportation facilities, and operational deficiencies. The narratives below describe how the Project will address each transportation challenge:

Mitigating Serious Safety Concerns

Transportation Challenge: Traffic growth along the OR126 corridor has led to an increase in crashes within the Project area over the past 15 years, such as the incident highlighted in the news story linked **HERE**. ODOT has a Safety Priority Index System (SPIS) that ranks potential safety problems on State Highways. SPIS scores are developed based on crash frequency, severity, and rate for a 0.10-mile segment along all State Highways. The Huston Road segment of the highway was a top 10% SPIS site in 2018, 2019, and 2020. The Ellmaker Road segment was a top 5% SPIS site in 2014, 2015, and 2016, and a top 10% site in 2017.

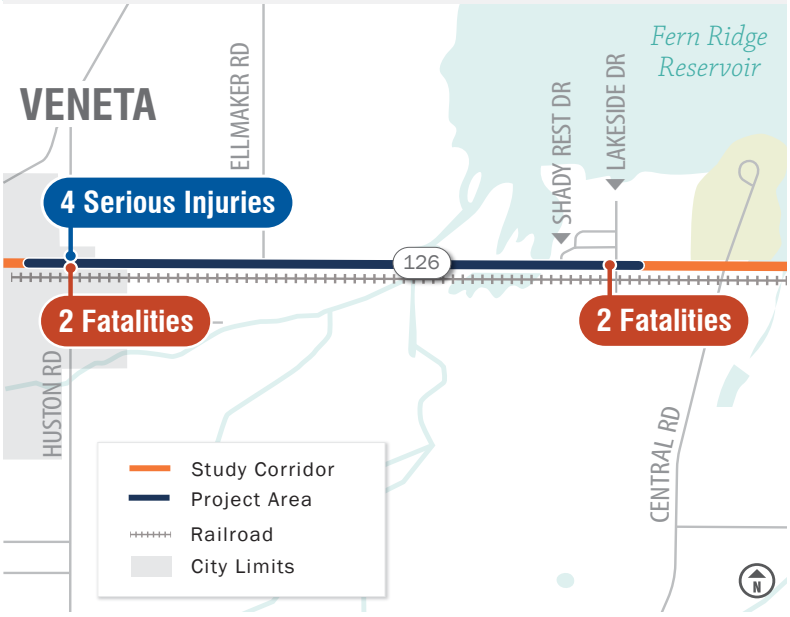
For the five-year period between 2017 and 2021, there were 36 crashes within the Project limits, as summarized in *Table 1*. Crash data beyond 2021 has not been compiled.

Table 1. Crash Type and Severity (2017-2021)

Fatal	*Serious Injury*	*Minor Injury*	*Possible Injury*	*Property Damage Only*	*Total*
2	2	11	9	12	36

It should be noted, however, that the crash statistics represent crash events, meaning that one crash event can lead to multiple injuries and fatalities. For example, the two serious injury events noted in *Table 1* resulted in four fatalities, and the two serious accident events injured four people as noted in *Figure 3*. In addition to the four people seriously injured, there were 47 people that suffered minor injuries or possible injuries within the project limits over the five-year period noted in *Table 1*.

Figure 3. Location and Severity of Crashes Noted in Table 1



How Project Addresses Transportation Challenge: To improve safety along the corridor, ODOT evaluated various intersection treatments; roundabouts were selected for the Houston Road and Ellmaker Road intersections. Installing a roundabout at a rural stop-controlled intersection can reduce fatal and injury accidents by as much as 82%. At the Lakeside Drive intersection, an eastbound left turn lane with widened shoulders was selected to improve safety. Installing a left turn lane at a rural unsignalized three-legged intersection can reduce fatal and injury accidents by as much as 44% and widened shoulders can reduce all crash types by as much as 18%.

Providing Active Transportation Needs

Transportation Challenge: OR126 currently has inconsistent shoulder widths and no dedicated facilities for people walking and biking. Shoulder widths in the Project area fluctuate between five feet and eight feet. With motor vehicle speeds often higher than the posted speed of 55 miles per hour (mph), bicyclists and pedestrians do not have adequate facilities to reach transit stops; service businesses located between Huston Road and Ellmaker Road; or recreational resources, including Fern Ridge Reservoir and Perkins Peninsula County Park. Because this section of highway is straight and flat, illegal passing often accompanies speeding. The lack of wide shoulders does not allow for people walking and biking to travel comfortably or safely.

How Project Addresses Transportation Challenge: To address the active transportation needs along the corridor, a separated shared-use path is planned along the north side of the roadway along this 1.9-mile section of the highway, providing a dedicated space for non-motorized users to safely reach their destination and access nearby recreational areas. ODOT has plans in the future to extend this path another 4.5 miles east to connect to the extensive trail network in Eugene, Oregon.

Improving Operational Deficiencies

Transportation Challenge: The Huston Road and Ellmaker Road intersections are currently over capacity, with congestion expected to increase in the future as traffic volumes increase. The existing unsignalized intersections result in operational delays that can be frustrating and cause drivers to take unnecessary risks when entering the roadway. With the high speeds on OR126, this situation then becomes a safety issue as discussed earlier.

The Coos Bay Rail Line borders the south side of the highway in this section, but on the north there are several businesses located between Huston Road and Ellmaker Road. These include convenience stores, restaurants, coffee shops, gas stations, automotive parts stores, automotive service facilities, and towing businesses. Because there are only two travel lanes and narrow shoulders along the approximately 0.5-mile distance, drivers accessing these businesses decelerate to turn, conflicting with through movements. This has led to an increase in rear-end collisions along the OR126 corridor, as drivers are following too closely and not anticipating the turning movements. As traffic volumes increase, this mix of turning and through vehicle movement creates both operational delay and safety issues.

How Project Addresses Transportation Challenge: To address these operational needs, ODOT evaluated this section of OR126 between Huston Road and Ellmaker Road and developed a comprehensive solution. This section of highway is a land use transition area between the rural undeveloped area to the east and the City of Veneta to the west, with the easterly City limits located at Huston Road. With a goal to improve operations, mobility, and safety, ODOT selected roundabouts to serve as gateways to this section of the town, which will require drivers to slow down. To meet the mobility needs, the roundabouts are designed with two through lanes in each direction on OR126. Between the roundabouts, a four-lane roadway with a raised median is proposed to provide additional capacity and improved safety by eliminating left turn conflicts. The net result is a traffic calming effect, encouraging lower speeds at and between the intersections, improving safety while providing access to the businesses.

Project History & Broader Context

ODOT partnered with the City of Eugene, City of Veneta, LTD, and Lane County to develop the Highway 126 Fern Ridge Corridor Plan (Corridor Plan) that was adopted by the Oregon Transportation Commission in April 2013 for a six-mile segment of OR126. The Corridor Plan was developed following a two-year process that included an extensive public outreach effort and evaluation of alternatives.

In 2020, ODOT engaged the same agency partners and the community to confirm the Corridor Plan outcomes, update the project baseline engineering data, and refine the Corridor Plan recommended alternative by completing a conceptual design and NEPA. Agency and community stakeholders endorsed moving forward with the recommended alternative and environmental studies began in 2021. Through discussions with the Federal Highway Administration (FHWA), ODOT anticipates all approvals to be in place for a Documented Categorical Exclusion by the end of 2023. This Project completes improvements along the westerly 1.9 miles of the Corridor Plan study limits.

Project Location

Located approximately 4.5 miles west of Eugene, Oregon, at the southwestern corner of the Willamette Valley, the Project is in rural Lane County at the easterly entrance to the City of Veneta *(see Figure 1 on page 1)*. Veneta has a population of more than 5,000 residents. Once a thriving timber town, the city now serves as a bedroom community for many who work in the Eugene-Springfield area.

OR126 connects Persistent Poverty Census Tracts 9.04 and 10.02, located approximately one mile east and west from the Project limits, respectively. Many low-income families live in rural areas and commute to Eugene or Springfield for employment.

Census Tract 9.04 is also designated as a Historically Disadvantaged Community: 91st percentile for asthma, 95th percentile for transportation barriers, and 73rd percentile for low income.

II. PROJECT LOCATION

A Google Earth KMZ file has been submitted as a separate attachment to illustrate the exact project location.

III. PROJECT BUDGET

Previously Incurred Costs

ODOT has invested in two planning efforts to develop a solution estimated at $300 million (M) for the seven-mile corridor and to complete the environmental documentation to support NEPA clearance. The Project seeking grant funding completes improvements along the westerly 1.9 miles of the Corridor Plan study limits.

Future Eligible Costs

Table 2 summarizes future Project costs, which were developed based on the 15% design completed during the planning process. The cost estimate for the Project was developed in January 2022 and has been escalated to the estimated year of expenditure. The Multimodal Project Discretionary Grant (MPDG) request amount represents 76.91% of the total Project budget, with ODOT committing to fund 23.09% of the Project costs. The ODOT funding consists of discretionary state funding set aside by the Oregon Transportation Commission (OTC) for use as a funding match for grant applications.

Table 2. Project Costs (Year of Expenditure Dollars)

Cost Element	*MPDG Grant Amount*	*ODOT Amount*	*Total Funding*	*Percent of Cost*
Engineering	$2,818,428	$846,283	$3,664,711	11%
Utility Relocation	$377,121	$113,237	$490,358	1%
Right-of-Way	$2,257,666	$677,904	$2,935,570	8%
Construction	$15,135,486	$4,544,697	$19,680,183	57%
Contingencies	$6,054,194	$1,817,879	$7,872,073	23%
Total Dollar Amount	**$26,642,896**	**$8,000,000**	**$34,642,896**	**100%**
Funding Percentage	76.91%	23.09%	100.00%	

Funding Commitments

ODOT established a fund dedicated for use as a match for federal grants. The $8M ODOT match identified in *Table 2* is committed matching funds for this project and will be available for expenditure in concert with the MPDG grant funding. ODOT does not have plans to pursue other US Department of Transportation (USDOT) funding opportunities at this time but will continue to look for opportunities to fund additional phases of improvements within the OR126 corridor. Without grant funds, it is likely that operational improvements on OR126 will languish.

Budget Contingencies

Table 2 identifies the contingency amounts for the Project. The contingency amount represents 23% percent of the total Project cost and 40% of the construction costs and were established based on the conceptual nature of the 15% design. These are the standard contingency percentages that ODOT uses at this stage of project development.

Urbanized Area

The Project is not in an urbanized area.

IV. PROJECT OUTCOME CRITERIA

Criterion #1: Safety

The Highway 126 Fern Ridge Corridor Plan (Corridor Plan) studied a six-mile segment of OR126 and serves as the guiding document for the improvements outlined in this Project. The Corridor Plan identified safety as a key need for the study. Since the Corridor Plan was adopted in 2013, traffic volumes have increased over the past 10 years and have translated to an increase in accidents. ODOT has a Safety Priority Index System (SPIS) that ranks potential safety problems on state highways. SPIS scores are developed based on crash frequency, severity and rate for a 0.10-mile segment along the state highway. Both the Huston Road and Ellmaker Road intersections have been top 10% SPIS sites for three consecutive years in 2017, 2018 and 2019. At the Lakeside Drive intersection, a fatality and serious injury were caused by crashes that involved rear-end collisions into eastbound motorists waiting to turn left at this intersection. For the five-year period between 2017 and 2021, there were 36 crashes within the Project limits, which resulted in four fatalities, four serious injuries, and 47 minor or possible injuries.

To improve safety along the corridor, ODOT evaluated various intersection alternatives; roundabouts were selected for the Houston Road and Ellmaker Road intersections. Per **FHWA, Making our Roads Safer – One Countermeasure at a Time, October 2021**, installing a roundabout at a rural stop-controlled intersection can reduce fatal and injury accidents by as much as 82%. At the Lakeside Drive intersection, an eastbound left turn lane with widened shoulders was selected to improve safety. Per the same FHWA manual noted above, installing a left turn lane at a rural unsignalized three-legged intersection can reduce fatal and injury accidents by as much as 44% and widened shoulders can reduce all crash types by as much as 18%.

Criterion #2: State of Good Repair

ODOT strives to be a good steward of Oregon's transportation assets, and a key element of that effort is pavement management. ODOT's Pavement Services Unit is responsible for pavement management of more than 18,000 lane miles of pavement. They complete visual pavement condition surveys every other year for all State Highways. The segment of OR126 within the Project limits was repaved in 2018; additional safety improvements were installed, including new signing, striping, guardrail upgrades, centerline rumble strips, and paved bus pullouts. The ODOT 2022 Pavement Condition Map lists this segment of OR126 as having a "Very Good" rating, the highest rating possible.

In western Oregon, pavements are built to last 12 to 18 years. Prior to paving the Project area in 2018, it was paved with an inlay treatment in 1996. ODOT Maintenance staff work closely with the Pavement Services Unit and consult them regarding repair of premature raveling areas or potholes that occur between scheduled pavement preservation projects. Because this is a highly traveled and a regionally important route, ODOT keeps the pavement in "Good" or better condition.

When ODOT identifies a highway section for a paving project, the standard procedure is to assess the condition of the pavement by using a falling weight deflectometer, pavement cores that reach the aggregate base, and probes that go 50 inches below the road into the subgrade. These tests indicate how the pavement, aggregate base, and subbase are performing in the project area. This information coupled with current traffic data, especially the percentage of heavy trucks, and weather information determines the type of pavement that will be installed, the gradation of rock, and percentage of asphalt, i.e., the mix design. We are also able to determine the dimensions of any full-depth repairs that are needed.

Replacement and upgrading roadside features like guardrail, delineators, signs, striping, and other pavement markings are typically budgeted for with a pavement preservation project. As design standards change, ODOT leverages a preservation project to bring these features up to current federal standards. Between paving projects, ODOT Maintenance is funded to repair and replace roadside features that are damaged. We re-stripe in the project area routinely every other year. Striping would be evaluated and re-done more often if there was a particularly hard winter and the stripes were degraded from snow plowing and studded tires.

In addition to the well-established safety benefits of roundabouts, they also offer reduced operating costs over signalized intersections, which require regular maintenance to time the signal and replace signal components that fail. ODOT's estimate for standard maintenance costs for a fully signalized four-way intersection are about $5,000 per year, not including the cost for any vandalism.

ODOT maintains several internal manuals and policies related to maintenance of our assets, including the Role of Maintenance, which was last updated in 2022 and provides a framework for decision-making by defining priorities and focus areas within the highway system maintenance and operation function.

Criterion #3: Economic Impacts, Freight Movement, and Job Creation

The Eugene-Springfield area is the second largest metropolitan area in Oregon. OR126 is a critical link between the urban areas of Eugene and Springfield and the rural communities to the west along the south central and southern portion of the Oregon Coast. OR126 is part of the National Highway System, designated a Statewide Highway, freight route, and a seismic lifeline route with an ADT of approximately 15,000 vehicles per day. It serves as the most direct route between I-5 and US Highway 101 (US101). Tourism is a primary economic engine for the coastal communities and OR126 is the primary route for the Eugene area residents to reach the Oregon Coast. OR126 connects rural communities along the south-central Oregon coast, the coast range mountains, and foothill areas with the Eugene-Springfield area, providing a critical connection to a regional trauma center and other health care services in Lane County, Oregon.

This Project is located at the easterly entrance to Veneta, one of several rural communities at the edge of the Willamette Valley where residents can find lower-cost housing. Many of those residents work in the Eugene-Springfield area and therefore drive OR126 daily.

Veneta is located along the south side of the US Army Corps of Engineer-owned Fern Ridge Reservoir, the largest reservoir in the south Willamette Valley at 9,000 acres. It is surrounded by several wildlife preserves and serves as a recreational amenity with boating, fishing, swimming, bicycling, and wildlife viewing.

Recognizing the importance of good infrastructure to support economic growth and the safe movement of goods and people, the City of Veneta has developed an Economic Development Strategy (December 2020). Goal 4 in that document identifies the need for infrastructure improvements. Strategies and actions include:

- *Strategy 4.2:* Continue infrastructure improvements to support the needs of current and future Veneta businesses.
  - *Action 4.2.3:* Continue to advocate for ODOT to fund and construct the preferred alternative consistent with adopted Corridor Plan. Continue to make improvements along OR126.
  - *Action 4.2.5:* Continue enhancing bicycle and pedestrian connections between Veneta, Elmira, and Fern Ridge Reservoir.
- *Strategy 4.5:* Improve access and connectivity from neighboring cities and unincorporated communities to enhance employment activity.
  - *Action 4.5.1:* Continue working with ODOT, Lane County, the Lane Council of Governments, and LTD to provide multimodal transportation options between the Fern Ridge community, Veneta, and the Eugene/Springfield metro region.

This Project supports those strategies and actions while addressing several high-priority safety needs along a segment of OR126 that has a crash rate above the statewide average and lacks the facilities for bicyclists and pedestrians to safely access nearby recreational amenities and services within the Project limits. It includes the construction of two roundabouts at the Huston Road and Ellmaker Road intersections, reducing speeds along the corridor at the entrance to Veneta, and providing ADA-compliant crossings of the roadway. Each crossing at the roundabout will include a rectangular rapid-flashing beacon (RRFB) warning system to alert drivers to the presence of pedestrians. It also provides a separate 1.93-mile-long shared-use path north of the roadway between Huston Road and Lakeside Drive, providing options for local residents to safely reach their destination. Completion of this portion of the path is also an important step toward completing a continuous path between Veneta and Eugene, where an extensive trail network is in place.

Within the Project limits, there is an adjacent active rail line south of OR126. At the Huston Road intersection, this Project will improve the railroad crossing, including providing a path for pedestrians and cyclists to cross the tracks where no such facility exists today. The crossing will also be improved for motor vehicles with a raised median, a new wider crossing surface, and new crossing gates and warning devices. These improvements are consistent with the City of Veneta's Transportation System Plan "Project CR10" that calls for rail crossing improvements to facilitate non-motorized access south of the tracks to proposed east-west roadways to provide improved access to the City of Veneta.

Freight Mobility

OR126 serves as a critical link to move goods and services from the larger population centers along I-5 to the rural communities west of Eugene, Oregon. Addressing safety and congestion issues with this project will help ensure the timely and efficient movement of goods.

Multimodal Transportation

Providing safe and comfortable facilities for people to walk and bike will encourage them to choose to take trips on foot, bicycle, or transit instead of driving. Households in Veneta spend 30% of their income on transportation-related costs (**https://htaindex.cnt.org/map/**). Converting trips away from single-occupancy vehicle trips will help reduce their transportation cost burden and increase household income.

Economic Performance

Veneta serves as a bedroom community for Eugene. People live in Veneta due to its small-town, rural feel and more affordable housing, and they travel to Eugene and Springfield and points beyond for work. Improving OR126 will help provide safe and reliable connections between the rural communities and the Eugene/Springfield area and I-5. It also supports Veneta's economic development strategy to attract new industries that create local employment opportunities.

Enhance Recreational and Tourism Opportunities

OR126 provides an important regional connection for recreational users to access the federally owned Fern Ridge Reservoir and tributary rivers and creeks for boating, swimming, wildlife viewing, hunting, and fishing. Perkins Peninsula Park is a large recreation area directly east of the Project area and is a big draw in the region with a boat launch, sports fields, and picnic area. The Project's shared-use path furthers local residents' recreational opportunities, providing safe access to the reservoir. The Corridor Plan for highway improvements into Eugene includes the future extension of the roadway and separated shared-use path east to Eugene. This will provide a multimodal connection to access Eugene's extensive trail network, furthering recreational and tourism opportunities.

High-Quality Workforce Training Programs

ODOT is piloting and have scheduled several large construction projects with Community Workforce Agreements (CWA). The aim of these pilot projects is to study how best to incorporate CWAs into our contracting and project delivery practices. This is new ground for ODOT. Our agency aims to establish a master CWA that would apply to large projects within specific parameters. At this time due to the ongoing study, it has not been determined if this Project would meet the criteria to include a CWA.

Promote Integrated Land Use

Oregon is unique in developing a statewide land use planning program that was established 50 years ago. Local jurisdictions, cities, and counties must develop land use plans that are consistent with 19 statewide land use planning goals. A fundamental component of this program is the Urban Growth Boundary (UGB) that protects rural lands while designating land for urban development. With land use planning rules that limit sprawl, Oregon recognized the link between land use and transportation planning to support positive outcomes and developed the Transportation Planning Rules (TPR), which provide local jurisdictions guidance to develop transportation facilities in close coordination with urban and rural development. An implementation element of the TPR includes development of local Transportation System Plans (TSPs), which assess how people move through their communities and identifies goals, strategies, policies, and infrastructure improvements to meet the diverse needs within a local jurisdiction. ODOT provides grants to local agencies to develop TSPs. This Project is consistent with Lane County and the City of Veneta's TSPs.

Criterion #4: Climate Change, Resiliency, and the Environment

ODOT established its Climate Office in March 2020, with a focus on reducing greenhouse gas (GHG) emissions from transportation, adapting to the impacts of climate change, and sustainability. **ODOT's 5-year Climate Action Plan** directs all climate-related activities across the organization and is comprehensive of mitigation, adaptation, and sustainability. This plan pulls from the **Statewide Transportation Strategy: A 2050 Vision for GHG Reduction (STS)**, the OTC's **Strategic Action Plan**, and Oregon Governor Kate Brown's **Executive Order 20-04**, among other directives and ongoing work efforts. While not called out specifically in ODOT's 5-Year Climate Action Plan, this Project does support the plan's goals.

The Project incorporates a number of elements that advance climate goals to reduce GHG emissions, including the construction of roundabouts that reduce congestion, improve safety, and reduce vehicle speeds.

The inclusion of a separated shared-use path provides low-cost active transportation alternatives, providing improved access to transit stops located along the Project corridor at Huston Road and Ellmaker Road. RRFBs at each of the roundabout crosswalks alert drivers to the presence of pedestrians, reducing crossing distances and making walking and biking much safer and enjoyable.

New storm drainage conveyance facilities will protect against localized flooding and provide water quality treatment for 100% of the new impermeable surfaces to improve the environment along a seismic lifeline route, since current runoff is not treated prior to entering adjacent water bodies.

GHG Mitigation

57% of the Project budget is allocated toward climate-supporting attributes, such as pedestrian and bicycle improvements, transit access improvements, and roundabouts designed to support pedestrian and bicycle safety in addition to vehicles and Intelligent Transportation System (ITS) solutions. These Project attributes help support reduced driving or reduced emissions of vehicles and result in a net decrease of GHGs. ODOT is required to do a GHG analysis of all projects in our Statewide Transportation Improvement Plan (STIP) to best understand if a project results in a net reduction in GHGs and identify additional project attribute opportunities to improve the GHG reduction. The analysis on the initial scope of this Project helped highlight a GHG reduction benefit in increasing the investment in pedestrian and bicycle facilities and access to transit.

Climate Adaptation

The Project will also respond to the latest science of Oregon's changing climate. ODOT's new Oregon **climate hazards risk maps** were used to investigate risk and highlight "high" risk hazards along the Project corridor. The Project is in an area of "high" risk and there are four overlapping, high-risk hazards estimated to impact the area by 2050. The number of risks increase the likelihood of an event impacting safety and reliability along the Project corridor. The four high-risk hazards estimated to impact this area are:

- Inland flooding
- Wildfire
- Very heavy precipitation events
- Extreme heat events

As a result, enhanced green infrastructure and natural solutions are planned with this Project as adaptations to both current and future conditions. ODOT recently adopted a Climate Adaptation and Resilience Roadmap that provides direction on how to consider future climate conditions in project development.

Project elements to address these high-risk hazards include new stormwater conveyance and treatment facilities that control local flooding and provide roadway runoff treatment. Regional flood control is provided by the adjacent Fern Ridge Reservoir, which the US Army Corps of Engineers manages as part of the larger Willamette River basin.

The Climate and Economic Justice Screening Tool identifies Census Tract 41039000904, located approximately one mile east from the Project limits, as a Historically Disadvantaged Community: 91st percentile for asthma, 95th percentile for transportation barriers, and 73rd percentile for low income. This Project will provide improved access to transportation with new bicycle and pedestrian facilities, improved access to transit, improved safety for all users with the planned roundabouts, and a new left turn lane.

Environmental Justice

Communities most closely served by this corridor, to meet basic needs like accessing food, school and employment, experience higher levels of social disparity. Social disparity is particularly important from a climate resilience perspective, due to disproportionately higher negative impacts and burdens related to hazard risk preparation, response, and recovery at the community and household level.

Sustainable Materials

The Project will likely use a recycled road base and asphalt in the construction of embankments, LED roadway lighting, and landscape plantings to facilitate natural stormwater treatment.

Criterion #5: Equity, Multimodal Options, and Quality of Life

Addressing Equity and Barriers to Opportunity

The multimodal design world is currently learning about roundabouts and their implications for people biking, walking and rolling, and individuals who are visually impaired. These roundabouts will be designed with special attention to current best practices. Resource documents include: **NCHRP Research Report 1043 Guide for Roundabouts** and **NCHRP Releases the New Guide for Roundabouts | Kittelson & Associates, Inc.**

Lane Transit District (LTD) currently provides service seven days a week between Veneta and Eugene via Route 93. There are multiple designated stops along the route. Link Lane, provided by Lane Council of Governments, provides service between Eugene and Florence, with a stop in Veneta seven days per week. ODOT works cooperatively with LTD to improve pullout areas on State Highways, such as the current locations at Ellmaker and Greenhill intersections, outside of the Project area. When this Project moves into design, LTD will be engaged to identify bus stop types and locations that can be incorporated.

LTD's Service Policy addresses the need for various amenities to provide at a given bus stop, such as shelter, Bus Stop Information, and seating. Generally, when deciding the frequency of buses and stop locations, LTD evaluates various measures to determine how and where to provide the most useful service to the community. For example, circumstances such as the current shortage of operators nationwide may limit the number of routes and trips that can be deployed by LTD immediately; this situation may change in the future. As housing densities increase, LTD responds accordingly by adjusting their stop frequency and locations. To learn more about LTD, contact LTD at this website: **https://www.ltd.org/contact-us/**.

Improving Quality of Life

Communities outside of Eugene, Oregon, have a long history of planning work pointing toward investing in regional connectivity. With consistent upticks in housing prices, more and more people have settled in communities outside of the urbanized areas. These communities lack comfortable, affordable, and reliable transportation options other than driving to get to places of work, schools, and other amenities in the nearby Eugene area. This trend disproportionately impacts low-income households, which have been shown to spend a greater percentage of their household income on transportation. Households in Veneta spend 30% of their income on transportation-related costs (**https://htaindex.cnt.org/map/**).

The lack of non-vehicular transportation options extending west of Eugene to Veneta and Elmira is also a safety risk. People needing to use a bicycle to get to and from places of work and recreation are forced to ride on the highway shoulder or along narrow rural roadways. ODOT's Active Transportation Needs Inventory (ATNI) provides a bicycle and pedestrian prioritization score based on equity, safety, and connectivity. OR126 on either side of Huston scores in the top 1% statewide for bicycle prioritization and from Huston to Ellmaker, in the top 5% for pedestrian prioritization.

Not only would the proposed separated shared-use path provide significant improvement for reaching local destinations, but it would begin building a long-awaited multimodal connection envisioned between Veneta and Eugene, and north from Veneta to the community of Elmira.

This Project will establish a footprint for a separated bicycle facility in accordance with ODOT's recently updated multimodal guidance (Highway Design Manual) and with strong support from the cycling community. Long term, this would be the beginning of a commuter route connecting Elmira, Veneta, and Eugene. Shorter term, it will provide non-vehicular transportation options to nearby recreational spots, and local businesses, as well as safety improvements for a significant number of cyclists that currently use the highway.

Benefitting a Historically Disadvantaged Community

OR126 provides an important transportation link for Historically Disadvantaged Communities located adjacent to the Project limits. Census Tract 9.04 is ranked in the 95th percentile for transportation barriers, 73rd percentile for low income, and 91st percentile for asthma. The inclusion of a separated shared-use path provides an active transportation alternative to access services and recreational opportunities where none exist today. RRFBs at each of the roundabouts alert drivers to the presence of pedestrians, which translates into an improved quality of life.

Meaningful and Accessible Engagement

ODOT has conducted extensive outreach with the OR126 project planning and NEPA processes. ODOT employs communication professionals who develop Communications and Public Involvement Plans (PIP) for all projects. Plans are created at the project kick-off and augmented as needed throughout the development of the project and into construction. The plans define the means and methods by which Statewide Goal 1 (Public Involvement) will be met.

If this Project receives grant funding, additional outreach will continue throughout the life of the project, including the following strategies:

- A project-specific webpage is posted when a project is under development; the current planning phase webpage is available **HERE**. The webpage outlines the elements of the project, cost, contact information, and schedule. When the project moves to construction, the webpage is updated to reflect that timeline.
- An initial community survey in multiple languages, as done during the NEPA phase for this Project, will be linked to the webpage and advertised through social media, emails, mailers, and contact lists from both ODOT and the City of Veneta. ODOT's current contact list reaches far beyond the immediate project area and contains more than 2,500 names.
- From project design through construction, additional outreach efforts would be made to confirm that we are on the right track with the proposed solutions.
- At key project milestones, the Project communication team reviews and concurs or revises the PIP and/or engagement strategies to facilitate continuing public involvement.

Equity Considerations

On large projects such as this one, ODOT would supplement our communication's staff with the use of professional consultant services. This is an opportunity for ODOT to engage certified woman-owned business enterprise (WBE) firms in the area.

Targeted Outreach

During the NEPA phase of work, ODOT conducted extensive public outreach. This included establishing a Steering Team made up of local officials from the Cities, County, and LTD. We conducted two rounds of interviews with three different focus groups to make them aware of the project, hear their concerns, answer questions, and incorporate their ideas. Focus groups included highway users, such as freight drivers, delivery drivers, medical services, and commuters, and users adjacent to the highway, such as pedestrians, bicyclists, and boaters. The third group had representatives from natural resource user groups, such as hunters, birdwatchers, ecological educators, and fishers. The Project also conducted two online Open Houses that resulted in receiving nearly 400 comments. The majority of the comments encouraged us to implement the Project and "just jump in there and get it done." The team also reached out to disadvantaged areas by way of post cards in food boxes that went to low-income and disabled residents, grade school reader boards, and recorded messages. Similar outreach will be conducted to construct the Project.

Once construction money is secured, ODOT will use our contact list of more than 2,500 names to inform interested stakeholders about the final design, such as when they can expect to see surveyors on the road, or be contacted by right-of-way agents, and the target date for construction. Preceding and during construction, ODOT will use social media, newspapers, e-mail, and postcards to advise people of coming projects and any traffic changes. We will also maintain a project-specific website. The site will be posted at the beginning of design and continually updated throughout construction. During development of the NEPA work, ODOT conducted extensive outreach through various methods to engage and secure input from diverse user groups such as:

- Better Eugene-Springfield Transportation (BEST)
- Eugene Active Transportation Committee
- Lane County of City of Eugene Transportation staff
- Travel Lane County
- Greater Eugene Area Riders
- Lane Transit District (LTD)

Planning and Engagement with Diverse Community Representatives

Stakeholders for this project include institutions, public agencies, advocacy groups, business groups and residents from Eugene to Florence who use OR126 daily. In addition, local transportation interest groups and individuals, including bicycle, freight, pedestrians, mobility impaired, transit, recreational, local environmental and naturalist organizations, adjacent businesses and property owners, media, emergency service providers, and the public have an interest in the project. Title VI/ EJ organizations were reached with specific strategies and through institutional partnerships. *Table 3* below outlines our thinking to identify the audiences and stakeholders to whom we reached out.

Table 3. Audience and Stakeholder Outreach

Audience Category	*Examples*
Government Agencies, Elected Officials, and Public Institutions	LTD, Lane Council of Governments, City of Eugene, Lane County, City of Veneta, City of Florence, Lane Area Commission on Transportation, Fern Ridge School District
Tribal Nations	Confederated Tribes of Siletz, Confederated Tribes of the Grand Ronde
Trip Generators	Oregon Coast Visitors Association, Three Rivers Casino, Oregon Country Fair, Travel Lane County
Transportation Stakeholders	Port of Coos Bay Rail Line, Oregon Trucking Association, GEARS, AAA, Mudslinger Events
Emergency Service Providers	Western Lane Ambulance District, Oregon State Police, Lane County Sheriff's Department, Fire Station #101, Sacred Heart Medical Center at River Bend, McKenzie Willamette Hospital
Businesses	Veneta-Fern Ridge Chamber of Commerce, Florence Area Chamber of Commerce, Eugene Chamber of Commerce, adjacent businesses, Rosen, West Eugene Business Park, Logging companies
Residents	Daily commuters, adjacent housing
Community Groups	Willamette Resource and Education Network, North American Butterfly Association, Long Tom Watershed Council, The Nature Conservancy, McKenzie River Trust, Lane County Audubon Society, Ducks Unlimited, OR Hunters Society, Native Plants Society, boating groups Mid Lane Cares, Food for Lane County, Elmira High School, Fern Ridge School District, Veneta Public Library, Centro Latino Americano, Senior and Disabled Services, Meals on Wheels, Integration Network for Immigrants in Lane County, St Vincent DePaul, Homes for Good, Mobility International, Lane Independent Living Alliance
Media	Fern Ridge Review, Siuslaw News

The Project PIP included specific steps to provide opportunities for participation by federal Title VI communities and Environmental Justice populations. The team used the ODOT Title VI (1964 Civil Rights Act) Plan guidance to identify Title VI populations, formulate public involvement strategies, and report outreach efforts and participation by Title VI and EJ communities.

Our interview process included organizations that advised and assisted us to engage these traditionally underrepresented residents. With their assistance, the project team employed the following strategies:

- Partnered with Fern Ridge School District serving Veneta, Elmira, Noti, and Walton. The superintendent sent a recorded phone message to 1,500 households, posted on Facebook, and put announcements on the district's reader board.
- Partnered with Mid Lane Cares serving a 475-mile service area, including Crow, Applegate, Lorraine, Elmira, Noti, and Mapleton. The executive director gave us access to place information and surveys in more than 200 food boxes through Food for Lane County's Love Project (low-income), Meals on Wheels (people with disabilities), and Café 60 (elders). We worked with food pantry staff to explain the project and refer questions to us, which enabled us to also provide hard copies of the open house through these community-based food programs.
- Partnered with subsidized housing providers in the Veneta area. St. Vincent DePaul and Homes for Good resident services coordinators helped get information to residents. These neighborhoods also received postcards in the mail.
- Information at stores frequented by low-income residents. Through interviews we learned that the Dari Mart at Ellmaker Rd. serves people who are low-income and unhoused for basic needs, as does the Bi-Mart. We placed information in those stores and placed A-frames with easily scanned QR codes at the entrances to alert about the project.
- Articles in local papers, e-newsletters, and social media, such as Facebook are important in this rural area. Efforts to garner media coverage focused on the Fern Ridge Review and Siuslaw News.
- The City of Veneta and the Fern Ridge School District placed the information on their websites and Facebook to help blanket the area.
- Materials available through the website included alt text for screen readers.
- Plain language and team contact information were used in all public material. Jargon was removed or fully explained, and graphics conveyed information. The project manager's phone number and email appeared on all material, resulting in more than 75 direct contacts. This is an important aspect of accessibility; the ability to communicate with the project with a comfortable method.
- Accommodations were offered in all public materials, such as open house advertisements.
- Access for pedestrians, including those with disabilities, will be available and identified through or around work zones. This information can be made available in alternate format on request by calling 503-373-7093, or via the Oregon Telecommunications Relay System: 7-1-1, or e-mail ODOTeeo@ODOT.state.or.us.

Hiring of Underrepresented Populations

ODOT is committed to a Civil Rights program that includes participation of Disadvantaged Business Enterprises (DBEs) in ODOT contracting opportunities. ODOT has an overall DBE utilization goal of 23.43%, which has been approved by the FHWA within 49 CFR §26.45. The 23.43% DBE goal is broken into two parts, where 17.33% of DBE usage will be race-conscious and 6.10% will be race-neutral. ODOT's **DBE Program** objectives include the following:

- Ensure non-discrimination in the award and administration of ODOT contracts.
- Create a level playing field where DBEs can compete fairly for federally funded contracts.
- Ensure the DBE program is in accordance with applicable law.
- Ensure that only eligible firms participate as DBE.
- Remove barriers for DBEs to participate in contracting.

- Promote DBE in all types of federally-assisted contracts and procurement activities.
- Assist firms so they may compete successfully in the marketplace outside the DBE Program.
- Help firms which receive federal funding provide opportunities for DBEs.

Additionally, the ODOT Office of Civil Rights administers and has incorporated into our construction contracts the On-the-Job Training (OJT) and Apprenticeship Program, which is designed to increase minorities and women in the construction industry. This program is also used by contractors to meet the goals of the Equal Employment Opportunity Program.

Trainees/apprentices who complete the OJT/Apprentice program will have skills to build a career and may eventually own their own construction business. Construction employers who develop their workforce through the program will have a diverse and highly skilled group of workers ready to face future construction projects. Finally, the public benefits from the creation of family wage jobs and Oregon's roads will be improved.

References:

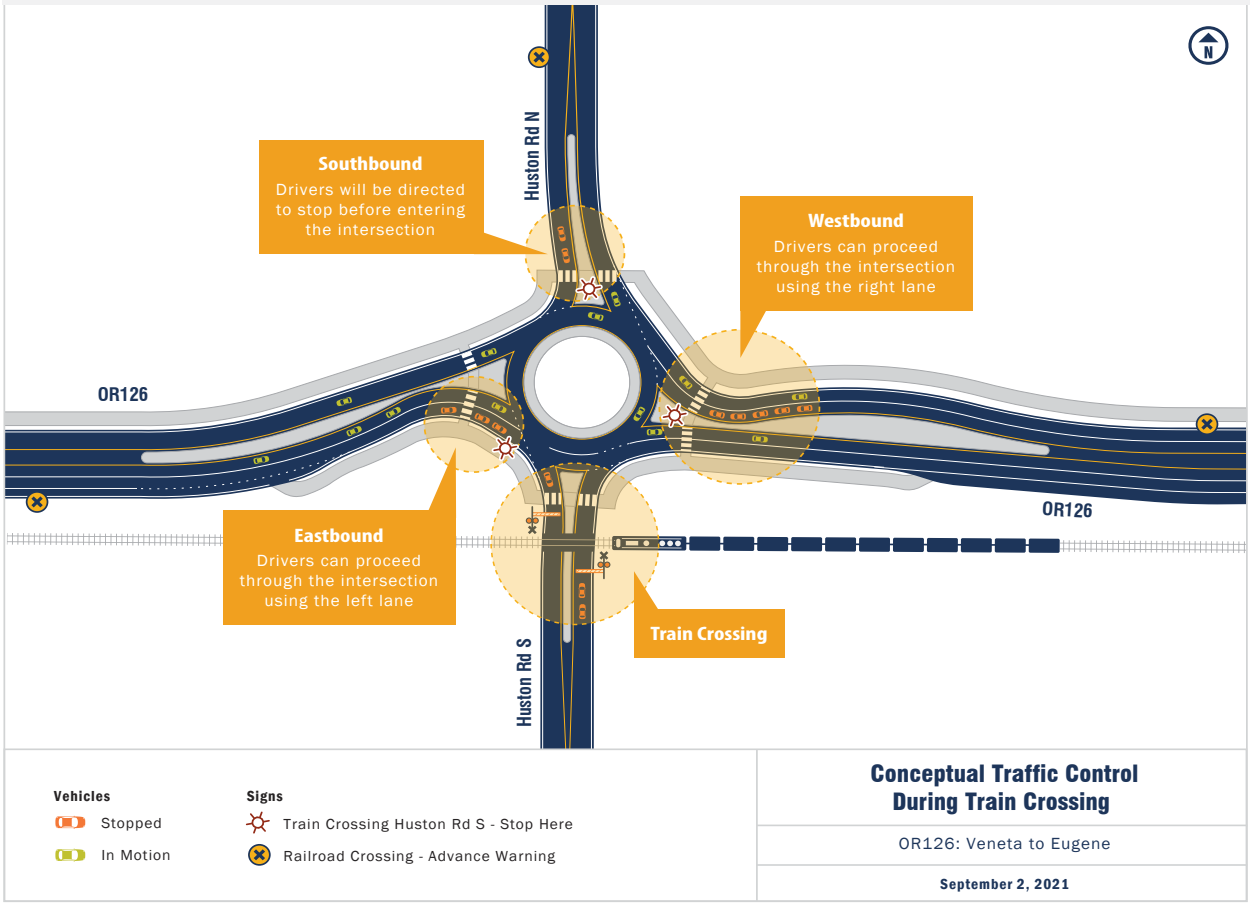
- **Federal Reimbursable Apprenticeship Training**
- **State Reimbursable Apprenticeship Training**
- **https://www.oregon.gov/odot/Business/OCR/SiteAssets/Pages/Workforce-Development/ODOT_BOLI_Highway_Construction_Workforce_Development_Program_2017.pdf**

Criterion #6: Innovation Areas: Technology, Project Delivery Financing

The OR126/Huston Road intersection is located directly adjacent to a railroad and the south leg of Huston Road crosses the tracks approximately 50 feet south of OR126. Placement of a roundabout at this intersection requires some innovative treatments to make sure cars and trucks do not queue back from the roundabout and block the tracks, while simultaneously minimizing impacts to private property. There are very few roundabout intersections that have been constructed adjacent to railroad tracks and none where the tracks are so closely spaced to the parallel road.

To address this situation, the roundabout will be constructed offset away from the tracks to provide additional separation and ITS treatments will be used to facilitate safe and efficient operation of the intersection. These include the placement of signs that activate with a message for drivers along OR126 wanting to cross the tracks while a train is coming, directing them where to wait before entering the circulating roadway, as illustrated in ***Figure 4*** below. Signs will also direct drivers continuing eastbound and westbound into the proper lane for passing through and continuing on their trip while a train is blocking the roadway. ODOT hopes to use the integration of the rail crossing safety apparatus with the ITS signage on the highway to showcase how roundabouts can co-exist with rail crossings in a way that is safe for all users.

Figure 4. Huston Road Roundabout Layout



V. BENEFIT COST ANALYSIS

The Project will improve an approximate two-mile section of OR126, replacing two stop controlled intersections with dual lane roundabouts, widen the interconnection highway section between the roundabouts to four lanes, add a turn lane at Lakeside Drive, add full shoulders and pedestrian and bicycle improvements along the entire project length, and provide for the addition of three transit stops. Project improvements constructed with $26.6M grant request will significantly improve safety, support freight mobility, and enhance mobility options for community and non-resident pedestrians, bicyclists and transit riders.

Assumptions and Methodology

The benefit cost analysis (BCA) for this Project is a combination of two safety focused components undertaken concurrently under a single construction contract with a benefit-cost analysis developed for each component. The benefits of each are based on the reduction in crashes/injuries and associate benefits for economic competitiveness, state of good repair, and equity, mobility and quality of life. This $34.6M capital project (in year of expenditure (YOE) dollars) converted to constant 2021 dollars and discounted at a seven percent rate has a **Net Present Value of $13.3M and a Benefit-Cost ratio of 1.68**. A summary can be found in the excel BCA spreadsheet on tab "PV Summary 7%."

Table 4. Benefit-Cost Analysis Improvements Discounted at 7%

Project Improvements	*Present Value of Capital Costs*	*Benefits Total*	*Net Present Value*	*Benefit/Cost Ratio*
Huston-Lakeside	($17,776,642)	$24,451,622	$6,674,980	1.38
Lakeside turn lane	($1,833,037)	$8,486,246	$6,653,209	4.63
Total Project	**($19,609,679)**	**$32,937,868**	**$13,328,189**	**1.68**

BCA Narrative

The baseline for the project is a no-build that would make no improvements to OR126 within or adjacent to the community of Veneta. *Table 5* summarizes the current Project area status, baseline, and problems to be addressed, changes to the baseline, and examples of improvement benefits.

Table 5. Current Status/Baseline, Changes to the Baseline, and Improvement Benefits

Current Status/Baseline and Problems to be Addressed	*Changes to Baseline*	*Improvement Benefits*
Vehicle fatalities and serious injuries occur at stop controlled intersections of the western portion of the Project.	Stop controlled intersections will be replaced with dual-lane roundabouts, connecting highway will be widened to four lanes.	Significant reduction in vehicle fatalities and injuries. Fatalities and injuries each reduced by 82%.
Vehicle fatalities and injuries occur at Lakeside Drive, an intersection to a residential area at the Project's eastern terminus.	Left turn lane will be added to the Lakeside Drive intersection to residential area at the Project's eastern terminus.	Reduction in vehicle fatalities and injuries. Fatalities and injuries each reduced by 44%.
Project roadway section has limited safety features and improvements for pedestrians, bicyclists, and transit users.	Adds full shoulders and separated pedestrian/bicycle path along the entire project length, provision for three transit stops.	Enhanced safety and mobility improvements and features for pedestrians, bicyclists, and transit users.

Under the no-build alternative, some 108 crashes involving nine fatalities and 99 non-fatal injuries could be expected within the 1.9-mile project area over the course of the period 2028 to 2047. Under the build alternative, focused safety improvements would reduce project area crashes expected over the course of the 2028 to 2047 post-construction period to only 23 crashes involving 3.3 fatalities and 19.6 non-fatal injuries, "Crash Data" worksheet tables. Overall, project safety improvements are expected to reduce vehicle fatalities by 63% and vehicle injuries by 80% and provide a present value of safety benefits that is nearly 50% greater than the present value of Project costs.

The monetary values calculated for the benefits are developed according to USDOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs, January 2023. Safety benefits are the largest category of benefits calculated in this analysis accounting for nearly 90 percent of project present value benefits. Economic competitiveness, state of good repair, residual value, and environmental benefits round out total benefits. Not readily quantifiable but important attributes of the project are the connectivity and mobility improvements and amenities the project elements are designed to provide to pedestrian, bicyclists and transit users in underserved rural communities and areas.

Factor Descriptions

Factors used or developed to make the benefit-cost calculations are described below, along with their sources. In the worksheets, all factors are converted into 2021 dollars and discounted according to US DOT BCA Guidance of 7%, and 3% for Carbon offsets. The analysis period covered by this BCA is the construction period and 20 years after project completion.

Construction cost estimates and schedule: Construction cost estimates by broad category and schedule are presented in the table starting in column H row 30 of the "Cost_1" and "Cost_2" worksheets. Project cost estimates were prepared by DOWL, LLC, based on the 15% design. The project is programed for completion in 2027 with the beginning of benefit estimates scheduled for 2028.

Capital cost information: Project cost estimates were developed in 2022 dollars. These have been converted into 2021 dollars and discounted in row 30 of the "7% Discounting" worksheet. The inflation adjustment factors may be found in cells Q67-Q72 of the Inputs Worksheet." The discount rate is seven percent and is first entered in cell B27 of the "7% Discounting" worksheet.

Cost savings (pavement): The highway owners involved have significant and on-going pavement preservation programs. Construction will displace one round of pavement preservation activity for each component in its opening year. The calculations in rows 33, and 63 of the "7% Discounting" worksheet are based on the assumption of pavement preservation costs of $226,142 per lane mile in 2021 dollars (see rows 2-4 of the "Cost_1 and Cost_2" worksheets). As this will be a rebuilt roadway, the new pavement is expected to last 25 years. The project only displaces one preservation cycle, and cost savings only apply to existing lane-miles. Cost of Good Repair values were provided by ODOT pavement engineers.

Emissions per gallon: The factors listed below were calculated by solving for tailpipe emissions per gallon using Tables 3-26, 3-27, and 3-28 of The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised), National Highway Traffic Safety Administration, DOT HS 812 013, May 2015 (revised). The tailpipe emissions per gallon were added to the upstream emissions per gallon, then short tons were converted to metric tons to produce the following estimates:

- NOX – 1.78E-05 metric tons per gallon
- PM2.5 – 1.505E-06 metric tons per gallon
- SOX – 1.084E-06 metric tons per gallon
- CO2 – 0.010984958 metric tons per gallon

These are entered in "Inputs Worksheet" cells J43:J48.

Fuel price: $3.877 per gallon. Source: "AAA Gas Prices" estimate for Oregon on 2/24/2023 Figure has been converted to 2021 dollars. This factor is first entered in "Inputs Worksheet" cell R41.

Reduction in GHG (CO2) emissions: Damage costs per metric ton varies over time, starting at $62 in 2028 and increasing to $85 in 2047, the last year of our analysis. Future damages from carbon are discounted at 3%. Source: "Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-6. This factor is first entered in "Inputs Worksheet" cells AW70-BS70 and in calculations in "Inputs Worksheet" cells AW33-BP33 and AW34-BP34. The 3% discounting is entered on the "7% Discounting" worksheet, cell B18.

Reduction in NOX emissions: $18,200-$18,900 damage costs per metric ton for our analysis period 2028-2047. Source: "Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-6. This factor is first entered in "Inputs Worksheet" cells AW73-BP73 and in calculations in "Inputs Worksheet" cells CQ33-DJ33 and CQ34-DJ34

Reduction in PM2.5 emissions: $879,400-$907,600 damage costs per metric ton for our analysis period 2028-2047. Source: "Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-6. This factor is first entered in "Inputs Worksheet" cells AW71-BP71 and in calculations in "Inputs Worksheet" cells DE55-DX55 and DE56-DX56.

Reduction in SO2 emissions: $49,500-$51,300 damage costs per metric ton for our analysis period 2028-2047. Source: "Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-6. This factor is first entered in "Inputs Worksheet" cells AW72-BP72 and in calculations in "Inputs Worksheet" cells CH55-DA55 and CH56-DA56.

Hourly value of time savings: For passenger vehicles, the "All Purposes" estimate of $18.80 per hour comes from Table A-3 in US DOT BCA Guidance. For truck drivers, used the estimate of $32.40 per hour from Table A-3. For bus drivers, the figure is $35.00 per hour from Table A-3. Source: "Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-3. These factors are first entered in "Inputs Worksheet" cells D42, D44 and D49 where they are scaled by expected ridership. Average bus ridership comes from Lane Transit District.

Peak hours: There are two peak hours per weekday, and each peak hour handles about 8% of ADT. Traffic generators are located to the east of the project termini. As special events occur in this area, peak hours are applied to 261 days per year. These factors are first entered in cells D41 and R7 of the "Inputs Worksheet."

Induced travel: Induced travel due to project is likely to be zero.

Inflation adjustment: The discount factors for converting future year costs (including fuel) to 2021 dollars are; 2022 – 1.1456, 2023 – 1.2153, 2024 – 1.2520, 2025 – 1.2901, 2026 – 1.3320, and 2027 – 1.3747. These reflect IHS Markit's June 2023 chained price index for state and local investment in highways and streets. The 2023 factor is applied to fuel in "Inputs Worksheet" cell R41, and the other factors are applied to capital expenditures in the "7% Discounting" worksheet. An inflation factor is included in the YOE project cost estimates. However, the adjustment for each year is unclear, so IHS Markit's index was used to adjust constant dollars to YOE dollars. The index factors are entered in cells Q67-Q73 of the "Inputs Worksheet."

Maintenance costs: $8,036 per new lane mile per year. Source: Oregon Department of Transportation's FYs 2016-2018 non-overhead average annual maintenance costs on a per lane-mile basis, converted to 2021 dollars from a 2017 value of 7,350. This figure is first entered in "Inputs Worksheet" cell N41. This figure is then applied to the New Lane-Miles entries of the "Cost_" worksheets in the "7% Discounting" worksheet. The conversion factor from 2017$ comes from Benefit-cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023, Table A-7.

Proportion of vehicle types: a) Passenger vehicles – 74.9%; b) Heavy trucks – 24.6 %; c) Buses – 0.5%. Source: ODOT traffic study and bus scheduling information from Lane Transit District.

Reduced vehicle operating costs: Project is not expected to have a noticeable effect on vehicle operating costs other than reduced fuel consumption from avoided vehicle, pedestrian and bike crashes.

Residual value: $1.7M at the end of the 20 years from completion of the project. Source: Amount is the present value of the straight-line depreciated amount of project features. Asset management experience indicates much roadway construction does not depreciate or does not depreciate in a way that would affect the next 20-year planning horizon. Roadway and roundabout construction are depreciated over 25 years. Lighting and signing are depreciated over 30 years. Right-of-way, utility relocation, and engineering do not depreciate. Calculations are made in the "Cost_1 and Cost_2" worksheets. Conversion to present value occurs in the "7% Discounting" worksheet rows 53 and 83.

Safety: The Project is primarily a safety project. Expected crashes are based on January 2017-December 2021 data (five years) collected and maintained by ODOT traffic section staff. Crash data are presented in cells B4-H12 of the "Crash Data" worksheet and transferred to cells H85-M85 and cells H86-M86 of the "Inputs Worksheet.". Over time, crash growth is expected to increase at the same rate as average daily traffic (see "Inputs Worksheet" cells I20, calculated in cells G93-G96).

The crash reduction factor (CRF) applied to each alternative is listed in cells B68-B69 of the "Inputs Worksheet" and applied to the transferred crash data in cells H77-M77 and H78-M78 of the "Inputs Worksheet." These factors are constant for each phase and apply separately to roundabout and turn lane components of the project. The CRF for roundabouts is applied to all crashes at all severities but excludes property damage only (PDO)s. The CFR for left turn lanes is applied to all crashes and at all severities and includes PDOs see cells F4-K4 and F5-K5 of "7% Discounting" worksheet.

The monetary values applied are from Table A-1 of "Benefit-Cost Analysis Guidance for Discretionary Grant Programs," U.S. Department of Transportation, January 2023. Reduced hours of delay resulting from reduced crashes are from "The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)," National Highway Traffic Safety Administration, May 2015, Table 3-21. These figures are applied as appropriate to calculate the value of time savings and are first entered in cells AC59:AC64 of the "Inputs Worksheet." This analysis only looks at the reduction in motor vehicle crashes.

Value of Pedestrian and Bicycle Facilities Improvements: Pedestrian and Cycling trips on improved facilities generate value to those users. In this project, the improved facilities are actually new facilities where none existed before, in spite of pedestrian and cycling trips being taken on roadway infrastructure. The project adds full shoulders along the entire project length, adds a separated bike path on the north, increases roadway lighting, increases accommodations for transit users, and provides ADA-compatible facilities at all project roadway crossings.

The valuation of pedestrian, bicycle and transit facilities and amenities are of ongoing research and consideration in the United States and other nations. Recent updates to BCA guidance include monitorization values which permit calculation of the present value of benefits associated with various pedestrian, bicycle and transit facilities and amenities. While this project completes various improvements which will directly benefit pedestrians, bicyclists and transit users, the absence of quantitative data precluded the calculation of reliable benefit values for these factors in this grant application.

BCA Calculations

The BCA calculations for this Project are include as a separate attachment, Microsoft Excel spreadsheet.

VI. PROJECT READINESS

Environmental Risk

ODOT has completed extensive community outreach while identifying the environmental risks for the Project. The community recommended an alternative informed of the environmental and transportation considerations. Subsequently, ODOT has completed environmental documents, which include an approved Section 106 document for Historic and Archaeology and a signed Biological Opinion, that are in the final review stage with FHWA. ODOT anticipates all approvals to be in place for a Documented Categorical Exclusion by the end of 2023.

Detailed Project Schedule

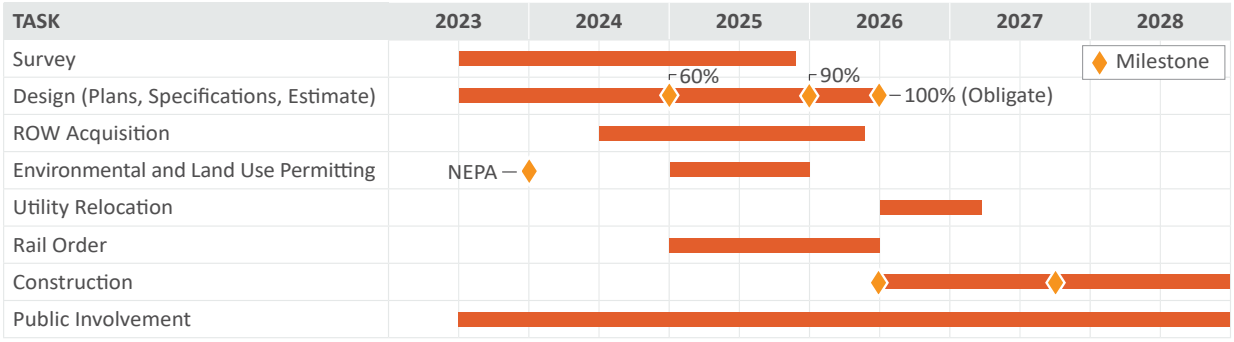
Please see the project schedule in ***Figure 5*** below for a depiction of the primary tasks needed to deliver the project.

ODOT has completed 15% engineering design, allowing us to finish the NEPA technical reports and perform community outreach on the design. Part of that design effort included several iterations for the location of the roundabouts. We were able to position them strategically to allow for minimal impacts to surrounding property and protected natural resources. Additionally, as ***Figure 5*** shows, ODOT is currently refining the design for the Huston Road roundabout so that we are well-prepared to continue through to construction for Huston Road roundabout and the rest of the project if we secure grant funding.

ODOT routinely delivers construction projects valued at $25M or more within a year of obligating construction funds. Construction funds are “obligated” once a complete bid-ready package of plans, specifications, and estimates (PS&E) are submitted to ODOT’s Project Controls Office, and FHWA concurs that the project is ready to be released to the construction community for bidding. Typically, the process takes two months. After a contractor’s bid has been reviewed and accepted and has met state and federal requirements, ODOT issues notice to proceed (NTP) to the contractor. ODOT estimates this Project to take about two years to construct. However, ODOT would entertain innovative options from the winning contractor if their proposal saved money or constructed the project faster with less disruption to the traveling public and surrounding businesses and residences. The Project design will minimize impacts to private property to the extent possible while incorporating standard engineering practices and federally accepted design criteria. Once the design is final, ODOT will follow federal guidelines for property appraisal and acquisition; offering Fair Market Value for any purchases per CFR 24 and the Uniform Relocation Assistance and Real Property Acquisition Policies Act (1970) as amended, as is ODOT’s usual practice. Our concept plan indicates approximately five acres will be needed for construction, although the acreage is expected to decrease as the design progresses from concept to Final. One residential displacement will be needed. The design endeavored to avoid this impact, but it would have meant potentially acquiring the local convenience store, which serves walk-in traffic from the nearby residential area and the transit stop. Additionally, a portion of a mini-storage used to park vehicles will need to be acquired. Other acquisitions include slivers of private property without buildings along the highway.

A permanent easement from the Coos Bay Rail Line will be needed to widen the county road crossing of the railroad tracks and provide ADA-compliant sidewalks for pedestrian use. The railroad easement is approximately 1.6 acres. ODOT has a signed Memorandum of Understanding (MOU) with Coos Bay Rail Line regarding our need for encroachment on their right-of-way. No Intergovernmental Agreement or other types of agreements are anticipated for this project.

Figure 5. Project Schedule



Required Approvals

FHWA approval of the environmental documents is expected by the end of 2023. Land use approval from the City of Veneta and Lane County will also be required. Through discussions with the City and County, this Project is identified in their TSPs and the approval process should be procedural and low-risk. Wetland permitting will also be required with a joint permit application to the US Army Corp of Engineers/Oregon Division of State Lands. These approval processes are captured in ***Figure 5***.

Assessment of Project Risks and Mitigation Strategies

There are always project risks. During development of concept plans, ODOT uncovered, recognized, and mitigated three known risks: public support of the project; encroachment on the railroad right-of-way; and stormwater treatment.

The refinement plan, completed in 2013 after public input, narrowed potential build alternatives to a recommended four-lane section with a separated shared-use path on the north. In 2020, additional public outreach confirmed their support for the recommended alternative through focus group meetings, online open houses, and the Steering Committee. ODOT has received broad support from the nearby City of Veneta, Lane County, and other stakeholders.

Since planning efforts began, the local FHWA Division Office has been engaged. They have been consulted during the course the NEPA process and the environmental documentation, which is nearing completion. They support a Categorical Exclusion and Section 106 and Section 4(f) de minimis documentation is nearly complete. FHWA's written concurrence on the classification is anticipated by the end of 2023. While the City of Veneta is not in a position to make a noteworthy monetary contribution to the Project, the Project team expects they would if given the means. Letters of Support from both the City of Veneta and Lane County have been provided as separate attachments.

Because this Project is bordered by a rail line and is also situated in a low area of jurisdictional wetlands, we pursued and secured a MOU from the Coos Bay Rail Line acknowledging that ODOT would need to encroach on their right-of-way to construct the Project. Knowing that working with any railroad is a risk, we feel the signed MOU puts us in a strong position to continue discussions with them when the design has progressed to more accurately determine the impacts to the railroad and their right-of-way and when construction is certain.

Similarly, because this Project is in a low area, treatment of stormwater runoff is challenging. It is ODOT's practice to treat the quantity and quality of stormwater runoff from any new impervious surface. Because we are adding shoulders and additional travel lanes, the quantity of runoff is substantial. Through discussions with National Marine Fisheries (NMFS), US Fish and Wildlife Service, and the Oregon Department of Fish and Wildlife (ODFW), and development of a Biological Assessment and subsequent Biological Opinion, ODOT was successful in identifying areas where stormwater treatment will occur, on and off the Project site, to the satisfaction of all agencies. Once complete, the Project will treat runoff that currently discharges untreated into adjacent bodies of water, thereby ensuring a net benefit to water quality.

Technical Capacity

ODOT employs hundreds of professionally licensed civil engineers and designers, including road design, bridge, traffic, and environmental staff. ODOT also outsources a significant portion of the agency's portfolio of capital project work to private firms. For this project, ODOT has an engineering and environmental consulting firm under contract currently advancing the design of the Huston Roundabout to a 60% design milestone. A contract amendment will be prepared following receipt of funding to advance this Project. The contracted firm has available resources to complete the design and is committed to doing so within or ahead of the identified schedule.

ODOT routinely balances our in-house design and construction resources with the needs of our Statewide Transportation Improvement Plan (STIP) and projected maintenance project load to verify we have the correct and adequate expertise on staff to deliver and construct projects. As workload fluctuates and unique expertise is needed, ODOT is readily equipped to contract with Oregon's professional engineering consulting community, which has been providing design and construction engineering support for ODOT for 35 years. Any engineering or supporting services, such as environmental or public outreach, must meet the same rigorous qualification and deliverable review standards as in-house employees.

Since the inception of the federal transportation program in the 1950s, ODOT has been using federal funds to deliver transportation projects that are compliant with federal rules and guidelines. ODOT manuals and procedures are all based on federal highway requirements; we routinely secure permits for unavoidable impacts to federally regulated resources, such as wetlands, historic resources, parks, and refuges. ODOT has a Civil Rights goal of contracting 23.44% to DBE businesses in fiscal year 2023-2025. Through June 2023, we have achieved 17.81%. In fiscal year 2022, the goal was 15.37%, and we achieved 22.44%, exceeding our goal.

This Project has not received a grant award from a state, local, or federal discretionary source.

VII. STATUTORY PROJECT REQUIREMENTS

Statutory Requirement #1

Requirement: The project will generate regional economic, mobility, or safety benefits.

Economic Benefits

This Project supports Veneta's economic growth goals that require safe, efficient, and reliable transportation infrastructure. It also supports local tourism by providing non-motorized recreational access to and along the US Army Corp of Engineers' Fern Ridge Reservoir and adjacent wildlife refuges.

Mobility Benefits

The Project will provide significant improvements in motorized and non-motorized mobility. For motorized users, the construction of roundabouts will reduce side street congestion with more gaps in the traffic and slower operating speeds along OR126. The addition of the left turn lane at Lakeside Drive will eliminate vehicles stopping on the travel lane and backing up traffic. The addition of a travel lane added to OR126 between Ellmaker Road and Huston Road will also improve mobility with vehicles turning into driveways able to use the right lane while through movements can utilize the left travel lane.

Safety Benefits

The Project will dramatically improve safety for all users along the corridor where four fatalities and 51 people have been injured over the past five years. The installation of roundabouts at Huston Road and Ellmaker Road can reduce fatal and injury accidents by as much as 82%. At the Lakeside Drive intersection, an eastbound left turn lane can reduce fatal and injury accidents by as much as 44% and widened shoulders along the Project limits can reduce all crash types by as much as 18%.

In addition, the construction of a shared-use path for bicyclists and pedestrians, along with crossing enhancements at the intersections and the railroad crossing will remove non-motorized users from the roadway shoulders, providing safe facilities for residents to access services without need for a motor vehicle.

Statutory Requirement #2

Requirement: The project will be cost effective.

The Project's BCA is a combination of two safety focused components undertaken concurrently under a single construction contract with a BCA developed for each component. The benefits of each are based on the reduction in crashes/injuries and associate benefits for economic competitiveness, state of good repair, and equity, mobility and quality of life. This $34.6M capital project (in YOE dollars) converted to constant 2021 dollars and discounted at a seven percent rate has a **Net Present Value of $13.3M and a Benefit-Cost ratio of 1.68**. A summary can be found in the excel BCA spreadsheet on tab "PV Summary 7%".

Table 4. Benefit-Cost Analysis Improvements Discounted at 7%

Project Improvements	*Present Value of Capital Costs*	*Benefits Total*	*Net Present Value*	*Benefit/Cost Ratio*
Huston-Lakeside	($17,776,642)	$24,451,622	$6,674,980	1.38
Lakeside turn lane	($1,833,037)	$8,486,246	$6,653,209	4.63
Total Project	**($19,609,679)**	**$32,937,868**	**$13,328,189**	**1.68**

The baseline for the Project is a no-build option that would make no improvements to OR126 within or adjacent to the community of Veneta. The following table summarizes the current project area status/baseline and problems to be addressed, changes to the baseline, and examples of improvement benefits.

Table 5. Current Status/Baseline, Changes to the Baseline, and Improvement Benefits

Current Status/Baseline and Problems to be Addressed	*Changes to Baseline*	*Improvement Benefits*
Vehicle fatalities and serious injuries occur at stop controlled intersections of the western portion of the Project.	Stop controlled intersections will be replaced with dual-lane roundabouts, connecting highway will be widened to four lanes.	Significant reduction in vehicle fatalities and injuries. Fatalities and injuries each reduced by 82%.
Vehicle fatalities and injuries occur at Lakeside Drive, an intersection to a residential area at the Project's eastern terminus.	Left turn lane will be added to the Lakeside Drive intersection to residential area at the Project's eastern terminus.	Reduction in vehicle fatalities and injuries. Fatalities and injuries each reduced by 44%.
Project roadway section has limited safety features and improvements for pedestrians, bicyclists, and transit users.	Adds full shoulders and separated pedestrian/bicycle path along the entire project length, provision for three transit stops.	Enhanced safety and mobility improvements and features for pedestrians, bicyclists, and transit users.

Under the no-build alternative, some 108 crashes involving nine fatalities and 99 non-fatal injuries could be expected within the 1.9-mile project area over the course of the period 2028 to 2047. Under the build alternative, focused safety improvements would reduce project area crashes expected over the course of the 2028 to 2047 post-construction period to only 23 crashes involving 3.3 fatalities and 19.6 non-fatal injuries, "Crash Data" worksheet tables. Overall, project safety improvements are expected to reduce vehicle fatalities by 63% and vehicle injuries by 80% and provide a present value of safety benefits that is nearly 50% greater than the present value of project costs.

Statutory Requirement #3

Requirement: The project will contribute to 1 or more of the national goals described under Section 150: (1) Safety; (2) Infrastructure condition; (3) Congestion reduction; (4) System reliability; (5) Freight movement and economic vitality; (6) Environmental sustainability; (7) Reduced project delivery delays.

Safety

One of the purposes of this Project is to increase traveler safety on OR126. Currently, the Huston Road and Ellmaker Road intersections experience accident rates above the statewide average. Accident types are predominantly rear-end collisions. Roundabouts have been shown to reduce these types of accidents by 82%. The existing highway shoulders are narrow. This road passes through a federal wildlife refuge so cycling opportunities are in demand. The project would increase shoulder widths on both side of the highway and add a separated shared-use path north of OR126 between Huston Road to Lakeside Drive. Physically separating cyclists and pedestrians will facilitate safety and encourage use of alternative travel.

OR126 is a long, straight, flat section of road. Congestion occurs as slower drivers and disabled motorists have nowhere to pull out of the travel lane. Those turning left also create backed up traffic in their wake. This in turn encourages unsafe and illegal passing. Wider shoulders and turn lanes along with additional travel lanes between Huston Road and Ellmaker Road will allow for safer movements and congestion relief.

Congestion Reduction

For motorized users, the construction of roundabouts will reduce side street congestion with more gaps in the traffic and slower operating speeds along OR126. The addition of the left turn lane at Lakeside Drive will eliminate vehicles stopping on the travel lane and backing up traffic. The addition of a travel lane added to OR126 between Ellmaker Road and Huston Road will also improve mobility with vehicles turning into driveways able to use the right lane while through movements can utilize the left travel lane.

Freight Movement and Economic Vitality

Veneta is rural town of more than 5,000 people. Once a timber-based economy, they are working to fashion themselves as a self-sustaining community but currently rely on their larger neighbor Eugene to provide living wage jobs and services. The school district is a major employer in Veneta, but most people are traveling from or through Veneta to access I-5, via OR126, to reach their jobs. The City of Veneta identifies itself as a commuter community but seeks to bring local stores and provide local needs to its citizens. This includes providing after hours and weekend destinations. Additionally, the City administrators recognize that in the event of a catastrophic seismic event, Veneta will be a staging area for supplies and services between the Willamette Valley and the coast. OR126 will be the primary travel route; without improvements movements of good will be stifled putting lives in peril.

Improvements to OR126 could include accommodations for future fiber optic, enhancing the regional Lane County fiber backbone. Similarly, during construction natural gas lines could be accommodated. Natural gas would facilitate development of industry in Veneta that requires an intensity of heat.

Freight movement along OR126 is critical to accommodate. OR126 connects the Oregon coast and the Willamette Valley and I-5. Currently, expansion of the Port of Coos Bay is underway as well as the Eugene Airport. These improvements will require additional freight to be moved throughout Oregon.

Environmental Sustainability

Within the Project area, OR126 lies between the Coos Bay Railroad and the Fern Ridge Reservoir. There is limited space to expand and improve the road network. ODOT's current design includes two roundabouts, two additional lanes of travel, widened shoulders, and a separated shared-use path, all with minimizing impacts to natural and manmade resources. Some wetland mitigation will be necessary. Through discussions with Oregon Division of State Lands (DSL), mitigation sites and use of wetland banks have been identified. ODOT typically incorporates water treatment facilities into their designs when additional paved surface area is added. Treatment opportunities for this project have been discussed and approved by NMFS and ODFW. There are no historic or archaeological features impacted.

Reduced Project Delivery Delays

Prior planning work on the OR126 corridor will allow this Project to move forward quickly and reduce project delivery delays due to the following factors:

- Extensive public and stakeholder outreach was completed during the development of the Corridor Plan and the subsequent 15% design and NEPA documentation for the corridor, resulting in broad and strong community support.
- Conceptual design has been completed for the corridor and a design consultant is currently advancing the design of the Huston Road roundabout to a 60% milestone by the end of 2023. Upon grant receipt, a contract amendment will be developed with the design consultant to continue design for the Project area.
- All approvals for the NEPA Documented Categorical Exclusion are anticipated by the end of 2023.
- An MOU is in place between ODOT and the railroad that supports the development of this Project and the outlines the need for property and rail crossing improvements.

Statutory Requirement #4

Requirement: The project is based on the results of preliminary engineering.

The Project pursuing grant funding is a portion of a $300M seven-mile corridor improvement project (ODOT Key number 21231, OR126: Veneta to Eugene), designed and estimated in 2021. The Project area was also part of a Corridor Plan produced in 2013 that evaluated design alternatives to improve safety and congestion on the highway. The Corridor Plan included extensive community outreach and established the publicly acceptable, and engineering feasibility framework for the project pursued in 2020. Preliminary engineering was completed in 2022 to the extent necessary, approximately 15%, to establish a project footprint, sufficient to determine the presence or absence of environmental resources and determine the project's impact on them.

This is a FHWA Project of Division Interest (PODI) project. As such, FHWA has been part of the Project since corridor planning efforts began, through scoping in 2019 and ongoing conceptual design and NEPA evaluation. They have preliminarily agreed that the Project qualifies as a Categorical Exclusion under CFR 771.17(d). All required technical reports have been completed; however, ODOT is still waiting on a signature from the Oregon State Historic Preservation Office to complete Section 106 and the signature of the Operators with Jurisdiction on the Section 4(f) de minimis before submitting final documents to FHWA for their signature.

Along with establishing a project footprint, ODOT also developed a construction estimate. The estimate was based on subsurface investigations, verification and location of utilities, hazardous materials records research and on-the-ground investigation, and topographic and LiDAR survey. Material quantities – cuts and fills – along with asphalt, concrete, and guardrail were calculated and estimated using the most current bid tabs for the vicinity. Required special features were figured as well, such as truncated domes for ADA ramps and RRFBs at bicycle and pedestrian crossings. Due to the proximity of one of the roundabouts to a railroad crossing, the estimate includes upgrading rail crossing signs, gates, lights, concrete pads with steel rails, and integrated signing for safe traffic control between the roundabout and the rail crossing.

Statutory Requirement #5

Requirement: The project is reasonably expected to begin construction not later than 18 months after the date of obligation of funds for the project.

As outlined in the project schedule ***(Figure 5)***, Project construction could start by the middle of 2026. With FHWA approval of the NEPA documents anticipated by the end of 2023, environmental risks have been mitigated and as previously noted, extensive public outreach has confirmed community and agency support for the Project. Further, a 15% design has been completed and design of the Huston Road roundabout is currently underway and will reach a 60% milestone by the end of 2023. Design, permitting and ROW acquisition would be able to ramp up immediately upon notice of grant funding.