

REEDSPORT RAIL CROSSING STUDY

DRAFT
FEBRUARY 2024



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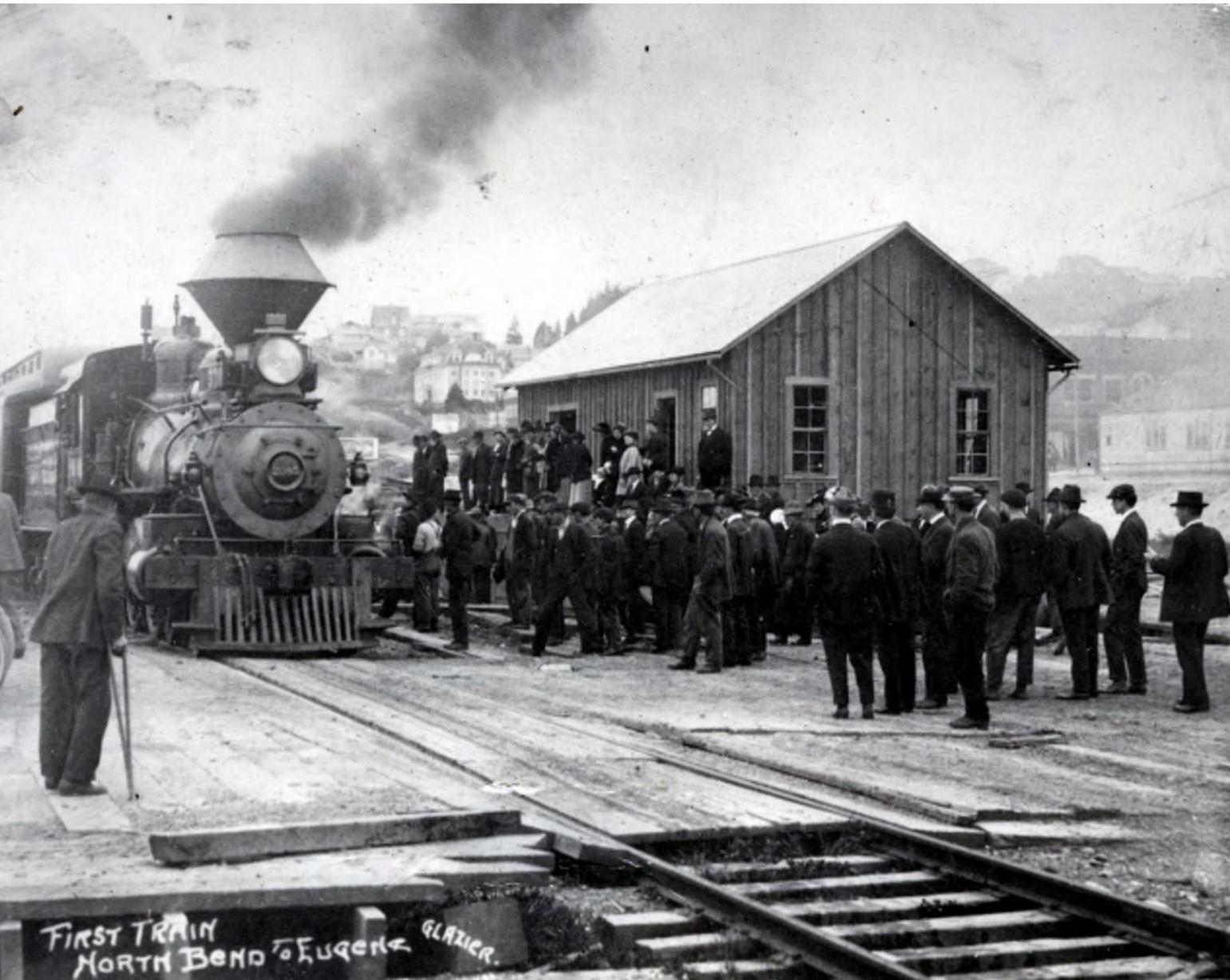
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The first Southern Pacific train from North Bend to Eugene leaves the station. Originally completed in 1916 as part of the Southern Pacific Railroad between Eugene and Powers, Oregon, the Coos Bay Branch was purchased in 2009 by the Port of Coos Bay and reopened in 2011 after repairs were made to the aging tunnels that led to the line's closure in 2007.

Image source: Port of Coos Bay, used by permission.

INTRODUCTION

Keeping ahead of change

The Coos Bay Rail Line is a vital economic engine in our region, moving over \$460 million worth of freight annually from the Oregon International Port of Coos Bay.

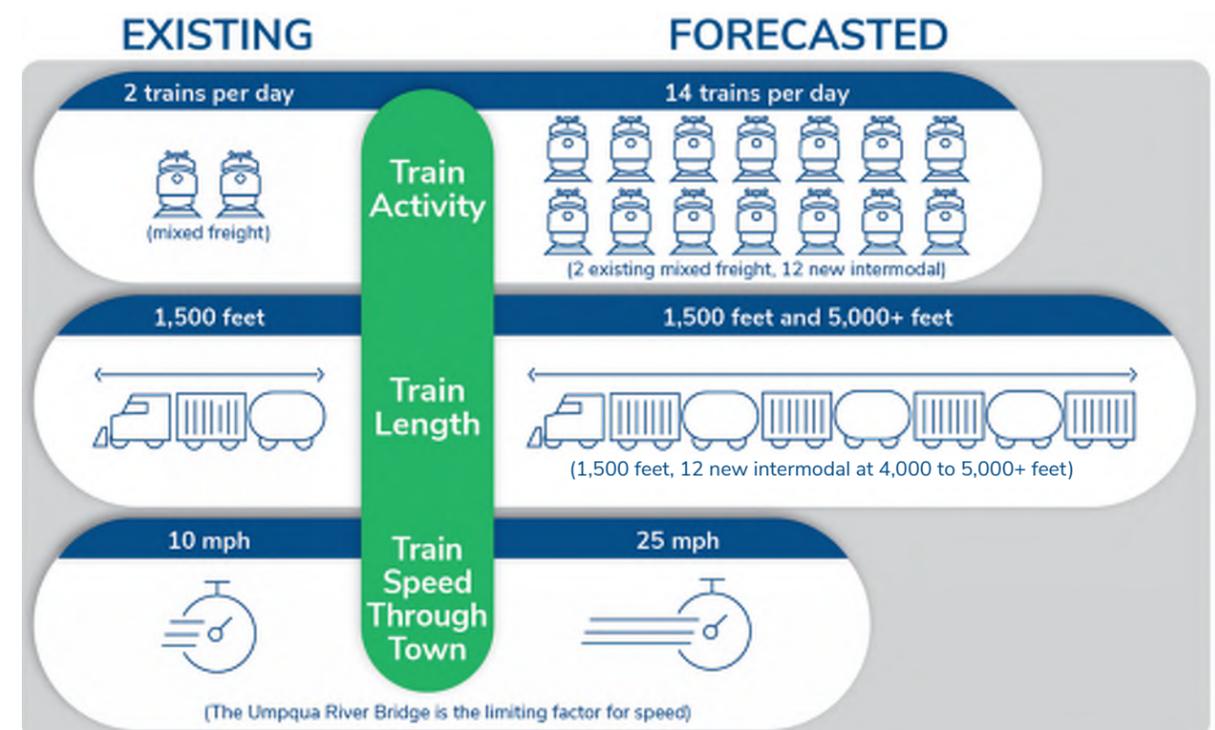
The railroad bisects downtown Reedsport and crosses both Winchester Avenue and Oregon Route 38 (OR 38, also known as Umpqua Highway) at grade rail crossings. Two trains pass through Reedsport each day.

The Port of Coos Bay plans to construct a new container terminal facility—the Pacific Coast Intermodal Port—on the North Spit in Coos Bay. It will be the first carbon-free marine terminal in the United States, and the only deep-water port between Astoria and San Francisco.

Activity at the new terminal is expected to increase the number and length of freight trains passing through Reedsport each day. It is also expected to increase jobs and economic development in the region.

The City of Reedsport and Oregon Department of Transportation (ODOT) are taking action now to stay ahead of this expected increase in freight rail traffic. The Reedsport Rail Crossing Study evaluated the potential impacts to the transportation system and improvements needed to keep people and commerce moving on OR 38 and US 101 (Oregon Coast).

Reedsport rail traffic



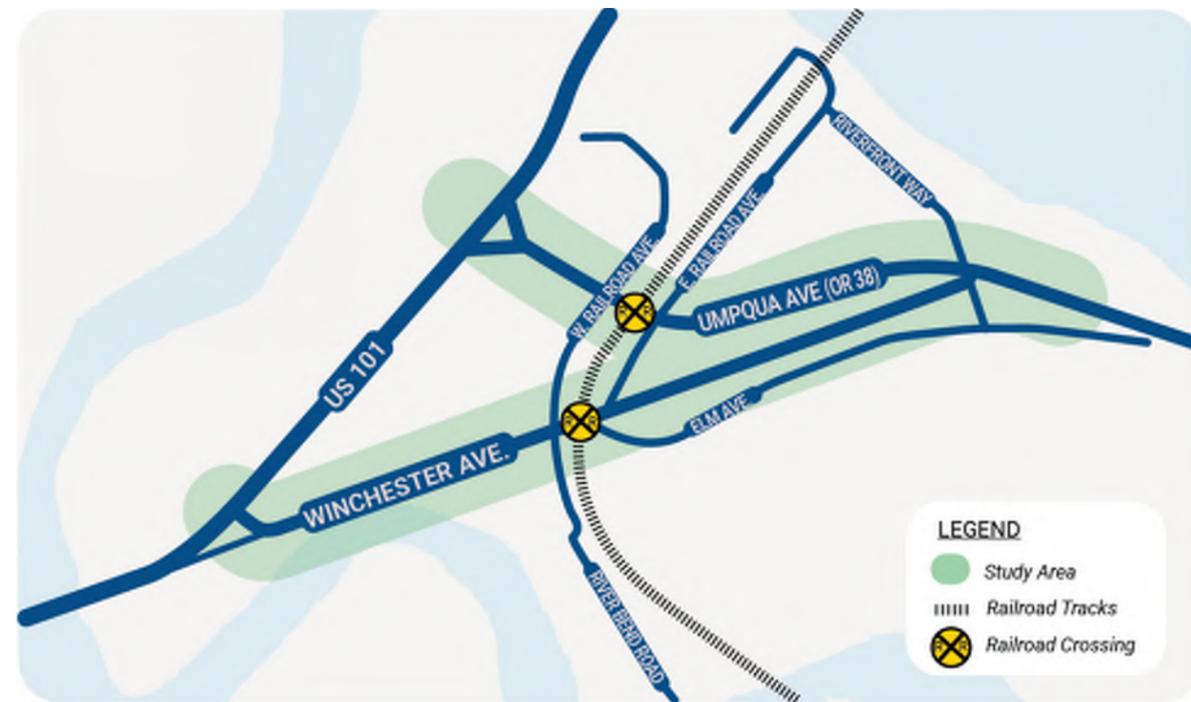
The study

The Reedsport Rail Crossing Study identified potential improvements to the existing at-grade railroad crossings at OR 38 and Winchester Avenue to help improve traffic flow, provide safe conditions for all roadway users, reduce train warning horn noise, and maintain safe operations for emergency services and stormwater controls.

The project team considered a variety of solutions to improve the railroad crossings, such as potential new crossings, converting existing at-grade roadway crossings to grade-separated overpass/underpass crossings, and upgrades to pedestrian and bicycle facilities. Some physical upgrades will enable further strategies, such as a “no-horn” quiet zone ordinance, to address the impact of increased train travel while protecting livability in Reedsport.

The project team consulted members of the public, emergency services, local business owners, the freight community, and the City of Reedsport Planning Commission and City Council for input on the improvement options. The selected improvement package responded most closely to everyone’s feedback while meeting the study’s identified Purpose and Need Statement (see page 9). This report provides details on the range of alternatives considered (page 25) and the preferred improvements (Page 33).

The study area



The study area is in eastern Reedsport, bordered by the Umpqua River to the north, Scholfield Creek to the west and south, and the OR 38/Riverfront Way and Winchester Avenue/Riverfront Way intersections to the east.

What happens next?

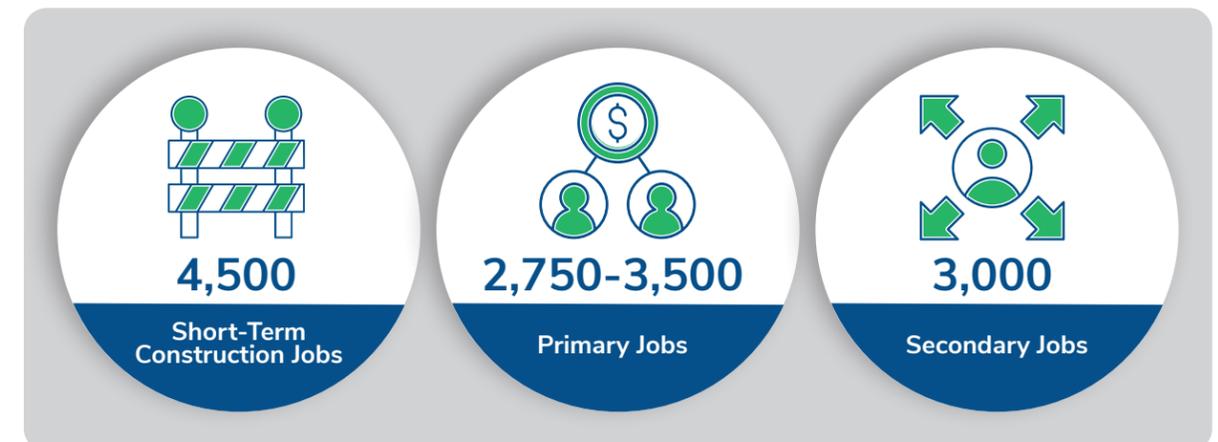
The Reedsport Rail Crossing Study (Study) will be adopted into the City’s Transportation System Plan (TSP) and amended into the Oregon Highway Plan (OHP) as a facility plan. The proposed projects in the study will be considered for construction if the planned container terminal receives funding to move forward. It’s anticipated that the Reedsport railroad improvements and the new terminal will be constructed simultaneously.

For a complete overview of the implementation process, see the Next Steps chapter starting on page 41.

The CBRE rail line



Jobs that the Port’s expansion is expected to create





Source: A'erion Blackman, CC BY 3.0, Wikimedia Commons

PURPOSE AND NEED

Purpose

The purpose of the study was to evaluate the impacts of the anticipated increase in rail activity on traffic operations and safety in Reedsport, and to identify potential solutions at the OR 38 and Winchester Avenue rail crossings. The study identified enhancements to the existing rail crossings, as well as other potential crossing locations, including grade separation (e.g., a roadway overpass above the rail line).

The proposed rail crossing projects will be supported by local circulation improvements to roadways, bicycle and pedestrian facilities, rail, and transit. They will also address, at a minimum, access management, access to and response times from emergency services, and stormwater controls in the study area. These projects will be adequate to support the Oregon International Port of Coos Bay container facility's development and the linked increase in activity on the Coos Bay Rail Line.

Need

The study team identified the following deficiencies based on the projected increase in traffic demand and train activity associated with the new Port facility; the existing and future conditions analysis; and feedback from the Project Advisory Committee, Project Management Team, community member interviews, and online open houses:

1 / Rail crossing delays and access/ circulation barriers

—A 4,100-foot train traveling at 10 mph through downtown Reedsport during 30th highest hour traffic conditions will create the following operational and/or safety-related deficiencies:

- a / Eastbound vehicular queues on OR 38 will spill back into the OR 38/US 101 intersection.
- b / Multiple cycles will be required at the OR 38/US 101 intersection to recover from the train event.
- c / Simultaneous delays of 5.5 minutes or greater will occur at the OR 38 and Winchester Avenue rail crossings. The delays will increase response times for emergency service vehicles (fire, ambulance, and police).

d / Local circulation and access delays exceeding 60 seconds will occur at cross streets to OR 38 (i.e., Myrtle Avenue, Laurel Avenue, W Railroad Avenue, E Railroad Avenue, Fir Avenue, N 6th Street, and N 5th Street) and Winchester Avenue (i.e., N 10th Street, W Railroad Avenue-River Bend Road, Elm Avenue, E Railroad Avenue, and N 7th Street).

e / Traffic volumes will increase on the vertically- and horizontally-restricted Port Dock Road rail undercrossing, as well as E Railroad Avenue, W Railroad Avenue, and Riverfront Way.

2 / Increased train activity—The forecasted increase from two to 14 trains per day is anticipated to create the following potential issues:

- a /** Increased probability of delays in emergency service (fire, ambulance, and police) response time to areas east and west of the rail line. The police station and downtown fire station are located east of the rail line. The hospital and Turner Fire Station (Reedsport's main fire station) are located west of the rail line, uptown.
- b /** Increased train horn use during school or nighttime hours, leading to quality of life concerns from nearby residents and businesses.
- c /** Increased pedestrian-train conflicts due to the lack of sidewalk gates on OR 38 and lack of sidewalks on Winchester Avenue.
- d /** Peak hour queues on OR 38 and Winchester Avenue that create local circulation and access delays at cross streets, including W Railroad Avenue, River Bend Road, Elm Avenue, and E Railroad Avenue.
- e /** Increased use of the Port Dock Road undercrossing and related increases in cut-through traffic on local streets that will create issues at the undercrossing as well as the OR 38/Riverfront Way-2nd Street and OR 38/US 101 intersections.

3 / OR 38/US 101 operations—The signalized intersection is forecasted to operate at capacity (a volume-to-capacity [v/c] ratio of 1.0) and exceed the Oregon Highway Plan mobility standard of 0.85 in Year 2045. These operations will result in decreased mobility for motorists and freight and long delays during conditions exceeding the 30th highest peak hour.

The study team focused on identifying the point at which the transportation system does not function effectively (i.e., a 4,100-foot train at 10 mph) nor meet the goals of the City of Reedsport's comprehensive plan, making mitigation necessary. The specific timing of the identified mitigation measures will be driven primarily by funding availability and the ramp up of rail operations at the proposed intermodal facility.

The factors shown in the figure at the right, "Factors that could increase or reduce needs," may further increase or reduce the needs identified above.

Other considerations and study assumptions:

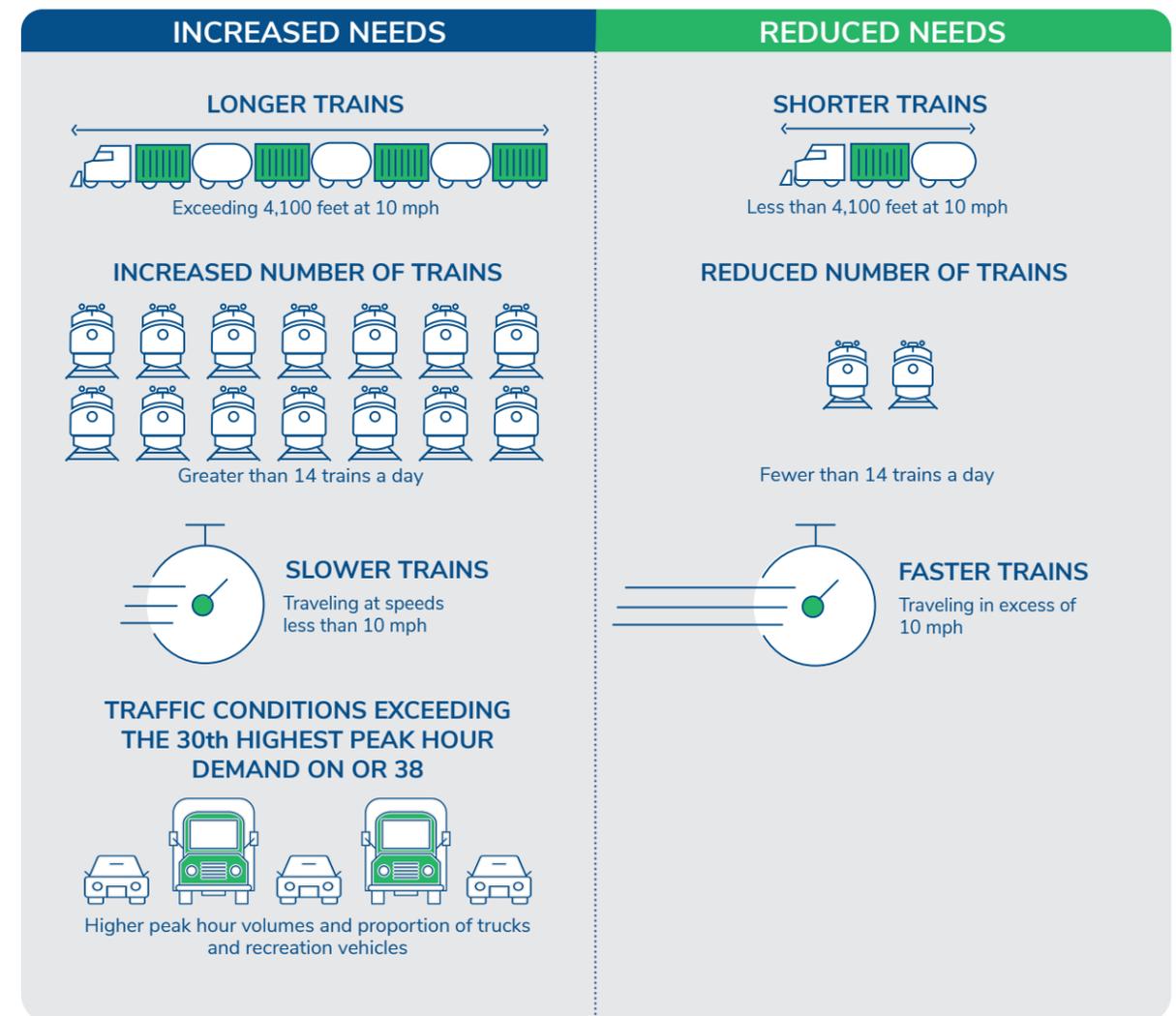
- **Train length**—Ports and railroads are generally incentivized to transport containers via fewer and longer trains. There are operational and physical limitations to the maximum train length permitted along any railroad line. Operational limitations include the grade and horizontal curvature of the railroad alignment, which are directly related to the number and position of the locomotives required to move the train over the line segment. Additional limitations to train length are typically physical constraints such as port/dock rail capacity, upstream/downstream switching yard capacity, and rail siding lengths. **The study assumed trains will be between 4,000 and 5,000 feet in length and potentially longer.**

The study found that a 4,100-foot (or longer) train traveling at 10 mph through downtown Reedsport will create impactful motor vehicle queues (i.e., eastbound queues that spillback into US 101), crossing delays, emergency vehicle response times, access delays, and traffic volumes on the local street system.



Source: A'eron Blackman, CC BY 3.0, [Wikimedia Commons](https://commons.wikimedia.org/wiki/File:Reedsport_Railroad_Tracks.jpg)

Factors that could increase or reduce needs





Source: A'eron Blackman, CC BY 3.0, [Wikimedia Commons](#)

- **Potential for moving containers by truck versus train**—Port facilities are generally set up to transport containers by train, truck, or a mix of modes depending on their location and proximity to population centers, and availability of trucks to support the required transit. The Port of Coos Bay’s remote nature (i.e., an 80-mile drive over the Coastal Mountain Range to access the Interstate Highway System) will make it similar to the Port of Prince Rupert in British Columbia, Canada, which is primarily serviced by trains. Given the location, efficiency of rail versus truck for longer hauls, likely destination of containerized goods, and existing highway infrastructure capacity, nearly all containers will be transported by rail. **The study assumed that significant increased truck traffic through Reedsport via OR 38 and US 101 is not anticipated based on the study team’s understanding of the proposed Pacific Coast Intermodal Port project.**
- **Train speed**—Due to the existing condition of and needed upgrade to the Umpqua Bridge, horizontal

curvature in the rail line both upstream and downstream of Reedsport, and magnitude of funding likely needed to improve existing rail tunnels and bridges, **the study assumed that future train speeds through Reedsport are anticipated to remain in the 10 to 25 mph range.**

- **Forecasted traffic growth on OR 38 and peak season conditions**—The traffic forecasts used in the existing and future conditions analysis represent the 30th highest peak hour conditions that typically occur on an average weekday in August. The future forecasted Year 2045 traffic volumes are based on a 1 percent growth rate (23 percent total growth in traffic). While the vehicular queues and blockage delays at the OR 38 and Winchester Avenue rail crossings are primarily driven by train length and speed, traffic volumes and vehicle types play a lesser role in the overall associated delay and queuing-related impacts to the community.

Goals and objectives

The study was guided by a set of goals and objectives based on the goals and policies in the Reedsport Comprehensive Plan and TSP, which reflect the City’s vision for transportation needs over the next 20 years. Objectives associated with each goal can be found in Technical Memorandum #2 (see below).

- **Goal #1:** Develop a transportation system to enhance Reedsport’s livability and meet federal, state, and local requirements.
- **Goal #2:** Create a balanced transportation system.
- **Goal #3:** Improve the safety of the transportation system.
- **Goal #4:** Develop an efficient transportation system that will handle future traffic growth.
- **Goal #5:** Provide a transportation system that is accessible to all members of the community.
- **Goal #6:** Develop a transportation system to provide for efficient freight movement.
- **Goal #7:** Create a funding system to implement the recommended transportation system improvement projects.

Want more details?

See Technical Memorandum #2: Purpose & Need, Goals, Objectives and Evaluation Criteria and Technical Memorandum #6: Alternatives Analysis



ENGAGING THE PUBLIC

Community voices informed every step of the study process, from initial fact-finding to selection of the set of proposed improvements and adoption of the plan by the City of Reedsport and the Oregon Transportation Commission.

Who is in the Reedsport community?



Population

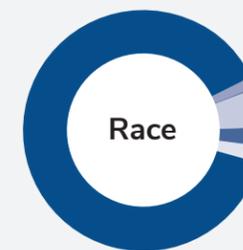
4,254

Median income

\$42,340

Oregon median income

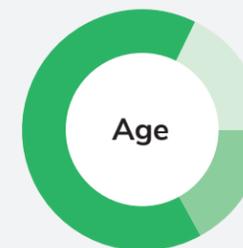
\$69,653



- 94% White
- 0.1% Black
- 1.4% American Indian/ Native American
- 0.3% Asian
- 5.7% Hispanic
- 2.6% Two or more races
- 2.2% Other



- 47.1% Under 18 years
- 16.6% 18 to 64
- 8.8% 65 years and over



- 17.1% Children 14 and under
- 65.2% Adults 15 to 64
- 17.7% 65 years and over



- 95.2% English
- 4.1% Spanish
- 0.7% Other

Demographic data for the City of Reedsport from the U.S. Census Bureau 2021 American Community Survey.

Source: OSU Special Collections & Archives
No restrictions. Wikimedia Commons

Key themes that emerged in discussions with community members

Among community outreach participants, there was a general familiarity and overall support for the Port's new container terminal project, specifically for the region's economic benefits. Several key themes emerged in discussions about how to prepare for this significant change.

LIVABILITY

Factors that affect community livability include noise, access, views, connectivity, and ease of use. Participants supported the proposed freight train traffic for economic development but expressed concern about the potential impacts on nearby residential areas and quality of life. The study considered potential solutions to reduce local congestion during the summertime and noise. Both of these issues will become increasingly important with any rail capacity increases.

RURAL INFRASTRUCTURE AND ROADWAY MAINTENANCE

Road conditions and maintenance are priorities for the Reedsport community. The study found that the current rail infrastructure has noticeable damage that requires upgrades for existing capacity.

Who participated?



ALTERNATIVE ROUTES AND VEHICLE SIZE

The study found that there are limited alternative routes to avoid the two rail crossings at OR 38 and Winchester Avenue in Reedsport. The primary alternative, Port Dock Road, is narrow and impractical for large vehicles such as emergency services, motorhomes, and recreational vehicles during seasonal traffic.

EMERGENCY SERVICES

Concern for safety and lack of alternative routes are recurring issues for emergency service vehicles such as ambulances, fire trucks, and police vehicles. The fire department detailed its strategic planning around the railroad and vehicle challenges to navigate emergency scenes around the city efficiently.

SEASONAL TRAFFIC

Reedsport experiences the highest traffic volume and congestion issues during the summer tourist season. Traffic concerns related to tourist travel in the summer include increased wait times for trains, the size of large recreational vehicles, and local congestion after the recent lane reconfiguration work on US 101.

THE PROJECT ADVISORY COMMITTEE (PAC)

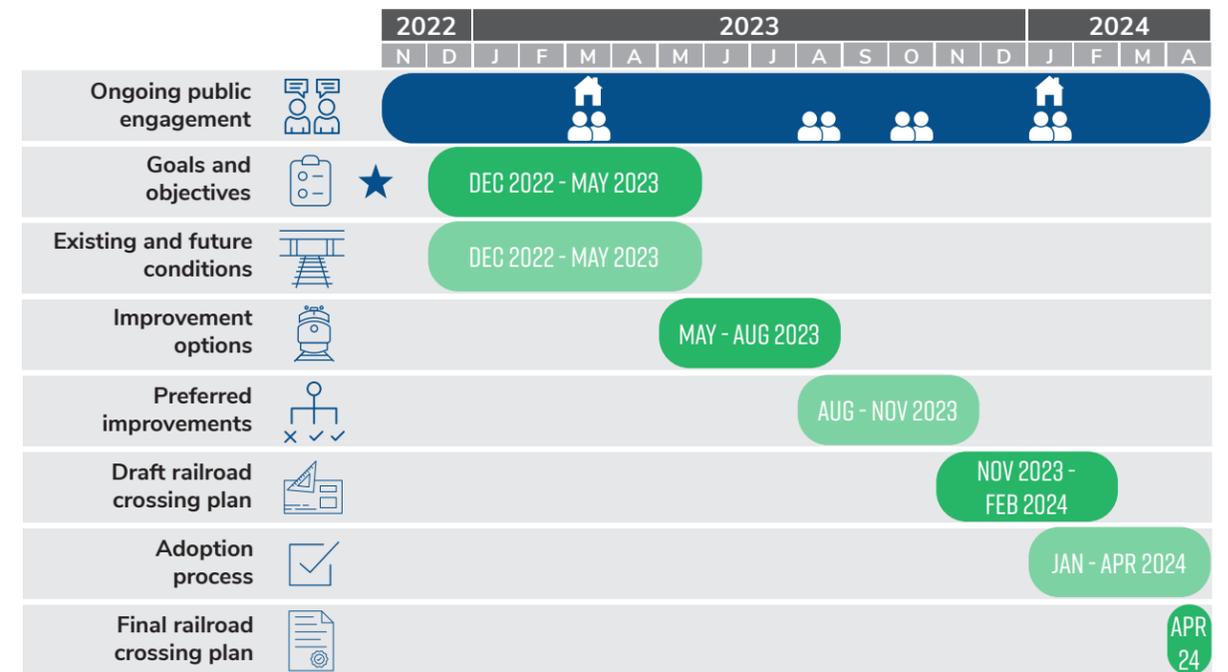
The Project Advisory Committee (PAC) provided technical and policy guidance and a local community and agency perspective on the preferred outcomes of the study. Members included representatives from the City of Reedsport; ODOT; the Oregon Department of Land Conservation and Development; the Confederated Tribes of Siletz; the Confederated Tribes of Coos; Lower Umpqua; and Siuslaw Indians; community groups; local businesses; the local school district; and the freight and railroad industry. A full list of the Project Advisory Committee members can be found at the beginning of this study report in the Acknowledgments section. The committee met four times during the study at key milestones.

KEY COMMUNITY REPRESENTATIVES

In March 2023, the project team interviewed key community representatives and officials to gauge awareness of the Port of Coos Bay's planned expansion and its expected impacts on freight train activity. The interviews also identified current community priorities and challenges, associated with the transportation system in Reedsport, including its railroad crossings. The interviews discussed local needs, challenges and opportunities associated with railroad crossings in Reedsport.

The project team used input from the interviews and early research to inform further engagement later in the study.

Study schedule



★ Project launch [Icon] Project Advisory Committee Meeting [Icon] Open house

WE HEARD YOU!

We received feedback from community members through a community survey, community representative interviews, and virtual open house. Here's what people had to say:



INCREASED RAIL ACTIVITY SHOULD BRING GROWTH TO THE CITY, WHICH IS EXCITING.

Emergency vehicles require planning around railroad crossings. Being stuck at the crossing is rare, but more traffic could present more challenges.

IMPACTS PRIMARILY OCCUR DURING THE TOURIST SEASON WHEN **BIG RVS AND MOTORHOMES** TRAVEL THROUGH THE COMMUNITY.

A no-horn ordinance would improve livability of the city and nearby residential area.

An underpass of traffic is not an option as there is not enough room to allow for only a 1.5% to 2.0% grade to accommodate the distance from the top of the grade at OR 38 to the bridge.

THE POTENTIAL INCREASE TO 14 TRAINS IS A LOT FOR ANYONE, ESPECIALLY IN A SMALL TOWN LIKE REEDSPORT.

There is strong support for an overpass for current capacity and the proposed train increase.

MANY PEOPLE HERE WALK, AND THEY WILL COMPLAIN WHEN THEY DO NOT HAVE THEIR PATHS. NOISE WILL ALSO BE A SIGNIFICANT FACTOR.

SCHOOL BUSES HAVE TO DEAL WITH THE RAILROAD CROSSINGS TO PICK UP STUDENTS. IN TOWN, ONE BRIDGE SEPARATES THE UPPER AND LOWER PARTS OF THE TOWN. **IF PEOPLE DO NOT USE THE BRIDGE TO CROSS TOWN, DRIVING TO ROSEBURG THREE HOURS AWAY IS THE ALTERNATIVE.**

Summertime brings high traffic, which is a significant issue without an alternative route around the railroad crossing.

If the swing bridge could be improved to handle a speed of 15 mph that would mean a traffic delay of only 4.5 minutes. If the bridge could be improved to allow 20 to 25 mph it would only require a delay of 3+ minutes, well within the accepted wait time.

Want more details?
[See the Public Involvement Plan](#)





Source: Oregon International Port of Coos Bay

EXISTING AND FUTURE CONDITIONS

It was important to understand the context and conditions of the multimodal transportation system surrounding the rail crossings in the study area and the potential impacts of failing to take timely action to improve them.

Land use and demographics

The study found that there are a mix of different land uses surrounding the study area, including industrial, commercial, mixed-use, and single- and multi-family housing. Activity centers near the study intersections include the Reedsport downtown core, City Hall, the police station/downtown fire station, library, Triangle Park, and the post office.

There is a higher percentage of people living below the federal poverty level, older adults, people with disabilities, and zero-vehicle households within the study area than Reedsport as a whole, Douglas County, or Oregon. Notably, there are more people living at 200 percent below poverty level than within the comparison groups.

Demographic	Study area block group 1	Reedsport	Douglas County	Oregon
 Zero-car households	8.6%	14%	5%	2.7%
 People living at 200% below poverty	51.4%	44.4%	35.5%	28.7%
 People living with a disability	*	23.1%	35.5%	15.1%
 People with low English proficiency	*	1.3%	1.3%	2.3%

*Data unavailable at the block group level

Demographic data for the City of Reedsport from the U.S. Census Bureau 2021 American Community Survey.

Environment

The study area has natural and cultural resources that must be considered as the project moves toward design and construction. It falls within a big game overlay as identified by the Oregon Department of Fish and Wildlife (ODFW) and contains several acres of wetlands that could be impacted by improvements to the railroad crossings at OR 38 and Winchester Avenue. The study found that there are multiple known hazardous material spills and two cultural resources that may fall within the area: the Umpqua River Bridge and the Umpqua-Eden archaeological site.

The study found that all study intersections are located within the Reedsport levee system, which protects the area from riverine flooding from the Umpqua River and Scholfield Creek. The area is expected to be protected from flooding up to the 200-year event, but a larger event could overtop the levees. Levees and floodwalls are provided along and within the study area.

Traffic volumes and operations

Today, the study intersections meet the community's needs, even during evening rush hour—the peak traffic hour of the day. The study forecasted that by the year 2045, the OR 38/US 101 intersection will be at capacity during the evening rush hour (30th highest hour) and above capacity during several summertime weekends and local events with or without traffic generated by the proposed Pacific Coast Intermodal Port project.

Safety and emergency services

The study found that a total of 15 crashes, including two at OR 38/Myrtle Avenue, were reported between 2016 and 2020 at the study intersections. Seven resulted in injury and eight caused only property damage. None of the reported crashes involved bicyclists or pedestrians. There are no sites listed in the top 15 percent of ODOT's Safety Priority Index System (SPIS) within the study area.

Emergency service providers within Reedsport include the Reedsport Volunteer Fire Department, Reedsport Police Department, and Lower Umpqua Hospital.

The Reedsport Volunteer Fire Department operates out of two stations, including Station 1 (Downtown) on the north side of Winchester Avenue at 4th Street and Station 2 (Turner Fire Station) on the north side of Frontage Avenue between Ranch Road and 22nd Street. The two stations serve the City of Reedsport specializing

in firefighting, rescue, hazardous materials incidents, special assignments, mutual aid calls, and fire prevention. Train events could reduce response times to areas west of the rail line as well as increase reliance on Station 2 to serve areas that would otherwise be served by Station 1.

The Reedsport Police Department operates out of the same building as the Reedsport Volunteer Fire Department Station 1. The police department facility houses a full-time communications center and municipal jail, as well as the department's Dispatch/Records Section, which provides dispatch services for the Police Department, Reedsport Volunteer Fire Department, and Lower Umpqua Hospital Ambulance services. Train events could also reduce police response times to areas west of the rail line and along the US 101 corridor.

The Lower Umpqua Hospital is located on the west side of Ranch Road, north of Ridgeway Drive. Ranch Road connects to US 101 via Frontage Road to 22nd Street on the north side of US 101 and Longwood Drive on the south side of US 101. The study found that a train event could reduce response time to and from areas east of the rail line.

Non-motorized user experience

PUBLIC TRANSPORTATION

Coos County Area Transit (CCAT) runs intercity service between Coos Bay and Florence on Monday through Saturday with one morning and one evening run. Dial-a-Ride service is available to Reedsport seniors and people with disabilities with advance reservations for trips starting and ending within Douglas County through the Umpqua Public Transportation District's "Douglas Rides" program.

PEDESTRIAN CONNECTIVITY

The study found that sidewalks are provided in the study area on one or both sides of collector and arterial roadways, with the exception Winchester Avenue, which has no sidewalk from the Ace Hardware southern access to 12th Street. The majority of local streets lack sidewalks or have sidewalks in disrepair.

BICYCLE CONNECTIVITY

The study found that bicycle connectivity is provided in the study area through bike lanes on US 101, OR 38 from US 101 to 3rd Street, and shared roadways on Winchester Avenue and local streets.



Aerial photo of Reedsport, 1942. Source: Oregon Historical Society Research Library, 006319.

Rail activity

The study found that rail activity through Reedsport has been relatively consistent since 2011, when the Coos Bay Rail Line began operations. The Umpqua swing span bridge is kept in the open position for river traffic, closing only for rail passages as required. Train speeds are restricted to 10 mph across the bridge, which limits the speed at which trains can pass through Reedsport.

The study assumed that two trains per day pass through Reedsport at a maximum operating length of about 1,500 feet and a maximum speed of 10 mph. The rail line generally carries non-container-based freight (e.g., milled wood and chips).

The planned international container terminal at the Port of Coos Bay, designed to accommodate approximately 600,000 containers per year, is expected to increase the number of trains traveling through Reedsport to between 10 and 12 per day at 4,000 to 5,000+ feet per train. Train length will be limited by the grades and curvature along the rail line after improvements, all of which have yet to be finalized.

The study found that train events are likely to cause backups on OR 38 and Winchester Avenue. During a 4,100-foot or longer train traveling at 10 mph with current Umpqua swing span speed restrictions, traffic backups on eastbound OR 38 would be expected to extend to US 101 during the weekday p.m. peak hour.

Want more details?

See Technical Memorandum #4: Existing Transportation Conditions and Technical Memorandum #5: Future Land Use and Transportation Conditions



Source: By Aeron Blackman, CC BY 3.0, Wikimedia Commons.

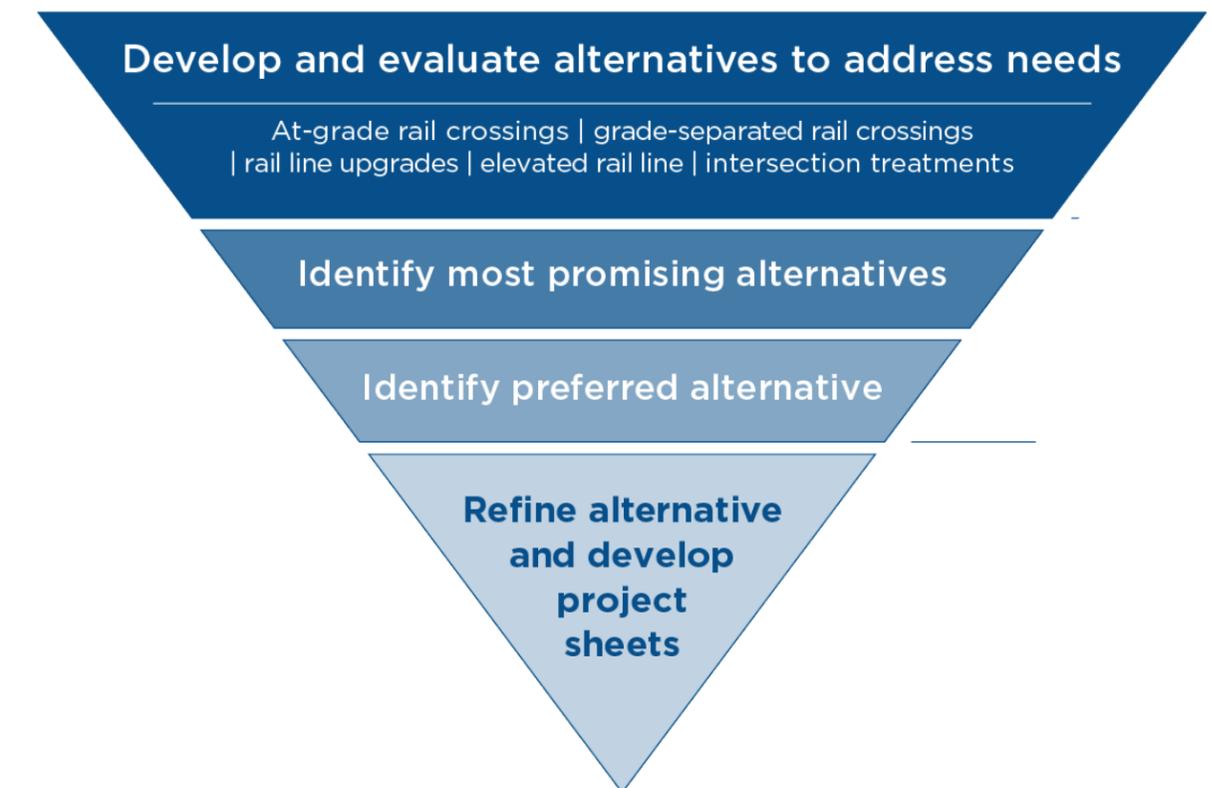
LOOKING AT THE RANGE OF ALTERNATIVES

What options did we consider?

The study followed a four-tiered process to identify and refine a preferred solution to address the projected increase in rail activity. The solutions the project team evaluated addressed transportation system needs, closing gaps, and resolving deficiencies.

The team first identified 15 projects to address study area needs. Feedback from the community, Project Advisory Committee, and Project Management Team revealed additional potential solutions. The project team then narrowed all the alternative solutions down and developed project packages. The two most promising improvement packages were presented for further consideration and refinement.

The range of alternatives



The two most promising improvement packages of alternatives

The study team ranked two improvement packages of alternatives as the most promising. Both packages maintain or enhance the community's transportation system while promoting active transportation; reduce barriers to access; improve vehicular, freight, pedestrian, bicycle, transit, and traffic mobility and safety; and minimize environmental impacts. To learn more about the process of identifying, vetting, and narrowing down alternatives, see Technical Memorandum #6: Alternatives Evaluation and Technical Memorandum #7: Preferred Improvements.

IMPROVEMENT PACKAGE 1



Alternative 1C

Four-quadrant gated rail crossing on Winchester Avenue

This component of Improvement Package 1 would provide a four-quadrant gated rail crossing on Winchester Avenue to improve the safety of the existing at-grade rail crossing. This option would also support implementing a quiet zone through downtown Reedsport, as four-quadrant gates do not require horns.

The improved at-grade crossing would include two gate arms and flashers on both sides of the rail line and in both directions. The crossing would also include gate arms and flashers across the pedestrian facilities. This type of crossing prevents motorists from driving around the lowered gates. With this type of crossing, the entry gates close before the exit gates to allow motorists to clear the rail line. The gates also lower long before the train arrives.

Exhibit 1. Four-quadrant gated rail crossing



Alternative 2A1

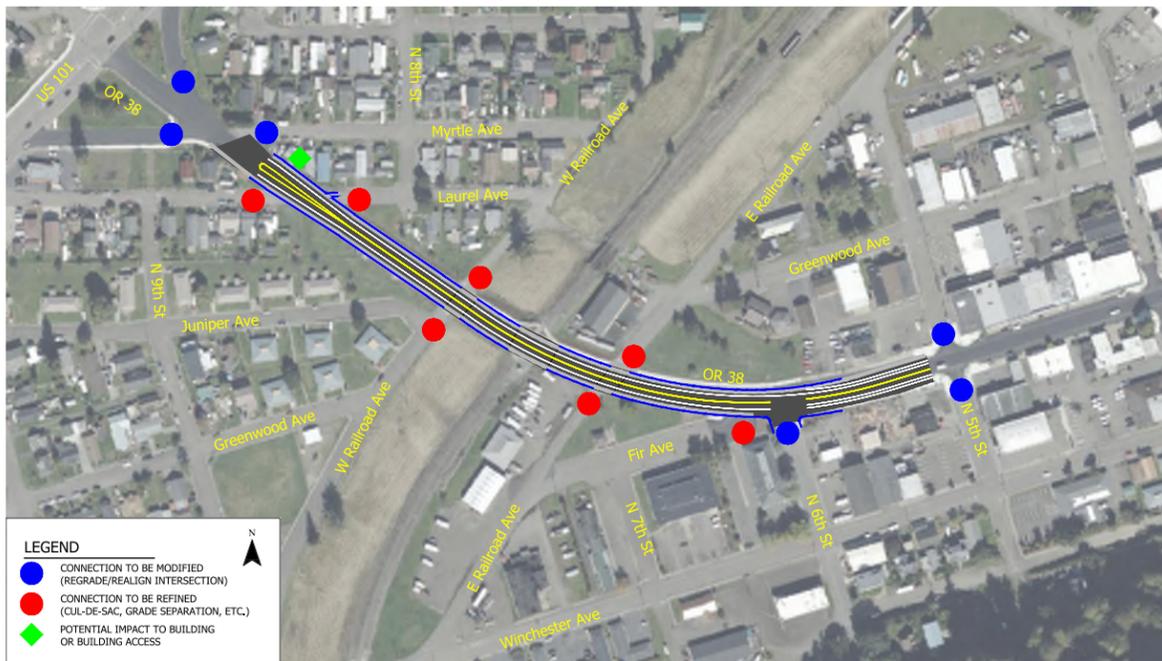
OR 38 rail overcrossing with retaining walls

This component of Improvement Package 1 calls for elevating OR 38 over the existing rail line. Retaining walls reduce the footprint of the overpass (the alternative being a sloped embankment on either side of the elevated roadway) and minimize the impacts to adjacent properties and transportation facilities. The exhibits below illustrate the OR 38 rail overcrossing with retaining walls throughout the length of the overpass. As shown, several existing street connections would need to be modified or refined and potential structures and/or property access could be impacted.

Exhibit 2. Aerial perspective



Exhibit 3. Potential impacted properties and street connections



IMPROVEMENT PACKAGE 2



Alternative 4A Elevated rail line

The primary component of Improvement Package 2 calls for raising the entire rail line through the community and allowing OR 38 and Winchester Avenue to pass under railway bridges. Improvement Package 2 is the least preferred of the two packages because it is substantially more expensive.

Construction phasing for the embankment required to elevate the tracks would be difficult while maintaining railroad operations along the same right-of-way. The use of retaining walls would limit the base width of the embankment; however, this would add to the cost. Depending upon the final elevation of the railroad track, the use of retaining walls may be required to keep the embankment within the existing railroad right-of-way. For the planning-level costs, retaining walls were assumed throughout the elevated alignment.

The rendering above illustrates the elevated rail line alternative with retaining walls throughout the length of grade change (Umpqua River to Scholfield Creek). Regardless of the construction method, the embankment created for the railroad would practically and visually bisect downtown Reedsport and potentially detract from overall community livability.

Key performance differentiators between the top two most promising improvement packages

Key differentiators	Improvement Package 1	Improvement Package 2
OR 38 vertical clearance	No vertical constraints.	Introduces the only vertical constraint between I-5 and US 101 (via OR 38 and OR 138).
Community barrier effect	The elevated OR 38 overpass creates an approximately 800-foot partial north-south visual barrier for homes along OR 38 to the area west of the rail line.	The elevated rail line introduces an east-west visual barrier throughout the downtown area, extending from the Scholfield Creek to Umpqua River.
Winchester Rail crossing queuing and potential cut-through traffic	The upgraded at-grade crossing would still create vehicular queues and potentially cut through traffic during train events.	The grade-separated rail overcrossing would eliminate vehicular queues and potentially cut through traffic.
Design and construction cost opinions	\$34.7 M (assumes retaining walls, embankment support, and three separate bridge spans) \$39.9 M (assumes a viaduct between East and West Railroad Avenue)	\$27.0 M (assumes retaining walls, embankment support, and bridges) \$61.0 M (assumes a viaduct between Winchester Avenue and OR 38)



Environmental assessment

Improvement Package	Alternative	Section 4(f) ¹	Section 6(f) ²	Historic Resources	Title VI ³
Improvement Package 1	1C	No impacts	No impacts	Likely	Likely none
	1C1	No impacts	No impacts	None	Likely none
	2A1	Hahn Park	No impacts	Likely	Likely none
Improvement Package 2	4A	No impacts	No impacts	Likely	Likely none



Want more details?
See Technical Memorandum #6: Alternative Analysis and Technical Memorandum #7: Preferred Improvements

¹ Briefly, the overall purpose of Section 4(f) is preservation, where “special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” (49 USC 303[a] and 23 USC 138[a]).
² Section 6(f) of the Land and Water Conservation Act requires that the conversion of lands or facilities acquired with Land and Water Conservation Act funds under the State Assistance program be coordinated with the National Park Service.
³ Title VI of the Civil Rights Act of 1964 provides that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.



PREFERRED ALTERNATIVE

Refined Improvement Package 1 was selected as the preferred alternative based on further feedback from the Project Advisory Committee, Project Management Team,, the City of Reedsport Planning Commission and City Council, and the community as well as further assessment, refinements, and environmental review of the two most promising improvement packages.

The selected package includes the following:

- Four-Quadrant Gated Rail Crossing on Winchester Avenue (1C)
- US 101 Northbound Train Activity Warning for Train Crossings at Winchester Avenue (1C1)
- OR 38 Rail Overcrossing with Retaining Walls (2A1)

Specific project sheets are provided in Attachments A and B.

Refined Improvement Package 1 overview





- Proposed retaining wall
- Proposed sidewalk
- - - 20% clearance to retaining wall
- Proposed roadway improvement

CONCEPTUAL DESIGN
 Project extents and potential impacts subject to change during final environment review and design

Winchester rail crossing

Four-quadrant gated rail crossing on Winchester Avenue (Project RRCS-1)



US 101 northbound train activity warning sign

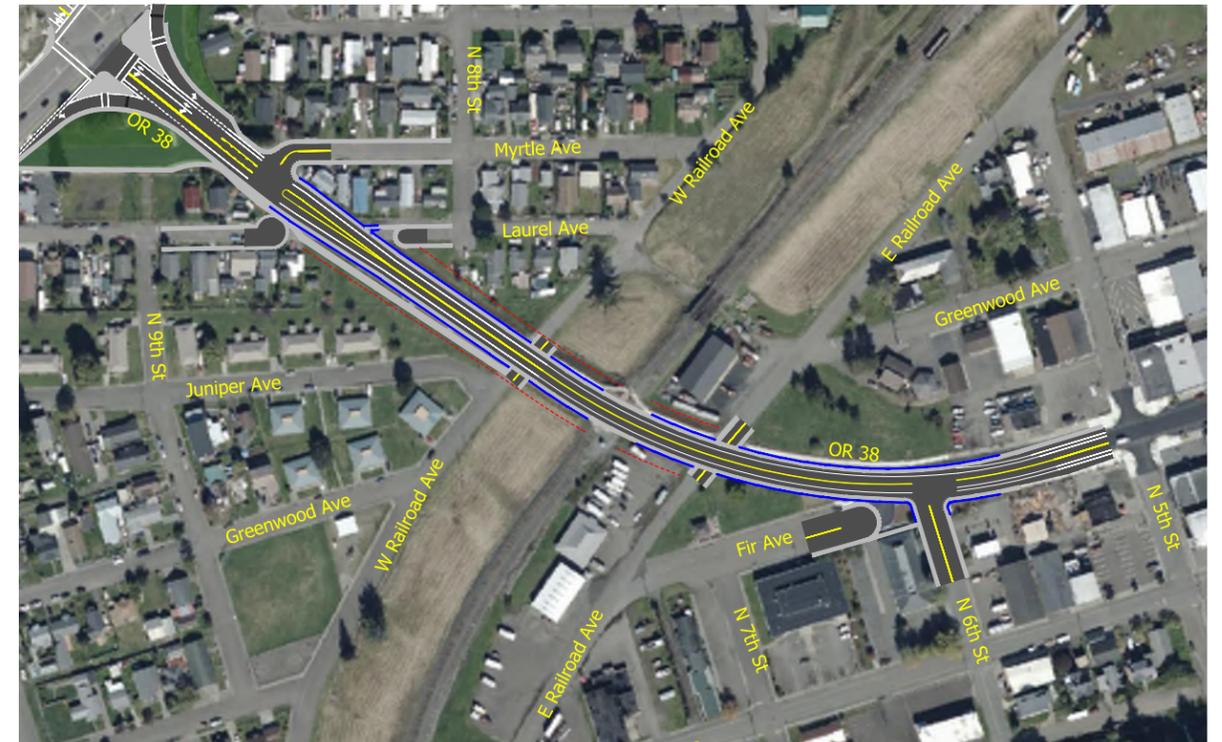


See Attachment A for RRCS-1 Project Sheet.



OR 38 Rail overcrossing

OR 38 related improvements and proposed roadway, bicycle, and pedestrian tie-ins (Project RRCS-2)



See Attachment A for RRCS-2 Project Sheet.

Other pedestrian, bicycle, and transit enhancements

Connections to the existing and/or planned pedestrian and bicycle network that will accompany the preferred improvement package are outlined below.

Roadway	Description	Part of Package 1?	Addition to Transportation System Plan?
Myrtle Avenue	Construct northerly sidewalk to fill existing gap east of OR 38. Construct southerly sidewalk from OR 38 to N 8th Street.	Yes	Yes
Laurel Avenue (south)	Reconstruct northerly and southerly sidewalks from 9th Street to OR 38.	Yes	Yes
Laurel Avenue (north)	Construct northerly and southerly sidewalks from OR 38 to N 8th Street.	Yes	Yes
Juniper Avenue	Construct northerly sidewalks to connect the existing sidewalk to W Railroad Avenue.	No	Yes
W Railroad Avenue	Construct westerly and easterly sidewalks within the OR 38 right-of-way	Yes	Yes
E Railroad Avenue	Add a multi-use path along the west side of roadway between Winchester Avenue and OR 38.	No	Yes
E Railroad Avenue	Construct a westerly multi-use path and easterly sidewalk within the OR 38 right-of-way	Yes	Yes
E Railroad Avenue	Add a multi-use path along the west side of roadway between OR 38 and Riverfront Way.	No	Yes
Fir Avenue	Reconstruct sidewalk-only connections to OR 38 from the existing sidewalk.	Yes	NA
North 6th Street	Construct and extend westerly and easterly sidewalks to the new OR 38 intersection.	Yes	NA
OR 38 (5th to US 101)	Construct northerly and southerly sidewalks and bike lanes.	Yes	NA
Winchester Avenue	Construct northerly sidewalks between W Railroad Avenue and E Railroad Avenue.	Yes	Yes
Parallel Northerly OR 38 Multi-use Path	A multi-use path between E and W Railroad Avenue utilizing the undercrossing on the north side of OR 38 (see RRSC-4 project sheet).	No	Yes

Future studies

US101/OR 38 REFINEMENT PLAN (UMPQUA RIVER TO SCHOLDFIELD CREEK)

The US 101 refinement will be adopted by the City of Reedsport as a planned project in the City's TSP. The refinement plan (either standalone or as part of the Environmental Review and Final Design process) is for US 101 from the Umpqua River to Scholfield Creek and along OR 38 from Laurel Avenue to US 101. The study should include, at a minimum, an evaluation of lane configurations and access management enhancements along US 101 and OR 38 and potential modifications to the OR 38/US 101-Port Dock Road intersection, including additional eastbound and westbound left-turn lanes at the intersection to provide additional capacity, potential removal of the existing slip lanes to/from OR 38, and future signal timing and phasing flexibility (e.g., protect-left-turn phasing, split phase). See Attachment A for the RRCS-3 project sheet.

CITY OF REEDSPORT TRANSPORTATION SYSTEM PLAN UPDATE

The City of Reedsport TSP will need to be updated to include all the elements that make up the Reedsport Rail Crossing Study and the other identified future roadway, pedestrian, and bicycle improvements (see Attachment B for TSP amendments).

Cost opinion

The study team developed scoping level cost opinions for each project within the package, including potential right-of-way, environmental, and construction staging needs and a 30 percent contingency. Based on these estimates and the potential to accommodate different bridge, retaining wall, and/or viaduct solutions between West Railroad Avenue and East Railroad Avenue, the conceptual cost opinion is \$34.7M million to \$39.9M million in year 2023 dollars. (see Attachment C for detailed cost calculations). The cost opinion with projected inflation is estimated to range from \$42.8M to \$49.2M in year 2030. The lower cost range assumes three separate bridge structures at West Railroad Avenue, Rail right-of-way, and East Railroad Avenue, while the higher range assumes a viaduct type structure from West Railroad Avenue to East Railroad Avenue.



Source: ODOT

NEXT STEPS

Going from vision to reality

The study's proposed projects identified here are in the early stages of development for preliminary design, environmental review, design, and construction to address the anticipated impacts of the future Pacific Coast Intermodal Port facility proposed by the Port of Coos Bay. The following is the proposed implementation plan after adoption of this study and refinement plan into the City of Reedsport Transportation System Plan and the Oregon Highway Plan.

further environmental reviews, and work collaboratively with ODOT and the City of Reedsport to design and ultimately construct the identified rail, highway, and local system multimodal improvements.

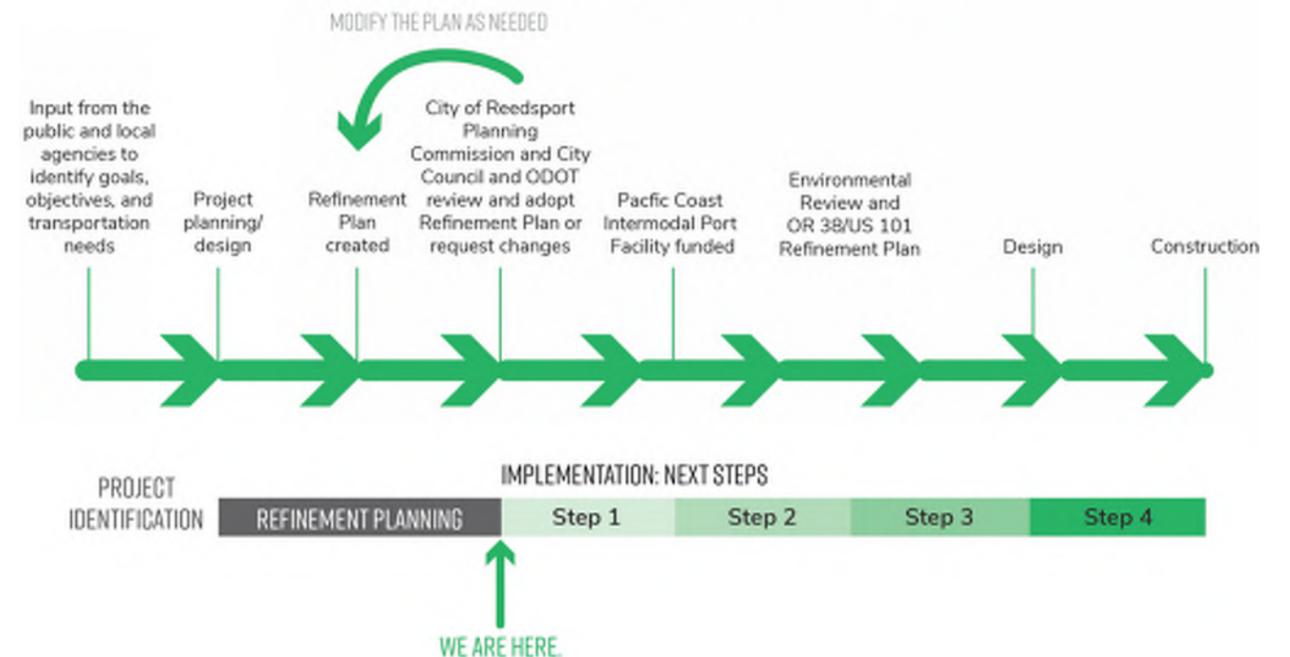
Throughout all steps of the implementation process, it is essential to continue to seek input to refine and design the preferred refined improvement package of projects in a manner that respects the cultural and historic significance of the area.

Following adoption, the Port of Coos Bay will seek to secure funding, conduct

Implementation steps

PROJECT DEVELOPMENT PROCESS

What happens before a project gets built?



STEP 1: TRANSPORTATION SYSTEM PLAN ADOPTION

The City of Reedsport Planning Commission and City Council will hold public hearings to adopt the preferred refined improvement package projects and the Reedsport Rail Crossing Study by reference into the City of Reedsport Transportation System Plan. Through this action, the City of Reedsport will:

- Confirm the need for the preferred refined improvement package of projects to mitigate potential impacts associated with the future proposed Pacific Coast Intermodal Port project.
- Preserve the right-of-way necessary to construct the proposed improvements in the future.
- Demonstrate public support for the proposed refined improvement package of projects necessary for the Port of Coos Bay to seek and secure funding to conduct the environmental review, design, and construct the rail overpass at OR 38 and quiet zone upgrades and advance warning features at the Winchester Avenue rail crossing.

Regional/state agency acknowledgment, adoption, and Transportation System Plan amendments

Following adoption of the Reedsport Rail Crossing Study and associated projects into the City of Reedsport Transportation System Plan, ODOT will also consider adopting the study and refinement plan into the Oregon Highway Plan.

STEP 2: PACIFIC COAST INTERMODAL PORT FACILITY FUNDING

The Port of Coos Bay will seek funding to construct the proposed Pacific Coast Intermodal Port facility and the associated mitigation, including rail, highway, and local transportation improvements identified in the Reedsport Rail Crossing Study (\$42.8M to \$49.2M in 2030 dollars).¹

STEP 3: ENVIRONMENTAL REVIEW

ODOT along with the Federal Highway Administration will complete the following environmental review steps once funding is secured by the Port of Coos Bay for the future proposed Pacific Coast Intermodal Port facility:

- Initiate the environmental review process.
- Confirm that a Documented Categorical Exclusion classification is the appropriate National Environmental Policy Act review mechanism.
- Prepare the OR 38/US 101 Refinement Plan (Umpqua River to Scholfield Creek) if it has not been completed.
- Review identified benefits, burdens, and unknowns associated with the preferred refined improvement package to determine what has potentially changed since the adoption of the refinement plan.
- Conduct the environmental review process.
- Obtain all federal and state permits and land use approvals from the City of Reedsport.



Reedsport. Source: Oregon Historical Society Research Library, 17736.

STEP 4: DESIGN AND CONSTRUCTION

After Steps 1–3, ODOT will develop the proposed projects as part of the Statewide Transportation Improvement Program (STIP) or prepare plans, specifications, and cost estimates to allow a construction contract to be advertised for competitive bids. Once the contracting mechanism is determined (e.g., traditional design, bid, and build or an alternative delivery method), the project will be advertised for construction bidding and be constructed.

Funding opportunities

Since the study's proposed projects are identified primarily to address the needs associated with the increased train activity due to the proposed Pacific Coast Intermodal Port project, it is assumed that funding for the environmental review, design, permitting, and construction will be secured by the Port of Coos Bay.

Want more details?

See Technical Memorandum #8: Amendments and Implementing Measures

¹ / The lower number includes three separate bridge spans. The higher number includes a viaduct from East to West Railroad Avenue.



Source: Kittelson & Associates, Inc.

SUPPORTING DOCUMENTS

Looking for a deeper dive? These memoranda have more information on all the subjects discussed in this report.

Document	Purpose
Public Involvement Plan	This plan documents the public involvement purpose and goals, key audiences, key messages, Project Advisory Committee, and the project team member roles and responsibilities.
Technical Memorandum #1: City of Reedsport Plan, Policy, and Code Review & Port of Coos Bay Expansion Review	This memorandum presents a review of existing plans and policies that affect transportation planning in the City of Reedsport and highlights the key issues that will factor into the Reedsport Rail Crossing Study.
Technical Memorandum #2: Purpose & Need, Goals, Objectives, and Evaluation Criteria	This memorandum provides a project background and presents the purpose and need for the Reedsport Rail Crossing Study along with the goals, objectives, and evaluation criteria.
Technical Memorandum #3: Analysis Methodology and Assumptions	This memorandum documents the methodologies and assumptions used to identify potential gaps and deficiencies in the existing transportation system and the future needs to accommodate the anticipated increase in rail activity along the Coos Bay Rail Line (CBRL).
Technical Memorandum #4: Existing Transportation Conditions	This memorandum summarizes the existing transportation system conditions, including traffic counts, vehicles and non-motorized transportation operations and safety, and environmental/topographical conditions related to the drainage system.
Technical Memorandum #5: Future Land Use and Transportation Conditions	This memorandum summarizes future (no-build) transportation system conditions within the study area, including future gaps, deficiencies, and needs to accommodate future growth.
Technical Memorandum #6: Alternatives Analysis	This memorandum provides a summary of the transportation needs (Needs Statement) introduced to the Reedsport transportation system with the development of the Port of Coos Bay Pacific Coast Intermodal Port, potential alternative solutions, and analysis to identify the top two most promising improvement packages for further consideration and refinement.
Technical Memorandum #7: Preferred Improvements	This memorandum addresses outstanding questions, provides a high-level environmental review of the two most promising improvement packages, and refines and recommends a preferred set of projects. The memo also provides the project team's opinion regarding the anticipated National Environmental Policy Act classification and a draft environmental prospectus for the preferred improvement package.
Technical Memorandum #8: Amendments and Implementing Measures	This memorandum summarizes the proposed project and study amendments to the City's Transportation System Plan to address the anticipated needs to accommodate the anticipated increase in rail activity along the Coos Bay Rail Line associated with the proposed future Pacific Coast Intermodal Port.

Study Attachments A (Project Sheets) and B (Cost Estimate)

