

# Final Report

## Dean to Dunes Trail Plan City of Reedsport/ODOT



FINAL  
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# Final Plan

## Project Information

Project: **Dean to Dunes Trail Plan**

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## SIGNATURE

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



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## 1. INTRODUCTION

The City of Reedsport and the surrounding unincorporated areas of Douglas County currently lack adequate bicycle and pedestrian facilities. US 101 and OR 38, the primary means by which bicyclists and pedestrians access the coast from the Reedsport area, are often inadequate to meet this need and are uncomfortable to use. Recent local planning efforts have identified a need to create a balanced transportation system by encouraging a more bicycle- and pedestrian-friendly environment along US 101 and OR 38, and to provide non-motorized connections between activity centers in and around Reedsport.

The City of Reedsport and the County have been actively engaged in a variety of ways to reinvigorate the local economy by encouraging and supporting coastal tourism. Despite its location near the Pacific Ocean and proximity to a number of nationally-significant recreational opportunities, Reedsport does not have a coastal view and relies on US 101 and OR 38 for tourists to see the ocean and other local attractors. The area has seen a significant growth in outdoor enthusiasts in recent years, and recreational activity is an important part of the local economy. The City and County would like to capitalize on this trend by providing a safe and convenient multiuse trail to improve access to local and regional amenities for commuters and recreational users alike. The *Dean to Dunes Trail Plan* (DDTP) will provide the framework for building on this opportunity.

### 1.1 PURPOSE OF THE PLAN

The *Dean to Dunes Trail Plan* is intended to provide guidance for developing a recreational trail that will connect the City of Reedsport (City) to surrounding natural resources and activity centers, including linking several federal land holdings. These land holdings include:

- Suislaw National Forest, the Oregon Dunes National Recreation Area, and beach parking on US Army Corps of Engineers (USACE) property south of Douglas County's Halfmoon Bay Campground located off US 101 near Winchester Bay on the Pacific Coast, and
- The Dean Creek Elk Viewing Area which is owned and operated by the Bureau of Land Management and is located to the east of Reedsport on Oregon Highway 38.



*View of Dunes from the Umpqua Lighthouse*

The DDTP builds on other trail-related planning efforts within the City, including the 2013 *Waterfront and Downtown Plan*, the 2015 *Levee Loop Trail Plan (LLTP)*, and the 2015 *Pedestrian Safety Study*.

The DDTP identifies a continuous trail extending from the Dean Creek Elk Viewing Area, westward to the City of Reedsport, then southwest to the Oregon Dunes (via the Umpqua South Jetty Beach Access at

Salmon Harbor Drive in Winchester Bay, Oregon), for a total distance of approximately ten miles. The DDTP will be adopted as a supporting document to the Reedsport and Douglas County Transportation System Plans (TSP), with references added into each TSP as appropriate.

## 1.2 PROJECT OVERVIEW

Once constructed, the Dean to Dunes Trail (DDT) will provide a safe, convenient, and continuous non-automobile transportation alternative for trips within and external to the community. The project is anticipated to support and encourage recreation and tourist activities, both locally and over longer distances including the US 101 Oregon Coast Bicycle Route and the Oregon Coast Trail which traverse the entire length of the state and pass through the study area. The project supports goals of the two designated scenic byways that meet in Reedsport—US 101, which is a nationally-designated All America Scenic Byway, and OR 38, the state-designated Umpqua River Scenic Byway. The project will also expand commuting options in the region.

## 1.3 ORGANIZATION AND CONTENT OF THIS REPORT

The DDTP is intended to present a short overview of the trail planning process, along with key findings, conclusions and recommendations. This report is divided into four chapters, with **Chapter 1** being this Introduction.

**Chapter 2** presents a summary of trail types proposed to be implemented within the DDT corridor, along with a menu of potential trail amenities. Amenities include but are not limited to illumination and fencing; wayfinding, informational and/or hazard signing; benches or other furniture; viewpoints or rest areas; and community.

**Chapter 3** describes the preferred DDT trail alignment, trail types and key features and amenities, along with a broader discussion of transportation system impacts related to the improvements and potential environmental issues.

**Chapter 4** discusses trail development cost estimates with an emphasis on the West Segment between the Oregon Dunes and Reedsport for which a potential funding opportunity has been identified. This chapter also includes a broader discussion of trail funding opportunities. Guidance for adopting and incorporating the DDTP into local transportation and comprehensive plans is also provided in this chapter.

## 2. DEVELOPMENT AND EVALUATION OF TRAIL OPTIONS

The Dean to Dunes Trail Plan builds on what is unique about the Reedsport area including the Oregon Dunes and beach access; the Umpqua River; the Elk Viewing Area at Dean Creek; visitor amenities such as the Umpqua Discovery Center, the Oregon Dunes Visitor Center, the Umpqua Lighthouse State Park, and bicycle support services for travelers along the Oregon Coast Bike Route; and a variety of outdoor activities like bird-watching, ATVs, paddling, camping, and picnicking.

The trail planning process began by articulating a specific vision of what the trail could or should be. Broad trail planning goals were established, and a wide range of potential trail alignment options were identified. Criteria that further refined the broad goal statements were developed and used to assess each of the trail options. DDTP goals, criteria and the evaluation of trail alignment options is described in this chapter.



*Umpqua Lighthouse*

### 2.1 GOALS AND OBJECTIVES

The primary goals of the Dean to Dunes Trail Plan are to:

- Establish a safer and more comfortable environment for bicyclists and pedestrians in the Reedsport Area
- Support economic activity and tourism
- Serve both visitors and locals

The trail planning process focused on identifying alignment options that best met these goals. To accomplish this effort, specific objectives that refined and more fully articulated the goals were developed. These objectives were used to guide an assessment of the broad performance and potential impacts associated with various trail alignment options leading to the selection of a preferred course of action. These objectives are not listed in any particular priority order but are built on the project's overarching goals and represent the range of issues that must be addressed in the study area corridor.

- *User Experience:*
  - The trail should serve multiple types of users, be paved and continuous and be primarily located off-street on publicly-owned or controlled property.
  - The trail should provide a high quality user experience that capitalizes on the area's unique aesthetic resources and encourages use by a variety of user types and abilities.
- *Safety and Security:*
  - The trail should avoid known safety issues or natural hazards and should be designed to enhance safety through separation from the roadway and by ensuring that trailheads, access points, and roadway crossings that are well-designed, visible, safe, and convenient.

- Connectivity:
  - The trail should connect to key destinations such as residential neighborhoods, employment centers, shopping areas, recreation opportunities, government offices, community services, schools, and other local activity centers. It should also connect to existing trails and other active transportation facilities in the area.
- Directness of Travel:
  - To the extent possible, trail alignments should provide the most direct route of travel between Dean Creek and the Oregon Dunes.
- Environmental and Cultural Resource Impacts:
  - Trail alignments should avoid or minimize impacts to environmental and cultural resources. Opportunities for interpretive signage and education about these resources should be provided.
- Plans and Regulations:
  - Trail options should maintain consistency with goals and policies of adopted local, regional and state plans, leverage planned Levee Loop Trail and ODOT improvements along the trail corridor, and comply with applicable design standards.
- Property Ownership Impacts:
  - Site future trails in existing publicly-owned or controlled property or rights-of-way and use private property only if no other feasible alternative can be identified.
- Costs and Funding Availability:
  - Minimize the capital costs of trail construction including necessary impact mitigation and/or property acquisition. Capitalize on grant and partnership funding opportunities.

## 2.2 TRAIL PLANNING PROCESS

Planning for the DDT consisted of a two-step process. Initially a broad range of trail alignment options were identified and a “fatal flaw” screening was conducted to eliminate options that did not meet the project’s goals and objectives. In the second step a more detailed assessment of the most promising trail options was conducted with specific reference to the planning objectives identified above. Trail alignment options were compared and contrasted, and preferred options identified.

The trail planning process is described in greater detail in a series of Technical Memoranda that document each step in the process. The reader is directed to these memoranda for more detailed information about trail alignment options and the evaluation process. These memoranda include:

- **Technical Memorandum #1** identified project goals and objectives, broadly discussed study area characteristics (including identification of seven planning segments for the trail corridor) and established an evaluation process and criteria for assessing the impacts and potential benefits of each alternative trail concept.
- **Technical Memorandum #2** inventoried and summarized existing conditions of the DDT study area that are relevant to the development of the DDTP. The report documented and described:
  - Existing local, state and federal plans, policies and regulations
  - Transportation and land use features in the study area

- Natural and cultural resource features
- Community demographics that may relevant to the development of the DDT

Technical Memorandum #2 also evaluated potential opportunities and constraints associated with these factors that could influence trail siting and development.

- **Technical Memorandum #3** identified and evaluated a range of trail development options along the ten-mile highway corridor. The primary emphasis in developing and assessing trail options was on the west end of the study area along US 101 between the Oregon Coast and Reedsport, and on the east end of the study area between Reedsport and Dean Creek. Several alignment alternatives were evaluated to serve a variety of purposes ranging from local recreational and utilitarian trips to long-distance travel by bicyclists and hikers. The information in this technical memorandum formed the basis for agency stakeholder and public engagement efforts that included a Planning Advisory Committee meeting, a City Council briefing and a public open house.
- **Technical Memorandum #4** identified a preferred trail alignment alternative, recommended appropriate amenities and features, developed cost estimates, and highlighted potential funding sources. The information in this technical memorandum formed the basis for further agency stakeholder and public engagement efforts that included a second Planning Advisory Committee meeting, City Council briefing and public open house.



## 2.3 TRAIL SEGMENTS AND OPTIONS

For ease of reference, the potential trail alignment has been divided into seven segments starting at the east end of the study area at the Dean Creek Elk Viewing Area and moving west and southward to the Oregon Dunes at Winchester Bay. These trail segments are identified in **Table 2-1**.

**Table 2-1. Trail Segments**

<b>Segment</b>	<b>Start</b>	<b>End</b>	<b>Length (mi)</b>
<i>Segment A</i>	OR 38 at Elk Viewing Area	OR 38 at Riverfront Way	2.9
<i>Segment B</i>	OR 38 at Riverfront Way	US 101 at 16 <sup>th</sup> Street	1.2
<i>Segment C</i>	US 101 at 16 <sup>th</sup> Street	US 101 at 22 <sup>nd</sup> Street	0.5
<i>Segment D</i>	US 101 at 22 <sup>nd</sup> Street	US 101 at Longwood Drive	1.0
<i>Segment E</i>	US 101 at Longwood Drive	US 101 at Salmon Harbor Drive	2.2
<i>Segment F</i>	US 101 at Salmon Harbor Drive	Salmon Harbor Drive at Discovery Point Lane	1.3
<i>Segment G</i>	Salmon Harbor Drive at Discovery Point Lane	Parking Area, Umpqua South Jetty Beach Access	0.8

### 2.3.1 Segment A – OR 38 Rural Corridor

The east end of the corridor (along OR 38) is largely a rural two-lane highway with 55 mph speeds, varying rights-of-way and pavement widths, and differing physical opportunities and constraints – all of which affect opportunities for trail development. Speeds drop to 40 mph at the west end of this segment. Existing daily traffic volumes are approximately 4,000 vehicles. Five trail alignment options were identified in this segment which have different challenges in connecting to the Dean Creek Elk Viewing Area on the east end and to Segment B in Reedsport on the west end.

#### *Key Issues and Challenges*

Key issues and challenges that must be addressed in this segment include:

- High vehicular speeds with limited shoulders and intermittent steep slopes and topographic constraints.
- Must provide sufficient width and buffering along north side of OR 38, may require some structures and widening.
- Location and design of required highway crossings at east and west ends.
- Potential for rest stop at old weigh station and gateway treatment for Reedsport.
- Must integrate with the Levee Loop Trail system.

#### *Overview of Options Considered*

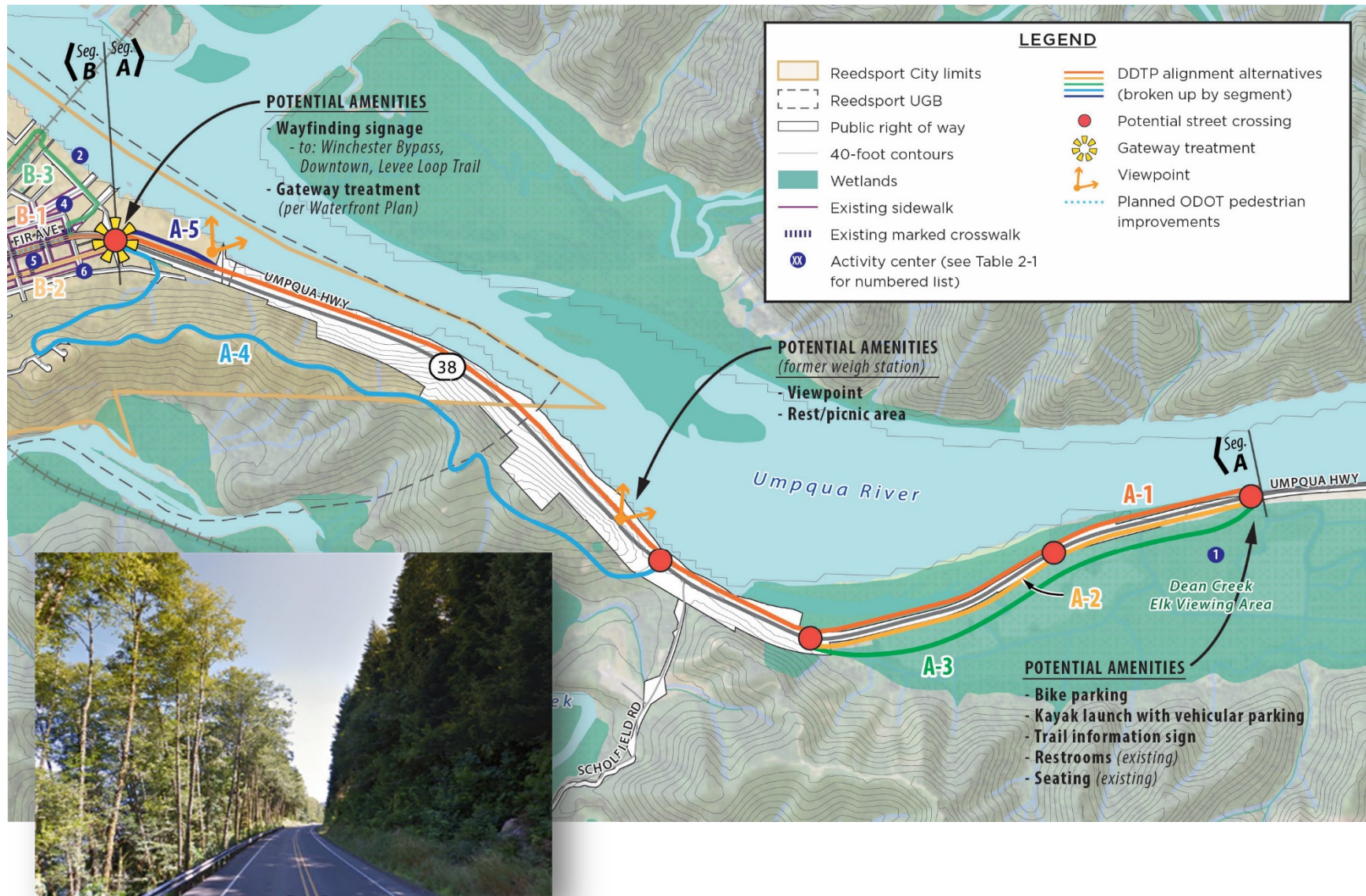
As shown in **Figure 2-1**, each of the five trail alignment options considered in Segment A uses the highway right-of-way in differing ways:

- **Option A-1:** Adjacent to OR 38 on the north side of the highway (Reedsport to Dean Creek with a highway crossing at Dean Creek)
  - Opportunities: Can take advantage of connections to the proposed Levee Loop Trail, particularly on the levee that surrounds Reedsport, and ODOT's pending improvements to OR 38 in Downtown Reedsport. Several potential viewpoints could be created such as the former highway weigh station. Many portions of this alignment have sufficient width to provide a 10 to 12-foot trail with buffering from the highway.
  - Constraints: Portions of the alignment have narrow shoulders and a steep drop-off towards the river. This may require some widening of the highway corridor through use of retaining walls and/or pier-supported trail. Would require a highway crossing to reach the Elk Viewing Area in a location where drivers may be distracted by animals.
- **Option A-2:** Adjacent to OR 38 on the south side of the highway (from where right-of-way widens away from steep slopes and narrow highway section to Dean Creek)



*Dean Creek Elk Viewing Area – Sunset Feeding*

Figure 2-1. Segment A - Trail Alignment Options



- **Opportunities:** Provides a good connection to the Elk Viewing Area while eliminating the need to cross the highway in an area where drivers may be distracted by the presence of animals. Would offer sufficient highway right-of-way and level topography to develop a trail and buffer it from the highway.
  - **Constraints:** Would require a highway crossing to link with Option A-1. Further investigation of an optimal location is required.
- **Option A-3:** Off south side of OR 38 through Dean Creek Elk Viewing Area (highway crossing at west end of viewing area property to Dean Creek)
  - **Opportunities:** Provides a good connection to the Elk Viewing Area and would eliminate the need to cross OR 38 in an area where animals would be visible. Would also include a separation from the highway and closer proximity to the elk.
  - **Constraints:** Would require a highway crossing to link users to the A-1 trail option. Further investigation of an optimal crossing location needs to occur which should minimize exposure of walkers and bicyclists to high speed traffic. May require wetlands permitting to construct and is likely located in the 100-year floodplain.
- **Option A-4:** Use local and unimproved roadway, partially Crestview Drive, through hills on south side of OR 38 (western terminus of Segment A to area between the old weigh station and Scholfield Road)
  - **Opportunities:** Bypasses the area with a relatively narrow right-of-way on OR 38 and steep slopes adjacent to the highway. Uses a low volume road with an off-highway feel. Could be a separated path or could share the existing roadway. Would require that unimproved portions of the road be paved.
  - **Constraints:** Very steep grades with an average range of 13 to 16 percent and a maximum grade of over 52 percent. Would require right-of-way acquisition as some portions at the east end of this alignment option are privately-owned. Offers little scenic value and the route is very circuitous.
- **Option A-5:** Umpqua River levee on north side of OR 38 (Reedsport to eastern end of levee)
  - **Opportunities:** Can take advantage of connections to the proposed LLTP facilities, particularly on the levee that surrounds Reedsport, and ODOT's pending improvements to OR 38 in Downtown Reedsport. Details of the connections should be determined during project design. Offers a good scenic viewing opportunity as this alignment is higher and closer to the water. The alignment is also located off the highway to provide a more pleasant user experience.
  - **Constraints:** The levee crown has a very narrow area that could be paved (i.e., between 8 and 12 feet in width). No amenities including signage or separated rest/view area could be placed on the levee. There is the need for levee ramps at the existing gate near the mid-point along the length of the levee or closure of this waterfront access point to provide a continuous trail connection.

Evaluation of the trail options considered in Segment A concluded that Option A-4 was fatally flawed but that the remaining options all had potential for development as the Dean to Dunes Trail along OR 38.

### 2.3.2 Segments B and C – Central Reedsport

The middle segment of the DDT corridor runs through the City of Reedsport between 22<sup>nd</sup> Street on US 101 and Winchester Avenue on OR 38. This alignment has lower speeds, varying widths, presence or absence of existing sidewalks and on-street bicycle lanes, and other issues which give this section a strongly urban character. Significant planning has already occurred for multimodal and trail-related improvements in this area as part of both the *Levee Loop Trail Plan*, and the City's *Pedestrian Safety Study*. It is not the intent of the DDT Plan to duplicate the effort already made for trail planning in the Reedsport Segment. Instead, the DDT Plan identifies how integration would be achieved between the trail and existing bicycle and pedestrian facilities in Reedsport Segment. Additionally, signage needs would be identified including: directional to make trail connections, informational and wayfinding to identify amenities that will be attractive to trail users.

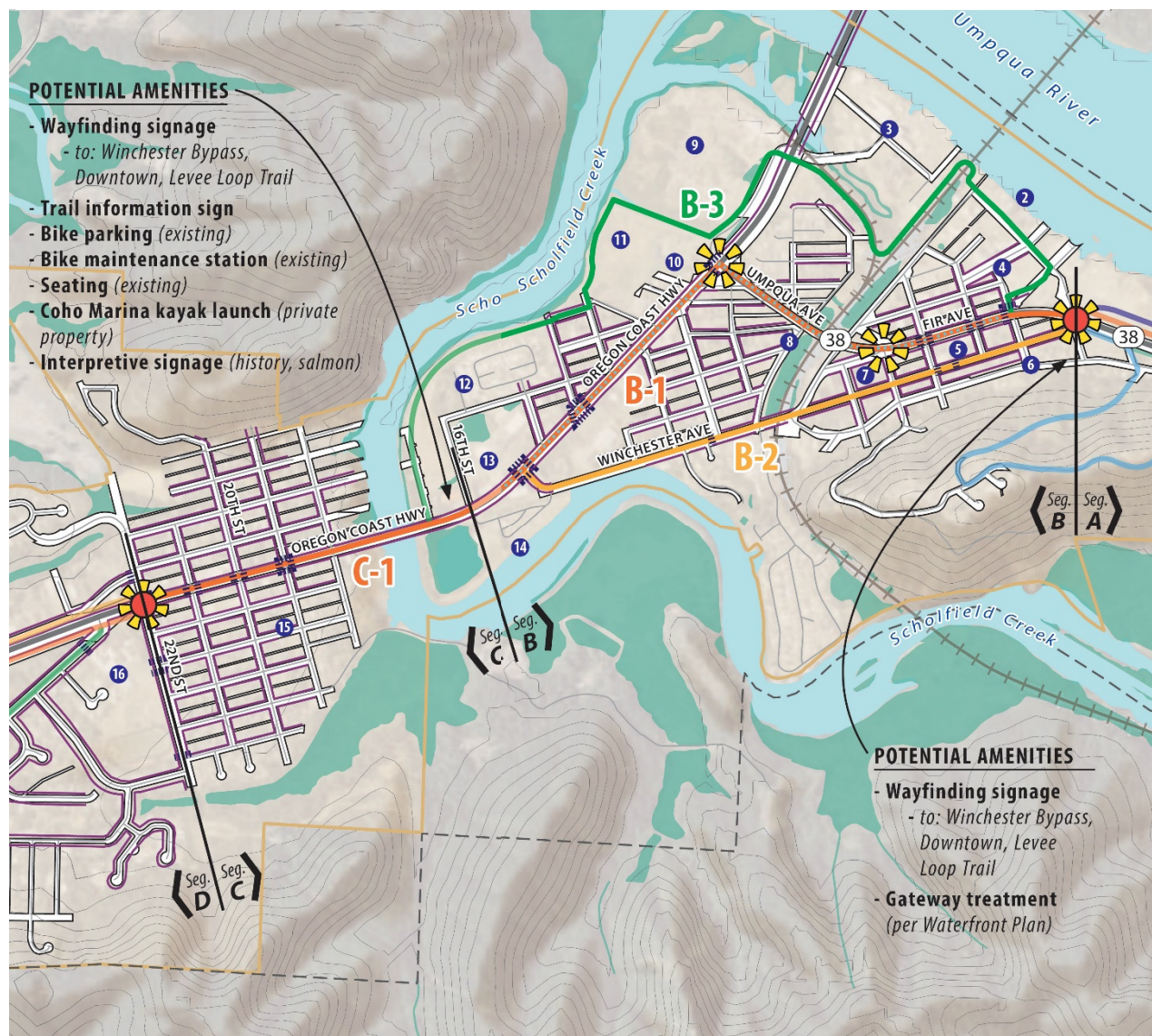


*Bike Lanes and Sidewalks on OR 38 in Reedsport*

Four trail alignment options were identified in Segments B and C to address both the existing infrastructure and planned improvements, such as those identified in the adopted LLTP or shortly to be constructed by ODOT. As shown in **Figure 2-2**, each option uses publicly-owned right-of-way in differing ways:

- **Option B-1:** Pending improvements along OR 38 and US 101 - offers an alignment along the state highways that is distinct from the LLTP (except for a short portion of OR 38 between 3<sup>rd</sup> Street and 6<sup>th</sup> Street) and provides a direct connection that can be uniquely branded as the DDT. Selection of this option would direct travelers into the downtown area and its services and amenities including the cycle stop. The portion of the option located along US 101 is currently designated as the Oregon Coast Bike Route. This option is part of the pending ODOT project and is not dependent on DDT improvements.
- **Option B-2:** Proposed Levee Loop Trail improvements along Winchester Avenue between 2<sup>nd</sup> Street and US 101 at the Scholfield Creek Bridge - Relies on the improvements proposed in the LLTP and would serve as a lower speed, lower volume alternative to travel on OR 38 and US 101 through Segment B. This street passes through an area that has less activity and fewer amenities than the state highway corridor. This option would be developed as part of the LLTP and is not dependent on DDT improvements.
- **Option B-3:** Proposed Levee Loop Trail improvements on the levee surrounding downtown - Uses the proposed levee loop trail around the west side of the city as another alternative to the direct connection provided by OR 38 and US 101. This alignment would be separated from the

Figure 2-2. Segments B and C - Trail Alignment Options



public street system and would offer a view of Scholfield Creek and McIntosh Slough. This option is part of the adopted LLTP and is not dependent on DDT improvements.

- **Option C-1:** Pending improvements along US 101 – These improvements would convert the four-lane section between 16<sup>th</sup> and 22<sup>nd</sup> Streets to three lanes including one travel lane in each direction, a center turn lane, two bicycle lanes, and space for on-street parking. Traffic signals would be modified at 19<sup>th</sup> Street and 22<sup>nd</sup> Street to match the three-lane conversion, street lights would be added or adjusted, and curb extensions and a pedestrian island (refuge) with flashing pedestrian beacons would be added at 20<sup>th</sup> Street.

Options B-1 and C-1 were identified as the preferred DDT alignment as they maximize use of existing and pending active transportation infrastructure, offer the best access to downtown businesses and

community activity centers, and support the currently designated Oregon Coast Trail and Oregon Coast Bike Route.

### 2.3.3 Segment D – Southwest Reedsport

Segment D includes the western portion of the City of Reedsport and the UGB and marks the area where US 101 transitions to a two-lane highway with increasingly rural characteristics. Speeds increase to 40 mph east of the Ranch Road overcrossing and 55 mph west of the overcrossing. Average daily traffic volumes are approximately 11,200 near the eastern end of Longwood Road, dropping to 8,100 at the southern city limits.

#### *Key Issues and Challenges*

Key issues and challenges that must be addressed in this segment include:

- On-highway alignment includes a narrow segment with steep rock walls on either side of the highway. The highway has higher speeds and volumes but provides a more direct connection between Reedsport and destinations to the south.
- Off-highway alignment using city streets with lower volumes and speeds. The route is less direct but serves both local and through trips.

#### *Overview of Options Considered*

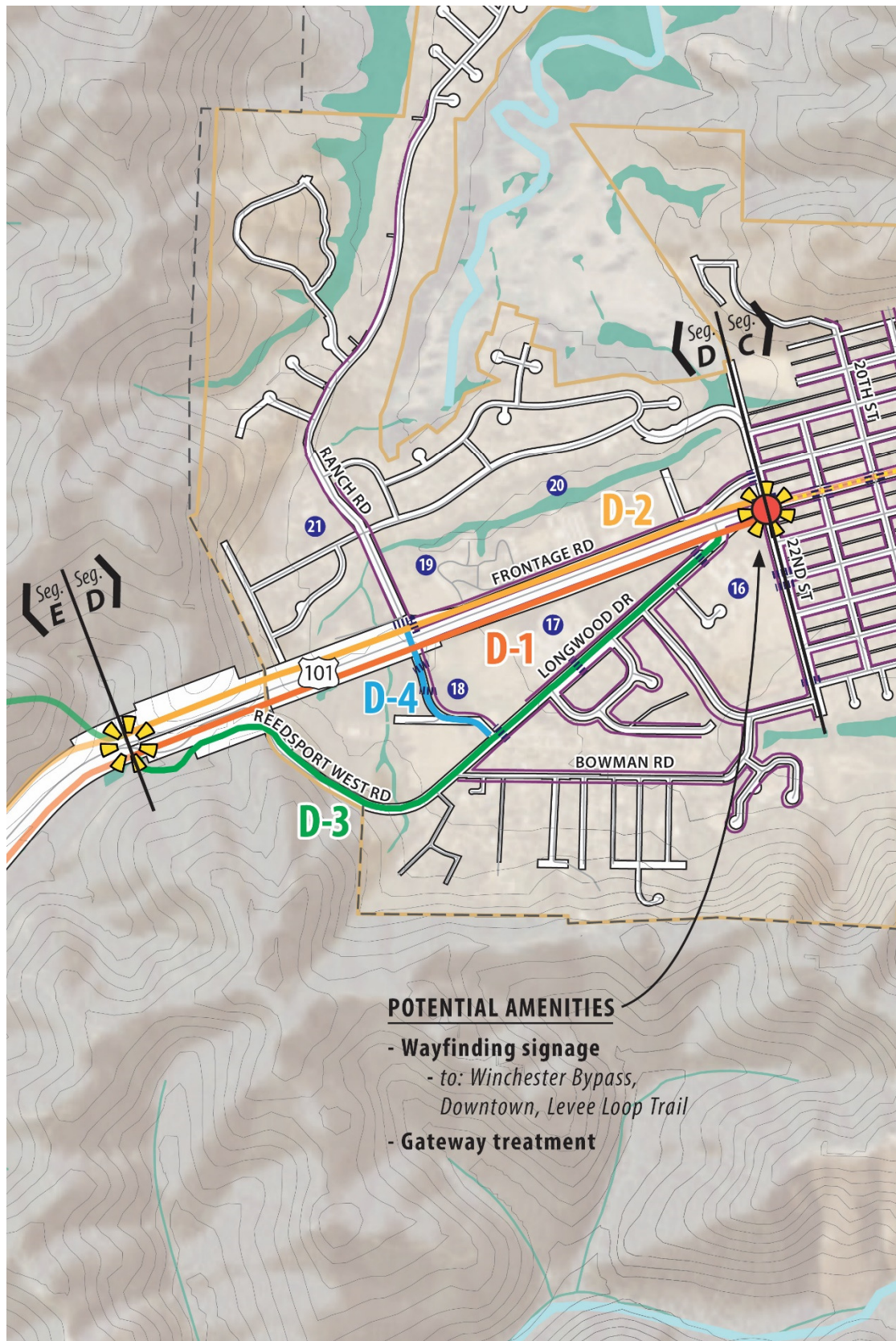
Four trail alignment options were identified in this segment which have different challenges in connecting to Segment C in Reedsport on the east end and Segment E on the west end. As shown in **Figure 2-3**, each option uses highway and local street rights-of-way in differing ways. Options include:

- **Option D-1:** Adjacent to US 101 on the southeast side of the highway (22<sup>nd</sup> Street to Reedsport West Road)
  - **Opportunities:** Provides service to local destinations as it's adjacent to school and Highland Park. Offers the most direct route between Reedsport and Winchester Bay and is the currently designated Oregon Coast Bike Route.
  - **Constraints:** US 101 is above grade with a bridge over Ranch Road and existing pavement width (guardrail to guardrail) is approximately 40-feet. There is only a limited area for trail and/or safety buffering, and it may be necessary to consider relocating highway centerline to provide adequate shoulders. There are steep banks on either side of the highway in a portion of this segment ("pinch point") that may give bicyclists or walkers a sense of insecurity.



*US 101 – Narrow Highway Segment south of Reedsport*

Figure 2-3. Segment D - Trail Alignment Options



- **Option D-2:** Frontage road on the northwest side of US 101 (22<sup>nd</sup> Street to Reedsport West Road)
  - Opportunities: Separates active transportation system users from the highway on a local, low volume street. Appears to be entirely located within existing highway right-of-way.
  - Constraints: Extremely steep south of Ranch Road, with a maximum grade of 36 percent. This option only works if the trail alignment in Segment E is on the west side of the highway (i.e., the logging road or the utility corridor) to avoid an at-grade highway crossing at Reedsport West Road.

- **Option D-3:** Along Longwood Drive/Reedsport West Road (west of 22<sup>nd</sup> Street to US 101)

Two sub-options were considered including: Sub-Option 1 which would require that traffic operations be constrained to one direction of travel only, and Sub-Option 2 which would require widening of Reedsport West Road to construct a separated two-way path.

- Opportunities: Provides an off highway experience on a lower volume, lower speed local street. Is located adjacent to and serves both the high school and Highland Park. The area north of Ranch Road has fairly wide right-of-way.
- Constraints: Needs a new pathway connection between the end of Longwood Drive and 22<sup>nd</sup> Street along the southeast side of US 101 to connect to the signalized intersection at 22<sup>nd</sup> Street where trail users can safely cross the highway. May require conversion of a portion of Reedsport West Road on the south end to one-way operations. Would require property acquisition to keep a two-way cross-section on Reedsport West Road. Short portions of this alignment have grades between 10 and 12 percent (for roughly 200 feet). Would likely reduce on-street parking if a separated two-way path were constructed rather than bike lanes.
- **Option D-4:** Along Ranch Road (Frontage Road to Longwood Drive)
  - Opportunities: Connects US 101 Frontage Road with Longwood Road, providing the opportunity for a reasonable, off-highway trail alignment. It is expected that there would be sufficient right-of-way to provide both vehicle travel lanes and bike lanes.
  - Constraints: Would require parking modification adjacent to the park, and a restriction of any on-street parking.

Option D-1 provides a complete connection between Reedsport and Winchester Bay using the US 101 alignment and was identified as the preferred concept. Two design options were carried forward including a new multiuse bridge on the east side of US 101 at Ranch Road to provide a completely separate trail alignment, and an at-grade crossing of Ranch Road.

### 2.3.4 Segment E – US 101 Rural Corridor

Segment E includes the US 101 corridor generally between the Reedsport city limits and Winchester Bay. US 101 is a two-lane highway with 55 mph speeds, dropping to 45 mph as the highway approaches Winchester Bay. Adjacent land uses are largely rural with some tourism and business support services, primarily along the southeast side of the highway. A few residences exist along the northwest side of the

highway near Winchester Bay. US 101 has a northbound passing lane from north of Winchester Bay to just south of Reedsport West Road. There are estuarine wetlands along a portion of the southeast side of the highway,

There is a southbound passing lane that starts at 8<sup>th</sup> Street in Winchester Bay and continues southward out of the DDTP study area. Average daily traffic volumes range from 10,900 vehicles north of 8<sup>th</sup> Street in Winchester Bay to 5,100 south of Broadway Street, also in Winchester Bay.

### *Key Issues and Challenges*

Key issues and challenges that must be addressed in this segment include:

- Requires widening and/or restriping of travel lanes on highway to provide sufficient width and buffering from high speed/high volume traffic.
- Requires highway crossing(s) at Winchester Bay, could also be used to enhance safety to ATV's crossing highway.
- Potential for rest or interpretive stop near the marsh on the east side of the highway.
- May have wetland, stream and/or other environmental impacts along US 101.

### *Overview of Options Considered*

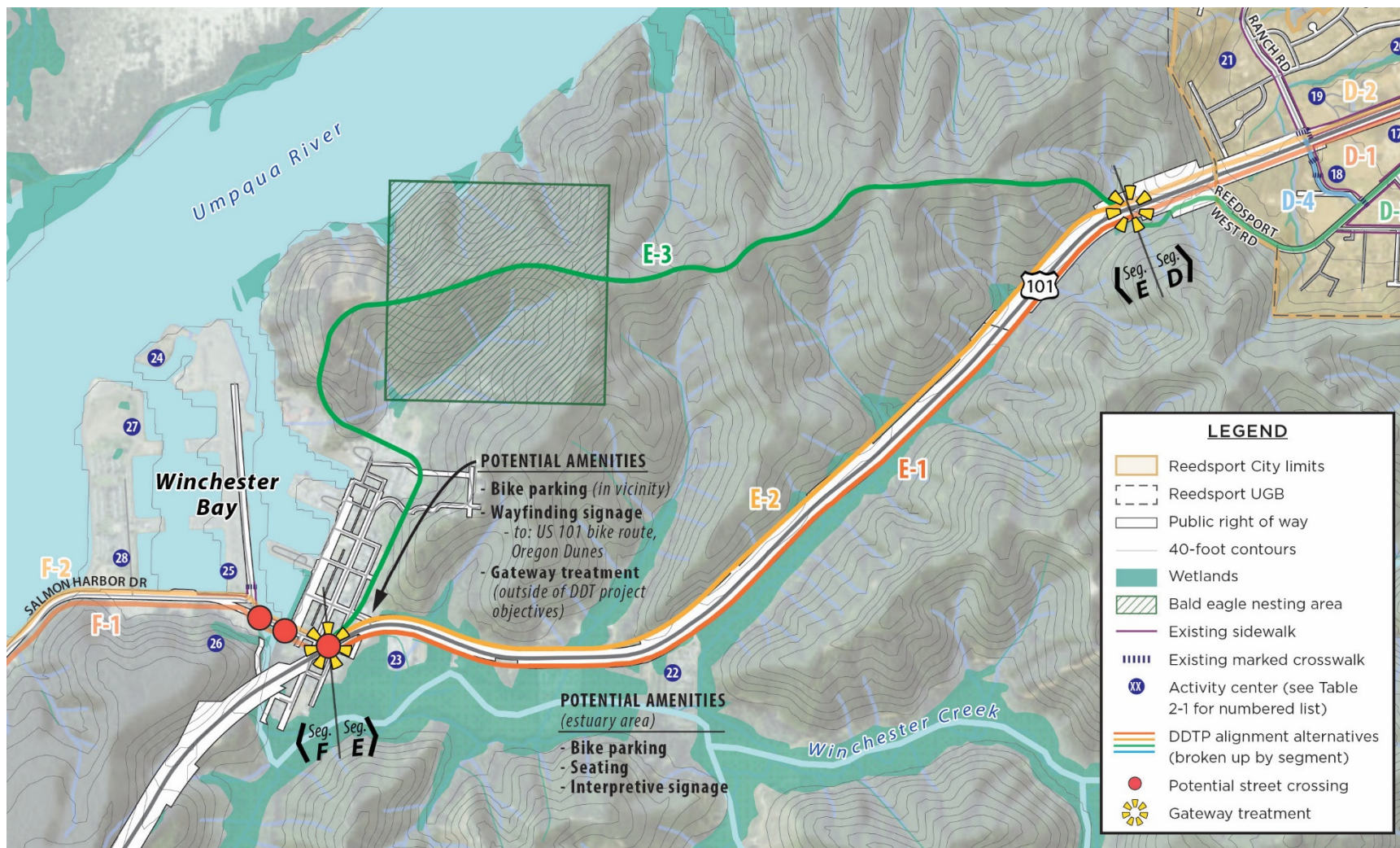
Three trail alignment options were identified in this segment which have different challenges in connecting to Segment D in Reedsport on the east end and Segment F on Salmon Harbor Drive in Winchester Bay. As shown in **Figure 2-4**, each option uses highway and local street rights-of-way in differing ways. Options include:

- **Option E-1:** Adjacent to US 101 on east side of the highway (Reedsport West Road to Salmon Harbor Drive)
  - **Opportunities:** Provides a direct connection between Segment D and Winchester Bay. Lies adjacent to an estuary which could provide the opportunity for an interpretive center and/or rest facility if there is a boardwalk and/or walking trail/park element in this area. This area provides good opportunities for bird-watching. Would provide a direct access to the RV parks on the east side of US 101. Is the currently the designated Oregon Coast Bike Route and has limited change in grade.
  - **Constraints:** May require some highway widening and/or installation of elevated structure or fill along the east side of the highway where there is a drop-off to provide sufficient lateral width for buffering from 55 mph speed traffic. This may also impact existing trees along the highway. May have wetland permitting issues, particularly for implementation of a



*US 101 Adjacent to Silver Creek Wetlands*

Figure 2-4. Segment E - Trail Alignment Options



boardwalk concept in areas where available space for a trail is narrow. Access management issues along the east side of the highway in Winchester Bay. Must cross US 101 to reach Winchester Bay and the dunes.

- **Option E-2:** Power corridor above grade of US 101 along west side of the highway (west end of Reedsport West Road to US 101 in the vicinity of the Oregon Coast RV Park)
  - Opportunities: Located off highway and largely within existing public right-of-way. The route is fairly direct and would not require crossing US 101 at Winchester Bay.
  - Constraints: May require property acquisition at the south end where the powerline corridor rejoins US 101. The majority of this alignment is very steep with maximum grades in excess of 60 percent. This alignment is disconnected from land uses that are adjacent to the highway in this segment including the existing RV parks and industrial development. It is also remote from the estuarine environment which would limit interpretive opportunities. The purpose of this alignment would be largely for through travel.
- **Option E-3:** Logging road west of US 101 (Reedsport West Road to Broadway Avenue in Winchester Bay)
  - Opportunities: Provides an off-highway experience through a natural forest including an area with identified eagle nesting. Traverses a ridgeline so may have potential for good viewpoints. Provides added service to local neighborhoods in Winchester Bay. Would not require crossing of US 101 at Winchester Bay.
  - Constraints: Offers a very circuitous and likely a longer route than using US 101. Sections are very steep with grades of 20 percent on the eastern end near US 101. Is disconnected from adjacent land uses and doesn't serve existing development along US 101 or the estuarine wetlands. Is privately owned.



*Entering Winchester Bay on Southbound US 101*

Option E-1 which runs along the southeast side of US 101, was identified as the only viable alignment concept for this segment.

### 2.3.5 Segment F – Winchester Bay

Segment F follows Salmon Harbor Drive from its intersection with US 101 to Discovery Point Lane. Salmon Harbor Drive is a two-lane county road signed for 25 mph. On its north side, this road connects US 101 to the Winchester Bay RV resort, Oak Rock County park, the Salmon Harbor marina, and the Old Coast Guard pier, and the beach. There is an existing pedestrian pathway along the north side of this

street with an 8-foot-wide pedestrian bridge over Winchester Creek. Further west, the shoulder of the north side of the street has been designated for ATV use with a designated speed of 15 mph. ATV traffic uses the north side of the street due to the narrow shoulder on the south side of the road in the vicinity of the County's sewerage treatment facility that constrains traffic in that area.

The south side of Salmon Harbor Drive connects US 101 to the Windy Cove RV Park and Campground (operated by Douglas County) and provides access to the Umpqua River Lighthouse and Museum via Lighthouse Road.

### *Key Issues and Challenges*

Key issues and challenges that must be addressed in this segment include:

- Option F-1 on south side of Salmon Harbor Drive would separate bicycle and pedestrian traffic from ATVs except near Discovery Point but would need new 10-12' bridge at Winchester Creek.
- Option F-2 on north side of Salmon Harbor Drive would need separation of bicyclists and pedestrians from ATVs but could use the existing (but narrow) Winchester Creek bridge.
- Both scenarios would require road crossings to get to all destinations.

### *Overview of Options Considered*

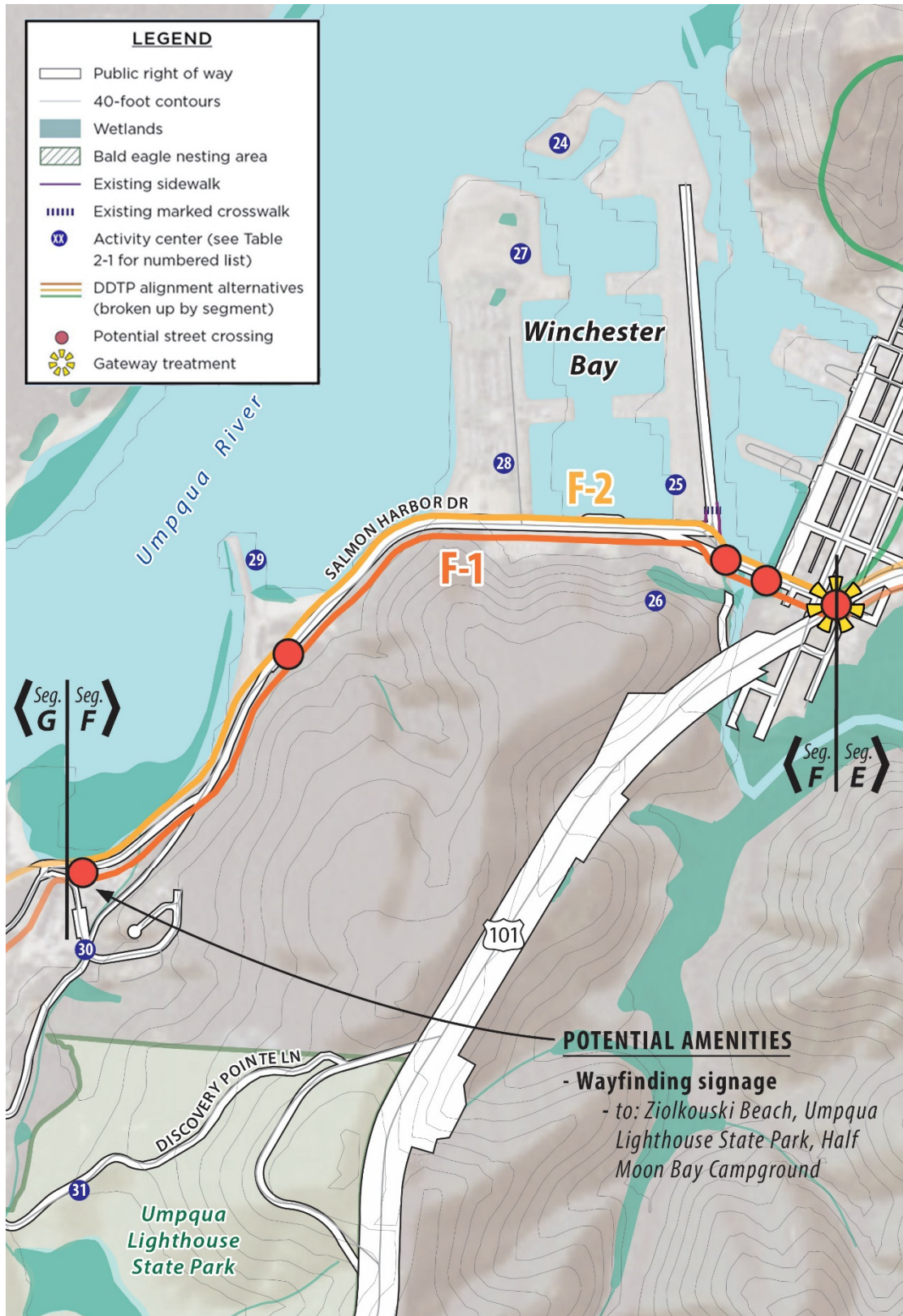
Two trail alignment options were identified in this segment. As shown in **Figure 2-5**, each option uses the existing road right-of-way in differing ways:

- **Option F-1:** Adjacent to Salmon Harbor Drive on the south side of the street (US 101 to Discovery Point Lane)
  - **Opportunities:** Separates bicyclists and pedestrians from the existing ATV trail. Provides opportunities for fish viewing at Winchester Creek Bridge. Provides a direct connection to Douglas County's Windy Cove campground. Provides direct access to Lighthouse Road and the Umpqua River Lighthouse Museum and to Discovery Point Lane.
  - **Constraints:** Would require a new and wider bridge over Winchester Creek which would add cost to the project. Would require a street crossing to reach the marina, the Winchester Bay RV Resort and other land uses and amenities north of Salmon Harbor Drive. Would require a street crossing to reach the existing Old Coast Guard fishing pier. Conflicts with ATV's may occur near the western end of this segment where these vehicles transition to the ATV use area and must interact with motor vehicles on the street and bicyclists/pedestrians on the trail.
- **Option F-2:** Adjacent to Salmon Harbor Drive on the north side of the street (US 101 to Discovery Point Lane)



*North Side of Salmon Harbor Drive at Winchester Creek Bridge*

Figure 2-5. Segment F - Trail Alignment Options



- ***Opportunities:*** Provides opportunities for viewing of fish and marina operations at Winchester Creek Bridge. Provides direct access to the marina, Winchester Bay Resort and its amenities, and the fishing pier. Provides direct connection to Douglas County's Half Moon Bay campground in Segment G without a street crossing.
- ***Constraints:*** The existing pedestrian bridge crossing of Winchester Creek is narrow (8-feet in width) and could create pedestrian and bicycle conflicts at the pinch point. There could be a conflict with the existing ATV trail, but this option separates active transportation users from most ATV activity near the west end of the segment. Requires a street crossing to access Lighthouse Road, Discovery Point Lane and associated development, and Douglas County's Windy Cove campground.

Option F-1 and Option F-2 both run alongside Salmon Harbor Drive between US 101 and Discovery Point Lane, with Option F-1 on the south side of the street and Option F-2 on the north side. With the County's plan to potentially relocate ATV activity to the south side of the road, Option F-2 was determined to be the preferred course of action.

### 2.3.6 Segment G – Oregon Dunes

The final, westerly segment of the DDT would provide access to the Oregon Dunes National Recreation Area. Several trail termini were considered including:

- Ending at the Umpqua Sand Campground in the Suislaw National Forest near the end of the Forest Service Road extending south from Salmon Harbor Drive.
- Ending at the Beach Parking lot on property owned by the US Army Corps of Engineers immediately south of the County's Half Moon Bay Campground.

Late in the DDTP development process a third alternative was added for consideration. This alternative would entail looping through the Umpqua Lighthouse State Park to rejoin US 101 south of Winchester Bay.

#### *Key Issues and Challenges*

Key issues and challenges that must be addressed in this segment include:

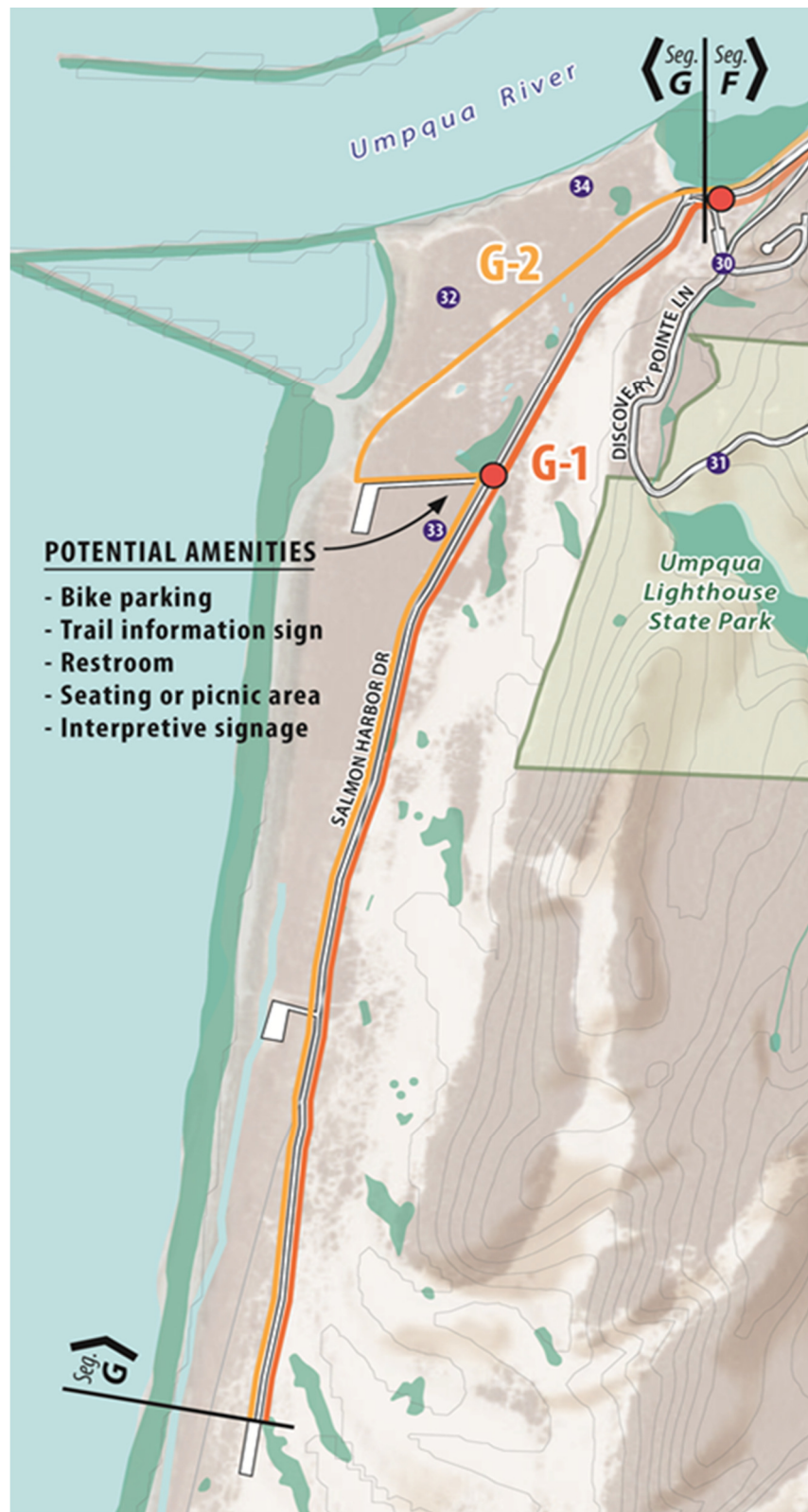
- Would use existing road for bicyclists, pedestrians may want a separate pathway (could be soft surface).
- Provides direct access to Half Moon Bay campground and sand campground in the Suislaw National Forest, as well as beach access.
- Bicyclists may have conflicts with ATVs using portions of the road beyond Discovery Point Lane.
- May have wetland permitting issues at north end.

#### *Overview of Options Considered*

In the initial evaluation of trail alignments, two options were evaluated and considered in this segment. As shown in **Figure 2-6**, each option uses the road right-of-way in differing ways:

- **Option G-1:** Adjacent to Salmon Harbor Drive on the either side of the road (Discovery Point Lane to beach parking area).

Figure 2-6. Segment G - Trail Alignment Options



- **Opportunities:** Salmon Harbor Drive is a low speed and low volume road that provides a positive tourism/visitor experience. The existing 22-foot wide roadway could be designated for shared bicycle/motorized vehicle use. However, a separate path would be appropriate for pedestrians. The existing grade is very flat, and it provides direct access to the Oregon Dunes. The trail alignment provides direct access to the County's Half Moon Bay campground.



*Salmon Harbor Drive near Half Moon Bay Campground*

- **Constraints:** Potential for conflict with ATV activity, particularly keeping ATVs off the pedestrian/bicycle trail if one is provided. May have wetland permitting issues which need further investigation during design. Concern has been expressed by the US Forest Service about extending the alignment into the Suislaw National Forest as the existing forest road leading to the Umpqua Sand Campground is in poor repair.
- **Option G-2:** Adjacent to Triangle Road and Ziolkouski Beach access (Discovery Point Lane to beach parking area)
  - **Opportunities:** The existing grade along this street is relatively flat with low speeds and low traffic volumes. This makes for a more pleasant tourism/visitor experience. The route provides direct access to the beach and the Half Moon Bay campground.
  - **Constraints:** The road is unimproved and unpaved and would require the development of a paved path. The route does not provide direct access to the dunes.

Based on the evaluation of the two trail alignment options considered during this phase of the planning process, Option G-1 was identified as the only viable alignment concept for this segment. Due to concerns about the improved nature of the existing forest road, this option would run from Discovery Point Lane to the end of the DDT at the beach parking south of Half Moon Bay campground. However, as noted previously, a third alignment option was introduced late in the planning process that would provide direct service to the Umpqua Lighthouse State Park. This option is discussed more fully in the next chapter.

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### 3. TRAIL TYPES AND AMENITIES

#### 3.1 TRAIL TYPES

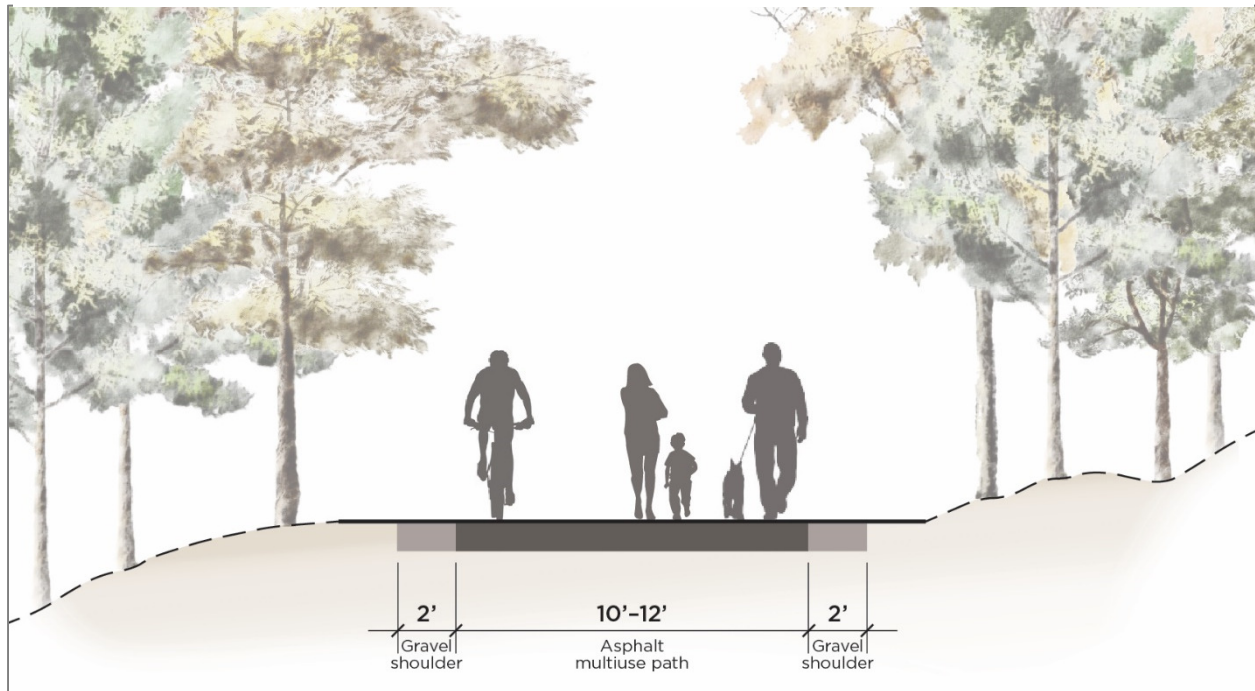
As more fully discussed in Technical Memoranda #3 and #4, the DDT will include a variety of trail types as follows.

##### 3.1.1 Preferred Trail Concept

The preferred trail type is a multiuse path that is separated from the roadway to the extent possible. This multi-use path could follow the highway alignment within ODOT right-of-way or use another right-of-way such as a city street or river levee. In general, the preferred trail alternative (illustrated in **Figure 3-1**) would be:

- Separated from the roadway by distance or barrier, providing a completely off-highway experience.
- 10 to 12 feet wide, with 2-foot-wide graveled shoulders.
- Paved with an asphalt surface.
- Sited in existing publicly-owned or controlled property or right-of-way.
- At or below ADA-compliant maximum grade (e.g., 5 percent) and designed with structures (ramps, retaining walls, landings, etc.) satisfying ADA requirements.

**Figure 3-1. Preferred DDTP Trail Cross-Section**



For trail segments where the preferred trail type is not feasible, other trail solutions – in no order of preference – may be used. Illustrations of each trail type considered and recommended for portions of the DDT corridor are included in **Appendix B**.

### 3.1.2 Street-adjacent to Lower Speed Roadway Concept

This trail concept would use the same materials and dimensions as the preferred multiuse trail, but would closely parallel a roadway, separated by at least a 5-foot-wide buffer that could be landscaped. This trail type would be appropriate adjacent to low-speed roadways, or where constraints (such as prior development or narrow right of way) prevent complete separation from the highway.

### 3.1.3 Street-adjacent to Higher Speed Roadway Concept

This concept would use the same materials and dimensions as the preferred multiuse trail, but would closely parallel a roadway, separated by at least a 5-foot-wide buffer that would include a physical barrier such as a guard rail or concrete divider. This trail type would be appropriate adjacent to higher-speed roadways, or where constraints (such as prior development or narrow right of way) prevent complete separation from the highway.

### 3.1.4 Cantilevered Structure with Retaining Walls or Pile-Supported Path

This concept would provide a level space of sufficient width for a trail (minimum of 8-feet wide) supported by retaining walls where fill is possible or a bridge structure to span a sensitive environmental area or steep slopes where the impact of the trail needs to be minimized. A low, elevated multiuse structure could set on piers or pin piles across wetlands, floodplain areas and other sensitive lands, or in areas where topographic constraints make this a preferable option to extensive earthwork and retaining walls that would otherwise be needed to provide sufficient trail width.

### 3.1.5 On-street Solutions

Where options for providing a trail separated from the roadway are limited, a variety of alternatives within the road right-of-way are possible, including: bike lanes and sidewalks, buffered bike lanes and/or shared road solutions (where volumes and speeds are low).

### 3.1.6 Levee Trail

This trail concept could be used for construction atop an existing levee along the Umpqua River adjacent of OR 38. The width of this trail would be constrained by the available width on top of the levee. Ramps to and from the trail would need to be constructed without impacting the flood-protection function of the levee. US Army Corps of Engineers (USACE) standards preclude footings dug into the levee, any signage will need to be located off of the levee berm, most probably at the toe of the levee ramp.

## 3.2 TRAIL AMENITIES AND FEATURES

Trail amenities such as directional or interpretive signing, rest or picnic areas and viewpoints will help to make the DDT a welcome place to recreate and travel along. The following discussion of trail amenities includes a simple narrative of each amenity type, graphic representation of each, typical materials, benefits and constraints, and order of magnitude costs. Conceptual locations for amenities in each corridor segment are presented in Chapter 4. Amenities include, but are not limited to:

### 3.2.1 Trailheads

Trailheads are a location where users can directly access the DDT as pedestrians or bicyclists, or where motorists can find parking before using the trail. Preferred trailhead features can include, but not be limited to: safe access roadways; vehicle parking (paved or gravel); secure bicycle parking; restrooms; benches, shelters or wayfinding signage; directional signage, security lighting and/or drinking water.

### 3.2.2 Signage

Trail signage can be informational or interpretive, offer direction or wayfinding guidance (including mileage to key destinations), identify hazards or provide regulatory control. Development of a DDT trail logo should also be considered for installation along various segments of the facility to help develop a unique brand or unified identity for the entire corridor. One idea for such a sign is illustrated in **Figure 3-2**.

**Figure 3-2. Example of Trail Logo Signage**



### 3.2.3 Interpretive Signage

This signage is intended to provide the traveler with information about the built and/or natural environment that is served by the trail. This signage can be located at viewpoints or other places where it could serve both trail users and motorists (where the trail is located near the highway). Typical examples of interpretive signing can: tell the story of the area, point out interesting natural features or identify opportunities for further exploration of the area.

### 3.2.4 Kiosks and Interpretive Facilities

Similar in function to interpretive signage, a kiosk typically provides more information to inform the traveler about the area. Kiosks can be co-located with rest areas, viewpoints, picnic grounds or other areas that might attract a larger number of travelers. Given the limitations to siting kiosks and other interpretive facilities on the levee crown, the LLTP recommends that these types of facilities should be part of other trail “entry” improvements – signing, lighting, furniture, etc. – at levee access ramps.

### 3.2.5 Rest Areas, Viewpoints and Other Amenities

For trails through a scenic area, intermittent viewpoints are important amenities where trail users can rest and enjoy the view. Viewpoints can be as simple as a widened section of asphalt or even compacted gravel, allowing pedestrians and bicyclists to step off trail travel lanes. Improvements can also include benches, shelter or picnic areas and/or interpretive signage, as well as dog waste supplies and disposal facilities. Several potential viewpoints are identified on DDTP segment maps.



### 3.2.6 Trail Crossings

At various locations along the DDT, it will be necessary for the trail to cross local streets, driveways and, in limited locations, US 101 or OR 38. Technical Memorandum #3 provides a detailed discussion of guidance on trail crossings and Technical Memorandum #4 identifies potential locations and treatments for these crossing. Specific treatments should be determined on a case-by-case basis during design engineering for individual improvements. Trail crossings might include:

- Intersection crossing
- Midblock crossings (potentially for locations along the highway where there are no intersections)
- Grade separation

### 3.2.7 Lighting/Illumination

Lighting is often suggested to help make trails safe and accessible in a 24-hour basis. Safety and security lighting is often provided where trails cross public streets or within developed areas where evening use may be desirable. Lighting may also be desirable on levee access ramps and the approaches to the ramps. Lighting may be inappropriate in rural or natural areas, given visual impacts and potential disturbance to wildlife and habitat values. It should be noted that while “visiting” trail users may prefer a well-lighted trail; local residents may find the lighting intrusive. Another consideration to improve the trail user experience and limit impacts on neighbors is to utilize “dark sky” compatible lighting. This lighting is designed to illuminate trail surfaces and shoulders while minimizing upward light pollution and improving vistas of the night sky.

### 3.2.8 Gateway Treatment

Gateways are usually landscaped sign installations that announce to motorists that they are entering a community. Although often installed for community development and community pride purposes, effective community gateways will communicate to motorists that they are making a transition from a rural roadway to a city street where land use, pedestrian, and motor vehicle activities will be more intense. The motorist should, in turn, respond by slowing down. Gateway signage is often accompanied by signage for speed reduction and/or boulevard type treatment that may add sidewalks, bike lanes, intersection traffic control, on-street parking, lighting or other clues that create a narrowed “gateway” effect and indicate that a speed reduction is appropriate.

## 4. RECOMMENDED TRAIL IMPROVEMENT PLAN

This chapter presents a discussion of the preferred alignment for the Dean to Dunes Trail between the Oregon Dunes National Recreation Area on the west end and the Dean Creek Elk Viewing Area on the east end. This corridor runs through a variety of terrain along differing roadway types within areas of changing land use character. Additionally, there are numerous topographic and natural resource challenges in the corridor which require a creative approach to creating a safe, comfortable and pleasant trail environment.

Technical Memorandum #3 discusses these challenges in some depth and describes the planning context and trail development opportunities in each portion of the corridor. In that memorandum, the trail was broken down into seven segments that were generally homogenous in character. This allowed a discussion of trail alignment options to focus on the key issues and opportunities in each specific geographic area where reasonable comparisons could be made between the options.

These seven homogeneous areas have been grouped into three major corridor segments which are illustrated in **Figure 4-1**:

- **West Segment** – which includes US 101 from the southern end of Reedsport to the Oregon Dunes National Recreation Area/Suislaw National Forest on the Pacific Coast.
- **Central Segment** – which largely includes US 101 and OR 38 through the City of Reedsport. Since this area has previously been studied as part of the *Levee Loop Trail Plan* and the *Pedestrian Safety Study* and has already identified recommended improvements, the primary focus in Technical Memorandum #4 will be on integrating the DDT with these recommendations.
- **East Segment** – which includes OR 38 from the east side of Reedsport to the Dean Creek Elk Viewing Area.

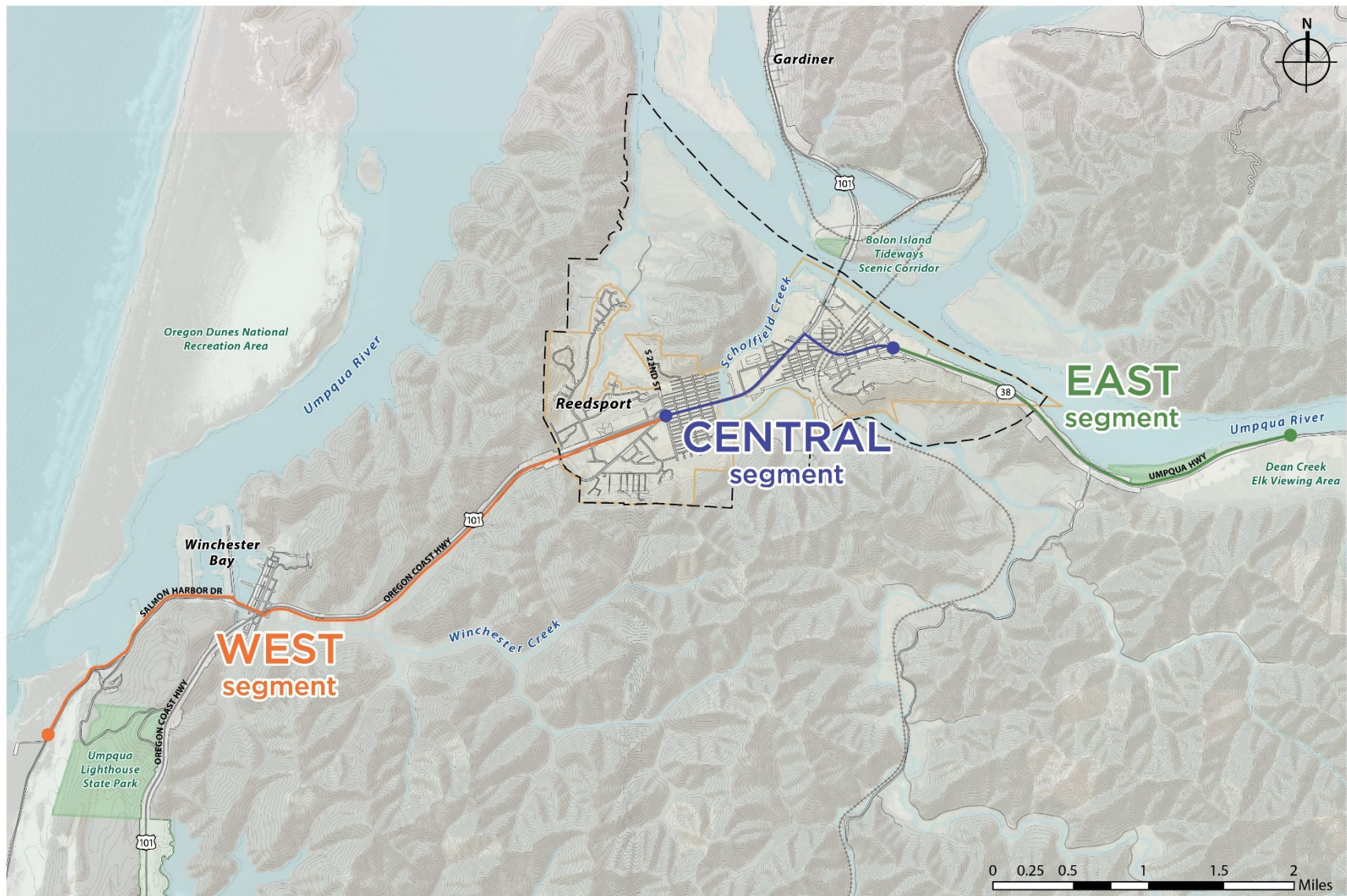
The recommended trail alignment and type, trail features and/or amenities, effects on the existing transportation system, and potential environmental issues for each of these three segments are discussed in this chapter. All graphics in this chapter are presented for illustrative purposes only. Engineering and other considerations that are discovered during the project design phase may require changes from the concepts or details shown in this report. Final alignments and details related to trail amenities will be determined during project design.

### 4.1 WEST SEGMENT – REEDSPORT TO OREGON DUNES

#### 4.1.1 Description

The west segment of the preferred Dean to Dunes Trail alignment runs along the east side of US 101 from the south side of Reedsport to the town of Winchester Bay. At Winchester Bay, the trail crosses the state highway and turns west along Salmon Harbor Drive, following this alignment west and then south to ultimately end in the Umpqua Lighthouse State Park with an option to continue into the Oregon Dunes National Recreation Area.

Figure 4-1. Dean to Dunes Trail Segments



## Existing Conditions

In this segment, US 101 is a two-lane highway with speeds ranging from 40 mph in Reedsport to 55 mph between Reedsport and Winchester Bay, where the speed then drops to 45 mph. The adjacent land use character is urban as it approaches the city including the Reedsport Junior and Senior High Schools near 22<sup>nd</sup> Street, Highland Elementary School and Highland Park all on the east side of the highway. South of Reedsport, the highway is located within unincorporated Douglas County and generally has one travel lane in each direction with a southbound left turn at the Oregon Coast RV Resort and a northbound passing lane that begins to the north of the RV Resort access road and extending to just south of Longwood Drive. There is an estuarine wetland on the east side of the highway for approximately 3,500 feet in this area. The highway's 55 mph speeds generally make for a challenging and uncomfortable bicycle riding or walking environment along existing shoulders. Descriptive information about the US 101 portion of the West Segment is presented in Technical Memoranda #2 and #3 under Segments D and E.

Salmon Harbor Drive is a two-lane county road with a 25 mph speed limit. The road passes through the town of Winchester and provides access to the harbor and a variety of visitor destinations. Portions of the existing shoulder along the north and west side of this road are signed at 15 mph for ATV use which represent a potential conflict with bicycle and pedestrian users. Further south, the road provides direct access to ATV trails and other Dune visitor facilities including several campgrounds. The road is narrow with minimal space for pedestrians and bicyclists. Descriptive information about the Salmon Harbor Drive portion of the West Segment is presented in Technical Memoranda #2 and #3 under Segments F and G.

## Overview of Trail Alignment

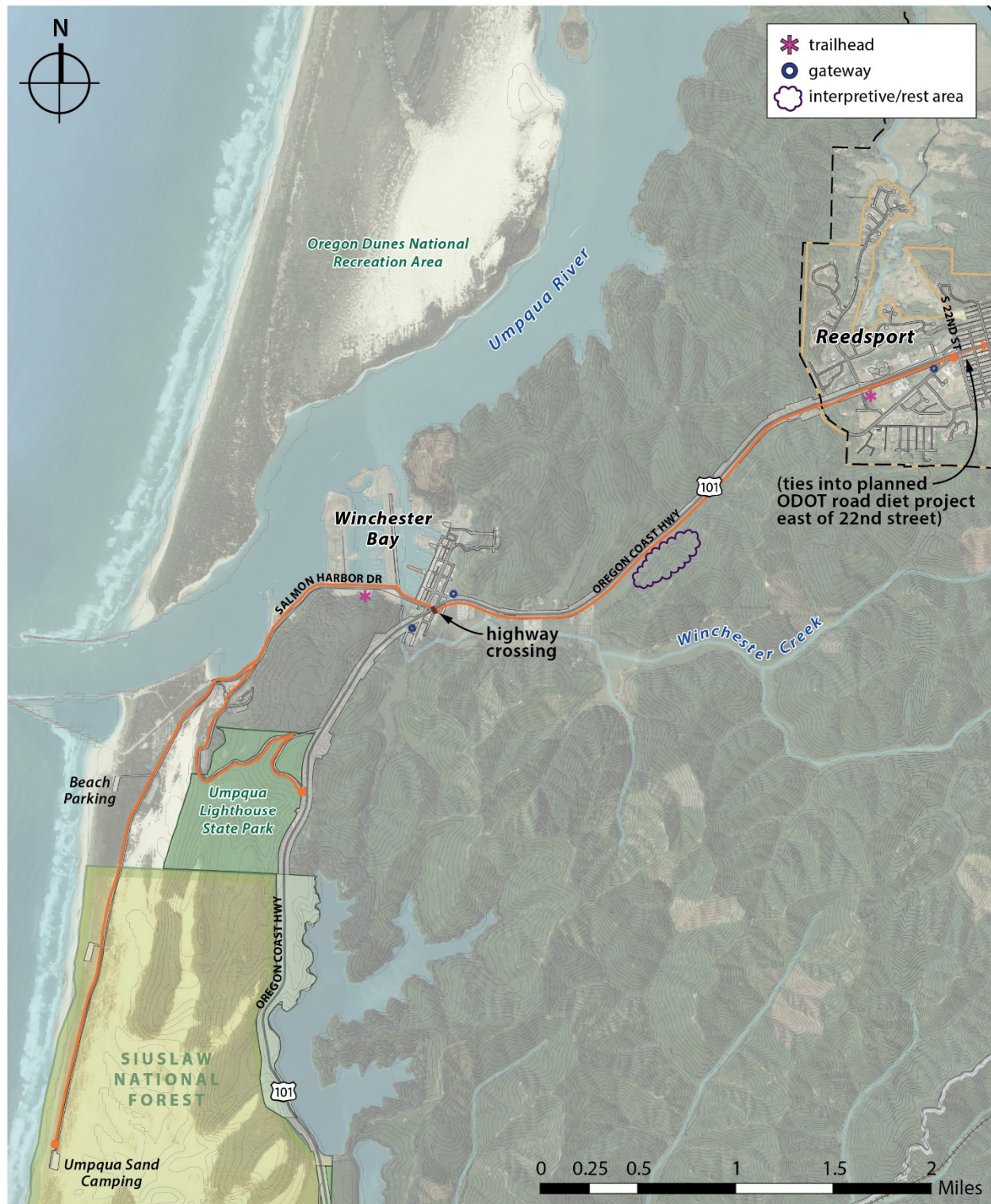
From north to south the West Segment of the preferred DDT concept follows the general alignment described below and illustrated in **Figure 4-2**. It should be noted that this discussion is preliminary and subject to change during the design phase of the project.

**Beginning of West Segment** - The trail alignment starts at the southeast corner of the intersection of US 101 with 22<sup>nd</sup> Street in the southern portion of the City of Reedsport. Immediately to the north, ODOT will shortly initiate a land reconfiguration improvement project on US 101 to upgrade the pedestrian and bicycling environment. As part of this project, the existing four-lane highway between 16<sup>th</sup> and 22<sup>nd</sup> Street will be converted to three-lanes including one lane of travel in each direction, a center turn lane, two bicycle lanes and space for on-street parking. The traffic signal on US 101 at 22<sup>nd</sup> Street will be improved to match the three-lane conversion and illumination will be enhanced. Further north, at approximately 16<sup>th</sup> Street, the City's Levee Loop Trail project would develop a trail system serving the heart of the community. The DDT would be coordinated with facilities recommended in that plan.



*Trail Alignment at US 101/Longwood Drive*

Figure 4-2. Dean to Dunes Trail - West Segment



**22<sup>nd</sup> Street to Ranch Road** - Heading south from the intersection, the trail is located on the east side of US 101 and closely follows the highway alignment. It crosses Longwood Drive at grade and then moves slightly away from the highway into a vegetated area within the ODOT highway right-of-way. The trail continues to parallel US 101, getting increasingly distant from the highway, ultimately running adjacent to Highland Elementary School and Highland Park. Two options for crossing Ranch Road are under consideration. Trail design will determine which is the most feasible and best meets the goals and objectives of the project:

- 1) **At-Grade Crossing:** The trail would cross Ranch Road at-grade in an area that provides on-street parking for park visitors. The topography is relative flat in this area with grades being 3 percent or less. A trailhead could be established at this location which would provide access between the trail and the adjacent community including Highland Park.
- 2) **Grade-Separated Crossing:** The trail would cross Ranch Road on a separate bicycle and pedestrian bridge immediately east of US 101.

**Ranch Road to Reedsport West Road** – South of the at-grade Ranch Road crossing, the trail alignment would begin to climb from an initial 3 percent grade to a 9 percent grade, even with a transverse trail alignment across the face of the slope (made possible by keeping the trail against the back of ODOT right of way approaching the slope). Preliminary analysis suggests an alignment against US 101 through the steeper section could facilitate ADA compliance, which is the design alternative shown in **Appendix A**. A segregated, barrier-separated path would be provided to the intersection with Reedsport West Road where an at grade crossing would be provided. Trail design will determine whether one of two design options is most feasible:

- 1) Maintaining the current highway alignment and removing rock and stabilizing the hillside along the east side of the highway, or
- 2) Shifting the highway alignment to the west to accommodate the trail on the east side.

At the pinch point, the highway travel lanes are approximately 13.75 feet wide with 5-foot paved shoulders and 5 feet of gravel beyond that (on both sides). Preliminary engineering analysis indicates shifting of the highway centerline to the west about 5.25 feet would allow room for a 10-foot trail with shoulders and protective barrier. The rock walls outside the road bed may require some form of stabilization.

The grade-separated Ranch Road crossing would generally maintain the existing highway grade to Reedsport West Road.

**Reedsport West Road to Winchester Bay** –

South of Reedsport West Road, the trail would continue on the east side of US 101 along a barrier-separated pathway. At the northern end of this section, the trail would be located within existing highway right-of-way outside of the existing northbound shoulder. In the middle portion of this section the trail would be located between the highway and an estuarine wetland,



*Trail Alignment along east/south side of US 101  
south of Reedsport*

a portion of which is zoned for Conservation Shorelands. Further south, there is existing development along both sides of the highway, but predominately on the south and east side. Development includes the Oregon Coast RV Resort, the Salmon Harbor RV Park, a mini-storage facility and other light industrial uses, and several commercial establishments on both sides of the highway in the Winchester Bay area.

As shown in **Figure 4-3**, the trail would follow the east side of the highway through the developed area on a separated and buffered path. Access management would be implemented to safely accommodate this trail (which would also improve safety in this area for all modes of travel). During the design process a final decision will be made on optimal trail crossing features including both signage and pavement marking (illustrations of both an unmarked crossing and a marked crosswalk are shown in this figure).

**Winchester Bay to Oregon Dunes National Recreation Area** – Turning west from US 101, the trail would follow Salmon Harbor Drive to Lighthouse Road. From this point on two conceptual trail options would be carried forward with preference given to the State Park Loop route:

- Loop Through Umpqua Lighthouse State Park – At Lighthouse Road the trail would turn south and travel uphill to the Umpqua Lighthouse State Park which includes a museum, a viewpoint of the dunes and Pacific Ocean, a lighthouse and other amenities. The road would be signed for shared use with bicycle and motor vehicles. Safe pathway space should be provided for pedestrians. The road is narrow and carries relatively light traffic volumes at lower speeds making shared use viable. The trail would continue on Lighthouse Road through the park ultimately rejoining US 101 south of Winchester Bay.
- Terminus at Umpqua Sand Campground - Heading west from US 101 on Salmon Harbor Drive, the trail would be located on the north side of the road and would use the existing pedestrian bridge over Winchester Creek. The trail would continue along the north and west side of Salmon Harbor Drive to provide separation from ATV traffic that is planned to use the south and east side of this street. For purposes of this planning effort, it was



*Lighthouse Road south of Salmon Harbor Drive*



*Trail Alignment on Salmon Harbor Drive west of US 101*

Figure 4-3. DDT Access Management in Winchester Bay



assumed that ATVs would be either trailered in to a place west of Winchester Creek from the rental businesses on the east side of US 101 or would access the ATV trail directly from local campgrounds. A key element in the design of the DDT would be to ensure maximum separation of these motorized and non-motorized modes to enhance the safety and the comfort of bicycle and pedestrian trail users. The trail would run along the west side of Salmon Harbor Drive to its southern terminus at the entrance to the beach parking lot on Army Corps property. There are numerous destinations served by the trail in this area including:

- Oak Rock County Park
- Salmon Harbor Marina
- Windy Cove RV Park and Campground
- Marina Activity Center
- Winchester Bay RV Resort
- Discovery Point Resort and RV Park
- Ziolkowski Beach Park
- Umpqua River Lighthouse and Museum (off the road and up the hill)
- Umpqua Day Use Beach Area
- Umpqua Sand Campground



This trail alignment option should be considered for implementation at such time as the Suislaw National Forest access road is improved. Prior to making these improvements, Forest Service staff have expressed concern about encouraging non-motorized users onto the unimproved roadway down to the Umpqua Sand Campground.

More detailed drawings of the trail alignment in the West Segment are included in **Appendix A** and descriptive information is presented in Technical Memorandum #4.

### 4.1.2 Implementation Decisions

As the Preferred DDT concept moves into design, decisions must be made related to the types of trail that should be provided along each portion of the West Segment, along with trail amenities and other trail features. The following is a brief discussion of the key issues that will need to be addressed in making ultimate decisions on the appropriate trail design.

#### *Conceptual Trail Types by Location*

Technical Memorandum #4 provides a comprehensive outline of where different types of trails might be constructed in the West Segment based on the characteristics of both the highway and surrounding land within the segment. It should be noted that this guidance is preliminary only and subject to change as the trail design process moves forward. A brief summary of the application of proposed trail types is presented below.

- US 101, 22nd Street to Reedsport West Road – this trail section could include three trail types:
  - Street Adjacent to Higher Speed Roadway Concept at the north end

- Preferred 10-foot Trail Concept through the center of this highway segment, including a physical barrier separation from US 101 and either a bridge over Ranch Road or an at-grade crossing.
- Street Adjacent to Higher Speed Roadway Concept at the south end
- US 101, Reedsport West Road to North end of Estuarine Wetlands – the narrow highway corridor and steep grade in this area may result in implementation of only one trail type in this area – the Street Adjacent to Higher Speed Roadway Concept.
- US 101, Estuarine Wetlands – through the wetlands along Silver Creek the preferred trail type would be either a Cantilevered Structure with Retaining Walls or Pile-Supported Path to minimize impacts on the wetlands.
- US 101, Estuarine Wetlands to Salmon Harbor Drive – this trail section could include two trail types:
  - Preferred 10-foot Trail Concept from the south end of wetlands to approaching Winchester Bay
  - Street Adjacent to Higher Speed Roadway Concept through Winchester Bay
- Salmon Harbor Drive, US 101 to Lighthouse Road – this trail section could include two trail types:
  - An on-street solution including bike lanes and a sidewalk through the developed portion of Winchester Bay where right-of-way is limited
  - Street-adjacent to Lower Speed Roadway Concept from the vicinity of Winchester Creek to Lighthouse Road.
- Lighthouse Road, Salmon Harbor Drive to US 101 – this alignment is preferred for the southern end of the West Segment. The trail through this area should be a shared bicycle and motor vehicular facility with appropriate signage and “sharrow” pavement markings. Considerations should be given to providing a separate pedestrian pathway in this area.
- Salmon Harbor Drive, Lighthouse Road to Trail Terminus – if this alignment is selected for future implementation, a single trail types might be considered – the Street-adjacent to Lower Speed Roadway Concept.

## Conceptual Trail Amenities and Features by Location

### Trailheads

Suggested trailhead locations in the West Segment include:

- Ranch Road near Highland Park
- Winchester Bay

### Signage

Suggested trail signage in the West Segment would include:

- DDT logo signage
- Oregon Coast Trail and Oregon Coast Bicycle Route



- Wayfinding signage including mileage to the wide variety of activity centers located in Reedsport such as the cycle stop or bike station for minor repairs, restrooms, food and other supplies, visitor and interpretive facilities and others.
- Regulatory and/or hazard signage.

### Kiosks and Interpretive Facilities

Suggested interpretive facilities in the West Segment include:

- In the vicinity of the Silver Creek Wetlands

### Rest Areas and Viewpoints

A suggested rest area in the West Segment could include:

- In the vicinity of the Silver Creek Wetlands, developed in conjunction with the interpretive facility.

### Trail Crossings

Potential trail crossing locations in the West Segment could include US 101 at 22<sup>nd</sup> Street, Longwood Drive, Ranch Road (with the at-grade concept), Reedsport West Road, various local roads and driveways along US 101 between Reedsport and Winchester Bay, US 101 in Winchester Bay, local streets along Salmon Harbor Drive, and Salmon Harbor Drive at Lighthouse Road. Bollards should be installed where necessary to prevent vehicles from access the trail.

### Lighting/Illumination

Suggested locations for illumination in the West Segment:

- Provide street lighting in locations with trail crossings of public streets or US 101.

### Gateway Treatment

Gateway treatment in the West Segment is suggested at the following locations:

- On US 101 where the highway enters Reedsport on the southern edge of the city (perhaps just south of 22nd Street).
- On US 101 in Winchester Bay. Separate treatments could be installed on either end of the town or in a single centralized location.

## *Design and Implementation Challenges*

Over the course of the DDT planning process, a number of implementation challenges were identified in the West Segment which must be addressed during the design process. Some of the more obvious challenges are described below, but this list should not be considered exhaustive. Additional challenges may be identified as the design process advances.

- US 101, 22nd Street to Ranch Road
  - A key design challenge in this trail section will be to achieve ADA compliance along the trail where grades increase sharply above 5 percent.
  - The narrow roadway between the rock walls on US 101 north of Reedsport West Road is another design challenge.

- Silver Creek Wetlands
  - A key challenge in this section will be to design and construct a trail that minimizes adverse impacts to the natural environment adjacent to the highway.
  - Based on input received from the Confederated Tribes of the Coos, Lower Umpqua and Siletz Indians consideration should also be given to using native vegetation for any trail buffering or other planted areas.
- Winchester Bay
  - One of the key design challenges in this area will be the implementation of an access management strategy along US 101 through Winchester Bay, an area with limited existing access control. This strategy would include driveway consolidation to enhance safety along the highway, as well as providing a clearly defined and protected facility for pedestrians and bicyclists. Landscaping could be provided along both sides of the highway and adjacent to the trail. Consideration should be given to native species in any landscaping improvements.
- Salmon Harbor Drive
  - Maintaining separation and orderly traffic movement for vehicles, OHVs, bicycles and pedestrians through a corridor of limited width will be the key design challenge in this area.

### 4.1.3 Environmental Issues

As part of the preparation for a Federal Lands Access Program (FLAP) grant funding application for the Western Segment (underway as of March 2018), an environmental baseline analysis was conducted by ODOT staff. This baseline report is included in Appendix B of Technical Memorandum #4. Analysis identified the following specific issues that may need to be addressed as any improvement project in the West Segment proceeds:

- *Cultural Resources* – Undisturbed portions of the proposed path may contain cultural resource deposits. An archaeological survey would be required throughout the project area. A few archaeological sites are in the vicinity of the proposed project. However, the exact locations are unknown.
- *Threatened and Endangered Species* – Endangered Species Act (ESA) listed plants may occur within the project footprint. A rare plant survey would be required. In addition, ESA- listed Coho Salmon are in Silver Creek. Impacts to Silver Creek would need to be avoided to the extent possible. Coordination with the National Marine Fisheries Service (NMFS) would be necessary for this project.
- *Other Fish and Wildlife Habitat* – Extending the culverts that cross US 101 at mileposts 214.0, 214.38, 215.32 and 215.6 will trigger fish passage regulations and require that each of the culverts be replaced with culverts that meet state and federal fish passage requirements.
- *Floodplain/Floodway* – a small portion of the trail may be located in the 100-year floodplain which will require appropriate permitting.
- *Section 4(f) and Section 6(f) Parklands* – the trail alignment will need to avoid potential impacts to these resources in the vicinity of the High School and near existing campgrounds. Windy Cove

Campground is located along the south side of Salmon Harbor Drive in the vicinity of the proposed path, and Umpqua Lighthouse State Park is located at the south end of a proposed trail option. Impacts to those areas will need to be avoided.

- *Water Quality/Stormwater Management* – will require stormwater management and/or treatment if water flow on new impervious surfaces is redirected.
- *Wetlands* – an area of vast wetlands is located along US 101 between mileposts 214.5 and 215.7. A wetland determination would be required and impacts to wetlands minimized. Any unavoidable impact will need to be permitted and mitigated. Mitigation rates are approximately \$100,000 per acre. However, physical mitigation will be required for any impacts over 0.1 acres and there are currently no mitigation banks on the south coast.
- *Waterways/Other Waters of US and State* – Silver Creek runs parallel to US 101 (on the east side) for approximately one mile. Impacts to Silver Creek will have to be minimized to the extent possible. This will likely cause geographical limitations when trying to fit a multiuse path through portions of this section. Any impacts to waterways or “other” waters will require appropriate permitting.

## 4.2 CENTRAL SEGMENT – US 101 AND OR 38 IN REEDSPORT

The middle segment of the Dean to Dunes Trail corridor runs through the City of Reedsport between 22<sup>nd</sup> Street on US 101 and 3<sup>rd</sup> Street on OR 38. This alignment has lower speeds, varying widths, presence or absence of existing sidewalks and on-street bicycle lanes, and other issues which give this section a strongly urban character. As noted earlier in this plan, significant planning has already occurred for multimodal and trail-related improvements in this area as part of both the *Levee Loop Trail Plan*, and the City's *Pedestrian Safety Study*. Thus, the key goals of the DDTP in addressing the Central Segment are to:

- Identify the preferred trail alignment among the choices previously studied
- Determine how the DDT alignment in the Central Segment will connect to the East and West Segments.
- Identify appropriate signage and other informational needs for the Central Segment

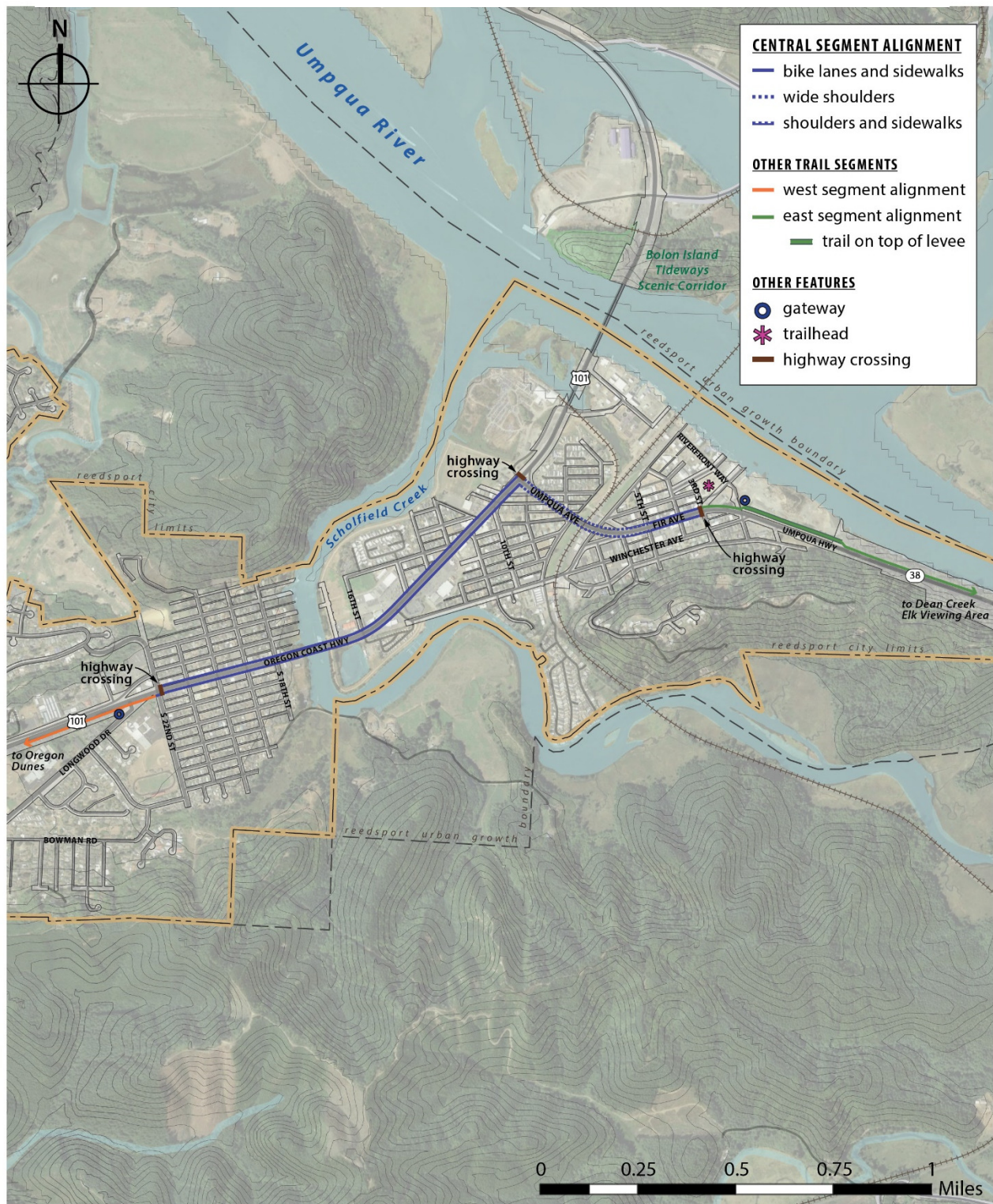
### 4.2.1 Overview of Improvements

The DDT would follow US 101 through Reedsport using existing or pending bicycle and pedestrian enhancements along the highway between 22<sup>nd</sup> Street and OR 38 (Umpqua Avenue). The trail would turn east along OR 38 crossing the CORP railroad tracks at the recently improved pedestrian crossing and transitioning from a wide shoulder into an urban type facility with sidewalks and bicycle lanes at 5<sup>th</sup> Street. These improvements continue to 3<sup>rd</sup> Street at which point the East Segment of the DDT would begin on the north side of OR 38. The alignment of the Central Trail Segment is illustrated in **Figure 4-4**.

### 4.2.2 Connections to the Central Segment

The Central Segment would join the West Segment on US 101 at 22<sup>nd</sup> Street. There is an existing traffic signal at this location which would provide protection for trail users as they leave the highway section with bike lanes and sidewalks and access the multiuse pathway on the east side of US 101.

**Figure 4-4. Segments B and C - Trail Alignment**



The Central Segment would join the East Segment on OR 38 at 3<sup>rd</sup> Street where the existing bike lanes and sidewalks end. There is a crosswalk at this location where pedestrians and bicyclists can cross to the north side of OR 38 and access the multiuse pathway to continue their journey east. ODOT has made improvements along OR 38 to add bicycle lanes between 3<sup>rd</sup> and 5<sup>th</sup> Streets and to build a protected and separated crossing at the Central Oregon and Pacific Railroad (CORP) tracks. However, there are gaps in a fully developed bicycle and pedestrian system along this highway and the existing shoulder must be used between approximately 5<sup>th</sup> Street and US 101. These shoulders can be used as an interim strategy for the DDT due to the low-speed and relatively low-traffic volumes along this highway segment. Over the longer-term consistent with the City's *Transportation System Plan*, it is proposed that sidewalk and bike lane improvements be developed to tie this section of the highway to existing improvements on OR 38 through development of sidewalks and bike lanes.

In both transition areas from the Central Segment to the East and West Segments signage needs would be identified during design. Necessary signs would include: directional signage to make connections to the DDT as well as Levee Loop trail facilities, trail logo signage to reinforce the presence of the route to bicyclists and pedestrians, and informational and wayfinding signage to identify amenities that will be attractive to trail users.

## 4.3 EAST SEGMENT – REEDSPORT TO DEAN CREEK ELK VIEWING AREA

### 4.3.1 Description

The preferred Dean to Dunes Trail alignment in this segment runs along the north side of OR 38 east of 3<sup>rd</sup> Street from where the highway approaches the Reedsport city limits to the Dean Creek Elk Viewing Area visitor facility. As noted previously, the corridor passes through a variety of terrain with differing roadway types. The west end of the East Segment is a two-lane urban highway with 25 mph speeds from east of 3<sup>rd</sup> Street to east of Winchester Avenue. Upon leaving the developed area, speeds increase to 40 mph along the levee that separates the highway from the Umpqua River, and then to 55 mph from near the end of the levee to Dean Creek. There are varying rights-of-way and pavement widths and differing physical opportunities and constraints along the highway – all of which affect trail development.



*Dean Creek Elk Viewing Area*

### 4.3.2 Overview of Trail Alignment

It should be noted that development of a multiuse trail along OR 38 to the east of Reedsport involves more complex challenges than can be addressed in a planning level study such as the DDTP. Consequently, the discussion of trail improvements in the East Segment is more generalized than in the West Segment and the area is a lower priority for implementation. While this section presents a general

discussion of a preferred trail alignment and identifies trail types and amenities that could be constructed, there is insufficient topographic and survey information available to provide specific details. The intent of the DDT Plan is to identify promising opportunities and key issues that must be addressed during a subsequent design level effort. This section includes a discussion of likely trail types that could be implemented in the East Segment, along with potential amenities with a particular focus on highway crossing alternatives.

- **Beginning of East Segment** – The trail alignment starts on the northeast corner of the intersection of OR 38 with 3<sup>rd</sup> Street in the eastern portion of the City of Reedsport. The preferred trail alignment would continue east along the highway frontage and cross at-grade both Riverfront Way and the entrance to future developable property on Umpqua River frontage. This trail could connect to the Umpqua Discovery Center and the Levee Loop Trail system by using the existing Riverfront Way.
- **Umpqua River Levee** - After crossing the property entrance road the trail would be ramped up onto the existing levee that parallels the north side of OR 38 for approximately 1,450 feet. This area is entirely within the existing Reedsport city limits. The levee is owned and maintained by the US Army Corps of Engineers (USACE) and any trail facility would require coordination with and permitting by this agency. By being located off the highway, this alignment provides a more pleasant user experience along with a good view of the river.
- **OR 38 from Levee to Dean Creek** - East of the end of the levee, the trail would follow the north side of OR 38 to a location where it would cross the highway at a location to be determined and then continue along the south side of the road to the Dean Creek Elk Viewing Area.

The eastern portion of this segment is illustrated in **Figure 4-5** where various highway crossing alternatives have been suggested. These crossing alternatives are further discussed below.

### 4.3.3 Implementation Decisions

As the Preferred DDT concept moves into design, decisions must be made related to the types of trail that should be provided along each portion of the East Segment, along with trail amenities and other trail features. The following is a brief discussion of the key issues that will need to be addressed in making ultimate decisions on the appropriate trail design.

#### *Conceptual Trail Types by Location*

While more detailed survey information will be needed to determine where there is sufficient existing width along the highway to add a buffered trail or where some other approach to trail design might be necessary. This section includes a short discussion of the potential trail types that could be implemented in the East Segment.

#### OR 38, 3<sup>rd</sup> Street to Levee

OR 38 (Fir Avenue) is posted for 25 mph speeds and has limited right-of-way, making this trail concept the appropriate choice in this section. This 10-foot asphalt pathway could run along the north side of Fir Avenue from east of 3<sup>rd</sup> Street to the point at which the existing Umpqua River levee begins. It would be separated from the roadway by at least a 5-foot wide buffer. This buffer can consist of pavement markings or simple barriers such as bollards, although a more substantial physical barrier—such as

vehicle parallel parking spaces or landscaping—is preferred. The trail would make an at-grade crossing of Riverfront Way and the existing entrance road to future developable riverfront property. An illustration of this type of trail is presented in **Appendix B**. This section could include one trail type, the **Street Adjacent to Lower Speed Road Concept**.

### Umpqua River Levee

East of the future riverfront development entrance road, the trail would access the existing Umpqua River levee via a new ramp that will require approval by the USACE and must meet ADA standards. The trail would follow the levee alignment for approximately 700 feet where a gated opening in the levee currently exists. At this point, the trail would need to drop back down to highway grade, cross the opening and then go back up onto the levee via another ramp. For a short distance the trail would be closer to the highway but would be buffered to preserve a sense of comfort for trail users. The gated crossing is currently unused but is expected to be used in the future as the riverfront property develops. When a full access road is developed at this location, trail crossing enhancements would be necessary including appropriate signage and pavement marking. The trail would continue along the levee for another 700 feet at which point it would ramp back down to highway grade. The trail would be paved with asphalt concrete and would be narrower than the Preferred Trail Concept due to the limited width of the levee itself. An illustration of this type of trail is presented in **Appendix B**. This section could include also one trail type, the **Levee Trail Concept**.



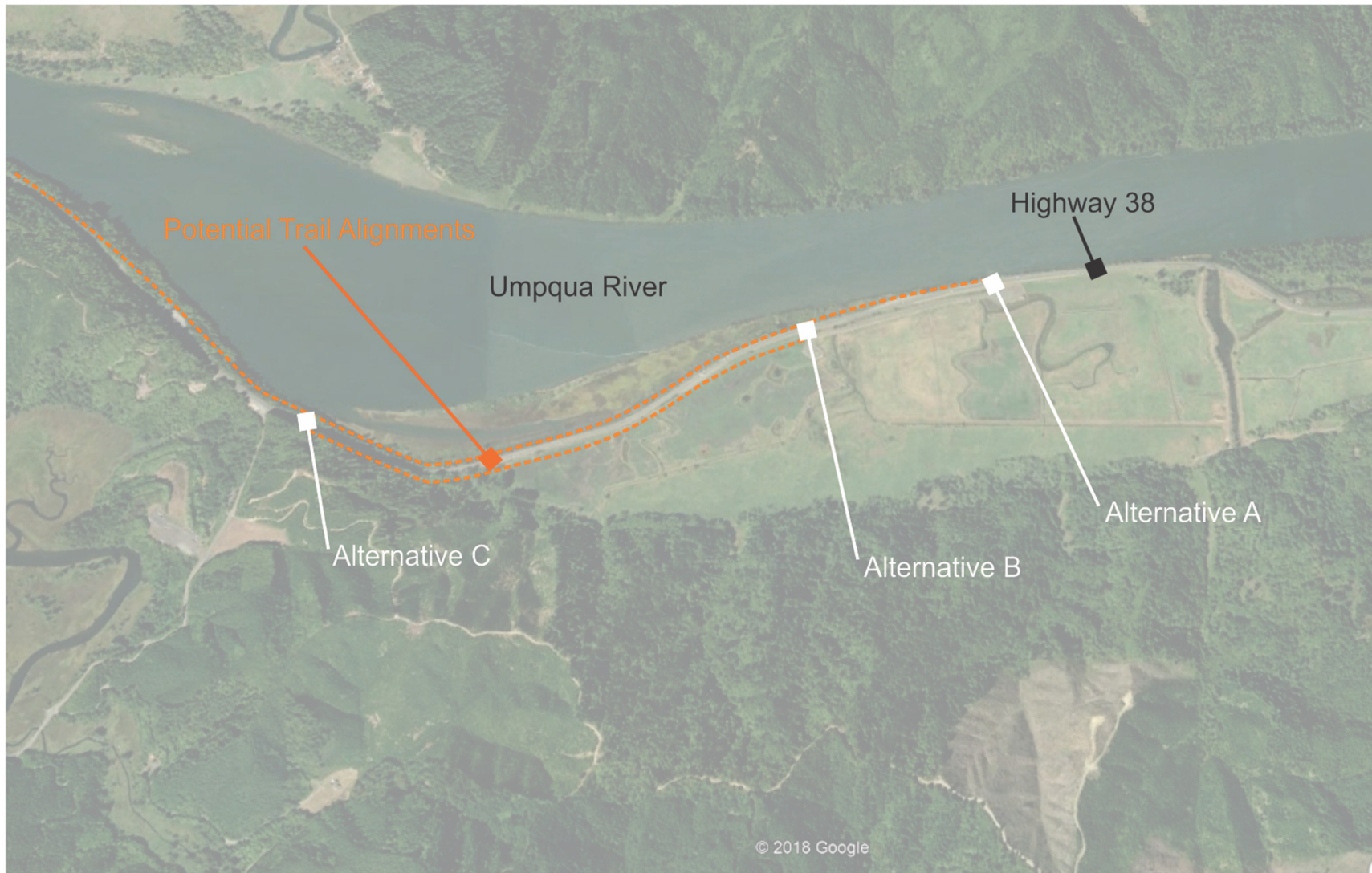
*Umpqua River Levee North of OR 38*

### OR 38, east of Levee to Dean Creek Elk Viewing Area

East of the levee the highway follows an alignment that is narrower and has frequent steep topography on either side (both up and down). Generally, the highway alignment through this area to a point just west of Dean Creek would preclude development of the Preferred Trail Concept. Trail recommendations in this area include the “Street Adjacent to Higher Speed Road Concept” and the “Multiuse Cantilevered or Pile-Supported Path” both of which are described below. Stationing of these trail types cannot be accomplished at this time due to insufficient survey information. Generally, the trail would stay on the north (river) side of OR 38 but would ultimately need to cross the highway to reach the Dean Creek Elk Viewing Area. As shown in **Figure 4-5** there are several potential highway crossing alternatives that require further investigation. Descriptive information about each of the three crossing alternatives is included in **Appendix C**.

This section could include three trail types, depending on location and topography:

- **Street Adjacent to Higher Speed Road Concept** – This trail concept would be used in locations where there is sufficient ROW to provide a barrier-separated facility and where speeds are 40 mph or greater. A concrete barrier with appropriate shy distance would be provided between

**Figure 4-5. DDT East Segment Highway Crossings**

the 10-foot trail and the highway. This pathway would also be separated from vehicular traffic by the highway shoulder. The trail would be paved with asphalt concrete. See Appendix B for an illustration of this concept.

- **Cantilevered Structure with Retaining Walls or Pile-Supported Path** - This type of trail would provide a separated 10-foot wide multiuse structure set on fill or piers between the highway shoulder and the existing slope in areas where there is insufficient right-of-way to provide a full barrier-separated trail on the same grade as the highway. Illustrations of these trail types are included in **Appendix B**.
- **Preferred 10-foot Trail Concept** - East of the narrow highway sections where sufficient right-of-way becomes available, the 10-foot Preferred Trail Concept would be used. Care should be taken in design and construction to minimize any wetland or river-related impacts in this area. Depending on which highway crossing alternative is selected for implementation, the trail may be either on the north or south side of OR 38. The various highway crossing alternatives are illustrated in **Appendix C**. An illustration of the Preferred Trail Concept is presented in **Figure 3-1**. The trail would be paved with asphalt concrete.

### *Trail Amenities and Features*

Key amenities and trail features to be installed in the East Segment include:

#### Trailheads

A trailhead location should be identified during the design process in consultation with stakeholders in the community. Existing on-street parking in the vicinity of Rainbow Plaza could be considered for this purpose. This trailhead should include safe access to the trail that separates vehicular and trail users (i.e., installation of bollards and signage to prevent vehicles using the trail), and provide bicycle storage/parking, as well as wayfinding, directional and trail logo signage. Additionally, restrooms are proposed in the LLTP close to a recommended levee trailhead near US 101 and the Scholfield Creek Bridge and these could also be used by persons using the DDT.

#### Trail Crossings

Potential trail crossings could be located at one or more of the following locations:

- Trail crossing of OR 38 at the intersection of Fir Avenue with 3rd Street using the existing crosswalk on the west side of this intersection.
- Trail crossing of Riverfront Way and the entrance to the area north of the levee and east of Riverfront Way where these streets intersect Fir Avenue (OR 38). Trail markings and signage should be installed at these intersections including bollards to restrict vehicular access to the trail. Existing illumination in this area may need to be enhanced.
- Trail crossing of OR 38 east of the Levee at one of the three potential locations illustrated in **Figure 4-5**, or at another location to be determined after further preliminary concept engineering and development when additional topographic survey, soils and other relevant information is available. Examples of potential highway crossing locations and types are shown in **Appendix C**.

### Trail Signage

Recommended trail signage in this Segment should include:

- DDT logo signage.
- Wayfinding signage including mileage to the wide variety of activity centers located in Reedsport such as the cycle stop or bike station for minor repairs, restrooms, food and other supplies, visitor and interpretive facilities and others.
- Directional signage to clearly identify the alignment of the DDT, particularly up onto and off of the levee.
- Regulatory and/or hazard signage.

As noted in the Levee Loop Trail Plan because USACE standards preclude footings dug into the levee, any signage would need to be located off of the levee berm, most probably at the toe of the levee ramp.

### Gateway Treatment

Install a gateway feature in the westbound direction approaching Reedsport identifying that a traveler is entering a built-up area. This treatment could also include additional active signage that reinforces the 25 mph speed reduction sign that currently exists on westbound OR 38 east of the city. This gateway location could also be coupled with an overall map of trail facilities in the Reedsport Area that includes both DDT information as well as the LLT system. The map could indicate trail lengths and accessibility information.

### Rest Area and/or Viewpoints

While the top of the levee provides views towards the Umpqua River, the narrow crown offers little room to create even simple viewpoints and approval by USACE of more structured viewpoints over the edge of the levee crown would be highly unlikely. An established rest area would likely need to be located off the levee crown.

### Interpretive Opportunity

Input received from the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians indicates that consideration should be given to providing interpretive information about the tribal presence and original allotments along the south bank of the Umpqua River in the study area. This information could be provided in conjunction with the proposed rest area.

### Design and Implementation Challenges

Over the course of the DDT planning process, a number of implementation challenges were identified in the West Segment which must be addressed during the design process. Some of the more obvious challenges are described below, but this list should not be considered exhaustive. Additional challenges may be identified as the design process advances.

### OR 38, 3<sup>rd</sup> Street to Umpqua River Levee

- Provide clear bicycle and pedestrian crossings at the intersections of OR 38 with 3<sup>rd</sup> Street and Riverfront Way.

### Umpqua River Levee north of OR 38

- The levee trail and all levee access ramps need to be located and conceptually designed to comply with USACE and Americans with Disabilities Act (ADA) requirements. As per USACE direction, ramps must not cut into the levee prism. As noted in the *LLTP*, there are two general challenges to locating any amenity features on the levee crown or levee berm slopes:
  - The crown is only 8 to 12 feet wide. Once an 8 to 10-foot-wide paved multiuse trail is built there will be little or no room for most trail amenities.
  - USACE generally does not permit any improvements that have to bore or cut into the levee prism. This could extend to even modest concrete footings for sign poles and bench legs. The City and/or ODOT will need to consult closely with USACE to find amenity solutions that satisfy regulations.
  - There is the need for levee ramps not only at the beginning and end of this facility but also at the existing gate near the mid-point along the length of the levee to provide a continuous trail connection.

### OR 38, Levee to Dean Creek Elk Viewing Area

- Identify appropriate trail treatment by specific location based on refined survey and engineering detail.
- Identify preferred highway crossing location and treatment.
- Based on public input received during the plan review process, consider extending the trail eastward to serve the O.H. Hinsdale Gardens. Parking is limited at these seasonal gardens so overflow parking has been made available at the Dean Creek Elk Viewing area. However, there is no safe pathway to get visitors from the BLM parking lot to the gardens. Since access to the gardens is seasonal, a sign could be added at the BLM lot to indicate times of operation or a website to check to verify accessibility.

## 5. COSTS, FUNDING AND IMPLEMENTATION

This chapter includes planning level cost estimates for trail improvements, focusing primarily on the West Segment which is the priority for implementation. The chapter also presents a summary of key funding sources of active transportation and trail-related improvements.

### 5.1 COST ESTIMATES

#### 5.1.1 Cost Estimating Methods, Assumptions and Resources

Cost estimates have been prepared by ODOT in support of two pending grant applications through the Federal Lands Access Program (FLAP) for development of the DDT. In the West Segment, the grant application is for design refinement/engineering and construction. In the east segment, an overall capital budget has been identified but the initial grant application would support a design and preliminary engineering study to refine the trail alignment identified in the DDTP. These cost estimates are presented below.

#### 5.1.2 Preferred West Segment Alignment – Reedsport to Oregon Dunes

As part of an application for Federal Lands Access Program (FLAP) funding, ODOT prepared a planning level cost estimate for this portion of the DDT. A total project cost of \$16,374,000 was identified as described in **Table 4-1**.

**Table 5-1. Cost Estimate for West Segment Trail**

Item	Total Cost
Total Estimated Construction Cost	\$12,811,000
Right-of-way Acquisition	\$1,000,000
Construction Engineering	\$1,281,000
Total Cost	\$16,374,000

#### 5.1.3 Preferred East Segment Alignment – Reedsport to Dean Creek

A planning level cost estimate for the East Segment of the DDTP trail could not be developed due to the lack of sufficient information about existing highway corridor topography and design constraints. ODOT has indicated an intent to submit a FLAP grant application in an upcoming cycle to conduct more detailed design analysis in the corridor. A final trail alignment will be identified at that time.

### 5.2 FUNDING OPPORTUNITIES

Funding for bicycle and pedestrian facilities comes from a variety of local, state and federal sources. This section discusses a variety of funding sources that could be used to design and construct the Dean to Dunes Trail.

#### 5.2.1 State Funds

State funding for bicycle and pedestrian improvements include the following key programs.

## *Statewide Transportation Improvement Program (STIP)*

The STIP documents Oregon's planned investments in transportation throughout the state over a four-year period. It includes multimodal projects on state, city and county transportation systems that are funded by state and federal sources. The allocation of funds in the STIP falls into several categories from which bicycle and pedestrian funding can be secured. These include:

- Enhance (which expands or improves the system)
- Fix It (which involves taking care of the existing system)
- Non-Highway Program
- Local Government Programs

The **Enhance program** provides funding for bicycle and pedestrian improvements through a combination of state and federal dollars. Funding is competitive with decisions made by the Oregon Transportation Commission in consultation with regional and local governments, public agencies and the public through a process that relies on recommendations from Area Commissions on Transportation (ACTs). Enhancement funds have a 10.27 percent match requirement.

The **Fix-It program** also provides the opportunity for funding through a set aside for specific types of bicycle and pedestrian improvement project such as:

- Sidewalk Improvement Program (SWIP) that is used to add pedestrian and bicycle facilities onto other projects or as stand-alone investments (like pedestrian crossings, pedestrian signals, sidewalk infill, shoulder widening or bicycle lane striping).
- Quick Fix funds are used on a discretionary basis for bicycle and pedestrian improvements on the state highway system for things such as sidewalk infill, pedestrian crossings and bicycle lane striping.

**Non-Highway programs** competitively fund bicycle and pedestrian projects along with public transportation. Projects are approved by the Oregon Transportation Commission with input from Area Commissions on Transportation.

## *Connect Oregon*

Bicycle and pedestrian projects are not eligible to use the State Highway Fund are eligible for funding under this grant program on a competitive basis. The program is funded biennially by the Oregon legislature, and includes a new \$15 bicycle excise tax in addition to lottery-backed bonds. The bicycle excise tax will be used only on bicycle and pedestrian projects. Connect Oregon funds have a 30 percent matching requirement.

## *Recreational Trail Program*

Recreational Trail Program Grants (RTP) are federally-funded and administered by the Oregon Department of Parks and Recreation (OPRD). RTP grants can be used to develop, construct, maintain and rehabilitate trails and trail facilities for hiking, bicycling and all-terrain vehicle riding. Yearly grants are awarded based on the level of funding approved by the U.S. Congress. Eligible applicants include cities, counties, state and federal agencies. The program requires a 20 percent match.

## 5.2.2 Federal Funds

A Federal funding program that could be used to develop the DDT includes:

### *Federal Lands Access Program (FLAP)*

Federal Lands Access Program (FLAP) funds are intended to connect county roads and state highways to Federal high-use recreational areas or Federal economic generators located on Federal lands. Within the DDT corridor, these federal lands include the Suislaw National Forest, the Army Corps of Engineers beach parking west of Winchester Bay, and the Oregon Dunes National Recreation Area at the west end of the corridor, and the Bureau of Land Management's Dean Creek Elk Viewing Area at the east end. Eligible projects include research, planning, engineering, construction, or maintenance activities related to road, bicycle and pedestrian improvements. Eligible agencies include all Federal Land Management Agencies in Oregon, the State of Oregon, local governments and tribes. Applications must be submitted jointly from a federal and local agency.

Money for this program is available from the Highway Trust Fund and is subject to annual appropriation by the U.S. Congress. For the current fiscal year, nearly \$33 million is available in the State of Oregon for projects. These projects are selected through a competitive application process and require a 10.27 percent match.

## 5.3 IMPLEMENTATION

This section focuses on actions that will need to be taken to ensure that the Dean to Dunes Trail Plan, when adopted, becomes a part of the appropriate planning and policy documents for the City of Reedsport and Douglas County. These plans include:

- City and County Comprehensive Plans
- City and County Transportation System Plans

Suggested actions to incorporate the findings and recommendations of the DDTP into these documents are described below.

### 5.3.1 Plan Amendments

Adoption of the *Dean to Dunes Trail Plan* will require formal acknowledgment in the existing Comprehensive and Transportation System Plans of the City of Reedsport and Douglas County to provide the basis for local agency implementation support. Suggestions on where and how this recognition should be incorporated into these documents is presented in this section.

#### *City of Reedsport Comprehensive Plan*

The appropriate place to acknowledge and incorporate the findings, conclusions and recommendations of the *Dean to Dunes Trail Plan* in the City's *Comprehensive Plan* is in the Community Services Element for Transportation. In particular, acknowledgment should be made by adding text under two transportation goals, Goal #1 and Goal #3.

Transportation Goal #1 speaks to developing a transportation system that will enhance Reedsport's livability and meet federal, state and local requirements. Policy #8 under this goal should be modified as shown by the underlined text below:

*“Insure compliance of transportation issues with the Reedsport Transportation System Plan, prepared by D.K.S. and Associates and revised to incorporate the findings, conclusions and recommendations of the Dean to Dunes Trail Plan which has been adopted by the Reedsport City Council and included as an inventory document for the Reedsport Comprehensive Plan.”*

Policy #9 under Goal #1 should also be modified as follows: *“Except where ODOT approval is required for projects on State Facilities, the Reedsport Transportation System Plan is amended to include the transportation improvements and cost estimates within the Reedsport Waterfront and Downtown Plan and the Dean to Dunes Trail Plan. [See Part 5.]”*

Transportation Goal #3 encourages the City to improve the safety of the transportation system. Under this goal a new policy should be added:

Policy #10 – The City shall work with ODOT to improve pedestrian and bicycle safety on OR 38 and US 101 through implementation of recommendations from the Dean to Dunes Trail Plan within the city limits.

### ***City of Reedsport Transportation System Plan***

The appropriate place to acknowledge and incorporate the findings, conclusions and recommendations of the *Dean to Dunes Trail Plan* in the City’s Transportation System Plan would be in the Pedestrian and Bicycle Plan implementation strategies. In particular, acknowledgment should be made by adding the underlined text below:

1. Add a strategy #7 to the Pedestrian Plan that incorporates the findings, conclusions and recommendations of the *Dean to Dunes Trail Plan* as follows:

*Strategy 7 – “Support Development of a Multiuse Trail in the OR 38 and US 101 corridors as recommended in the Dean to Dunes Trail Plan”*

This strategy acknowledges the adoption of the Dean to Dunes Trail Plan and incorporates it by reference into the Transportation System Plan. The City supports federal, state and local efforts to develop a multiuse path along OR 38 between the Dean Creek Elk Viewing Area and 3rd Street in Reedsport, and along US 101 between 22nd Street and a western terminus at the Oregon Dunes.

2. Add a strategy #7 to the Bicycle Plan that incorporates the findings, conclusions and recommendations of the *Dean to Dunes Trail Plan* as follows:

*Strategy 7 – “Support Development of a Multiuse Trail in the OR 38 and US 101 corridors as recommended in the Dean to Dunes Trail Plan”*

This strategy acknowledges the adoption of the Dean to Dunes Trail Plan and incorporates it by reference into the Transportation System Plan. The City supports federal, state and local efforts to develop a multiuse path along OR 38 between the Dean Creek Elk Viewing Area and 3rd Street in Reedsport, and along US 101 between 22nd Street and a western terminus at the Oregon Dunes.

### ***Douglas County Comprehensive Plan and Transportation System Plan***

The County’s Comprehensive Plan speaks broadly to the development of bicycle facilities along various state highways and county roads and recognizes bicycle planning activities in Reedsport. Suggested

revisions to these documents to acknowledge the recommendations of the *Dean to Dunes Trail Plan* include the following:

1. Modify Table 13-2 Designated Bikeway Routes and accompanying map in both plans as follows:
  - Change designation of project #1 - US 101 from Class III to Class I in the area from the Reedsport city limits to Salmon Harbor Drive in Winchester Bay.
  - Change designation of project #6 – OR 38 from Class III to Class I in the area from the Reedsport city limits to the Dean Creek Elk Viewing Area entrance.
2. Under “Consistency with Other Bikeway Plans” in both plans, modify text as follows:
  - *“221. The City of Roseburg adopted a Bike and Pedestrian Plan on September 2009. The City of Reedsport adopted a Bikeway Master Plan on May 1990 and the Dean to Dunes Trail Plan on xxx 2018. These are the only cities in Douglas County with an adopted bikeway plan.”* (Fill in the actual month of adoption)
  - *“225. Five bikeways within the State bikeway system, the Coast Bicycle Route (Hwy. 101), Interstate-5, Hwy 138, 38 and 42, passes through Douglas County. Bicycle facilities should be provided along the sections of Highway 38 from Drain to Elkton and Reedsport to Scottsburg. All five bikeways are included as part of this Plan.” The findings and recommendations of the Dean to Dunes Trail Plan for portions of US 101 and OR 38 abutting Reedsport are acknowledged and incorporated in this plan by reference.*
3. Under “Winchester Bay Circulation Policies” add the following:
  - *“6. Douglas County should work with, and solicit the help of, the Oregon Department of Transportation in an effort to beautify the Highway 101 corridor through Winchester Bay consistent with the conceptual recommendations of the Dean to Dunes Trail Plan and improve highway safety. ODOT should consider development of the corridor using a Parkway concept. Consideration should be given to the need for turn lanes, sidewalks, bike lanes and planting strips. Existing individual highway access permits from private properties should be renegotiated and diverted to common access points and, where possible, to County Road access points.”*
  - *“8. Bicycle lanes along Salmon Harbor Drive and Beach Boulevard should be installed to facilitate use of this mode of transportation consistent with the conceptual recommendations of the Dean to Dunes Trail Plan.”*

### ***Douglas County Bikeway Master Plan***

Suggested revisions to the County’s Bikeway Master Plan to acknowledge the recommendations of the *Dean to Dunes Trail Plan* include the following:

4. Modify Table 5 Designated Bikeway Routes and accompanying Map 2 as follows:
  - Change designation of project #1 - US 101 from Class III to Class I in the area from the Reedsport city limits to Salmon Harbor Drive in Winchester Bay.
  - Change designation of project #6 – OR 38 from Class III to Class I in the area from the Reedsport city limits to the Dean Creek Elk Viewing Area entrance.

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**APPENDIX A**  
**RECOMMENDED TRAIL ALIGNMENT CONCEPTS**

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## APPENDIX A – RECOMMENDED TRAIL ALIGNMENT CONCEPTS

Figure A-1. DDT West Segment, 2<sup>nd</sup> Street to Reedsport West Road



Figure A-2. DDT Trail Alignment, 22<sup>nd</sup> Street to Reedsport West Road

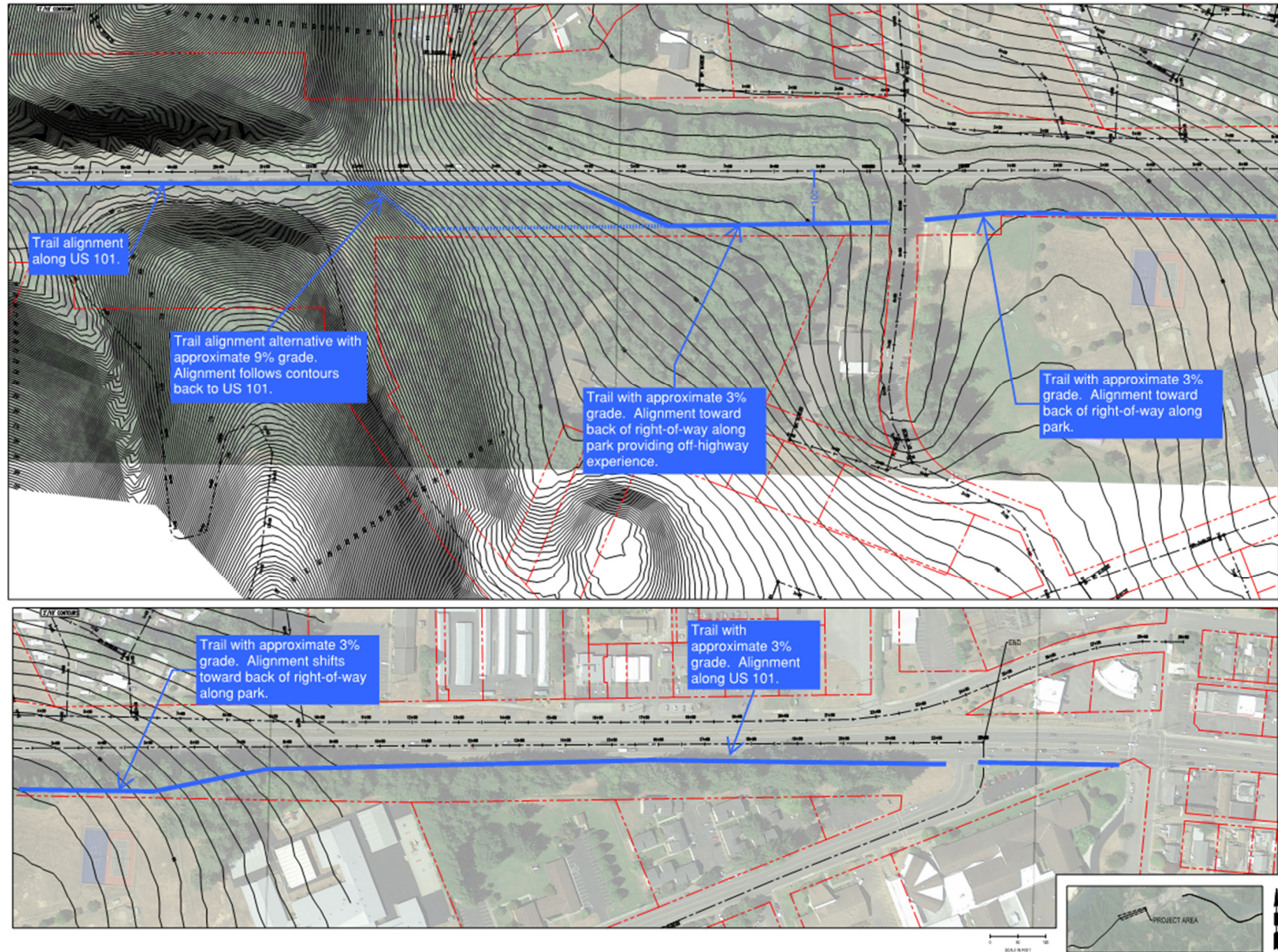


Figure A-3. DDT West Segment, Ranch Road to Estuarine Wetlands



Figure A-4. DDT West Segment, Near Estuarine Wetlands



Figure A-5. DDT West Segment, North of Winchester Bay

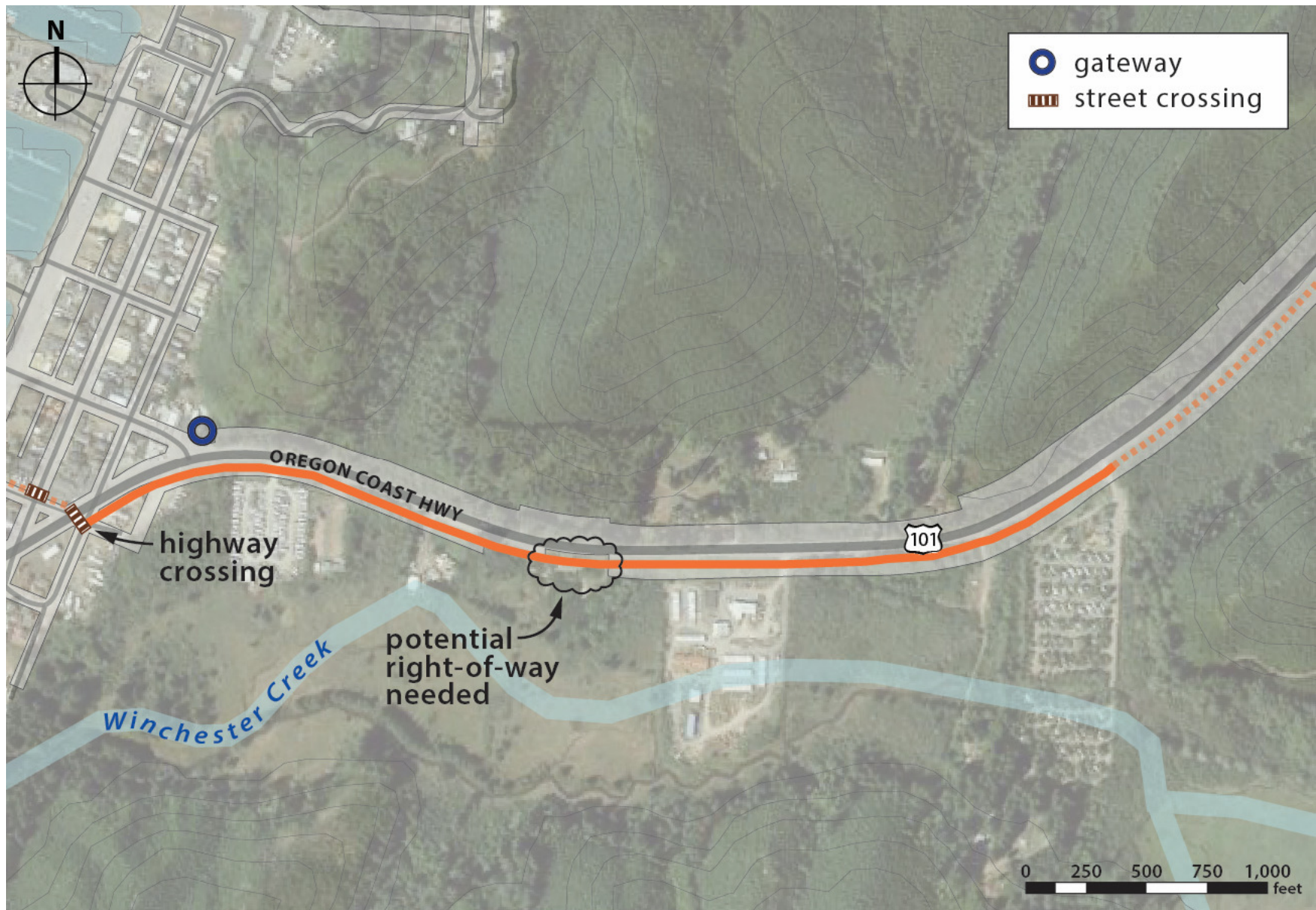


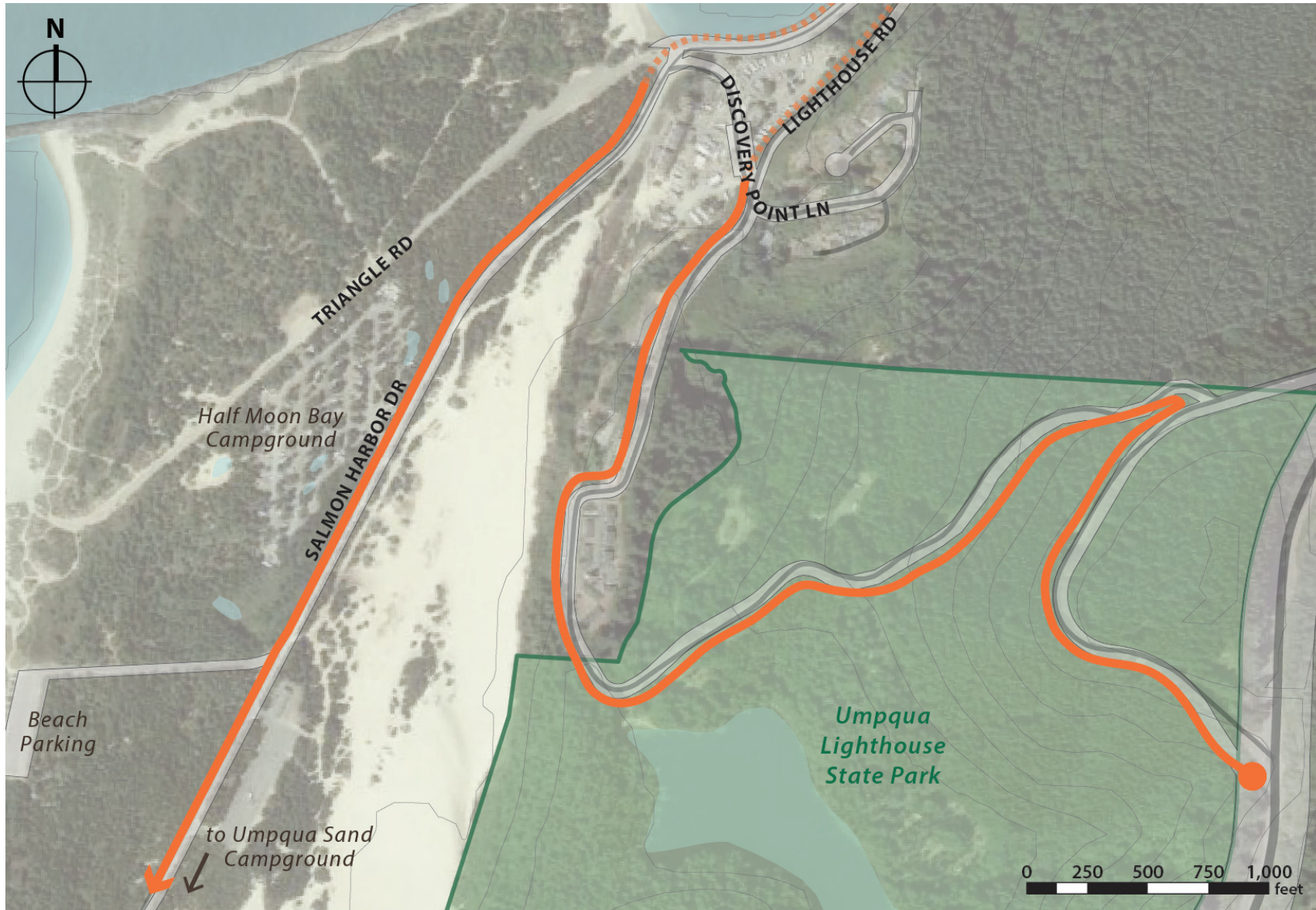
Figure A-6. DDT Alignment in Winchester Bay



Figure A-7. DDT West Segment, Winchester Bay to Discovery Point Lane



Figure A-8. DDT West Segment, Discovery Point Lane to Southern Terminus



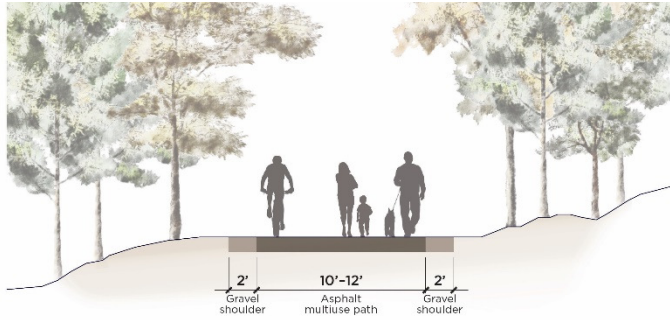
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## **APPENDIX B**

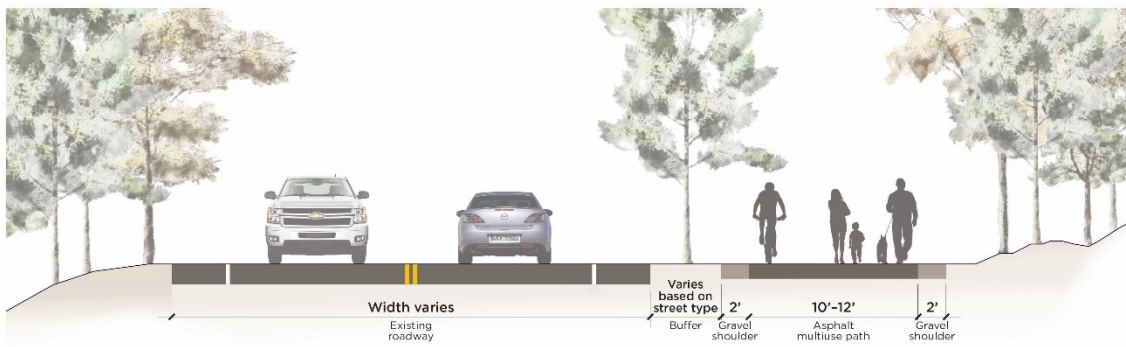
### **ILLUSTRATION AND DESCRIPTIONS OF TRAIL TYPES**



## Appendix B – Illustration and Descriptions of Trail Types

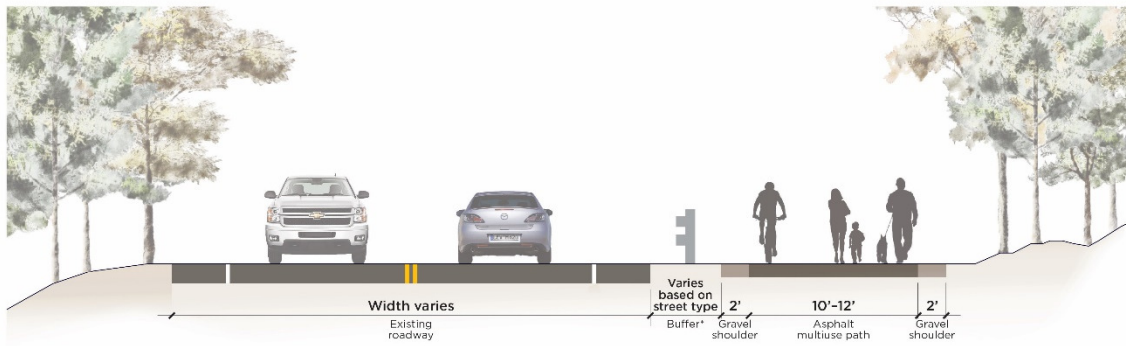


**Preferred Multiuse Trail**

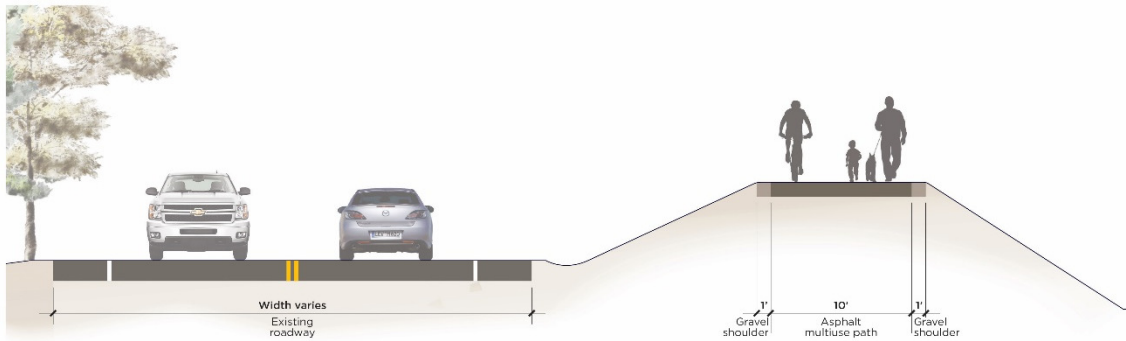


**Street Adjacent Trail - Lower Speed Streets**

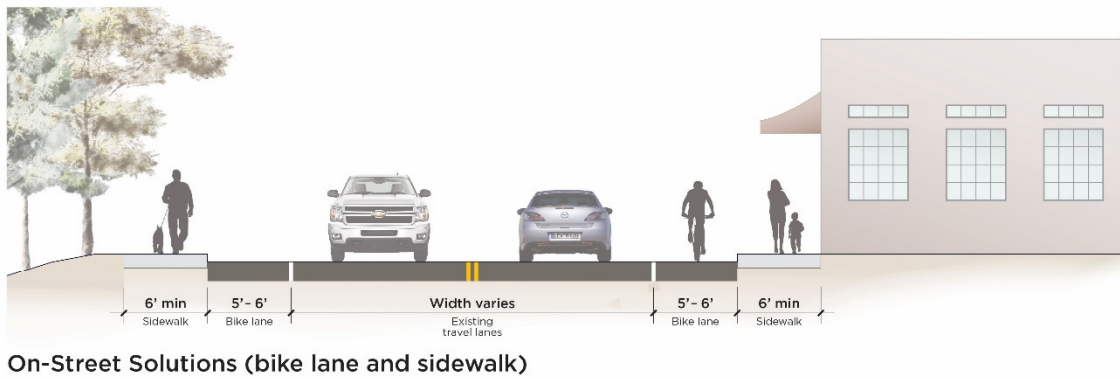
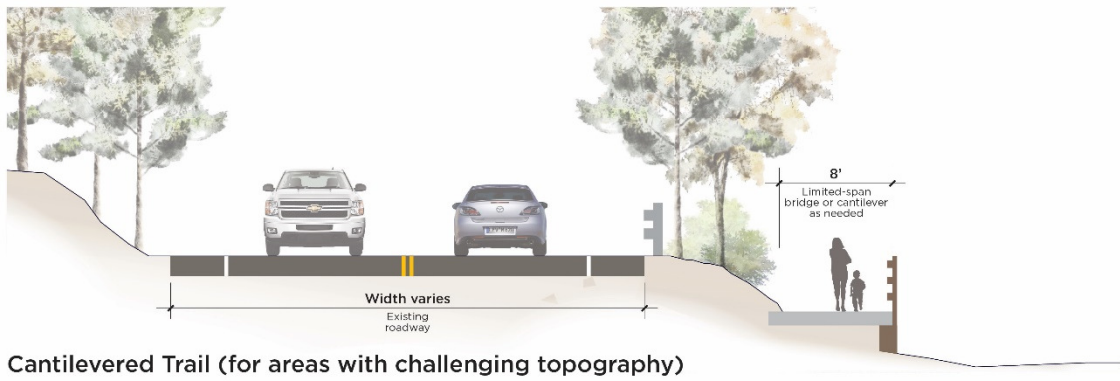
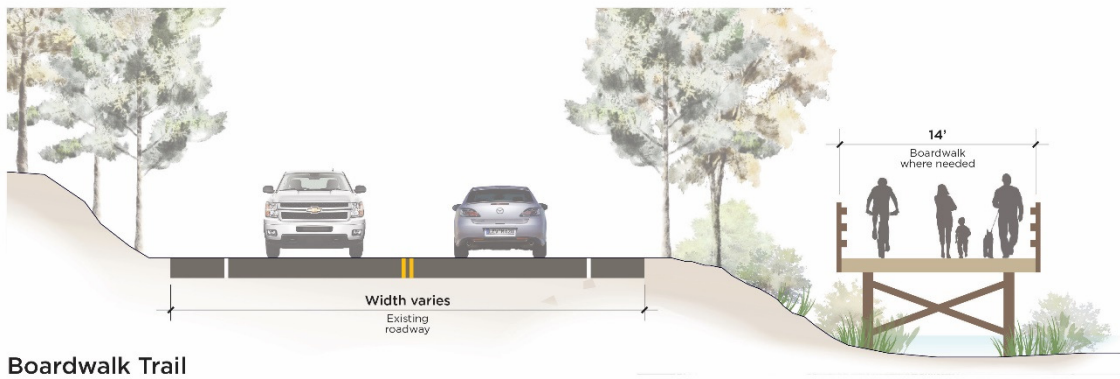
*Note: Landscaped buffer may be replaced with painted/striped buffer on low speed streets*



**Street Adjacent Trail - Higher Speed Streets**



**Levee Trail**



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# **APPENDIX C**

## **EAST SEGMENT TRAIL CROSSING OPTIONS**



## APPENDIX C – EAST SEGMENT TRAIL CROSSING OPTIONS

Figure C-1. OR 38 Trail Crossing Alternative A



Figure C-2. OR 38 Trail Crossing Alternative B



**Figure C-3. OR 38 Trail Crossing Alternative C**

