

City of Reedsport, Oregon

Levee Loop Trail System Plan

Volumes I and II



Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

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September 2015

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Credits

Photographs courtesy of Jim Rapp and Gregg Everhart.

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1. Executive Summary

The need for the Reedsport Levee Loop Trail (LLT), and possible connecting trail routes, is identified in the City of Reedsport's (City) 2006 Transportation System Plan (TSP) and further described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). A central objective of the Levee Loop Trail System Plan (LLTP) is to identify a trail alignment that primarily follows the 1968 levee system constructed to protect Reedsport's waterfront, downtown, and adjacent neighborhoods and highway commercial areas from flooding. Major sections of the levee are in private ownership. Trail sections may also use public streets or other public property.

The City operates and maintains this levee, with the US Army Corps of Engineers (USACE) as the primary regulator. The City is currently conducting a study for the purpose of securing levee accreditation from the Federal Emergency Management Agency (FEMA) as to flood protection adequacy.

The LLT will provide a convenient, non-motorized transportation alternative for city residents and visitors in traveling within and through the city's downtown and waterfront core. The LLT will access key attractions and destinations within the city; reduce reliance on motorized vehicles for trips to work, school, shopping, and recreation; and improve pedestrian, bicycle, and motorized vehicle safety along US 101, Oregon 38, and on city streets.

Total Trail Length and Cost

Trail alignments along the 1968 levee are the preferred solution for a trail system connecting commercial, industrial, recreational, and residential areas in and around the Reedsport downtown and river waterfront.

The LLT is primarily on the Levee Crown, except for short distances along Port Dock Road and US 101, and in areas where there is no earthen berm levee.

- **Total length:** 19,812 linear feet (LF)
- **Total on levee** (including ramps): 9,696 LF
- **Boardwalks/street-adjacent trail:** 936 LF
- **Total on-street:** 10,116 LF
- **Total cost:** \$6,244,600

Segment 1: Umpqua Waterfront

- **Preferred Trail Alignment:** On-street, shared-use – N 3rd Street/Rainbow Plaza/Riverfront Way.
- **Preferred Oregon 38 Crossing:** N 3rd Street at Fir Avenue/Oregon 38.
- **Other Road Crossings:** Signed crosswalks on Riverfront Way at E Railroad Avenue, Rainbow Plaza, and Water Avenue.
- **Levee Access:** New ramp from E Railroad Avenue around the toe of the railroad berm, then up to the levee berm from Port Dock Road.
- **Additional Recommendations:** Twelve-foot-wide sidewalk on the water side of Riverfront Way between E Railroad Avenue and Water Avenue; extension of the Riverfront Boardwalk between E Railroad Avenue and Water Avenue.

Segment 2: Port Dock Road

- **Preferred Trail Alignment:** Levee Crown from Port Dock Road at railroad bridge to Port Dock Road at Umpqua River US 101 Bridge; street-adjacent trail with short boardwalk along Port Dock Road.
- **Preferred Port Dock Road Crossing:** Signed crosswalk acceptable, user-activated flashing beacon desirable.
- **Levee Access:** New ramp under Umpqua River US 101 Bridge at Port Dock Road to Levee Crown; new ramp from Myrtle Avenue to Levee Crown near McIntosh Slough.
- **Possible Non-motorized Boat Launch:** "Expert" McIntosh Slough non-motorized boat launch under or near Umpqua River US 101 Bridge.

Segment 3: Champion Park

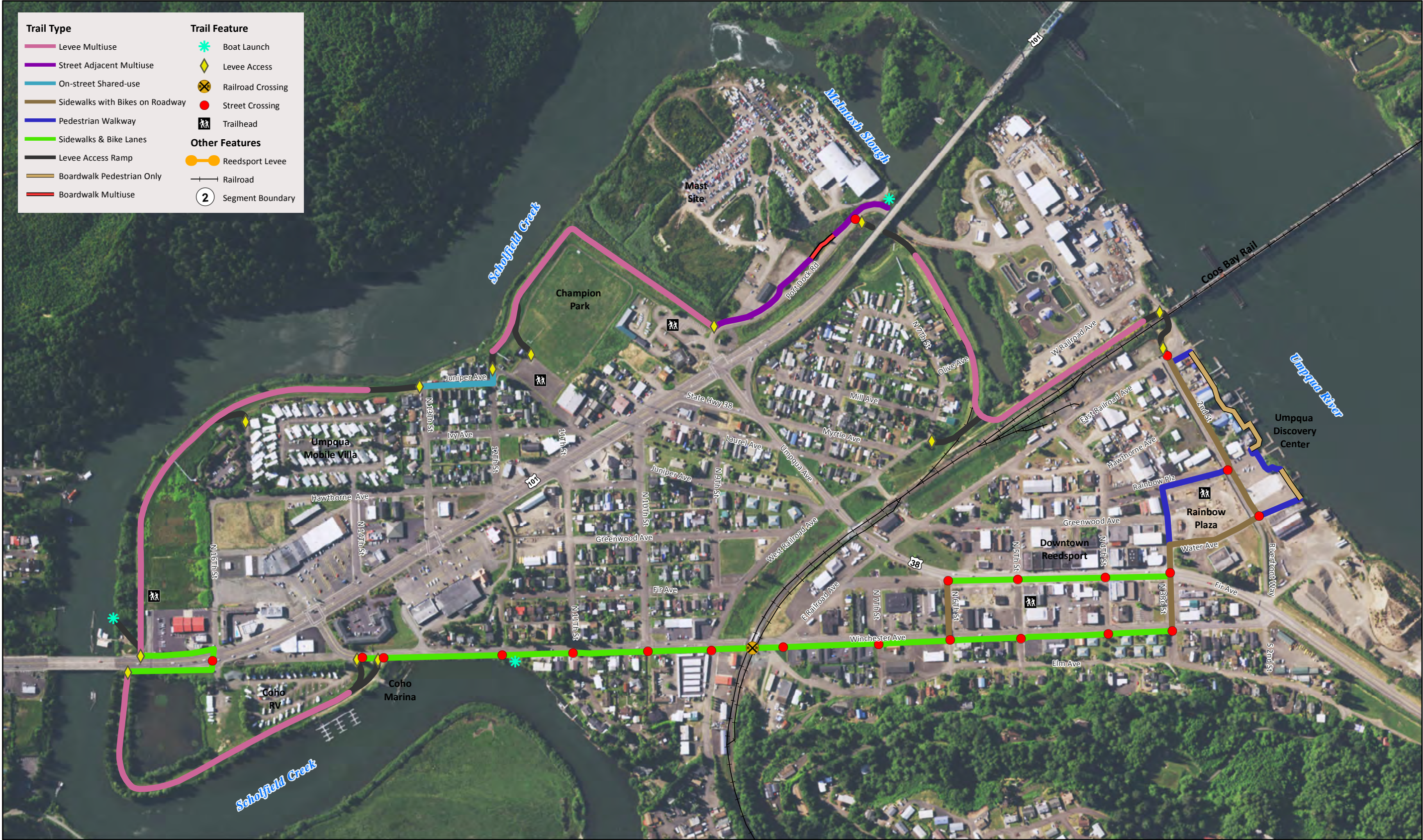
- **Preferred Trail Alignment:** Levee Crown, with on-street, shared-use Juniper Avenue section between N 12th Street and N 13th Street.
- **Levee Access:** Existing ramp from Port Dock Road to the Levee Crown near USFS Offices/Oregon Dunes Visitor Center; new ramp directly into Champion Park; upgraded ramp at N 12th Street.

Segment 4: Scholfield Waterfront

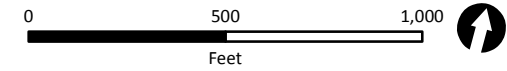
- **Preferred Trail Alignment:** Levee Crown
- **Preferred US 101 Crossing:** N 16th Street using crosswalk and user-activated flashing beacon. Undercrossing of Scholfield Creek US 101 Bridge preferred if bridge is rebuilt.
- **Levee Access:** Upgraded ramp from N 13th Street; new ramp to Umpqua Mobile Village private roadway; new ramp north of US 101 (accessing preferred non-motorized boat launch); new dual-ramp to Winchester Avenue.
- **Preferred Non-motorized Boat Launch:** North of US 101 into Scholfield Creek. Will require new levee access ramp.

Segment 5: Winchester Avenue

- **Preferred Trail Alignment:** Bicycle lanes/sidewalks along Winchester Avenue, and looping through downtown via sidewalks and bicycle lanes or shared-use along N 3rd Street, N 6th Street, and Fir Avenue (Oregon 38).
- **Preferred Oregon 38 Crossing:** Uses the preferred crossing option connecting Segment 1 to Segment 5 (see Segment 1).
- **Other Road Crossings:** All local streets intersecting with Winchester and Fir Avenue (3rd, 4th, 5th, 6th, 7th, E Railroad Avenue, W Railroad Avenue, 10th, 11th, 12th) should have signing and pavement markings or crosswalks installed.
- **Possible Non-Motorized Boat Launch:** "Limited purpose" launch into Scholfield Creek on small undeveloped private property along Winchester Avenue at N 12th Street.



Parametrix



Reedsport Levee Loop Trail
Map 1: Preferred Trail Option

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2. Background

The need for the Reedsport Levee Loop Trail (LLT), and possible connecting trail routes, is identified in the City of Reedsport's (City) 2006 Transportation System Plan (TSP) and further described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). A central objective of the Levee Loop Trail System Plan (LLTP) is to identify a trail alignment that primarily follows the 1968 levee system constructed to protect Reedsport's waterfront, downtown, and adjacent neighborhoods and highway commercial areas from flooding. Major sections of the levee are in private ownership. Trail sections may also use public streets or other public property.

The City operates and maintains this levee, with the US Army Corps of Engineers (USACE) as the primary regulator. The City is currently conducting a study for the purpose of securing levee accreditation from the Federal Emergency Management Agency (FEMA) as to flood protection adequacy.

Purpose and Goals

Problem Statement

The City currently lacks an integrated system of developed bicycle and pedestrian routes, particularly near and between US 101 and Oregon 38. Sidewalks and bicycle lanes exist in sections of the downtown and nearby neighborhoods, and there is a waterfront boardwalk near Riverfront Way, but many areas are without developed and safe bicycle and pedestrian options. Many informal trails have been established, particularly atop sections of the levee.

Purpose

The LLT will provide a convenient, non-motorized transportation alternative for city residents and visitors in traveling within and through the city's downtown and waterfront core. The LLT will access key attractions and destinations within the city; reduce reliance on motorized vehicles for trips to work, school, shopping, and recreation; and improve pedestrian, bicycle, and motorized vehicle safety along US 101, Oregon 38, and on city streets.

Plan Goals and Objectives

The LLTP provides a detailed analysis refining RWDP concepts and identifies near-term and long-term preferred trail alignment options, trail standards and design elements, trailhead locations, levee ramp accesses, key road and rail crossing options, regulatory requirements, cost estimates, and sources of funding. Development of the LLT will be coordinated with the City's ongoing levee accreditation effort.

Trail alignments along the 1968 levee are the preferred solution for a trail system connecting commercial, industrial, recreational, and residential areas in and around the Reedsport downtown and river waterfront.

LLTP objectives include:

1. Maximize the percentage of the trail alignment that is off-street and on the levee.
2. Identify a long-term and primarily off-street paved multiuse trail alignment.
3. Identify interim trail solutions more reliant on shared-use roadways and/or bicycle lanes and sidewalks until a multiuse trail can be constructed.
4. Identify trail alignments, standards, and cross-sections that comply with ADA and other statutory and regulatory requirements.
5. Provide guidance for trail alignments, access and amenity structures that satisfy USACE and FEMA requirements.
6. Link the trail to key destinations such as government offices, shopping, schools, residential neighborhoods, employment areas, and other community activity centers.
7. Provide trail alignments and designs that assure the safety and security of trail users.
8. Provide well-designed, visible, safe and convenient trail access points and trailheads, as well as street and highway crossings.
9. Consider visual and use impacts to abutting property owners and developments in determining the preferred trail alignments and designs.
10. Provide preliminary trail cost estimates, and catalog potential funding opportunities.

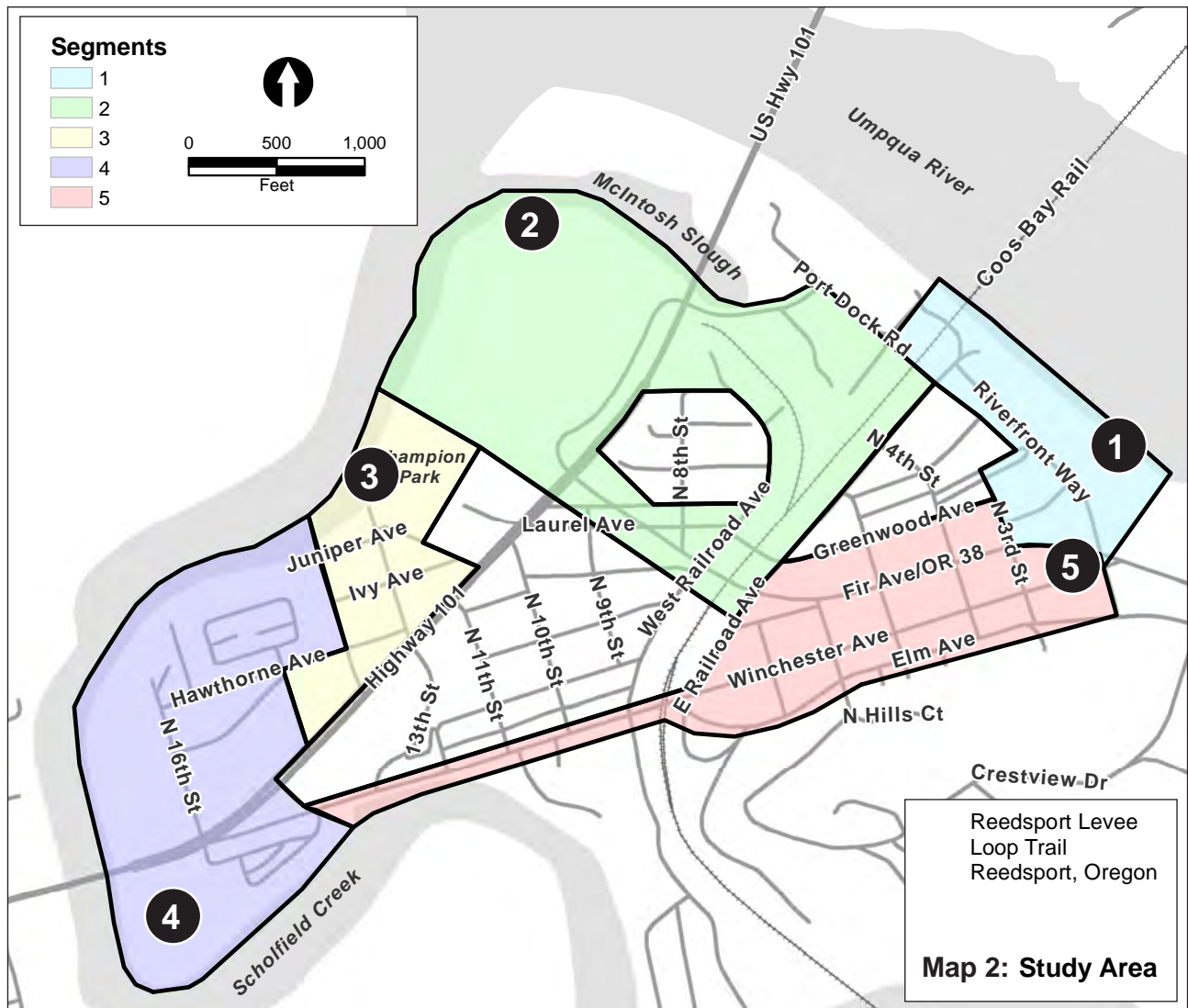
Emergency Access

The proposed LLT system borders much of the city's low to moderate income housing areas, including HUD housing and manufactured home parks for ages 65 and over. The trail system will provide residents in these areas with direct health benefits from being able to walk or bicycle to commercial areas or to enjoy the natural beauty and recreation activities provided by the Umpqua River and Scholfield Creek.

The LLT system will also play a vital role in emergency operations. Should the center of the city experience extreme flooding, a tsunami, or another catastrophic event that closes roadways through and out of the community, a paved trail system on the elevated Reedsport levee could serve as an

essential evacuation route. The levee trail will also be an alternate route for police, fire, and medical first responders. Along with the planned upgrade to the Scholfield Creek US 101 Bridge, to which the LLT will connect, the trail system would be the only route for area residents to safely access higher ground and evacuation zones with medical services, food and shelter, and emergency communications.

As noted elsewhere in this LLTP, trail paving will be constructed to carry maintenance vehicle loads. Loading would also be adequate for emergency equipment.



Study Area

The LLTP study area is divided into five planning segments. See Map 2 for study area and segment boundaries.

- 1** **Segment 1: Umpqua Waterfront** – Rainbow Plaza, Riverfront Way, Umpqua River Waterfront
- 2** **Segment 2: Port Dock Road** – Coos Bay Rail, Oregon 38, Port Dock Road, McIntosh Slough Waterfront
- 3** **Segment 3: Champion Park** – Champion Park, Ivy-Hawthorne Neighborhood, and Commercial Areas between 11th and 14th Streets
- 4** **Segment 4: Scholfield Waterfront** – N 14th Street to N 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront north and south of US 101, Coho RV and Marina
- 5** **Segment 5: Winchester-Downtown** – Winchester Avenue, Downtown Reedsport, Oregon 38/Fir Avenue

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3. Baseline Information

Baseline Information inventories, summarizes, and as applicable maps, existing plans and policies, transportation and land use features, natural and historic resource features, and community demographics that may impact trail development. For additional detail see Technical Memorandum No. 2: Baseline Information (Appendix B).

Baseline conditions information was derived from Geographic Information System (GIS) records when available. Other documents and reports were consulted for additional information as needed. All information was provided by the City or the Oregon Department of Transportation (ODOT). Any gaps in baseline information as listed in the LLTP's statement of work are noted.

Baseline conditions that may influence the LLTP are described under the following five topics.

1. Existing Plans and Policies
2. Transportation Features
3. Land Use Features
4. Natural and Historic Resource Features
5. Demographics

In addition, three aerial base maps are provided:

General Features (see Map 3)

Shows study area development and natural vegetation patterns. This map is overlaid with

topographic contours, the city limits, location of the 1968 levee, major named roadways and other transportation structures (railroad, bridges), major named water features; and key activity centers. Letter icons on the Key Activities Centers table on page 10 correspond to the list of key activity centers on Map 3.

Transportation and Land Use Features (see Map 4)

Shows functional roadway classifications, the 1968 levee, land use zoning, property boundaries, and larger vacant land parcels.

Natural Resource Features (see Map 5)

Shows wetlands and nonwetland waters, 100-year and 500-year floodplain, the 1968 levee, and estuarine natural resource zones.



Riverfront Way from Railroad Berm



Scholfield Creek along Winchester Avenue



Fir Avenue/OR 38 at N 4th Street

Key Activity Centers

Key activity centers are identified on General Features map (Map 3) with lettered icons.

Segment 1: Umpqua River Waterfront, Rainbow Plaza, Riverfront Way.

A Umpqua Discovery Center – Riverfront Way

B Rainbow Plaza – 3rd at Rainbow Plaza Road

C City Boat Launch – Riverfront Way

Segment 2: Coos Bay Rail Link, Oregon 38, Port Dock Road, McIntosh Slough Waterfront

D Oregon Dunes Visitor Center – US 101 at Oregon 38

E Douglas County Housing Authority Housing – Juniper Avenue at W. Railroad Avenue

F Reedsport Industrial Area – Port Dock Road

G Mast Redevelopment Site – Port Dock Road

Segment 3: Champion Park, US 101, Ivy-Hawthorne Neighborhood and Commercial Areas Between North 11th and North 14th Streets

H Champion Park

Segment 4: Scholfield Creek Waterfront, N 14th Street to N 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront South of US 101

I Umpqua Shopping Center – US 101 at 14th Street

J Umpqua Mobile Villa – Hawthorne Avenue at 14th Street

K Coho RV and Marina – US 101 at Winchester Avenue

Segment 5: Winchester Avenue, Downtown Reedsport, Oregon 38

L US Post Office – Fir Avenue at 3rd Street

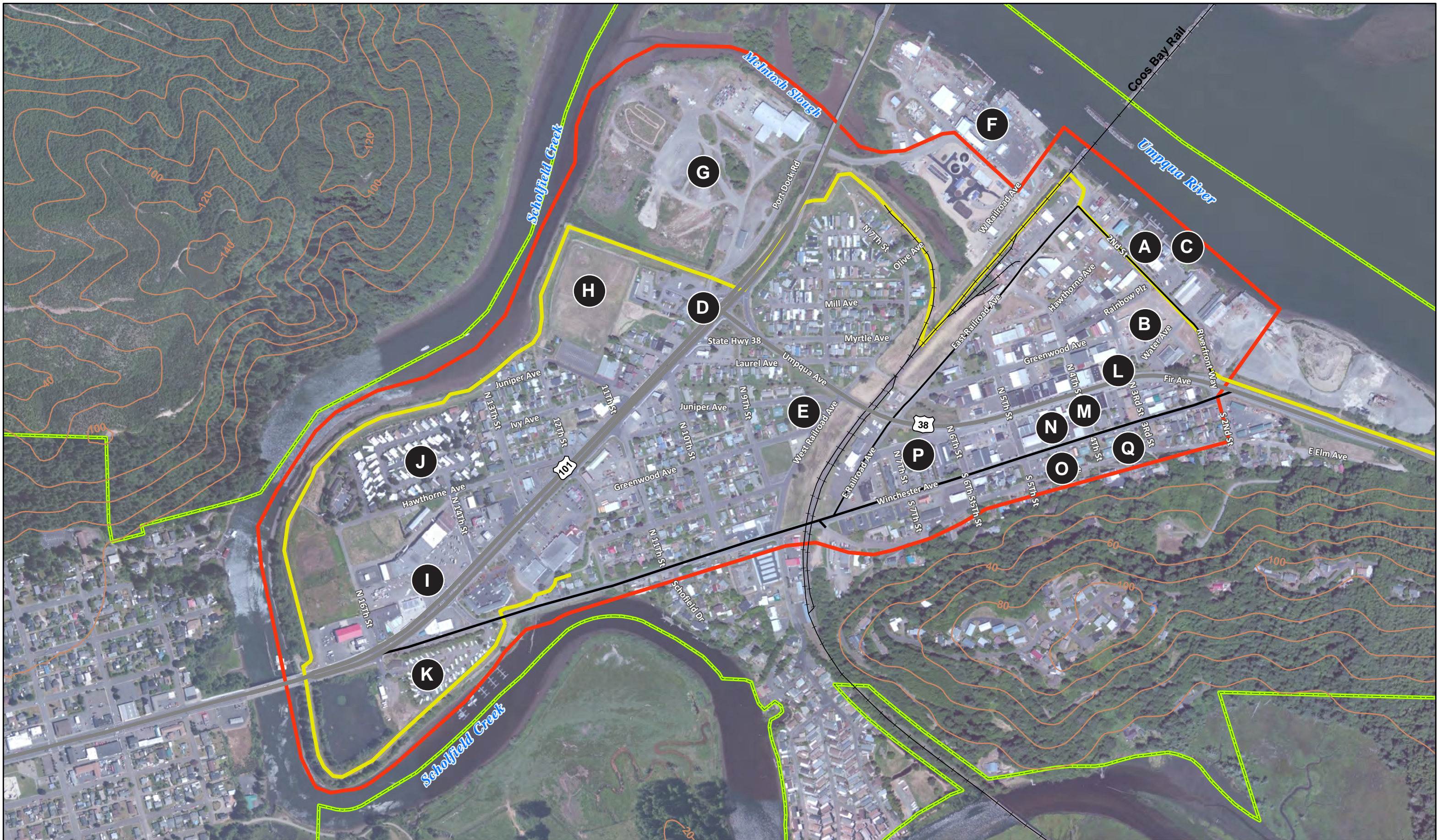
M Central Lincoln PUD – Fir Avenue at 4th Street

N City Offices – City Hall, Police, Fire, Library – Winchester between 3rd Street and 5th Street

O Lower Umpqua Senior Center – Winchester Avenue at 5th Street

P County Offices – Fir Avenue at 7th Street

Q Douglas County Housing Authority Housing – Winchester Avenue at 4th Street



Parametrix



0 0.05 0.1 0.2 0.3 Miles

- Reedsport Levee
- Arterial
- Contour (20ft)
- Trail Study Area
- Collector
- Railroad
- Reedsport City Limits

Reedsport Levee Loop Trail Plan

Map 3: General Features

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Existing Plans and Policies

Refer to Technical Memorandum No. 2: Baseline Conditions, Chapter 2 for more details on existing plans and policies.

City of Reedsport

Comprehensive Plan

The City Comprehensive Plan was acknowledged by the State of Oregon in 1994 and has been periodically updated, most recently in 2013. The entire LLTP study area is within the current city limits and urban growth boundary (UGB).

Pedestrian and Bicycle Goals and Policies

The development of trails and other pedestrian and bicycle facilities are frequently cited and supported in the current Comprehensive Plan:

- Chapter IV: Community Services under the Parks and Recreation Goal No. 1 (pages IV-4 to IV-5).
- Transportation Goals No. 2, 3, and 4 (pages IV-6 to IV-8).

- Development of the Levee Loop Trail (LLT) is specifically cited twice.

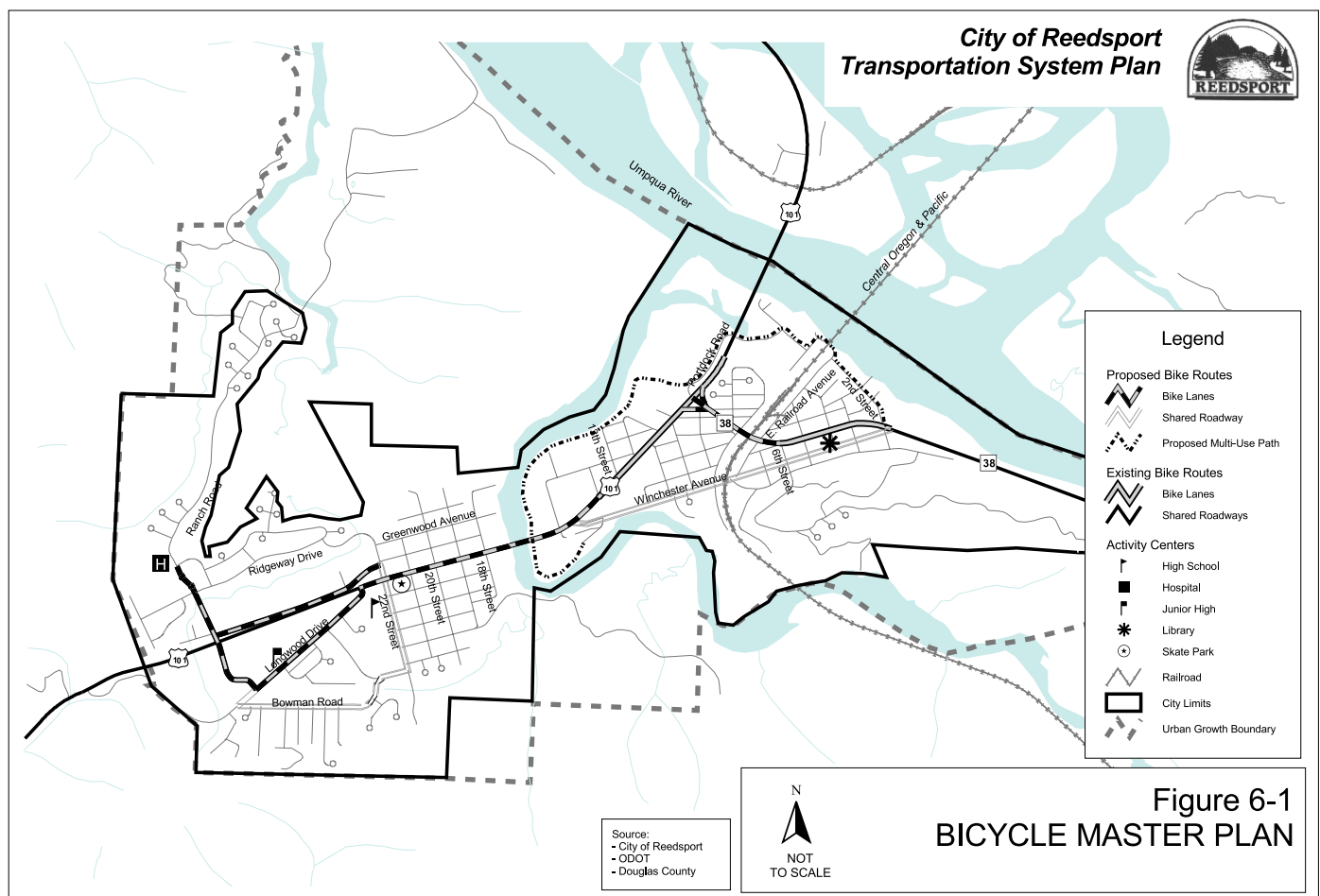
Transportation System Plan

The current City TSP was adopted in 2006. Two specific chapters address nonmotorized travel in the city: Chapter 5, Pedestrian Plan, and Chapter 6, Bicycle Plan. These two TSP chapters include goals and objectives similar to those for the LLT – connectivity, safety, improved crossings, etc.

Pedestrian Plan

The TSP Pedestrian Plan identifies three arterial roadway crossing improvements that could directly support the development of a safe and complete LLT.

- **Segments 1 and 5:** Oregon 38 and Winchester Avenue
- **Segment 2:** Oregon 38 and W Railroad Avenue (improvements completed 2014)
- **Segment 4:** US 101 and Scholfield Creek Bridge



Bicycle Plan

Trail Alignment

The TSP Bicycle Plan specifically maps and describes a levee trail, and supports the three arterial crossing improvements cited in the Pedestrian Plan. TSP Figure 6-1 (on previous page) illustrates a multiuse trail extending from Oregon 38 along the Umpqua River waterfront, crossing the Coos Bay Rail Link line and US 101, then following the levee along Scholfield Creek, crossing US 101 again, and continuing along the levee to Winchester Avenue. Winchester Avenue from the end of the levee and through downtown to Oregon 38 is identified as a shared-use roadway (e.g., bicycles and vehicles would share the roadway using signing and pavement markings for safety).

Road Crossings

The TSP Bicycle Plan includes four roadway crossing enhancements within the LLTP study area. One of these crossings—US 101 near N 16th Street on the east side of the Scholfield Creek Bridge (LLTP Segment 4)—is identified for a marked crosswalk, raised refuge median, and user-activated signal.

Trail Standards

The TSP identifies the standard width of the multiuse trail as 10 feet to 12 feet, and includes cross section illustrations for a “primary” trail (12 feet wide) and a “feeder” trail (8 to 10 feet wide). These trail widths correspond to what are termed multiuse and connector trails in the LLTP.

Waterfront and Downtown Plan

The City adopted the RWDP in 2013. The RWDP illustrates a levee trail alignment with several differences or additions from the TSP trail alignment. The net result of the RWDP’s recommended alignment is that only approximately 4,000 LF of the levee berm within the LLTP study area would be used for the LLT.

Other City Plans

Development plans for two larger properties within the LLTP study area could complement or impact trail development.

Rainbow Plaza (Segment 1)

Additional development is planned for the Rainbow Plaza gravel parking area and event space on the inland side of the Riverfront Way floodwall. The



Riverfront Way from Rainbow Plaza/Water Avenue

site is bounded by Water Avenue, N 3rd Street, and Rainbow Plaza Road. Floodwall gates connect the Rainbow Plaza to Riverfront Way in two places. A conceptual design plan for an upgraded Plaza was produced in 2010 (see Technical Memorandum No. 2). Sidewalks are included along Water Avenue, and wide pathways are part of the interior space design that connects through a floodwall gate to the Umpqua Discovery Center.

McIntosh Slough (Mast Brothers) Property (Segment 2)

This subarea of Segment 2 is bounded by Port Dock Road, US 101, McIntosh Slough, Scholfield Creek, and Champion Park. The site is locally referred to as the “Mast Brothers” property. The entire site is outside of the flood protection of the levee, except for the southern edge, where the levee between Port Dock Road and Scholfield Creek is actually within this private property. The proposed mixed use development for this site is illustrated on the RWDP map (see Technical Memorandum No. 2).

State of Oregon

Transportation Planning Rule

Statewide Planning Goal 12 (Transportation) provides for and encourage a safe, convenient and economic transportation system. The Transportation Planning Rule (OAR 660-012-0000) implements Goal 12, and “supports the availability of a variety of transportation choices for moving people that balance vehicular use with other transportation modes, including walking and bicycling.” The rule cites the need and

requirement for bicycle and pedestrian facilities in numerous sections.

Oregon Highway Plan

The current Oregon Highway Plan was published in 1999 and reissued with amendments in 2006. A review of amendments between 2006 and 2103 was undertaken and none was found that were counter to the LLT or LLTP (see Technical Memorandum No. 2 for more details).

Bicycle and Pedestrian Plan and Design Guide

ODOT has adopted American Association of State Highway Transportation Officials (AASHTO) guidelines for nonvehicular pathway design standards. The 2011 ODOT *Bicycle and Pedestrian Design Guide*¹ (Part 2 of the State's Bicycle and Pedestrian Plan) includes chapters for on-road bikeways, walkways, street crossings, and intersections, as well as "shared use paths." Shared use paths are what the LLTP terms multiuse trails.

Table 1 summarizes key ODOT trail width standards that could apply to the LLT. Concrete surfaces are recommended for heavily used trails to maximize the longevity of the surface, although asphalt surfaces are acceptable for most paths. Typical ODOT minimums

for rural trails or trails with space constraints are consistent with what could be developed for the LLT.

Table 1: ODOT Trail Width Standards

Two-Way Bike/Ped (unless otherwise noted)	Trail Width
One-way cyclist or pedestrian	6'
Few users and/or space constraints	8'
Typical minimum in rural area	10'
Urban and suburban mixed use	12'
High mixed use, faster/commuting bicyclists	12'+

Adapted from ODOT Oregon Bicycle and Pedestrian Design Guide

Federal

USACE Levee Regulations

A central LLTP objective is to identify a preferred long-term trail alignment on the crown of the earthen berm levee that protects the city's downtown and surrounding neighborhoods from flooding. The LLTP study area is primarily within levee protection, except for along Riverfront Way (Segment 1) and the Mast Site northwest of US 101/ Port Dock Road (portion of Segment 2).

USACE has jurisdiction over potential encroachments upon the 1968 levee, including those envisioned by the LLT such as paved trail pathways, access

¹ <http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/plan-proc.aspx>



Port Dock Road near Mast Site

ramps, storm water collection and conveyance, other utilities, and potentially trail amenities. In developing the LLT, the City must assure compliance with USACE levee safety and structural integrity requirements and limitations. See Chapter 10 of this LLTP for more information.

Americans with Disabilities Act (ADA)

The LLTP study area is almost entirely within a flat coastal estuary, except for areas close to Winchester Avenue between N 16th Street and N 12th Street (Segment 5), and the southeast edge of Segment 5 along Elm Avenue.

ADA compliance challenges for the LLT are highly unlikely, except possibly for sections where the trail must transition off the levee. The Levee Crown is essentially flat. Fifteen-foot-wide development exclusion zones from the toe of the levee slopes will almost always provide enough open land to accommodate trail access ramps under 5 percent grades.

Transportation Features

The following highlights of the vehicular transportation system within and through the city are based on the 2006 City TSP, with additional information derived from subsequent published documents such as the 2013 RWDP. Refer to Technical Memorandum No. 2, Chapter 3, for additional details on transportation features.

Vehicular Roadways

State of Oregon

US 101 (Segments 2, 3, and 4) and Oregon 38 (Segments 2 and 5) are the only arterial roadways within the LLTP study area. Both highways are under State of Oregon (ODOT) jurisdiction, and are designated as statewide National Highway System freight routes. Both highways will be crossed or followed by the LLT. ODOT will have to consent to any new highway crossings or other trail improvements impacting these roadways.

Oregon 38 is the “main street” through downtown Reedsport (Segment 5). Oregon 38 is named Umpqua Avenue between US 101 and the Coos Bay Rail Link (Segment 2), and Fir Avenue from the railroad crossing through downtown (Segment 5).



US 101 and OR 38 Intersection

City of Reedsport Collector Roadways

Winchester Avenue (Segment 5) between US 101 and Oregon 38 is a city collector roadway. There are no other city collector roadways in the LLTP study area. City and County offices, the Lower Umpqua Senior Center, and other public service buildings are on or near Winchester Avenue.

Neighborhood and Local Streets

Hawthorne Avenue and N 16th Street between N 12th Street and US 101 (Segments 3 and 4) are designated as neighborhood routes. This type of street, which used to be called a minor collector, is generally longer than the typical local roadway but still provides for only localized connectivity.

All other city streets within the LLTP study area are classified as local roadways.

Bicycle/Pedestrian Network

Bicycle Lanes and Sidewalks

The City's current TSP catalogs existing sidewalks, and bicycle lanes in the LLTP study area. The City has recently completed the Reedsport Pedestrian Safety Study. This pedestrian study focuses in part on unsignalized intersection improvements, two within in the LLTP study area.

Multiuse and Similar Trails

The only “multiuse” trails in the LLTP study area are the informal pathways that have been established

atop the levee. There is a paved pedestrian pathway around the perimeter of Champion Park (Segment 3).

Boardwalks

There is an existing waterfront boardwalk in Segment 1 along the Umpqua River behind the Umpqua Discovery Center. The RWDP recommends an extension of this boardwalk northwest to the railroad bridge and southeast past the City boat launch/parking area and into the former Knife River industrial site.



Riverfront Boardwalk

Rail

A freight rail line enters the LLTP study area via the railroad bridge over the Umpqua River (Segment 1), parallels the levee around the northwest exterior of the downtown area (Segment 2), then turns southeast across Winchester Avenue (Segment 5), and exits the study area. This rail line is operated as Coos Bay Rail Link through a management agreement between the Port of Coos Bay and a short-line railroad operating company.

According to the 2006 City TSP, a maximum of two freight trains daily use this line with speeds limited to 15 miles per hour or less. The alignment of the rail line within the LLTP study area is shown on the General Features map (LLTP Map 3).

There are four existing railroad crossings in the LLTP study area:

- **Segment 1:** Undercrossing connecting Riverfront Way and Port Dock Road under the southwest



Umpqua River Railroad Bridge

approach span of the railroad bridge on the bank of the Umpqua River.

- **Segment 2:** Low undercrossing (7-foot 2-inch vertical clearance) connecting Laurel Avenue/W Railroad Avenue to Greenwood Avenue/E Railroad Avenue near Oregon 38.
- **Segment 2:** At-grade crossing at the Umpqua Avenue section of Oregon 38.
- **Segment 5:** At-grade crossing at Winchester Avenue.

The two at-grade crossings have recently (2014) been upgraded with widened shoulders and improved sidewalks.

There is also an abandoned spur rail line that follows the arc of the levee along the south side of the McIntosh Slough and under US 101 to Port Dock Road. The rail bed is at lower elevation than the levee.



Railroad crossing at Winchester Avenue

Land Use Features

Refer to Technical Memorandum No. 2, Chapter 4 for details on land use features. LLTP Map 4, Transportation and Land Use, illustrates land use zoning.

Reedsport Levee

Levee Characteristics and Features

The height of the 1968 levee varies from 15 to 18 feet above the ordinary high water level of the Umpqua River and Scholfield Creek, with side slopes ranging from 2:1 to 3:1. The Levee Crown ranges from approximately 8 feet to 12 feet wide. Within the LLTP study area there are three pump stations and outfalls used to manage flood waters. Vegetation wear patterns atop the levee indicate that there is already considerable informal use by bicyclists, walkers, and maintenance vehicles.



Pump station near McIntosh Slough

The levee must be kept clear of vegetation and wildlife (such as woody plant root systems and burrowing mammals) that may adversely impact levee permeability or structural integrity.

Some slumping has been noted along sections of the levee (for instance, near N 16th Street and between Port Dock Road and US 101). The cause of this settling needs to be investigated and mitigation undertaken in advance of trail construction.

In some areas there is no elevated earthen berm structure – Riverfront Way (Segment 1), Juniper Avenue (Segment 3), Winchester Avenue (Segment



Floodgate on Winchester Avenue near Coho RV Park and Marina

5), and several locations where roadways bisect the levee. Flood control is accomplished in these sections with floodwalls and gates.

Trail Impacts

The LLT will transition off of the levee several times to connect to roadways and on-street trail sections, community connector trails, and trailheads. Access ramps will have to be engineered to be built *onto* the levee slope, rather than *into* the levee to preserve the integrity of the structure and to meet USACE and FEMA requirements.

Fifteen-foot-wide development exclusion zones (from the toe of levee slopes) are part of the levee system. Within the exclusion zones, structures unrelated to levee operations are prohibited. The significance for trail development is that the undeveloped exclusion zones will make siting of ADA-compliant ramps relatively straightforward. There are, however, some areas where surface access improvements, accessory buildings, private landscaping, and other minor encroachments are within the exclusion zone.

Levee Ownership

Although the City is the levee maintenance authority, many sections are privately owned. The cooperation of these owners is essential for levee improvements and maintenance, as well as for future trail development. Ownership is mapped in Technical Memorandum No. 2, Chapter 4.

Natural and Historic Resource Features

Refer to Technical Memorandum No. 2, Chapter 5 for details on natural and historic resource features.

Topography

The LLTP study area is almost entirely within a flat coastal estuary. Topographic contours are shown on the General Features map (LLTP Map 3).

Floodplain

The 100-year and 500-year floodplains within the LLTP study area are shown on the Natural Resources map (LLTP Map 5).

FEMA is charged with assessing flood hazards and risks, and providing accurate flood data. FEMA flood hazard mapping is the basis of National Flood Insurance Program (NFIP) regulations and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments.

100-year Floodplain

A 100-year flood (or base flood) has a 1 percent probability of occurring in any given year. Based on expected 100-year flood flow rates, flood water levels are mapped as areas of inundation (the 100-year floodplain). Location within the 100-year floodplain can complicate building permit issuance, the application of environmental regulations, and eligibility for flood insurance.



Floodwall along Juniper Avenue

Properties between the Umpqua River and Riverfront Way (Segment 1) are outside of levee flood protection and classified as 100-year floodplain. Portions of Segment 2 northeast of Champion Park and Port Dock Road/US 101 (the Mast Brothers property described earlier) are also outside of the 1968 levee.

500-year Floodplain

Prior to development of the 1968 levee, most of the downtown and waterfront areas and surrounding neighborhood and commercial areas were in the 100-year floodplain and subject to regular inundation. Most of the LLTP study area is now inside of the levee and classified as 500-year floodplain. These areas are eligible for flood insurance.

Oregon Goal 5 Resources

Oregon Statewide Planning Goal 5 (OAR 66-015-0000) addresses natural resources and scenic and historic areas and open space. Goal 5 specifies that local governments adopt programs to protect these resources. The City has not conducted a Goal 5 Inventory, but has adopted estuarine and shoreline zone ordinances protecting and conserving these natural resources areas. These zones can be found on the Natural Resources map (LLTP Map 5).

Wetlands and Nonwetland Waters

Wetlands and nonwetland waters within the LLTP study area are mapped on the Natural Resources map (Map 5). The Umpqua River and Scholfield Creek are the defining waters of the LLTP study area and will provide spectacular scenic views, recreational opportunities, and bird and wildlife viewing from the future trail on the Levee Crown. The McIntosh Slough (Segment 2) flows into the confluence of these two streams. Other than these three systems, there are few remaining wetlands and nonwetland waters in the LLTP study area. The most prominent is a lagoon near Coho RV and Marina (Segment 4).

Fish and Wildlife

Fish and wildlife populations within the LLTP study area are limited due to prior urbanization and extensive alterations to the original estuarine ecology. There are no known Endangered Species Act (ESA) or state-listed threatened or endangered wildlife species resident within the LLTP study area.



Lagoon near Coho RV

Hazardous Materials

The Oregon Department of Environmental Quality (DEQ) lists only one site within the LLTP study area in its Environmental Cleanup Site Information (ECSI) database: the Unocal Bulk Plant at 155 E Railroad Avenue (Segment 2). The contamination involves release of gasoline and diesel fuels to groundwater.

Historic and Cultural Resources

The Oregon Department of Parks and Recreation's historic sites inventory lists one historic structure in the study area: the US 101 Umpqua River Bridge. The bridge was built in 1934 and designed by C.B. McCullough, the architect for the iconic series of Oregon Coast bridges built between 1927 and 1936. The Umpqua River Bridge was placed on the National Register of Historic Places in 2005.



McIntosh Slough under Umpqua River Bridge

Demographics

The City has no statistics specific to Title VI populations within the LLTP study area. Title VI refers to the Civil Rights Act of 1964. Title VI prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance.

Key Population Demographics

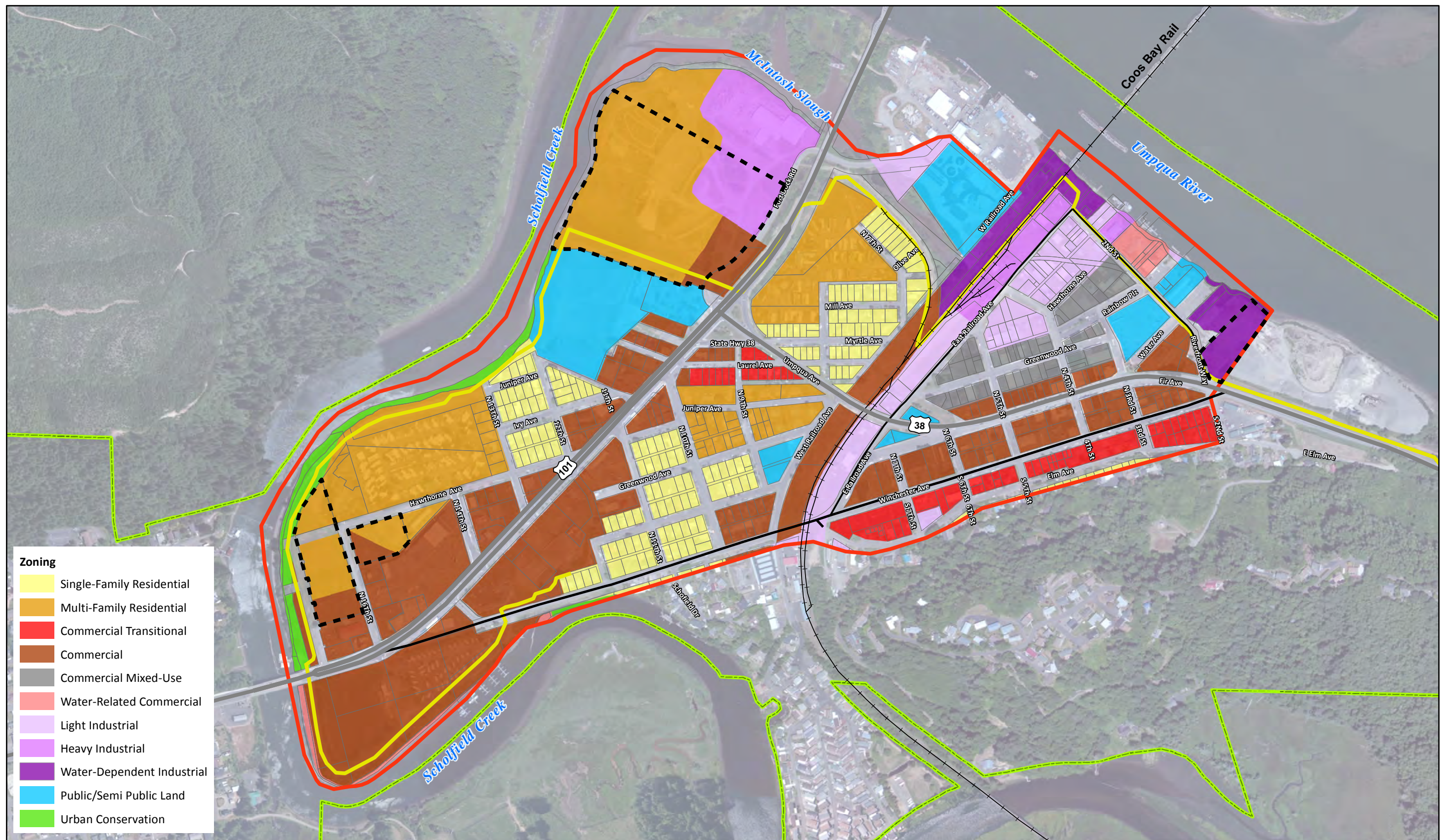
Given the absence of specific study area data, the City directed that 2010 US Census data be used to extrapolate this information. The City also directed that 60 percent of the city's total Title VI-type populations be assumed to reside within the LLTP study area.

The 2010 city population was 4,154, although US Census updates show a steady but slight decline to 4,090 by 2013. Based on the City's direction to use 60 percent to extrapolate from 2010 counts, approximately 254 Title VI-classed individuals are estimated to live within the LLTP study area. The 65 and older population within the study area, which may overlap in part with Title VI populations, is estimated at 678.

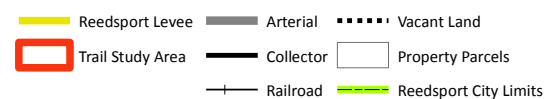
Title VI Trail Benefits

Title VI and similar populations would greatly benefit from a trail system providing convenient and safe alternatives to owning, operating, and using motorized vehicles to commute, recreate, and shop. In fact, given relatively low median household incomes and higher poverty rates in Reedsport, the entire population within the LLTP study area would benefit from better options and opportunities to routinely walk and bike. The LLT would also serve as an emergency evacuation route for these populations in cases of extreme flooding or other emergencies blocking vehicular roadways.

See LLTP Appendix F for more Title VI information.

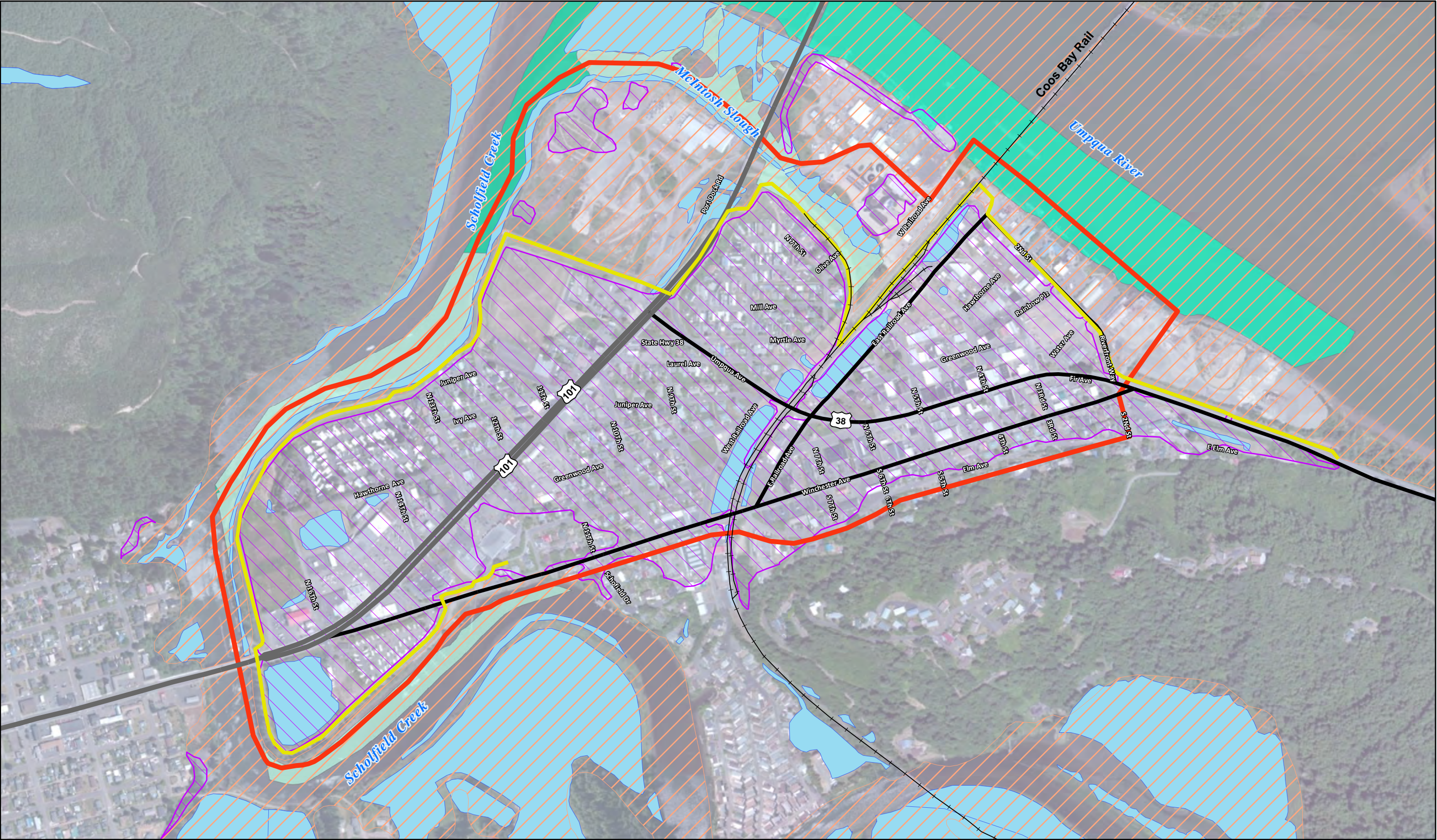


Parametrix

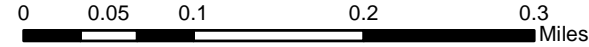


Reedsport Levee Loop Trail Plan

Map 4: Transportation and Land Use



Parametrix



- | | | |
|--------------------|--------------------|---------------------------|
| — Railroad | Flood Zones | Zoning - Estuarine |
| — Reedsport Levee | 100-Year | Estuarine Conservation |
| — Highway 101 | 500-Year | Estuarine Development |
| — Trail Study Area | Wetlands | Estuarine Natural |

Reedsport Levee Loop Trail Plan
Map 5: Natural Resources

4. Conceptual Trail Options

A wide variety of trail types, alignments, levee access points, and road and rail crossings supporting the full functioning of the future trail were considered in the development of the LLTP. See Technical Memorandum No. 3: Conceptual Trail Options, Chapters 2, 3 and 4 for the full range of alternatives considered, including attributes and challenges of specific options. See LLTP Map 6 for all trail alignments and trail types considered.

Segment 1: Umpqua Waterfront

Prior waterfront development, already high volumes of visitor traffic in summer months, use by larger vehicles and boat trailers, and the location of a floodwall along nearly the entire length of Riverfront Way make LLT development particularly challenging. Three options were identified. All have identical challenges in connecting to Segment 2, but differ with respect to connecting to Segment 5. Each option utilizes Riverfront Way to a differing degree.

Segment 2: Port Dock Road

This segment includes the portion of the levee paralleling Coos Bay Rail Link, rail and highway undercrossings, and potentially wetland boardwalk or bridge sections. Four options were considered.

Segment 3: Champion Park

This trail segment starts at Port Dock Road near the Oregon Dunes Visitor Center. The west end of the segment is N 13th Street. Other than using local residential streets, the only viable permanent trail option in this segment is routing around Champion Park on the Levee Crown. One short shared-use on-street section along one block of Juniper Avenue is required.

Segment 4: Scholfield Waterfront

Segment 4 includes the residential and commercial areas west of N 13th Street and N 14th Street. The segment crosses US 101, and the levee encloses the area south of the highway occupied by a lagoon and Coho RV and Marina. Other than on-street solutions, the only viable alternative in this segment both north and south of US 101 is a multiuse trail on the Levee Crown.

Segment 5: Winchester Avenue

Segment 5 extends from Floodgate 7 on Winchester Avenue near Coho RV to downtown Reedsport and Oregon 38. The section from Floodgate 7 to the Coos Bay Rail Link crossing is designated for bicycle lanes and sidewalks. After crossing the rail line, two options were considered: continuation along Winchester Avenue or shifting one block north along E Railroad Street to connect the downtown “main street” – Oregon 38/Fir Avenue.

Trail Option Evaluations

Uniform evaluation criteria were applied in comparatively assessing the strengths and weaknesses of proposed trail options within individual segments. Evaluation levels are a matter of degree and are intended as guidance in making relative comparisons of route options within the same trail segment.

Evaluation criteria should not be used as an absolute indication that one option is better than another, except perhaps for categories that are deemed “fatally flawed.” The criteria should simply be viewed as a series of questions to ask in evaluating trail options. Trade-offs are to be expected.

Evaluation Levels

Refer to Technical Memorandum No. 1 for the original full set of factors by category used in comparatively evaluating alignment and crossing options. These original criteria were amended as an outcome of application to conceptual trail options. Refer to Technical Memorandum No. 3 for descriptions and mapping of all the rated alignment options listed below. With the exception of LLTP Map 6, maps in this LLTP only show the preferred options.

Rating Key

A	Strong	Impact is primarily positive, and/or best meets project goals and objectives.
B	Acceptable	Impact is neutral, and/or positive and negative impacts are approximately balanced
C	Weak	Impact is primarily negative, and/or is contrary to project goals and objectives.
D	Unacceptable	Significantly or fatally flawed due to major or multiple adverse impacts or constraints.

Alignment and Crossing Evaluations by Segment

The evaluation below was conducted by the consulting project manager and trail planner. Each conducted separate evaluations, then combined the ratings. City and ODOT staff reviewed the outcomes.

Segment 1: Umpqua Waterfront

Alignment Options

	Riverfront Way	Riverfront Way/ Boardwalk	Riverfront Way/ Rainbow Plaza
Trail Type	B	A	B
Experience	B	A	B
Safety	C	B	B
Environmental	B	A	B
Plans/Regulations	A	B	A
Property Ownership	A	B	A
Cost	B	C	A
Phasing	Riverfront Way and Riverfront Way/Rainbow Plaza can be interim alignment options, preferred option driven by crossing option (see below).		

- Riverfront Way/Boardwalk improves relative trail user experience, but increases cost and regulations.

Crossing Options

	Oregon 38	3rd/Fir
Trail Type	N/A - Both options cross existing streets	
Experience	B (D if not improved)	B
Safety	B (D if not improved)	B
Environmental	N/A - Both crossings within existing street	
Plans/Regulations	B	A
Property Ownership	A	A
Cost	B	A
Phasing	3rd/Fir acceptable as interim or near-term option, OR 38 as long-term option if improved.	

- Oregon 38 at Winchester crossing is only acceptable if RWDP recommended improvements are implemented. ODOT has not endorsed Oregon 38 trail crossing improvements.

Segment 2: Port Dock Road

Alignment Options

	Levee Crown	Levee Alternate 1	Levee Alternate 2	On-Street
Trail Type	B	B	A	C
Experience	A	A	B	C
Safety	A	B	A	C
Environmental	A	A	A	A
Plans/Regulations	B	A	A	A
Property Ownership	B	B	A	A
Cost	B	A	A	A
Phasing	Levee Alternate 2 cannot be implemented until levee improvements along US 101 are made.			

- Levee Crown may require special bridge structures and wetland crossing.
- Levee Alternate 1 has possible security concerns as route is screened by levee berm and waterfront vegetation.
- Levee Alternate 2 is the only alignment option that uses 100% of levee and is the only Segment 2 option fully protected from flooding by the levee. User experience diminished by proximity to US 101.

Crossing Options

	Levee Crown	Levee Alternate 1	Levee Alternate 2
Trail Type	N/A - All crossing treatments identical.		
Experience	A	A	B
Safety	B	B	A
Environmental	B	A	A
Plans/Regulations	A	A	B
Property Ownership	A	A	A
Cost	A	A	B
Phasing	N/A - Crossing choice tied to selection of Segment 2 trail alignment options.		

- Crossings associated with Levee Crown and Levee Alternate 1 alignment options have sight line issues.

Segment 3: Champion Park

Alignment Options

	Levee Crown	Shared-Use	On-Street
Trail Type	A	N/A	C
Experience	A	N/A	C
Safety	A	N/A	C
Environmental	A	N/A	N/A - on street
Plans/Regulations	A	N/A	A
Property Ownership	B	N/A	A
Cost	B	N/A	A
Phasing	Levee Crown probable near-term phasing, good <i>existing</i> transitions to streets.		

- Shared-Use alignment option is only along one-block section of Juniper Avenue and is used by both Levee Crown and On-Street options.
- On-Street alignment option eliminates a considerable section of levee loop, and US 101 crossings are challenged (see note below). This option could be used for interim solution.

Crossing Options – Not rated.

On-Street alignment option would either cross US 101 at N 13th Street or Winchester Avenue (in Segment 4); some sidewalk/bicycle lane improvements also needed on both sides of US 101 for this crossing option to work; could be part of an interim solution.

Segment 4: Scholfield Waterfront

Alignment Options – Not rated.

Levee Crown only option for multiuse trail. Probable near-term phasing. Street/US 101 transitions are constrained (see Crossing Options below).

Crossing Options

	US 101/Bridge	16th/US 101	16th/Schwab
Trail Type	A	C	C
Experience	B	C	B
Safety	A (D if not improved)	B (D if not improved)	B (D if not improved)
Environmental	A	A	A
Plans/Regulations	A	A	A
Property Ownership	A	A	A
Cost	B	A	B
Phasing	N/A - Crossing choice tied to Segment 4 trail alignment options.		

- US 101/Bridge crossing evaluation assumes some form of crossing improvement – crosswalk, beacons, etc. ODOT has not endorsed these improvements. Without crossing improvements, this crossing is UNACCEPTABLE.
- 16th/US 101 crossing requires detour along both sides of US 101; without crossing improvements the poor westbound US 101 sight lines make this location UNACCEPTABLE.
- 16th/Schwab crossing includes trailhead connection, short multiuse trail, and on-street section; same UNACCEPTABLE crossing issues if no improvements are made.

Segment 5A: Winchester Avenue – West

Alignment Options – Not rated.

Only trail option is on-street sidewalks and bicycle lanes.

Crossing Options – Not rated.

Crossing options for Winchester West are all identical. Only variation is the location of the two dual levee ramp options discussed in Technical Memorandum No. 3.

Segment 5B: Winchester Avenue – East

Alignment Options

	Winchester East	Fir Avenue
Trail Type	A	A
Experience	A	A
Safety	A	B
Environmental	A	A
Plans/Regulations	A	A
Property Ownership	A	A
Cost	A	A
Phasing	N/A - uses only existing streets	

- Both alignment options involve on-street bicycle lanes and sidewalks; Fir Avenue alignment option less safe than Winchester East based on traffic speeds and volumes.
- Fir Avenue Intersection with Oregon 38, E Railroad, and N 6th results in complex bicyclist/pedestrian movements that are not a factor with Winchester East option.
- Suggest considering signed on-street downtown loop (Winchester – N 3rd – Fir – N 6th) as bicyclist/pedestrian solution for Segment 5B.

Crossing Options – Not rated.

All crossings are identical and only vary by location.

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5. Preferred Trail Options

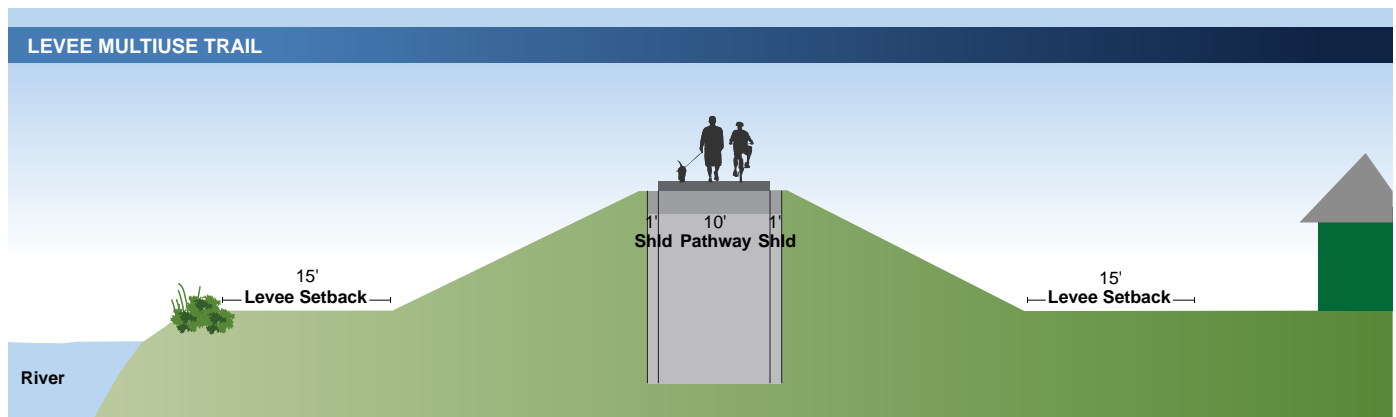
A wide variety of trail type and alignment options were considered leading up to the selection of preferred trail options. These considered options are summarized in Technical Memorandum No. 3: Conceptual Trail Options and Technical Memorandum No. 4: Preferred Trail Options.

Trail Types

The LLT is intended as a multiuse pathway accommodating a full range of users, including bicyclists, pedestrians, and the mobility impaired. A variety of trail types will be used in developing the LLT for commuter, destination, and recreational users. The basic width recommended for multiuse trail types is 8 to 12 feet, except as noted otherwise. The standard trail surface is asphalt, again except as noted otherwise.

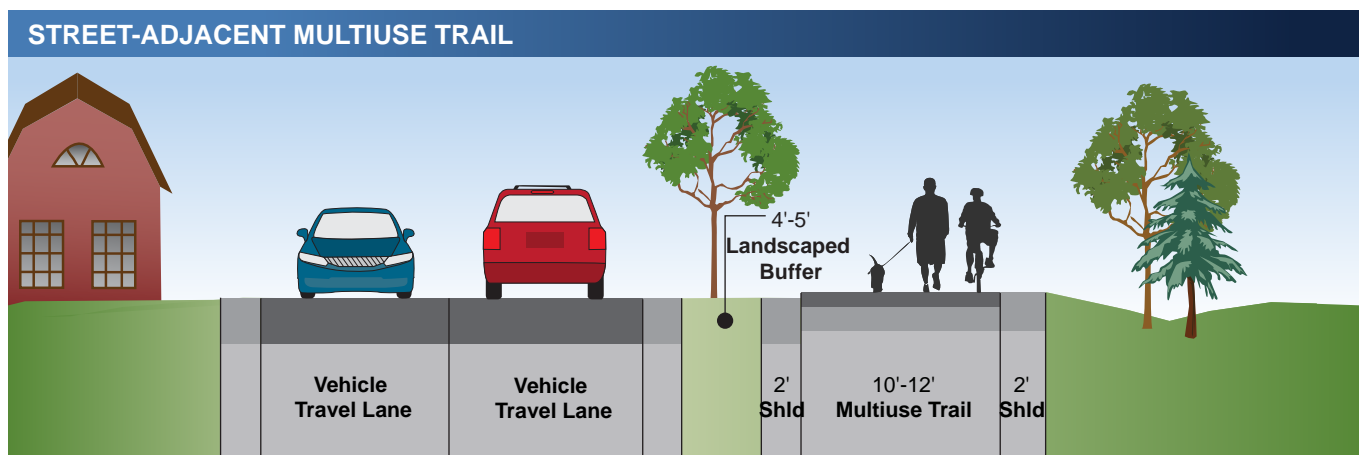
Levee Multiuse

The primary trail type for the LLT is a multiuse pathway on the Levee Crown. Given the width of the Levee Crown (8 to 12 feet), this multiuse trail type may have to be as narrow as 8 to 10 feet, with limited or no shoulders. The levee multiuse trail must also be engineered to support motorized maintenance vehicle loads.



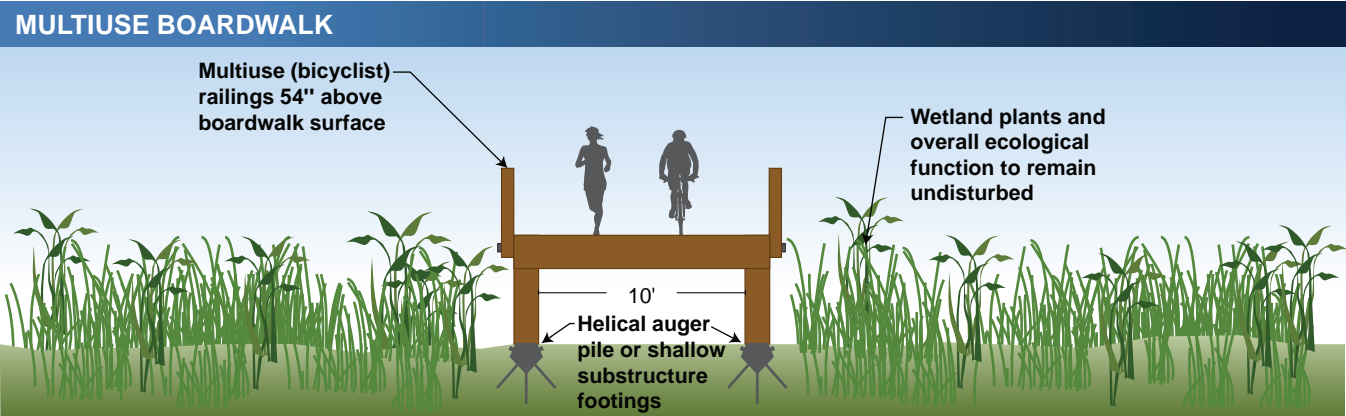
Street-Adjacent Multiuse

Street-adjacent multiuse trails are possible where there is vacant land along roadways and few access driveways. This trail cross section can include a 4- to 5-foot landscaped buffer separating the trail from the roadway. In constrained areas, the buffer may be narrowed or even eliminated. The street-adjacent trail type is recommended along Port Dock Road (Segment 2). This trail section will be combined with a short boardwalk across a small wetland. Along two sections of Port Dock Road the trail will cross wide industrial driveways. Signing, pavement markings, and/or distinctive surface treatments may have to be substituted for a separate asphalt trail.



Boardwalk Multiuse

This solution is recommended for one trail section along Port Dock Road where wetlands may need to be crossed. Boardwalk width will match intersecting multiuse trail width. Preferred materials are steel with concrete surfaces; surfaces must accommodate wheelchairs, walkers, and other mobility devices to be Americans with Disabilities Act (ADA)-compliant.



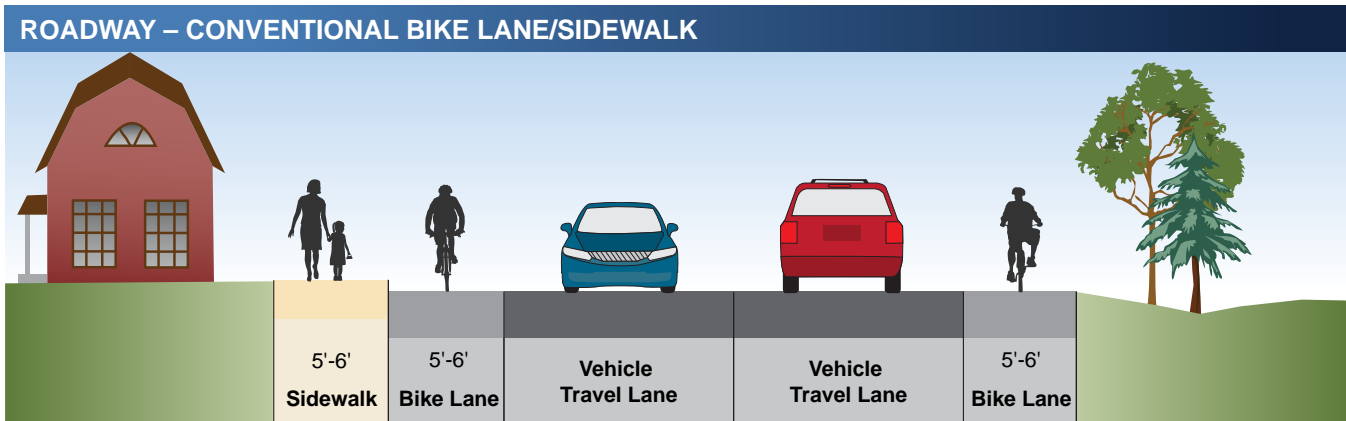
Pedestrian-Only Boardwalk or Trail

A west and east extension of the existing Umpqua River shoreline pedestrian-only boardwalk behind the Umpqua Discovery Center is part of the recommended long-range trail option for Segment 1. This form of boardwalk can be 6 to 8 feet wide. To be ADA-compliant, the wood surfaces of the existing boardwalk may have to be renovated or replaced to accommodate wheelchairs, walkers, and other mobility devices.

There are also three areas in Segment 1 where a pedestrian-only asphalt trail is recommended. The two connections from the extended Umpqua River shoreline boardwalk back to Riverfront Way are pedestrian-only, as is a short section through Rainbow Plaza. This type of trail can be 6 to 8 feet wide.

Sidewalks/Bicycle Lanes

New or improved sidewalks and bicycle lanes are recommended for trail sections along higher traffic volume roadways where no practical or cost effective means are available to site a multiuse trail. This solution is applied to the Winchester Avenue on-street option and the Winchester Avenue-Fir Avenue loop through downtown (Segment 5), and along US 101 between the Scholfield Creek Bridge and N 16th Street (Segment 4). Motor vehicle parking on Winchester Avenue may have to be restricted to establish adequately wide bicycle lanes.



Note: Can include sidewalks on both sides.

Shared-Use

This solution is only safe and practical along local streets with low traffic volumes and speeds. Shared-use solutions are also possible for low-cost interim routes until the multiuse levee trail is developed. Shared-use is also suggested for Juniper Avenue (Segment 3) where the earthen berm levee is replaced by a floodwall and older existing sidewalks are narrow.

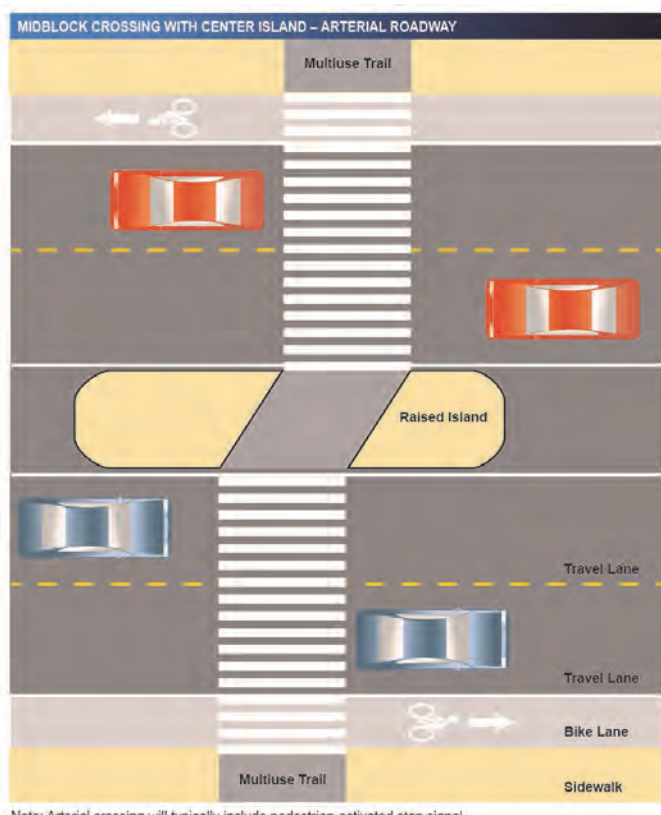
Sidewalks/Bicycle Shared-Use

In some areas, on-street trail sections can be improved with sidewalks but the street may be too constrained to also accommodate designated bicycle lanes. This solution provides for bicycles to share the road with motor vehicles by using signing and pavement markings (see pavement marking example on plan view drawing opposite).

- Riverfront Way and N 3rd Street (Segment 1) may utilize this solution.
- This solution could also be used on Winchester Avenue (Segment 5) if motor vehicle parking is not removed. On-street shared-use is however not desirable as Winchester is a collector roadway.

Arterial Midblock Crossing

Arterial roadway crossings require crosswalk signing and striping and user-activated beacons or signals. A raised center refuge island is highly preferable.



Note: Arterial crossing will typically include pedestrian-activated stop signal.

Trail Alignments, Ramps, and Crossings

Segment 1: Riverfront Way

Preferred Trail Alignment

N 3rd Street/Rainbow Plaza/Riverfront Way

Trail Length

2,369 LF (including ramps)

Estimated Cost

\$1,079,000 (including highway crossing)

Preferred Oregon 38 Crossing

N 3rd Street at Fir Avenue/Oregon 38. As Oregon 38 is an arterial roadway, a signed crosswalk with a user-activated beacon is desirable, similar to the treatment described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). ODOT has not supported the RWDP-level improvement at N 3rd Street. The crossing improvements for N 3rd Street specified in the Reedsport Pedestrian Safety Study (finalized in 2015) would suffice, at least on an interim basis.

Other Road Crossings

Signed crosswalks on Riverfront Way at E Railroad Avenue, Rainbow Plaza, and Water Avenue.

Levee Access

- **Preferred Solution:** 360-foot-long ramp from E Railroad Avenue to Port Dock Road curving around the toe of the railroad berm under the railroad bridge, then up to the levee berm

that parallels the railroad. Would require land acquisition on the E Railroad Avenue/Riverfront Way side of the levee. There is sufficient clearance under this bridge for this ramp solution.

- **Interim Solution:** On-street, shared-use under the railroad bridge is an acceptable interim trail alternative. Signing and pavement markings, and potentially some surface repaving, is desirable. A shorter (approximately 100 feet) straight ramp up to the Levee Crown from Port Dock Road would still be required.

Additional Recommendations

- **Sidewalk Improvements:** Construct continuous 12-foot wide sidewalk on the water side of Riverfront Way between E Railroad Avenue and Water Avenue. Approximately 240 LF of sidewalk already exists.
- **Boardwalk:** As a long-range option, extend the Riverfront Boardwalk between E Railroad Avenue and Water Avenue (this boardwalk extension is recommended in the RWDP).
- **Rainbow Plaza:** A solution using existing and improved on-street infrastructure – bicycle lanes or pedestrian pathways – is mapped and costed. Rainbow Plaza will eventually be redeveloped as per the concept plan included in Technical Memorandum No. 2, Appendix B. LLT bicycle and pedestrians pathways could be incorporated directly into the Plaza redesign.



Oregon 38/N 3rd Street Crossing



Rail Trestle Undercrossing

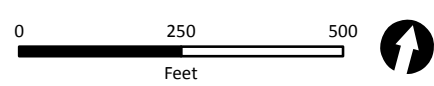


Riverfront Way: Sidewalk Extension Area

Segment 1: Riverfront Way



Parametrix



Reedsport Levee Loop Trail
Map 7: Preferred Trail Option
Segment 1: Umpqua Waterfront

Segment 2: Port Dock Road

Preferred Trail Alignment

Levee Crown from Port Dock Road at the railroad bridge to Port Dock Road near Umpqua River US 101 Bridge. Follows northwest side of Port Dock Road to Champion Park using street-adjacent multiuse trail combined with a short multiuse wetland boardwalk.

Trail Length

3,436 LF (including ramps)

Estimated Cost

\$1,576,350

Preferred Port Dock Road Crossing

Trail will cross Port Dock Road at the same point where a now-abandoned rail spur crossed this roadway. Signing and marked crosswalk acceptable, but a user-activated beacon would improve safety given short sight lines along this section of road.

Levee Access

- **Highway Bridge:** 305-foot-long ramp under the Umpqua River US 101 Bridge will connect the Levee Crown to Port Dock Road. This ramp alignment uses the abandoned rail spur. There is sufficient clearance under this bridge for this ramp solution.
- **Myrtle Avenue:** 299-foot-long ramp from Myrtle Avenue to Levee Crown near to McIntosh Slough.



Ramp Location: Port Dock Road at Rail Spur

This ramp improves neighborhood access to the LLT but is not necessary to complete a continuous LLT. The wide right angle turn in the LLT at this location will require levee berm modifications. Modifications would have to comply with USACE and FEMA flood protection standards.

Additional Recommendations

- **Industrial Frontage:** Until the Mast Site is redeveloped for mixed use (see Technical Memorandum No. 2, Appendix A), the street-adjacent trail along Port Dock Road will cross wide industrial driveways. The area is paved or graveled and special signing or pavement markings/treatments to delineate the LLT may be a more practical solution than the conventional street-adjacent trail. May require agreements with property owners and industrial tenants.
- **Interim Solution:** Traffic volumes on Port Dock Road are low enough that this roadway could be signed and pavement marked for interim on-street shared-use.
- **Approach to Champion Park:** The final street-adjacent trail approach along Port Dock Road to the Champion Park (Segment 3) levee has a steep drop-off that may require road improvements and/or fill. In the interim, this short LLT section could be on-street shared-use with signing and pavement markings.

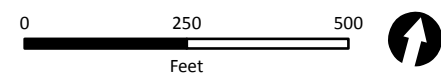
“Expert” Non-motorized Boat Launch

Site on McIntosh Slough under the Umpqua River US 101 highway bridge could be developed as an “expert” non-motorized boat launch. Launch site is uniquely scenic but tidal conditions and constrained uplands limit full functionality and access for all levels of users. A short street-adjacent spur trail is proposed to connect this launch site to the main stem of the LLT and to the community trail around the Mast Site (see Chapter 10). This launch is not cost-estimated.

Segment 2: Port Dock Road



Parametrix



Reedsport Levee Loop Trail
Map 8: Preferred Trail Option
Segment 2: Port Dock Road

Segment 3: Champion Park

Preferred Trail Alignment

Levee Crown, combined with a one block on-street shared-use section of Juniper Avenue between N 12th Street and N 13th Street where the levee berm is replaced by a floodwall.



Levee Crown around Champion Park

Trail Length

2,479 LF (including ramps)

Estimated Cost

\$844,950

Preferred Levee Ramp Options

- **Port Dock Road/Champion Park:** The short existing grade up from Port Dock Road to the Levee Crown in the vicinity of USFS Offices and the Oregon Dunes Visitor Center only requires paving to create an ADA-compliant trail ramp. This levee access is therefore treated as an extension of the LLT main stem for cost estimating purposes.



Ramp Location: Champion Park at Port Dock Road

- **Champion Park:** New 280-foot-long ramp option connecting directly to the Champion Park restrooms and parking lot would require relocation of a section of the narrow paved pathway around the perimeter of the Park, and perhaps a section of the fence enclosing the dog park.



Ramp Location: Champion Park at Dog Park/Restroom

- **N 12th Street:** Partly built 100-foot-long access ramp directly connecting to N 12th Street. Would be less expensive to upgrade this ramp than to build the new Champion Park ramp alternative described above. The N 12th Street ramp could be developed as an early phase improvement, with the new Champion Park ramp being a longer-term addition. The N 12th Street ramp could also serve as a maintenance vehicle access.

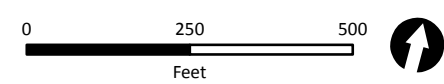


Ramp Location: N 12th Street

Segment 3: Champion Park



Parametrix



Reedsport Levee Loop Trail
Map 9: Preferred Trail Option
Segment 3: Champion Park

Segment 4: Scholfield Waterfront

Preferred Trail Alignment

Levee Crown

Trail Length

5,630 LF (including ramps)

Estimated Cost

\$2,524,000 (including controlled highway crossing)

Preferred US 101 Crossing

US 101 at N 16th Street. Recommended crossing treatment is a marked crosswalk with user-activated beacon. N 16th Street is the one location along this section of US 101 that is acceptable to ODOT for consideration for a controlled crossing. The function of this crossing would be improved by a short multiuse connecting trail from the proposed trailhead (see Connector Trail map). ODOT and the City will have to continue to consult on solutions that provide for both trail continuity and user safety.



TSP Recommended US 101 Crossing Site –
Vicinity of 16th Avenue near Scholfield Creek Bridge

Other US 101 Crossing Options

- **US 101 Undercrossing:** The possibility of the LLT crossing under US 101 at the Scholfield Bridge was evaluated in Technical Memorandums No. 3 and No. 4. A wide range of constraints, including low clearances, resulted in this alternative being eliminated. However, possible reconstruction of this bridge may reduce or eliminate many constraints. If the bridge is reconstructed, a trail undercrossing would be preferred over the N 16th Street crossing.

- **Interim Crossing:** Until a N 16th Street crossing or bridge undercrossing is built, the levee trail through Segment 4 should include signing and barriers directing users to cross US 101 at Winchester Avenue.

Preferred Levee Ramp Options

- **N 13th Street:** Uses an already partly graded 270-foot-long section behind the Juniper Avenue floodwall to reach the Levee Crown.
- **Umpqua Mobile Villa:** A new 166-foot-long ramp connecting the Levee Crown to a private access roadway on Umpqua Mobile Villa property. Will require use permission from property owner.
- **North of US 101:** Two levee ramps will be required:
 - When the levee is upgraded for flood control purposes, it will match the elevation of US 101. Thus this trail main stem “ramp” will simply consist of a standard levee multiuse section with a paved multiuse trail surface.
 - 205-foot-long ramp from Levee Crown to proposed non-motorized boat launch.

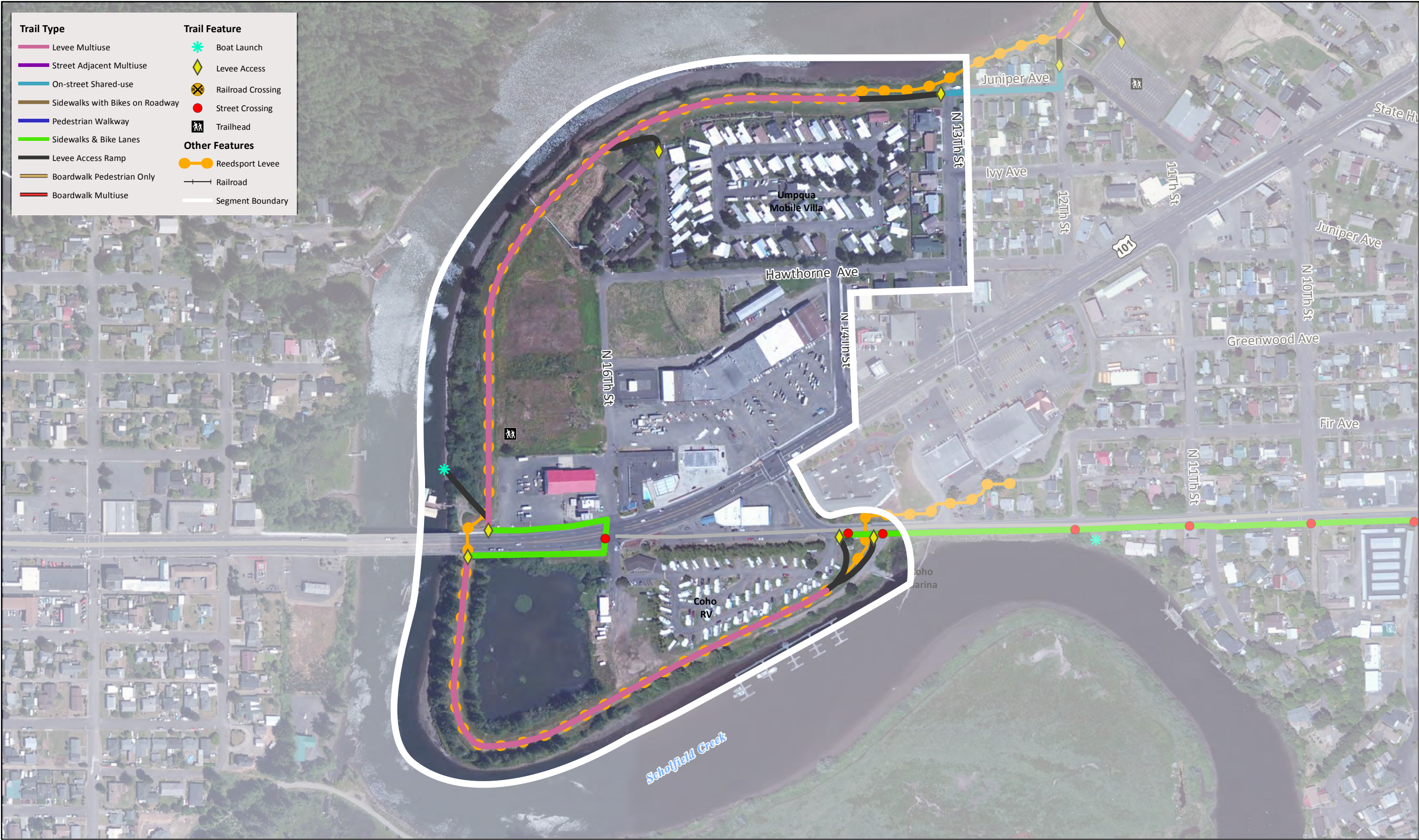
Note: Previous trail options included a third ramp connecting the trail to a proposed new trailhead. As the levee and highway grades will match in the final preferred trail crossing solution, a ramp to the trailhead is not required. Trail users can simply follow access driveways or short connecting pathways.

- **Winchester Avenue:** Dual-ramp connecting directly to Winchester Avenue. This ramp configuration eliminates need to modify Floodgate 7 across Winchester Avenue and allows trail users traveling in both directions to avoid “sharing the road” through the gate. The ramp on the Coho Marina side of levee will probably require relocation of the Marina driveway including a retaining wall along the creek. Ramp on RV park side of levee would be less expensive and would suffice as a first stage solution. Will require use permissions or acquisition from Coho RV.

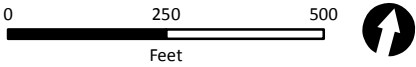
Preferred Non-motorized Boat Launch

The preferred launch site is just north of US 101. Will require levee access ramp and trailhead improvements to be fully functional.

Segment 4: Scholfield Waterfront



Parametrix



Reedsport Levee Loop Trail
Map 10: Preferred Trail Option
Segment 4: Scholfield Waterfront

Segment 5: Winchester Avenue

Preferred Trail Alignment

Bicycle lanes/sidewalks along Winchester Avenue from Coho RV to N 6th Street; then looping through downtown via sidewalks and bicycle lanes or shared-use along N 3rd Street, N 6th Street, Winchester, and Fir Avenue (Oregon 38). Will require new sidewalk on water side of Winchester Avenue between Coho Marina driveway and N 12th Street.



Winchester Avenue: Sidewalk Extension Area

Trail Length

5,898 LF

Estimated Cost

\$221,000

Preferred Oregon 38 Crossing

See Segment 1 for discussion.

Other Road Crossings

Winchester Avenue is a designated collector. Fir Avenue (Oregon 38) is an arterial. All streets intersecting with Winchester Avenue (W Railroad Avenue, E Railroad Avenue, 7th, 10th, 11th, 12th) and Fir Avenue (3rd, 4th, 5th, 6th are designated as local streets. Each local street intersection crossing should have trail signing and crosswalk or other pavement markings.



Fir Avenue Downtown

Rail Crossing

The Winchester Avenue on-street trail section also crosses the railroad. Improvements have recently been completed to this rail crossing. These improvements may have to be upgraded to accommodate the increased pedestrian and bicycle traffic resulting from trail development.

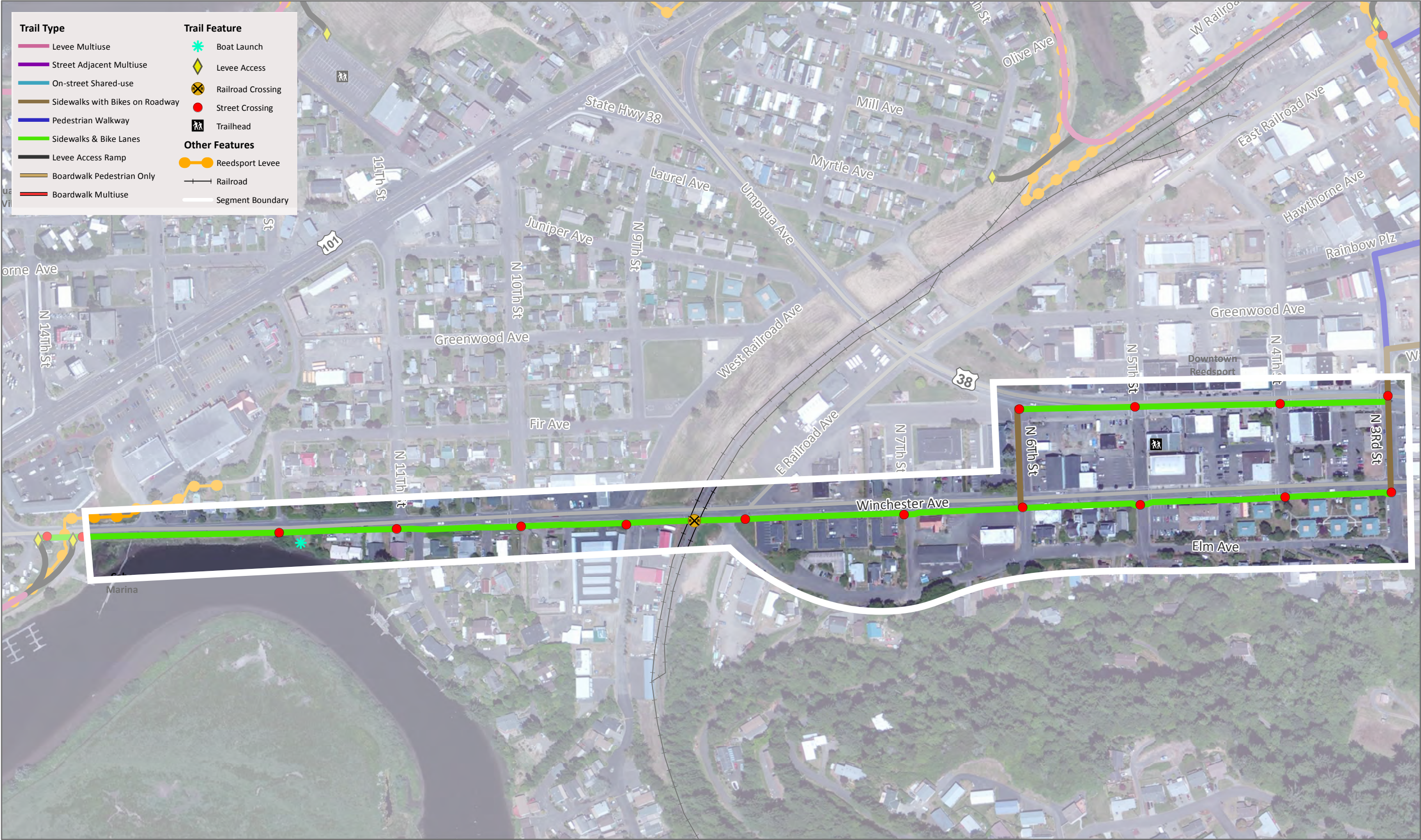
“Limited Purpose” Non-motorized Boat Launch

Uses a small undeveloped private property overlooking Scholfield Creek at N 12th Street and Winchester Avenue. This site does not have the tidal constraints of the possible McIntosh Slough (Segment 2) launch site, but has similar upland constraints that limit functionality. There is sufficient area for creating an off-street vehicle pull-out for safer vessel and gear unloading, but none for parking. This launch is not cost-estimated.

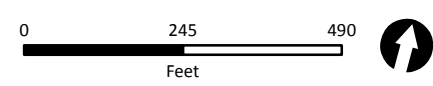


12th Street/Scholfield Creek Launch site

Segment 5: Winchester Avenue



Parametrix



Reedsport Levee Loop Trail
Map 11: Preferred Trail Option
Segment 5: Winchester Avenue

Connecting Trails

A variety of secondary loop trails, short connector spur trails, and selected on-street routes can contribute to a “complete” pedestrian and bicycle system (see Map 12). These additional trails and on-street facilities will safely and efficiently connect residents and visitors alike to key destinations such as government offices, schools, offices, shopping, and recreational areas. These connector trails and routes are not included in LLT cost estimates. The interim trail options shown on Map 13 can also be part of an interconnecting system.

On-Street Connectors

- **US 101 Sidewalks and Bicycle Lanes**

In general, sidewalks and bicycle lanes along US 101 should be signed at key intersections to direct users to Levee Crown and on-street sections of the LLT. In some areas, bicycle lane upgrades may be required.



Existing US 101 Bicycle Lane and Sidewalk

- **Oregon 38 (Umpqua Avenue)**

The Umpqua Avenue section of Oregon 38 (US 101 to N 6th Street) is scheduled for sidewalk and bicycle lane upgrades in 2018. This arterial street should be signed at key intersections to direct users to the LLT.

- **Segment 2: Oregon Dunes Visitor Center Shared-Use**

Using signing and pavement markings, and potentially different paving treatments along the front of the Oregon Dunes Visitor Center, a short connection could be made between the LLT section around Champion Park and the Oregon 38/US 101 intersection.

- **Segment 4: N 13th Street and N 16th Street**

Two on-street routes are suggested for signing and pavement markings connecting from US 101

to the long stretch of the LLT on the Levee Crown along Scholfield Creek: N 13th Street to the levee access ramp at N 13th Street and Juniper Avenue, and North 14th Street to the levee access ramp near Umpqua Mobile Villa.

Local Trail Connectors

- **Segment 1: Knife River Spur Trail**

The RWDP identifies the former Knife River aggregate site southeast of Riverfront Way and the Umpqua Discovery Center for eventual waterfront commercial and open space development, including an extension of the Riverfront Way boardwalk. A surface trail could also extend into the Knife River site or along the portion of the levee that follows Oregon 38 eastward.

- **Segment 2: McIntosh Slough Loop Trail**

This multiuse loop is illustrated in the RWDP. This loop would be a highly scenic alternative to the street-adjacent LLT section along Port Dock Road. Redevelopment of the Mast Site would probably be a prerequisite to development of this local loop trail, as the area is presently without any levee flood protection. This loop would also connect to the possible McIntosh Slough “expert” non-motorized boat launch.

- **Segment 2: McIntosh Slough Boat Launch Spur Trail**

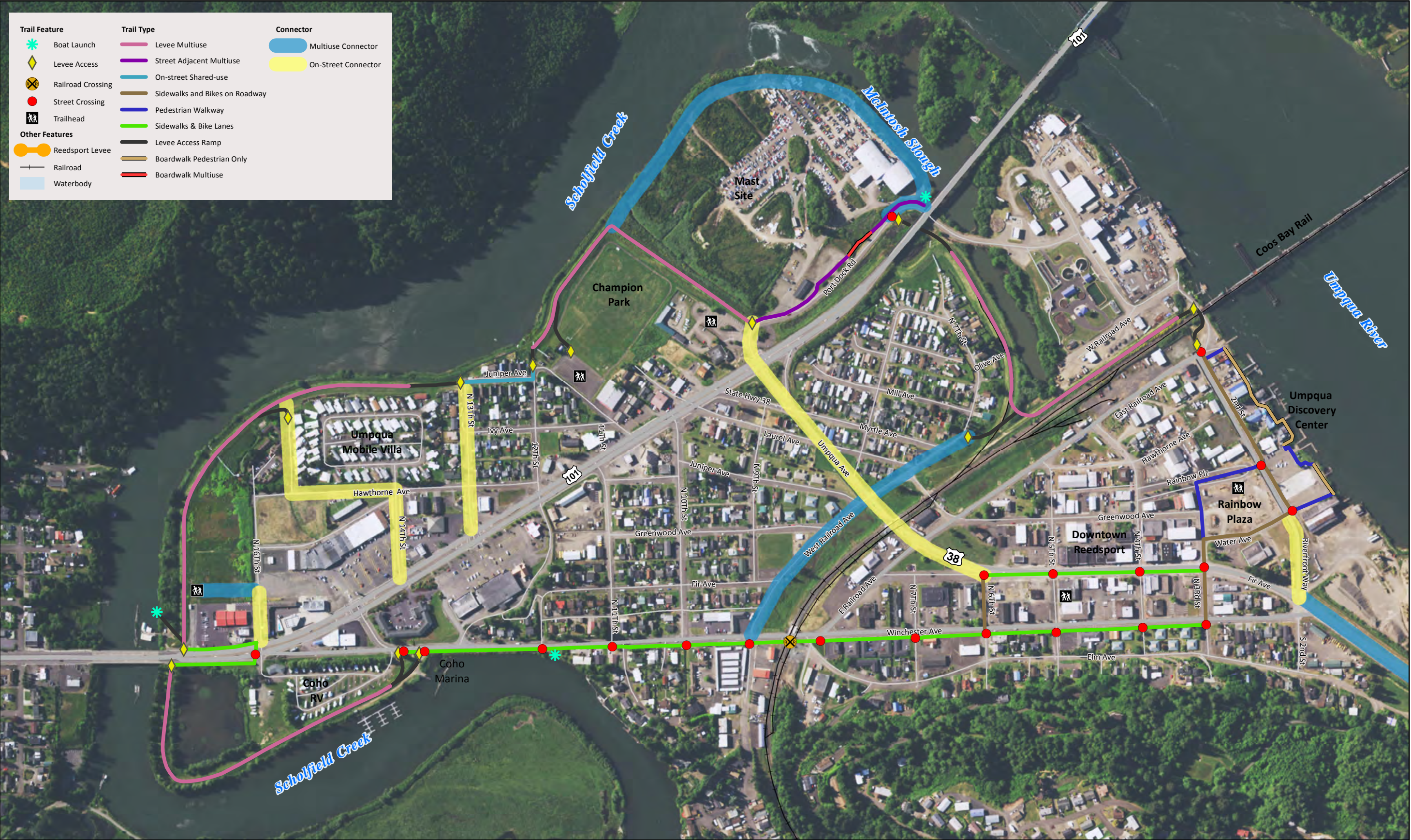
Short street-adjacent trail section connecting the main trail crossing of Port Dock Road to the proposed non-motorized boat launch under the US 101 approach ramp to the Umpqua River Bridge.

- **Segment 4: Trailhead Connector**

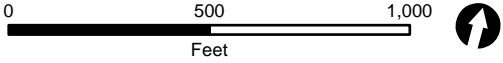
A short multiuse trail connecting the new trailhead in this location to N 16th Street is recommended. Includes a short shared-use on-street section to the N 16th Street crossing of US 101.

- **Segment 2 to Segment 5: W Railroad Avenue Connector Trail**

The main LLT route includes a levee access ramp connecting Myrtle Avenue/W Railroad Avenue to the Levee Crown. A street-adjacent trail extending from the base of this ramp across Oregon 38/ Umpqua Avenue to Winchester Avenue is suggested. This would serve as a shortcut back to the Levee Crown trail for users that do not wish to follow on-street sections into the downtown. The southeast side of W Railroad Avenue is presently an open field.



Parametrix



Reedsport Levee Loop Trail
Map 12: Connector Trails and Routes

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Interim Trail Options

The LLT will most likely be built in phases. Until multiuse trail sections are constructed or the permanent on-street sections of the trail are signed and pavement marked, existing city streets and the Levee Crown can be used as interim routes connecting to permanent trail improvements and/or key destinations. Interim routes are shown on Map 13. These possible interim sections are described in detail in Technical Memorandum No. 3.



Reedsport Levee Loop Trail
Map 13: Interim Trail Options

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6. Trail Features and Amenities

A wide variety of trail features were considered in the development of the LLTP. See Technical Memorandum No. 3: Conceptual Options, Chapters 4 and 6 for full range of alternatives considered, including attributes and challenges of specific options. Reference Technical Memorandum No. 4, Chapter 9 for additional discussion of trailheads and boat launches, and Chapter 11 of Technical Memorandum No. 4 for more information on trail amenities.

Trailheads

One new trailhead is recommended as part of the LLT. Four additional trailheads could be co-located with existing facilities. See Technical Memorandum No. 3 for more information. Conceptual trailhead locations are noted on LLTP maps. Site design and trailhead amenities may vary greatly based on location and expected usage. Trailheads that share parking and other facilities at government centers and commercial areas are a cost effective alternative to standalone sites.

Note: Trailhead locations are intended to identify the general areas within which a facility would be desirable, but are not property specific unless otherwise noted.

Preferred trailheads features and amenities include:

- Safe access roadways separating vehicular and trail user traffic
- Vehicle parking
- Secure bicycle storage
- Restroom facilities
- Benches, shelters and picnic facilities
- Interpretive facilities
- Wayfinding signage
- Security lighting
- Drinking water

New Trailhead

- **Segment 4:** Scholfield Creek north of US 101. May require private property acquisition, although trailhead could be at least partly sited on undeveloped public right-of-way. Signing and pavement markings and a short multiuse

connector trail is recommended to improve access to the Levee Crown and to the preferred N 16th Street crossing of US 101.



Trailhead Site (grassed area behind truck) from US 101

Shared-Use Trailheads

- **Segment 1:** Rainbow Plaza or Riverfront Way Commercial Areas.
- **Segment 2:** Oregon Dunes Visitor Center or the former Chamber of Commerce visitor information building site opposite the Dunes Center.
- **Segment 3:** Champion Park at N 12th Street.
- **Segment 5:** Downtown area government facilities.

Non-Motorized Boat Launches

Two boat ramps are already in place along the Umpqua River near Riverfront Way shoreline. These boat ramps provide for launch of motorized vessels and are very busy in summer months. Users of non-motorized water craft (kayaks, canoes, inflatables) may prefer less congested areas. Non-motorized users may also prefer to launch into the quieter waters of the McIntosh Slough or Scholfield Creek.

The preferred non-motorized boat launch (Segment 4) includes features that may be shared with the proposed Segment 4 trailhead (*such features are in italics on the next page*). There may be room on the waterside of the levee for limited amenities nearer to the launch. A floating dock anchored to pilings will accommodate the extremes of tidal fluctuation.

- *Accesses and driveways accommodating turning movements of vehicle-hauled trailers*
- *Boat unloading areas*
- *Space to assemble gear and ready for launch*
- *Vehicle parking*
- *Restroom facilities*
- *Benches, shelters, and picnic facilities*
- *Interpretive facilities*
- *Wayfinding signage*
- *Security lighting*
- *Drinking water*



Floating dock

Preferred Launch Site

- **Segment 4: Scholfield Creek near Les Schwab Tire Center.** This potential site is accessed via a new ramp from the levee section near the proposed trailhead behind the Les Schwab Tire Center on US 101. Users will have to haul boats and gear up and over the levee. Users would park at the trailhead or nearby.

Limited Purpose Launch Sites

- **Segment 2: McIntosh Slough.** A launch site into McIntosh Slough under or near to the gothic-style support arches of the historic Umpqua River US 101 Bridge would provide for a unique scenic experience for kayakers and other non-motorized boaters. At low tides, the Slough does not have sufficient water, even in the main channel, to be passable. Users will have to time trips to avoid being temporarily stranded by mud flats and low water.

- **Segment 5: Scholfield Creek near N 12th Street.** This site is at the point where Scholfield Creek bends away from Winchester Avenue. A small vacant lot would have to be acquired. There is sufficient room to create a drop off/pick up area but none for off-street parking.

Amenities

A variety of outdoor facilities, furniture, lighting, signing and other amenities will make the LLT a welcome place along which to travel and enjoy Reedsport and the waterfront. These same features and amenities, if established with uniform or complementary designs, materials, and themes, can also help provide the LLT with a distinctive identity.

There are two general challenges to locating any amenity features on the Levee Crown or levee berm slopes:

- The Levee Crown is generally 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 many trail amenities.
- USACE generally does not permit any improvements that have to bore or cut into the levee prism. This prohibition could extend even to modest concrete footings for sign poles and bench legs. As the LLT develops, the City will need to consult closely with USACE to find amenity solutions that satisfy regulations. Recent City discussions with USACE indicate some flexibility for minor footings, such as might be needed for sign poles, although not for conduits, as might be needed for electrical power.

Restrooms

To reduce maintenance costs and vandalism, restrooms should be located in highly visible and accessible



Prefabricated restroom

locations. For trails, the best locations for restrooms are usually in association with trailheads or other high-activity areas. Pre-fabricated restrooms are usually the least expensive. The one new trailhead proposed for the LLT (Segment 4) should include restrooms. This trailhead will be visible from nearby commercial uses, US 101, and City streets and will also serve the preferred non-motorized boat launch.

There are several other sites identified in the LLTP for shared-use as LLT trailheads. Champion Park (Segment 3) has a freestanding restroom facility. The Oregon Dunes Visitor Center (Segment 3) and a variety of public buildings along Winchester Avenue and Fir Avenue (Segment 5) also have public restrooms, as does the Umpqua Discovery Center (Segment 1).

Taken together, all these sites, with the addition of a new restroom at the proposed Segment 4 trailhead, provide for a reasonable number of adequately spaced restroom facilities along the LLT.

Levee Access Ramps

All levee access ramps have been located and conceptually designed to comply with USACE and Americans with Disabilities Act (ADA) requirements. All ramps are designed as earthen fill structures. As per USACE regulations, ramps will not cut into the levee prism. As best as can be determined at the conceptual level, only one of the new access ramps – the creekside ramp of the possible long-range dual ramp proposed on Winchester Avenue (Segment 4) – will have to be constructed to flood levee standards.

Levee access ramps should include features identifying the LLT and the access point – at a minimum a trail name sign. Additional signing with an overall trail map with trail lengths and accessibility information could be included.

Thematic Elements

Trail features and amenities should reflect an overall trail design framework that communicates a unified sense of place, appearance, and experience. Themes can be reflected in signing graphics; and in details on benches, boardwalk railings, bicycle racks, and trailhead facilities.

The Umpqua River, McIntosh Slough and Scholfield Creek, and the levee itself, are suggested as the theme of the LLT. The gothic arches under the historic Umpqua River highway bridge could also be reflected in amenity design.



Under US 101 Bridge

Downtown Reedsport is distinguished by the locally produced large wood carvings sited along Fir Avenue sidewalks and elsewhere. This well-known community feature could be extended to the LLT, particularly at ramps. Pieces are large and heavy enough to deter vandalism and theft.



Furniture

A variety of trail furnishing can improve the trail user experience – benches, trash receptacles, shelters, etc. As with all amenity features, it will be hard to find space on the Levee Crown for such structures. USACE restrictions may mean that furniture can be placed on the crown but not anchored to it, increasing the probability of vandalism or theft. For seating, an alternative is to use large wood or stone structures that are simply too heavy to carry away.

Assuming USACE restrictions and Levee Crown width constraints can be resolved in some areas along the trail, features such as benches, lighting, and shelters should be carefully positioned to avoid impacts on adjacent neighbors.

Bicycle Racks

Bicycle racks should be included at trailheads and access ramps. Simple U- or staple-shaped racks are recommended. Racks can also be creatively designed to reflect community and trail themes. The City is in the process of commissioning the fabrication of themed racks.



Staple-shaped bicycle racks

Lighting

While visiting trail users may prefer a well-lit trail, neighboring residents may find lighting intrusive. A way 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.

In any event, USACE regulations will probably preclude the footings, underground wiring conduits, and junction boxes that would be needed to provide conventional lighting. There will also be little area to install lighting on the narrow Levee Crown. Trail lighting may have to be limited to levee access ramps and the approaches to the ramps, and the areas where the LLT crosses a roadway.

Alternatives could include:

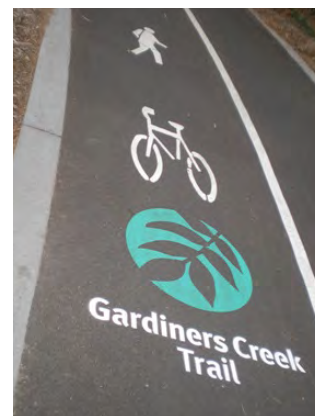
- Use of low-height solar photovoltaic-powered light standards.
- Use of asphalt paving with painted on or embedded photovoltaics.
- Painted fog lines along trail edges.



Solar photovoltaic trail lighting

Signage

Given the limited area and USACE restrictions on the Levee Crown, a system of pavement markings may be the most practical and cost-effective way to sign the actual trail. An LLT logo could be developed and used to mark trail pavement. With the advent of smart phones, some communities have also placed numeric identifiers at regular intervals along trails so police or fire/ambulance responders can get to specific locations.



On-pavement signing

Kiosks and Interpretive Facilities

Given the limitations to siting kiosks and other interpretive facilities on the Levee Crown, these types of facilities should be combined with other LLT “entry” improvements – maps, directional signing, lighting, furniture, etc. – at or near levee access ramps, trailheads and road crossings.



Informational kiosks

Viewpoints

For trails through scenic areas, intermittent viewpoints are important amenities where 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 of trail travel lanes; or more elaborate and include interpretive signing.

The narrow Levee Crown offers little extra room to create even simple viewpoints. USACE approval of more structured viewpoints vaulted over the edge of the Levee Crown would be highly unlikely. Nonetheless as the LLT is built, the City should look for viewpoint opportunities. One possibility is a viewpoint structure at the proposed new non-motorized boat launch near US 101.

Fencing/Other Barriers

The need for security fencing for the LLT is limited, but the City should be prepared to address any trespass concerns of neighboring properties as the trail is developed and trail traffic grows. Fencing might also be appropriate to protect adjacent sensitive lands.

As with many trail amenities, there will be little room for fencing on the Levee Crown. Security fencing

could be installed along the edge of the 15-foot-wide levee exclusion zone, but would have the effect of limiting access to the levee.

Once the paved trail atop the levee is constructed, motor vehicle use of the Levee Crown may become a problem. Fenced gates are a possible solution (a gate is in place already for the Port Dock Road/Champion Park ramp) but bollards would be as effective and not impede bicyclist and pedestrian movements. “No vehicles allowed” pavement markings or warning signs should also be installed.



Bollards restricting vehicle access

Landscaping

Landscaping on the Levee Crown or levee berm slopes is not permitted by USACE standards. Tree roots and other large vegetation reduce the structural integrity of the levee prism. Fortunately, the highly scenic views from most sections of the Levee Crown will more than compensate for the lack of landscaping.

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7. Cost Estimates and Property Acquisition

Additional information on the assumptions underlying cost estimates for specific trail types and features can be found in Technical Memorandum No. 4, Chapter 8.

Cost Estimates by Trail Segment

Table 3: LLT Cost Estimates

	Trail Length (LF)	Trail Cost	Ramp Length (LF)	Ramp Cost	Total Construction Cost	Total Engineering Cost	Total
Segment 1: Umpqua Waterfront¹	2,009	\$579,700	360	\$117,000	\$696,700	\$383,200	\$1,079,900
Segment 2: Port Dock Road	2,832	\$820,700	604	\$196,300	\$1,017,000	\$559,350	\$1,576,350
Segment 3: Champion Park	2,099	\$421,650	380	\$123,500	\$545,150	\$299,800	\$844,950
Segment 4: Scholfield Waterfront²	4,643	\$1,282,475	987	\$345,450	\$1,627,925	\$895,375	\$2,523,300
Segment 5: Winchester Avenue³	5,898	\$171,200	N/A	N/A	\$171,200	\$49,800	\$221,000
TOTAL	17,481	\$3,275,725	2,331	\$782,250	\$4,057,975	\$2,227,525	\$6,244,600

1. Excludes existing 241-foot-long, 12-foot-wide sidewalk.

2. Includes new trailhead and non-motorized boat launch.

3. On-street signing and pavement marking, plus 604-foot-long new sidewalk.

Cost Estimate Assumptions and Limitations

Design and Engineering Costs

Trail design and engineering, permitting, and construction management were estimated as percentages of construction cost:

- Preliminary engineering/permitting: 25 percent
- Construction engineering: 15 percent
- Construction contingencies: 15 percent

Trail and Ramp Construction Costs

Trail linear foot distances were measured from GIS-based mapping. Levee access ramp distances are based on specific non-engineered ramp designs. All designs meet ADA and USACE requirements. All estimates are plan-level and subject to final design, engineering and permitting, and prevailing labor and materials rates. Costs do NOT include any required improvements to the underlying levee berm.

Trail types are those identified in Chapter 5 of this LLTP. Unit costs are based on information derived

from recent trail master plans and construction projects in Oregon, including one project within ODOT Region 3.

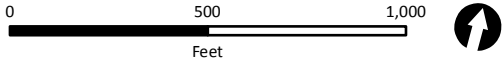
Property Acquisition

Property acquisition requirements for preferred LLT alignment options are very limited. Except in Segments 1 and 5 – where there is no levee berm – most of the preferred trail alignment is on the Levee Crown and accessed by ramps that are primarily but not exclusively within the 15-foot-wide exclusion area from the toe of the levee slope. Much of the levee and levee exclusion area is already in public ownership. Other LLT sections are on public right-of-way. See Map 14 for potential acquisition areas. A more detailed enumeration of specific acquisition areas is in Technical Memorandum No. 4.

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Parametrix



Reedsport Levee Loop Trail
Map 14: Potential Property Acquisitions
or Use Permissions

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8. Trail Phasing

Phasing Plan

The following specific approaches are suggested in managing LLT phasing. Additional information on trail phasing, including the criteria used to identify priorities, can be found in Technical Memorandum No. 4, Chapter 7.

Signing and Pavement Markings

The most economical means to quickly establish a relatively continuous LLT are new crosswalks and signing and pavement markings designating both permanent and interim on-street sections as part of the LLT. These street sections can be combined with interim use of an unimproved Levee Crown to accommodate a wide range of trail users, excepting road bicycles on the levee.

Levee Crown Surface Upgrades

Interim improvements could be made to Levee Crown surfaces that would open up at least limited usage for road bicycles. The surfacing would consist of a geotextile layer covered by two sizes of base rock. This would also reduce Levee Crown wear and tear.

Levee Accreditation

Multiuse trail improvements on the Levee Crown or the construction of new levee access ramps should NOT be undertaken until the current levee accreditation study is complete. No trail or ramp construction should be undertaken in the specific levee areas identified for upgrades until such upgrades are made.

Road and Rail Crossing Improvements

All road and rail crossing improvements should be timed to coincide with the construction of associated LLT sections. The possible US 101 trail undercrossing (Segment 4) is only feasible if the Scholfield Creek Bridge is upgraded.

Levee Ramps

There are three categories of LLT ramps proposed. Ramp construction phasing is suggested in the following order:

- **Partly existing ramps:** Existing grading and fill provide for at least partial ramps in four locations: Champion Park at Port Dock Road (Segment 3), N 12th Street (Segment 3), N 13th Street (Segment 4), and Scholfield Creek Bridge/US 101 (Segment 4). Paving, and potentially some additional grading, will complete these ramps. Expected levee improvements resulting from the FEMA accreditation study will bring the levee to grade with US 101.
- **Ramps following the line of the LLT:** Three proposed ramps follow the line of the LLT and thus are essential to creating a continuous trail – Railroad Bridge (Segment 1), Highway Bridge at Port Dock Road (Segment 2), and Coho RV/Marina at Winchester Avenue (Segment 4).

Note: the Railroad Bridge ramp can be built in two sections. A new 100-foot-long ramp section from Port Dock Road up to the levee is essential. The ramp section from E Railroad Avenue under the rail bridge could be deferred, and signing and pavement markings substituted. The Coho RV/Marina ramp could also be built in two stages.

- **Optional access ramps:** Four ramps improve LLT access but are not essential to the continuity of the LLT – Myrtle Avenue (Segment 2), Champion Park (Segment 2), Umpqua Mobile Villa (Segment 4), and Preferred Non-motorized Boat Launch Ramp (Segment 4).

Table 4: Phased Priorities

(See Map 15 for locations of LLT phases.)

Near-Term

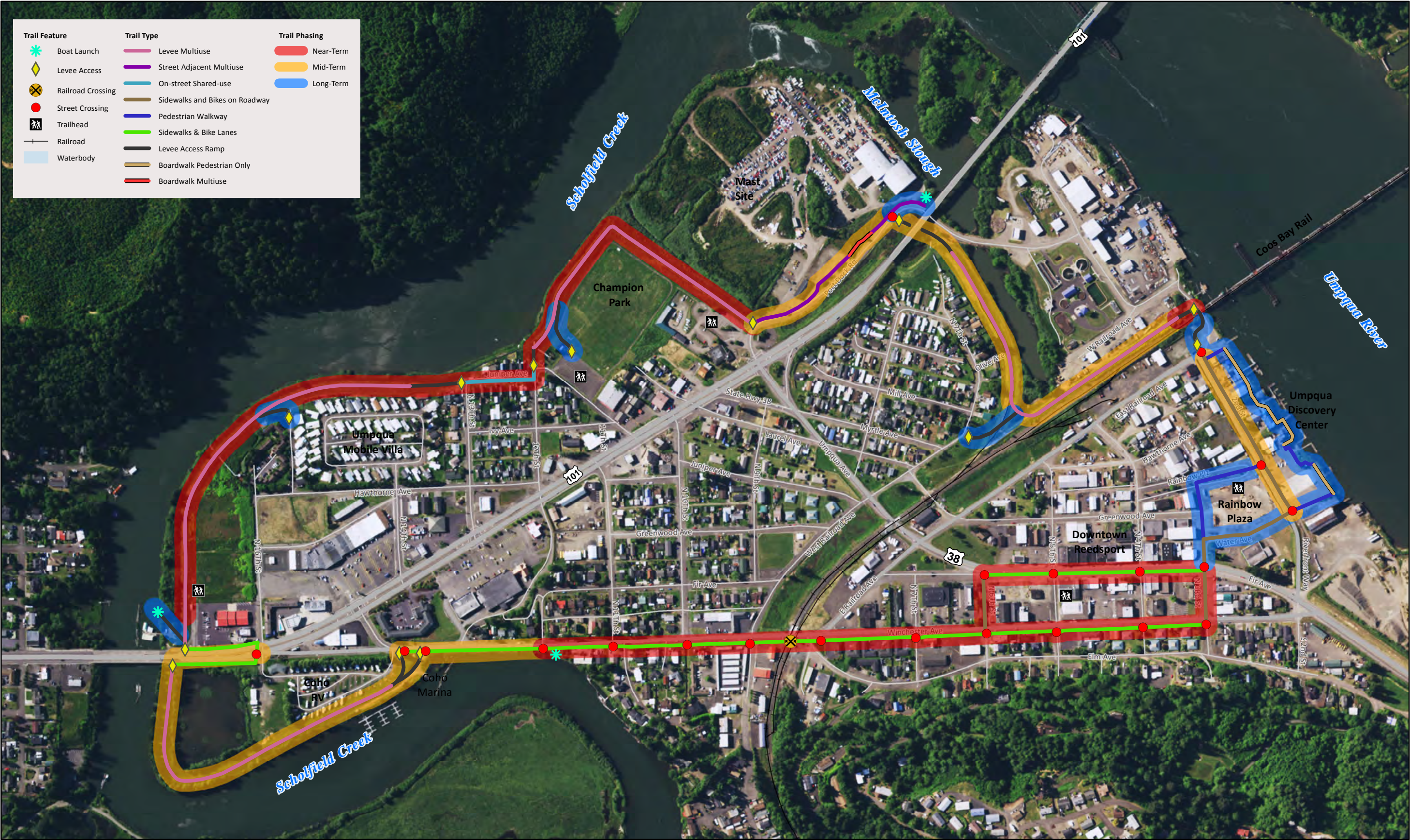
Trail Sections	<ul style="list-style-type: none"> • Segment 3: Champion Park (Port Dock Road to N 12th Street) • Segment 4: N 13th Street to US 101 (at Scholfield Creek US 101 bridge)
Upgraded Ramps	<ul style="list-style-type: none"> • Segment 3: Champion Park at Port Dock Road • Segment 3: N 12th Street • Segment 4: N 13th Street • Segment 4: US 101 at Scholfield Creek
New Ramps	<ul style="list-style-type: none"> • Segment 1: Railroad Bridge (Port Dock Road side)
On-street	<ul style="list-style-type: none"> • All on-street sections (signing and pavement markings and/or crosswalks)

Mid-Term

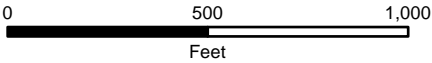
Trail Sections	<ul style="list-style-type: none"> • Segment 2: Port Dock Road (at railroad bridge) to Port Dock Road (at Umpqua River US 101 Bridge) • Segment 2: Port Dock Road (street-adjacent trail) • Segment 4: Coho RV (US 101 to Winchester Avenue)
New Ramps	<ul style="list-style-type: none"> • Segment 1: Railroad-adjacent Levee Crown • Segment 2: Umpqua River US 101 Bridge Approach • Segment 4: Winchester Avenue (ramp on Coho RV side)
On-street	<ul style="list-style-type: none"> • Riverfront Way (12-foot-wide sidewalk – E Railroad Avenue to Water Avenue) • Winchester Avenue (5-foot-wide sidewalk – waterside from Coho RV to N 12th Street)

Long-Term

New Ramps	<ul style="list-style-type: none"> • Segment 1: Railroad Bridge Approach (E Railroad Avenue side) • Segment 2: Myrtle Avenue • Segment 3: Champion Park (to parking lot) • Segment 4: Umpqua Mobile Villa • Segment 4: Winchester Avenue (ramp on Coho Marina side)
Boardwalk	<ul style="list-style-type: none"> • Segment 1: Riverfront Boardwalk Extension
On-street	<ul style="list-style-type: none"> • Segment 1: N 3rd Street/Water Avenue • Segment 1: N 3rd/Rainbow Plaza (5-foot-wide sidewalk – Water Avenue to Riverfront Way) <p><i>On-street improvements tied to full development of Rainbow Plaza</i></p>



Parametrix



Note: This phasing map shows Preferred Trail Option alignments and trail types only. See Technical Memorandum No.4 for interim and intermediate phased solutions using other trail types.

Reedport Levee Loop Trail
Map 15: Trail Phasing Plan
Permanent Solutions

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9. Funding Opportunities

Trail development and enhancement funding sources are summarized in the Table 5 below. Terms and conditions will change from time to time, new programs may emerge or others may sunset, and funding cycles and levels will vary. Funding or construction planning should be preceded by a review of current programs and cycles.

Construction Funding

Transportation and parks system development charges (SDC) can be assessed by municipal jurisdictions against new development. Although limited to funding extra-capacity capital improvements to meet the demands generated by new development, SDCs could be available to apply to trail development. Street utility fees can also be established to underwrite trail operation and maintenance costs.

The City should also look at funding sources to preserve and upgrade the 1968 levee or to make improvements to community safety and tsunami response. Trail development could be folded into such grant-supported efforts.

Table 5. Trail Design and Construction Funding Sources

Agency	Program	Funding Cycle	Local Match Percentage	Range of Funds Available
ODOT	Statewide Transportation Improvement Program (STIP) – Enhance and Fix-it (2015–2018)	3-year cycle	10% (Enhance)	\$1.3B total (\$720M Fix-It & \$227M Enhance)
ODOT	Oregon Connect (2015–2018)	Each biennium	20%	\$42M

Enhancement Funding

Funding may also be available to underwrite specific elements or types of trail construction, or to provide enhancements or mitigation within trail corridors. Such funds are summarized in Table 6. These funds are sometimes sourced from federal or state government, with state or regional agencies administering allocation and award. Locally sourced funds may also be available.

Table 6. Potential Trail Enhancement Funding Sources

Agency	Program	Funding Cycle	Local Match Percentage	Range of Available Funds
Oregon Parks and Recreation	Local Government Grant	Annual	20% to 50%	\$40,000 to \$1M
	Recreational Trails Grants	Annual	20%	Minimum of \$5,000
	Land and Water Conservation Fund (LWCF)	Annual	50%	Minimum of \$12,500
Oregon Community Foundation	Oregon Historic Trails Fund	Annual	N/A	Up to \$40,000
	Oregon Parks Foundation Fund	Annual	N/A	\$1,500 to \$5,000
Bikes Belong	Bikes Belong Grant	Quarterly	N/A	Up to \$10,000
Cycle Oregon	Cycle Oregon Signature Grant	Annual	N/A	\$50,000 to \$100,000

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10. USACE and FEMA Levee Requirements

A central LLTP objective is to identify a preferred long-term multiuse trail alignment atop the 1968 earthen berm levee that protects the city's downtown and surrounding neighborhoods from flooding. The LLTP study area is primarily within areas protected by this levee.

The City has jurisdiction over potential encroachments upon the levee, including those envisioned by the LLTP, such as paved pathways, access ramps, and trail amenities. In developing the LLT, the City must assure compliance with USACE levee safety and structural integrity requirements and limitations.

To maintain flood insurance eligibility for the areas of the city within the levee, the levee must meet flood control requirements. The Federal Emergency Management Agency (FEMA) provides accreditation (formerly called certification) for the levee on an intermittent basis. The levee was last accredited in 2010, and a new accreditation is scheduled for 2016. The City is currently conducting a comprehensive assessment of the levee with respect to probable accreditation improvements.

See Technical Memorandum No. 2: Baseline Information, Chapters 2 and 4; Technical Memorandum No. 3: Conceptual Trail Options, Chapter 5; and Technical Memorandum No. 4: Preferred Trail Options, Chapter 7 for additional information on USACE and FEMA requirements, and underway and planned City actions to improve the levee.

408 Permitting

As reported in Technical Memorandums No. 2 and No. 3, USACE permits levee alterations through a Section 408 process. The improvements planned for the LLT would also likely be subject to a National Environmental Policy Act (NEPA) assessment, in addition to other typical environmental permitting. The applicable USACE policy is numbered 1165-2-216. The link to the USACE website is http://planning.usace.army.mil/toolbox/library/Ecs/EC_1165-2-216.pdf.

USACE Conceptual Review

USACE regulatory and engineering staff informally reviewed possible trail alignment considerations, concepts, and treatments identified in Technical Memorandums No. 1 and No. 2, met directly with City and consultant staff to review Technical Memorandum No. 3, and participated by telephone in Project Advisory Committee review of Technical Memorandum No. 4: Preferred Trail Options. LLTP review by USACE is a courtesy and is not binding. USACE provided the following preliminary input:

Levee Settling

The 1968 levee has settled to varying degrees in different locations. The addition of a multiuse trail to the Levee Crown may increase the rate or number of locations experiencing settling. This factor should be evaluated and taken into consideration in trail design and engineering. Sheet pile floodwalls near Juniper Avenue (Segment 3) have also settled, and this should be taken into account in trail location and design.

Levee Access Options

Levee access points, whether designed and engineered as an outcome of the LLTP, or pioneered by the already considerable informal use of the levee for walking and biking, will concentrate "wear and tear" on the levee. Designed and engineered accesses should be sited to provide clear and convenient alternatives to informal access points.

Engineered access points must also comply with ADA requirements, and be constructed so that the original levee will not be structurally compromised, such as by cutting into the levee prism. Paved surfaces should be designed to withstand maintenance vehicle loads.

Informal Use of the Levee

USACE expressed general concern about damages and liability from people "pioneering" access up to the Levee Crown, particularly in areas with adjacent uses such as parks and residential developments. The establishment of designated and improved levee access points should reduce these problems.

Floodgate Control Structures

Trail design and engineering, including levee access ramps, should assure that the integrity of existing levee closure structures (such as floodwall gates where roadways interrupt the berm levee) are maintained or that the control structures are appropriately reconstructed if impacted by trail improvements.

APPENDIX A

Technical Memorandum No. 1: Project Goals and Objectives

Technical Memorandum No. 1 can be downloaded at www.cityoffreedsport.org or obtained from the City.

City of Reedsport, Oregon

Levee Loop Trail System Plan

Technical Memorandum No. 1

Project Goals and Objectives



Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
September 2014

Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
September 2014

Credits

Cover photographs of Reedsport Levee courtesy Jim Rapp.

Conceptual levee trail cross section on page 3 courtesy Parametrix.

Photograph of Sandy River Levee near Troutdale, Oregon, on page 5 courtesy Gregg Everhart.

Photograph of Umpqua River Bridge and Port Dock Road on page 6 courtesy Jim Rapp.

Background

The need for a Levee Loop Trail (LLT) is identified in the City of Reedsport's (City) 2006 Transportation System Plan (TSP) and is further described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). The TSP and RWDP both identify conceptual trail alignments that use portions of a major levee system constructed in 1968 to protect Reedsport's waterfront, downtown, and adjacent highway commercial areas and neighborhoods from flooding.

The City operates and maintains this levee, with the US Army Corps of Engineers (USACE) as the primary regulator. Major sections of the levee are in private ownership. The City is currently in the process of USACE recertification of the levee system.

Problem Statement

The City currently lacks an integrated system of developed bicycle and pedestrian routes, particularly near and between US 101 and Oregon 38. Sidewalks and bicycle lanes exist in sections of the downtown and nearby neighborhoods, and there is waterfront boardwalk near Riverfront Way, but many areas are without developed and safe bicycle and pedestrian options. Many informal trails have been established, particularly atop sections of the levee.

Purpose

The LLT will provide a convenient, non-motorized transportation alternative for city residents and visitors in traveling within and through the city's downtown and waterfront core. The LLT will access key attractions and destinations within the city; reduce reliance on motorized vehicles for trips to work, school, shopping, and recreation; and improve pedestrian, bicycle, and motorized vehicle safety along US 101, Oregon 38, and on city streets.

Plan Goals and Objectives

The Levee Loop Trail System Plan (LLTP) will consider trail alignments along the levee as the preferred solution for a trail system connecting commercial, industrial, recreational, and residential areas in and around the Reedsport downtown and river waterfront.

The LLTP will provide a detailed analysis refining RWDP concepts, will identify near-term and long-term preferred trail alignment alternatives, trail standards and design elements, trailhead locations and other access points, key road and rail crossing options, regulatory requirements, cost estimates, and sources of funding. The LLTP will be coordinated with the City's ongoing USACE levee recertification effort.

LLTP objectives include:

1. Maximize the percentage of the trail alignment that is off-street and atop the levee.
2. Identify a long-term and primarily off-street paved multiuse trail alignment.
3. Identify interim trail solutions more reliant on soft-surface trails, shared-use roadways, and/or bicycle lanes and sidewalks until a multiuse trail can be constructed.
4. Identify trail alignments, standards, and cross-sections that comply with ADA and other statutory and regulatory requirements.
5. Provide guidance for levee system alterations necessary for trail alignments and access structures that satisfy USACE recertification requirements.
6. Link the trail to key destinations such as government offices, shopping, schools, residential neighborhoods, employment areas, and other community activity centers.
7. Provide trail alignments and designs that assure the safety and security of trail users.
8. Provide well-designed, visible, safe and convenient trail access points and trailheads, as well as street and highway crossings.
9. Consider visual and use impacts to abutting property owners and developments in determining the preferred trail alignments and designs.
10. Provide preliminary trail cost estimates, and catalog potential funding opportunities.

Study Area

The LLTP study area encompasses most of downtown Reedsport; the community's waterfront along the Umpqua River, Scholfield Creek, and McIntosh Slough; residential neighborhoods west of downtown; existing and planned industrial and commercial areas near Port Dock Road and the Port of Coos Bay Railroad; and businesses and services along US 101 and Oregon 38.

The study area is divided into five planning segments to provide for detailed analysis of possible trail alignments:

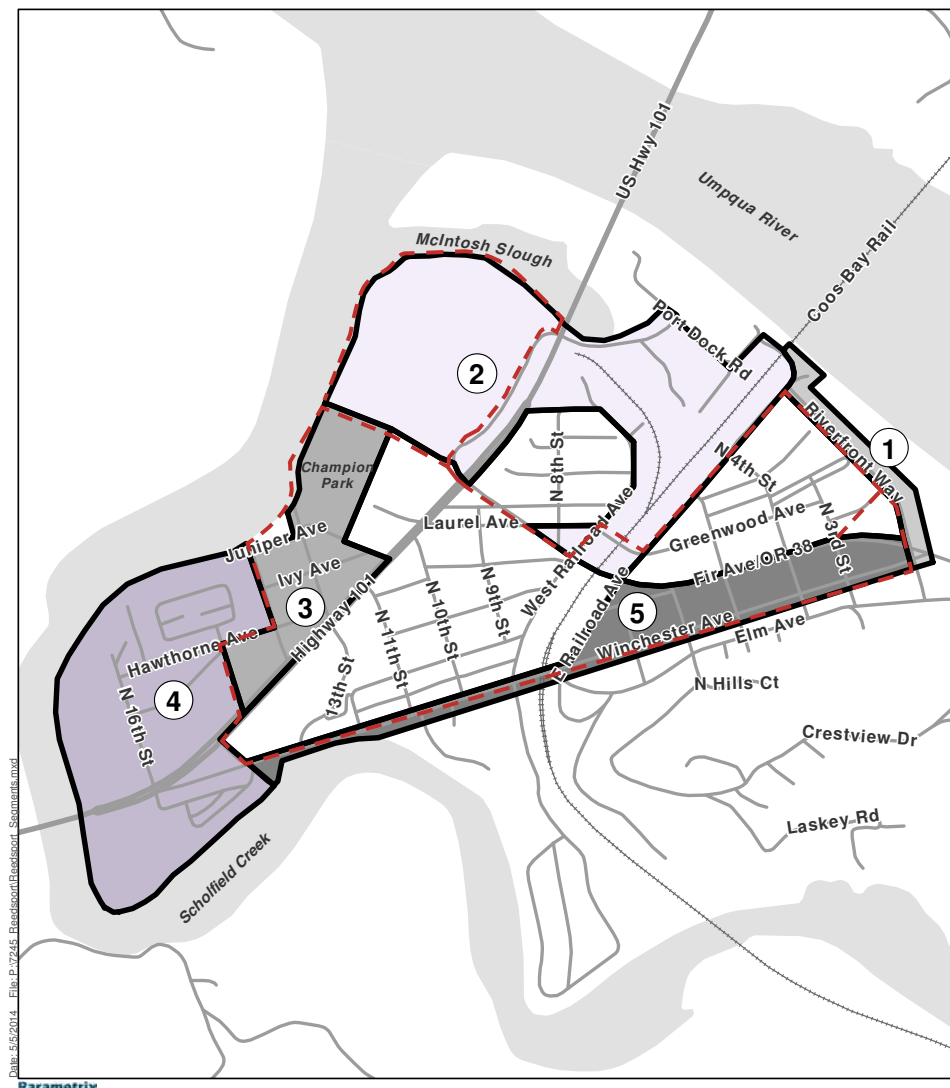
Segment 1: Umpqua River Waterfront, Riverfront Way.

Segment 2: Port of Coos Bay Railroad, Port Dock Road, McIntosh Slough Waterfront.

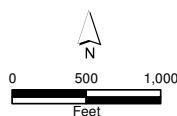
Segment 3: Champion Park, Ivy-Hawthorne Neighborhood and Commercial Areas between North 11th and North 14th Streets.

Segment 4: Scholfield Creek Waterfront, Neighborhood-Commercial Areas between North 14th Street and North 16th Streets, Scholfield Creek Waterfront south of US 101.

Segment 5: Winchester Avenue, Downtown Reedsport, Oregon 38.



Note: Trail alignments on the study area map are from the RWDP, and are subject to change as part of the LLTP.



Segment



--- Conceptual Trail from Reedsport Waterfront and Downtown Plan (RWDP)

Study Area

Reedsport Levee Loop Trail
Reedsport, Oregon

Preferred Trail Types

The LLTP will analyze possible trail alignments through the five trail planning segments and propose differing trail types or other pedestrian and bicycle solutions reflecting the particular opportunities and constraints in each segment.

Conceptual cross section illustrations and specifications for selected trail types will be provided at a later stage of the LLTP project. At time of design and engineering, the trail and required trail structures (bridges, boardwalks, ramps, retaining walls, etc.) should comply with current AASHTO and ODOT design standards.

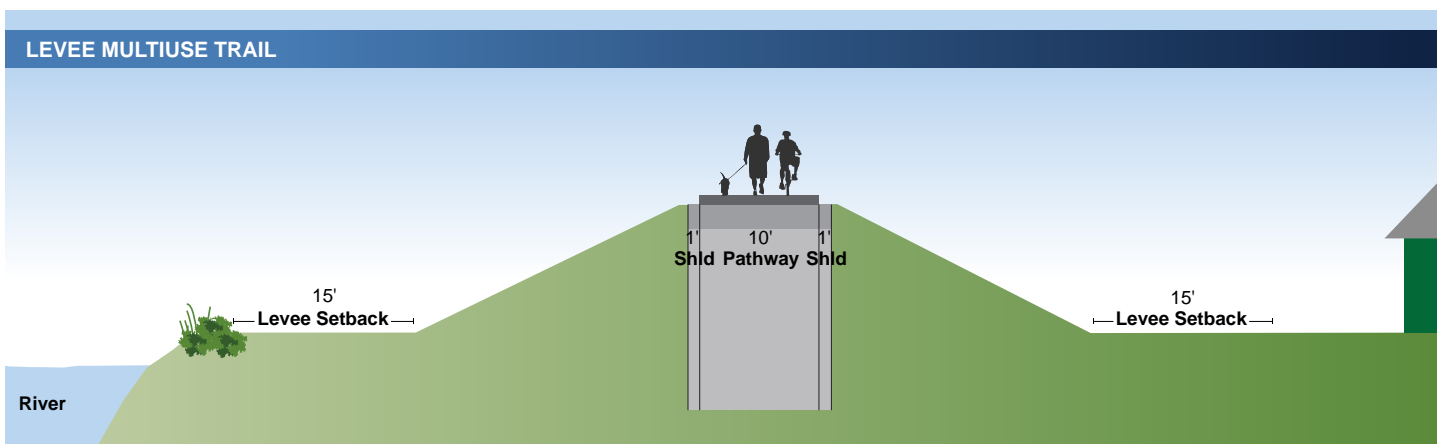
The **preferred LLTP trail** type is a multiuse trail meeting the needs of touring, commuter, recreational, and family bicyclists and pedestrians (as well as strollers, skates, skateboards and other non-motorized conveyances). The preferred multiuse trail is:

- Aligned on the top of the levee.
- 10 to 12 feet wide, with 2-foot-wide graveled shoulders.
- Asphalt surface.
- At or below ADA-compliant maximum grade (e.g., 5 percent) and designed with structures (ramps, retaining walls, landings, etc.) satisfying USACE and ADA requirements.

A wide variety of constraints—prior development, environmental features, etc.—may suggest or require that trail type variations are desirable or necessary in order to develop a continuous and fully functional multiuse trail accommodating all users. Based on the

analysis conducted as part of the LLTP, these may include:

- **Multiuse trail on alignment other than the levee** – Could include routes through public open spaces or other public property, or on a new public right of way or easements identified as an outcome of the LLTP process.
- **Street adjacent multiuse trail** closely paralleling a roadway but separated by a 4- to 5-foot-wide buffer. Buffer can consist of pavement markings, simple barriers such as bollards, vehicle parallel parking spaces, or landscaping.
- **Multiuse boardwalk** – A low elevated multiuse structure set on piers across wetlands, floodplain areas, or other sensitive lands. Boardwalk material may include wood, steel, or concrete or some combination.
- **Flood-resistant multiuse trail** – Multiuse trail through areas subject to occasional but regular inundation. Trail surface materials may differ from the preferred multiuse trail type, trail may be elevated, and/or additional structures for cross-drainage included.
- **Community trail** – Width of 6 to 8 feet and either paved or soft-surface. Suitable for recreational and family trips through constrained areas or for short connections to key destinations not directly accessed by the multiuse trail. Use of this narrower trail type usually requires a nearby route suitable for higher speed commuter and touring bicyclists.



Note: Levee height and width may vary, conceptual only.

- **On-street solutions** – A variety of alternatives within the road right of way are possible, including:
 - Shared roadway solutions or widened roadway shoulders allowing trail users to use vehicle roadways, with signing and surface striping to assure safety. This solution is only practical and safe on low-speed, low-traffic roadways.
 - Bike lanes, designated by signing and road surface striping, with parallel pedestrian sidewalks.
- **Roadway crossings** – At-grade treatments may include:
 - Conventional crosswalk signing and road surface striping for local streets.
 - Upgraded signing and surface striping at existing controlled intersections.
 - Midblock arterial and collector roadway crossings with user-activated beacons or signals, and raised mid-street islands to improve safety.

Comparative Trail Evaluation Criteria

Uniform evaluation criteria will be applied in comparatively assessing the strengths and weaknesses of proposed trail alternatives. Evaluation levels are a matter of degree and are intended as guidance in making relative comparisons of route alternatives within the same trail segment. The categories and features are not weighted, nor in order of importance. Points are not assigned.

Evaluation criteria should not be used as an absolute indication that one alternative is better than another, except perhaps for categories that are deemed “fatally flawed.” The criteria should simply be viewed as a series of questions to ask in evaluating trail alternatives.

Trade-offs are to be expected, especially in highly constrained segments where a given trail alternative may rate well for most categories but very poorly or even significantly flawed for one or two others, and may still end up as the preferred choice.

Evaluation Levels (strongest to weakest)

- Impact is primarily positive and/or best meets project goals and objectives.
- Impact is neutral, or positive and negative impacts are approximately balanced.
- Impact is primarily negative and/or is contrary to project goals and objectives.
- Significantly or fatally flawed due to multiple and extensive adverse impacts and/or is entirely contrary to project goals and objectives.

Evaluation Categories and Features

1. Trail Types

The preferred trail type is a multiuse trail on an alignment atop the levee.

Other trail solutions, in approximate descending order of desirability, may be used:

- Multiuse trail not on levee, or street-adjacent multiuse trail.
- Variations from the standard multiuse trail type, such as reduced width or alternate surfaces; or special treatments, such as boardwalks, bridges, and flood-resistant structures.
- Solutions with pedestrians and bicycle users separated onto different routes.
- Shared-use, bicycle lanes/sidewalks, or other on-street solutions (widened shoulders for instance).

2. Trail User Experience/Connectivity

The relative quality of a trail alternative from the perspective of the trail user. Quality of experience factors that rate stronger include:

- Accesses and/or passes near to attractive views, parks, natural areas, recreational facilities, and similar sites.
- Passes through or near to downtown and waterfront destinations, historic sites, schools, and other attractions.
- Avoids noise and safety impacts from higher speed/higher volume roadways, industrial activities, and other major activity generators.
- Provides connections to transit services, other local trails and bikeways, and trailheads or other access facilities (such as a kayak launch) for trail users.

3. Directness of Travel

Relative to other possible alternatives, this factor considers the degree to which a given trail alternative avoids out-of-direction or circuitous travel.

The shortest distance between two points typically rates strongest.

Detours or slightly longer routes that provide more functionality with respect to connectivity, environmental features, safety and security, and other factors may outweigh the benefits of the shortest direction of travel.

4. Safety and Security

Features that can positively impact trail user safety, security, and accessibility. Features include:

- Off-street trails (e.g., separate from road right of way) rate stronger than on-street solutions (bike lanes/sidewalks or shared use).
- Lower speed/volume roadways used for shared-use or bike lane/sidewalk solutions.
- Trail alternatives with fewer road crossings, particularly midblock.
- Trail alternatives in open and visible areas, or close to uses and activities that provide a sense of security.
- Flatter trail grades that accommodate a wider range of user skill and condition levels and simplify ADA accessibility compliance.

5. Environmental and Cultural Resources

Trail routes can have positive and/or adverse impacts on existing natural habitats, other environmental features, and cultural resources.

Factors to consider include:

- Alternatives that best avoid adverse environmental or cultural resource rate stronger.
- Opportunities or requirements as part of trail development for environmental or cultural resource restoration and enhancements.
- Trail improvements that degrade environmental features or cultural, historic, or archaeological resources rate weaker.

6. Plans and Regulations

The relative degree to which special plans or regulations may apply to a given trail alternative compared to other possible routes. Alternatives with simple and efficient regulatory and permitting requirements rate strongest. Factors to consider include:

- USACE levee recertification or ADA-compliance requirements.
- Permitting required across a wide range of regulations and agencies.
- Major variations from approved or customary standards or policies.
- Trail alternative is feasible only as part of some other infrastructure development such as a roadway extension.
- Special approvals are needed under a different plan unrelated to trails, such as water quality regulations.

7. Property Ownership

Trail development may require property acquisitions or easement purchases. Use of existing public property or right of way is preferred. The fewer the number of individual private property or easement acquisitions that are required, or the smaller area that has to be acquired, the stronger the alternative.



Levee Trail near Sandy River, Oregon

8. Cost

The relative cost of building a given trail alternative as compared to other possible routes. The more cost-efficient alternatives rate stronger. Cost factors, other than property or easement acquisition, include:

- Relocation requirements such as the cost of moving utility lines or buildings.
- Construction, design and engineering costs, especially the degree to which special structures (boardwalks, ramps, bridges, etc.) may be required.
- Mitigation efforts such as replacing or restoring wetlands degraded as an outcome of trail construction.

9. Phasing and Funding

Many factors will influence the sequence and timing of trail construction. Phasing plans notwithstanding, viable acquisition and funding opportunities should

always be pursued as available. Attributes that improve funding competitiveness include:

- There are a wide range of programs available to fund a given trail section or structure.
- A trail section or structure increases connectivity to the overall system.
- A specific trail section or structure connects to major activity center(s).
- The section or structure extends a built portion of the trail or other intersecting built trails.
- The trail section is functional in and of itself (e.g., if other trail sections were never built, the given section would still be useful).
- A given trail section is a crucial link without which other sections would not be functional.
- There are no practical or safe alternatives for trail users without construction of a particular trail section.



Umpqua River Bridge and Port Dock Road

Next Steps

September 2014–November 2014: Baseline information including existing plans and policies, transportation and land use features, natural and cultural resource features, and demographics will be described and mapped.

December 2014–March 2015: Conceptual trail options will be analyzed and mapped. A public open house will be held in February or March to get communitywide input on the possible options.

April 2015–June 2015: Near-term and long-term preferred trail options will be selected. A joint Reedsport City Council/Planning Commission Workshop will be held in May or June to review recommended trail options.

July 2015–August 2015: The Levee Loop Trail System Master Plan will be published.

APPENDIX B

Technical Memorandum No. 2: Baseline Information

Technical Memorandum No. 2 can be downloaded at www.cityoffreedsport.org or obtained from the City.

City of Reedsport, Oregon

Levee Loop Trail System Plan

Technical Memorandum No. 2

Baseline Information



Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
November 2014

Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
November 2014

Credits

All Photographs courtesy of Jim Rapp

Levee Photographs on cover:

Parallel to Coos Bay Rail Link

Along Scholfield Creek

Under US 101 Bridge Approach

Around Champion Park near Mast Site

Near US 101 at Scholfield Bridge

Along Scholfield Creek behind Coho RV Park and Marina

Map figures from Reedsport 2006 Transportation System Plan by permission of City,
originally produced by DKS Associates

Reedsport 2013 Waterfront and Downtown Plan map by permission of City, originally
produced by Siegel Planning Services

Rainbow Plaza Site Plan by permission of City, originally produced by Cameron McCarthy
Gilbert & Scheibe Architects

Tsunami Evacuation Zone Map by permission of City, originally produced by NOAA and
DOGAMI

Study Area Ownership Map by permission of City

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1. Background

Levee Loop Trail

The City of Reedsport (City) currently lacks an integrated system of developed bicycle and pedestrian routes, particularly near and between US 101 and Oregon 38. Sidewalks and bicycle lanes exist in sections of the downtown and nearby neighborhoods, and there is a waterfront boardwalk near Riverfront Way, but many areas are without developed and safe biking and walking options.

The Levee Loop Trail (LLT) will provide a convenient, non-motorized transportation alternative for residents and visitors traveling through the city's downtown and waterfront core. The LLT will primarily follow the levee surrounding the downtown and adjacent neighborhoods, with some trail sections using streets or other property. The LLT will access key attractions and destinations within the city; reduce reliance on motorized vehicles for trips to work, school, shopping, and recreation; and improve pedestrian, bicycle, and motorized vehicle safety along US 101, Oregon 38, and on city streets.



Umpqua riverfront near Discovery Center

The need for the LLT is identified in the City's 2006 Transportation System Plan (TSP) and is further described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). The TSP and RWDP both

identify conceptual trail alignments that follow portions of the 1968 levee system constructed to protect Reedsport's waterfront, downtown, and adjacent highway commercial areas and neighborhoods from flooding. Pathways have been established by informal usage atop sections of the levee.

The City operates and maintains the levee, with the US Army Corps of Engineers (USACE) as the primary regulator. Major sections of the levee are in private ownership (see p. 24). The City is currently in the process of recertification of the levee system.

Study Area

The Levee Loop Trail System Plan (LLTP) study area is divided into five planning segments to provide for the detailed analysis of possible trail alignments and to facilitate development of a phasing plan accommodating near and long-term trail options. Technical Memorandum No. 1 – Project Goals and Objectives provides more information and a study area segment map. In response to baseline conditions identified in this Technical Memorandum No. 2, particularly from reviewing the City's TSP and RWDP, some segment boundary modifications were made. See this Technical Memorandum No. 2 (p. 2) for the revised segment map (Figure 1).

- **Segment 1:** Umpqua River Waterfront, Rainbow Plaza, Riverfront Way
- **Segment 2:** Coos Bay Rail Link, Oregon 38, Port Dock Road, McIntosh Slough Waterfront
- **Segment 3:** Champion Park, US 101, Ivy-Hawthorne Neighborhood and Commercial Areas between North 11th and North 14th Streets
- **Segment 4:** Scholfield Creek Waterfront, North 14th Street to North 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront south of US 101
- **Segment 5:** Winchester Avenue, Downtown Reedsport, Oregon 38



- 1
- 2
- 3
- 4
- 5

Figure 1: Study Area

Goals and Objectives

The LLTP will consider trail alignments along the levee as the preferred solution for connecting commercial, industrial, recreational, and residential areas in and around the downtown and waterfronts. The LLTP will identify near-term and long-term preferred trail alignment alternatives, trail standards and design elements, trailhead locations and other access points, key road and rail crossing options, regulatory requirements, cost estimates, and sources of funding. The LLTP will be coordinated with the City's ongoing levee recertification effort.

The full description of LLTP goals and objectives can be found in Technical Memorandum No. 1 – Project Goals and Objectives, published September 2014. This memorandum can be downloaded at www.cityoffreedsport.org or obtained from the City.

Existing Conditions

Technical Memorandum No. 2 – Baseline Information inventories, summarizes, and as applicable maps, existing plans and policies, transportation and land use features, natural and historic resource features, and community demographics that may impact trail development. This memorandum assesses the potential opportunities and constraints associated with these factors for trail siting and development. Information in this technical memorandum will be incorporated into the LLTP to help guide future development of the trail.

Existing conditions information was derived from Geographic Information System (GIS) records when available. Other documents and reports were consulted for additional information as needed. All information was provided by the City or the Oregon Department of Transportation (ODOT). Any gaps in baseline information as listed in the LLTP's statement of work are noted.

Existing conditions that may influence the LLTP are listed and described in five chapters. These chapters include narrative, tables, and/or mapping illustrating key features and information.

1. Existing Plans and Policies
2. Transportation Features
3. Land Use Features
4. Natural and Historic Resource Features
5. Demographics

In addition, three aerial base maps have been produced:

General Features (see Map A, p. 5)

Shows study area development and natural vegetation patterns. This map is overlaid with topographic contours, the City limits, location of the 1968 levee, major named roadways and other transportation structures (railroad, bridges), major named water features; and key activity centers. Letter icons correspond to the list of key activity centers on the facing page to Map A (p. 5) of this technical memorandum.

Transportation and Land Use Features (see Map B, p. 25)

Shows functional roadway classifications, the 1968 levee, land use zoning, property boundaries, and larger vacant land parcels.

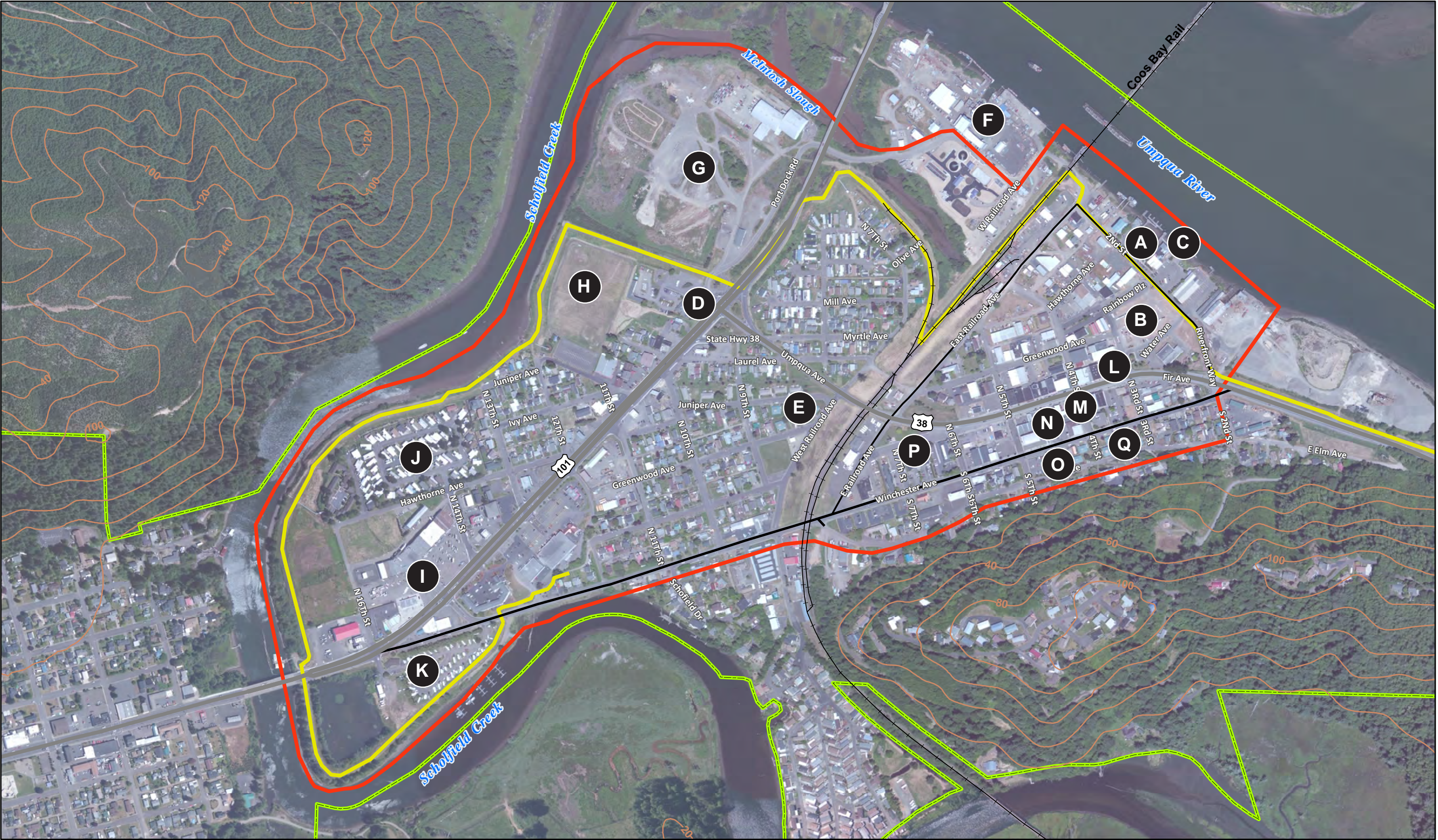
Natural Resource Features (see Map C, p. 29)

Shows wetlands and nonwetland waters, 100-year and 500-year floodplain, the 1968 levee, and estuarine natural resource zones.

Key Activity Centers

Key activity centers are identified on General Features map (Map A, p. 5) with lettered icons.

Segment 1: Umpqua River Waterfront, Rainbow Plaza, Riverfront Way.	
A	Umpqua Discovery Center – Riverfront Way
B	Rainbow Plaza – 3rd at Rainbow Plaza Road
C	City Boat Launch – Riverfront Way
Segment 2: Coos Bay Rail Link, Oregon 38, Port Dock Road, McIntosh Slough Waterfront	
D	Oregon Dunes Visitor Center – US 101 at Oregon 38
E	Douglas County Housing Authority Housing – Juniper Avenue at W. Railroad Avenue
F	Reedsport Industrial Area – Port Dock Road
G	Mast Redevelopment Site – Port Dock Road
Segment 3: Champion Park, US 101, Ivy-Hawthorne Neighborhood and Commercial Areas Between North 11th and North 14th Streets	
H	Champion Park
Segment 4: Scholfield Creek Waterfront, North 14th Street to North 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront South of US 101	
I	Umpqua Shopping Center – US 101 at 14th Street
J	Umpqua Mobile Villa – Hawthorne Avenue at 14th Street
K	Coho RV and Marina – US 101 at Winchester Avenue
Segment 5: Winchester Avenue, Downtown Reedsport, Oregon 38	
L	US Post Office – Fir Avenue at 3rd Street
M	Central Lincoln PUD – Fir Avenue at 4th Street
N	City Offices – City Hall, Police, Fire, Library – Winchester between 3rd Street and 5th Street
O	Lower Umpqua Senior Center – Winchester Avenue at 5th Street
P	County Offices – Fir Avenue at 7th Street
Q	Douglas County Housing Authority Housing – Winchester Avenue at 4th Street



Parametrix



Key Activity Center
See p. 4 of Technical Memorandum No. 2

Reedsport Levee

Trail Study Area

Arterial

Collector

Contour (20ft)

Railroad

Reedsport City Limits

0 0.05 0.1 0.2 0.3 Miles

Reedsport Levee Loop Trail Plan

Map A: General Features

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2. Existing Plans and Policies

City of Reedsport

Comprehensive Plan

The City Comprehensive Plan was acknowledged by the State of Oregon in 1994 and has been periodically updated, most recently in 2013. The entire LLTP study area is within the current City limits and urban growth boundary (UGB). The Comprehensive Plan contains a wide range of policies supportive of the development of the LLT. The Comprehensive Plan can be downloaded at www.cityofreedsport.org or obtained from the City.

Pedestrian and Bicycle Goals and Policies

The development of trails and other pedestrian and bicycle facilities are frequently cited and supported in the current Comprehensive Plan:

- Chapter IV: Community Services under the Parks and Recreation Goal No. 1 (pp. IV-4 to IV-5).
- Transportation Goals No. 2, 3, and 4 (pp. IV-6 to IV-8).
- Development of the Levee Loop Trail (LLT) is specifically cited twice.
- The City's Transportation System Plan (TSP) and Waterfront and Downtown Plan (RWDP), both of which include recommendations for a trail system, are cross referenced.

Coastal Resources

The Comprehensive Plan includes an extensive Coastal Resources chapter, and identifies estuarine and shoreline planning subareas, recognizing the importance of these resources to the history and continued vitality of Reedsport. If primarily sited on the levee protecting the community from floodwaters, the LLT will pass through or near to many of these subareas. Any trail development within these subareas will have to satisfy coastal resource protection and restoration goals. Estuarine subareas are shown on the Natural Resource Features map (Map C, p. 29).



Scholfield Creek from Levee

Transportation System Plan

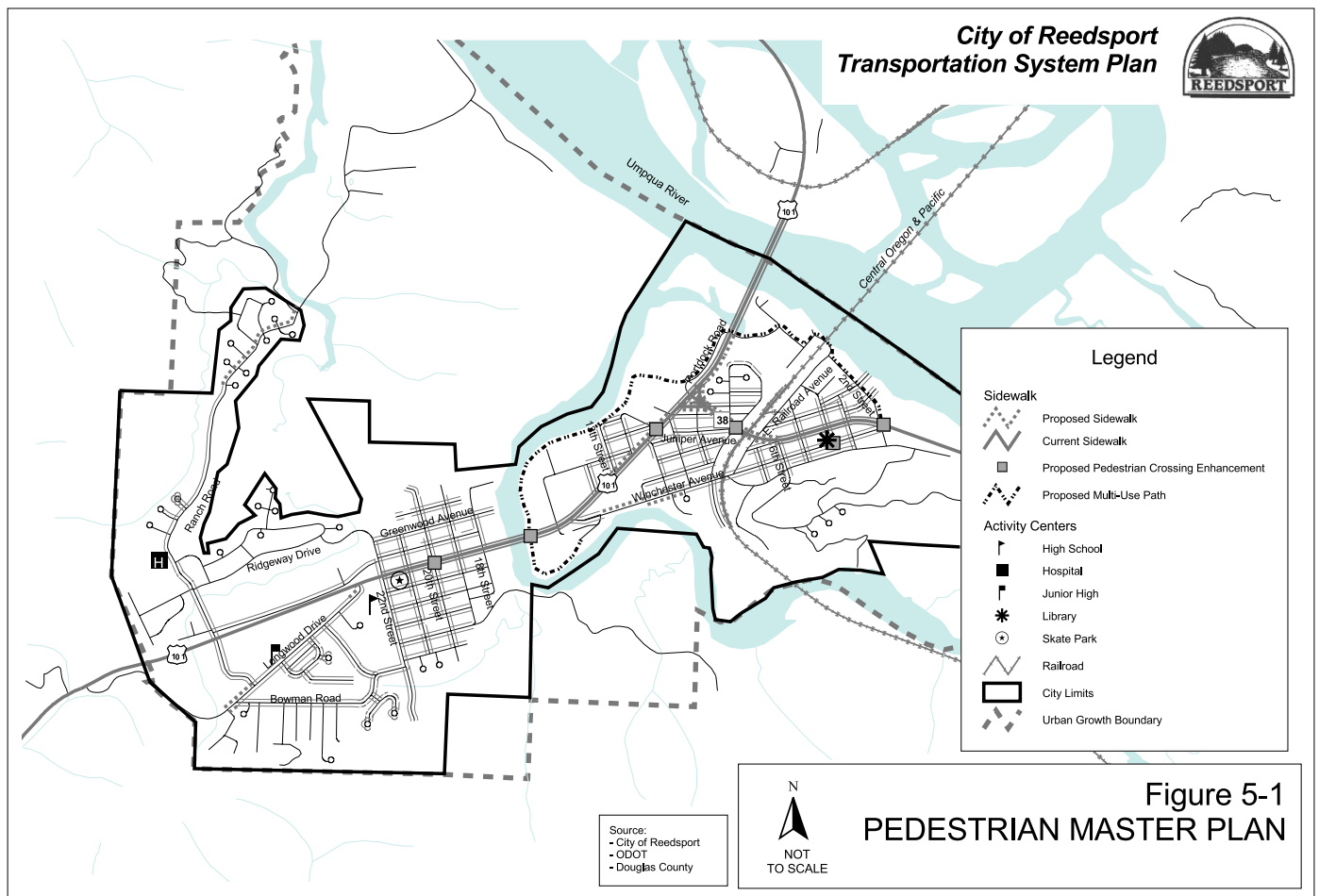
The current City TSP was adopted in 2006. Two specific chapters address nonmotorized travel in the City: Chapter 5, Pedestrian Plan, and Chapter 6, Bicycle Plan. These two TSP chapters include goals and objectives similar to those for the LLT—connectivity, safety, improved crossings, etc.

The TSP also includes traffic counts that may be useful in determining streets suitable for on-street shared-use trail options. TSP traffic counts were conducted in 2004. With little if any population growth in the City and region over the last 10 years, these traffic counts should still be reasonably accurate. The City TSP can be downloaded at www.cityofreedsport.org or obtained from the City.

Pedestrian Plan

The TSP Pedestrian Plan (pp. 5-1 to 5-10) identifies three arterial roadway crossing improvements that could directly support the development of a safe and complete LLT.

- **Segment 2:** Oregon 38 and West Railroad Avenue (improvements completed 2014)
- **Segments 1 and 5:** Oregon 38 and Winchester Avenue
- **Segment 4:** US 101 and Scholfield Creek Bridge



TSP Figure 5-1 (reproduced above) includes a conceptual multiuse trail alignment that is identical to the alignment shown on TSP Figure 6-1 (reproduced on p. 9 of this memorandum).

Bicycle Plan

Trail Alignment

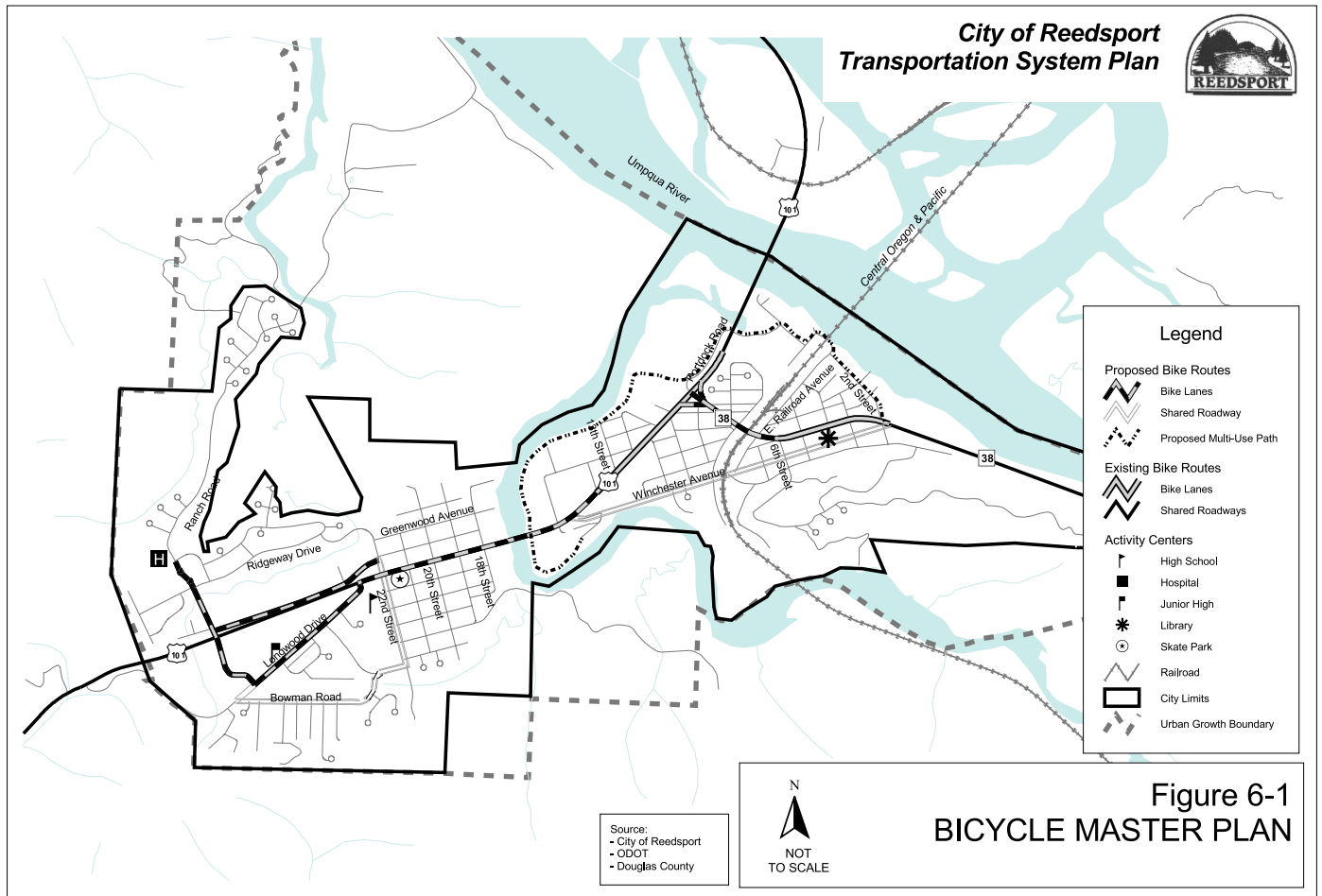
The TSP Bicycle Plan (pp. 6-1 to 6-8) specifically maps and describes a levee trail, and supports the three arterial crossing improvements in the Pedestrian Plan. TSP Figure 6-1 illustrates a multiuse trail extending from Oregon 38 along the Umpqua River waterfront, crossing the Coos Bay Rail Link line and US 101, then following the levee along Scholfield Creek, crossing US 101 again, and continuing along the levee to Winchester Avenue. Winchester Avenue from the end of the levee and through the government offices section of downtown to Oregon 38 is identified as a shared-use roadway (e.g., bikes and vehicles would share the roadway using signing and striping for safety).

Road Crossings

The TSP Bicycle Plan includes four roadway crossing enhancements within the LLTP study area (see TSP p. 5-8, Table 5-3). One of these crossings—US 101 near 16th Avenue on the east side of the Scholfield Creek Bridge (LLTP Segment 4)—is identified for a marked crosswalk, raised median refuge, and pedestrian-activated signal. US 101 crosses the levee at this point. ODOT has not concurred with the need for this improved crossing at the time of publication of this technical memorandum (November 2014).

Trail Standards

The TSP identifies the standard width of the multiuse trail as 10 feet to 12 feet (p. 6-1), and includes cross section illustrations (Figure 7-5) for a “primary” trail (12 feet wide) and a “feeder” trail (8 to 10 feet wide). These trail types correspond to what will be termed multiuse trail and community connector trail in the final LLTP.



Courtesy of City

Waterfront and Downtown Plan

The City adopted the RWDP in 2013. The RWDP illustrates a levee trail alignment (see Appendix A, RWDP Figure 6) with several differences or additions from the TSP trail alignment. The net result of the RWDP's recommended alignment (specific details follow) is that only 4,500 linear feet of the approximate 20,000 linear feet of the levee berm within the LLTP study area would be used for the LLT. A key objective of the LLTP is to identify trail alignments that use approximately 18,000 linear feet of the levee. Figure 2: Prior Conceptual Trail Alignments (p. 10) illustrates the difference between the "main stems" of TSP and RWDP trail alignments.

Recommendations in the adopted RWDP for five subareas may impact LLTP alignments or trail types:

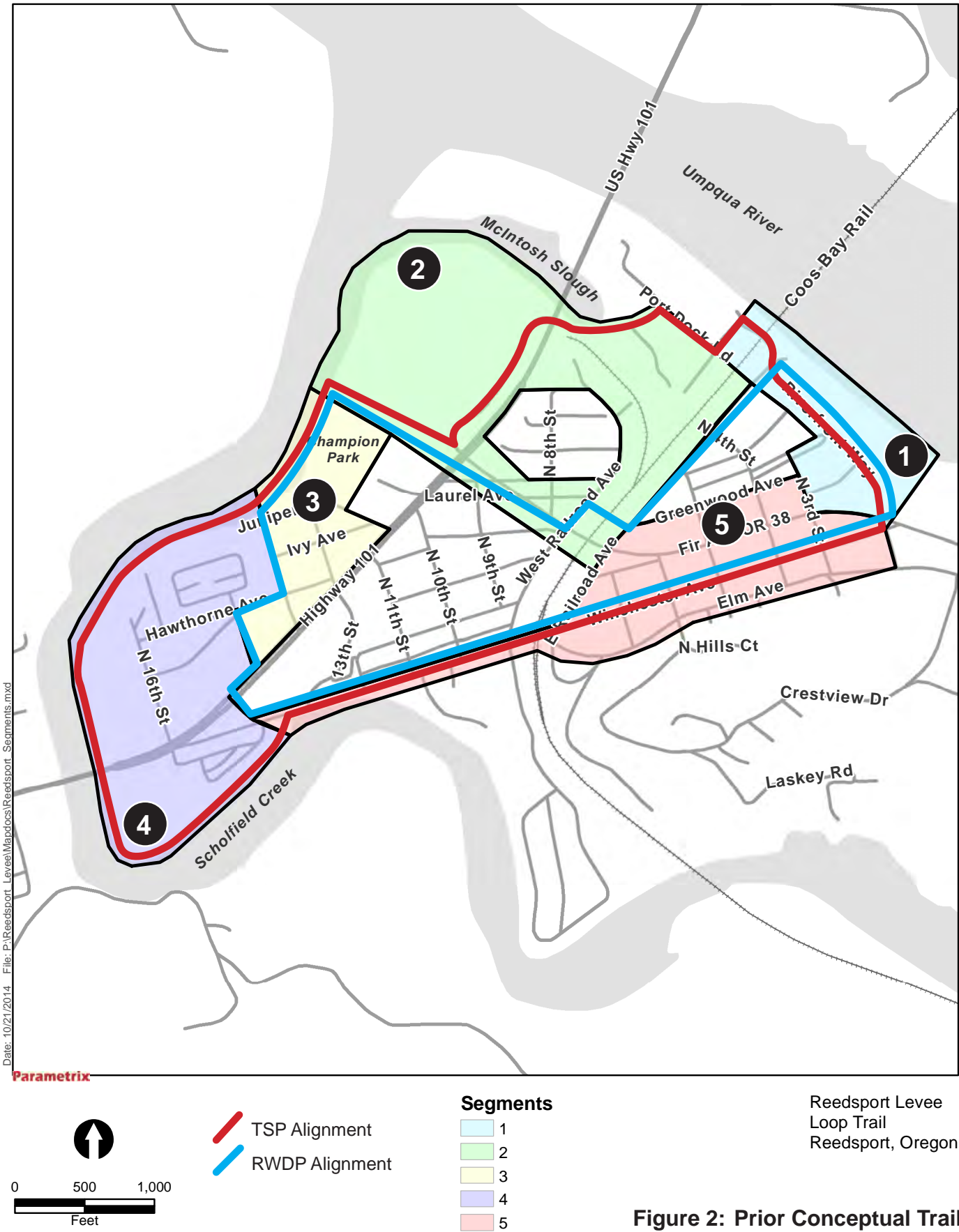
Riverfront Way/Rainbow Plaza (LLTP Segment 1)

Recommended improvements in the RWDP include:



TSP Recommended US 101 Crossing Site –
16th Avenue near Scholfield Bridge

- Shoulder widening and sidewalk extension on the water (northeast) side of Riverfront Way.
- Multiuse path through the Rainbow Plaza area on the inland side of the Riverfront Way floodwall.



- Waterfront boardwalk extension north and south from the Umpqua Discovery Center.

East Railroad Avenue (LLTP Segment 2)

The RWDP recommends a 10-foot-wide “street-adjacent” multiuse trail on the east side of East Railroad Avenue between Riverfront Way and Greenwood Avenue.

McIntosh Slough (“Mast”) Property (LLTP Segment 2)

The RWDP maps a “local access” trail that backtracks up Port Dock Road from Oregon 38 and then along the edge of the McIntosh Slough and Scholfield Creek to reconnect to the levee on the creek side of Champion Park. This alignment is entirely outside of the protection of the levee. Further analysis or



Riverfront Way-Port Dock Road Undercrossing

- Crosses the railroad through the height-restricted Greenwood Avenue/Laurel Avenue underpass, then follows Oregon 38/Umpqua Avenue.
- Crosses US 101 at the signalized intersection with Oregon 38 to reach the levee at Champion Park.

West End Alignment (LLTP Segment 4)

The adopted RWDP does not show a full loop levee trail as in the TSP. The RWDP study area did not extend west of North 14th Street. A “spur” trail atop the levee is shown to the west end of the RWDP study area, but the trail is not shown returning to Winchester Avenue on the south side of US 101 as in the TSP. The RWDP instead proposes an on-street connection through residential and commercial areas between North 12th Street and North 14th Street that crosses to the south side of US 101 at the



Riverfront Way at East Railroad Avenue

refinement of this local trail is not part of the LLTP but the route will be shown as a community connector trail in the final LLTP.

Railroad Crossing (LLTP Segment 2)

The adopted RWDP recommends three significant changes to the TSP trail route and earlier RWDP trail alternatives (see RWDP appendices for earlier versions). The final RWDP route would effectively eliminate a possible 6,500 linear feet of levee from the trail alignment. The RWDP trail alignment includes the following:

- Turns southwest down East Railroad Avenue from Riverfront Way.



Levee at Scholfield Creek Bend – North of US 101

signalized intersection with Winchester Avenue. This RWDP solution eliminates approximately 9,000 linear feet of levee from the trail alignment.

Zoning Ordinance

A review of the City's current (2012) Zoning Ordinance and Zoning Map found no significant conflicts or impediments to developing a multiuse trail system through the LLTP study area. Code sections that may influence trail development are:

- **Estuarine Zones:** Estuarine Conservation and Estuarine Development zones along the Umpqua River and Scholfield Creek waterfronts (Segments 1, 2, 3, and 4).
- **Floodplain Zones:** Flood Hazard Area section (10.76.010) regulates development in the 100-year floodplain. Impacts of roadways or trails are not mentioned in this section. 100-year floodplain maps were most recently updated in 2010.
- **Levee Limitations:** Section 10.76.060 simply states "levee and floodwall design and encroachment shall be consistent with the standards and procedures of the USACE."

Capital Improvement Plan

The City's 2014–2019 Capital Improvement Program (CIP) includes four projects directly related to levee trail development (see list below). The current CIP also allocates funds for a levee storm water study (\$130,000, 2015, high need) and storm water improvements (\$300,000, 2017, high need). All CIP costs are the City-allocated share of improvements, not the total cost.

- **Segment 1:** Repave Riverfront Way from Fir Avenue (Oregon 38) to Water Street – \$25,000, 2016, moderate need
- **Segments 2, 3, and 4:** General levee repairs – \$82,000, 2015, high need
- **Segments 2, 3, and 4:** Levee trail surfacing – \$200,000, 2016, moderate need
- **Segment 5:** Upgrade railroad crossing at Winchester Avenue – \$15,000, 2015, high need

Other City Plans

Development plans for two larger properties within the LLTP study area could complement or impact trail development. As part of developing conceptual trail alignments and treatments, the LLTP will consider means to integrate the trail with these plans.

Rainbow Plaza (LLTP Segment 1)

Additional development is planned for an existing gravel parking area and event space on the inland side of the Riverfront Way floodwall. Improvements will include a more formal open plaza for outdoor events and general community gatherings, and overflow parking from the nearby boat launch and Umpqua Discovery Center. The site is bounded by Water Avenue, 3rd Street, and Rainbow Plaza Road. Floodwall gates connect the Rainbow Plaza to Riverfront Way in two places.

A conceptual design plan for an upgraded Plaza was produced in 2010 (see Appendix B). Sidewalks are included along Water Avenue, and wide pathways are part of the interior space design that connects through a floodwall gate to the Umpqua Discovery Center. The LLT could be aligned through the Plaza area, particularly if Oregon 38/Fir Avenue is selected as the on-street portion of the trail connecting Segments 1 and 5.

McIntosh Slough ("Mast") Property (LLTP Segment 2)

This subarea of Segment 2 is bounded by Port Dock Road, McIntosh Slough, Scholfield Creek, and Champion Park. The site is locally referred to as the "Mast Brothers" property. The entire site is outside of the flood protection of the levee, except for the southern edge, where the levee between Port Dock Road and Scholfield Creek is actually within this private property. The proposed land uses for this site are illustrated on the RWDP map (Appendix A):

- Light industrial land uses nearest the slough
- Commercial development along Port Dock Road
- Multi-family housing on the balance of the site
- Local trail around the exterior of the site
- Boardwalk through wetlands along Port Dock Road
- Kayak launch on McIntosh Slough



Under US 101 Bridge - possible Kayak Launch

State of Oregon

Transportation Planning Rule

Statewide Planning Goal 12 (Transportation) provides for and encourage a safe, convenient and economic transportation system. The Transportation Planning Rule (OAR 660-012-0000) implements Goal 12, and “supports the availability of a variety of transportation choices for moving people that balance vehicular use with other transportation modes, including walking and bicycling.” The rule cites the need and requirement for bicycle and pedestrian facilities in numerous sections.

Oregon Highway Plan

The current Oregon Highway Plan was published in 1999 and reissued with amendments in 2006. A review of further amendments between 2006 and 2103 was undertaken and none was found that impacted the LLT or LLTP. Oregon’s 1995 Bicycle and Pedestrian Plan and 2011 Design Guide (see description in later section of this technical memorandum) by definition contains more policies and standards respecting non-motorized transportation than the Highway Plan. Highway Plan goals were nonetheless reviewed.

To create a loop system, the LLT will have to cross US 101 and Oregon 38 in several places. Probable

crossing points are documented in Chapter 3 of this technical memorandum. Based on the conceptual trail alignment options and crossing sites and treatments identified in the next phase of the LLTP process, a variety of state highway standards may come into play. These will be identified and evaluated as applicable in the LLTP conceptual alignment phase. Number and letter codes below (example: 2B) refer to goal subsections.

Goal 1 – System Definition: US 101 is classified (1A) as part of the National Highway System, a Freight Route (1C), and Scenic Byway (1D). Oregon 38 is also a designated Freight Route. Trail alignments and treatments following or crossing these facilities will have to comply with applicable standards.

Goal 2 – System Management: This goal establishes the need for integration of state and local policies and standards in developing and managing transportation systems. The LLT may follow or cross both US 101 and Oregon 38 in several locations. ODOT and Reedsport will have to partner in determining alignments, treatments, and construction standards (2A), off-system improvement funding (2B), public involvement around trail planning and construction (2D), and traffic safety (2F).

Goal 3 – Access Management: This goal does not specifically address trail access management issues that may arise where the LLT crosses US 101 or Oregon 38, but many of the principles articulated in this portion of the Highway Plan may nevertheless apply, signalization (3A), medians (3B) and interchanges (3C) in particular. This goal also provides for procedures for deviations from access management standards (3D).

Goal 4 – Travel Alternatives: This goal addresses motorized and passenger service travel alternatives. That notwithstanding LLT will help reduce passenger vehicle and freight congestion in line with this goal.

Goal 5 – Environmental and Scenic Resources: While aimed at maintaining and improving environmental cultural, and scenic resources impacted by the development of motorized transportation infrastructure, the resources and associated actions articulated under this goal are virtually identical to those for the development of LLT.

Statewide Transportation Improvement Program

The Statewide Transportation Improvement Program (STIP) is Oregon’s 4-year transportation capital improvement program. STIP identifies the funding for, and scheduling of, transportation projects and programs; and includes projects on federal, state, city, and county transportation systems, and multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian).



US 101-Port Dock Road – area outside levee

For 2015–2018, the STIP is divided into two broad categories:

- **Enhance:** Activities that enhance, expand, or improve the transportation system. The Enhance process reflects ODOT’s goal to make investment decisions based on transportation systems as a whole, not for each mode or project type. This category could be a primary source for trail capital funding.
- **Fix-It:** Activities that fix or preserve the transportation system. The Fix-It project selection process is similar to prior STIPs.

Bicycle and Pedestrian Plan and Design Guide

ODOT has adopted American Association of State Highway Transportation Officials (AASHTO) guidelines for nonvehicular pathway design standards. The 2011

ODOT *Bicycle and Pedestrian Design Guide*¹ (Part 2 of the State’s Bicycle and Pedestrian Plan) includes chapters for on-road bikeways, walkways, street crossings, and intersections, as well as “shared use paths.” Shared use paths are what the LLTP terms multiuse trails.

Table 1 summarizes key ODOT trail width standards that could apply to the LLT. Concrete surfaces are recommended for heavily used trails to maximize the longevity of the surface, although asphalt surfaces are acceptable for most paths. Typical ODOT minimums for rural trails or trails with space constraints are consistent with what could be developed for the LLT.

Table 1: ODOT Trail Width Standards

Two-Way Bike/Ped (unless otherwise noted)	Trail Width
One-way cyclist or pedestrian	6’
Few users and/or space constraints	8’
Typical minimum in rural area	10’
Urban and suburban mixed use	12’
High mixed use, faster/commuting bicyclists	12’+

Adapted from ODOT Oregon Bicycle and Pedestrian Design Guide

Other State Transportation Plans

The planning and development of the LLT is also anticipated to be consistent with the applicable goals and policies of Oregon’s Rail Plan, and Highway Design Manual.

Federal

USACE Levee Regulations

A central LLTP objective is to identify a preferred long-term trail alignment atop the earthen berm levee that protects the City’s downtown and surrounding neighborhoods from flooding. The LLTP study area is primarily within community areas protected by the levee, except for along Riverfront Way (Segment 1) and northwest of US 101/Port Dock Road and Champion Park (portion of Segment 2).

¹ <http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/plan-proc.aspx>



Private Coho Boat Launch accessed via exclusion zone

The US Army Corps of Engineers (USACE) has jurisdiction over potential encroachments upon the 1968 levee, including those envisioned by the LLT such as paved trail pathways, access ramps, storm water collection and conveyance, other utilities, and potentially even trail amenities such as signing, interpretive facilities, benches, etc. In developing the LLT, the City must assure compliance with USACE levee safety and structural integrity requirements and limitations.

Levee Recertification

Levee recertification is essential to maintaining flood insurance eligibility. The 1968 levee was last recertified in 2010, and a new recertification is scheduled for 2015. The City will conduct the recertification study and make indicated improvements. The Federal Emergency Management Agency (FEMA) reviews the recertification work for flood insurance eligibility purposes (see p. 16).

Minor 408 Permitting

In accordance with 33 U.S.C. 408, any levee encroachments or mitigation will minimally need to be addressed under a Section 408 Minor Permit approved by the Portland (Oregon) USACE District. Minor 408 permits apply to projects that result in “temporary impacts to levees or are within the critical area of the levee, but do not permanently change key physical characteristics or hydraulic conditions.” Minor 408 reviews typically take 30 days and can be approved at the District level. Probable LLT improvements should not adversely impact key levee characteristics or conditions. In fact, asphaltic

trail paving on the top of the levee will reduce levee permeability, which should be found by USACE to improve levee function and structural integrity by reducing water infiltration.

Major 408 Permitting

A Major 408 permit could be required if early consultation with USACE or a Minor 408 review finds that planned LLT improvements or features could result in significant adverse and permanent impacts on levee function and integrity. Major 408 permit applications potentially include complex evaluations of hydrologic, hydraulic, environmental, structural, and geotechnical impacts; and if not outright denial, significant mitigation measures. The Major 408 permit is initially submitted to the Portland District but requires additional review and approval above District level. Major 408 permit approvals may take nine months or longer.

Americans with Disabilities Act (ADA)

The LLTP study area is almost entirely within a flat coastal estuary, except for the southeast edge of Segment 5 along Elm Avenue. The crown of the levee is essentially flat. ADA compliance challenges for the LLT are highly unlikely, except sections where the trail must transition off the levee. Fifteen-foot-wide development exclusion zones from toe of the levee slopes will generally provide enough open land to accommodate ramps under 5 percent grades. Ramps would be substantial in any event. Given the average height of the levee, ramps may be in the range of 200 to 300 feet long to meet ADA grade standards.

There are areas where the exclusion zone is currently used for permitted accesses (for instance, where the levee crosses Winchester Avenue between Segments 4 and 5 near the Coho RV Park), and ADA-compliant ramps may be harder to site.

US DOT Guidance

The US Department of Transportation published *ADA Standards for Transportation Facilities* in 2006. These standards were based on the 2004 US Access Board *Accessibility Guidelines*. Together with the 2010 US Department of Justice *ADA Standards for Accessible Design*, these documents form the basis for compliance with the Americans with Disabilities Act (ADA) and the associated Architectural Barriers Act.

AASHTO Guidance

ODOT suggests consulting AASHTO's *Designing Sidewalks and Trails for Access*.² AASHTO recommends a maximum grade of 5 percent for bicyclists, with steeper grades allowable for up to 500 feet, provided there is good horizontal alignment and sight distance. The recommended standard cross-slope grade is 2 percent.

ADA Flexibility

Variations to ADA standards are possible. For instance, the US Forest Service has standards for steeper areas where outright compliance with the 5 percent grade maximum proves environmentally damaging. Flexibility is also possible if local jurisdictions have ADA compliance review processes. The City of Portland has well developed variance procedures that could be consulted. If local jurisdictions use their own funds for trail construction, the degree of ADA compliance is a matter of local policy.

Floodplain Zones

The 100-year and 500-year floodplains within the LLTP study area are mapped on the Natural Resource Features map (Map C, p. 29).

A 100-year flood (or base flood) has a 1 percent probability of occurring in any given year. Based on expected 100-year flood flow rates, flood water levels are mapped as areas of inundation, referred to as the 100-year floodplain. Location within the 100-year floodplain can complicate building permit issuance, the application of environmental regulations, and eligibility for flood insurance.

FEMA is charged with assessing flood hazards and risks, and providing accurate flood data. FEMA flood hazard mapping is the basis of National Flood Insurance Program (NFIP) regulations and flood insurance requirements. FEMA maintains and updates data through Flood Insurance Rate Maps (FIRMs) and risk assessments.

100-year Floodplain

Properties between the Umpqua River and Riverfront Way (Segment 1) are outside of levee flood protection and classified as 100-year floodplain.

² http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/index.cfm, publication FHWA-EP-01-027

Portions of Segment 2 northeast of Champion Park and Port Dock Road/US 101 (the Mast property described earlier) are also outside of the 1968 levee.

500-year Floodplain

Prior to development of the 1968 levee, substantial portions of the community, including the downtown and waterfront areas, were subject to regular inundation. Most of the LLTP study area is now inside of the levee and classified as 500-year floodplain. These areas are eligible for flood insurance.

Tsunami Inundation Evacuation Areas

The City currently publishes a fold-out map of tsunami inundation areas, evacuation routes, and related emergency response information. The tsunami evacuation hazard area is an area of expected inundation, based on geologic data and historic tsunami modeling. These areas are identified as those that residents and visitors should vacate in the event of two different classes of tsunami (termed "distant" and "local"). See Appendix C for the hazard areas within the LLTP study area.

Distant Tsunami

Portions of Segments 1, 2, 3, and 4 are designated for evacuation in the event of a distant tsunami generated by an earthquake "far away" from the Oregon Coast:

- **Segment 1:** Some areas along Riverfront Way and the adjacent waterfront
- **Segments 2 and 3:** Lower elevation areas around Champion Park and between Juniper Avenue, Hawthorne Avenue, and 13th Street
- **Segments 2, 3, and 4:** Immediate shoreline of the Umpqua River and Scholfield Creek

Local Tsunami

Almost the entire balance of the LLTP study area is classified as a tsunami hazard area for "local" earthquakes originating near the Oregon Coast (termed Local Cascadia). The exceptions are two sites that are outside the hazard area due to higher elevation:

- **Portion of Segment 1:** Southeast of Riverfront Way near Umpqua River shoreline
- **Portion of Segment 5:** Vicinity of Winchester Avenue and 11th Street

3. Transportation Features

The following highlights of the vehicular transportation system within and through the City are based on the 2006 City TSP, with additional information derived from subsequent published documents such as the 2013 RWDP.

Vehicular Roadways

State of Oregon

US 101 (Segments 2, 3, and 4) and Oregon 38 (Segments 2 and 5) are the only arterial roadways within the LLTP study area. Both highways are under State of Oregon (ODOT) jurisdiction, and are designated as statewide National Highway System freight routes. Oregon 38 is the “main street” through downtown Reedsport (Segment 5). Oregon 38 is named Umpqua Avenue between US 101 and the Coos Bay Rail Link (Segment 2), and Fir Avenue from the railroad crossing through downtown (Segment 5).

Both highways will potentially be crossed or followed by the LLT. US 101 will have to be crossed in Segments 2 and 4. Oregon 38 will have to be crossed by the trail to connect Segments 1 and 5, and some trail sections may follow Oregon 38 through Segments 2 and 5. ODOT will have to consent to any new highway crossings or other trail improvements impacting state roadways.



US 101 and OR 38 Intersection

County

There are no roadways under Douglas County jurisdiction within the LLTP study area.

City of Reedsport

Collector Roadways

Winchester Avenue (Segment 5) between US 101 and Oregon 38 is a city collector roadway. There are no other City collector roadways in the LLTP study area. City and County offices, the Lower Umpqua Senior Center, and other public service buildings are on or near Winchester Avenue. This roadway is a possible route for a LLT section through Segment 5 that would use conventional sidewalk/bike lane solutions.

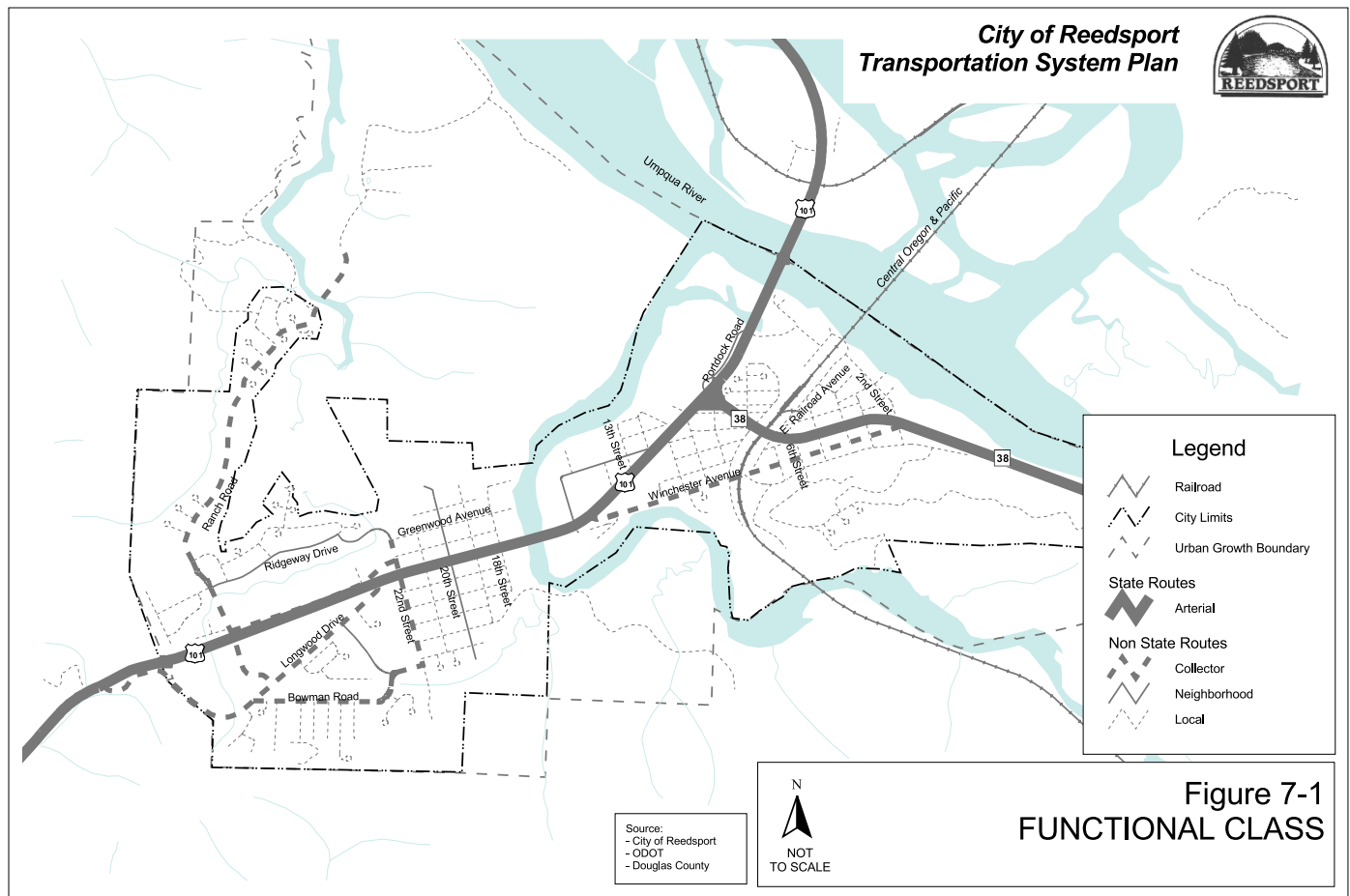


Winchester Avenue along Scholfeld Creek

Neighborhood and Local Streets

Hawthorne Avenue and 16th Street between 12th Street and US 101 (Segments 3 and 4) are designated as neighborhood routes. This type of street, which used to be called a minor collector, is generally longer than the typical local roadway but still provides for only localized connectivity. All other City streets within the LLTP study area are classified as local roadways. See TSP Figure 7-1, Functional Class (p. 18) of this technical memorandum.

There is potential for LLT sections to follow local streets on an interim basis using sidewalks and bike lanes or shared-use signing and pavement markings.



Courtesy of City

Such interim sections will be identified as part of the final LLTP. In Segments 1, 2, and 3, local on-street sections may form part of the long-term LLT route. The trail section through Segment 5 will almost certainly have to be on-street on a permanent basis.

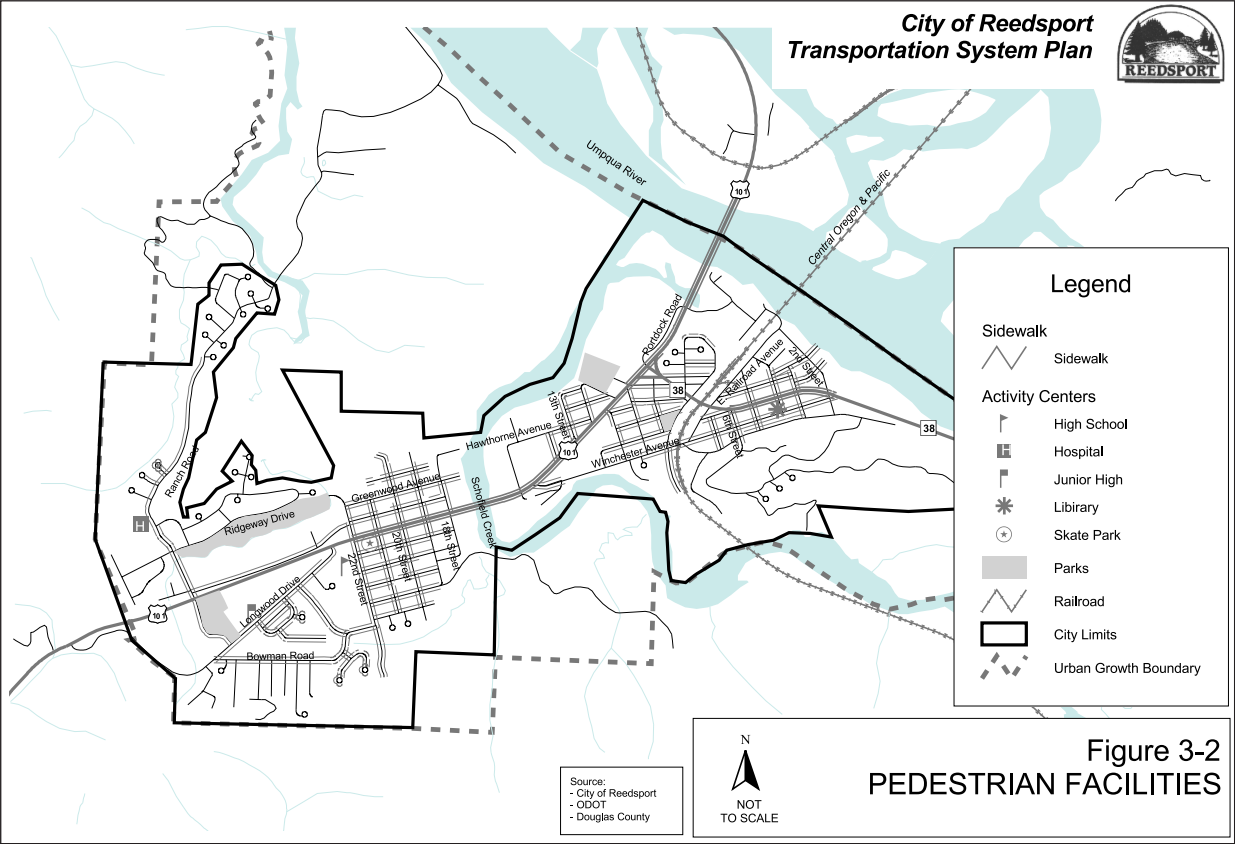
Bicycle/Pedestrian Network

Bicycle Lanes and Sidewalks

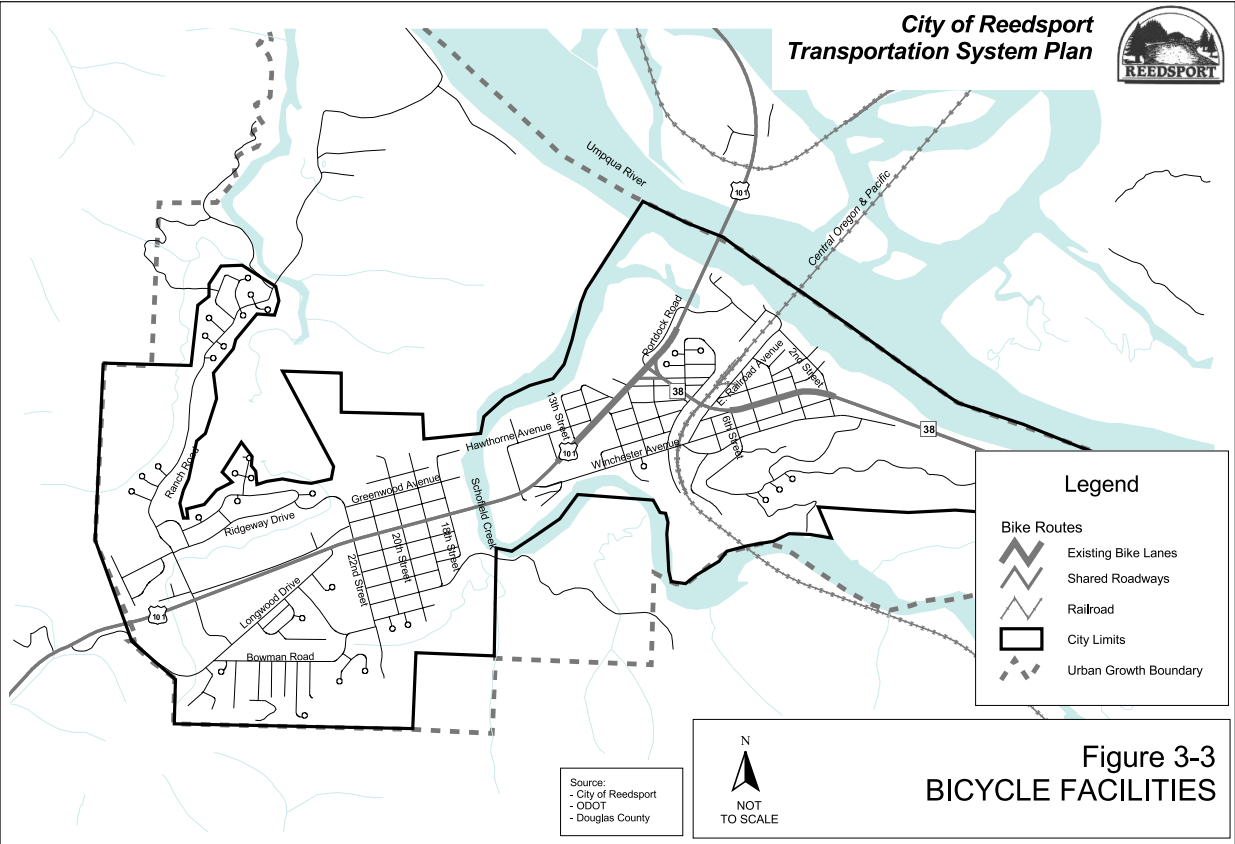
The City's current TSP catalogs sidewalks (see Figure 3-2), and bicycle lanes (see Figure 3-3) in the LLTP study area. Information on pedestrian and bicycle activity levels and roadway characteristics (number of lanes, speed limits, signalization, etc.) which might impact bicycle/pedestrian routes and safety is also included. Current and proposed improvements are shown on TSP Figures 5-1 and 6-1 which are reproduced earlier in this Technical Memorandum No. 2.

The City is currently undertaking a Pedestrian Safety Study (in draft form as of August 2014). This pedestrian study focuses in part on unsignalized intersection improvements, two of which are in the LLTP study area:

- **Segments 1 and 5:** Oregon 38 at 3rd Street – improvements to this downtown intersection would support trail alternatives using sidewalks and bike lanes along Oregon 38/Fir Avenue and accessing the waterfront via Rainbow Plaza/Water Avenue and/or Riverfront Way.
- **Segment 4:** US 101 and 14th Street (north side of highway) may be the location of an on-street LLT alignment through Segment 3, but any US 101 trail crossing will probably utilize the signalized Winchester Avenue crossing to the southwest.



Courtesy of City



Courtesy of City

Multiuse and Similar Trails

The only multiuse trails in the LLTP study area are the informal pathways that have been established atop the levee.

Boardwalks

There is an existing waterfront boardwalk in Segment 1 on the Umpqua River along the Umpqua Discovery Center. The RWDP recommends an extension of this boardwalk northwest to the Port of Coos Bay railroad bridge and southeast past the City boat launch /parking area and the former Knife River industrial site. This extended boardwalk could serve pedestrian traffic as part of the LLT, and take pressure off Riverfront Way in accommodating pedestrians, bicyclists, and vehicles.



Boardwalks – Umpqua Discovery Center

Rail

The Oregon International Port of Coos Bay owns the rail line that enters the LLTP study area via the railroad bridge over the Umpqua River (Segment 2), parallels the levee around the northwest exterior of the downtown area (Segment 2), then turns southeast across Winchester Avenue (Segment 5), and exits the study area. This rail line is operated as Coos Bay Rail Link (CBR) through a management agreement between the Port of Coos Bay and a short-line railroad operating company.

According to the 2006 City TSP, a maximum of two freight trains daily use this line with speeds limited

to 15 miles per hour or less. The alignment of the rail line within the LLTP study area is shown on the General Features map (Map A, p. 5).



Parallel higher elevation rail line as seen from levee near Greenwood Avenue



Levee near McIntosh Slough paralleled by lower elevation abandoned spur rail corridor

There is also an abandoned spur rail line (rail ties and rails were observed during a site visit) that follows the arc of the levee along the south side of the McIntosh Slough from the CBR line to US 101/ Port Dock Road. It appears that this spur rail at one time served the "Mast" site described elsewhere in Technical Memorandum No. 2. The rail bed is at lower elevation than the levee. Information provided by the City indicates that the spur line property and adjacent levee section is in the same ownership as the Mast site.

There are four existing railroad crossings in the LLTP study area:

- **Segment 2:** Undercrossing connecting Riverfront Way and Port Dock Road under the southwest approach span of the railroad bridge on the bank of the Umpqua River.
- **Segment 2:** Low undercrossing (7-foot 2-inch vertical clearance) connecting Laurel Avenue/ West Railroad Avenue to Greenwood Avenue/ East Railroad Avenue near Oregon 38.
- **Segment 2:** At-grade crossing at the Umpqua Avenue section of Oregon 38.
- **Segment 5:** At-grade crossing at Winchester Avenue.

Both at-grade crossings have recently (2014) been upgraded with widened shoulders and improved sidewalks.

Waterways

Three waterways are within or abut the LLTP study area: Umpqua River, Schofield Creek, and McIntosh Slough. Trail alignments in the TSP and RWDP did

not include new waterway crossings, and new LLTP crossings are not anticipated.

The LLT is also not expected to impact the transportation function of these waterways. The RWDP proposed an extension to the Umpqua Discovery Center boardwalk (LLTP Segment 1) and this extension may be part of the LLTP. A new, nonmotorized boat launch may be proposed on Scholfield Creek or McIntosh Slough.

To the extent these facilities are recommended in the LLTP, the probable locations (see additional discussion elsewhere in this technical memorandum) will enhance water access but not interfere with existing waterway commerce or transportation.

Transit

There are no scheduled public transit services in the City. The City provides a Dial-a-Ride service within a 5-mile radius of Reedsport. This service primarily accommodates elderly and disabled patrons but is open to anyone. There are two private bus services that provide transportation to other communities north and south along the Oregon Coast.



Restricted Height Undercrossing at Greenwood Avenue



Riverfront Way/Port Dock Road Rail Undercrossing

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4. Land Use Features

Reedsport Levee

Levee Characteristics and Features

The height of the 1968 levee varies from 15 to 18 feet above the ordinary high water level of the Umpqua River and Scholfield Creek, with side slopes ranging from 2:1 to 3:1. The top of the levee ranges from approximately 10 feet to 12 feet wide. Within the LLTP study area there are three pump stations and outfalls used to manage flood waters.

The levee must be kept clear of vegetation and wildlife (such as woody plant root systems and burrowing mammals) that may adversely impact levee permeability or structural integrity. Vegetation wear patterns atop the levee indicate that there is already considerable informal use by bicyclists, walkers, and maintenance vehicles.

In some areas there is no elevated earthen berm structure - Riverfront Way (Segment 1), Juniper Avenue (Segment 3), and several locations where roadways bisect the levee. Flood control is accomplished in these sections with floodwalls and gates.

Some slumping has been noted along sections of the levee (for instance, near 16th Street). The cause of this settlement needs to be investigated and mitigation undertaken in advance of trail construction.

Trail Impacts

The LLT will potentially transition off of the levee several times to connect to on-street trail sections, to community connector trails, and to trailheads. Access ramps will have to be engineered to be built *onto* the levee slope, rather than *into* the levee to preserve the integrity of the structure and to meet USACE requirements.

Fifteen-foot-wide development exclusion zones (from the toe of levee slopes) are part of the system. Within the exclusion zones, structures unrelated to levee operations are prohibited. Field visits notes some areas where surface access improvements, accessory buildings, private landscaping, and other minor encroachments appear to be within the exclusion



Pump station near McIntosh Slough



Floodwall near Juniper Avenue



Floodgate on Winchester Avenue near Coho RV Park and Marina

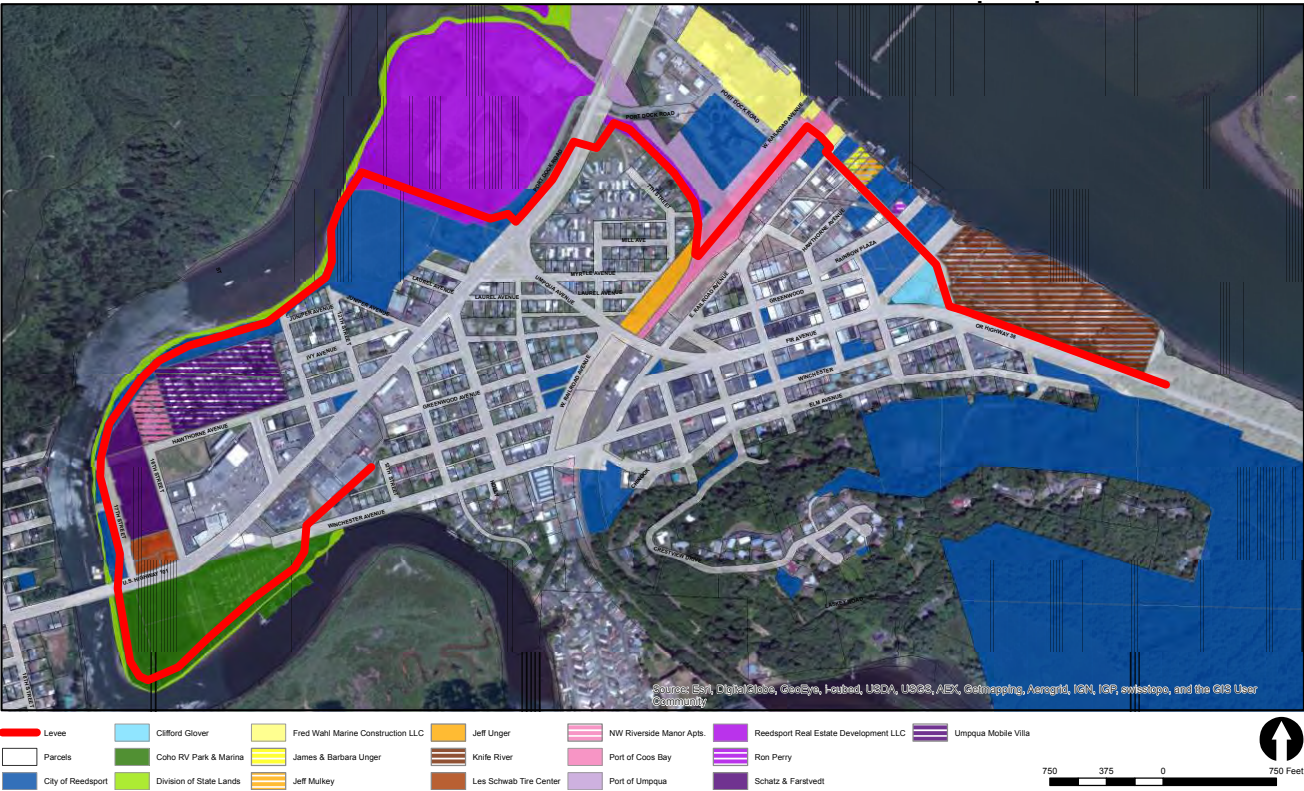


Levee behind Umpqua Mobile Villa showing exclusion zone

zone. The significance is that with the exception of these few encroachments, the undeveloped exclusion zones will make siting of ADA-compliant ramps relatively straightforward.

Levee Ownership

Although the City is the levee maintenance authority, many sections are privately owned (see levee location and ownership map below). The cooperation of these owners is essential for levee recertification and maintenance, as well as for future trail development.



Courtesy of City

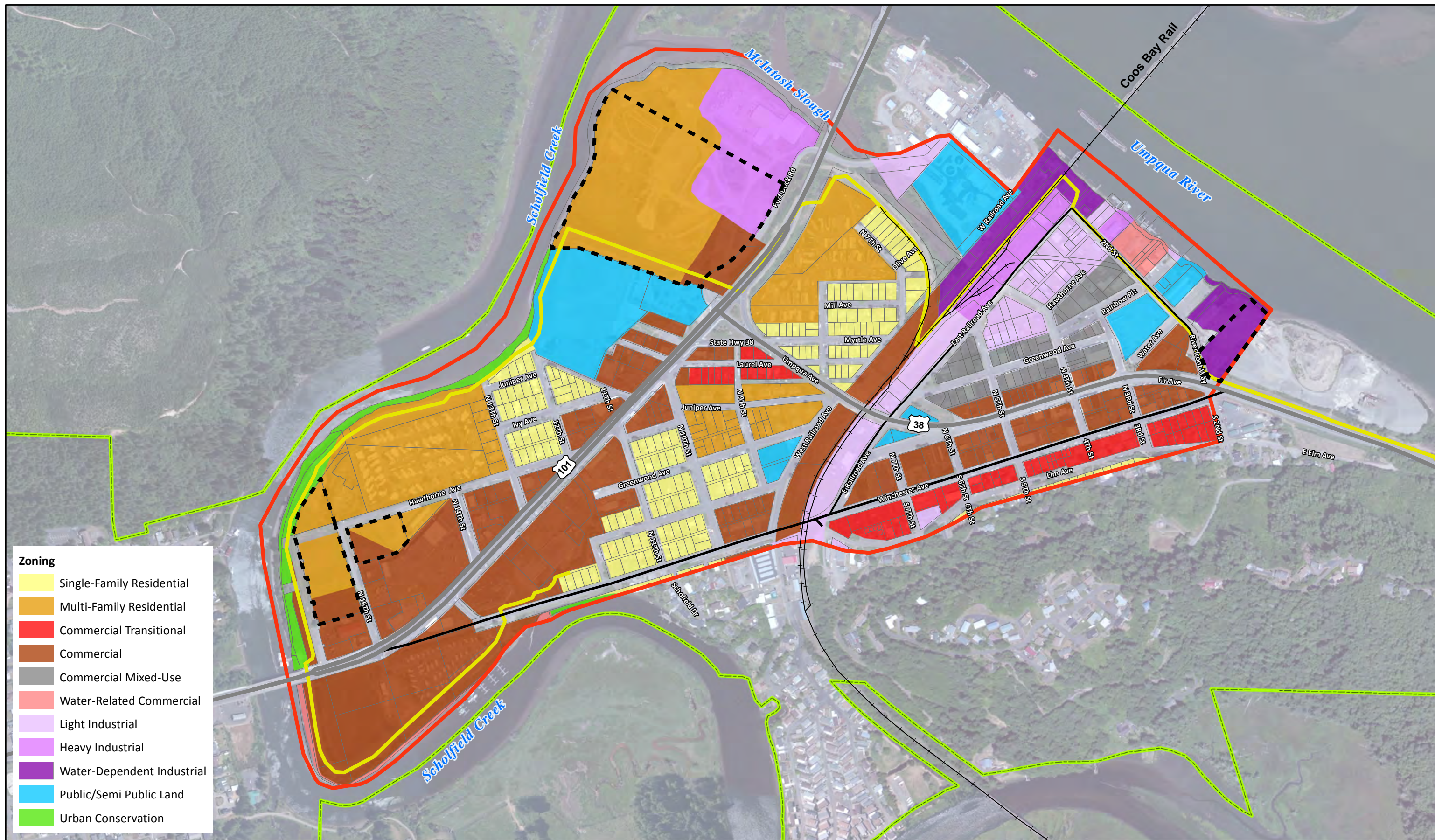
Existing Land Uses/Vacant Lands

Within the LLTP study area, most of the downtown, surrounding neighborhoods, and commercial properties are fully subdivided and developed. Existing land uses can be seen on the aerial General Features map (Map A, p. 5), as well as vacant lands. Map B shows property parcel boundaries and highlights major vacant parcels. The only major inconsistency noted between City comprehensive plan/zoning designations and current land uses is

the industrial Mast site which is zoned in part to redevelop to multifamily residential (see additional discussion on p. 11 of this technical memorandum).

Zoning and Special Overlay Zones

The current (2012) City Zoning Map is incorporated into the Transportation and Land Use Features map (Map B, p. 25). Estuarine zones from the Zoning Map are incorporated into Map C: Natural Resources. The City’s urban renewal district includes most to the LLTP study area.



Zoning

- Single-Family Residential
- Multi-Family Residential
- Commercial Transitional
- Commercial
- Commercial Mixed-Use
- Water-Related Commercial
- Light Industrial
- Heavy Industrial
- Water-Dependent Industrial
- Public/Semi Public Land
- Urban Conservation

Parametrix

0 0.05 0.1 0.2 0.3 Miles

↑

- Reedsport Levee
- Trail Study Area
- Arterial
- Collector
- Railroad
- Major Vacant Land
- Property Parcels
- Reedsport City Limits

Reedsport Levee Loop Trail Plan Map B: Transportation and Land Use

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5. Natural and Historic Resource Features

Topography and Steep Slopes

The LLTP study area is almost entirely within a flat coastal estuary. Topographic contours are shown on the General Features map (Map A, p. 5). There are two small areas of slightly higher elevation:

- **Segment 5:** North of Winchester Avenue between 11th Street and 12th Street
- **Segment 5:** Along the south side of Elm Avenue

Unstable Slopes

Oregon Department of Geology and Mineral Industries (DOGAMI) landslide information database indicates that no historic or currently unstable slopes have been documented within the LLTP study area.

Floodplain

Floodplain standards are described in the Existing Plans and Policies chapter of this Technical Memorandum No. 2. 100-year and 500-year floodplain is mapped on the Natural Resource Features map (Map C, p. 29).

Tsunami Inundation Areas

Information on tsunami inundation evacuation hazard areas is provided in the Existing Plans and Policies chapter of this Technical Memorandum No. 2, and the areas are illustrated in Appendix C.

Oregon Goal 5 Resources

Oregon Statewide Planning Goal 5 (OAR 66-015-0000) addresses natural resources and scenic and historic areas and open space. Goal 5 specifies that local governments adopt programs to protect these resources. The City has not conducted a Goal 5 Inventory, but has adopted estuarine and shoreline zone ordinances protecting and conserving these natural resources areas. These zones can be found on City Comprehensive Plan and Zoning maps and on the Natural Resource Features map (Map C, p. 29). Some standalone wetland assessments have also been conducted by the City. Douglas County conducted a Goal 5 Inventory, but this effort excluded the City.

Wetlands and Nonwetland Waters

Wetlands and nonwetland waters within the LLTP study area are mapped on the Natural Resource Features map (Map C, p. 29). The Umpqua River and Scholfield Creek are the defining waters of the LLTP study area and will provide spectacular scenic views, recreational opportunities, and bird and wildlife viewing from the future trail atop the levee. The McIntosh Slough (Segment 2) flows into the confluence of these two streams. Other than these three systems, there are few remaining wetlands and nonwetland waters in the LLTP study area:

- **Segment 2:** Intermittent remnant or possibly created wetlands follow both sides of the Port of Coos Bay Railroad between the Umpqua River and Winchester Avenue.
- **Segment 2:** Remnant wetlands along Port Dock Road and under the US 101 bridge between the McIntosh Slough and Oregon 38.
- **Segment 4:** Two separated small remnant wetlands bounded by local streets between Umpqua Mobile Villa and the back side of the Umpqua Shopping Center.
- **Segment 4:** Pond/wetland area between the Coho RV Park and Marina and Scholfield Creek.

Fish and Wildlife

The Umpqua River Basin is home to a wide diversity of fish and wildlife species. Fish and wildlife species and populations within the LLTP study area are



Levee along Scholfield Creek near Umpqua Mobile Villa

limited due to prior urbanization and the extensive alterations to the original estuarine ecology. There are no known Endangered Species Act (ESA) or state-listed threatened or endangered wildlife species resident within the LLTP study area, although listed fish species are present in the Umpqua River and Scholfield Creek. There are more than a dozen species of native anadromous fish and nine species of native freshwater fish in the basin, including coho salmon and Pacific Eulachon which are federally listed under ESA as threatened.

The Oregon Wildlife Explorer Wildlife Viewer generates lists by county, eco-regions, basin, and watershed. See www.oregonexplorer.info/wildlife/WildlifeViewer. The US Fish and Wildlife Service lists endangered and threatened, proposed, candidate, and delisted species under the ESA, as well as species of concern (www.fws.gov/oregonfwo/Species/List). The Oregon Department of Fish and Wildlife publishes and updates similar lists.

Hazardous Materials

The Oregon Department of Environmental Quality (DEQ) lists seven Reedsport sites in its Environmental Cleanup Site Information (ECSI) database. Four of the Reedsport sites were determined to require no State action. Of the remaining three, only one—the Unocal Bulk Plant at 155 East Railroad Avenue—is within the LLTP study area (Segment 2). The contamination involves release of gasoline and diesel fuels to groundwater.

Historic and Cultural Resources

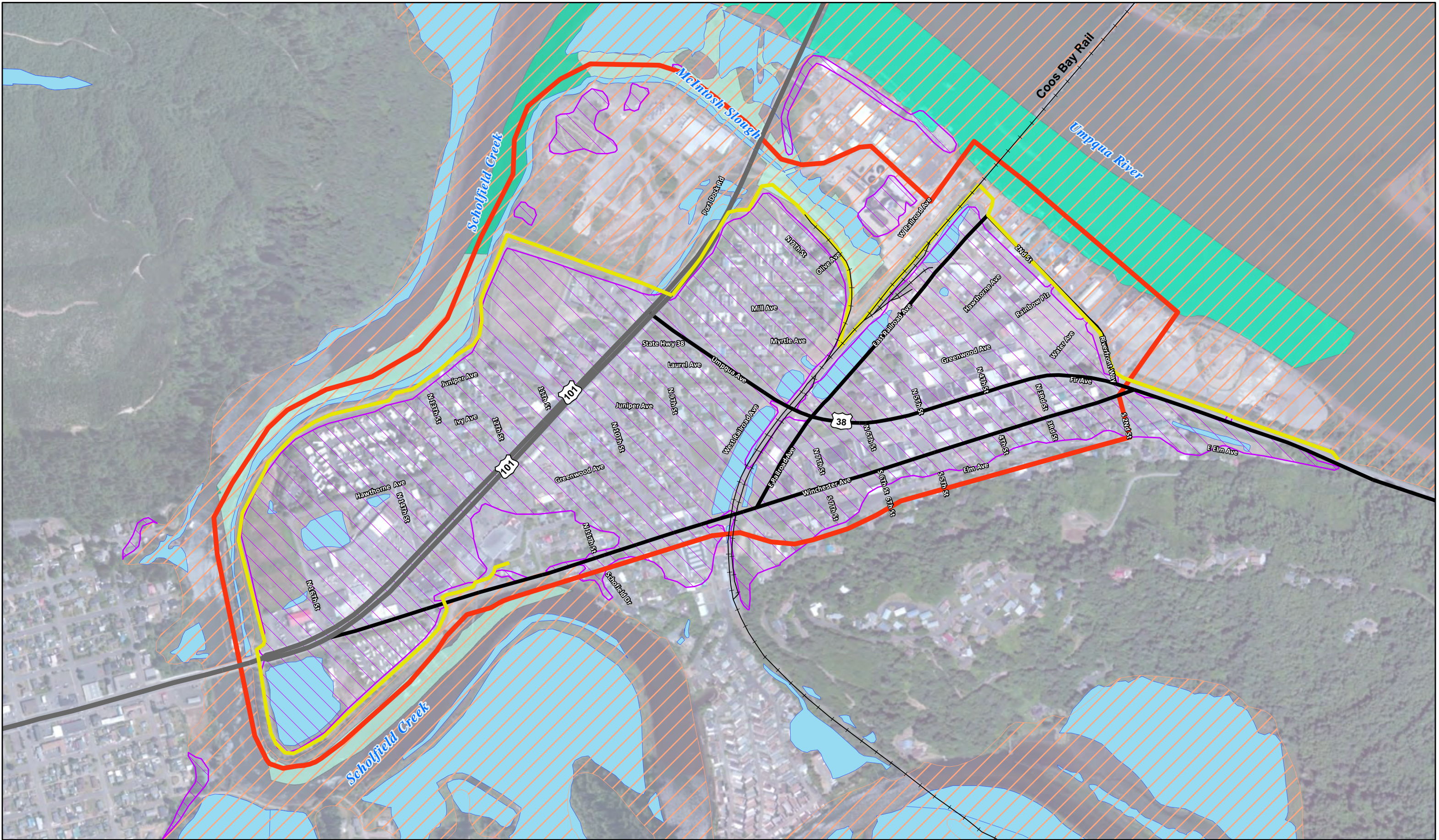
The Oregon Department of Parks and Recreation Historic Sites database was reviewed. Although Reedsport was incorporated in 1919 and the LLTP study area includes the downtown core, the only historic structure in the study area is the US 101 Umpqua River Bridge. Prior to the construction of the levee in 1968, the downtown and surrounding neighborhoods, being located in the estuarine floodplain of the Umpqua River, were subject to regular and major flooding. Older buildings and sites simply did not survive.

The US 101 bridge was built in 1934 and designed by C.B. McCullough, the architect for a series of

iconic Oregon Coast bridges built between 1927 and 1936. The Umpqua River Bridge was placed on the National Register of Historic Places in 2005.



South Approach to US 101 Bridge over McIntosh Slough



Parametrix



0 0.05 0.1 0.2 0.3 Miles

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Railroad Reedsport Levee Highway 101 Trail Study Area | Flood Zones <ul style="list-style-type: none"> 100-Year 500-Year | Zoning - Estuarine <ul style="list-style-type: none"> Estuarine Conservation Estuarine Development Estuarine Natural |
|--|---|--|

Reedsport Levee Loop Trail Plan Map C: Natural Resources

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6. Demographics

Key socio-economic and demographic information within the LLTP study area is reported below, particularly for Title VI populations. Title VI refers to the Civil Rights Act of 1964. Title VI prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance.

Key Population Demographics

The City has no statistics specific to Title VI populations within the LLTP study area. The City directed that 2010 US Census data be used to extrapolate this information. The City also directed that 60 percent of the City's total Title VI-type populations be assumed to reside within the LLTP study area.

The 2010 City population was 4,154, although US Census—published updates shows a steady but slight decline to 4,090 by 2013. The US Census publishes updates to other City statistics but as not all are updated to the same year, 2010 is cited herein. Based on the City's direction to use 60 percent to extrapolate from 2010 counts, approximately 254 Title VI-classed individuals are estimated to live within the LLTP study area. The 65 and older population within the study area, which may overlap in part with Title VI populations, is estimated at 678.

Table 2: Key City Demographics

Total Population	4,154
Under 18	741
18-64	2,283
65 and older	1,130
Title VI population	423
Median Age	51
Median Household Income	\$26,054
Population over 16 in labor force	49.1%
Population below poverty level	21.9% (was 16% in 2000)

Title VI-Type Housing

The City also identified housing sites in the LLTP study area with possible higher percentages of elderly, handicapped, minority, or lower income residents. All

four of these housing developments are very close to, if not directly abutting, possible LLT alignments:

- **Segments 2:** Douglas County Housing Authority development between Juniper Avenue and Greenwood Avenue near Oregon 38, Winchester Avenue, and Elm Avenue near downtown
- **Segment 4:** Umpqua Mobile Villa on Hawthorne Avenue
- **Segment 4:** Coho RV Park and Marina on US 101 may also have higher percentages of Title VI or lower-income residents
- **Segment 5:** Douglas County Housing Authority development between Winchester Avenue and Elm Avenue near downtown

Title VI Trail Benefits

Title VI and similar populations would greatly benefit from a trail system providing convenient and safe alternatives to owning, operating, and using motorized vehicles to commute, recreate, and shop. In fact, given relatively low median household incomes and higher poverty rates in Reedsport, the entire population within the LLTP study area would benefit from better options and opportunities to routinely walk and bike.

The 2010 Census also identified that 8 percent of the Reedsport population over 16 walks or uses "other" (presumably bikes, skateboards, etc.) nonmotorized conveyances to get to work. This is a drop from 2000 where 11.5 percent identified these two categories as their work commute method.

Outreach

The City may wish to conduct specific outreach to Title VI populations at the LLTP Conceptual Trail Options phase. Given the four probable concentrations of Title VI and similar populations—Coho RV Park, Umpqua Mobile Villa, and the two County Housing Authority developments—presentations or direct-mail communication to resident associations would be relatively cost effective.

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APPENDIX A

RWDP Preferred Concept Plan

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Preferred Concept Plan (Figure 6)

Waterfront and Downtown Plan, City of Reedsport, Oregon



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APPENDIX B

Rainbow Plaza Redevelopment Concept Plan

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SUMMARY

The proposed improvements to the plaza balance the practical requirements of hosting large annual events (Chainsaw Festival and Tralla Festival), provision of overflow parking on a day-to-day basis (including demand for seasonal fishing activity and bus parking for the UDC) and improving its appearance and adding features to encourage more frequent activity and community gathering.

The most prominent new feature is a landform (berm) approximately 6 feet in height topped with a pedestrian walkway, which will provide excellent views of activities within the plaza and views over the flood wall of the riverfront area beyond. Access to this feature is provided by both a gently sloped ramp and a stairway. The lawn slopes of the berm will provide informal seating for observing performances and activities on the south side. Depending on the size of the activity and time of day, performers can orient themselves either towards the berm or towards the large open space. A permanent stage, one with a raised platform and covering, has not been sited for the sake of maintaining flexibility of use. The provision of a portable stage structure is advised as an alternative.

Vehicle accessways on the perimeter of the plaza have been remodeled. Rainbow Plaza east of 3rd Street has been reduced as a means of expanding the event area. Access to existing businesses fronting Rainbow Plaza will be maintained. It is intended that Water Avenue and the remodeled portion of Rainbow Plaza have limited and controlled access during large events and that adjoining parking spaces are used for special event needs (vendors, performers, staff, etc.). The north edge of Water Avenue is proposed to be "curbless" to allow for convenient uninhibited vehicle access into the plaza open space during setups, tear-downs, and non-event times. A special mid-block entry to the plaza from Water Avenue enhances vehicle access. Other vehicle features include a dedicated drop-off lane on 3rd Street for buses and passenger vehicles and a turnaround circle at the intersection of 3rd Street and Rainbow Plaza.

Access and egress for the event area is provided at each of the four corners. The south and west gates are primary entrances that can serve both higher volumes of pedestrians during large events and allow vehicle access during set-up and tear-down times. The east and north gates are intended primarily for pedestrians, but can also be accessed by vehicles. Three of the four gateways incorporate large decorative columns and an archway to pass beneath - to increase the identity and welcoming festive feel of the plaza. A pedestrian walkway is provided on the west and south sides of the plaza.

Pavements within and around the plaza vary. Perimeter sidewalks are concrete. The entry gates feature concrete and unit paving. The large open space in the center is comprised primarily of asphalt, with the ability to incorporate stamped and colored patterns to create visual interest. The pavements can be specified to be permeable, which may be desired to increase the rate of drainage. Material choices may vary and be adapted according to final budgets and project objectives as the design is refined. Directional signs, lights and subgrade utilities are not shown on this plan, but provisions for them are included in the program and budget.

Landscapes have been located in concentrated areas to serve specific functions and to minimize their maintenance. A vegetated bioswale fronts 3rd Street and will provide functional drainage capacity and be a visual buffer between the plaza and industrial activities on 3rd Street. The berm feature will be surfaced primarily with lawn for informal seating, and with shrubs where the slopes are too steep for mowing. Trees will provide sun and light rain shelter on the perimeter of the event spaces. Incorporating tree grates, to maximize use of the paved surfaces, is recommended.

AT GRADE ENTRY
ART/CARVINGS
TERRACES
Views of events within Plaza and views beyond site over the Flood Wall (Umpqua River).

ACCESSIBLE WALK TO TERRACES
NEW PLANTINGS

"Circle" paving or striping to enhance turnaround.
ENLARGED ISLAND
Sculpture and plantings.

WEST GATE ENTRY
Vehicle accessible
RESTROOM BUILDING

BIOSWALE
Drainage and plantings
BIOSWALE CROSSING
(wood decking)

DROP-OFF AREA

ASPHALT PAVING
Special color / texture
ART/CARVINGS

EXISTING PAVEMENT EDGE
To remain (typical)

EXISTING RIVERFRONT SIGN
To remain

NORTH GATE ENTRY
Pedestrian access to the Riverfront and Umpqua Discovery Center. Continue brick paving pattern at Plaza Entry.

Steps up to platform 6'- rise.
ASPHALT PAVING

Utilize wall for story telling (Reedsport History, etc.).

LAWN BERM
1:4 for spectator observations
AT GRADE SIDEWALK
Vehicle accessible entry.

ART/CARVINGS
Parallel Parking for vendors (and carvers) during events.
AT GRADE SIDEWALK
Vehicle accessible entry.

Move Steam Donkey from site to new location to be determined.

SOUTH GATE / ENTRY
Vehicle accessible

SITE PLAN



JULY 27, 2010

RAINBOW PLAZA REDEVELOPMENT CONCEPT

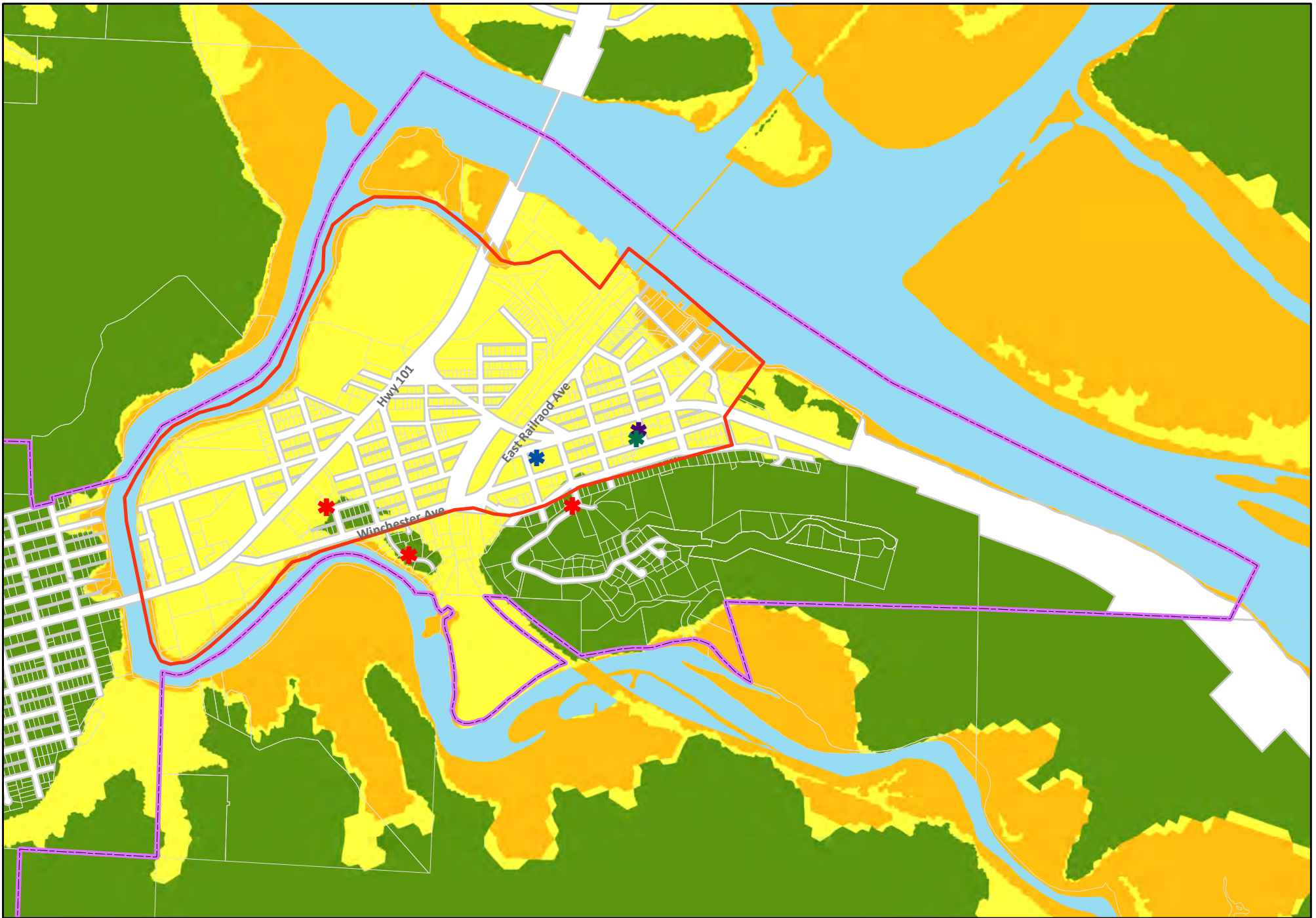
REEDSPORT, OREGON

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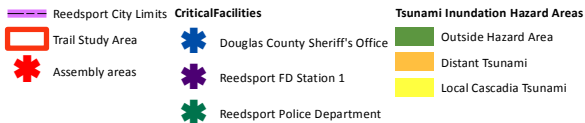
APPENDIX C

Tsunami Inundation Hazard Areas

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Parametrix



Tsunami Inundation Areas

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APPENDIX C

Technical Memorandum No. 3: Conceptual Trail Options

Technical Memorandum No. 3 can be downloaded at www.cityoffreedsport.org or obtained from the City.

City of Reedsport, Oregon

Levee Loop Trail System Plan

Technical Memorandum No. 3
Conceptual Trail Options



Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
March 2015

Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
March 2015

Credits

All photographs courtesy of Jim Rapp and Gregg Everhart

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1. Background

The City of Reedsport (City) currently lacks an integrated system of developed bicycle and pedestrian routes, particularly near and between US 101 and Oregon 38. Sidewalks and bicycle lanes exist in sections of the downtown and surrounding streets and neighborhoods, and there is a waterfront boardwalk near Riverfront Way, but many areas of the City are without developed and safe biking and walking options.

The Reedsport Levee Loop Trail (LLT) will provide a convenient, non-motorized transportation alternative for residents and visitors traveling through the city's downtown and waterfront core. The LLT will access key attractions and destinations within the city; reduce reliance on motorized vehicles for trips to work, school, shopping, and recreation; and improve pedestrian, bicycle, and motorized vehicle safety along US 101, Oregon 38, and on city streets.

The need for the LLT, and possible conceptual trail routes, is identified in the City's 2006 Transportation System Plan (TSP) and further described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). A central objective of the Levee Loop Trail System Plan (LLTP) is to identify a trail alignment that primarily follows the 1968 levee system constructed to protect Reedsport's waterfront, downtown, and adjacent neighborhoods and highway commercial areas from flooding. Major sections of the levee are in private ownership. Limited trail sections may follow public streets or use other property.

The City operates and maintains this levee, with the US Army Corps of Engineers (USACE) as the primary regulator. The City is currently conducting a study for the purpose of securing levee accreditation by the Federal Emergency Management Agency (FEMA) as to flood protection adequacy.

Planning Process

The LLTP planning process is divided into the following four planning stages. Technical memorandums for each stage, plus the final master plan document to be published by June 2015, can be

downloaded at www.cityofreedsport.org or obtained from the City.

Goals and Objectives

This stage is complete and is reported in Technical Memorandum No. 1. Planning project goals and objectives, probable preferred trail types, and comparative trail alternative evaluation criteria are included.

Baseline Information

This stage is complete and is reported in Technical Memorandum No. 2. Existing plans and policies potentially impacting the LLTP study area and trail development are summarized, key activity centers and destinations within the study area are identified, and existing conditions with respect to transportation, land use, and natural and historic resources are described and mapped. In addition, community demographics within the study area are highlighted.

Conceptual Trail Options

This Technical Memorandum No. 3 describes and maps a variety of trail alignment options, trail type treatments, levee access points, roadway and rail crossing options, interim trail solutions, and conceptual trailhead and non-motorized boat launch locations. This technical memorandum also reports the outcomes of an initial and nonbinding USACE review of the conceptual trail options that follow or access the levee.

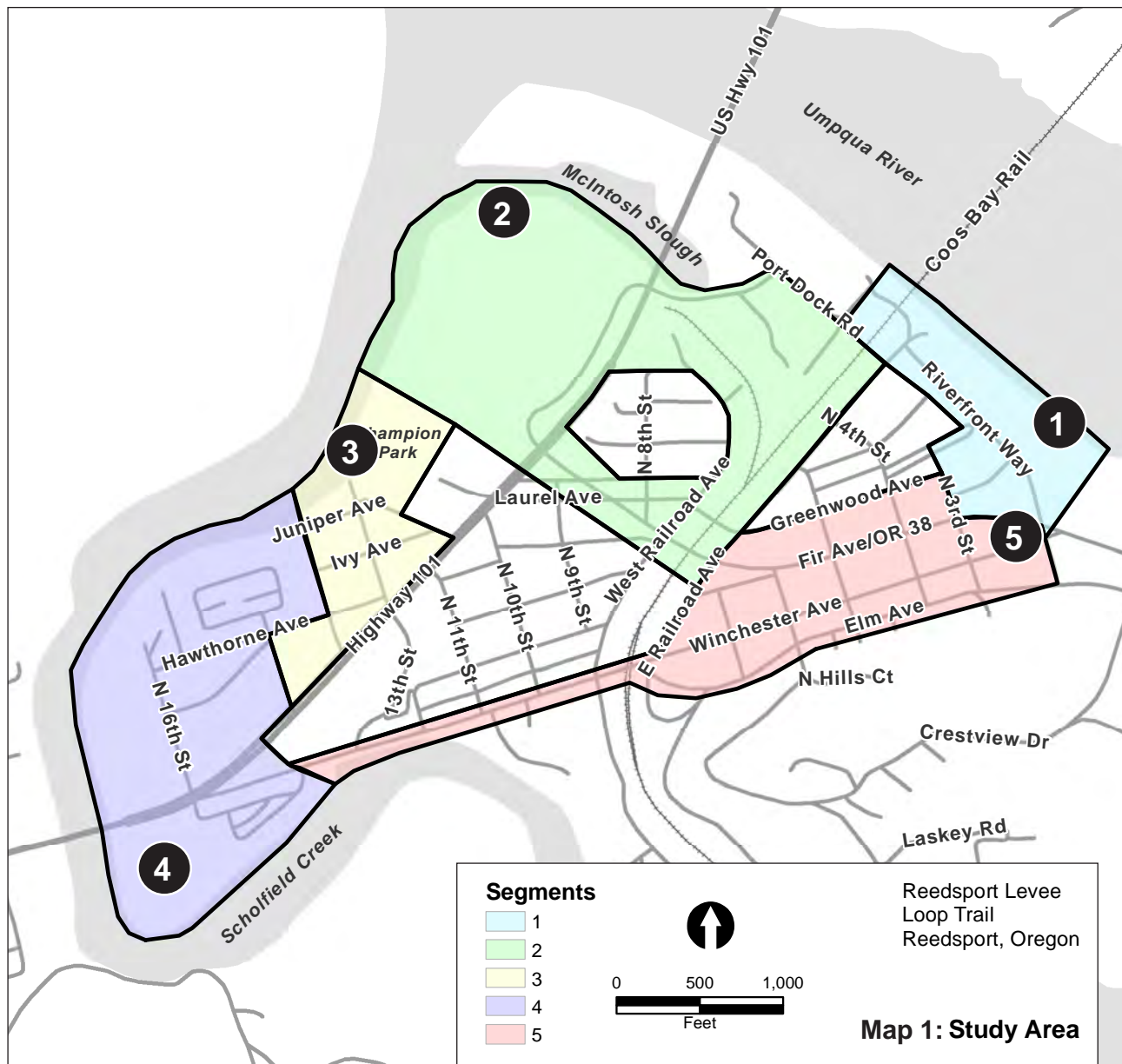
Preferred Trail Option

Following agency and public review of the trail alternatives and other options described and mapped in Technical Memorandum No. 3, a preferred trail alternative will be selected, as well as secondary trail alignments and interim trail options primarily utilizing city streets. This fourth technical memorandum will also identify suggested community connector trails; describe key trail amenities such as signing, lighting, fencing and trail furniture; and provide "plan level" cost estimates and phasing strategies.

Study Area

The LLTP study area is divided into five planning segments to provide for the detailed analysis of possible trail alignments and to facilitate development of a phasing plan. See Map 1 for study area and segment boundaries established as an outcome of the Baseline Information stage of the LLTP (Technical Memorandum No. 2). Some segment boundaries were amended slightly for this Technical Memorandum No. 3.

- 1 Segment 1: Umpqua Waterfront** – Rainbow Plaza, Riverfront Way, Umpqua River Waterfront
- 2 Segment 2: Port Dock Road** – Coos Bay Rail, Oregon 38, Port Dock Road, McIntosh Slough Waterfront
- 3 Segment 3: Champion Park** – North of US 101, Champion Park, Ivy-Hawthorne Neighborhood, and Commercial Areas between 11th and 14th Streets
- 4 Segment 4: Scholfield Waterfront** – 14th Street to 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront north and south of US 101, Coho RV and Marina
- 5 Segment 5: Winchester-Downtown** – Winchester Avenue, Downtown Reedsport, Oregon 38/Fir Avenue



2. Trail Typology

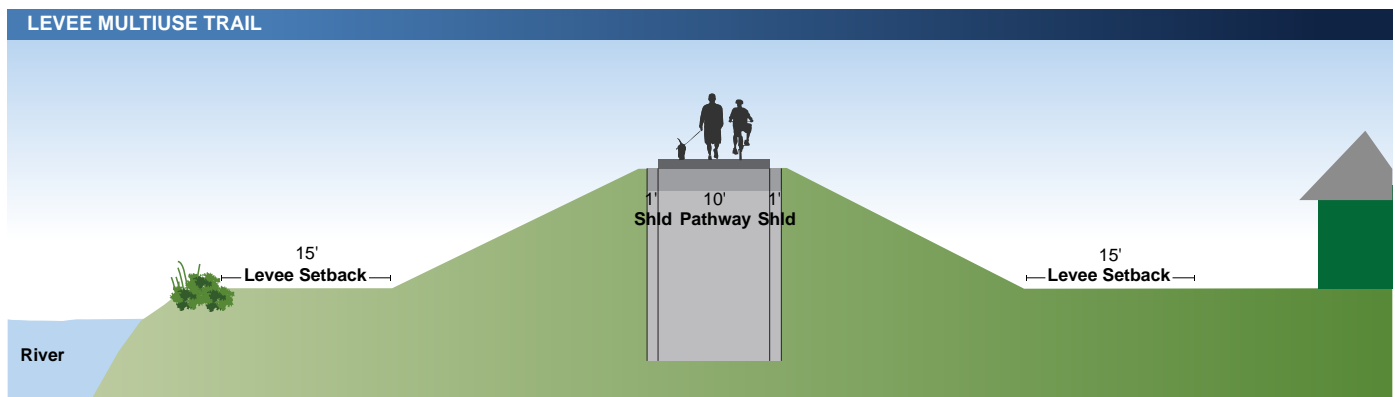
The Levee Loop Trail (LLT) is intended as a multiuse pathway accommodating the full range of users, such as bicyclists, pedestrians, and mobility impaired. There are three primary activities which will use all sections of the trail to varying degrees:

- **Commute** – Trips taken on a regular fixed schedule to specific destinations. These primarily include daily trips to places of employment or to schools.
- **Destination** – Trips taken on an intermittent basis to local activity centers and through neighborhoods for the purposes of shopping, accessing services, social engagements, community events, etc.
- **Recreation** – Trips taken for the purposes of exercise and recreation, including trips to access other recreation opportunities. The LLT will also accommodate touring bicyclists and walkers coming to the City from other communities.

A variety of trail types will be used in developing the LLT for commuter, destination, and recreational users. The basic width recommended for multiuse trail types in Reedsport is 8 to 10 feet, except as noted otherwise. The standard trail surface is asphalt, again except as noted otherwise.

Levee Multiuse

The primary trail type for the LLT is a multiuse pathway on the levee crown. Given limitations atop most of the levee, particularly the limited width of the levee crown (8 to 12 feet), this multiuse trail type may have to be as narrow as 8 feet, with limited or no shoulders. The levee multiuse trail must also be engineered to support motorized maintenance vehicle loads.



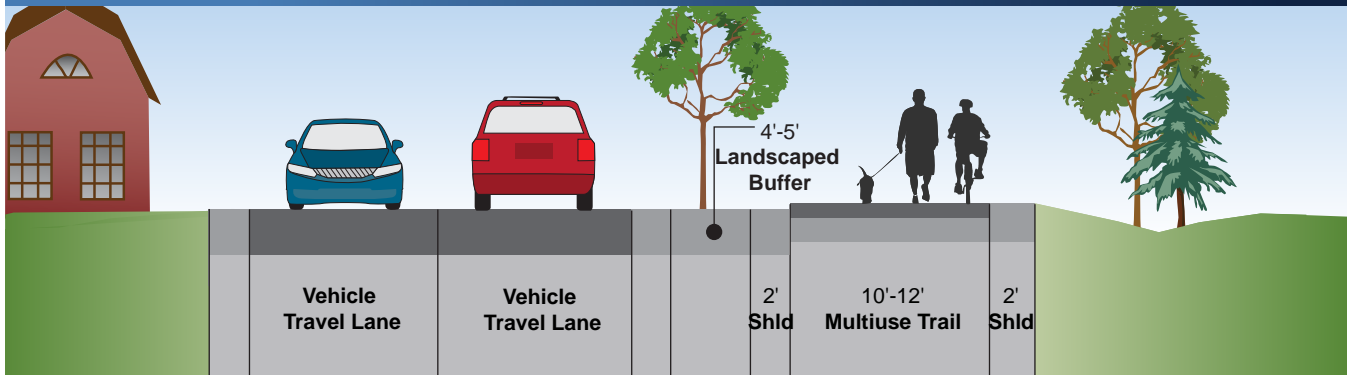
Note: Levee height and width may vary, conceptual only.

Multiuse

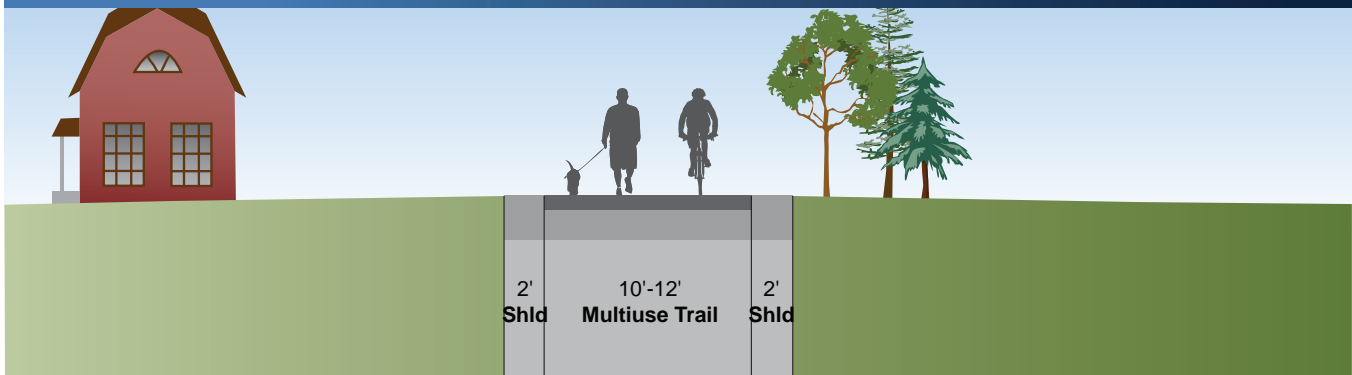
Street-adjacent multiuse trails are possible where there is vacant land along roadways and few access driveways. This trail cross section can include a 4- to 5-foot landscaped buffer separating the trail from the roadway. In constrained areas, the buffer may be narrowed or even eliminated. Multiuse trails can also be aligned separately from roadways.

- This trail type is one of three alternatives suggested in the RWDP along East Railroad Avenue (Segments 2 and 5). This is the type shown on these segment maps. The other possible types are shared-use and sidewalks/bicycle lanes.
- One recommended alternative along Port Dock Road (Segment 2).
- Street-adjacent or standard multiuse trails are also an alternative solution for the east end of Segment 1.

STREET-ADJACENT MULTIUSE TRAIL



STANDARD MULTIUSE TRAIL



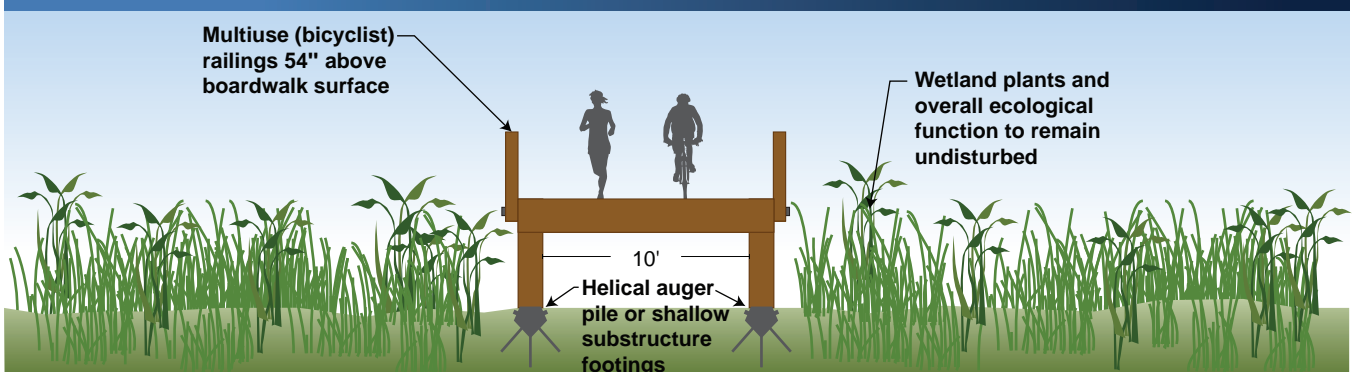
Boardwalk Multiuse

This solution is recommended for trail sections along Port Dock Road and the undercrossing of US 101 (Segment 2) where wetlands may need to be crossed. Boardwalk width will match intersecting multiuse trail width. Preferred materials are steel with concrete surfaces; surfaces must accommodate wheelchairs, walkers, and other mobility devices to be Americans with Disabilities Act (ADA)-compliant.

Multiuse boardwalks were also initially considered for the three areas listed below but, as documented elsewhere in this technical memorandum, other solutions were ultimately recommended.

- The Riverfront Way/Port Dock Road undercrossing of Coos Bay Rail Line (Segments 1 and 2)
- The Scholfield Creek shoreline near Juniper Avenue (Segment 3)
- Along south side of Winchester Avenue (Segment 5) between Floodgate 7 and approximately N 12th Street.

MULTIUSE BOARDWALK



Note: Boardwalk materials will vary: wood, steel, concrete, etc.

Pedestrian-Only

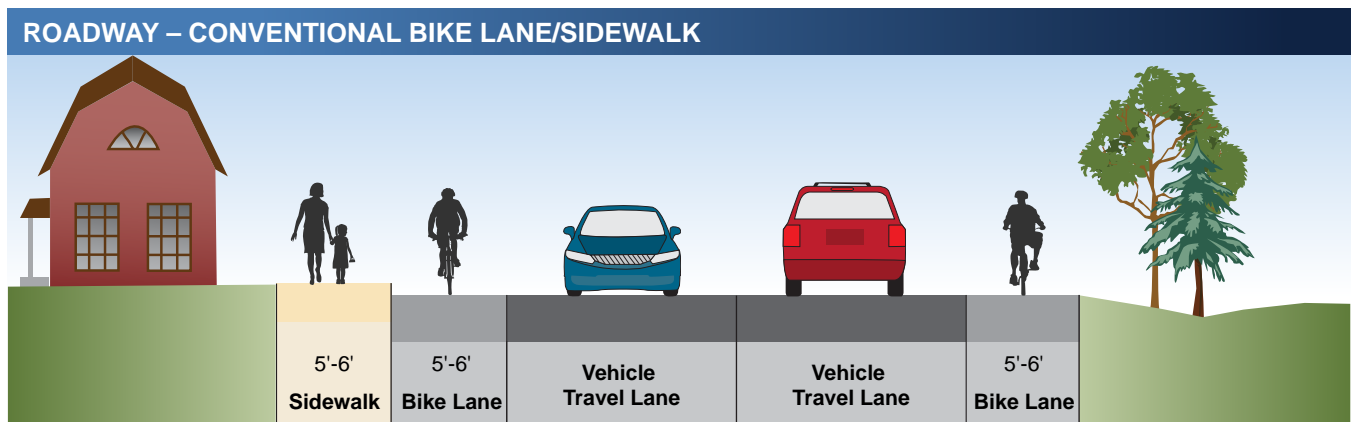
A west and east extension of the existing Umpqua River shoreline pedestrian boardwalk behind the Umpqua Discovery Center is part of an alternative trail option for Segment 1. This form of boardwalk can be 6 to 8 feet wide. To be ADA-compliant, the wood surfaces of the existing Umpqua River boardwalk may have to be renovated or replaced to accommodate wheelchairs, walkers, and other mobility devices.

There are also two areas in Segment 1 where a pedestrian-only asphalt trail is recommended. Connections from the extended Umpqua River shoreline boardwalk back to Riverfront Way are pedestrian-only, as is a short trail section through Rainbow Plaza. This type of trail can be 6 to 8 feet wide.

Sidewalks/Bicycle Lanes

New or improved sidewalks and bicycle lanes are recommended for trail sections along higher traffic volume roadways where no practical or cost effective means are available to site a multiuse trail. This solution is applied to:

- The Winchester Avenue and Fir Avenue downtown alternatives (Segment 5), although motor vehicle parking on the south side of Winchester Avenue may have to be removed to establish adequately wide bicycle lanes.
- One of the alternative solutions following East Railroad Avenue (Segment 2).
- Oregon 38/Umpqua Avenue through Segment 2 from N 6th Street to US 101 (this sidewalk/bicycle lane improvement is scheduled for construction in 2016).



Note: Can include sidewalks on both sides.

Shared-Use

This solution is only safe and practical along local streets with low volume and speed traffic. On-street shared-use solutions are also possible for low-cost interim routes until the multiuse levee trail is developed (see Chapter 6, Map 15). Shared-use is suggested for:

- Juniper Avenue (Segment 3) where the earthen berm levee is replaced by a floodwall.
- One of the alternatives following East Railroad Avenue (Segment 2).

Sidewalks/Bicycle Shared-Use

In some areas, on-street trail sections can be improved with sidewalks but the street may be too constrained to also accommodate designated bicycle lanes. This solution provides for bicycles to share the road with motor vehicles by using signing and pavement markings (see pavement marking example on plan view drawing opposite).

- Riverfront Way (Segment 1), N 3rd Street (Segment 5), and on-street options through Segments 3 and 4 may utilize this solution.
- This solution could also be used on Winchester Avenue, if motor vehicle parking on the south side is not removed.



Note: Functional for low speed, low vehicle traffic roadways.

3. Trail Alignment and Levee Access Options



Reedspport Levee Loop Trail
Map 2: Overall Trail Options

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Segment 1: Umpqua Waterfront

Prior waterfront development, already high volumes of visitor traffic in summer months, use by larger vehicles and boat trailers, and the location of a floodwall along nearly the entire length of Riverfront Way makes this segment highly constrained. Three options are identified. All three options have identical challenges in connecting to Segment 2, but differ with respect to connecting to Segment 5. Each option utilizes Riverfront Way to a differing degree.

- **Riverfront Way** – Widened or new sidewalks with the option of bicycles sharing the roadway with motor vehicles. Pedestrian and bicycle multiuse trail would extend into the Knife River industrial property and connect to Oregon 38 through Floodgate 5.
- **Boardwalk** – Combines existing or widened sidewalks on Riverfront Way with an extended pedestrian-only waterfront boardwalk. Bicycles could share the road. Could extend into the Knife River property with additional boardwalk and a pedestrian-only pathway connecting back to Oregon 38 at Floodgate 5. This boardwalk would also be an enhancement to all Segment 1 alternatives.
- **Rainbow Plaza** – Brings trail users through the Rainbow Plaza area to Riverfront Way via sidewalk/ bicycle shared-use solution along N 3rd Street.

Levee Access

A floodwall replaces the earthen berm levee along nearly the full length of Segment 1, except for the short section of Riverfront Way that is atop the levee berm approaching Oregon 38.



Riverfront Way at Water Avenue



Riverfront Way

Connects to Segment 5 at Oregon 38 intersection and to Segment 2 trail options described later in this technical memorandum. Basic trail type is a widened sidewalk on the waterside of Riverfront Way with bicycles sharing motor vehicle lanes. Safety is improved with “share the road” signing and pavement markings. Where the southeast end of Riverfront Way turns up the earthen berm levee, a separate bicycle/pedestrian multiuse path would be extended directly into the Knife River property to Floodgate 5.

Attributes

- Established route nominally accommodating all types of users in accessing waterfront attractions.
- Existing sidewalks along some sections of Riverfront Way.

Challenges

- Rail undercrossing at Riverfront Way/Port Dock Road has sight line constraints.
- Rail undercrossing improvements for separate trail required (although distance under rail trestle is short enough for safe use of street surface).
- Suggested rail undercrossing treatment (see Chapter 5) would involve cutting into end of railroad berm (but not the levee berm) and replacing with retaining wall.
- Narrow Riverfront Way is heavily trafficked, especially during summer season, and numerous driveways also create safety issues.
- Controlling speeds of all vehicles, including bicycles, on Riverfront Way is vital in creating a safe multiuse alternative.



Riverfront Boardwalk

- Southeast section of Riverfront Way approaching Oregon 38 is on the levee crown, with little or no room to expand paved areas to accommodate pedestrians, bicycles, and motor vehicles. Bicycle and pedestrian users could instead be directed to Oregon 38 along a short multiuse trail section.
- Crossing of Oregon 38 to Segment 5 is complex and may be dependent on the future “gateway,” roadway, and intersection improvements recommended in RWDP but not endorsed by ODOT.

B Riverfront Way Boardwalk

Utilizes the full length of Riverfront Way to accommodate bicycles on-street, with pedestrians on an extended boardwalk along the waterfront.

Attributes

- Reduces congestion and potential user conflicts on Riverfront Way.
- Portion of waterfront boardwalk already constructed; expansion included in RWDP.
- Takes pedestrians directly past the river side of retail businesses and the Umpqua Discovery Center.
- Excellent views of the Umpqua River.
- Works with other all Segment 1 alternatives.

Challenges

- Boardwalk extension may be significantly more expensive on a linear-foot basis than the other Segment 1 alternatives.
- Shoreline environmental permitting will be required.
- ADA compliance may be challenging, particularly for existing boardwalk sections which do not presently have fully ADA-compliant surfaces.
- Connections back to Riverfront Way will require on-street or across parking lot routes or designated pedestrian-only pathways.
- Crossing of Oregon 38 to Segment 5 is complex and may be dependent on future “gateway,” roadway, and intersection improvements that are included in RWDP but not endorsed by ODOT.

C Riverfront Way/Rainbow Plaza

Follows along Riverfront Way from the Segment 2 connection, then crosses through the floodwall gate at the Rainbow Plaza roadway and/or Water Avenue. Integrates with planned Rainbow Plaza redevelopment, then follows N 3rd Street into Segment 5 into downtown Reedsport.

Attributes

- Avoids the constrained area atop the levee where Riverfront Way approaches Oregon 38.
- Does not require the Oregon 38 improvements in the RWDP.
- Compatible with plans for improving Rainbow Plaza and extending the waterfront boardwalk.
- Not dependent on roadway, boardwalk, or trail extensions into Knife River property.
- Bicycle traffic could be directed to Water Avenue and pedestrian traffic through Rainbow Plaza.
- Less potential for traffic and user conflicts along N 3rd Street than on Riverfront Way.

Challenges

- Option is only fully realized by development of the Rainbow Plaza improvement plan (illustrated in Technical Memorandum No. 2), although sidewalks and bicycle shared-use through the current Plaza area would be sufficient in the short term.
- Limited sight lines through floodwall gates when crossing Riverfront Way.
- No other challenges identified other than those along Riverfront Way (see other alternatives above).



Rainbow Plaza along Water Avenue

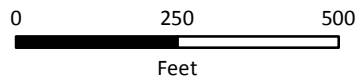
Other Options (not mapped)

- **Sidewalk/bicycle lane along full length of Riverfront Way.**
There is not enough room for separate walking and bicycling lanes and two-way motor vehicle traffic.
- **Bicycle lane along floodwall side of Riverfront Way.** Would be very unsafe, with no room for bicycles to avoid oncoming vehicle traffic.
- **Bicycle lane along Rainbow Plaza side of floodwall.**
No views of river and limits physical access to waterfront. May also conflict with future designs for Rainbow Plaza.

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Parametrix



Reedsport Levee Loop Trail
Map 3: Trail Options
Segment 1

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Segment 2: Port Dock Road

This segment includes a portion of the levee paralleling Coos Bay Rail Link, rail and highway undercrossings, and potentially wetland boardwalk or bridge sections. Four options are considered:

- **Levee Crown** – Multiuse trail along the levee crown from the northwest end of Riverfront Way to Port Dock Road, crossing under Coos Bay Rail Link and US 101, then following Port Dock Road with a multiuse boardwalk and street-adjacent trail to Champion Park.
- **Levee Crown Alternate No. 1** – An abandoned spur rail line parallels the levee along McIntosh Slough between Myrtle Avenue and Port Dock Road. This route is currently used as a levee maintenance access road.
- **Levee Crown Alternate No. 2** – Aligns trail along improved levee paralleling US 101.
- **On-Street** – The RWDP recommended following City streets with shared-use, sidewalks/bicycle lanes and/or street-adjacent trail sections from Riverfront Way to Oregon 38 and then to US 101. Sidewalk and bicycle lane improvements on Oregon 38 are scheduled for 2016. This alternative is discussed further on page 17.

Levee Access

Riverfront Way/Port Dock Road

Combined rail undercrossing and levee access solutions are discussed in Chapter 5.

McIntosh Slough

On the southwest side of the McIntosh Slough, a side approach ramp at Myrtle Avenue/N 7th Street accesses the levee where the trail turns northwest and away from Coos Bay Rail Link.



Levee Crown

Levee Crown option connects with Segment 1 through the railroad undercrossing along the Umpqua River shoreline (see Chapter 4). Follows levee section that first parallels Coos Bay Rail Link, then turns northwest along McIntosh Slough. Boardwalk or bridge section crosses under elevated US 101 bridge approach and then crosses Port Dock Road at grade. Follows northwest side of Port Dock Road using multiuse boardwalk and street-adjacent trail to existing levee access ramp at Champion Park near Oregon 38/US 101 intersection.

Attributes

- Utilizes the available earthen berm levee for approximately 70 percent of the length of this trail segment. Balance of trail segment is on multiuse boardwalk or street-adjacent trail.
- Keeps trail users entirely off of roadways, except for crossing of Port Dock Road.
- Provides for good views and nearby access to McIntosh Slough, including a possible non-motorized boat launch site. Trail option proposal includes a short connector trail to launch site.
- Directly accesses the future “Mast” mixed-use redevelopment site.
- Existing access ramp from Port Dock Road to Champion Park section of levee may only need surfacing and other minor improvements.

Challenges

- This entire section of the levee is privately or rail owned. Trail development permissions or land acquisition would be required.
- Boardwalks and bridges under US 101 and along Port Dock Road would require wetland permitting and would be relatively expensive.
- Street-adjacent trail section along Port Dock Road may require modification to existing industrial parking lot entrances.
- Grade and side slopes as Port Dock Road approaches Champion Park will challenge ADA compliance.
- Port Dock Road in this area is subject to periodic flooding.



Levee along Coos Bay Rail Link

B Levee Crown Alternate No. 1

The lower elevation abandoned rail spur that parallels the levee between Myrtle Avenue and Port Dock Road could be used as an alternate to a trail on the levee crown.

Attributes

- Better avoids wetland impacts.
- Doesn't require boardwalk or bridge sections.
- Closer to the proposed boat launch site under the US 101 bridge.
- Rail bed already in use as maintenance access.
- Could combine with Levee Crown option, using last 400 feet of this No. 1 alternative to cross under US 101.

Challenges

- Places trail outside of levee flood protection.
- Closer to major bend in Port Dock Road, potentially increasing sight line issues.
- Existing rail bed would have to be modified to remove old rail ties and be widened in sections.



Spur Rail Alternate

C Levee Crown Alternate No. 2

This alternate follows the Levee Crown option under US 101 to Port Dock Road but turns and stays atop the levee section separating Port Dock Road and US 101. This alternate is only feasible if the levee through this area is significantly upgraded. USACE has indicated this is an area of significant concern over levee settling and prior alterations. The City's current levee certification study has preliminarily

indicated that major rebuilding of this levee section would be required.

Attributes

- Keeps the trail atop the levee crown for almost the entire length of this segment.
- Avoids some requirements for ramp/boardwalk/bridge improvements to cross wetlands under and around US 101 bridge approach.
- Wetland mitigation would be taken care of as part of levee improvements.
- Avoids steeper grade, side slope, and ADA-compliance issues along Port Dock Road with street adjacent trail or on-street solutions approaching levee around Champion Park.
- On-street interim solution along Port Dock Road using signing and pavement markings would be acceptable until levee is improved.

Challenges

- Alternate is not feasible until levee between Port Dock Road and US 101 is upgraded.
- Levee Crown and Levee Crown Alternate No. 1 solutions for approaching and crossing Port Dock Road are not needed for Alternate No. 2, and would be redundant if built, thus entire trail section from Coos Bay Rail Link to Champion Park may have to be deferred until levee is upgraded.
- Will bring trail very close to and in some sections above grade of US 101, with resulting highway noise and fume impacts.
- May require power pole relocation.



Levee between US 101 and Port Dock Road

D On-Street

This on-street option is primarily as illustrated in the RWDP. Connects to Segment 1 at intersection of Riverfront Way and East Railroad Avenue. Follows East Railroad Avenue with either shared-use, sidewalk/bicycle lane improvements, and/or street adjacent multiuse trail. Crosses to southwest side of Oregon 38, then crosses US 101 at signalized intersection and connects to Segment 3.

Attributes

- Avoids improvements, special permitting, and land acquisition for rail undercrossing at Riverfront Way/Port Dock Road.
- Avoid special permitting for boardwalk sections along Port Dock Road.
- Oregon 38 will be improved in 2016 with sidewalks and bicycle lanes all the way to US 101.

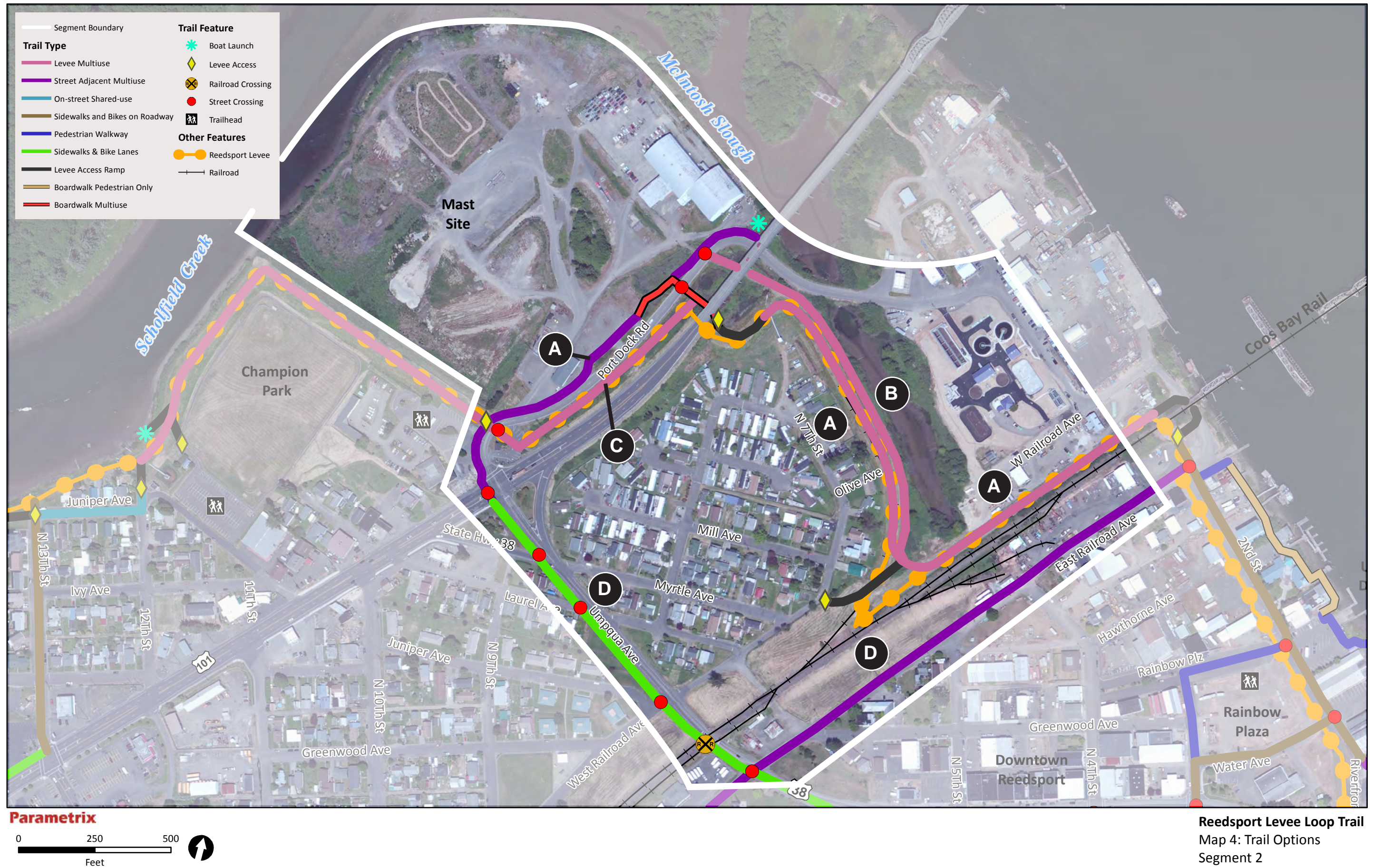
Challenges

- This alternative does not use the levee at all, instead the route is entirely on or along streets. Eliminates 4,500 linear feet of potential trail atop the levee.
- No particular scenic value anywhere along this option – entirely urbanized.
- Would have to cross both Oregon 38 and US 101 at grade.
- New Oregon 38 crossing would be required.



East Railroad Avenue Alternate Route

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Segment 3: Champion Park

This trail segment starts at Port Dock Road near the Oregon Dunes Visitor Center. The west end of the segment is N 13th Street/N 14th Street. Other than using local residential streets, the only viable permanent trail option in this segment is routing around Champion Park atop the levee. One short shared-use street section along one block of Juniper Avenue is recommended.

Levee Access

Port Dock Road

The existing levee access ramp from Port Dock Road near the Oregon Dunes Visitor Center would be suitable with some improvements. Signing and road surface markings or different paving treatments would be required across the entry to the Visitor Center parking lot to assure safety for trail users accessing the levee from US 101.

Champion Park

In addition to, or in place of, the proposed N 12th Street levee access (see below). Could reduce informal access to levee crown by providing for a ramp into the park close to restrooms and the designated dog exercise area.



Champion Park Ramp Site

N 12th Street

Between N 12th Street and N 13th Street, the earthen berm levee is replaced by a floodwall. The LLT will have to transition off the levee at N 12th Street and back onto the levee at N 13th Street. ADA requirements would be met by extending the existing levee access ramp at N 12th Street and Champion Park to reduce grades and adding asphalt paving. Alternatively, the current higher challenge ramp grade could be maintained and ADA compliance achieved by using intermittent landings.

A Levee Crown Attributes

- Only viable multiuse trail option in this segment.
- Levee section along Scholfield Creek is owned by the City.
- Close to recreation opportunities and facilities at Champion Park.
- Excellent views of Scholfield Creek and wooded shoreline and hills on opposite bank.
- Opportunity for shared-use trailheads with existing facilities at Oregon Dunes Visitor Center and at Champion Park.



Floodwall by 13th Street Ramp Site

Challenges

- Levee section along the north side of Champion Park is on private property. Use permissions or acquisition would be required.
- Proximity to Champion Park may motivate park users to blaze pathways up levee slopes. Directional and warning signing would be needed to direct users to formal levee access points.
- Benches and viewing area atop levee near N 12th Street already attracts user activities that are reported as conflicting with the adjacent neighborhood.

B

Shared-use

Earthen berm is replaced by floodwall between N 12th and N 13th Streets. A short shared-use trail section along one block of Juniper Avenue replaces the levee crown trail at this point. Older sidewalks are in place.

C

On-street

An on-street trail section using existing sidewalks paired with bicycle shared-use is possible. This route shares the boundary with Segment 4 and follows N 13th Street, then parallels a section of US 101 with full bicycle lane and sidewalk improvements to the signalized Winchester Avenue intersection (in Segment 4).



Levee Gate at Port Dock Road

Attributes

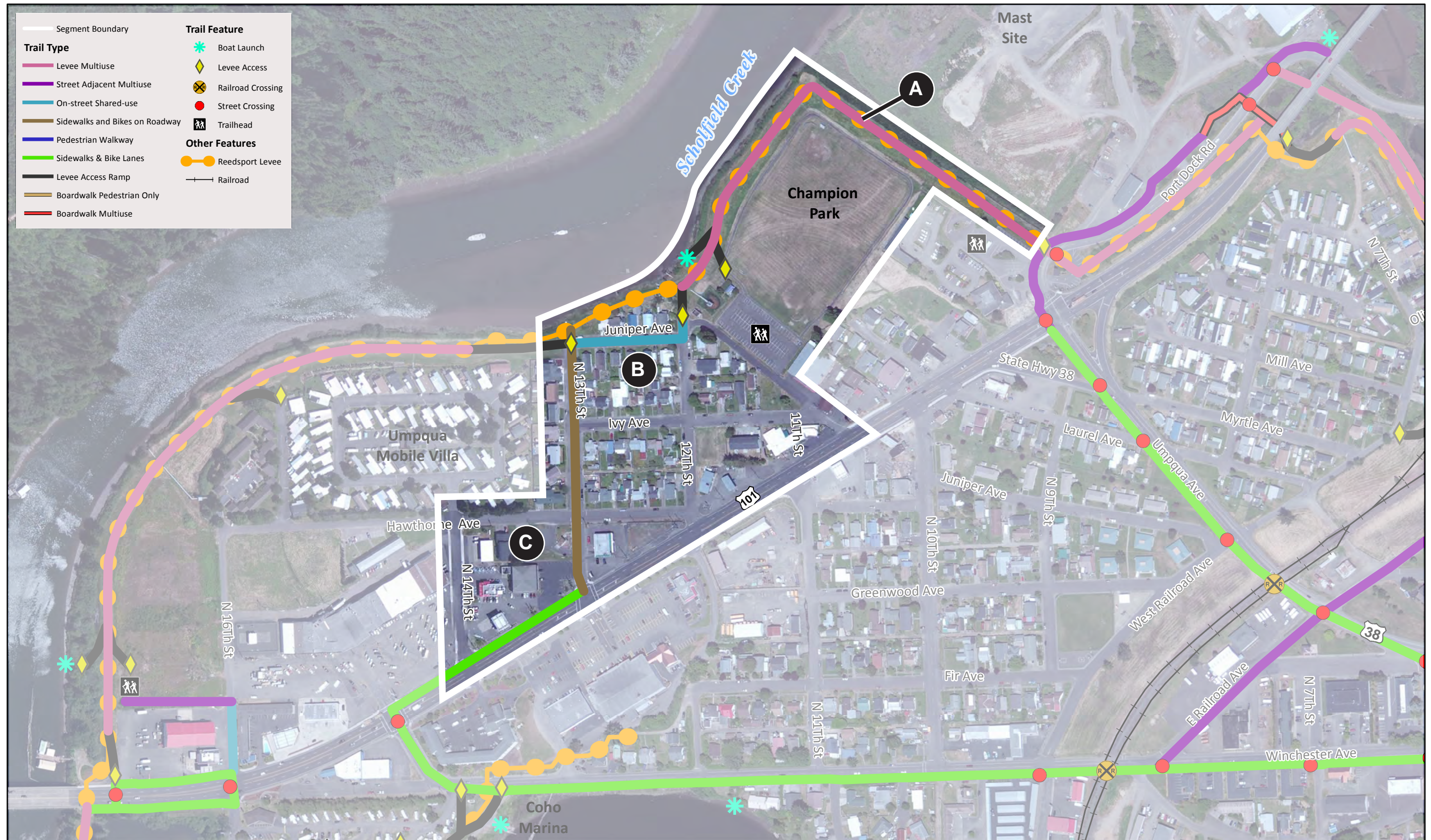
- Lowest cost trail alternative.
- Uses existing signalized crossing of US 101.

Challenges

- Does not use levee at all.
- Motor vehicle traffic on US 101 could reduce the trail user experience.

Other Options (not mapped)

- **Shoreline multiuse or pedestrian-only boardwalk between N 12th Street and N 13th Street.** Flood protection is presently provided by a floodwall in this section. USACE has concerns about the structural integrity of the wall, and a boardwalk would involve complex environmental permitting and construction.
- **Trail through Champion Park.** An existing paved perimeter pathway follows the toe of the interior levee slope, but would have to be widened to meet multiuse standards. This pathway could also serve as an interim trail route until the levee crown trail is built (see Chapter 6).



Parametrix

Reedsport Levee Loop Trail
Map 5: Trail Options
Segment 3

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Segment 4: Scholfield Waterfront

Segment 4 includes the residential and commercial areas west of N 13th Street and N 14th Street. The segment crosses US 101, and the levee encloses the area south of the highway occupied by a lagoon and Coho RV and Marina. Other than on-street solutions (discussed in more detail below and under Segment 3), the only viable alternative in this segment both north and south of US 101 is a multiuse trail on the levee crown along Scholfield Creek. The “south” levee trail section would connect to the west end of Segment 5 at Winchester Avenue.

The RWDP illustrates a spur trail along a portion of the levee but only from N 13th Street to the approximate line of N 16th Street. The RWDP recommended sidewalks/bicycle lanes or shared-use as the permanent trail solution for this area along N 13th Street, Hawthorne Avenue, and N 14th Street with a short section on US 101, then crossing to the south side of US 101 at the signalized Winchester Avenue intersection. The City’s current pedestrian safety study recommends US 101 crossing improvements at N 13th Street.

Levee Access

N 13th Street

The existing earthen levee ramp at this location would be suitable with paving improvements.

Near N 16th Street

An unnamed private road between Umpqua Mobile Villa and a multiuse housing development is an opportunity to develop a new side approach ramp about halfway between N 13th Street and US 101. This road appears to be on the Mobile Villa property and use permissions would be required.

US 101 Scholfield Creek Bridge

Crossing of US 101 at the west end of the LLTP study area is necessary to achieve a loop trail using the maximum length of the levee. Crossing solution opportunities and challenges are discussed in Chapter 4. For access on and off the levee, the three options are:

- Side approach ramp (north side of highway) along driveway access to Les Schwab Tires.

- Existing bicycle lane and sidewalk along US 101 (south side) connecting to presently uncontrolled highway crossing at N 16th Street.
- Side approach ramp behind Les Schwab Tires connecting to a proposed trailhead, then following a short multiuse trail section to N 16th Street. Shared-use along N 16th Street to crossing of US 101, then follows existing sidewalk and bicycle lane along highway back to levee.

Winchester Avenue

Levee trail connection options to Winchester Avenue on the east side of Coho RV are complex. Three possibilities are identified and further discussed in Chapter 4.

- Approach ramp on west side of the levee along driveway access to Coho RV.
- Side approach ramp on immediate east side of levee along driveway access to Coho Marina.
- Ramps on both sides of the levee connecting Coho RV directly to Coho Marina. Private driveways on both sides of levee would be used to connect trail users to Winchester Avenue.

A Levee Crown Attributes

- Only viable multiuse trail alignment option in this segment.
- Combined with Segment 3, provides approximately a continuous 13,000-linear-foot trail atop the levee.
- Excellent views of Scholfield Creek and wooded shoreline and hills on opposite bank.
- Directly accesses Umpqua Mobile Villa and Coho RV and Marina.
- Levee north of US 101 is owned by City.
- Vacant land along Scholfield Creek immediately north of US 101 could be acquired for new trailhead.

Challenges

- The closest signalized crossing of US 101 is at Winchester Avenue, approximately 1,000 linear feet east of the levee. Routing of bicycle and pedestrian traffic to this crossing point and then back to the levee alignment would be difficult to enforce.

- Proximity to Umpqua Mobile Villa, Coho RV, and multifamily housing development may motivate residents to blaze pathways up levee slopes. Directional and warning signing will be needed to direct users to formal levee access points.
- Early results from City's levee recertification study indicate that extensive and possibly complex levee improvements may be required close to US 101. May further challenge highway crossing options.
- Coho RV owns levee south of US 101 but in early project outreach has indicated support for trail development.

Other Options (not mapped)

- **On-street alignment along Hawthorne Avenue to N 16th Street.** Provides none of the attributes of the Levee Crown option nor solves the US 101 crossing challenge.
- **Undercrossing of the US 101 Scholfield Bridge.** Extremely complex and costly design and engineering challenge with multiple environmental and special construction permitting requirements.

Has potential ADA compliance challenges in constructing ramps down to the bridge undercrossing; there may be user personal safety concerns with an undercrossing; may require relocation or removal of existing property improvements; and could be impassable in some high water events.

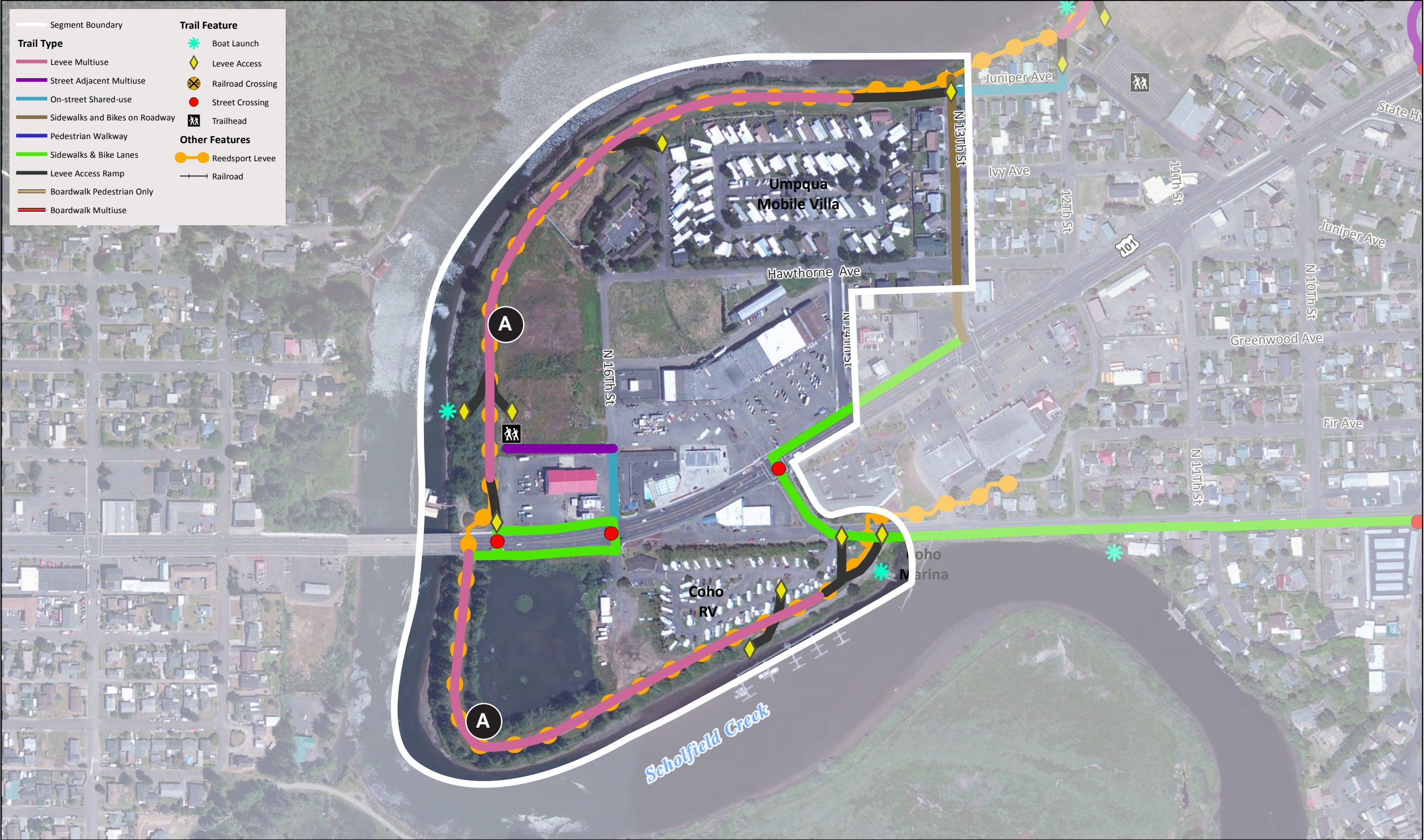
- **Curved approach ramp closer to creek bank (north side) of highway.** This option will be challenged by the driveway access to a floating home on the creek at this location. Based on information provided by the City, the levee improvements needed to meet probable FEMA accreditation requirements will limit or eliminate the feasibility of this ramp option. In addition, this approach would be closer to the US 101 bridge, possibly increasing ODOT concerns over any new highway crossing in this area.



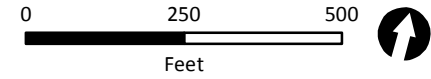
Levee behind Umpqua Mobile Villa



Levee behind Coho RV



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Reedsport Levee Loop Trail
Map 6: Trail Options
Segment 4

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Segment 5: Winchester Avenue

Segment 5 is divided into two maps reflecting the differences in suggested LLTP west end and east end solutions. Prior City trail plans (TSP and RWDP) did not identify off-street trail alternatives anywhere in this segment.

Segment 5 extends from Floodgate 7 on Winchester Avenue near Coho RV to downtown Reedsport and Oregon 38. The section from Floodgate 7 to the Coos Bay Rail Link crossing—termed “West” below—is recommended for a single solution: bicycle lanes and sidewalk. After crossing the rail line, two options are mapped: continuation along Winchester Avenue (termed “East”) or shifting one block north along East Railroad Street to connect the downtown “main street”—Oregon 38/Fir Avenue (termed “Fir”).

Levee Access

Winchester Avenue at Coho RV

This levee access is detailed in Chapter 4.

A Winchester West

Widened bicycle lanes and a new sidewalk along Winchester Avenue between Floodgate 7 and N 12th Street would be required. “No Parking” signing along south side would increase safety and provide more area for bicycle lane and sidewalk improvements. If vehicle parking is retained, traffic speed controls and shared-use lane markings would be needed to increase safety.

Attributes

- No other viable multiuse trail option.
- Excellent views of Scholfield Creek, and wetlands and wooded hills on the opposite bank.

Challenges

- At west end of this section near Coho RV, the narrow Floodgate 7 highly constrains possible bicycle lane or sidewalk safety improvements.
- Winchester Avenue is a perfectly straight collector roadway, and even with bicycle lane and sidewalk improvements, or signing and pavement markings for shared-use, safety may be impaired by speeding motor vehicles.
- New sidewalks may require retaining walls along Scholfield Creek, potentially complicating permitting.



Creek along Winchester Avenue

B Winchester East

Sidewalks are already in place along both sides of this section of Winchester Avenue. There are also striped off areas on both sides of Winchester Avenue that are wide enough for adequate bicycle lanes. These areas are used for motor vehicle parking. As with Winchester West, the removal of vehicle parking on the south side would be needed to provide a safe and functional bicycle lane. As Winchester Avenue is designated as a collector roadway, shared-use is not recommended.

Attributes

- Passes directly through the greatest concentration of government buildings and public services in the downtown area.
- Lower volumes of motor vehicle traffic than on Fir Avenue/Oregon 38.
- Can connect along N 3rd Street to the Riverfront Way/Rainbow Plaza trail option in Segment 1.

Challenges

- Bypasses downtown businesses. Wayfinding signing, informational kiosks and other methods would be needed to direct trail users to businesses and services on Fir Avenue.
- Direct connection from Winchester Avenue to Riverfront Way (Segment 1) is dependent on intersection improvements at Oregon 38. Connection challenges across Oregon 38 to Segment 1 are further discussed in Chapter 4.

- Motor vehicle parking on south side would have to be removed to create safe and fully functional bicycle lanes.

C Fir Avenue

Follows East Railroad Avenue with street adjacent multiuse trail from Winchester Avenue to Oregon 38/Fir Avenue. Bicycle lane and sidewalk improvements from East Railroad Avenue to N 6th Street are scheduled for 2016, and will connect to existing bicycle lanes and sidewalks between N 6th Street and N 3rd Street.

Attributes

- Trail users will pass right by downtown retail businesses and services.
- Bicycle lanes and sidewalks are in place or scheduled for construction along Oregon 38/Fir Avenue between East Railroad Avenue and N 3rd Street.
- Existing crosswalks across Oregon 38/Fir Avenue provide safer access to the Riverfront Way/Rainbow Plaza trail option (Segment 1).
- Option can connect along N 3rd Street to Riverfront Way/Rainbow Plaza.
- The RWDP recommends pedestrian crossing improvements including user-activated beacons at intersection of N 3rd Street and Fir Avenue. The yet-to-be-adopted City pedestrian crossing study recommends curb extensions, pedestrian crossing signage, and improved street lighting.
- Not dependent on future intersection improvements to Oregon 38 at Riverfront Way.

Challenges

- Requires new street-adjacent trail to East Railroad Avenue from Winchester Avenue to intersection with Oregon 38.
- The area of intersection of East Railroad Avenue, Fir Avenue, Oregon 38 and N 6th and N 7th Streets is very complex and is not recommended for an on-street solution. Broad paved areas may make safe and distinct bicycle and pedestrian ways a challenge to design.

- Motor vehicle traffic volumes, speeds, and noise may be greater on Fir Avenue/Oregon 38 than on Winchester Avenue.



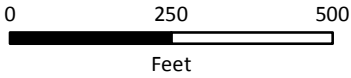
Fir Avenue at 4th

Other Options (not mapped)

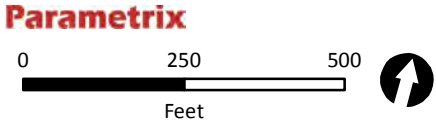
- **Multiuse boardwalk along Winchester West.** Environmental permitting will be required for a boardwalk along Scholfield Creek. This solution could be more expensive than bicycle lane and sidewalk improvements, and a boardwalk would not offer appreciably better creek views than on-street improvements. Pedestrian-only boardwalk combined with bicycle lanes is another option.
- **Shared-use along Elm Street.** This local street route would be quieter and have lower traffic volumes and speeds than Winchester Avenue or Fir Avenue, but is one or two blocks further removed from government offices and downtown business, has some topographical challenges not found elsewhere in the LLTP study area, and the resulting higher volume bicycle traffic might not be welcome in the neighborhood.



Parametrix



Reedsport Levee Loop Trail
Map 7: Trail Options
Segment 5 West



Reedsport Levee Loop Trail
Map 8: Trail Options
Segment 5 East

4. Trail Crossing and Segment Connection Options

Roadways

Points where the trail will cross roadways are indicated with red icons on segment maps. Marked crossings are primarily four-way intersections, major roadways, or those using special crossing treatments. Crossings of local roads or three-way intersections are typically not marked.

The City, in partnership with ODOT, is in the final stages of a pedestrian crossing study to improve safety at key highway and city street intersections. The recommended improvements impacting the LLT are noted under the preceding Chapter 3 and in this Chapter 4. Please refer to the pedestrian study for further details on the following sites.

- Segment 2: US 101 at Oregon 38
- Segments 3/4: US 101 at N 14th Street
- Segments 4/5: US 101 at Scholfeld Bridge (3-lane highway conversion only)
- Segment 5: Oregon 38 at N 3rd Street

Other adopted City plans (TSP and/or RWDP) suggest major “gateway” improvements on Oregon 38 at the intersection with Riverfront Way and Winchester Avenue (Segments 1 and 2), and an improved bicycle/pedestrian crossing of US 101 at Scholfeld Bridge (Segment 4). ODOT has not endorsed or approved these two improvement concepts.

Segment 1 to Segment 5

Two options are considered for connecting Segment 1 and Segment 5:

Oregon 38 at Winchester Avenue/N 2nd Street

A direct connection of Segments 1 and 5 (Riverfront Way and Winchester Avenue) requires a crossing of Oregon 38. This connection is complicated. The highway, three roadways, and an industrial access driveway through Floodgate 5 all intersect at this point. There is presently not even a marked crosswalk from Winchester Avenue or N 2nd Street across Oregon 38 to Riverfront Way (Segment 1).

The 2006 TSP recommends crosswalk striping in this location. The 2013 RWDP suggests signalization, gateway feature improvements, disconnecting the



Riverfront Way from Winchester Avenue

nearby intersection of N 2nd Street and Winchester Avenue, and rerouting the driveway access to the Knife River industrial site. The RWDP indicates that ODOT has not endorsed these intersection improvements, even conceptually, and this area is not addressed in the current pedestrian crossing study. The full range of improvements recommended in the RWDP would be considerably more expensive than the N 3rd Street segment connection (see next section of this chapter).

Map 9 below illustrates a conceptual trail crossing alignment option. Full engineered design of this intersection must precede actual trail improvements and will dictate the final trail crossing solution. In addition to modified existing streets, an extension of Riverfront Way bicycle and pedestrian facilities into the Knife River property or a connection to the Umpqua River boardwalk is also possible.



Map 9. Oregon 38 at Winchester/N 2nd Street



Umpqua River Bridge and Port Dock Road

Use of this area as the LLT crossing solution connecting Riverfront Way to Winchester Avenue is not recommended unless RWDP suggested Oregon 38 intersection improvements are first made.

N 3rd Street at Fir Avenue

The alternative to crossing Oregon 38 as described above is routing trail users traveling on Winchester Avenue, Riverfront Way, and Fir Avenue through the Rainbow Plaza area via N 3rd Street. See Map 10 below. This option is also functionally part of the Riverfront Way/Rainbow Plaza trail option for Segment 1, or could be part of an on-street interim

solution until Oregon 38 intersection improvements are constructed.

This alternative would cross at the presently unsignalized N 3rd Street intersection of Oregon 38/Fir Avenue. Motor vehicles at N 3rd Street may be traveling more slowly than at the Winchester Avenue/N 2nd Street intersection. Sight lines are also better.

The RWDP recommends a pedestrian-activated flashing beacon at N 3rd Street to improve safety. The pedestrian crossing study recommends curb extensions, pedestrian crossing signing, and improved street lighting.

Crosswalks are marked at N 3rd Street and other downtown street intersections with Oregon 38/Fir Avenue (4th, 5th and 6th). ODOT indicates these crosswalks are not warranted based on current traffic volumes.

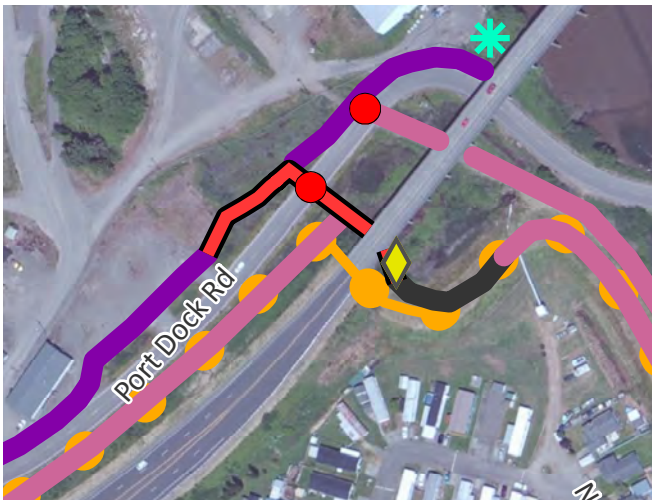


Map 10. N 3rd Street at Fir Avenue

Segment 2: US 101 at Port Dock Road

The Levee Crown option and Levee Crown Alternates No. 1 and 2 cross under the approach ramp to the historic Umpqua River US 101 bridge to Port Dock Road. Port Dock Road is classified as a local street, but given industrial motor vehicle traffic and poor sight lines created by the curves in this roadway under and parallel to the highway, a crosswalk with bicycle/pedestrian warning signs would improve safety.

The trail from the Levee Crown option under US 101 to the grade of Port Dock Road would use short sections of multiuse boardwalk or a short multiuse bridge to lessen impacts on the wetlands created in this area by prior roadway impoundments. Map 11 illustrates trails routes and types through this area.



Map 11. US 101/Port Dock Road Crossings

Segment 4: US 101 at Scholfield Creek

An improved crossing of US 101 at this point is needed to develop a trail using the levee. The nearest signalized crossing of US 101 is approximately 1000 feet to the east at Winchester Avenue, too far up and back to reasonably expect levee trail users to follow such a detour. Although there are sidewalks and bicycle lanes along both sides of US 101 between Winchester Avenue and Scholfield Creek, it is likely that most trail users will simply wait for a gap in highway traffic and cross near the creek, as is commonly done by walkers at present.

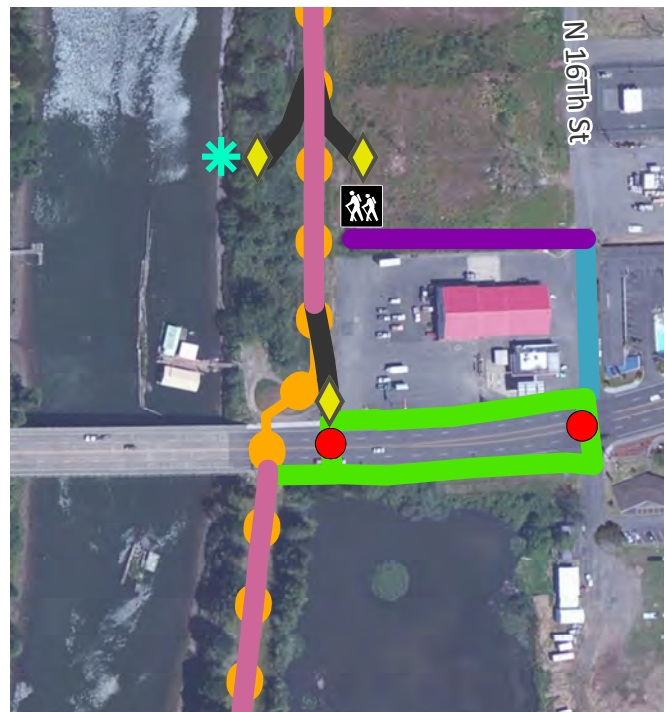
The 2006 TSP identified the need for marked crosswalk, raised center refuge island, and pedestrian activated signal for safely crossing US 101 at Scholfield Creek. ODOT has indicated that approval of a new highway crossing at this location is problematic.

TSP Recommended US 101 Crossing Site –
16th Avenue near Scholfield Bridge

The pedestrian crossing study does not discuss crossing improvements but does recommend a lane conversion from the present five lanes to three lanes between the Scholfield Bridge and N 16th Street. This should improve safety for bicyclists and pedestrians choosing to cross at this point even in the absence of the RWDP-recommended improvements.

Map 12 illustrates three potential crossing levee access solutions:

- The solution along US 101 to N 16th Street, although about half of the “up and back” distance as compared to a Winchester Avenue highway crossing, may still be too far out of direction to eliminate trail users simply continuing to jaywalk at the levee.
- The direct crossing at US 101 at the levee solution will have to accommodate necessary improvements to the levee on the north side of the highway.
- The solution routing trail users across the backside of Les Schwab Tires then along N 16th Street to US 101 best connects to a proposed trailhead in this area. N 16th Street is probably the least safe US 101 crossing location given very poor sight lines to oncoming southbound highway traffic.



Map 12. US 101/Scholfield Creek Crossing

Segments 4 and 5: Coho RV at Winchester Avenue

The levee wraps around the exterior of Coho RV and intersects with Winchester Avenue in the vicinity of Floodgate 7. There is an RV park access driveway just west of the floodgate. A second driveway along the creek side (east of Floodgate 7) accesses the Coho Marina.

Floodgate 7 interrupts the existing sidewalks on both sides of Winchester Avenue and narrows bicycle and motor vehicle travel lanes. This forces walkers, bicycles and motor vehicles to temporarily share the road through the floodgate.

Two ramp alternatives accessing the levee directly from Winchester Avenue are shown (see Map 13): one on the interior side of the levee and one on the creek side. A solution using a ramp on both sides of the levee would completely eliminate the need for bicycle and pedestrian traffic to pass through Floodgate 7.

- The interior ramp option along the RV park driveway will have to be sited carefully to avoid conflicts with the driveway.
- The creek side option may require a retaining wall to support the ramp and/or shifting of the marina access driveway by using a retaining wall along the creek to maintain adequate access. The shift in the driveway may also require changes to the private boat launch approach and ramp in this location.
- A third levee access option includes ramps on both sides of the levee at some distance from Winchester Avenue. One ramp would connect to a private access road within Coho RV, the second would connect to the private Coho Marina driveway in the vicinity of the small boat harbor. Permission from Coho RV would be required. The ramp into the RV park would probably eliminate two RV spaces.



Floodgate on Winchester Avenue near Coho RV Park and Marina



Map 13. Winchester Ramp Option

Railways

Segments 1 and 2: Riverfront Way/Port Dock Road

Without this rail undercrossing, approximately 6,500 linear feet of levee could not be used for the trail alignment.

The undercrossing alignment option is shown on Map 14. An elevated pathway improvement would go under the rail trestle and around the toe of the rail bed slope (see the photograph below). The existing route would cut into the retaining slope of the rail bed. The retaining slope would be replaced by retaining walls. This solution then accesses the levee running parallel to the rail line up an improved straight approach ramp.



Rail Trestle under Crossing

A second undercrossing concept was considered using a multiuse boardwalk along the shoreline under the railroad bridge trestle. This option would require an immediate crossing of Port Dock Road to access the levee ramp in an area of poor sight lines. It would also route trail user traffic across the entrance to an existing boat launch ramp, potentially creating conflicts.

Coos Bay Rail Link will be the ultimate decision maker with respect to any alterations to the rail berm or trestle. ODOT Rail may also have to approve alterations.

Absent the foregoing suggested undercrossing improvements, the section of roadway under the rail trestle is short enough and traffic volumes typically

low enough (truck traffic is not permitted) that a shared-use solution would be reasonably safe on an interim basis. Bicycle/pedestrian warning signs and pavement marking would be required.



Map 14. Coos Bay Rail undercrossing

Segments 2 and 5: Umpqua Avenue/Oregon 38 and Winchester Avenue

These rail crossings have been recently upgraded with new sidewalks within the rail right of way. Further improvements may be necessary to fully accommodate safe movements by bicyclists and pedestrians, especially with the higher volumes that will come if these street sections are part of a functioning LLT.



Railroad Crossing at Winchester Avenue

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5. USACE Levee Requirements

A central LLTP objective is to identify a preferred long-term trail alignment atop the earthen berm levee that protects the City's downtown and surrounding neighborhoods from flooding. The LLTP study area is primarily within areas protected by this levee, except for the waterside of Riverfront Way (Segment 1), northwest of US 101/Port Dock Road and Champion Park (portion of Segment 2), and Winchester Avenue between Floodgate 7 and approximately N 11th Street (Segment 5).

To maintain flood insurance eligibility for the area within the 1968 levee, the levee must be adequate to meet flood control requirements. The Federal Emergency Management Agency (FEMA) provides accreditation (formerly called certification) for the levee on an intermittent basis. The levee was last accredited in 2010, and a new accreditation is scheduled for 2015 or 2016. The City is currently conducting a comprehensive assessment of the levee with respect to probable accreditation improvements.

The City of Reedsport has jurisdiction over potential encroachments upon the 1968 levee, including those envisioned by the LLTP. These include paved trail pathways and access ramps, and possibly trail amenities such as signing, interpretive facilities, benches, etc. In developing the LLT, the City must assure compliance with USACE levee safety and structural integrity requirements and limitations. This is accomplished through a Section 408 permitting process.

408 Permitting

As reported in Technical Memorandum No. 2, USACE permits levee alterations through a Section 408 process. This permitting process previously had two levels: "Minor" and "Major." Subsequent input received from USACE at this Conceptual Trail Options stage indicated that there is a new Section 408 policy guideline. This new guideline effectively does away with Minor permits, the permit type that was previously expected to apply given the "levels of modification" required for the levee trail alignments and access structures identified in this Technical Memorandum No. 3.

The improvements planned for the LLT would likely be subject to a National Environmental Policy Act (NEPA) assessment, in addition to other typical environmental permitting. This new policy is numbered 1165-2-216. The link to the USACE website is http://planning.usace.army.mil/toolbox/library/Ecs/EC_1165-2-216.pdf. USACE has cited possible trail and levee improvements impacting wetlands and streams, and the trail route along McIntosh Slough, as probable NEPA "triggers."

USACE Conceptual Review

USACE regulatory and engineering staff have informally reviewed possible trail alignment considerations, concepts and treatments identified in Technical Memorandums Nos. 1 and 2 and also met with project and city staff to review this Technical Memorandum No. 3. USACE is represented on the Project Advisory Committee. LLTP review by USACE is a courtesy and not binding. Formal review and approval of trails plans will be subject to Section 408 permitting and based on actual engineered design of trail sections and access structures. USACE has provided the following preliminary input:

Levee Settling

The 1968 levee has settled to varying degrees in different locations. The addition of a multiuse trail to the levee crown may increase the rate or number of locations experiencing settling. This factor should be evaluated and taken into consideration in trail design and engineering. Sheet pile floodwalls near Juniper Avenue (Segment 3) have also settled, and this should be taken into account in trail location and design. The City's 2015 levee accreditation assessment study will provide more specific information on settlement locations and causes.

Informal Use of the Levee

USACE expressed general concern about damages and liability from people "pioneering" access up to the crown of the levee, particularly in areas with concentrated adjacent uses and activities such as parks and denser residential developments. The establishment of designated and improved levee access points should reduce these problems.

Floodgate Control Structures

Trail design and engineering, including levee access ramps, should assure that the integrity of existing levee closure structures (such as floodwall gates where roadways interrupt the berm levee) are maintained or that the control structures are appropriately reconstructed if impacted by trail improvements.

Levee Access Options

Levee access points, whether designed and engineered as an outcome of the LLTP, or pioneered by the already considerable informal use of the levee for walking and biking, will concentrate “wear and tear” on the levee. Designed and engineered accesses should be sited to provide clear and convenient alternatives to “created” access points. The conceptual locations for the levee accesses proposed in this Technical Memorandum No. 3 consider current use patterns.

Engineered access points must also comply with ADA requirements, and be constructed so that the original levee will not be structurally compromised, such as by cutting into the levee prism. Paved surfaces should be designed to withstand maintenance vehicle loads.

USACE staff reviewed an early draft of Technical Memorandum No. 3 and had comments on the following possible trail options, locations and treatments. USACE did not take issue with the overall conceptual alignments or trail types proposed, but did have some site specific concerns. In general, all the improvements listed below would be subject to Section 408 permitting but some permits may be issued out of the Portland USACE office rather than at the national level.

- **Widening of levee berm along Riverfront Way near Oregon 38 (Segment 1).** Roadway is narrow in this section. To allow safe joint use by walkers, bicyclists and motor vehicles, levee and road widening could be required. USACE indicated that the widening for transportation purposes would have to be designed and built to meet flood levee standards.
- **Undercrossing of Coos Bay Rail Link at Riverfront Way and Port Dock Road (Segments 1 and 2).** A determination would have to be made as to whether the retaining slope for the rail bed that would be cut into and replaced by a retaining wall was part of the flood levee. This could make a difference in design and permitting.
- **Transition of trail from paralleling Coos Bay Rail Link to paralleling McIntosh Slough (Segment 2).** The levee at this point makes a sharp cutback. The proposed levee trail alignment suggests a wide curve for the purposes of best accommodating bicycle traffic. This curve may require a levee expansion meeting all flood levee standards.
- **Levee along Port Dock Road (Segment 2).** The levee between Port Dock Road and US 101 is one possible trail alignment. The City’s current levee accreditation study has preliminarily indicated that major rebuilding of this levee section would be required. USACE identified concerns with construction methods through wetlands and drainage areas under US 101, and the condition of the original levee due to bridge/highway “overbuild” and the possible impacts of additional encroachments (e.g., a trail). Levee improvements would have to be included before this section could be used for the trail.
- **Crossing of US 101 near Scholfield Creek (Segment 4).** USACE had no general issues with this highway crossing but did note that the crossing option close to the creek would impact an area where considerable levee repairs and upgrades may be required. Levee improvements will have to be completed before this particular trail ramp and crossing alternative could be constructed.
- **Levee access from Winchester Avenue at Floodgate No. 7 (Segment 5).** As per earlier USACE comments based on Technical Memorandums Nos. 1 and 2, the solutions for levee access in this location cannot impair the functioning of the floodgate. The ramp and retaining wall alternatives on the creekside of the levee would also have to be designed and built to meet flood levee standards.

6. Other Trail Options and Facilities

Interim Trail Routes

Local streets with lower motor vehicle speeds and traffic volumes or with existing bicycle lanes and sidewalks may be acceptable as interim solutions while phases of the levee trail are being constructed. Map 15 (page 45) shows streets that, with the addition of street markings and signing, or the use of existing bicycle lanes and sidewalks, could temporarily provide connectivity until specific levee trail sections are developed.

Unimproved sections of the levee crown will effectively act as interim options suitable for use by walkers and some bicyclists, in much the same manner as presently used by Reedsport residents and visitors. Interim improvements on the levee crown could be made using a geotextile layer covered by two sizes of base rock. This would also reduce levee crown wear and tear.

Segment 1: Riverfront Way

Riverfront Way as presently improved could continue to suffice for through and destination bicycle and pedestrian traffic to the Umpqua Discovery Center and area commercial and visitor services.

Segment 2: East Railroad Avenue

Shared-use down East Railroad Avenue between Riverfront Way and Oregon 38 is a possibility, but this interim solution would still require users to travel along Oregon 38/Umpqua Avenue to US 101. A new crossing of Oregon 38, and installation of the new pedestrian and bicycle facilities along Oregon 38 scheduled for 2016, would be necessary to ensure adequate user safety. Shared-use on Oregon 38 is not an option due to high speed traffic volumes.

Segment 2: Port Dock Road

Permanent solutions along Port Dock Road are considered, each with special design engineering and/or construction timing challenges (see Chapter 3). In the interim, Port Dock Road would be reasonably safe for shared-use, with appropriate share-the-road signing and pavement markings.



Levee at Scholfield Creek Bend – North of US 101

Segment 3: Champion Park

There is an existing paved pathway around Champion Park paralleling the toe of the interior levee slope. This could be used as an interim solution until a trail on the levee crown in this segment is constructed.

Segments 3/4: Local Streets

A range of interim on-street solution would take trail users from Juniper Avenue at N 13th Street to a signalized crossing of US 101 at Winchester Avenue.

There are sidewalks on both sides of these interim options, but the final blocks approaching US 101 pass through higher traffic commercial developments, which may make bicycle shared-use less safe. Trail users would have to follow sections of US 101 to the Winchester Avenue signal.

The short section of Winchester Avenue on the immediate south side of US 101 has sidewalks on both sides but no bicycle lanes, although the south travel lane is much wider than the north lane. At Floodgate 7, sidewalks are blocked and travel lanes narrow, creating safety hazards for shared-use bicycle and pedestrian traffic.

Segment 5: Winchester Avenue

Existing parking lanes and the raised but unimproved shoulder along Winchester Avenue from Floodgate 7 to NE 12th Street could be an interim solution linking the two sections of Winchester Avenue with existing, more complete bicycle lane/sidewalk improvements – US 101 to Floodgate 7 and Coos Bay Rail Link to N 3rd Street.

As with the permanent solutions for this LLT segment, changes such as the elimination of motor vehicle parking along the south side of Winchester Avenue volume may be necessary to accommodate the higher pedestrian and bicycle traffic that trail designation will bring.

Segment 5: N 3rd Street

Provides for interim connection between Segment 1 and Segment 5 from Winchester Avenue to Rainbow Plaza if Winchester Avenue/Riverfront Way is selected as the preferred Oregon 38 crossing alternative or if City-proposed intersection improvements to Oregon 38 are not constructed.

Trailheads

Some proposed trailhead locations will require the construction of new facilities, others can be established through shared use agreements with existing property owners and facilities. Conceptual trailheads are noted on segment maps. *Trailhead locations are intended to identify the general areas within which a trailhead facility would be desirable, but are not property specific unless otherwise noted.*

Site design and amenities may vary greatly based on location and expected usage. Trailheads that share parking and other facilities at government centers and commercial areas are a cost effective alternative to standalone sites.

Desirable key features of trailheads include:

- Safe access roadways separating vehicular and trail user traffic
- Motor vehicle parking
- Secure bicycle storage
- Restroom facilities
- Benches, shelters, and picnic facilities

- Interpretive facilities and wayfinding signage
- Directional signing
- Security lighting
- Drinking water

Shared Trailheads

- **Segment 1:** Rainbow Plaza or Riverfront Way Commercial Areas.
- **Segment 2:** Oregon Dunes Visitor Center or the former Chamber of Commerce visitor information building site opposite the Dunes Center.
- **Segment 3:** Champion Park at N 12th Street.
- **Segment 5:** Downtown area government facilities.

New Trailheads

- **Segment 2:** At or near the proposed non-motorized boat launch to McIntosh Slough under the US 101 bridge. Due to boat launch requirements, access limitations, and sensitive shoreline natural resources, trailhead facilities at this location would be limited unless additional property could be acquired from Mast site.
- **Segment 4:** Scholfield Creek at US 101. Requires private property acquisition, although parking could be shared with adjacent Les Schwab Tires.

Non-Motorized Boat Launches

The physical presence of the levee is a significant impediment to boat access to the Umpqua River and Scholfield Creek. Two boat ramps are already in place along the Riverfront Way shoreline. Public parking, accesses, and other facilities are available around the Umpqua Discovery Center, Rainbow Plaza, and the retail businesses in this district.

These two Riverfront Way boat ramps provide for launch of motorized vessels, and users of non-motorized water craft (kayaks, canoes, inflatables) may prefer less congested areas. Non-motorized users may also prefer to launch into the quieter waters of the McIntosh Slough or Scholfield Creek.

Desirable features and facilities for non-motorized boat launches include:

- Quiet waters with lower flow rates and less motorized boat traffic will improve the safety and comfort level of users

- Launch ramp that extends far enough into the waterbody to be functional except during extreme low tides
- Accesses and driveways accommodating turning movements of vehicle-hauled trailers, and boat unloading and hauling
- Space for boaters to assemble gear and ready for launch
- Vehicle parking
- Restroom facilities
- Benches, shelters, and picnic facilities
- Interpretive facilities and wayfinding signage
- Directional signing
- Security lighting
- Drinking water

Possible Launch Sites

Five possible non-motorized boat launch sites are shown on segment maps:

- **Segment 2: McIntosh Slough.** A launch area under or near to the gothic-style support arches of the historic US 101 bridge would provide for a unique scenic experience for kayakers and other non-motorized boaters. Access would be from Port Dock Road. Wetlands could be impacted by site improvements. Land acquisition from the neighboring Mast site could open up more room for launch siting, vehicle parking, and trailhead facilities.



Port Dock Road Launch Site

At low tides, the slough may not have sufficient water, even in the main channel, to be passable. Users will have to carefully time their trips to avoid being temporarily stranded in mud flats and low water areas.

- **Segment 3: Champion Park.** The site is near the Champion Park parking lot and restroom. This is a very challenging option as users would have to haul boats and gear up and over the levee. A levee access ramp would be required for this launch.



Champion Park Boat Launch

- **Segment 4: Scholfield Creek near Les Schwab Tire Center.** This potential site is located opposite the possible levee ramp that will connect to a proposed trailhead behind Less Schwab. Like the Champion Park launch, users will have to haul boats and gear up and over the levee.

- **Segment 4: Scholfield Creek-Coho Marina.** This private marina is accessed by a driveway off Winchester Avenue and includes a boat launch ramp and floating pier near to the avenue. LLT access improvements may impact this driveway and the boat ramp (see Chapter 4 for more discussion) but a shared use agreement with Coho might be a possibility.



Coho Marina Launch

- **Segment 5: Scholfield Creek near N 12th Street.** This site is at the point where Scholfield Creek bends away from Winchester Avenue. A small vacant lot would have to be acquired. There is sufficient room to create a drop off/pick up area but none for off-street parking.



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7. Potential Property Acquisition

Different sections of the trail may require use permissions, easements, or outright acquisitions of private property. Possible acquisition requirements are noted in Chapters 3 and 4 and are highlighted in yellow on Map 16 (below). Acquisition areas are general only and subject to survey and actual trail engineering.



APPENDIX D

Technical Memorandum No. 4: Preferred Trail Options

Technical Memorandum No. 4 can be downloaded at www.cityoffreedsport.org or obtained from the City.

City of Reedsport, Oregon

Levee Loop Trail System Plan

Technical Memorandum No. 4

Preferred Trail Options



Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
July 2015

Prepared for:
City of Reedsport, Oregon
Oregon Department of Transportation

Prepared by:
Parametrix
July 2015

Credits

Photographs courtesy of Jim Rapp and Gregg Everhart

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1. Summary of Recommendations

Total Trail Length and Cost

Except for along Port Dock Road paralleling US 101, and areas where there is no earthen berm levee, the LLT is on the Levee Crown.

- **Total length:** 19,329 linear feet
- **Total on levee** (including ramps): 9,951
- **Total on-street:** 8,442
- **Boardwalks/street-adjacent trail:** 936
- **Total Cost:** \$6,371,650

Segment 1: Umpqua Waterfront

- **Preferred Trail Alignment:** N 3rd Street/Rainbow Plaza/Riverfront Way
- **Preferred Oregon 38 Crossing:** N 3rd Street at Fir Avenue/Oregon 38.
- **Other Road Crossings:** Signed crosswalks on Riverfront Way at E Railroad Avenue, Rainbow Plaza, and Water Avenue.
- **Levee Access:** New ramp from E Railroad Avenue around the toe of the railroad berm, then up to the levee berm from Port Dock Road.
- **Additional Recommendations:** Twelve-foot-wide sidewalk on the water side of Riverfront Way between E Railroad Avenue and Water Avenue; extension of the Riverfront Boardwalk between E Railroad Avenue and Water Avenue.

Segment 2: Port Dock Road

- **Preferred Trail Alignment:** Levee Crown from Port Dock Road at railroad bridge to Port Dock Road at Umpqua River US 101 Bridge; street-adjacent trail with short boardwalk along Port Dock Road.
- **Preferred Port Dock Road Crossing:** Signed crosswalk acceptable, user-activated flashing beacon desirable.
- **Levee Access:** New ramp under Umpqua River US 101 Bridge at Port Dock Road to Levee Crown; new ramp from Myrtle Avenue to Levee Crown near McIntosh Slough.
- **Possible Non-motorized Boat Launch:** "Expert" McIntosh Slough non-motorized boat launch under or near Umpqua River US 101 Bridge.

Segment 3: Champion Park

- **Preferred Trail Alignment:** Levee Crown, with on-street Juniper Avenue section between N 12th Street and N 13th Street.
- **Levee Access:** Existing ramp from Port Dock Road to the Levee Crown near USFS Offices/Oregon Dunes Visitor Center; new ramp directly into Champion Park; upgraded ramp at N 12th Street.

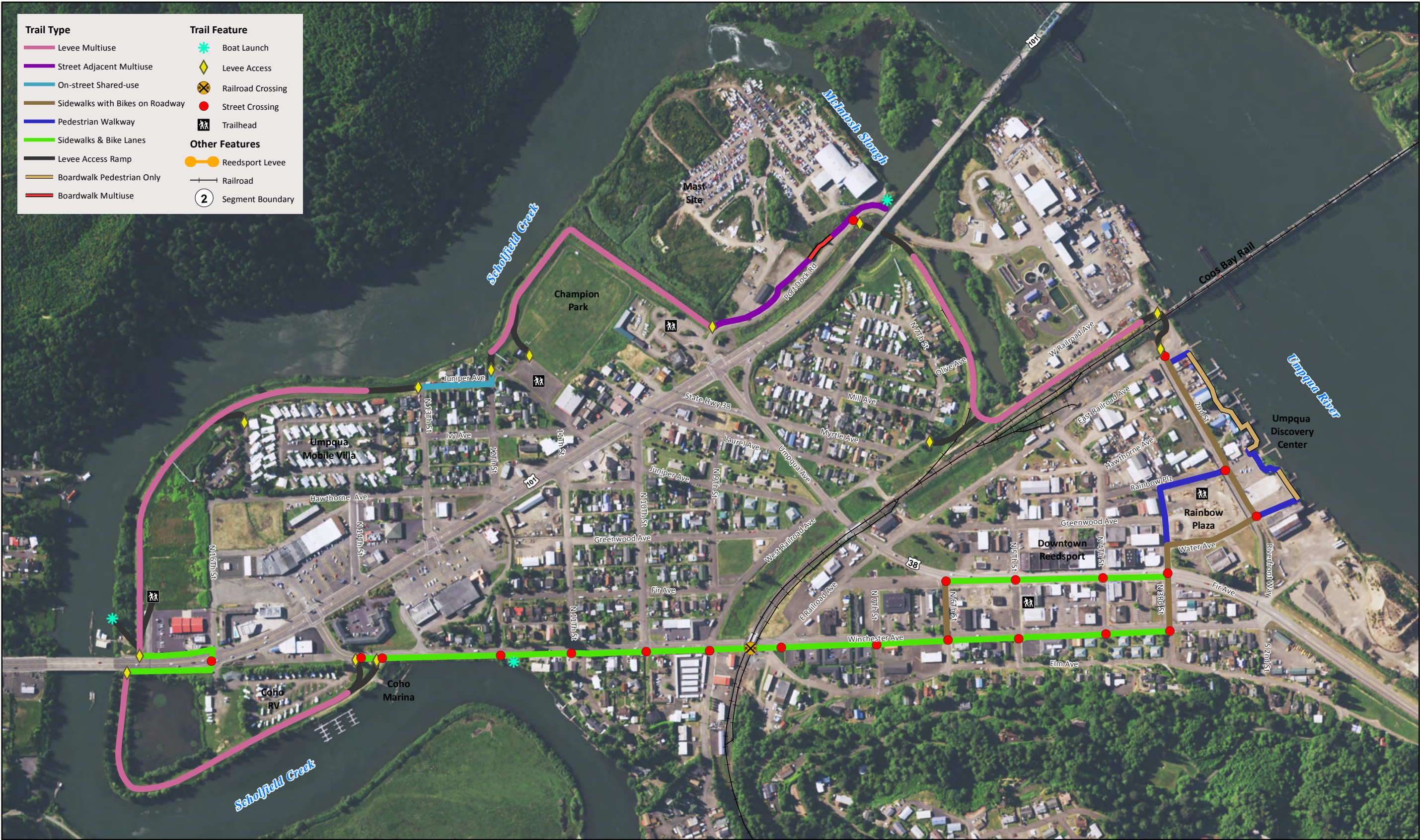
Segment 4: Scholfield Waterfront

- **Preferred Trail Alignment:** Levee Crown
- **Preferred US 101 Crossing:** US 101 at N 16th Street. Crossing recommended to include crosswalk with user-activated beacon.
- **Levee Access:** Upgraded ramp from N 13th Street; new ramp to Umpqua Mobile Village private roadway; two new ramps north of US 101 (one accessing preferred boat launch, second accessing proposed trailhead); new dual-ramp to Winchester Avenue.
- **Preferred Non-motorized Boat Launch:** North of US 101 into Scholfield Creek. Will require levee access ramp on both sides of levee (see "north of US 101" ramps above).

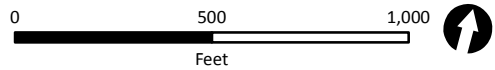
Segment 5: Winchester Avenue

- **Preferred Trail Alignment:** Bicycle lanes/sidewalks along Winchester Avenue, and looping through downtown via sidewalks and bicycle lanes or shared-use along N 3rd Street, N 6th Street, and Fir Avenue (Oregon 38).
- **Preferred Oregon 38 Crossing:** Uses the preferred crossing option connecting Segment 1 to Segment 5 (see Segment 1).
- **Other Road Crossings:** All local streets intersecting with Winchester and Fir Avenue (3rd, 4th, 5th, 6th, 7th, E Railroad Avenue, W Railroad Avenue, 10th, 11th, 12th) should have signing and pavement markings or crosswalks installed.
- **Possible Non-Motorized Boat Launch:** "Limited purpose" launch into Scholfield Creek on small undeveloped private property along Winchester Avenue at N 12th Street.

2. Overall Preferred Trail Option



Parametrix



Reedsport Levee Loop Trail
Map 1 : Preferred Trail Option

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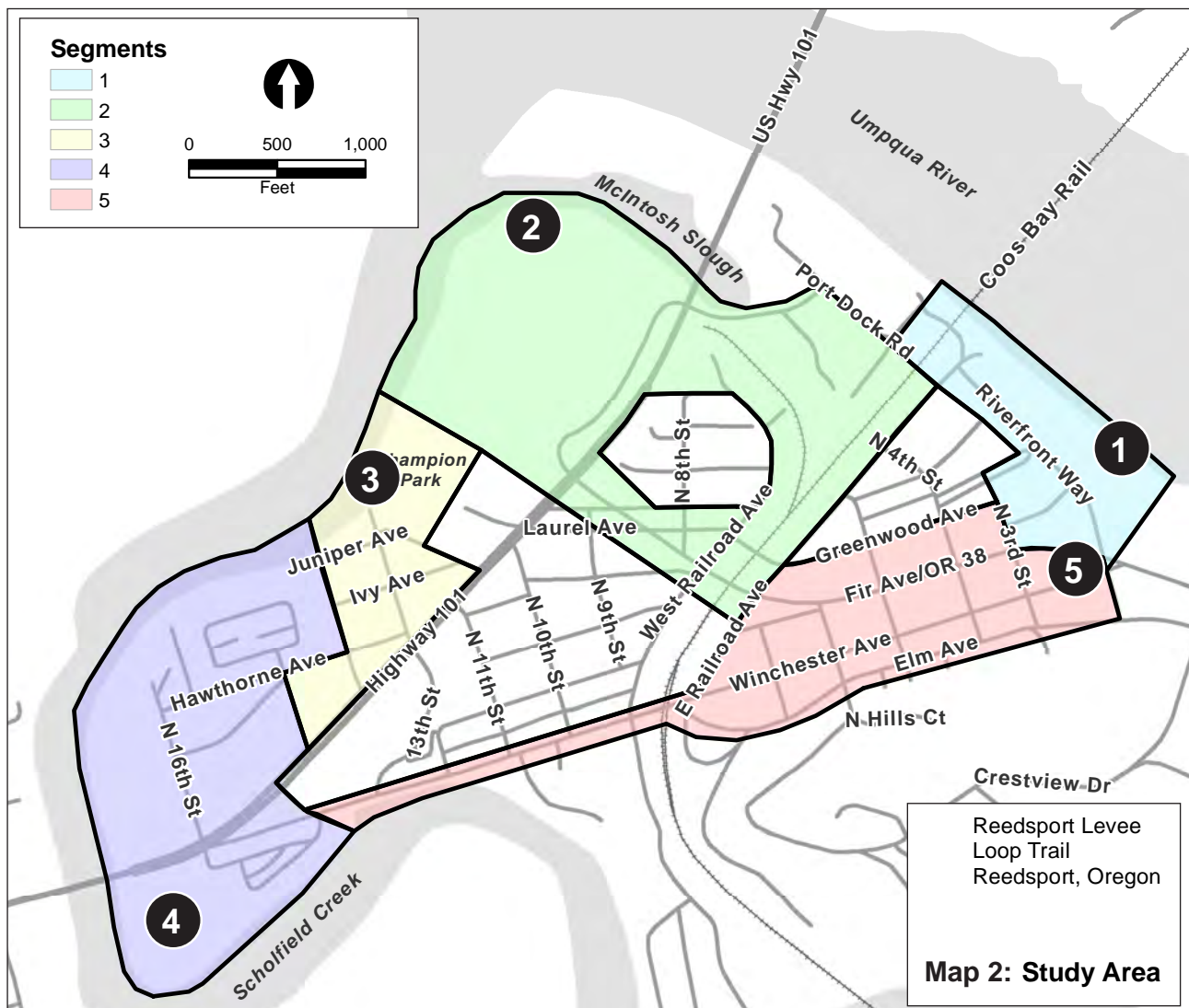
3. Background

The City of Reedsport Levee Loop Trail (LLT) will provide a convenient, non-motorized transportation alternative for residents and visitors traveling through the City's downtown and waterfront core. The central goal of the Levee Loop Trail System Plan (LLTP) is to identify a LLT alignment that primarily follows the 1968 levee berm constructed to protect the Reedsport waterfront, downtown, adjacent neighborhoods, and highway commercial areas from flooding. Limited LLT sections will follow public right-of-way or use other property.

Study Area

The LLTP study area is divided into five planning segments. See Map 2 for study area and segment boundaries established as an outcome of the Baseline Information stage of the LLTP (Technical Memorandum No. 2). Some segment boundaries were amended slightly for this Technical Memorandum No. 4.

- 1 Segment 1: Umpqua Waterfront** – Rainbow Plaza, Riverfront Way, Umpqua River Waterfront
- 2 Segment 2: Port Dock Road** – Coos Bay Rail, Oregon 38, Port Dock Road, McIntosh Slough Waterfront
- 3 Segment 3: Champion Park** – Champion Park, Ivy-Hawthorne Neighborhood, and Commercial Areas between 11th and 14th Streets
- 4 Segment 4: Scholfield Waterfront** – 14th Street to 16th Street Neighborhood and Commercial Areas, Scholfield Creek Waterfront north and south of US 101, Coho RV and Marina
- 5 Segment 5: Winchester-Downtown** – Winchester Avenue, Downtown Reedsport, Oregon 38/Fir Avenue



LLTP Technical Memorandums

To date, three LLTP technical memoranda have been published:

- **Goals and Objectives (Technical Memorandum No. 1):**
Defines project goals and objectives, illustrates the preferred trail type (multiuse trail on Levee Crown), describes possible additional trail treatments, and lists preliminary comparative trail alignment option evaluation criteria.
- **Baseline Information (Technical Memorandum No. 2):**
Existing plans and policies potentially impacting the LLTP study area and LLT development are summarized, key activity centers and destinations within the study area are identified, and existing conditions with respect to transportation, land use, and natural and historic resources are described and mapped. In addition, community demographics within the study area are highlighted.
- **Conceptual Trail Options (Technical Memorandum No. 3):**
Describes and maps a variety of LLT alignment options, trail type and treatments, possible levee access points, roadway and rail crossing options, and conceptual non-motorized boat launch and trailhead locations.
- Plan-level construction cost estimates for preferred LLT alignments and types, roadway crossings, levee access ramps, trailheads and boat launches. Estimates also include design/engineering, permitting, and construction management and contingencies.
- Mapping of LLT sections that may require land acquisition or use permissions from private property owners.
- Descriptions and illustrations of possible trail amenities such as lighting, signage, and trail furniture. Includes brief narratives as to benefits and constraints, as appropriate.

This **Technical Memorandum No. 4: Preferred Trail Options** assesses and identifies preferred LLT alignments and trail types, roadway and railroad crossing options, and levee access points and structures within each trail planning segment. Technical Memorandum No. 4 includes:

- LLT alignment and road crossing comparative evaluations using the evaluation criteria published in Technical Memorandum No. 1, as modified by outcomes of Technical Memorandum No. 3.
- Qualitative evaluation of non-motorized boat launch sites, including levee access ramps where required, and mapping of preferred and limited-purpose launch sites.
- Mapping of proposed trailhead locations, including one new trailhead facility.
- Mapping of potential secondary trail or on-street routes improving overall LLT connectivity.

4. Comparative Trail Alignment and Crossing Evaluations

Option Evaluation Criteria

Evaluation criteria and levels are a matter of degree and intended only as guidance in making relative comparisons of options *within the same trail segment*. Evaluation categories are not weighted or in order of importance. Evaluation outcomes are not intended as an absolute indication that one option is better than another, except for UNACCEPTABLE. The UNACCEPTABLE level was only rarely considered in this LLTP evaluation exercise, as prior project stages tended to eliminate options that had significant flaws and/or multiple constraints.

Modifications to Evaluation Categories/Criteria

Nine evaluation categories and associated criteria were established at the outset of this planning process (see Technical Memorandum No. 1). In assessing the range of LLT alignment and trail type options and special features included in Technical Memorandum No. 3, it was determined that certain elements of the original evaluation criteria did not “fit” the outcomes of the LLTP planning process. These are:

- **Direction of Travel.** Given the relatively small study area, and that all options were part of a *loop* system, differences in out-of-direction travel between options within given segments were minor or non-existent. This criteria was therefore dropped.
- **Experience/Connectivity.** As with Direction of Travel, differences in Connectivity were minor for the most part. Therefore, only trail user Experience elements were applied.
- **Safety/Security.** In general, LLT alignment options do not have features that may cause Security concerns under normal circumstances. The exceptions are noted. Therefore, only Safety issues such as traffic conflicts at road crossings, shared use of roadways etc., were comparatively evaluated.

- **Environmental/Cultural.** The only designated Cultural/Historic feature in the study area is the Umpqua River US 101 Bridge. LLT options have no adverse impact on this structure. Therefore, only Environmental impacts or opportunities were comparatively evaluated.

Exceptions to Evaluation Process

Evaluation outcomes are summarized on separate tables (see section that follows) for each planning segment, with the following exceptions:

- **Alignments not comparatively evaluated:** Segment 4 (trail is primarily on Levee Crown and there are no acceptable alternatives); and Segment 5 (for section where LLT exclusively follows Winchester Avenue).
- **Road crossings not comparatively evaluated:** Segments 3 and 5 (all crossings are essentially identical and are the only option available).
- **Rail crossings:** Additional improvements may be needed to the existing rail crossings in Segments 2 and 5 but there is only a single option for each segment; Segment 1 rail undercrossing from Riverfront Way to Port Dock Road could also be on-street.
- **Proposed levee ramp locations:** With two exceptions, ramp locations were not comparatively evaluated. The exceptions are: Segment 3 (there are two ramp options into Champion Park) and Segment 4 (there were two dual-ramp options considered in the vicinity of Coho RV). The ramp opportunities and constraints in these locations are discussed in Technical Memorandum No. 3.
- **Non-motorized boat launch locations:** Alignment and crossing evaluation criteria do not match factors influencing preferred launch sites. The three of the five launch sites identified in Technical Memorandum No. 3 are given a further qualitative evaluation in this Technical Memorandum No. 4 (Chapter 9).

Evaluation Levels

Refer to Technical Memorandum No. 1 for the original full set of factors by category used in comparatively evaluating alignment and crossing options. Refer to Technical Memorandum **No. 3** for descriptions and mapping of all the rated alignment options listed below. Maps in this Technical Memorandum No. 4 only show the preferred options.

Rating Key

A	Strong	Impact is primarily positive, and/or best meets project goals and objectives.
B	Acceptable	Impact is neutral, and/or positive and negative impacts are approximately balanced
C	Weak	Impact is primarily negative, and/or is contrary to project goals and objectives.
D	Unacceptable	Significantly or fatally flawed due to major or multiple adverse impacts or constraints.

Alignment and Crossing Evaluations by Segment

The evaluation below was conducted by the consulting project manager and trail planner. Each conducted separate evaluations, then combined the ratings. City and ODOT staff reviewed the outcomes.

Segment 1: Umpqua Waterfront

Alignment Options

	Riverfront Way	Riverfront Way/ Boardwalk	Riverfront Way/ Rainbow Plaza
Trail Type	B	A	B
Experience	B	A	B
Safety	C	B	B
Environmental	B	A	B
Plans/Regulations	A	B	A
Property Ownership	A	B	A
Cost	B	C	A
Phasing	Riverfront Way and Riverfront Way/Rainbow Plaza can be interim alignment options, preferred option driven by crossing option (see below).		

- Riverfront Way/Boardwalk improves relative trail user experience, but increases cost and regulations.

Crossing Options

	Oregon 38	3rd/Fir
Trail Type	N/A - Both options cross existing streets	
Experience	B (D if not improved)	B
Safety	B (D if not improved)	B
Environmental	N/A - Both crossings within existing street	
Plans/Regulations	B	A
Property Ownership	A	A
Cost	B	A
Phasing	3rd/Fir acceptable as interim or near-term option, OR 38 as long-term option if improved.	

- Oregon 38 at Winchester crossing is only acceptable if RWDP recommended improvements are implemented. ODOT has not endorsed Oregon 38 trail crossing improvements.

Segment 2: Port Dock Road

Alignment Options

	Levee Crown	Levee Alternate 1	Levee Alternate 2	On-Street
Trail Type	B	B	A	C
Experience	A	A	B	C
Safety	A	B	A	C
Environmental	A	A	A	A
Plans/Regulations	B	A	A	A
Property Ownership	B	B	A	A
Cost	B	A	A	A
Phasing	Levee Alternate 2 cannot be implemented until levee improvements along US 101 are made.			

- Levee Crown may require special bridge structures and wetland crossing.
- Levee Alternate 1 has possible security concerns as route is screened by levee berm and waterfront vegetation.
- Levee Alternate 2 is the only alignment option that uses 100% of levee and is the only Segment 2 option fully protected from flooding by the levee. User experience diminished by proximity to US 101.

Crossing Options

	Levee Crown	Levee Alternate 1	Levee Alternate 2
Trail Type	N/A - All crossing treatments identical.		
Experience	A	A	B
Safety	B	B	A
Environmental	B	A	A
Plans/Regulations	A	A	B
Property Ownership	A	A	A
Cost	A	A	B
Phasing	N/A - Crossing choice tied to selection of Segment 2 trail alignment options.		

- Crossings associated with Levee Crown and Levee Alternate 1 alignment options have sight line issues.

Segment 3: Champion Park

Alignment Options

	Levee Crown	Shared-Use	On-Street
Trail Type	A	N/A	C
Experience	A	N/A	C
Safety	A	N/A	C
Environmental	A	N/A	N/A - on street
Plans/Regulations	A	N/A	A
Property Ownership	B	N/A	A
Cost	B	N/A	A
Phasing	Levee Crown probable near-term phasing, good <i>existing</i> transitions to streets.		

- Shared-Use alignment option is only along one-block section of Juniper Avenue and is used by both Levee Crown and On-Street options.
- On-Street alignment option eliminates a considerable section of levee loop, and US 101 crossings are challenged (see note below). This option could be used for interim solution.

Crossing Options – Not rated.

On-Street alignment option would either cross US 101 at N 13th Street or Winchester Avenue (in Segment 4); some sidewalk/bicycle lane improvements also needed on both sides of US 101 for this crossing option to work; could be part of an interim solution.

Segment 4: Scholfield Waterfront

Alignment Options – Not rated.

Levee Crown only option for multiuse trail. Probable near-term phasing. Street/US 101 transitions are constrained (see Crossing Options below).

Crossing Options

	US 101/Bridge	16th/US 101	16th/Schwab
Trail Type	A	C	C
Experience	B	C	B
Safety	A (D if not improved)	B (D if not improved)	B (D if not improved)
Environmental	A	A	A
Plans/Regulations	A	A	A
Property Ownership	A	A	A
Cost	B	A	B
Phasing	N/A - Crossing choice tied to Segment 4 trail alignment options.		

- US 101/Bridge crossing evaluation assumes some form of crossing improvement – crosswalk, beacons, etc. ODOT has not endorsed these improvements. Without crossing improvements, this crossing is UNACCEPTABLE.

- 16th/US 101 crossing requires detour along both sides of US 101; without crossing improvements the poor westbound US 101 sight lines make this location UNACCEPTABLE.
- 16th/Schwab crossing includes trailhead connection, short multiuse trail, and on-street section; same UNACCEPTABLE crossing issues if no improvements are made.

Segment 5A: Winchester Avenue – West

Alignment Options – Not rated.

Only trail option is on-street sidewalks and bicycle lanes.

Crossing Options – Not rated.

Crossing options for Winchester West are all identical. Only variation is the location of the two dual levee ramp options discussed in Technical Memorandum No. 3.

Segment 5B: Winchester Avenue – East

Alignment Options

	Winchester East	Fir Avenue
Trail Type	A	A
Experience	A	A
Safety	A	B
Environmental	A	A
Plans/Regulations	A	A
Property Ownership	A	A
Cost	A	A
Phasing	N/A - uses only existing streets	

- Both alignment options involve on-street bicycle lanes and sidewalks; Fir Avenue alignment option less safe than Winchester East based on traffic speeds and volumes.
- Fir Avenue Intersection with Oregon 38, E Railroad, and N 6th results in complex bicyclist/pedestrian movements that are not a factor with Winchester East option.
- Suggest considering signed on-street downtown loop (Winchester – N 3rd – Fir – N 6th) as bicyclist/pedestrian solution for Segment 5B.

Crossing Options – Not rated.

All crossings are identical and only vary by location.

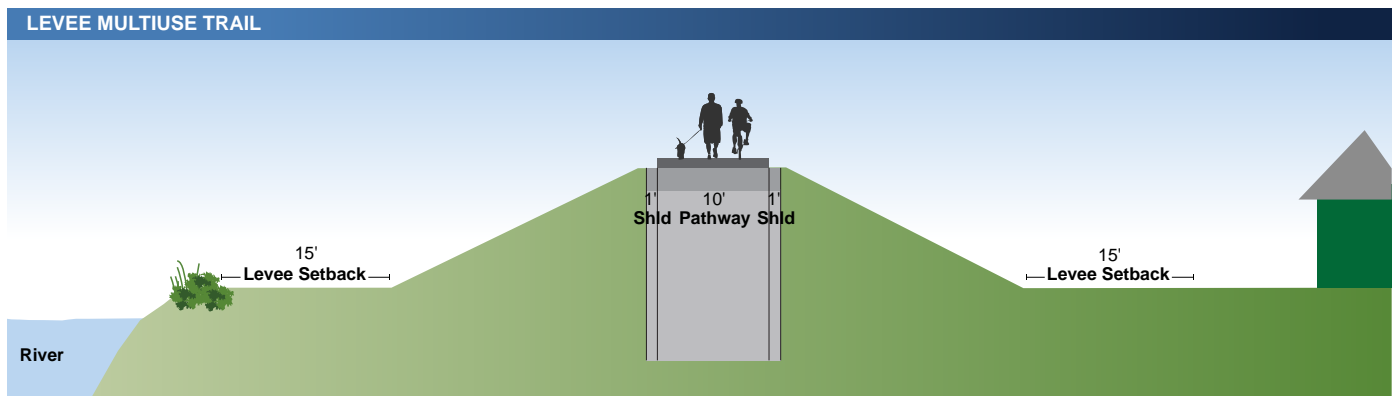
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5. Preferred Trail Types

The Levee Loop Trail (LLT) is intended as a multiuse pathway accommodating a full range of users, including bicyclists, pedestrians, and the mobility impaired. A variety of trail types will be used in developing the LLT for commuter, destination, and recreational users. The basic width recommended for multiuse trail types along the LLT is 8 to 10 feet, except as noted otherwise. The standard trail surface is asphalt, again except as noted otherwise. ODOT standards specify a 12-foot-wide trail with 2-foot-wide shoulders, thus a design exception may be required.

Levee Multiuse

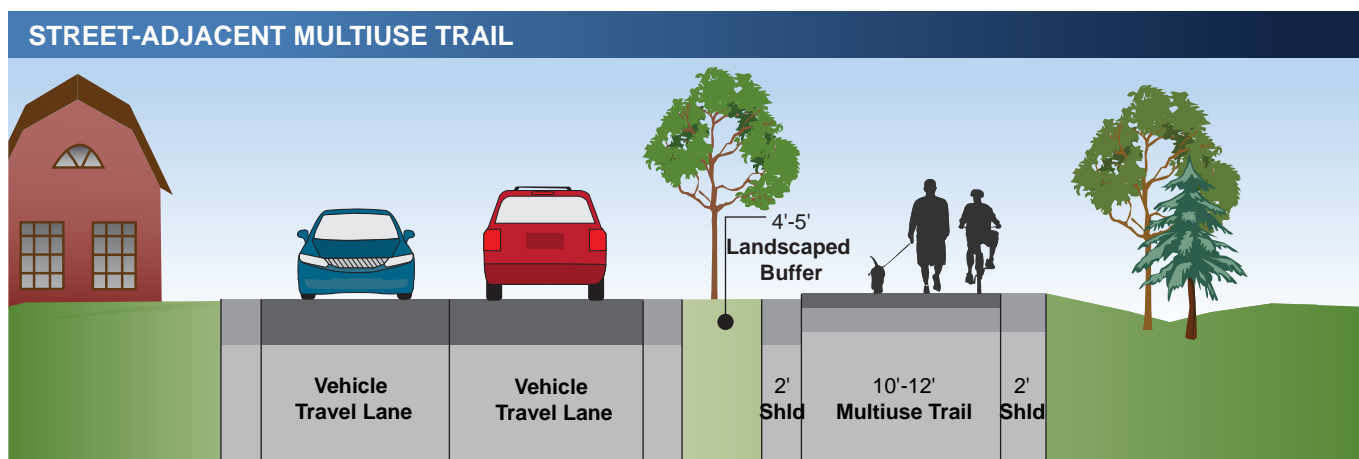
The primary trail type for the LLT is a multiuse pathway on the Levee Crown. Given the limited width of the Levee Crown (8 to 12 feet), this multiuse trail type may have to be as narrow as 8 to 10 feet, with limited or no shoulders. The levee multiuse trail must also be engineered to support motorized maintenance vehicle loads.



Note: Levee height and width may vary, conceptual only.

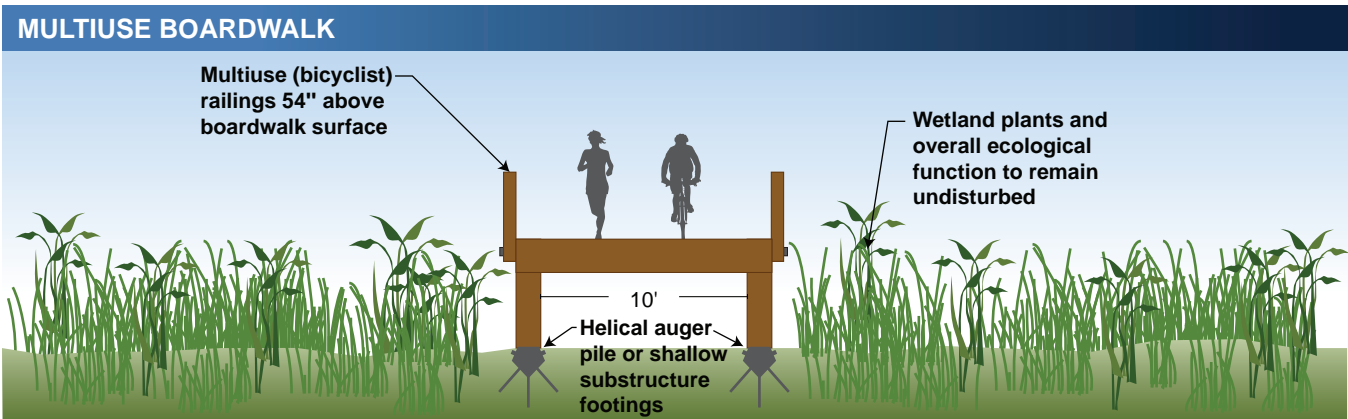
Street-Adjacent Multiuse

Street-adjacent multiuse trails are possible where there is vacant land along roadways and few access driveways. This trail cross section can include a 4- to 5-foot landscaped buffer separating the trail from the roadway. In constrained areas, the buffer may be narrowed or even eliminated. The street-adjacent trail type is recommended along Port Dock Road (Segment 2). This trail section will be combined with a short boardwalk across a small wetland. There are also two sections along Port Dock Road where the trail will cross wide industrial driveways and parking areas. Signing, pavement markings, and/or distinctive surface treatments may have to be substituted for a separate asphalt trail.



Boardwalk Multiuse

This solution is recommended for one trail section along Port Dock Road where wetlands may need to be crossed. Boardwalk width will match intersecting multiuse trail width. Preferred materials are steel with concrete surfaces; surfaces must accommodate wheelchairs, walkers, and other mobility devices to be Americans with Disabilities Act (ADA)-compliant.



Note: Boardwalk materials will vary: wood, steel, concrete, etc.

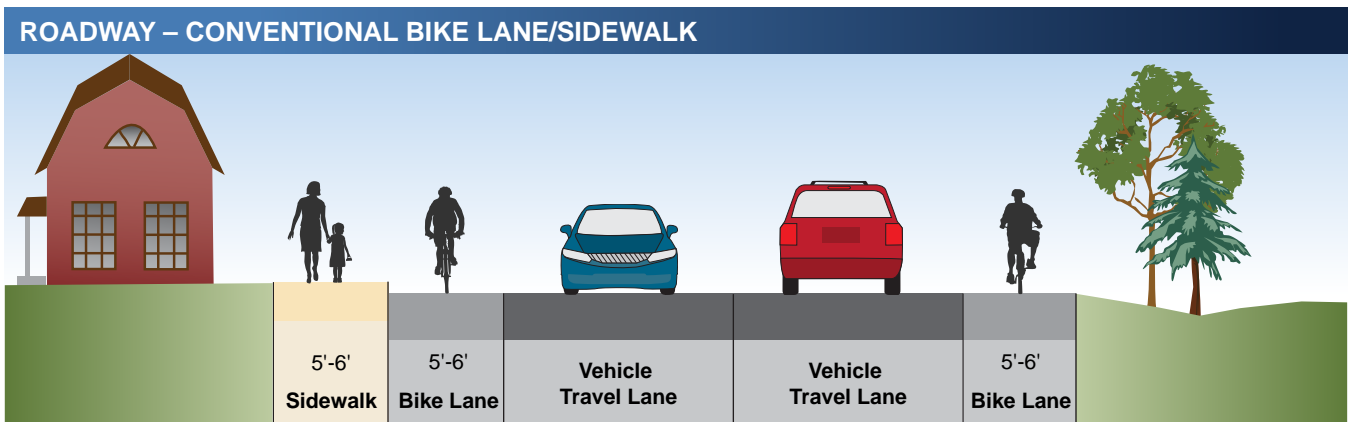
Pedestrian-Only Boardwalk or Trail

A west and east extension of the existing Umpqua River shoreline pedestrian boardwalk behind the Umpqua Discovery Center is part of a recommended long-range trail option for Segment 1. This form of boardwalk can be 6 to 8 feet wide. To be ADA-compliant, the wood surfaces of the existing boardwalk may have to be renovated or replaced to accommodate wheelchairs, walkers, and other mobility devices.

There are also three areas in Segment 1 where a pedestrian-only asphalt trail is recommended. The two connections from the extended Umpqua River shoreline boardwalk back to Riverfront Way are pedestrian-only, as is a short section through Rainbow Plaza. This type of trail can be 6 to 8 feet wide.

Sidewalks/Bicycle Lanes

New or improved sidewalks and bicycle lanes are recommended for trail sections along higher traffic volume roadways where no practical or cost effective means are available to site a multiuse trail. This solution is applied to the Winchester Avenue on-street option, and the Winchester Avenue-Fir Avenue loop through downtown (both Segment 5). Motor vehicle parking on Winchester Avenue may have to be restricted to establish adequately wide bicycle lanes.



Note: Can include sidewalks on both sides.

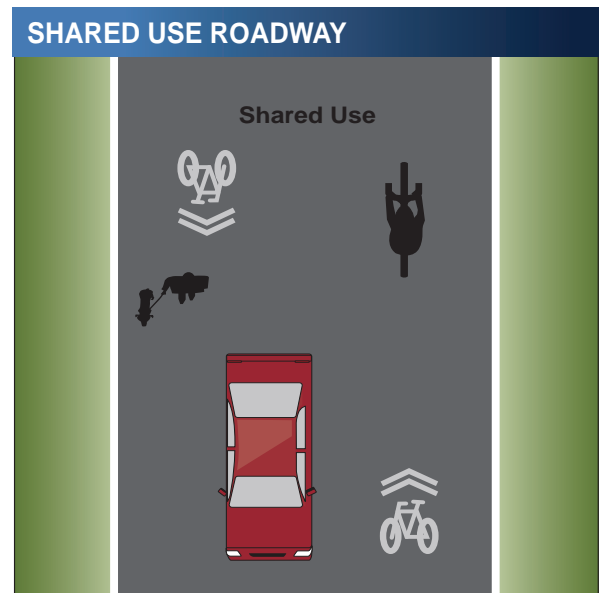
Shared-Use

This solution is only safe and practical along local streets with low traffic volumes and speeds. Shared-use solutions are also possible for low-cost interim routes until the multiuse levee trail is developed (see Chapter 9, Map 10). Shared-use is also suggested for Juniper Avenue (Segment 3) where the earthen berm levee is replaced by a floodwall and older existing sidewalks are very narrow.

Sidewalks/Bicycle Shared-Use

In some areas, on-street trail sections can be improved with sidewalks but the street may be too constrained to also accommodate designated bicycle lanes. This solution provides for bicycles to share the road with motor vehicles by using signing and pavement markings (see pavement marking example on plan view drawing opposite).

- Riverfront Way and N 3rd Street (Segment 1) may utilize this solution.
- This solution could also be used on Winchester Avenue (Segment 5) if motor vehicle parking is not removed. On-street shared-use is however not desirable as Winchester is a collector roadway.



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6. Preferred Options by Segment

Segment 1: Riverfront Way



Oregon 38/N 3rd Street Crossing



Riverfront Way from
Rainbow Plaza/Water Avenue



Rainbow Plaza from Floodgate



Riverfront Way Crossing at Rainbow Plaza



Riverfront Way: Sidewalk Extension Area



Rail Trestle Undercrossing

Segment 1: Riverfront Way

Preferred Trail Alignment

N 3rd Street/Rainbow Plaza/Riverfront Way

Trail Length

2,369 linear feet (including ramps)

Estimated Cost

\$1,079,000 (including highway crossing)

Preferred Oregon 38 Crossing

N 3rd Street at Fir Avenue/Oregon 38. As Oregon 38 is an arterial roadway, a signed crosswalk with a user-activated beacon is desirable, similar to the treatment described in the 2013 Reedsport Waterfront and Downtown Plan (RWDP). ODOT has not supported the RWDP-level improvement at N 3rd Street. The crossing improvements for N 3rd Street specified in the 2015 Reedsport Pedestrian Safety Study would suffice, at least on an interim basis.

Other Road Crossings

Signed crosswalks on Riverfront Way at E Railroad Avenue, Rainbow Plaza, and Water Avenue.

Levee Access

- **Preferred Solution:** 360-foot-long ramp from E Railroad Avenue to Port Dock Road curving around the toe of the railroad berm under the railroad bridge, then up to the levee berm that parallels the railroad. Would require land acquisition on the E Railroad Avenue/Riverfront Way side of the levee. There is sufficient clearance under this bridge for this ramp solution.
- **Interim Solution:** On-street, shared-use under the railroad bridge is an acceptable interim trail alternative. Signing and pavement markings, and potentially some surface repaving, is desirable. A shorter (approximately 100 feet) straight ramp up to the Levee Crown from Port Dock Road would still be required.

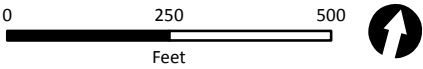
Additional Recommendations

- **Sidewalk Improvements:** Construct continuous 12-foot wide sidewalk on the water side of Riverfront Way between E Railroad Avenue and Water Avenue. Approximately 250 linear feet of sidewalk already exists.
- **Boardwalk:** As a long-range option, extend the Riverfront Boardwalk between E Railroad Avenue and Water Avenue (this boardwalk extension is recommended in the RWDP).
- **Rainbow Plaza:** A solution using existing and improved on-street infrastructure — bicycle lanes or pedestrian pathways — is mapped and costed. Rainbow Plaza will eventually be redeveloped as per the concept plan included in Technical Memorandum No. 2, Appendix B. LLT bicycle and pedestrians pathways could be incorporated directly into the Plaza redesign.

Segment 1: Riverfront Way



Parametrix



Reedsport Levee Loop Trail
Map 3: Preferred Trail Option
Segment 1: Umpqua Waterfront

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Segment 2: Port Dock Road



Ramp Location: Port Dock Road to Levee near Railroad



Ramp Location: Myrtle Avenue



Ramp Location: Rail Spur to Levee Crown



Ramp Location: Port Dock Road at Rail Spur



Port Dock Road: from Trail Crossing



Port Dock Road: Approach to Champion Park Ramp

Segment 2: Port Dock Road

Preferred Trail Alignment

Levee Crown from Port Dock Road at the railroad bridge to Port Dock Road near Umpqua River US 101 Bridge. Follows northwest side of Port Dock Road to Champion Park using street-adjacent multiuse trail section combined with a short multiuse wetland boardwalk.

Trail Length

3,436 linear feet (including ramps)

Estimated Cost

\$1,576,350

Preferred Port Dock Road Crossing

Trail will cross Port Dock Road at the same point where a now-abandoned rail spur crossed this roadway. Signing and marked crosswalk acceptable. User-activated beacon would improve safety given short sight lines along this section of road.

Levee Access

- **Highway Bridge:** 305-foot-long ramp under the Umpqua River US 101 Bridge will connect the Levee Crown to Port Dock Road. This ramp alignment uses the abandoned rail spur. There is sufficient clearance under this bridge for this ramp solution.
- **Myrtle Avenue:** 299-foot-long ramp from Myrtle Avenue to Levee Crown near to McIntosh Slough. This ramp improves neighborhood access to the LLT but is not necessary to complete a continuous LLT. The wide right angle turn in the LLT at this location will require levee berm modifications. Modifications would have to comply with USACE and FEMA flood protection standards.

Additional Recommendations

- **Industrial Frontage:** Until the Mast Site is redeveloped as a mixed-use site (see Technical Memorandum No. 2, Appendix A), the street-adjacent trail along Port Dock Road will cross three wide industrial driveways. The area is paved or graveled and special signing or pavement markings/treatments to delineate the LLT may be a more practical solution than the conventional street-adjacent trail shown in Chapter 5, page 13. May require agreements with property owners and industrial tenants.
- **Interim Solution:** Traffic volumes on Port Dock Road are low enough that this roadway could be signed and pavement marked for interim on-street shared-use.
- **Approach to Champion Park:** The final street-adjacent trail approach along Port Dock Road to the Champion Park (Segment 3) levee has a steep drop-off that may require road improvements and/or fill. In the interim, this short LLT section could be on-street shared-use with signing and pavement markings.

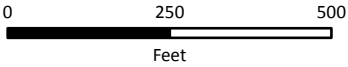
“Expert” Non-motorized Boat Launch

Site on McIntosh Slough under the Umpqua River US 101 highway bridge could be developed as an “expert” non-motorized boat launch. Launch site is uniquely scenic but tidal conditions and constrained uplands limit full functionality and access for all levels of users. A short street-adjacent spur trail is proposed to connect this launch site to the main stem of the LLT and to the community trail around the Mast Site (see Chapter 10). This launch is not cost-estimated.

Segment 2: Port Dock Road



Parametrix



Reedsport Levee Loop Trail
Map 4: Preferred Trail Option
Segment 2: Port Dock Road

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Segment 3: Champion Park



Ramp Location: Champion Park at Port Dock Road



Ramp Location View 1: Champion Park at Dog Park/Restroom



Ramp Location View 2: Champion Park at Dog Park/Restroom



Ramp Location: N 12th Street



Juniper Avenue Shared-Use Connector



Juniper Avenue from N 13th Street Ramp

Segment 3: Champion Park

Preferred Trail Alignment

Levee Crown, combined with a one block on-street shared-use section of Juniper Avenue between N 12th Street and N 13th Street where the levee berm is replaced by a floodwall.

Trail Length

2,479 linear feet (including ramps)

Estimated Cost

\$844,950

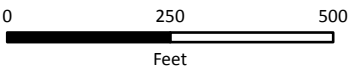
Preferred Levee Ramp Options

- **Port Dock Road/Champion Park:** The short existing grade up from Port Dock Road to the Levee Crown in the vicinity of USFS Offices and the Oregon Dunes Visitor Center only requires paving to create an ADA-compliant trail ramp. This levee access is therefore treated as an extension of the LLT main stem for cost estimating purposes.
- **Champion Park:** New 280-foot-long ramp option connecting directly to the Champion Park restrooms and parking lot would require relocation of a section of an existing pedestrian pathway around the perimeter of the Park, and perhaps a section of the fence enclosing the dog park. Vegetation wear lines on the levee slope indicates the location of this proposed new ramp is already been “pioneered” by walkers accessing the restrooms and parking lot.
- **N 12th Street:** Partly built 100-foot-long access ramp directly connecting to N 12th Street. Would be less expensive to upgrade this ramp than to build the new Champion Park ramp alternative described above. The N 12th Street ramp could be developed an early phase improvement, with the new Champion Park ramp being a longer-term addition. The N 12th Street ramp would also serve as a maintenance vehicle access.

Segment 3: Champion Park



Parametrix



Reedsport Levee Loop Trail
Map 5: Preferred Trail Option
Segment 3: Champion Park

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Segment 4: Scholfield Waterfront



Ramp Location: N 13th Street



Ramp Location: Umpqua Mobile Villas



New Trailhead Site near US 101



Levee at Scholfield US 101 Bridge



Lagoon near Coho RV



Ramp Location: Winchester Avenue - Coho RV Side

Segment 4: Scholfield Waterfront

Preferred Trail Alignment

Levee Crown

Trail Length

5,147 linear feet (including ramps)

Estimated Cost

\$2,649,450 (including controlled highway crossing)

Preferred US 101 Crossing

US 101 at N 16th Street. Recommended crossing treatment is a marked crosswalk with user-activated beacon or similar treatment. N 16th Street is the one location along this section of US 101 that is acceptable to ODOT for consideration for a controlled crossing. The function of this crossing would be improved by a short multiuse connecting trail from the proposed trailhead north of US 101 to N 16th Street. ODOT and the City will have to continue to consult on solutions that provide for both trail continuity and user safety.

Other US 101 Crossing Options

- **US 101 Undercrossing:** The possibility of the LLT crossing under US 101 at the Scholfield Bridge was evaluated in Technical Memorandum No. 3 (see page 26). A wide range of constraints, including low clearances, resulted in this alternative being eliminated. However, possible reconstruction of this bridge may reduce or eliminate many constraints. If the bridge is reconstructed, a trail undercrossing would be preferred over the N 16th Street crossing.
- **Interim Crossing:** Until a N 16th Street crossing or bridge undercrossing is built, the levee trail through Segment 4 should include signing and barriers directing users to cross US 101 at Winchester Avenue.

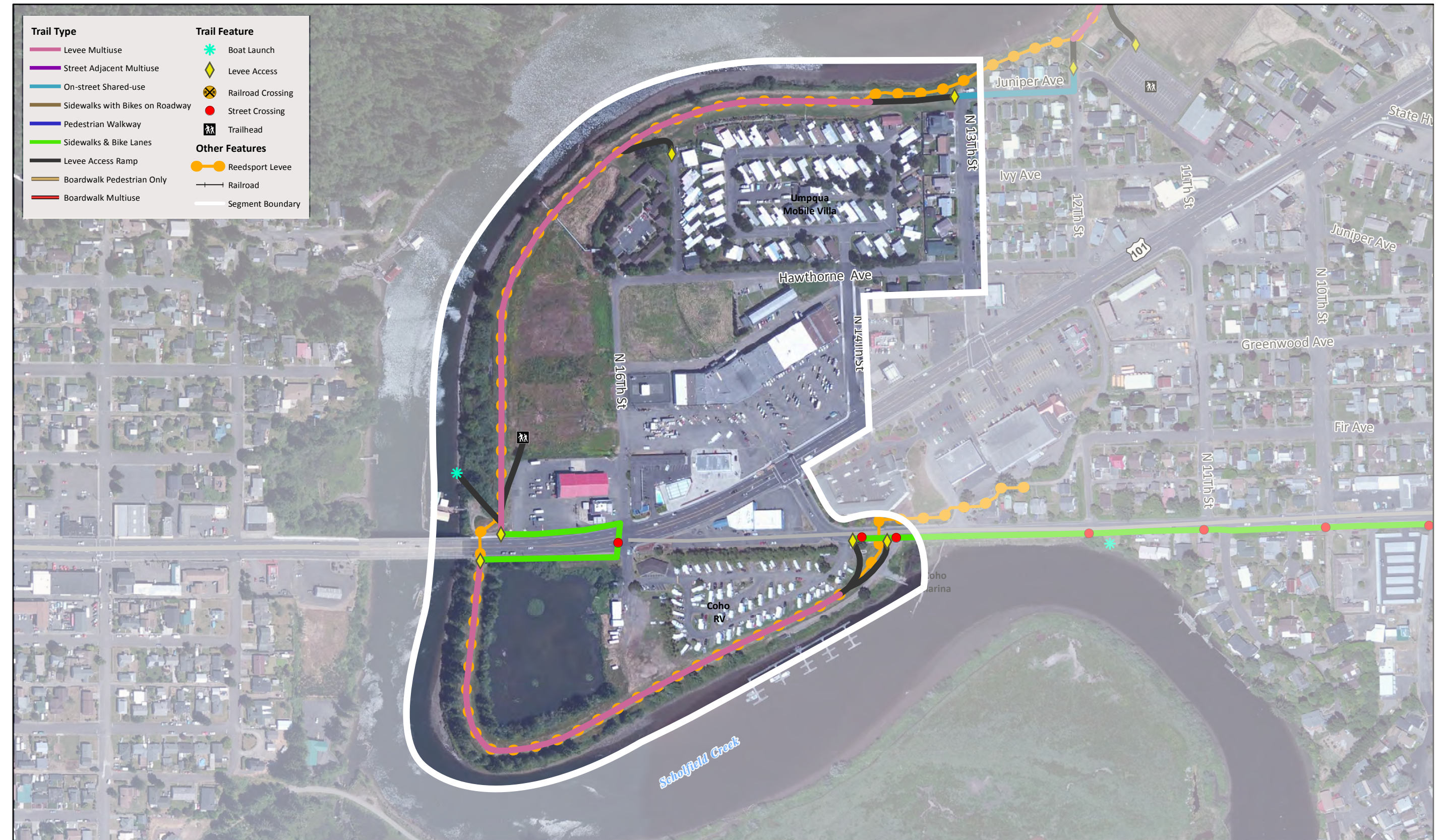
Preferred Levee Ramp Options

- **N 13th Street:** Uses an already partly graded 270-foot-long section behind the Juniper Avenue floodwall to reach the Levee Crown.
- **Umpqua Mobile Villa:** A new 166-foot-long ramp connecting the Levee Crown to a private access roadway on Umpqua Mobile Villa property. Will require use permission from property owner.
- **North of US 101:** Three levee ramps will be required:
 - When the levee is upgraded for flood control purposes, it will match the elevation of US 101. Thus this trail main stem "ramp" will simply consist of a standard levee multiuse section with a paved multiuse trail surface.
 - 205-foot-long ramp from Levee Crown to proposed non-motorized boat launch.
 - 255-foot-long ramp taking trail users down to the recommended new trailhead.
- **Winchester Avenue:** Dual-ramp connecting directly to Winchester Avenue. This ramp configuration eliminates need to modify Floodgate 7 across Winchester Avenue and allows trail users traveling in both directions to avoid "sharing the road" through the gate. The ramp on the Coho Marina side of levee will probably require relocation of the Marina driveway including a retaining wall along the creek. Ramp on RV park side of levee would be less expensive and would suffice as a first stage solution. Will require use permissions or acquisition from Coho RV.

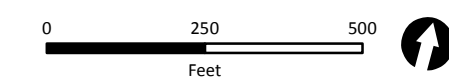
Preferred Non-motorized Boat Launch

The preferred launch site is just north of US 101. Will require access ramp on both sides of levee (see above "North of US 101" ramps), and trailhead and launch site improvements, to be fully functional.

Segment 4: Scholfield Waterfront



Parametrix



Reedsport Levee Loop Trail
Map 6: Preferred Trail Option
Segment 4: Scholfield Waterfront

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Segment 5: Winchester Avenue



Winchester Avenue: Floodgate 7



Winchester Avenue: Sidewalk Extension Area



Winchester Avenue: Example of Parking/Bicycle Lane Conflict



Railroad Crossing at Winchester Avenue



Fir Avenue (Oregon 38): Downtown On-street Trail at N 4th Street



Fir Avenue Downtown showing Wood Sculpture

Segment 5: Winchester Avenue

Preferred Trail Alignment

Bicycle lanes/sidewalks along Winchester Avenue from Coho RV to N 6th Street; then looping through downtown via sidewalks and bicycle lanes or shared-use along N 3rd Street, N 6th Street, Winchester, and Fir Avenue (Oregon 38). Will require new sidewalk on water side of Winchester Avenue between Coho Marina driveway and N 12th Street.

Trail Length

5,898 linear feet

Estimated Cost

\$221,000

Preferred Oregon 38 Crossing

See Segment 1 for discussion.

Other Road Crossings

Winchester Avenue is a designated collector. Fir Avenue (Oregon 38) is an arterial. All streets intersecting with Winchester Avenue (W Railroad Avenue, E Railroad Avenue, 7th, 10th, 11th, 12th) and Fir Avenue (3rd, 4th, 5th, 6th) are designated as local streets. Each local street intersection crossing should have signing and pavement markings.

Rail Crossing

The Winchester Avenue on-street trail section also crosses the railroad. Improvements have recently been completed to this rail crossing. These improvements may have to be upgraded to accommodate the increased pedestrian and bicycle traffic resulting from trail development.

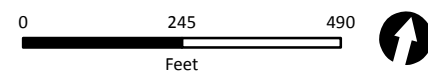
“Limited Purpose” Non-motorized Boat Launch

Uses a small undeveloped private property overlooking Scholfeld Creek at N 12th Street and Winchester Avenue. This site does not have the tidal constraints of the possible McIntosh Slough (Segment 2) launch site, but has similar upland constraints that limit functionality. There is sufficient area for creating an off-street vehicle pull-out for safer vessel and gear unloading, but none for parking. This launch is not cost-estimated.

Segment 5: Winchester Avenue



Parametrix



Reedsport Levee Loop Trail
Map 7: Preferred Trail Option
Segment 5: Winchester Avenue

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7. Trail Phasing

This LLT phasing plan provides guidance in balancing trail development options and pursuing construction funding. Many factors influence actual construction sequences and timeframes. Availability of construction funding is the primary driver. The building of specific trail sections and structures may also change phasing priorities.

Phasing will also be influenced by changing jurisdictional authority and priorities, other public and private development, and evolving regional and local plans. The possibility for interim solutions (see Technical Memorandum No. 4, Chapter 9) may shift trail building priorities to areas where interim options are less feasible.

The City should re-visit this phasing plan over time and re-assess the priorities based on changing circumstances.

General Phasing Criteria

The criteria in Table 1 are suggested in prioritizing trail sections or structures. Higher priority trail segments or sections will demonstrate some combination of the listed characteristics. Criteria are not in order of importance nor weighted. A sequential (1-2-3) or yearly ranking is not particularly useful over a long construction horizon. The recommended trail phasing stages are: Near-term, Mid-term, and Long-term.

Specific Phasing Considerations

Levee Improvements

LLT phasing will be driven by a relatively unique factor: the timing of levee improvements. As discussed in Technical Memorandum No. 3, Chapter 5, the levee must be structurally adequate to meet flood control requirements to maintain flood insurance eligibility.

The Federal Emergency Management Agency (FEMA) provides accreditation (formerly called certification) for the levee on an intermittent basis. The levee was last accredited in 2010, and a new accreditation is scheduled for 2016. The City is currently conducting a comprehensive assessment. Discussions with the consulting engineer for this accreditation assessment indicate that levee improvements will be required. In particular, levee improvements in Segments 2 and 4 impact the timing of trail construction.

Property Acquisition

The timing and feasibility of private property acquisition or use permissions is often a major factor in trail phasing. This is not expected to be the case with the LLT. Most of the trail is on the Levee Crown or along public right-of-way. The sections of the levee that are on private property are subject to USACE restrictions that make these areas of no practical development value.

Table 1: Phasing Criteria

Alignment	<ul style="list-style-type: none"> • Uses the Levee Crown, unless no levee option is available • Uses areas of the levee not requiring accreditation improvements
User Alternatives	<ul style="list-style-type: none"> • There are no practical or safe alternatives for trail users without constructing a specific trail section or structure.
Connectivity and Functionality	<p>A specific trail section or structure:</p> <ul style="list-style-type: none"> • Connects to major activity center(s). • Extends built portion of the LLT or intersecting built trails. • Functional in and of itself (e.g., if other trail sections were never built, the section would still be useful). • Crucial link without which other sections would not be functional.
Overall Benefit/Cost	The benefits of a specific trail section or structure are distinctly greater than the relative length or cost, environmental mitigation or permitting complexity, and other factors.

Phasing Plan

The following specific approaches are suggested in managing LLT phasing:

Signing and Pavement Markings/Ramps

The most economical means to quickly establish a relatively continuous LLT are new crosswalks and signing and pavement markings designating both permanent and interim on-street sections as part of the LLT. These street sections can be combined with interim use of an unimproved Levee Crown to accommodate a wide range of trail users, excepting road bicycles on the levee.

Levee Crown Surface Upgrades

Interim improvements could be made to Levee Crown surfaces that would open up at least limited usage for road bicycles. The surfacing would consist of a geotextile layer covered by two sizes of base rock. This would also reduce Levee Crown wear and tear.

Levee Accreditation

Multiuse trail improvements on the Levee Crown or the construction of new levee access ramps should NOT be undertaken until the levee accreditation study currently underway is complete. No trail or ramp construction should be undertaken in the specific levee areas identified for upgrades until such upgrades are made. All other factors being equal, levee trail sections and ramps in areas that do NOT require upgrades should receive priority.

Road and Rail Crossing Improvements

All road and rail crossing improvements should be timed to coincide with the construction of associated LLT sections. The possible US 101 trail undercrossing is only feasible if the Scholfield Bridge is upgraded.

Levee Ramps

There are three categories of LLT ramps proposed. Ramp construction phasing is suggested in the following order:

- **Partly existing ramps:** Existing grading and fill provides for partial ramps in three locations – Champion Park at Port Dock Road (Segment 3), N 12th Street (Segment 3), and N 13th Street (Segment 4). Some additional grading and/or paving will complete these three ramps.
- **Ramps following the line of the LLT:** Four proposed ramps follow the line of the LLT and thus are essential to creating a continuous trail – Railroad Bridge (Segment 1), Highway Bridge at Port Dock Road (Segment 2), US 101 at Scholfield Creek (Segment 4), and Coho RV/Marina at Winchester Avenue (Segment 4).
Note: the Railroad Bridge ramp can be built in two sections. A new 100-foot-long ramp section from Port Dock Road up to the levee is essential. The ramp section from E Railroad Avenue under the rail bridge could be deferred, and signing and pavement markings substituted. The Coho RV/Marina ramp could also be built in two stages.
- **Optional access ramps:** Five new ramps improve LLT access but are not essential to the continuity of the LLT – Myrtle Avenue (Segment 2), Champion Park (Segment 2), Umpqua Mobile Villa (Segment 4), Preferred Boat Launch Ramp (Segment 4), and new Trailhead Ramp (Segment 4).



Current Condition of Potential US 101 Undercrossing

Table 2: Phased Priorities

(See Map 8 for locations of LLT phases.)

Near-Term

Trail Sections	<ul style="list-style-type: none"> Segment 3: Champion Park (Port Dock Road to N 12th Street) Segment 4: N 13th Street to US 101 (at Scholfield Creek US 101 bridge)
Upgraded Ramps	<ul style="list-style-type: none"> Segment 3: Champion Park at Port Dock Road Segment 3: N 12th Street Segment 4: N 13th Street Segment 4: US 101 at Scholfield Creek
New Ramps	<ul style="list-style-type: none"> Segment 1: Railroad Bridge (Port Dock Road side)
On-street	<ul style="list-style-type: none"> All on-street sections (signing and pavement markings and/or crosswalks)

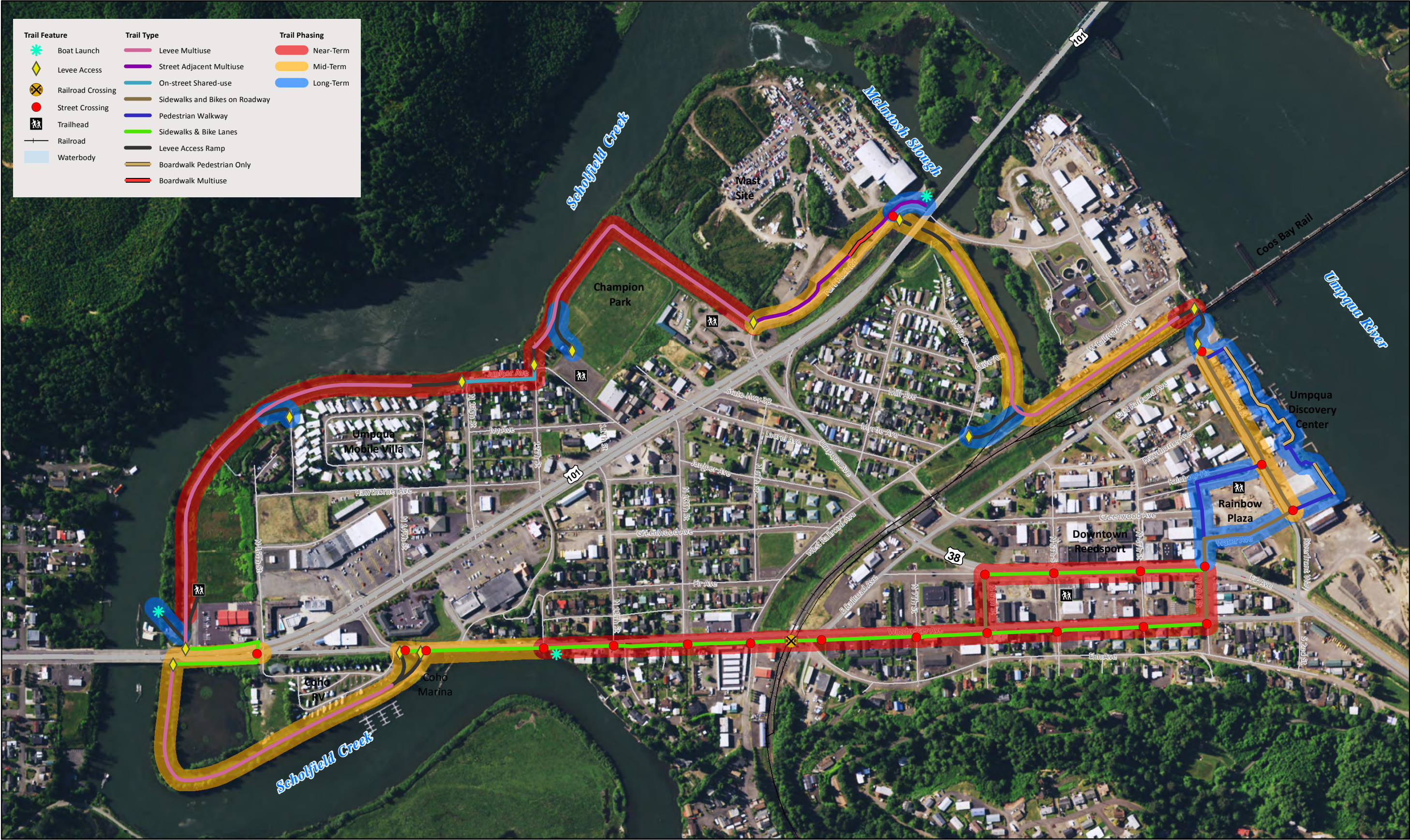
Mid-Term

Trail Sections	<ul style="list-style-type: none"> Segment 2: Port Dock Road (at railroad bridge) to Port Dock Road (at Umpqua River US 101 Bridge) Segment 2: Port Dock Road (street-adjacent trail) Segment 4: Coho RV (US 101 to Winchester Avenue)
New Ramps	<ul style="list-style-type: none"> Segment 1: Railroad-adjacent Levee Crown Segment 2: Umpqua River US 101 Bridge Approach Segment 4: Winchester Avenue (ramp on Coho RV side)
On-street	<ul style="list-style-type: none"> Riverfront Way (12-foot-wide sidewalk – E Railroad Avenue to Water Avenue) Winchester Avenue (5-foot-wide sidewalk – waterside from Coho RV to N 12th Street)

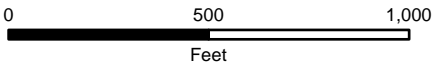
Long-Term

New Ramps	<ul style="list-style-type: none"> Segment 1: Railroad Bridge Approach (E Railroad Avenue side) Segment 2: Myrtle Avenue Segment 3: Champion Park (to parking lot) Segment 4: Umpqua Mobile Villa Segment 4: Winchester Avenue (ramp on Coho Marina side)
Boardwalk	<ul style="list-style-type: none"> Segment 1: Riverfront Boardwalk Extension
On-street	<ul style="list-style-type: none"> Segment 1: N 3rd Street/Water Avenue Segment 1: N 3rd/Rainbow Plaza (5-foot-wide sidewalk – Water Avenue to Riverfront Way) <p><i>On-street improvements tied to full development of Rainbow Plaza</i></p>

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Parametrix



Note: This phasing map shows Preferred Trail Option alignments and trail types only. See Technical Memorandum No.4 for interim and intermediate phased solutions using other trail types.

Reedspport Levee Loop Trail
Map 8: Trail Phasing Plan
Permanent Solutions

8. Cost Estimates

Cost Estimates by Trail Segment

Table 3: LLT Cost Estimates

	Trail Length (LF)	Trail Cost	Ramp Length (LF)	Ramp Cost	Total Construction Cost	Total Engineering Cost	Total
Segment 1: Umpqua Waterfront¹	2,009	\$579,700	360	\$117,000	\$696,700	\$383,200	\$1,079,900
Segment 2: Port Dock Road	2,832	\$820,700	604	\$196,300	\$1,017,000	\$559,350	\$1,576,350
Segment 3: Champion Park	2,099	\$421,650	380	\$123,500	\$545,150	\$299,800	\$844,950
Segment 4: Scholfield Waterfront²	3,905	\$1,305,700	1,242	\$403,650	\$1,709,350	\$940,100	\$2,649,450
Segment 5: Winchester Avenue³	5,898	\$171,200	N/A	N/A	\$171,200	\$49,800	\$221,000
TOTAL	16,984	\$3,347,250	2,586	\$840,450	\$4,187,700	\$2,259,050	\$6,371,650

1. Excludes existing 241-foot-long sidewalk.

2. Excludes existing bicycle lanes and sidewalks on US 101, but includes new trailhead and non-motorized boat launch.

3. On-street signing and pavement marking, plus 604-foot-long new sidewalk.

Cost Estimate Assumptions and Limitations

Design and Engineering Costs

Trail design and engineering, permitting, and construction management were estimated as percentages of construction cost:

- Preliminary engineering/permitting: 25 percent
- Construction engineering: 15 percent
- Construction contingencies: 15 percent

Trail and Ramp Construction Costs

Trail linear foot distances were measured from GIS-based mapping. Unit cost estimates vary by trail type. Levee access ramp distances are based on specific non-engineered ramp designs for each ramp. All designs meet ADA and USACE requirements. All estimates are plan-level and subject to final design,

engineering and permitting, and prevailing labor and materials market rates at the time of construction. Costs do NOT include any required improvements to the underlying levee berm. Such improvements are currently being assessed by the City through a separate levee accreditation study.

Trail types are those identified in this Technical Memorandum No. 4. Unit costs are based on information derived from recent trail master plans and trail construction projects in the State of Oregon, including one project within ODOT Region 3. In addition, the estimated costs for trails on the Levee Crown and for access ramps up to the levee assume construction to a load bearing capacity suitable to support maintenance vehicles.

Specific Cost Assumptions

Trails

Levee multiuse trail (10 feet wide) suitable to withstand typical maintenance vehicle loads	\$250/linear foot
Street-adjacent multiuse trail (12 feet wide)	\$250/linear foot
<i>Note: The distinction from the levee multiuse trail is that the street-adjacent trail is wider and includes buffering from roadways. Street-adjacent trails for the LLT do not however need to be constructed to withstand maintenance vehicle loads, thus estimated linear foot costs balance out.</i>	

Ramps

Levee access ramps	\$325/linear foot
<i>Note: All ramps are assumed to be earthen/aggregate fill with no retaining walls. Specific ramp alignments and slopes may vary. An average linear foot estimate is used. At this plan-level stage it is expected that the Segment 1 ramp, the Segment 2 Port Dock Road ramp, and Winchester Avenue dual-ramp (Segment 4) may be more expensive. The N 12th Street ramp (Segment 3) and the N 13th Street ramp (Segment 4) should be less expensive.</i>	

Boardwalks

Wetland multiuse boardwalk (Segment 2)	\$800/linear foot
<i>Note: Riverfront boardwalk extension (Segment 1) is a long-term option and is not estimated.</i>	

Sidewalks

12-foot-wide sidewalk (Segment 1)	\$200/linear foot
5-foot-wide sidewalk (Segment 5)	\$150/linear foot

On-Street Shared-Use

Pavement markings and signing (every 1,000 linear feet of roadway)	\$2,000
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Arterial Street Crossings

Raised refuge island and user-activated flashing beacons	\$400,000 per crossing
No refuge island	\$325,000 per crossing

Local Street Crossings

Pavement markings and signing	\$5,000 per crossing
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Trail Amenities

Way-finding signs, benches, etc. (every 1,000 linear feet of trail)	\$4,000
Trailheads and boat launches	\$200,000 per new facility

Note: Trailhead and boat launch sites shown on LLT segment maps are conceptual only and indicate a general, not specific, location. Features may vary with final design and construction. Trailhead estimate assumes small paved parking lot, restrooms, small sheltered picnic area, and interpretive and way-finding signing. Boat launch estimate includes a floating pier and interpretive and way-finding signage. "Limited purpose" launch sites are not estimated.

9. Additional Trail Elements

Property Acquisition

Property acquisition requirements for preferred LLT alignment options are very limited. Much of the levee and levee exclusion areas are in public ownership. Except in Segments 1 and 5, most of the preferred trail alignment is on the Levee Crown and accessed by ramps that are primarily within the 15-foot-wide exclusion area from the toe of the levee slope. Other LLT sections are on public right-of-way. See Map 9 for potential acquisition areas.

Levee Trail Sections

Some levee sections and exclusion areas planned for the LLT are in private ownership. As these properties are encumbered by the levee berm and have no value for private development, acquisition costs may be nil or modest. These sections are:

- **Segment 2:** Along McIntosh Slough
- **Segment 3:** Along northeast side of Champion Park
- **Segment 4:** Coho RV and Marina

Other LLT sections potentially requiring private property acquisition are:

- **Segment 1:** One section of waterfront required to extend Umpqua River waterfront boardwalk and a parallel section for sidewalk extension
- **Segment 2:** Frontage along the Mast Site on Port Dock Road for a street-adjacent trail section

Levee Ramps

Levee ramp areas potentially requiring private property acquisition or use permissions are:

- **Segment 1:** Ramp to and under the railroad bridge (E Railroad Avenue side)
- **Segment 2:** The abandoned rail spur used to ramp down to Port Dock Road
- **Segment 2:** Myrtle Avenue ramp
- **Segment 4:** Umpqua Villa ramp (may also require use permission for private access roadway)
- **Segment 4:** Coho RV/Marina ramps at Winchester Avenue

Trailheads

One new trailhead is recommended as part of the LLT. Four additional trailheads could be co-located with existing facilities. See Technical Memorandum No. 3, page 42 for more information. Site design and amenities may vary greatly based on location and expected usage. Trailheads that share parking and other facilities at government centers and commercial areas are a cost effective alternative to standalone sites.

Conceptual trailhead locations are noted on segment maps. *Note: Trailhead locations are intended to identify the general areas within which a facility would be desirable, but are not property specific unless otherwise noted.*

Shared Trailheads

- **Segment 1:** Rainbow Plaza or Riverfront Way Commercial Areas.
- **Segment 2:** Oregon Dunes Visitor Center or the former Chamber of Commerce visitor information building site opposite the Dunes Center.
- **Segment 3:** Champion Park at N 12th Street.
- **Segment 5:** Downtown area government facilities.

New Trailhead

- **Segment 4:** Scholfield Creek at US 101. May require private property acquisition, although trailhead could be primarily on undeveloped public right-of-way. A new levee ramp directly accessing the trailhead would be required.

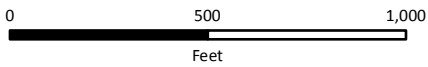


Trailhead Site (grassed area behind truck) from US 101

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Parametrix



Reedsport Levee Loop Trail
Map 9: Potential Property Acquisitions
or Use Permissions

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Non-Motorized Boat Launches

The physical presence of the levee is a significant impediment to boat access to the Umpqua River and Scholfield Creek. Two boat ramps are already in place along the Riverfront Way shoreline. These two Riverfront Way boat ramps provide for launch of motorized vessels. Users of non-motorized water craft (kayaks, canoes, inflatables) may prefer less congested areas. Non-motorized users may also prefer to launch into the quieter waters of the McIntosh Slough or Scholfield Creek.

Preferred Launch Site

- **Segment 4: Scholfield Creek near Les Schwab Tire Center.**

This potential site is located opposite the levee ramp that will connect to a proposed trailhead behind Les Schwab. Users will have to haul boats and gear up and over the levee. Users would park at or near the trailhead. There may be room on the waterside of the levee for limited amenities nearer the launch.



US 101/Scholfield Creek Launch site

Limited Purpose Launch Sites

- **Segment 2: McIntosh Slough.** A launch site into McIntosh Slough under or near to the gothic-style support arches of the historic Umpqua River US 101 Bridge would provide for a unique scenic experience for kayakers and other non-motorized boaters. Access would be from Port Dock Road. Wetlands could be impacted by site improvements. At low tides, the Slough does not have sufficient water, even in the main channel, to be passable. Users will have to time trips to avoid being temporarily stranded by mud flats and low water.



McIntosh Slough Launch site

- **Segment 5: Scholfield Creek near N 12th Street.** This site is at the point where Scholfield Creek bends away from Winchester Avenue. A small vacant lot would have to be acquired. There is sufficient room to create a drop off/pick up area but none for off-street parking.



12th Street/Scholfield Creek Launch site

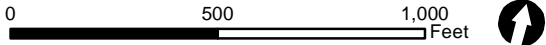
Interim Trail Options

The LLT will most likely be built in phases (see Technical Memorandum No. 4, Chapter 7). Until multiuse trail sections are constructed or the permanent on-street sections of the trail are signed and marked, existing city streets and the Levee Crown can be used as interim routes connecting to permanent trail improvements and/or key destinations. Interim routes are shown on Map 10. These possible interim sections are described in detail in Technical Memorandum No. 3, Chapter 6.

Interim Trail Options



Parametrix



Reedspport Levee Loop Trail
Map 10: Interim Trail Options

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10. Connector Trails and Routes

A variety of secondary loop trails, short connector spur trails, and selected on-street routes can contribute to a “complete” pedestrian and bicycle system (see Map 11). These additional trails and on-street facilities will safely and efficiently connect residents and visitors alike to key destinations such as government offices, schools, offices, shopping, and recreational areas. These connector trails and routes are not included in LLT cost estimates. The interim trail options shown on Map 10 can also be part of an interconnecting system.

On-Street Connectors

- **US 101 Sidewalks and Bicycle Lanes**

In general, sidewalks and bicycle lanes along US 101 should be signed at key intersections to direct users to Levee Crown and on-street sections of the LLT. In some areas, bicycle lane upgrades may be required.



Existing US 101 Bicycle Lane and Sidewalk

- **Oregon 38 (Umpqua Avenue)**

The Umpqua Avenue section of Oregon 38 (US 101 to N 6th Street) is scheduled for a sidewalk and bicycle lane upgrade in 2018. This arterial street should be signed at key intersections to direct users to the LLT.

- **Segment 2: Oregon Dunes Visitor Center Shared-Use**

Using signing, pavement markings, and potentially different paving treatments along the front of the Oregon Dunes Visitor Center, a short connection could be made between the LLT

section around Champion Park and the Oregon 38/US 101 intersection.

- **Segment 4: N 13th Street and N 16th Street**

Two on-street routes are suggested for signing and pavement markings connecting from US 101 to the long stretch of the LLT on the Levee Crown along Scholfield Creek: N 13th Street to the levee access ramp at N 13th Street and Juniper Avenue, and North 14th Street to the levee access ramp near Umpqua Mobile Villa.

Local Trail Connectors

- **Segment 1: Knife River Spur Trail**

The RWDP identifies the former Knife River aggregate site southeast of Riverfront Way and the Umpqua Discovery Center for eventual waterfront commercial and open space development, including an extension of the Riverfront Way boardwalk. A surface trail could also extend into the Knife River site or along the portion of the levee that follows Oregon 38 eastward.



Looking South into Knife River site

- **Segment 2: McIntosh Slough Loop Trail Loop**

This multiuse loop is illustrated in the RWDP. The loop would be subject to regular inundation as it would be completely outside of levee flood protection, but would be a highly scenic alternative to the street-adjacent LLT section along Port Dock Road. This loop would also connect to the possible McIntosh Slough “expert” non-motorized boat launch. Redevelopment of the Mast Site would probably be a prerequisite to development of this local loop trail. This redevelopment would presumably include new levee protection.

- **Segment 2: McIntosh Slough Boat Launch Spur Trail**

Short street-adjacent trail section connecting the main trail crossing of Port Dock Road to the proposed non-motorized boat launch under the US 101 approach ramp to the Umpqua River Bridge.



Possible McIntosh Slough Launch site

- **Segment 4: US 101 Trailhead**

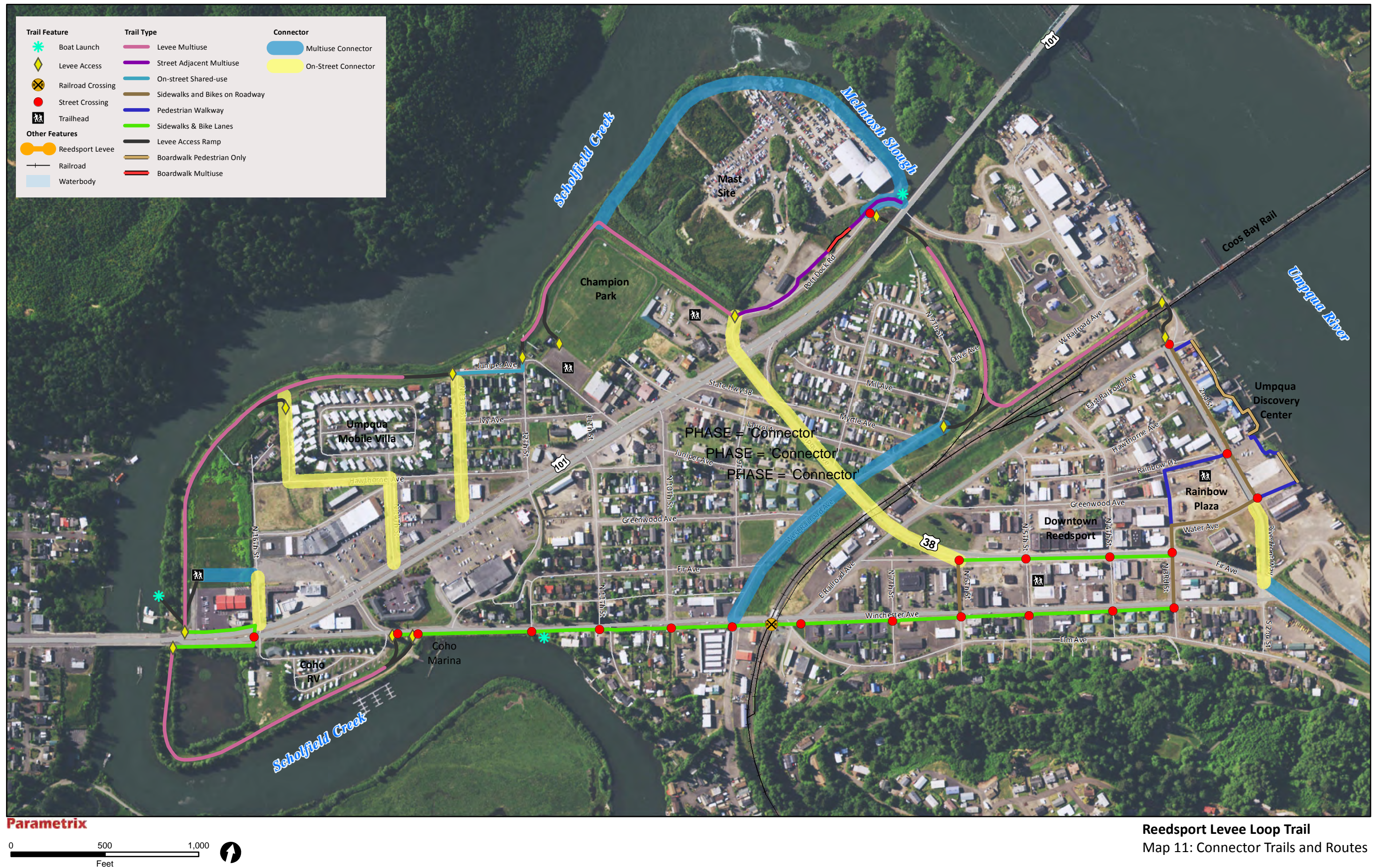
A short multiuse trail connecting the new trailhead in this location to N 16th Street is recommended. Includes a short shared-use on-street section to the N 16th Street crossing of US 101.

- **Segment 2 to Segment 5:
W Railroad Avenue Connector Trail**

The main LLT route includes a levee access ramp connecting Myrtle Avenue/W Railroad Avenue to the Levee Crown. A street-adjacent trail extending from the base of this ramp across Oregon 38/Umpqua Avenue to Winchester Avenue is suggested. This would serve as a shortcut back to the Levee Crown trail for users that do not wish to follow on-street sections into the downtown. The southeast side of W Railroad Avenue is presently an open field.



W Railroad Avenue Connector Route



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11. Trail Amenities

A variety of outdoor facilities, furniture, lighting, signing and other amenities will make the LLT a welcome place along which to travel and enjoy Reedsport and the waterfront. These same features and amenities, if established with uniform or complementary designs, materials, and themes, can also help provide the LLT with a distinctive identity.

Photographs included in this chapter are examples for illustration purposes only.

Major Trail Facilities

Trailhead

One new trailhead facility is planned for the LLT. The site is north of US 101 near the Scholfield Creek Bridge (Segment 4). This trailhead will also provide vehicle parking and some other amenities serving the preferred non-motorized boat launch in the same general location.

Preferred trailheads features and amenities include:

- Safe access roadways separating vehicular and trail user traffic
- Vehicle parking
- Secure bicycle storage
- Restroom facilities
- Benches, shelters and picnic facilities
- Interpretive facilities
- Wayfinding signage
- Security lighting
- Drinking water

Non-motorized Boat Launches

One new all-purpose non-motorized boat launch is planned for the LLT, along with two more specialized launches. The preferred all-purpose launch is near to the proposed Segment 4 trailhead. A floating dock anchored to pilings will accommodate the extremes of tidal fluctuations (see example photograph that follows).



Preferred Segment 4 non-motorized boat launch features include facilities and amenities (*in italics*) that will be shared with the Segment 4 trailhead:

- *Accesses and driveways accommodating turning movements of vehicle-hauled trailers*
- *Boat unloading areas*
- Space to assemble gear and ready for launch
- *Vehicle parking*
- *Restroom facilities*
- Benches, shelters, and picnic facilities
- Interpretive facilities
- Wayfinding signage
- Security lighting
- *Drinking water*

Restrooms

Restrooms are expensive to build and maintain. Restrooms are also subject to vandalism and other inappropriate uses. To reduce maintenance costs and vandalism, restrooms should be located in highly visible and accessible locations. For trails, the best locations for restrooms are usually in association with trailheads or other high-activity areas. Pre-fabricated restrooms (example below) are usually the least expensive.



The new trailhead proposed for the LLT (Segment 4) should include restrooms. This trailhead will be visible from nearby commercial uses, US 101, and City streets.

There are several other sites identified in the LLTP for co-use as LLT trailheads. Champion Park (Segment 3) has a freestanding restroom facility. The Oregon Dunes Visitor Center (Segment 3) and a variety of public buildings along Winchester Avenue and Fir Avenue (Segment 5) also have public restrooms, as does the Umpqua Discovery Center (Segment 1).

Taken together, all these sites, with the addition of a new trailhead (Segment 4), provide for a reasonable number of adequately spaced restroom facilities along the LLT.

Levee Access Ramps

All levee access ramps have been located and conceptually designed to comply with USACE and ADA requirements. As per USACE regulations, ramps will not cut into the levee prism. As best as can be determined, only one new access ramp – the creekside ramp proposed on Winchester Avenue (Segment 4) – will have to be constructed to USACE standards.

Levee access ramps should include features identifying the LLT and the access point. This can be done at a minimum through a trail name sign. Additional signing with an overall trail map with trail lengths and accessibility information could be included.



The limited room atop the levee, combined with USACE standards that normally preclude footings dug into the levee, means signage on poles or posts may need to be located off of the levee berm, most probably at the toe of levee ramps.

Amenity Features and Structures

There are two general challenges to locating any amenity features on the Levee Crown or levee berm slopes:

- The Levee Crown is generally 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 many trail amenities.
- USACE generally does not permit any improvements that have to bore or cut into the levee prism. As the LLT develops, the City will need to consult closely with USACE to find amenity solutions that satisfy regulations. Recent City discussions with USACE indicate some flexibility for minor footings, although not for conduits.

Thematic Elements

The Umpqua River, McIntosh Slough and Scholfield Creek are suggested as the themes of the LLT. The gothic arches under the Umpqua River highway bridge could also be reflected in amenity design. Downtown Reedsport is distinguished by the locally produced large wood carvings sited along Fir Avenue sidewalks and elsewhere. This community feature could be extended to the LLT. Pieces are large and heavy enough to deter vandalism and theft.

The LLT will include a variety of special features, structures, and improvements to make the route accessible, safe, and pleasant to use. These features can work together to support overall trail design themes that communicate a unified trail appearance and experience. Themes can be reflected in signing graphics, on benches, boardwalk railings, bicycle racks, and on entry features such as gates and portals.





Furniture

A variety of trail furnishing can improve the trail user experience – benches, trash receptacles, shelters, etc. As with all amenity features, it will be hard to find space on the Levee Crown for such structures. USACE restrictions may mean that furniture can be placed on the crown but not anchored to it, increasing the probability of vandalism or theft. An alternative is to use large wood or stone structures that are simply too heavy to carry away.

Features such as benches, lighting, and shelters should be carefully positioned to avoid impacts on adjacent neighbors. For security reasons such facilities should not be sited out-of-view of non-trail users. In any event, USACE restrictions may greatly limit or eliminate such features on the Levee Crown.



Bicycle Racks

Bicycle racks should be included at trailheads. Simple “U” or staple-shaped racks are recommended. Racks can also be creatively designed to reflect community and trail themes. The City is in the process of commissioning the fabrication of themed racks.



Lighting

Lighting is often suggested to help make trails safe and accessible on a 24-hour basis. While “visiting” trail users may prefer a well-lit trail, neighboring residents may find lighting intrusive. One way 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.

Also, USACE regulations protecting the structural integrity of the levee will probably preclude the footings, underground wiring conduits, and junction boxes that would be needed to provide conventional lighting along the Levee Crown, and there will be little area to install lighting on the narrow Levee Crown. Trail lighting may have to be limited to levee access ramps and the approaches to the ramps, and the areas where the LLT crosses a roadway.

Lighting alternatives could include:

- Use of asphalt paving with painted-on or embedded photovoltaics.
- Painted fog lines along trail edges.
- Use of low-level solar photovoltaic-powered light standards to provide for early evening lighting.



Signage

Given the limited area and USACE restrictions on the Levee Crown, a system of pavement markings may be the most practical and cost-effective way to sign the actual trail. An LLT logo could be developed and used to mark trail pavement. With the advent of smart phones, some communities have also placed identifiers at regular intervals so the police or fire/ambulance staff can respond to emergencies by getting a specific location.



Kiosks and Interpretive Facilities

Given the limitations to siting kiosks and other interpretive facilities on the Levee Crown, these types of facilities, and freestanding maps and directional signing, should be combined with other LLT "entry" improvements – lighting, furniture, etc. – at or near levee access ramps, trailheads, and road crossings.



Viewpoints

For trails through scenic areas, 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 of trail travel lanes; or more elaborate and include interpretive signing and shelters.

Unfortunately the narrow Levee Crown offers little extra room to create even simple viewpoints. USACE approval of more structured viewpoints vaulted over the edge of the Levee Crown would be highly unlikely. Nonetheless as the LLT is built the

City should look for viewpoint opportunities. One possibility is a viewpoint structure at the proposed new non-motorized boat launch near US 101.



Landscaping

Landscaping on the Levee Crown or levee berm slopes is not permitted by USACE standards. Tree roots and other large vegetation reduces the structural integrity of the levee prism. Fortunately, the highly scenic views from most sections of the Levee Crown will more than compensate for the lack of landscaping.

Fencing/Other Barriers

The need for security fencing for the LLT is limited, but the City should be prepared to address any trespass concerns of neighboring properties as the trail is developed and trail traffic grows. Fencing might also be appropriate to protect adjacent sensitive lands. As with many trail amenities, there will be little room for fencing on the Levee Crown. Security fencing could be installed along the edge of the 15-foot-wide levee exclusion zone.

Once the paved trail atop the levee is constructed, motor vehicle use of the Levee Crown may become a problem. Fenced gates are a possible solution (a gate is in place already for the Port Dock Road/Champion Park ramp) but bollards would be as effective and not impede bicyclist and pedestrian movements. "No vehicles allowed" pavement markings or warning signs should be included.



APPENDIX E

Project Meeting Records

City of Reedsport, Oregon
Levee Loop Trail System Plan (LLTP)
Technical Memorandum No. 4 (TM4): Preferred Tail Options
Meeting Notes – June 29-30, 2015

1. Stakeholder Interviews

- **Coho RV and Marina**

Jim Rapp met with Ralph and Valarie Asturias, local managers/partners in Coho RV Park and Marina, and Robert Staechle of RASNCC Holding, an investor in the Coho RV and Marina. They were pleased that the access ramp options sited within the RV Park as an option in earlier reports had been dropped. They were also pleased that their private boat launch was no longer shown as a shared-use option.

We discussed the preferred dual-ramp levee access at Winchester Avenue. The reason for this dual-ramp configuration was so that no trail user would be required to use the street through the confined Floodgate 7. This being said, the RV Park-side access ramp could suffice in the interim – as travel movements through the floodgate would be quick.

They were concerned that the Marina-side access ramp would interfere with the driveway to the Marina and private boat launch. I assured them that any ramp design would either preserve the existing driveway or provide a modified driveway that works just as well. Retaining walls either for the ramp or along the creek could be used to assure continued driveway access to the Marina.

With respect to the rest of the LLTP, they asked “why not go under the Scholfield Bridge to connect across US 101?” We discussed the complex cost, technical and public safety issues with this option. They also asked about parking and trailheads. We discussed the various provisions in the plan.

- **Fred Wahl Marine Construction**

Jim Rapp met with Fred Wahl. Mr. Wahl indicated he was opposed to any trail solution that brought trail users along the portions of Port Dock Road that passed through his industrial properties. I indicated that, although early versions of the RWDP looked at street routes through his properties, the present LLTP effort never considered any such options.

He preferred that trail users not even be routed on the levee that parallels the rail line near his properties, and suggested East Railroad Avenue instead. I indicated that that East Railroad Avenue could work but our charge was to maximize the trail route atop the levee. On-street routes had no advantages over the levee in this location.

We discussed the near-term and long-term levee access ramp options under the railroad bridge. Given low traffic volumes, a straight ramp up to the levee from Port Dock Road

would probably suffice. Trail users could safely follow the roadway under the bridge supports with improvements to signing, pavement marking, and some repaving. The longer term option would involve a property he owns on the Riverfront Way/East Railroad Avenue side of the levee. He indicated willingness to sell this property to the City.

- **Mast Brother Towing**

Jim Rapp met with Josh Mast. Mast Brothers own a large parcel along Port Dock Road slated for mixed use redevelopment. The ownership includes the portion of the levee on the northeast side of Champion Park, and the levee and abandoned rail spur along McIntosh Slough.

We discussed the trail options along Port Dock Road, the McIntosh Slough levee/rail spur, and on the levee along Champion Park, as well as the proposed community connector trail around the waterside exterior of his site> the connector trail carries over from a recommendation in the RWDP. His primary concern was that the trail along Port Dock Road not constrain future redevelopment plans. We talked about the standard street-adjacent multiuse trail recommended in this location. I indicated that, except for the proposed boardwalk across the small wetland in this area, initial improvements would probably be limited to signing and pavement markings or some paving treatments. This would distinguish the line of the trail from the extensive existing paving and graveled areas surrounding industrial buildings in this area.

The standard street-adjacent trail would probably not be built until the proposed mixed-use site development broke ground. We discussed whether as part of this future redevelopment a standard multiuse trail through the site would be possible. He indicated that conceptually this would be possible.

2. Amenity Features

Jim and Gregg Everhart met with Jonathan Wright and Jessica Terra to review examples of trail amenities. TM4 includes a chapter on amenities that require example illustrations. Parametrix compiled a photographic catalog of benches, lighting, trash receptacles, kiosks, bike racks, restrooms, pavement markings, boat ramps, entry and regulatory signing, wayfinding signs, interpretive signs, and trailheads. Gregg led the discussion, and staff selected examples that best reflected local preferences and themes. These photographs will be added to illustrate Technical Memorandum No. 4.

3. Project Advisory Committee

Jim Rapp and Gregg Everhart met with members of the Project Advisory Committee. John McDonald of ODOT Region 3 also participated in the discussion. Jim reviewed the preferred trail alignments and types; and phasing, community trail, and interim trail components.

Comments noted were:

- In response to questions, Jim provided more details on the one major area where the levee was not used for the trail – along US 101 and Port Dock Road. Extensive levee improvements were required in this location and transmission-scale power poles would have to be relocated before a trail could be constructed. Ramp/bridge/boardwalk connections from the McIntosh Slough section of the levee would also be more complex. More environmental permitting and mitigation would be required. Thus the street-adjacent trail option along the opposite side of Port Dock Road was preferred.
- John McDonald elaborated on the reasons for ODOT opposing at-grade crossing of US 101 at the Scholfield Bridge. John indicated that ODOT was not saying that the City couldn't adopt an at-grade crossing as the preferred LLTP solution, but that interim and other options should be noted in the final LLTP. Jonathan Wright countered that the crossing was essential to creating a functional trail through the most scenic and probably what will be the most used sections of the entire Levee Loop Trail. After much discussion, it was decided that Jim would craft language to review with ODOT and the City before finalizing TM4.
- It was requested that the possibility of a US 101 undercrossing be reintroduced into TM4. Earlier analysis based on the existing bridge found too many cost, permitting, technical, ADA, and public safety issues with an undercrossing of the existing bridge. Jonathan indicated however that a bridge rebuild was now a possibility. In the context of a rebuild many undercrossing system would be resolved or could at least be embedded in larger bridge permitting, design and engineering. Jim was to reintroduce language into TM4 to this effect.
- Jonathan asked that the phasing plan be altered to make the Segment 4 levee trail north of US 101 a Near-term priority, and that the sections of the levee trail paralleling McIntosh Slough and the railroad be dropped down to Mid-term. The group concurred.
- It was also noted the USACE had indicated in separate discussions with the City that amenities that required minor anchoring to the levee prism may be acceptable. Improvements that required conduits would not be. This is a more flexible approach than previously indicated and creates some possibilities for locating certain amenities on the levee crown. Jim pointed out however that the narrow levee crown would also restrict many amenities, as the multiuse asphalt path would take up most of the area.

4. Planning Commission/City Council Work Session

Jim and Gregg presented the preferred trail alignments and trail types, and recommendations for phasing, community trail connectors, and interim trail solutions to the Planning Commission. City Council members were also present but sat in the audience which included several community members. Jim and Gregg also highlighted some the changes and refinements arising from stakeholder and PAC review earlier in the day.

The Commission asked questions but did not suggest any further changes. Primarily, the Commission expressed support and the wish to get on with funding and building the trail.

5. Project Management Team

Jim, Gregg, Jonathan and Jessica met to debrief on the prior days activities and to confirm the changes to recommendations and additional language for TM4. These include:

- Language balancing City and ODOT US 101 crossing preferences and staging.
- Changes to phasing as discussed at the PAC.
- Further explanation of staged improvement possibilities for the Winchester Avenue, East Railroad Avenue/Port Dock Road, and US 101 levee access ramps.
- Further explanation of staged improvement possibilities for the Rainbow Plaza/Riverfront Way and Mast/Port Dock Road trail sections.
- Brief section reintroducing the possibility of a US 101 undercrossing associated with an overall Scholfield Bridge upgrade.
- Indicating that the community connector trail around the exterior of the Mast site would be multiuse.

Date: August 25 and 26, 2014

Project: Reedsport Levee Loop Trail (LLT) System Master Plan

Activity: Project Kick-off Meetings and Field Trip

Location: Reedsport City Hall and project study area

Attendees: **City** Jonathan Wright, City Manager, Jessica Terra, City Planner
ODOT Region 3 Alexandra Krull
Parametrix Jim Rapp, Gregg Everhart

Kick-off Meeting (8/24)

General Project Discussion

Goal of maximizing trail atop levee

Levee was completed in 1968, most recent major flood was 2005 but Discovery Center off of Riverfront Way remained above peak flood level. The importance of the planning being focused on maximizing the linear distance of the trail on the levee was agreed to. On-street alignments and other solutions should only be part of the interim alternative, or if a section of levee simply cannot accommodate a trail levee trail is simply not possible.

Noted that trail alignment in the adopted Reedsport Waterfront and Downtown Plan (RWDP) uses only approximately 25% of levee; earlier versions of RWDP, and Transportation System Plan (TSP) used more.

Most of levee is already used by pedestrians; can see worn grass in more heavily used areas. Concerns that may be raised in formalizing the levee as a trail will be typical: privacy impacts, safety, and burglary potential. Cost of building a multiuse trail to State standards – 10-12 foot width, asphalt paving, ADA-compliant (ramps, etc.) may also raise issues.

Off-levee areas

Areas where on-street solutions are highly probable, if not outright the only solution, include: Riverfront Way, near Juniper Avenue, and connecting back along the Oregon 38 corridor through downtown. TSP and RWDP show Winchester Avenue as connection from US 101/Scholfield Creek back to downtown.

The group discussed the Winchester route in particular and alternatives east of the rail crossing along Elm Avenue or Fir Avenue (Oregon 38). Both TSP and RWDP recommended Winchester which is less trafficked than Fir/Oregon 38 and brings users past most government offices. However given the level of existing and planned bike/ped improvements along Fir and the economic benefits of bringing the route through the commercial downtown, the group preferred Fir/Oregon 38.

Riverfront Way and surrounding properties can get congested with boat trailer traffic and waterfront visitors, this will make safe on-street trail solutions challenging.

Boardwalk possibilities include: riverfront along Riverfront Way, riverfront paralleling to Juniper Avenue, areas crossing under US101 near Port Dock Road. The RWDP illustrates a boardwalk extension along riverfront paralleling Riverfront Way (existing boardwalk is in front of Discovery Center). This extension

is a very long-term project requiring a whole variety of redevelopment. Probably not a viable LLTP solution, even for peds, except in that context. The existing boardwalk ramps and surface may also have to be upgraded to meet ADA

Levee structures

In addition to actual elevated levee structure, 15 feet from tow of slope on both sides is part of levee system. Areas must be kept free of trees, buildings, fences and other structures. Levee also includes pump systems and gravity drains with tide gates; and in some place flood walls replace or augment elevated levee (Riverfront Way, Juniper Avenue, and at points where roads cross line of levee (Winchester Avenue for instance). US Army Corps of Engineers (USACE) considers water infiltration to be a concern for levee integrity, so impervious surfaces on levee, to the extent permitted, are actually favored.

Levee ownership

Levee is in multiple ownerships including City ownership, although City is responsible for overall maintenance under agreement with USACE. The section of the levee parallel to the railroad is owned by Port of Coos Bay (also owns rail line). Port may be positive about a rail near trail. Land on both sides of rail underpass is owned by Fred Wahl (ship building/repair business).

Generally complicated land ownership along Riverfront Way – City owns Schooner property & leases building; then Fred Wahl, then Port of Coos Bay; there is no City ownership/right-of-way at this railroad undercrossing; City is co-owner of parcel across street from Discovery Center – will eventually divide so City has the open area and private owner has the buildings.

USACE responsibilities

USACE is supposed to do annual inspections. Last visit was 2011, tentatively scheduled for recertification visit on 9/15/2014. Several areas have encroachments; other areas have settling. City manages mole/gopher abatement program. USACE is typically very concerned about seepage and likely to prefer impervious trail surface.

Connections to other parts of City, and from outside City

- Bike touring is common on Hwy 101, although Reedsport is currently be seen as a destination; Reedsport is terminus of Crater to Coast route that is being proposed as Oregon Scenic Bikeway.
- TSP and RWDP shows new crossing for trail at HWY 1001 bridge across Scholfield Creek. ODOT has pedestrian study underway – this will provide guidance regarding possibilities for crossing at this point.
- TSP shows a bike/ped bridge across Scholfield Creek connecting west and east side of City. Connection not part of LLTP.
- Will need to designate access points to levee trail; look for locations with natural flow of traffic from street system. Ramps will be needed that meet ADA requirements without negatively impacting levee integrity or USACE requirements. This will be relatively straightforward in some area but challenging in others.

- Ideal trailheads and other access points are from already City-owned parcels – possibilities are Rainbow Plaza near Riverfront Way, Champion Park, City-owned property at Hwy 101/Scholfield Creek.
- Kayak launch sites would ideally be on quieter waters than the Umpqua River. McIntosh Slough and reaches of Scholfield Creek above confluence with Umpqua are possibilities.

Demographics

Check census data for 2010; more of the low income population in City lives in study area; no substantial non-English-speaking population; OSU may have most detailed information; several retirement communities (mobile homes) and two subsidized housing projects are in study area.

Summary of key planning issues

Key issues facing the goal of having most of the trail on the levee include:

- Areas where levee is interrupted or replaced with walls – Riverfront Way, along Port Dock Road, near Juniper Avenue Sufficient area or other limitations to permitting ramps and structures
- Key crossing points without which levee access would require significant out-of-direction travel – Port Dock Road at Railroad, US 101.
- Private ownership of levee – portions of levee are owned privately and ownership rights or associated private development may limit access to and from the levee.

Review Final Scope/Budget

1. Jim noted that the RWDP illustrated a trail along McIntosh Slough and Scholfield Creek from Port Dock Road to the Champion Park Levee. It was agreed that unless this was the preferred LLT alignment that no planning for this route was in the scope. The fact this route was outside of the levee and part of a large parcel slated for redevelopment but with no formal adopted master plan or timeline made it probably infeasible.
2. The RWDP identified Winchester Avenue for an on-street section of the trail. It was agreed that Fir Avenue/Oregon 38 through the downtown core should be considered but that Elm Avenue should not. Bike lanes and sidewalks exist on Fir.
3. Opportunities to get input from USACE at the plan-level may be limited. A new person at USACE – Mark Brodesser – is assigned to Reedsport levee and should be contacted.
4. Jim pointed out that in the back and forth over scheduling and budgeting detail, the first consultant visit (this kick-off meeting and field trip) was listed as one overnight, when actually it needed to be two.

Review Schedule Assumptions

Jim will transfer schedule in the project contract to a shared calendar, accounting for the actual NTP.

Review Draft Technical Memorandum No. 1 (TM #1)

Project Goals and Objectives

Jim noted that the draft Goals and Objectives were based on grant application, ODOT RFP, and contract language, with some minor language changes and re-ordering, and the addition of objectives with

respect to developing long-term and interim trail solutions, and maximizing the percentage of the trail atop the levee.

Preferred Trail Types

1. Jim explained that the preferred trail type descriptions were an expansion of the language in the contract. Cross-sections would be developed later in the project for the types selected for trail options.
2. Jonathan requested that a example photograph and a concept cross-section for a multiuse trail on a levee be included in this section of TM #1.

Evaluation Criteria

Jim explained that the evaluation criteria were not designed to be weighted or pointed. In the experience of both Jim and Gregg, trying to apply a quantitative rating at the plan-level is usually ineffective. The criteria format presented in TM #1 is designed to provide a common set of factors that can be qualitatively applied to different options to better assure a uniform evaluations.

The criteria have been customized to the LLTP to reflect local conditions and concerns and the goals and objectives of the project. Jim asked that PMT review of the draft TM #1 particularly focus on the evaluation criteria, both the categories and the evaluation factors listed under each category.

Review Initial Baseline Information Mapping

The team reviewed the baseline information maps, and identified areas where additional information would be desirable. The biggest gaps were in various Goal 5-type resources. Jim noted that Douglas County Goal 5 inventories excluded the City but that Parametrix GIS staff thought the Lane Council of Governments (LCOG) might have some additional data. Jonathan said that the City's Comprehensive Plan and some other plans might address the gaps but that the information would not be extensive. It was agreed that for any baseline information categories named in the project's contracted scope for which there was no known data that TM #2 should simply note the gap.

For land use map overlay it was agreed to use Zoning Map rather than Comprehensive Plan map

Debrief Meeting (8/25)

The team met on Tuesday morning to debrief on Monday's activities and define next steps (note: this Tuesday meeting was basically the first PMT meeting as defined by the project's scope). The following next steps were defined:

Parametrix

1. Edit TM #1 as per City/ODOT comments – add photo and cross-section illustration to Trail Type.
2. Produce kick-off meeting notes.
3. Put key project dates and deliverables on a shared calendar.
4. Contact LCOG re: additional GIS resources for baseline conditions, especially Goal 5-type resources.
5. Extrapolate demographic write-up from 2010 US Census

City

1. Provide email re: Use of pilings off Champion Park.
2. Comments on draft TM #1 – particularly evaluation criteria.
3. Conduct set of key stakeholder interviews, provide Parametrix with notes.
4. Map of city-owned properties, including those being considered for acquisition ("considered" parcels will be held in confidence by PMX).
5. USACE contact info.
6. Additional levee information – ownership/easement map, width/height data, encroachments, etc.
7. Any Goal 5 type resource reports and records, and if not ... indicate where in other plans (Comp Plan, etc.) references to same exist (or not).
8. Any special plans or studies within the trail study area (Mast site, Rainbow, riverfront, etc.).

ODOT

1. Comments on TM #1.
2. Further discussion with Region 3 re: possibility of new US 101 bike/ped crossing between Scholfield Creek bridge and 16th, or undercrossing of US 101 bridge at creek.

Possible early key stakeholder interviews (It was left to City to decide if these stakeholders would be able to talk in the absence of a draft route plan or if we need to wait until there is a draft plan):

1. Owner of land at rail underpass near riverfront - would they "tolerate" a plan that showed use of their property at underpass as a long-term solution? Use of their property for ramp up to levee on west side of railroad?
2. Coho – OK with a paved trail along levee? OK about discussing solutions for getting down off levee at Winchester?
3. Mast – continued willingness to discuss off-street trail solution along Port Dock Road? Willingness to provide parking for a under 101 kayak launch?
4. Owner(s) of land at rail underpass near Laurel – who are the owners? Would they be willing to consider short-term use as part of an interim solution? Or as a long-term solution? (Sidebar question probably for Port ... is the rail line not down the center of rail right-of-way at this point?)
5. Port of Coos Bay - Would they allow levee in their ownership to be used for the trail? Would they be OK with trail on the levee paralleling the rail line?

NAME	ADDRESS	EMAIL	PHONE	SEGMENT OF INTEREST	COMMENTS	HOW WOULD YOU USE THE LEVEE LOOP TRAIL?	HOW FREQUENTLY WOULD YOU USE THE TRAIL?	HOW DID YOU HEAR ABOUT THE PROJECT?
Nancy Lee	13th Street	reedsport.123or@yahoo.com		3	I live in that are and see how many people and dogs use that area.	I wouldn't use it. As we age walking on earth/ground is a lot easeir for our joints, therefore I think the whole idea is ridiculous. Use the money some place else that would be more productive.		
					This is not important. What is important is that before levee projects, the city needs to get creative and bring more industry, businesses, and jobs to our local area.			
					I think it's a bad idea and a waste of dollars. There are not that many people that use the existing levee trail in my area-but almost all of them are taking their dogs there to poop, which they don't clean up. I can only see this developmen as more dog poop, if indeed more people might be using it.			
Sheri Aasen	638 Evergreen Loop	saasen@luhonline.com	541-662-1101	1, 2	I am intersted because it's off street, quiet areas, wildlife viewing.	Walking/Jogging	A few times a month.	Email, rotary
					This is an exciting project.			
Emesha Jackson	2149 Alder Avenue	ejackson@cityofreedsport.org	848-231-1222	2, 3, 5	They have great scenic views and are easy to follow. I love walking my dog on these segments.	Walking/Jogging, Experience Nature, Dog Walking	A few times a week.	City Staff
					I don't prefer one trail alignment over another, just want accessible points, signage, and view points.			
					I like the idea of naming it "River Trail" instead of "Levee Loop Trail"			
Joann Patten	1813 Greenwood Avenue	pattenjoann@yahoo.com	541-271-1512	2, 3, 5	I'm interested in these segments because they are nearest to my house. I walk these regularly.	Walking/Jogging, Biking, Recreation, Experience Nature	A few times a week.	Flier
					I would like to see a safe way to cross Highway 101 at segment 3.			
					I'm hesitant to walk the trail at dusk, so I'm excited for lighting.			
Dan Karpa		saildive@frontier.com	541-662-8022		The more I think about this proposed asphalt trail, the less I like the idea. Has there been a usage survey done? I've lived next to the levee by Champion Park for many years, the last five have been here (Greenwood Ave) and have a view of the levee from the Schofield bridge to Mast Bros junk yard, from what I've observed, there are just a handful of people that regularly use it, mostly to walk their dogs or run/jog, which brings up the problem of injuries that can occur from running or walking on asphalt. Green grass is more aesthetically pleasing than blacktop, blends in better with the water and surrounding vegetation. I'm sending you this email because the survey questions seemed too one sided. This seems like a large project with questionable favorable results. I moved here from Portland to be closer to nature, not to see it paved over like they did there, of course with their high density population, it makes more sense for them. There must be more pressing matters that this city needs to address, like refinancing the treatment plant debt, or passing an ordinance against the use of exhaust brakes, how about the local garbage truck doing its pickups at a reasonable hour instead of 5:45 AM. :-)			

Flip Chart Comments from Open House:

Boardwalk along Winchester at creek is nice, but will be expensive.

Distance markets at each Quarter Mile (or less), along with historic pictures of the area. Walking tour of the area.

COHO RV Park does not wish to lose two RV spaces to access ramp and fill slopes.

Details on launch, lighting, amenities after selection of preferred alternative.

ODOT has money for project to add bike lanes and sidewalks along Highway 38 instead of PMX option of on street trail.

Segment #2-lower rail alignment has bird watching opportunity.

Segment #1-"bike colored" route as good interim route-doable on Riverfront Way. Boardwalk is nice (especially with any new development), but expensive. It is a great use of waterfront, but longer term.

Segment #2-former plan using Port Dock Road gave property owner concerns. The proposed LLTP route is oke (under the bridge).

Railroad will want their property posted "No Trespassing" for liability reasons.

Segment #2-prefer high trail vs. low trail: views of homes, birds, bridges, and expense for ADA.

North launch is tidally challenged.

Connector trails will be added once preferred route is selcted.

Check of US Forest Service property.

Potential 4m launch site-small lot with driveway for loading and unloading with stair step launch.

Winchester Avenue vs. Main Street

Trail is priority-Main Street Project

Look at trail up hill as alternative to Winchester-better workout and views.

Could have traffic jam when multiple walkers, dogs, meet and pass because the width is too narrow.

Not many people would use it.

Add mile and quarter mile markers-encourage distance. Emergency location.

USACE desires ramp in "desire" trail wear areas.

Dog park area fencing is temporary.

Champion park launch has challenges, but the parking lot and restroom are pluses. Interest in picnic table on creek side of levee-DSL issue?

CP may need both ramps.

Segment #3-change on street route to use ped-study existing signalized crossing (not downtown plan route)

Highway 101 bridge is 60 years old but in good shape-no rehab needed. ODOT concern with crossing improvements not being warranted; sudy underway.

Alt1-cross under bridge-DSL, ADA, Cost, Safety

Alt2-use driveway area (floating home notification)

Alt3-north of driveway area

Alt4-roads farther north

Alt5-route trail away from levee to new trailhead at 16th Street (difficult crossing, even in a car; COHO visitors have been hit by cars in this location).

Visibility/speed curve at Highway 101

Possibility to cross bridge (uphill) to south, then cross

Prefab pedestrian bridge

Segment # 4-floodgate crossing-eliminate center

USACE concerned with pedestrians wearing path in grass

RV Coho-also concerned with visitors/theft

Date: November 26, 2014

From: Jim Rapp, Consultant Project Manager, Parametrix

To: Project Management Team (PMT)

**RE: Reedsport Levee Loop Trail Master Plan (LLTP)
Outcomes of Project Advisory Committee (PAC) Meeting #1**

Meeting Purpose: Update the PAC on project goals and objectives (review of Technical Memorandum No. 1); review draft Technical Memorandum No. 2: Baseline Information)

Date/Location: The inaugural meeting of the LLTP PAC was conducted on Monday November 17, 2014 from 3:00 PM to 4:30 PM at Reedsport City Hall. The meeting was conducted in part via teleconference with Parametrix and US Army Corps of Engineers (USACE) representatives participating from Portland, Oregon. The PAC meeting was preceded by a series of face-to-face stakeholder interviews conducted at City Hall by City and ODOT staff. Consultant did not participate in these interviews, the results of which have been tabulated separately by the City.

PAC Meeting Participants

PMT

- Alexandra Coates, ODOT
- Jonathan Wright, City of Reedsport
- Jessica Terra, City of Reedsport

Consultant (Parametrix)

- Jim Rapp
- Gregg Everhart

PAC

- Brian Saber, USACE
- Bill Abboty, USACE
- DeeDee Murphy
- Ray Lapke
- Frank Barth
- Lind McColum
- Emesha Jackson
- Debby Turner
- Allen Teitzel
- Ralph Asturias
- Valarie Asturias
- John Stokes
- Duane Wisehart

Meeting Outcomes

Jim Rapp and Gregg Everhart reviewed:

1. **Technical Memorandum #1: Project Goals and Objectives**, focusing on the project study area and planning segments, project goals and objectives, and the trail option rating criteria.

There were no comments or suggestion for revisions made.

2. **DRAFT Technical Memorandum #2: Baseline Conditions**, focusing on each chapter of the memorandum: Plans and Policies, Transportation, Land Use, Natural Resources, and Demographics.

USACE inquired as to project goals and processes, particularly with respect to USACE responsibilities for the 1968 Reedsport levee. The sections of Technical Memorandum #2 addressing levee characteristics, possible 408 permitting, and FEMA levee recertification were pointed out. Consultant reiterated that this is a planning level effort, and that the project's statement of work emphasized close coordination with USACE. USACE staff committed to reviewing and commenting on possible solutions at the next phase of this master plan project - Conceptual Trail Options.

There were no other comments or suggestions for revisions made. Note: many questions were answered at the earlier stakeholder interviews and most centered on trail solutions not baseline conditions. The Port of Coos Bay did submit an email the day after the PAC requesting corrections to the name used for its rail line through the study area.

3. **Next Steps:** Technical Memorandum No. 3: Conceptual Trail Options will be delivered in draft form by the end of January 2015 or early February. The second PAC meeting and a public open house is tentatively scheduled for 3rd or 4th week February 2015

NAME	ADDRESS	PHONE	EMAIL	WHAT SEGMENT(S) ARE YOU MOST INTERESTED IN?	WHY ARE YOU MOST INTERESTED IN THE SELECTED SEGMENT(S)	WHAT DO YOU THINK? ARE THERE OTHER CONDITIONS? WHAT IS YOUR PREFERRED ALIGNMENT?	TELL US ABOUT YOURSELF	HOW WOULD YOU USE THE TRAIL?	HOW OFTEN WOULD YOU USE THE TRAIL?	OTHER COMMENTS
Judy Tyree	-	-	icigar@myastound.net	-						I am very excited about this trail.
David Gibson	PO Box 5350, Bend, OR. 97708	541-416-5342	david.r.gibson@lesschwab.com	4	Concerned with the impact on my business.	Does not appear to impact us.	Les Schwab Tire Center/174 N. 16th Street Owner of a residential rental property in Reedsport	Walking, jogging, biking, recreation, to experience nature	Never	Concerned with the impact on local business and security issues.
Karen Rich			karenrich7@gmail.com	1, 2, 3, 4, 5	I would love to see this project completed.				A few times a year	
Cheri (Haner) Ryan	1209 Juniper Avenue, Reedsport, OR. 97467		Tiggertype@gmail.com	3	The plan proposes to build a path between my property and the river. This will lower my property value because it will either prevent us from getting to the river anymore or make my backyard and possessions (boat, etc.) more accessible to all who might travel the trail. I grew up in Reedsport and plan to spend a lot of time in the area when I retire in a few years. I think expanding trails is great for the recreation opportunities and the economy as well.	Please! Not in my backyard. (literally) It would be a humongous nuisance providing noise and litter and quite possibly bring in trouble with vagrants and theft of personal property. It will have hidden areas and provide a thoroughfare for the transient population to travel. We get more transients than tourists. Folks presently (and quite happily and safely) walk our street going from Champion Park south to the next levee. People go up and down the street walking their dogs, kids are on bicycles, and folks are out for exercise. Police drive by and can see all that is going on.	I live here.	At present, I enjoy the levee to experience nature, minus human influence. This diminishes where more humans congregate. The spew pop and beer cans in the bushes, litter the ground with cigarette butts, play loud music and attract out of town bums.	Never	The part of the levee in back of my property is steep and there isn't a lot of room to separate my property from a broad walking trail. My neighbos (including the ones on the north side of Juinper) feel this is an innappropriate placement of the trail and are very unhappy. This trail is better suite for Lake Oswego, Milwaulkee, or Eugene. Most of us enjoy the underdeveloped aspects of Reedsport and are not eager to see it improved. Those who prefer a "citified" area should move elsewhere. Who is the trail really for citizens or tourists?
Don Fullhart	PO Box 194, Sisters, OR. 97759	541-419-9980	dfullhart@fullhartinsurance.com			I don't have enough information to provide input.	Own office building and business in Reedsport, but work out of other location.	Walking, jogging	A few times a year	
Kirk and Rhonda Denham	85332 Edenvale Road, Pleasant Hill, OR. 97455	541-228-4087 or 541-912- 3158	rhonda@multipoints.com	1, 2, 3, 4, 5	Own property along Segment 3. Use the Waterfront area often. We use Segments 1 and 5 often and would like to see them upgraded. Bug Segment 3 is private property and should remain private.	I do not want this trail to go behind my house on Juniper. We purchased that location specifically for peace and quiet of the river setting and no possible growth of any kind behind our house. I do not want traffic of any kind. The theft possibilities are enough concern, not to mention the noise pollution and lack of privacy in my own backyard.	I use the docks for fishing in Segment 1 and live along Segment 3.		Never	The population can use street access on Juniper as they do now. There is no need to go behind my house. We have read Tech. Memo 1 and have concerns. The proposed fence shown at the bottom of the levee would result in a taking of our property with is unacceptable. There's little question that the profile would severely impact our business operations. We are interested in the trail profile as it evolves.
Ralph Asturias	1580 Winchester Avenue, Reedsport, OR. 97467	541-271-5411		4	Our property is surrounded by the levee on two sides. We walk there almost every day and many times use this on our way to the bank or stores. We walk the long way around COHO, crossing at 101. It is along the river and very pleasant.	We support the concept of a levee trail system and commend the City for continuing to pursue a viable solution. Yes, it seems the trail should stick to the levee rather than divert to streets and there needs to be a crosswalk next to the bridge on 101.		Walking/jogging, recreation/reflection, to reach shopping and other community destination.	Daily	We have such a beautiful river area. The more we can align the trail with the river the more it will be used.
Doug and Cindy Farber Launa M. Compton- Ocana	1189 Winchester Avenue, Reedsport, OR. 97467 521 E. Mineral Road, Phoenix, AZ 85042	707-695-6256 480-652-2550	cindy.farber@gmail.com compton_ocana@yahoo.com	4 1, 5	 I'm a property owner.		Live at 12th and Winchester.		Never	
Charles Wade	385 N. 5th Street, Reedsport, OR. 97467		c_kenterprise@yahoo.com	1, 2, 3, 4, 5	Good of the community.		I live downtown and am retired	Walking/jogging, biking, recreation, to reach shopping or other community destinations	A few times a week	Good idea if it does not cost City of Reedsport tax payers any more money.
Kathy MacGregor	1257 Winchester Avenue	541-912-9118	kathy@epud.net	1, 2, 3, 4, 5	I live on Winchester and walk the levee every day I am in town. My only challenge is crossing Highway 101...sometimes an interesting experience. I love the levee and consider it one of the perks of where I live.	It would be wonderful, if as part of this plan, Winchester could become a "local traffic only" street. That would create more awareness of downtown.	Live at 1257 Winchester.	Walking/jogging, recreation, to reach shopping or other community destinaions, do experience nature, dog walking	Daily	I think it is a wonderful part of Reedsport with current levee and park-I refer to it as a promanade. I believe it is a wonderful next project for Reedsport.
Josh Mast	1912 Winchester Avenue	541-271-3019 541-997-6744	josh@mastbros.com	2, 3, 5	Property owners that have the levee.	Concerned with design and placement.				
Art Koning	87784 Terrace View Drive, Florence, OR. 97439	or 541-991- 0670	homesbyterrace@gmail.com	3, 4	We own Umpqua Mobile Villa and our home owners in the park will use it.		We own the park.	Walking/jogging,	Our home owners would use it often. We would use it when in the area.	Great idea.

LLTP KEY STAKEHOLDER MEETING #2
COMMENTS ON TM2

Other comments from the audience:

Concern that segment 1 might discourage use of the "bear tracks" along 3rd Street to Riverfront Way, onto the Discovery Center. Juniper residents are concerned with transients, noise, litter--would prefer an on street option, instead of behind their houses--also suggest pulling people away from Juniper with signs to bird viewing areas or kayak launches, etc.

Potential pedestrian and bike conflict--width of trail should be wide enough to allow bikes and peds, also need speed limit signs and other signage to help reduce conflict. Suggestion to have public parking available and signage directing trail users to the Visitors Center--this option also takes people away from the Juniper area. Suggestion to install pedestrian lighting near areas of the trail where transients stay, in order to detour them--check with USACE to see what options are available--maybe concrete weighted solar lights or motion lights?

People won't want to walk all the way down to 16th Street in order to cross Highway 101--like the idea of a crossing at the base of the bridge or sky bridge over 101.

Feel that public safety will improve as the trail develops--with more lighting, transients will likely relocate because they don't want to be seen.

Railroad-their main concern is simply with rail safety--prevent trespassing with appropriate signage, pedestrian barriers, etc.

Solar lighting does not require electrical lines which may be supported by USACE.

Survey Results (16 surveys returned):

Questions asked	# of "likes"	Other comments
GENERAL		
Of the following what is your favorite type of recreation?		
Hiking	12	
Biking	5	
Kayaking	5	
Nature Watching	10	
What is your primary interest in the Levee Loop Trail?		
Recreation	13	
Economic Enhancement	8	
Health Benefits	6	
Other	3	What changes will affect home owners abutting the levee; Rail line safety; draws tourists.
What do you think the theme for the trail should be, if any?		
Nature trail with scenic view points	9	
Physical fitness trail with information and suggested activities	4	
Water related recreation with fishing, kayaking and water access as the focus	6	
No theme	1	
Other	4	Getting Around Reedsport; Nature, Physical Fitness & Water related rec.; Rename: Riverwalk Trail; I like the lack of development; "People Mover" (transportation)-great for seniors to get from home to shopping.
SEGMENT 1		
How do you think conflicts with vehicle traffic should be minimized?		
Develop a combined bike/walking lane on the street	10	
Have bikes use Riverfront Way and pedestrians use an off street alternative (where available)	4	

LLTP KEY STAKEHOLDER MEETING #2

COMMENTS ON TM2

Additional lighting in this area	5	
Other	2	Water fountains; doggie bag stations and trash receptacles.
What amenities would you like to see?		
More restroom facilities	6	
The addition of bike friendly amenities (e.g., bike racks, bike friendly day us areas)	6	
Better picnic facilities	6	
Other	2	Safe cross walks; parking.
Do you have any other ideas or suggestions for this area?	8	Benches; better lighting; ways to combine multiple uses and reach out to tourists; kayaking; birdwatching; history kiosk; doggie bag dispensers; trash cans; make the trail wide enough for two people to walk beside one another with a divider down the patch, so two other people can walk next to each other in the opposite direction.
SEGMENT 2		
Would you prefer on street alignments rather than on the levee in this area?		
Due to the scenic quality of the levee sections in this Segment, I feel that every attempt should be made to keep the trail on the levee in this area	10	
I don't mind on street alternatives.	2	
What trail enhancements would you like to see in this area?		
Benches for scenic view areas	10	
Pedestrian lighting	6	
Other	2	Bike racks, scenic signage (ie, what birds to watch for), map with route, distance for hikers, bikers, kayakers; drinking fountain.
How do you feel about developing a water access area under the cathedral arches of the 101 bridge?		
I think that any water access areas will help promote the use of the trail	7	
This would make a nice picnic area	1	
I would like to see a kayak launch here	9	
Other	3	Interesting option-I think this would be used; water fountain; parking.
Do you feel that conflicts may arise between property owners and trail users in this area		
No-most people will stay on the trail	6	
Yes-Additional signage o trail markers may be required	8	
Do you have any other ideas or suggestions for this area?	3	Loop back along railroad, not Port Dock Rd; hide or get rid of U-Pull it; change Rail designation to Coos Bay Rail Link (CBR); Rename trail: River Loop Trail or River Recreation Trail or River Recreation Area to capture scenic byway bikers; bird feeders; signs with history info.
SEGMENT 3		
In the area of the sheet pile wall, which of the following do you feel would be best?		
The trail should be aligned on Juniper Avenue to avoid conflicts with neighbors.	2	
The trail should be aligned on Juniper Avenue with a potential future alignment on the riverward side of the wall, taking into consideration measures to help protect the privacy of property owners adjacent.	9	

LLTP KEY STAKEHOLDER MEETING #2
COMMENTS ON TM2

How can recreational opportunities be coordinated with the existing park?		
Multiple trail access points should be provided.	8	
This area would make a great kayak launch.	8	
Bike facilities should be developed to assist bicyclists utilize the park and water access points.	7	
Other	2	Encourage dog poop clean up; bring in kayak rentals and/or stand-up paddle boards; no improvements here, as any of the above would decrease property values with a lack of privacy.
Do you have any other ideas or suggestions for this area?	5	Concern with transients occupying any benches that are installed; promotional events for the trail-3k or 5k; feeders and bird houses; water fountains; dog water stations; trash cans; use the sidewalk or road by painting a trail that connects the levee on either side; speed limit signs for bicyclists.
SEGMENT 4		
Do you feel that conflicts may arise between property owners and trail users in this area?		
No-Most people will stay on the trail	6	
yes-Additional signage or trail markers may be required	6	
What trail enhancements would you like to see in this area?		
Benches for scenic view areas	11	
pedestrian lighting	5	
Other	2	Bike racks; signage with maps, routes, distances; doggie bag stations; trash receptacles.
What suggestions do you have regarding crossing Highway 101?		
I think people should go down to 16th Street to cross.	0	
I think that a separate crossing should be developed at the base of the bridge.	7	
I think that an under bridge alternative should be developed if possible.	6	
Other	2	Cross walk lights; well painted crosswalk with pedestrian sign.
Do you feel that conflicts may arise between property owners and trail users in this area?		
No-Most people will stay on the trail	6	
Yes-Additional signage or trail markers may be required	3	
Do you have any other ideas or suggestions for this area?	5	Resting areas and signage; place to attract birds; COHO has the perfect spot for a kayak launch-already exists; more visitors=off trail use and damages whether there are signs or not; many folks will not be respectful of our town and signs.
SEGMENT 5		
On Winchester Avenue what should be done to minimize conflicts with traffic?		
A pedestrian/bike lane should be developed.	6	
Sidewalks should be developed, where none exists, for pedestrians and a narrow bike lane can be developed for bicyclists.	8	
Other	1	Start with bike lane and then develop sidewalk as funds are available.
What trail alignment do you prefer?		
I think the trail should utilize the bicycle and pedestrian facilities in the downtown (i.e., Highway 38) to help attract people to businesses located there.	9	

LLTP KEY STAKEHOLDER MEETING #2

COMMENTS ON TM2

I think that Winchester Avenue should be utilized the entire length of the trail until its terminues at 3rd Street to avoid traffic impacts.	4	
Other		
What trail enhancements would you like to see in this area?		
Benches	12	
Bike racks	12	
Other	3	Close the street or part of it to allow for pedestrians and bikes only; signage; maps located at key points; side walks.
Do you have any other ideas or suggestions for this area?	4	More chainsaw carvings; think about natural areas, wetlands, environmental improvements to attract funding; each of these segments need info and historical signage; events to promote new trail; fishing points; solar lights.

APPENDIX F

Title VI Report

To be provided by the City of Reedsport.

