



Council Creek Regional Trail Master Plan

Report No. 3
IMPLEMENTATION STRATEGY



Prepared for

City of Banks, Oregon
City of Forest Grove, Oregon
City of Cornelius, Oregon
City of Hillsboro, Oregon
Washington County, Oregon
Oregon Department of Transportation
Metro



Prepared by

Parametrix

Date

October 2014

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Cover Photographs – all cover photographs courtesy Jim Rapp.

- *Top photograph is of an OMSI-sponsored biking group at Banks-Vernonia Trailhead in Banks, the north terminus of the Council Creek Regional Trail.*
- *Bottom photograph is the downtown Hillsboro MAX station, the south terminus of the Council Creek Regional Trail.*
- *Intermediate photographs are features of the other three jurisdictions through which the trail will pass, Washington County, Forest Grove, and Cornelius.*

Report Photographs – all courtesy Jim Rapp unless noted otherwise

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Citation

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1. Summary: Recommended Preferred Alternatives

RESERVED – Summary of recommendations will be added at end of Preferred Alternative selection process.

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2. Background

The Council Creek Regional Trail (CCRT) Master Plan Project Advisory Committee (PAC), consisting of representatives from the Cities of Banks, Forest Grove, Cornelius, and Hillsboro; Washington County, Metro, and ODOT, met on July 1, 2014, to:

- Review public open house and stakeholder interview outcomes from the period between April 2014 and June 2014.
- Consider the recommendations of the Stakeholder Advisory Committee (SAC) on the wide range of trail alignments and trail type options identified in Plan Report No. 2 – Trail Alignment Analysis.
- Select up to three (3) alignments per trail planning segment for additional analysis as the preferred trail alternative.

The trail alignment alternatives selected, as well the detailed records of public and technical processes followed, are described and mapped in Plan Report No. 2, Chapter 1, pages 1-1 to 1-21, dated July 2014. Plan Report No. 2 also includes descriptions and maps of the full range of trail alignment alternatives originally considered (Chapters 6 to 11). Plan Report No. 2 can be viewed and downloaded from the project's website.¹

This DRAFT Plan Report No. 3 – Implementation Strategy summarizes and maps the outcomes of further technical and planning analysis and public processes conducted from July 2014 to October 2014. Key tasks and sequencing as part of this additional effort included:

- **Stakeholder interviews** – Additional interviews were conducted to resolve technical and jurisdictional issues that emerged as part of and after the review processes leading up to the final Plan Report No. 2. Interviews are summarized in Appendix A of DRAFT Plan Report No. 3.
- **Open house** – An open house was held on August 27, 2014 for the general public and property owners to preview PAC-selected trail alternatives and to address public safety concerns raised at an earlier open house. This earlier open house meeting record is included in Plan Report No. 2. The meeting record for the August 27 open house and a compilation of submitted questionnaires is included as Appendix B of DRAFT Plan Report No. 3. A third open house is currently scheduled for November 5, 2014. Meeting records will be added to DRAFT Plan Report No. 3 appendices prior to final publication.

¹ <http://www.oregonmetro.gov/public-projects/council-creek-regional-trail-master-plan>

- **Trail alignment refinements** – Refinements to the July 1 trail alternatives were examined as directed by the PAC. Selected refinements are reported and mapped in Chapter 3 of DRAFT Plan Report No. 3.
- **Trail design typology** – Preferred and alternative trail design types and special structures were initially described in Plan Report No. 2, pages 4-2 to 4-5, and are refined, expanded, and illustrated in Chapter 4 of DRAFT Plan Report No. 3.
- **Costs** – Cost estimates and underlying cost assumptions for trail alignments, trail design types, special structures, and property acquisition are reported in Chapter 5 of DRAFT Plan Report No. 3, and further detailed in Appendix C.
- **Jurisdictional authority** – A summary table and background highlighting the strengths and limitations of the probable jurisdictional authorities that will develop and operate the CCRT are reported in Chapter 6 of DRAFT Plan Report No. 3.
- **Funding opportunities** – Information on current funding available for trail construction and for trail enhancements is reported in Chapter 7 of DRAFT Plan Report No. 3.
- **Comparative trail alignment evaluation** – The trail alignment alternatives in each segment are comparatively assessed, based on criteria approved by the PAC as part of Plan Report No. 2 (see Chapter 5 of Plan Report No. 2). These criteria are slightly revised and re-published in Chapter 8 of DRAFT Plan Report No. 3.
- **Regulatory and jurisdictional requirements/guidelines** – Summary tables and background on probable jurisdictional permitting and other requirements are reported in Chapter 9 of DRAFT Plan Report No. 3.
- **Phasing strategy** – Preferred trail alignment alternatives will be reviewed through a public and jurisdictional process including a third open house in November 2014 and subsequent consideration by the SAC and PAC. After this review is complete, phasing will be applied to the recommended preferred alternative(s). See Chapter 10 of DRAFT Plan Report No. 3 for phasing criteria and background.

REGIONAL RESERVES

Urban and rural reserves are designated by Metro under State of Oregon Administrative Rule 660. Reserves identify lands where the metropolitan Portland region's urban growth boundary (UGB) may (urban reserve) or may not (rural reserve) expand over the next 40 to 50 years. Rural reserve designation does not limit the development of trails. Urban reserve and rural reserves are discussed in Chapter 3 of Plan Report No. 1, and reserve boundaries as of early 2014 are illustrated on the Transportation and Land

Use maps. For more information on urban and rural reserves, please see Metro's website.²

In April 2014, the State of Oregon altered urban reserve designations or the UGB in three areas within the CCRT study corridor:

Segment 3: WEST

The urban reserve boundary along NW Purdin Road was adjusted southward to follow the main stem of Council Creek between Oregon 47 and NW Thatcher Road. The area south of the creek was brought into the UGB, and land north of the creek re-designated as rural reserve. The trail alignment alternative in this area follows the BPA transmission-scale power corridor, so this change has no impact on the alignment. Land along the one-third of Segment 3: **WEST** north of Council Creek is longer future urban and this may impact land acquisition timing and cost.

Segment 5: HOBBS

The urban reserve area west of NW 345th Avenue between Oregon 8 and the Tualatin River was brought into the UGB. This new UGB area includes the preferred route (**HOBBS**) for the CCRT spur trail to the Tualatin River. UGB designation may speed redevelopment in this area with opportunities to secure trail right of way or improvements as part of the urbanization process.

Segments 4 and 6: CREEK and RAIL 1

Prior to State action most of the land between Oregon 8 and the south edge of the 100-year floodplain of Council Creek and Dairy Creek was designated as urban reserve. These lands are now within the UGB from the Cornelius city limit almost all the way to the Hillsboro city limit at Dairy Creek. A possible local variation of **CREEK** (see Segment 6 trail alignment map) and a section of **RAIL 1** pass through this new UGB area. This has no impact on **RAIL 1** but may impact land acquisition timing and cost for the **CREEK** variation.

² <http://www.oregonmetro.gov/>



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3. Trail Alignment Refinements

In selecting up to three alternatives for each segment as the preferred alternative, the PAC directed that refinements be considered for certain alignments, special structures, and trail types before estimating costs and applying evaluation criteria. These refinements are illustrated on the following segment maps, and changes are summarized on the facing page to each map.

A single consolidated map showing the entire north-south study area precedes Segment 1 to 3 maps and a second consolidated map showing the west-east study area precedes Segment 4 to 6 maps. The capitalized trail section names (**WEST, CENTER, EAST 1, CREEK**, etc.) on the segment maps and facing page summaries refer to the trail alignment alternatives being considered for the preferred trail alignment. For other alignments considered earlier in the master plan process, see Plan Report No. 2.



Council Creek Regional Trail Planning Segments

SEGMENTS 1 THROUGH 3: BANKS TO FOREST GROVE



Segment 1 - Banks-Vernonia Trailhead



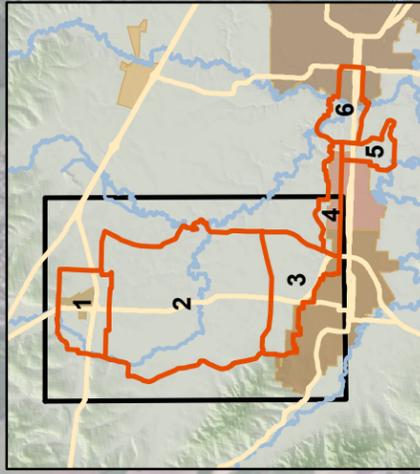
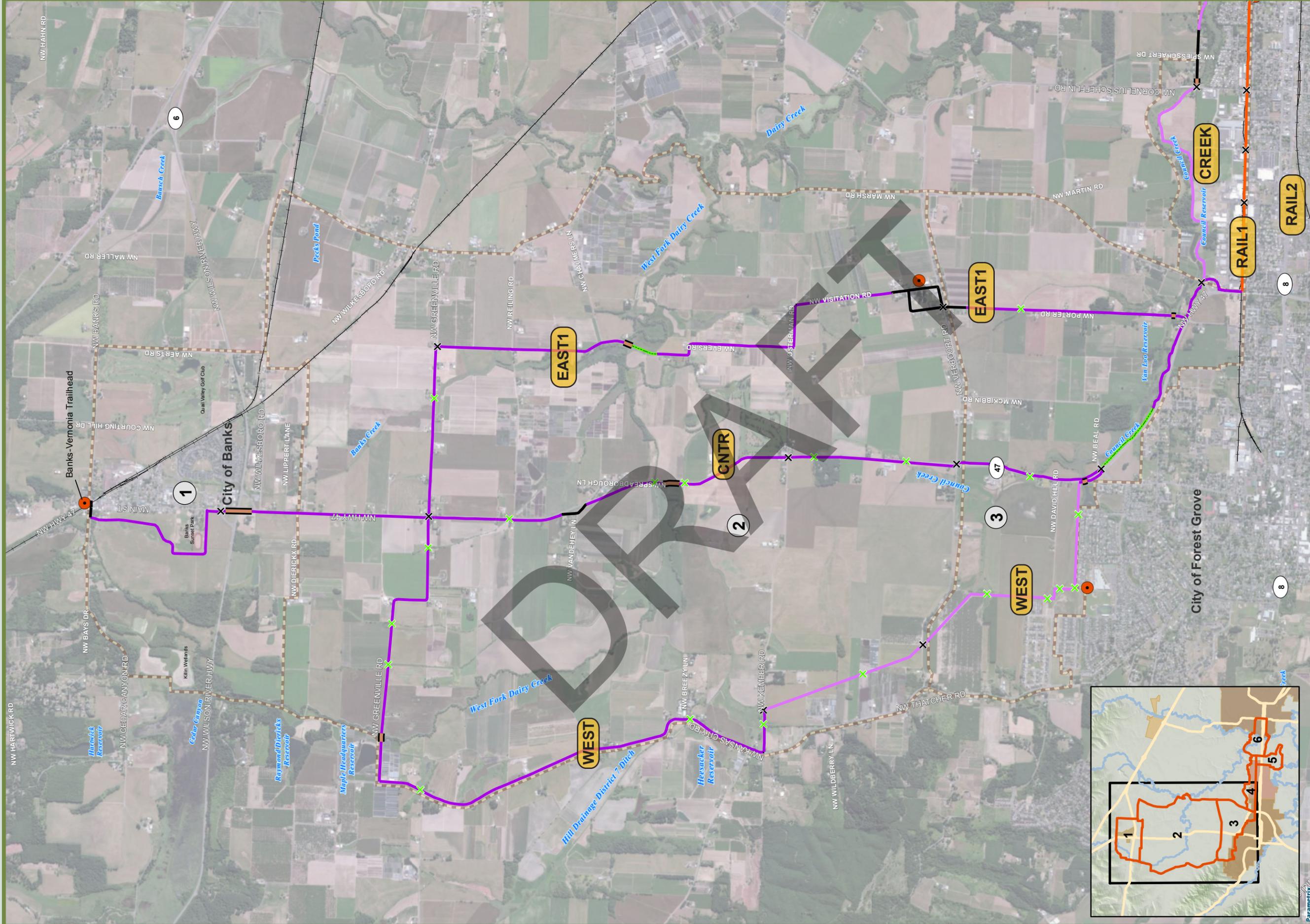
Segment 2 - Evers Road at Greenville Road



Segment 2 - Vandehey Lane



Segment 3 - Porter Road showing TVID Setback



**Council Creek Regional Trail
Master Plan - Trail Alternatives
Segment 1, 2 & 3**

**Banks
Washington Co. (North)
Forest Grove**

October, 2014



Trail Type	Crossing Type	Trail Segment Boundary	Taxlot Boundary
Multituse Trail	Collector/Arterial Road Crossing	Trail Segment Boundary	Park
Street-adjacent Multituse	Minor Stream Crossing	BPA Corridor	Natural Area
On-Street	New Railroad Crossing	Streams	Private Recreation Area
Multituse Rail-with-Trail		Railroad	Cemetery
Multituse Boardwalk		Waterbody	Public Land
Pedestrian Trail		Wetland Area	
Flood-resistant Trail		FEMA 100 Yr. Flood Plain	
Bridge or Undercrossing			
Conceptual Trailhead Location			

Parametrix

SEGMENT 1: BANKS

- A** Widened concrete sidewalk section along south side NW Banks Road better connecting the Banks-Vernonia Trailhead to the City's planned Westside Circulator Roadway (WCR).
- B** Street-adjacent multiuse trail (**WEST**) paralleling west side of future WCR. Trail on west side of WCR avoids new road crossing where trail re-intersects with Main Street south of downtown. Could be developed as standard multiuse trail before road construction, or as cycle track as part of road construction.
- C** Street-adjacent trail on west side of Main Street/Oregon 47 through the Oregon 6 undercrossing. Trail surface through undercrossing is concrete, approaches are asphalt. Uses existing signalization/crosswalk at Oregon 6 ramp intersection, as well as ODOT property between ramp and undercrossing. Trail sections approaching Oregon 6 undercrossing and the trail section under Oregon 6 do NOT include a buffer separation. This will reduce slope cuts and retaining wall heights.



City of Banks Welcome Sign



Oregon 6/Oregon 46 undercrossing looking north



Planned Westside Circulator Roadway route

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SEGMENT 2: WASHINGTON COUNTY (NORTH)

COMMON

- A** All Segment 2 alternatives use street-adjacent multiuse trail on west side of Oregon 47 to NW Greenville Road.

WEST

WEST unchanged from July 1, except option crossing farmland between NW Kemper Road and NW Purdin Road is eliminated. Scenic bikeway shoulder widening on NW Greenville Road and NW Kansas City Road could substitute for street-adjacent multiuse trail. Widening adequately serves touring bicyclists only.

- B** **WEST** follows north side of NW Greenville Road.
- C** **WEST** follows east side of NW Kansas City Road. Both sides challenging due to TVID irrigation lines and PGE power poles and proximity of farm improvements.
- D** BPA corridor trail meets ADA grades with intermittent cut and fill and some low retaining walls at south end. Standard multiuse trail is recommended.

CENTER

Overall **CENTER** unchanged from July 1. Street-adjacent multiuse trail without buffer could be used for short sections to reduce private property and tree impacts.

TVID indicates paved trails along irrigation lines not acceptable. Hold harmless agreements and/or use of utility/agricultural trail (see Chapter 4) could mitigate. Street-adjacent trail west of irrigation lines possible, may increase land acquisition.

PGE poles on east side of Oregon 47 probably in road right of way. Rural street-adjacent trail located on east side of poles avoids relocation, but may increase farm impacts. PGE power poles turn east and leave **CENTER** at NW Osterman Road.

- E** **CENTER** could follow the west or east side of Oregon 47. Both sides challenging due to TVID lines on west side and PGE poles on east side.
- F** Section of shared-use along low traffic side road (NW Vandehey Lane or NW Spreadborough Road) depending on side of Oregon 47 followed by trail.
- G** **CENTER** could shift to east side of Oregon 47 to avoid TVID impacts, but west side location may better limit farm impacts. Shift possible at NW Greenville, NW Osterman, or NW Purdin Road. Segment mapping assumes NW Purdin Road.

EAST 1

EAST 1 unchanged from July 1. Low vehicle traffic on NW Evers Road and NW Visitation Road make shared-use or on-street treatments feasible, particularly in interim until funding

and land secured for functional multiuse trail sections. Scenic bikeway shoulder widening on NW Greenville Road and NW Visitation Road could substitute for street-adjacent trail (see Appendix D for scenic bikeway route).

- H** Street-adjacent trail on north side of NW Greenville Road avoids TVID lines.
- I** Street-adjacent trail located on west side of NW Evers Road avoids TVID lines, but may increase stream and wetland impacts.
- J** On-street "loop" within community of Verboort with widened shoulder on NW Visitation Road, widened sidewalk on north side NW Verboort Road.



BPA corridor near Kemper Road



Evers Road

Courtesy Gregg Everhart



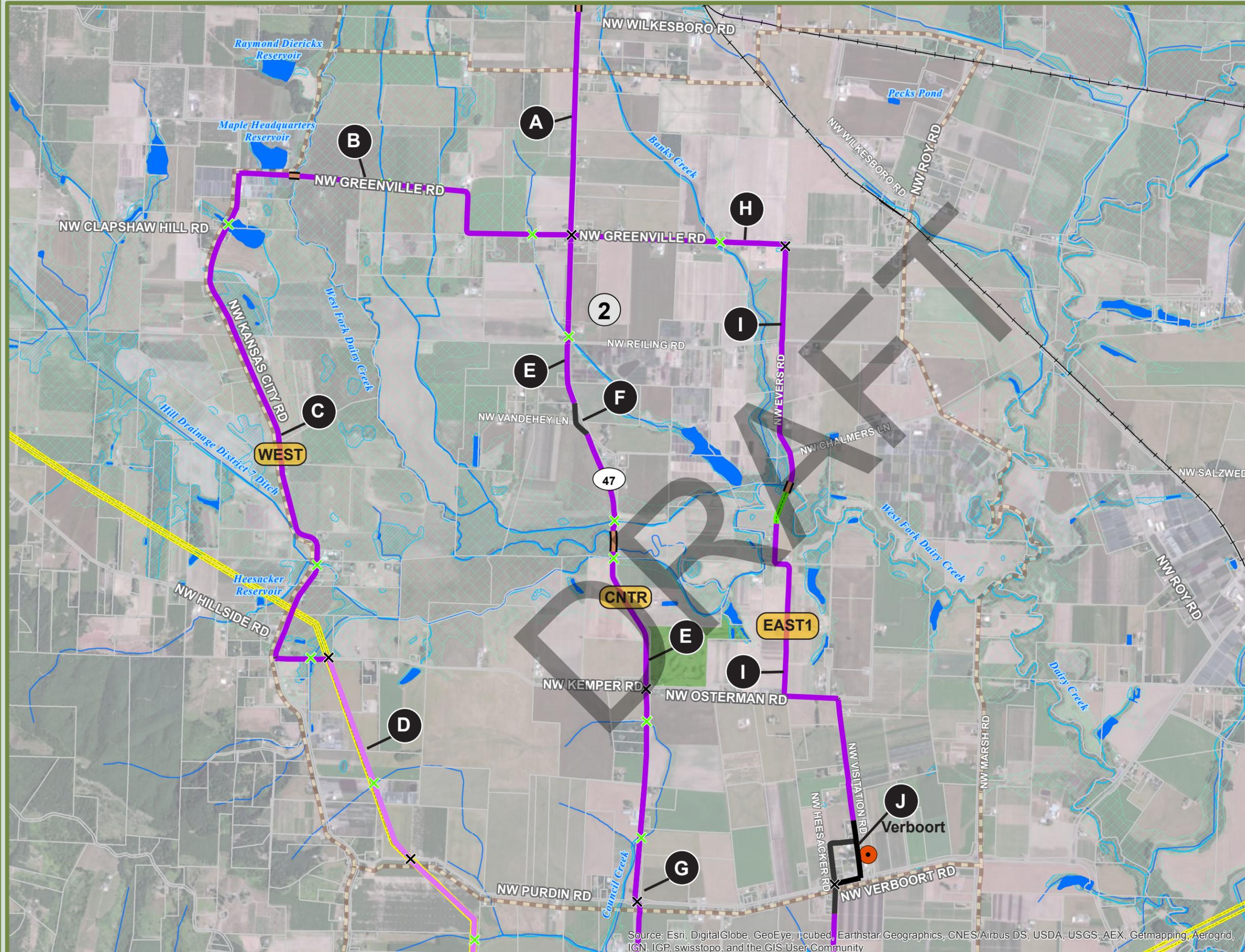
Visitation Church in Verboort

Council Creek Regional Trail Master Plan

Trail Alternatives Segment 2

Washington County (North)

October 1, 2014

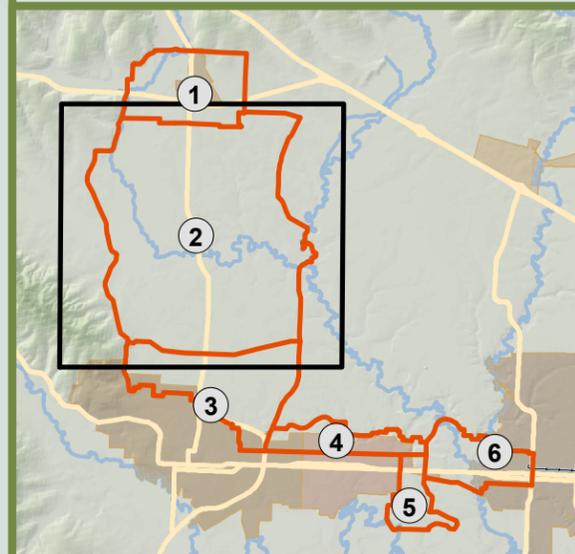


- Trail Type**
- Multiuse Trail
 - Street-adjacent Multiuse
 - On-Street
 - Multiuse Rail-with-Trail
 - Multiuse Boardwalk
 - Flood-resistant Multiuse Trail
 - Community Trail
 - Bridge or Undercrossing
 - Conceptual Trailhead Location

- Crossing Type**
- X Collector/Arterial Road Crossing
 - X Minor Stream Crossing
 - X New Railroad Crossing
 - Trail Segment Boundary
 - BPA Corridor
 - Railroad
 - Taxlot Boundary
 - Park
 - Natural Area
 - Private Recreation Area
 - Cemetery
 - Public Land
 - Streams
 - Waterbody
 - Wetland Area
 - FEMA 100 Yr. Flood Plain



* Dashed lines represent possible local variation



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SEGMENT 3: FOREST GROVE

WEST

WEST unchanged from July 1, except for trail connection to Sunset Drive intersection. As trail (and BPA corridor) crosses into UGB and NW David Hill Road area, alignment variations possible based on development patterns.

- A** Standard multiuse trail in BPA corridor NW Purdin Road to Oregon 47.
- B** Short bridge and section of street-adjacent trail on the southwest side of Oregon 47 connects to existing Sunset Drive/NW Beal Road signalized intersection to cross to northeast side of highway.

CENTER

CENTER unchanged from July 1.

- C** Street-adjacent multiuse trail crosses to east side of Oregon 47 at NW Purdin Road. No TVID irrigation lines or PGE power poles along this section of highway. Fewer farm improvement on the east side of highway between NW Purdin Road and NW Beal Road.

EAST 1

Overall **EAST 1** unchanged from July 1, except preferred trail type along NW Porter Road changed from shared-use to rural street-adjacent trail. Shared-use is interim solution until funding and land secured for functional multiuse trail sections.

- D** Street-adjacent multiuse trail. Impacts to five to six farm dwellings within 500 feet of NW Verboort Road intersection; would possibly require purchase of land and some improvements, especially on west side. Recommend approximate 500-foot-long on-street section to avoid impacts.
- E** If Porter Road Bridge is closed to vehicle traffic or replaced with bicycle/pedestrian bridge, low traffic associated with the 14 farm dwellings/operations along NW Porter Road will allow interim or permanent shared-use solution.

COMMON

Trail variation following BPA power corridor south of Oregon 47 near Oak Street to connect to **RAIL 1** or **RAIL 2** is eliminated. Fencing between trail and Council Creek recommended along this section to limit access to wetlands.

- F** 2,400-foot-long multiuse boardwalk common to **WEST** and **CENTER** from NW Sunset Drive along southwest edge of property owned by County. Approximately 25 feet between highway pavement edge to County property line. Could accommodate standard trail but would be closer to vehicle traffic.

- G** From boardwalk to NW Porter Road, street-adjacent multiuse trail on public property except for one private parcel abutting NW Porter Road.
- H** From NW Porter Road eastbound, **WEST**, **CENTER** and **EAST 1** use common street-adjacent multiuse trail through planned traffic circle at NW Martin Road–Oregon 47 intersection.



Porter Road, looking north



Council Creek along Oregon 47, County-owned site

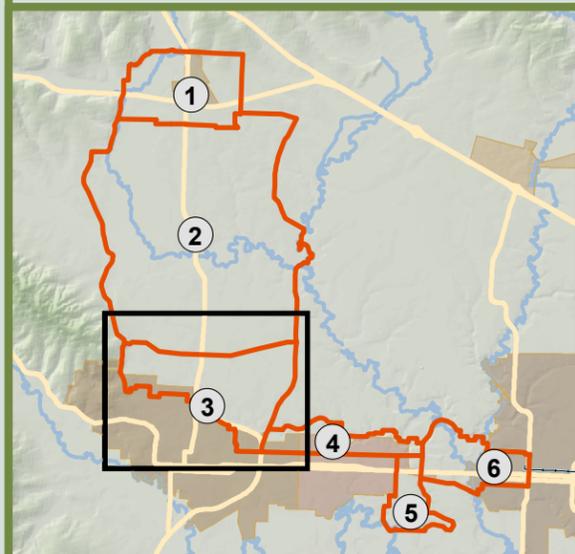
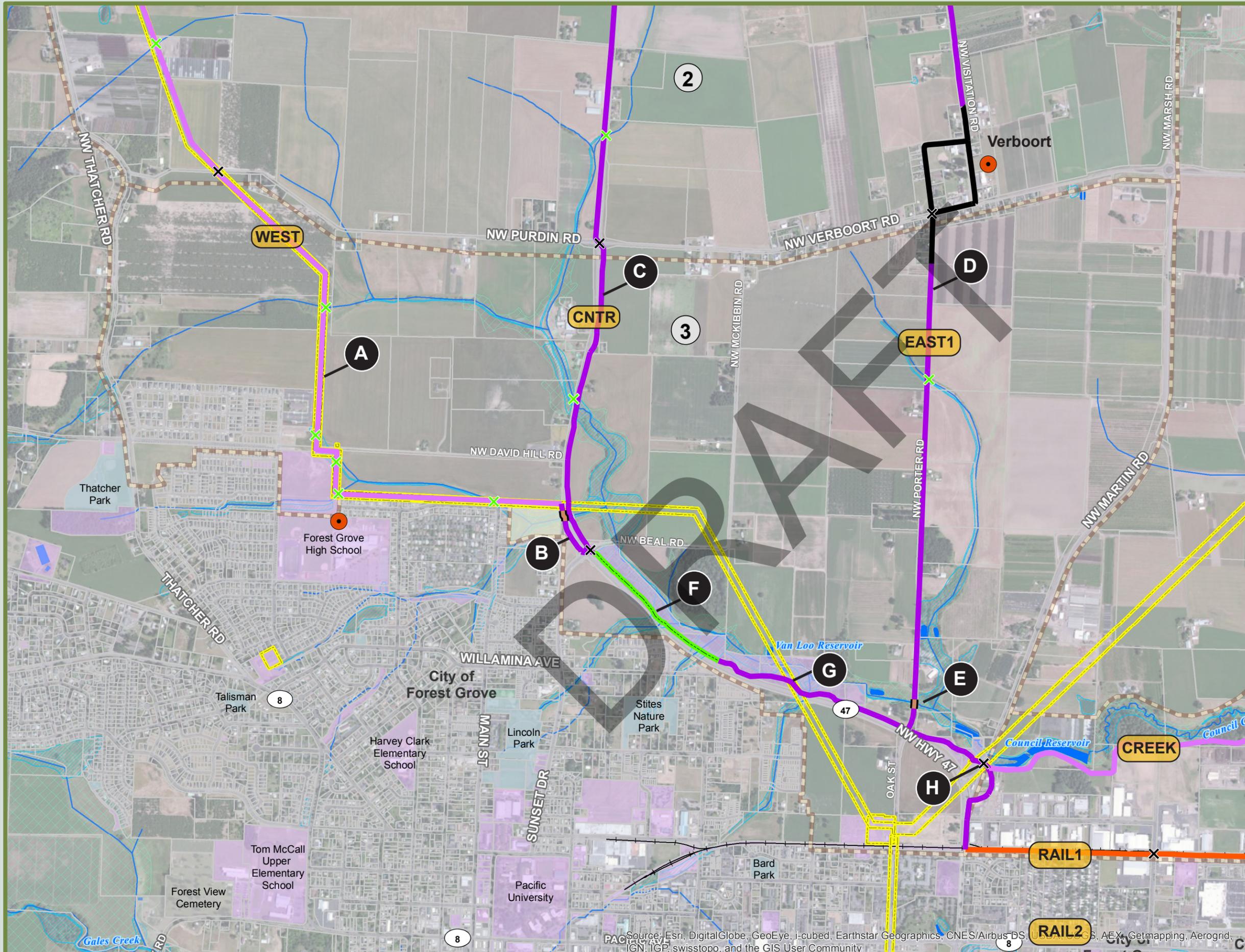
Council Creek Regional Trail Master Plan

Trail Alternatives Segment 3

Forest Grove

October, 2014

- Trail Type**
- Multiuse Trail
 - Street-adjacent Multiuse
 - On-Street
 - Multiuse Rail-with-Trail
 - Multiuse Boardwalk
 - Flood-resistant Multiuse Trail
 - Community Trail
 - Bridge or Undercrossing
 - Conceptual Trailhead Location
- Crossing Type**
- X Collector/Arterial Road Crossing
 - X Minor Stream Crossing
 - X New Railroad Crossing
 - X Trail Segment Boundary
 - BPA Corridor
 - Railroad
 - Taxlot Boundary
 - Park
 - Natural Area
 - Private Recreation Area
 - Cemetery
 - Public Land
 - Streams
 - Waterbody
 - ▨ Wetland Area
 - ▨ FEMA 100 Yr. Flood Plain



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

SEGMENTS 4 THROUGH 6: CORNELIUS TO HILLSBORO



Boundary of Segment 4 – Council Creek



Segment 5 – SW 345th Avenue



*Segment 6 – Rail corridor
through Hillsboro*



*Segment 4 – Rail corridor
through Cornelius*

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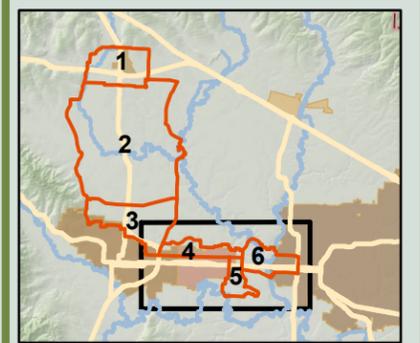
Council Creek Regional Trail Master Plan
Trail Alternatives
Segment 4, 5 & 6
Cornelius
Jobs Ditch
Washington Co. (East)

- Trail Type**
- Multiuse Trail
 - Street-adjacent Multiuse
 - On-Street
 - Multiuse Rail-with-Trail
 - Multiuse Boardwalk
 - Pedestrian Trail
 - Flood-resistant Trail
 - Bridge or Undercrossing
 - Conceptual Trailhead Location
- Crossing Type**
- ✕ Collector/Arterial Road Crossing
 - ✕ Minor Stream Crossing
 - ✕ New Railroad Crossing
- Map Features**
- Study Areas
 - Railroad
 - Taxlot Boundary
 - Park
 - Natural Area
 - Private Recreation Area
 - Cemetery
 - Streams
 - Waterbody
 - Wetland Area
 - FEMA 100 Yr. Flood Plain
 - Public Land

October, 2014



All illustrated alignments subject to change based on final design, permitting, and engineering.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SEGMENT 4: CORNELIUS

CREEK

- A** **CREEK** from Oregon 47/NW Martin Road to N 10th Avenue unchanged from July 1. Also possible for this section to follow new collector roadway included in adopted Forest Grove and Cornelius TSPs.
- B** Modified trail crossing of N 10th Avenue and Council Creek connecting to NW Spiesschaert Drive; at-grade arterial midblock crossing combined with lower elevation bridge over creek/wetlands. NW Spiesschaert Drive gravel surface for this section, could pave entire roadway as neighborhood benefit.
- C** Alignment slightly modified between NW Spiesschaert Drive and N 19th Avenue: short bridge across Council Creek and short boardwalk to N 19th Avenue.
- D** Alignment modified between N 19th Avenue and NW Hobbs Road: multiuse trail combined with two boardwalk sections. Some retaining walls required along Council Creek.
- E** From NW Hobbs Road to Segment 6 boundary, trail alignment and trail types unchanged from July 1.

RAIL 1

RAIL 1 follows south side of the rail right of way, unchanged from July 1. Fencing between rail and trail, and along south edge of rail right of way, recommended to improve safety and security.

Various trail cross-sections can accommodate continued freight rail or new MAX light rail (see Chapter 4 for conceptual cross-sections and Appendix A for details on discussions with TriMet and ODOT). Rail-to-trail combined with other transit or open space improvements possible if rail removed.

North side route re-examined but power pole relocation cost prohibitive (\$100,000 per pole as per PGE input). May be some areas where freight rail alignment might allow north side trail routing between existing power poles and rail, but survey required. From field observations appears freight rail is 5 to 6 feet off center to north, making trail siting on this side even more problematic. Continuous north side trail probably only feasible if MAX development rebuilt or buried power infrastructure.

RAIL 2

RAIL 2 is eliminated. Union Pacific Railroad, owner/operator of **RAIL 2**, indicated that corridor not available for rail-with-trail. See Appendix A.



Along Council Creek in Cornelius

Courtesy Gregg Everhart



Rail siding west of N 10th Avenue



NW Spiesschaert Drive

Council Creek Regional Trail Master Plan

Trail Alternatives Segment 4 Cornelius

October, 2014

Trail Type

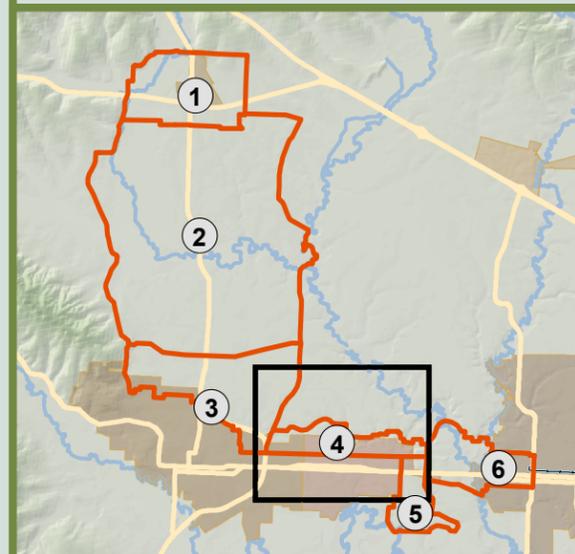
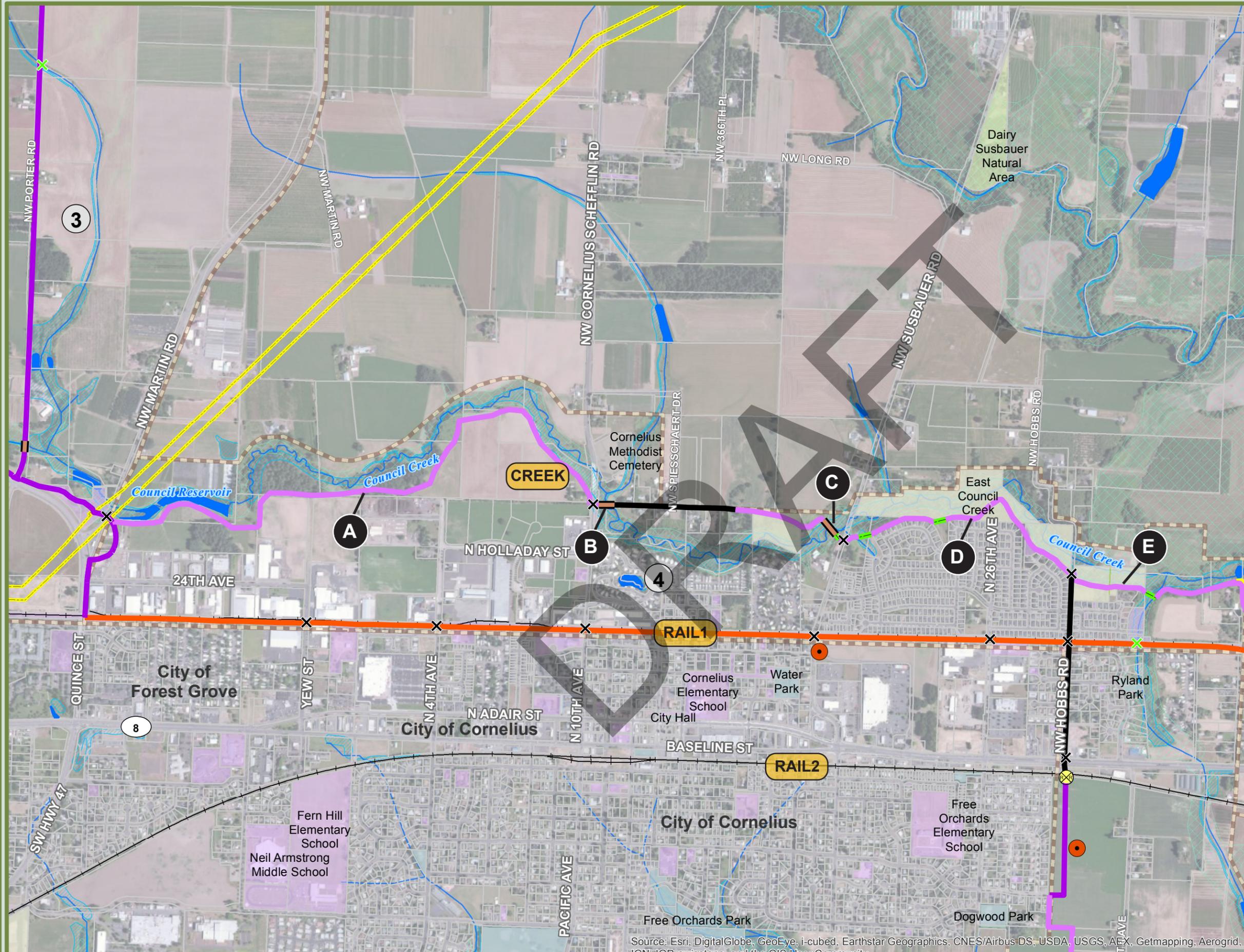
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- On-Street
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- Multiuse Boardwalk
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- Conceptual Trailhead Location

Crossing Type

- Collector/Arterial Road Crossing
- Minor Stream Crossing
- New Railroad Crossing
- Trail Segment Boundary
- BPA Corridor
- Railroad
- Taxlot Boundary
- Park
- Natural Area
- Private Recreation Area
- Cemetery
- Public Land
- Streams
- Waterbody
- Wetland Area
- FEMA 100 Yr. Flood Plain



* Dashed lines represent possible local variation



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SEGMENT 5: JOBES DITCH

HOBBS

HOBBS selected as preferred alternative for Segment 5. No further refinements made to trail alignment or trail crossing types. Cycle track solution could be applied to section of trail along new high school property.

Development of **HOBBS** is dependent on future extension of N 29th Avenue across Oregon 8, the permitting and construction of new railroad crossing, and final site planning or construction of new high school.



Looking toward Tualatin River from SW Cook Street



Jobes Ditch Spur Trail corridor near Dogwood Park



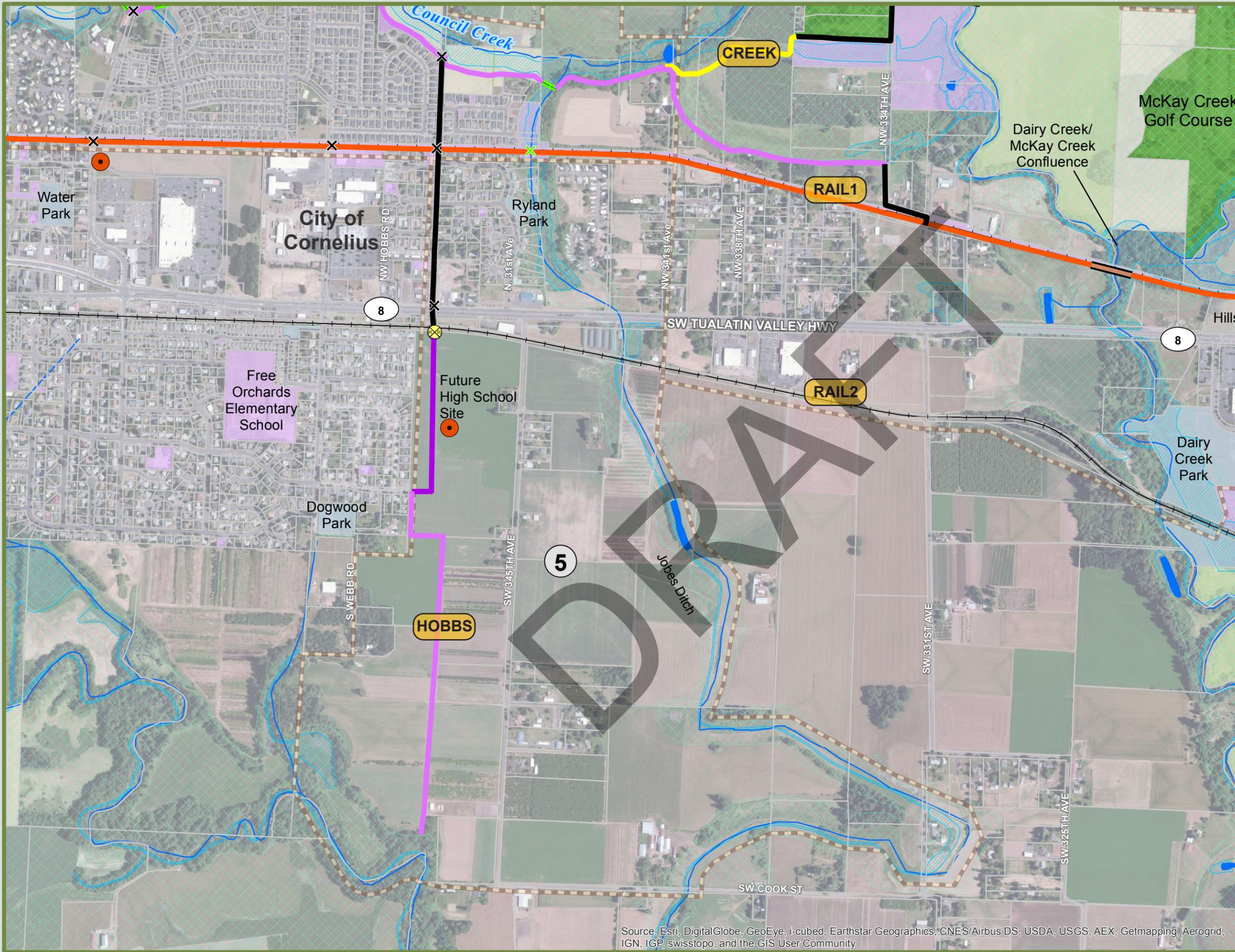
Jobes Ditch Spur Trail corridor looking toward Oregon 8

Council Creek Regional Trail Master Plan

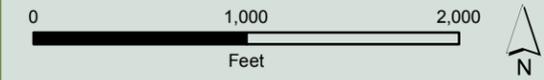
Trail Alternatives Segment 5

Jobs Ditch

October, 2014



- Trail Type**
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 - Public Land
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 - Waterbody
 - Wetland Area
 - FEMA 100 Yr. Flood Plain



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

SEGMENT 6: HILLSBORO/WASHINGTON COUNTY (EAST)

CREEK

CREEK unchanged from July 1, except for minor route modification across Metro-owned natural area, and addition of trail option connecting **CREEK** and **RAIL 1** (see **C** below).

- A** Shared-use roadway recommended west of NW 334th Avenue along south edge of Killarney West Golf Course, rather than multiuse flood-resistant trail. Roadway is gravel surface, could be paved as neighborhood benefit.
- B** Flood-resistant trail through Metro-owned natural area eliminated in favor of longer multiuse boardwalk and multiuse trail, and alignment slightly modified.
- C** Standard multiuse trail option along the south edge of the Dairy Creek floodplain connects **CREEK** from Segment 6 boundary to **RAIL 1** near NW 334th Avenue. Replaces the **CREEK** route from segment boundary to MAX through floodplains, natural areas, and Hillsboro neighborhood streets. Could also be used to connect **RAIL 1** to **CREEK** routes re-classified to community-scale local access trails. This connection is not included in **CREEK** typology summary or cost estimates.

RAIL 1

RAIL 1 follows south side of the rail right of way, unchanged from July 1. Fencing between rail and trail, and along south edge of rail right of way, recommended to improve safety and security.

Various trail cross sections can accommodate continued freight rail or new MAX light rail (see Chapter 4 for conceptual cross sections and Appendix A for details on discussions with TriMet and ODOT). Rail-to-trail combined with other transit or open space improvements possible if rail removed.

North side route re-examined but power pole relocation cost prohibitive (\$100,000 per pole as per PGE input). May be some areas where freight rail alignment might allow north side trail routing between existing power poles and rail, but survey required. From field observations appears freight rail is 5 to 6 feet off center to north, making trail siting on this side even more problematic. Continuous north side trail probably only feasible if MAX development rebuilt or power infrastructure is buried.

RAIL 2

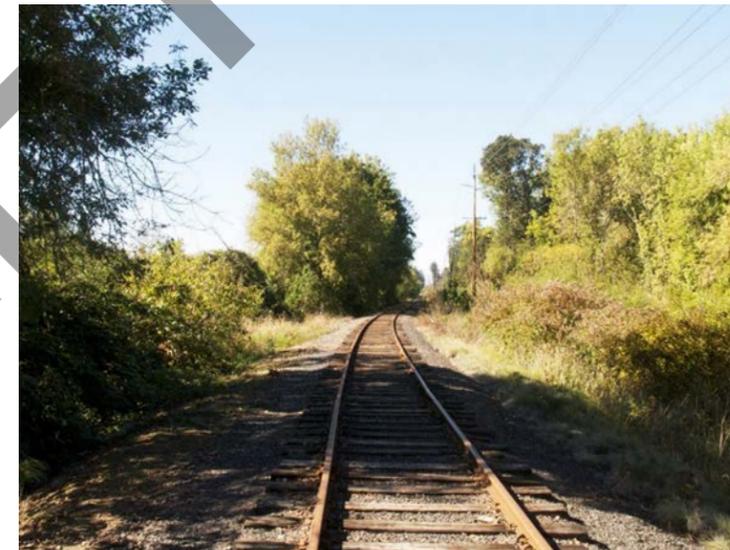
RAIL 2 is eliminated. Union Pacific Railroad, owner/operator of **RAIL 2**, indicated that corridor not available for rail-with-trail. See Appendix A.

COMMON

NW Washington Street connection to downtown Hillsboro MAX station common to all options is unchanged from July 1.



Dairy Creek



Rail corridor near Pioneer Cemetery

Courtesy Gregg Everhart

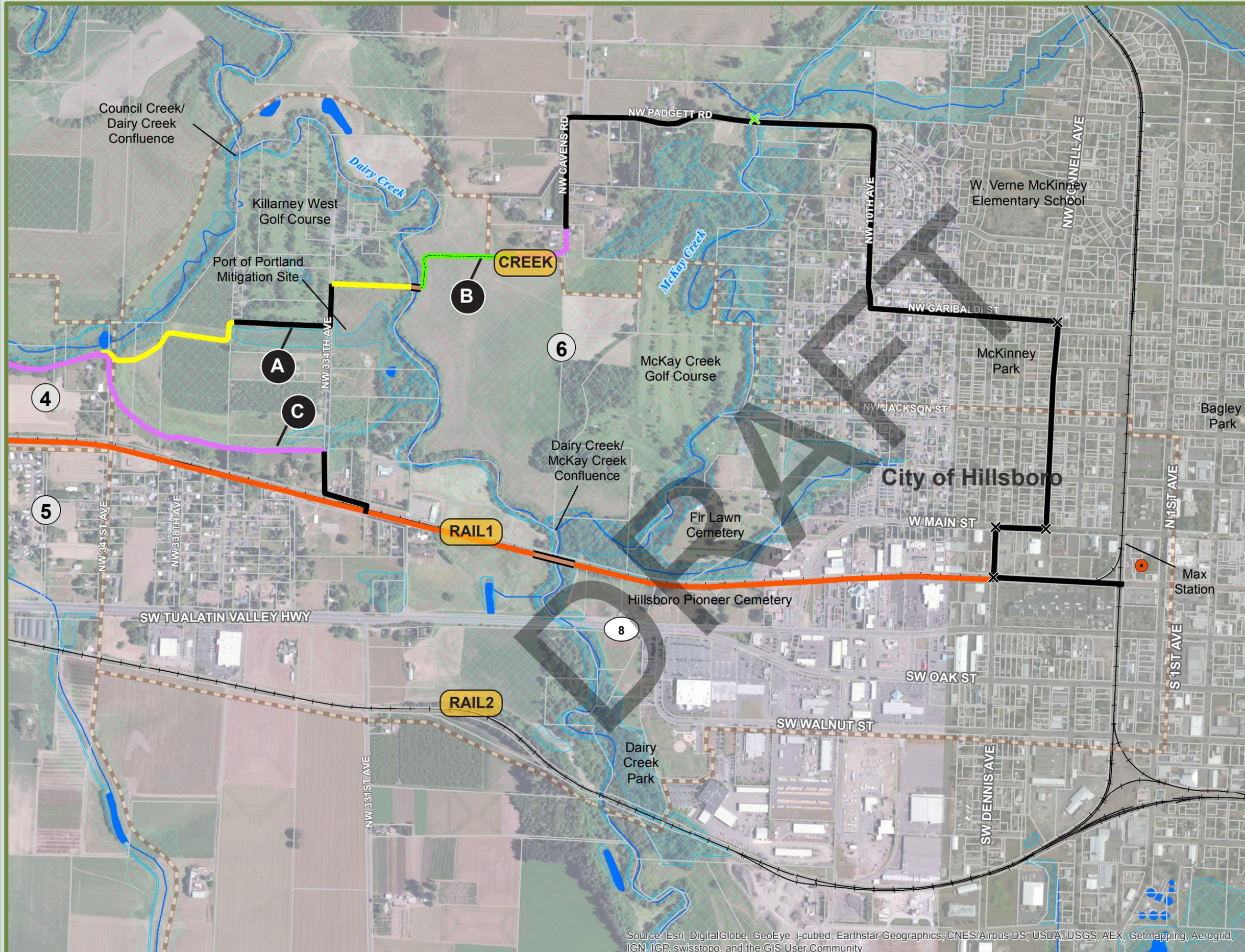


Wider rail right of way east of NW 334th Avenue

Council Creek Regional Trail Master Plan

Trail Alternatives
 Segment 6 - Hillsboro
 Washington County (East)

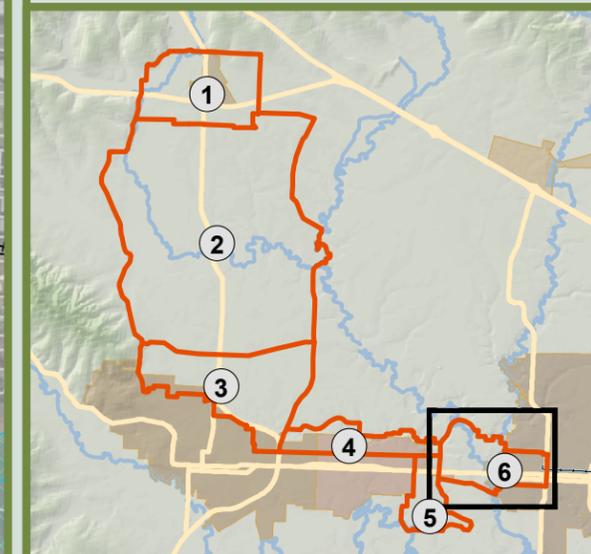
October, 2014



- Trail Type**
- Multiuse Trail
 - Street-adjacent Multiuse
 - On-Street
 - Multiuse Rail-with-Trail
 - Multiuse Boardwalk
 - Flood-resistant Multiuse Trail
 - Community Trail
 - Bridge or Undercrossing
 - Conceptual Trailhead Location
- Crossing Type**
- ✕ Collector/Arterial Road Crossing
 - ✕ Minor Stream Crossing
 - ✕ New Railroad Crossing
 - Trail Segment Boundary
 - BPA Corridor
 - Railroad
 - Taxlot Boundary
 - Park
 - Natural Area
 - Private Recreation Area
 - Cemetery
 - Public Land
 - Streams
 - Waterbody
 - Wetland Area
 - FEMA 100 Yr. Flood Plain



* Dashed lines represent possible local variation



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



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DRAFT

4. Trail Design Typology

The CCRT study area is primarily within the flat valley floor of the Tualatin River Watershed. For nearly all trail alternatives and sections, longitudinal slopes are under 5 percent and cross slopes under 2 percent. These existing grades allow full compliance with Americans with Disabilities Act (ADA) standards without extensive use of special structures or trail meanders and switchbacks.

Steeper slopes only occur along stream corridors and along the toe of the slope of the Coast Range at the very west edge of the study area. These exceptions can be mitigated by short bridges, minor cut and fill or trail meanders, and/or retaining walls. Possible exception areas are:

WEST Segment 2	A few intermittent steeper areas along NW Kansas City Road, and cross slopes at south end of the BPA power corridor approaching NW Purdin Road. NW Kansas City Road may require additional right of way acquisition to achieve acceptable grades with trail meanders.
CREEK Segment 4	Between N 19th Avenue and NW Hobbs Road along Council Creek. Also possibly between Oregon 47 and N 10th Avenue, and NW Hobbs Road and east Segment 4 boundary.
CREEK Segment 6	Approaches to NW Cavens Road from Metro-owned natural area.

TRAIL TYPOLOGY BY SEGMENT

Section	Description	Trail type	Width	Surface
Segment 1: Banks				
WEST	Follows future City Westside Circulator Roadway	Urban street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
WEST	Includes 750 linear feet of approach trail w/retaining walls; passes under OR 6	Multiuse highway under-crossing	10'–12' (no buffer)	Asphalt, concrete
COMMON (all options)	Follows west side of OR 47 across city limits/UGB into Segment 2	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
Segment 2: Washington County (North)				
COMMON (all options)	Follows west side OR 47 from Banks UGB to Greenville Road	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
WEST	West side OR 47; north side NW Greenville Road and east side NW Kansas City Road to NW Kemper Road; some meanders to meet ADA-grades	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt

Section	Description	Trail type	Width	Surface
WEST	BPA corridor NW Kemper Road to NW Purdin Road; minor cut/fill and retaining walls to meet ADA-grades	Standard Multiuse	10'–12' (2' gravel shoulders)	Asphalt
CENTER	West side OR 47 NW Greenville Road to NW Purdin Road; short shared-use on NW Vandehey Lane or NW Spreadborough Road	Rural street-adjacent multiuse; shared-use	10'–12' (2' gravel shoulders) and existing roadway	Asphalt
EAST 1	North side NW Greenville Road to NW Evers Road	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
EAST 1	West side NW Evers Road to short north side section NW Osterman Road; shared-use alternative possible	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
EAST 1	East side NW Visitation Road to just north of NW Heesacker Road; shared use alternative possible	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
EAST 1	Verboort Loop w/some shoulder widening and sidewalk improvements	Shared-use	Existing roadways	Asphalt
Segment 3: Forest Grove				
WEST	BPA power corridor NW Purdin Road to OR 47, crosses OR 47 at Sunset Drive/NW Beal Road	Standard Multiuse	10'–12' (2' gravel shoulders)	Asphalt
CENTER	East side OR 47 from Purdin Road to NW Beal Road	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
EAST 1	Along NW Porter Road; Porter Road bridge may close to motorized vehicles; shared use alternative possible	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
COMMON (WEST + CENTER)	North side OR 47; NW Beal Road to approx. 2,400' southwest	Multiuse boardwalk	10'–12'	Steel-concrete
COMMON (WEST + CENTER)	End of multiuse boardwalk to NW Porter Road	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
COMMON (all options)	Integrate with OR 47/NW Martin Road intersection rebuild (traffic circle)	Street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
Segment 4: Cornelius				
CREEK	Follows south bank of Council Creek to N 10th Avenue	Standard Multiuse	10'–12' (2' gravel shoulders)	Asphalt

Section	Description	Trail type	Width	Surface
CREEK	N 10th Avenue to N 19th Avenue; north side of Council Creek; includes 2 bridges and short boardwalk	Shared-use; standard multiuse	Existing roadway + 10'-12' (2' gravel shoulders)	Asphalt
CREEK	N 19th Avenue to Segment 6; follows south side of Council Creek; includes 3 short boardwalks, retaining walls	Standard and stream bank multiuse	10'-12' (shoulders - retaining walls)	Asphalt
RAIL 1	Follows south side rail ROW; safety and security fencing recommended	Rail-w-trail	10'-12' (varying shoulders)	Asphalt
Segment 5: JOBES DITCH				
HOBBS	RAIL 1 to OR 8 uses existing bike lanes-sidewalks; may require some retrofit sidewalk	On-street	Sidewalks-Bike lanes	Concrete-asphalt
HOBBS	OR 8 to S Dogwood Street; build w/N 29th Avenue extension; could be cycle track	Urban street-adjacent multiuse	10'-12' (2' gravel shoulders)	Asphalt
HOBBS	S Dogwood Street to river; build as part of urban development	Multiuse	10'-12' (2' gravel shoulders)	Asphalt
Segment 6: HILLSBORO/WASHINGTON COUNTY (EAST)				
CREEK	To Dairy Creek; could use multiuse boardwalk alternative; one section is shared-use	Flood resistant, shared-use	10'-12'	Concrete, asphalt
CREEK	Dairy Creek to NW Cavens Road; boardwalk across Metro property, short standard multiuse	Multiuse boardwalk, standard multiuse	10'-12', existing lane	Steel-concrete, asphalt
CREEK	NW Cavens Road to Washington Street; follows Hillsboro's bicycle way network	On-street, shared-use	Follows existing streets	See Hillsboro TSP
RAIL 1	Follows south side rail ROW; safety and security fencing recommended; new bridge at Dairy Creek	Rail-w-trail	10'-12' (varying shoulders)	Asphalt
COMMON	Some retrofit sidewalks required north side of Washington Street	On-street	Sidewalks-Bike lanes	Concrete for new sidewalks



TRAIL TYPE CROSS SECTIONS

Over the 15 miles of the CCRT, a wide variety of opportunities and constraints may suggest or require different trail types in establishing a continuous and fully functional regional-scale trail accommodating all users.

Preferred Trail Type

The preferred trail type for the CCRT is a multiuse trail accommodating the full range of users—touring, commuter, family, and recreational bicyclists, and users of other conveyances such as strollers, skates, etc.; and family, touring, and casual pedestrians seeking exercise and recreation or alternative means to schools, shopping, and services. The basic features of a multiuse trail are:

- Surface width of 10 to 12 feet, with 2-foot-wide graveled shoulders
- Asphalt or other hard surface (concrete does not require graveled shoulders – can be used to narrow trail section in constrained areas)
- ADA-compliant grades (less than 5 percent longitudinal slope and 2 percent cross-slope)

Three variations of the multiuse trail applicable in different conditions and constraints within the study area are recommended.

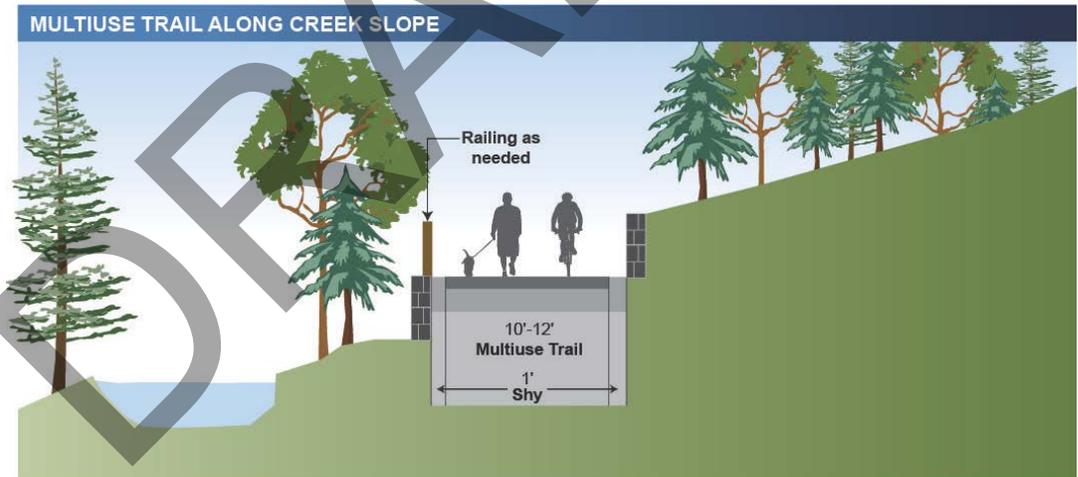
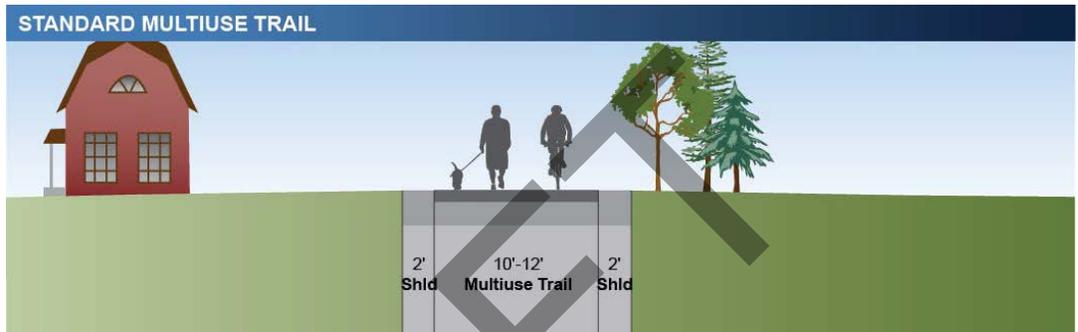
In addition, it may be appropriate to consider gravel trails rather than paved as interim solutions in rural areas. Commuter bicycle traffic is expected to be low through rural areas. Soft-surface treatments can support multiple uses, including mountain bicycles, but are not recommended for trails frequently used by touring or commuting bicycles. The Tualatin Valley Scenic Bikeway through Segments 2 and 3, especially if improved as per County plans, may also in part satisfy touring bicycle demand (see Appendix D for bikeway map).

STANDARD MULTIUSE

The standard multiuse trail follows an off-road alignment, completely separate and on a different route from roadways. Cut and fill, retaining walls, and/or short boardwalks and bridges may be required to provide ADA-compliant grades for short local sections of the standard multiuse trail, but existing grades in the study area are for the most part below ADA maximums.

The standard multiuse trail type is applied to the following CCRT alignment alternatives, including a variation applied to a trail section in Segment 4 that is aligned through a highly constrained area along Council Creek:

WEST Segments 2 and 3	Within the BPA power corridor
CREEK Segments 4 and 6	Along Council Creek in Forest Grove and Cornelius, and through portions of unincorporated Washington County between Cornelius and Hillsboro. Trail between N 19th Avenue and NW Hobbs Road requires retaining walls
HOBBS Segment 5	For a portion of the Jobs Ditch “spur” trail connecting to the Tualatin River



Note: Depending on design and site specifics, only a single wall (uphill or downhill) may be required.

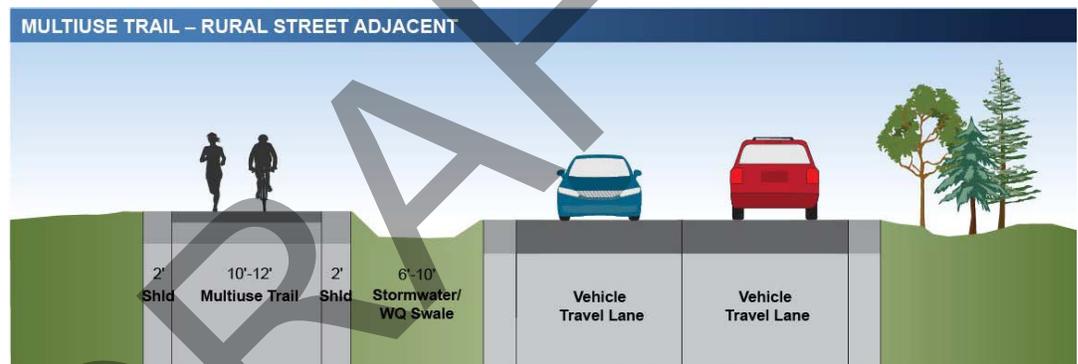
STREET-ADJACENT MULTIUSE

Alignments that closely parallel roadways distinguish street-adjacent multiuse trails from the standard multiuse trail. The street-adjacent trail is separated from the roadway by a landscaped buffer or drainage swale. Two variations of the street-adjacent multiuse trail are used:

RURAL STREET-ADJACENT MULTIUSE TRAIL

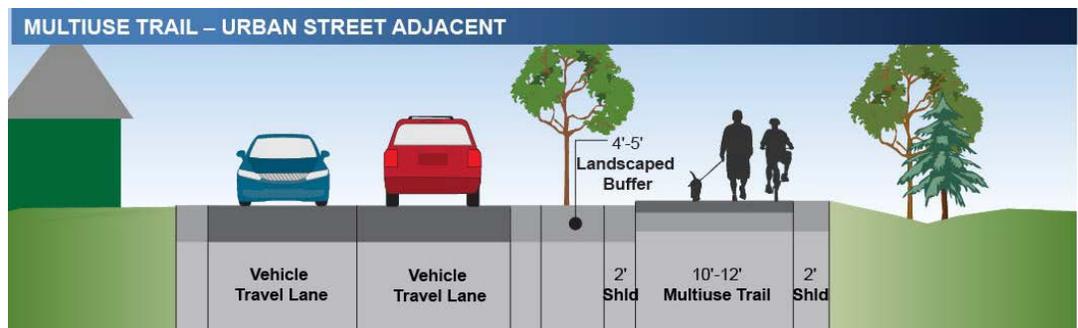
For roadways where stormwater conveyance and treatment is handled by open drainage swales, typically in rural areas. Swale acts as trail buffer. The rural street-adjacent trail is the primary multiuse solution recommended for Segments 1, 2, and 3, except for a standard multiuse trail section within the BPA power corridor in Segments 2 and 3 (**WEST**).

The greatest challenge in using this rural variation in Segment 2 will be other infrastructure—TVID irrigation lines or PGE power transmission poles—that closely follows existing roadways. May require purchase of additional right of way to bypass TVID and PGE lines or the relocation of these lines.



URBAN STREET-ADJACENT MULTIUSE TRAIL

For streets where stormwater is conveyed through culverts and piping, typically in urban areas. Includes a landscaped buffer. The urban street-adjacent multiuse trail is recommended for a section of the Jobs Ditch spur trail (**HOBBS** - Segment 5) as part of a future collector roadway extension and high school development. The urban street-adjacent trail could also be applied along the future Westside Circulator Roadway in Segment 1.



RAIL-WITH-TRAIL MULTIUSE

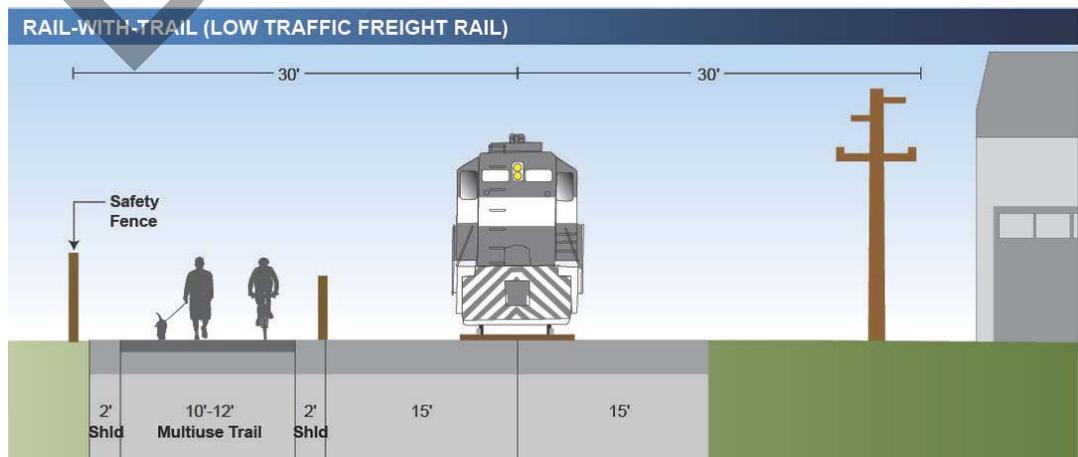
A rail corridor from downtown Hillsboro to Oregon 47 in Forest Grove is proposed for a rail-*with*-trail multiuse solution through Segments 4 and 6. The rail corridor is primarily 60 feet wide and occupied by a single-track freight line with low speed and very limited traffic. This rail corridor is owned by the State and is leased to a private freight rail operator. The State has listed this line for eventual abandonment. There is a PGE transmission-scale power line within the entire north edge of the rail corridor.

Specific trail alignment and trail type solutions are complicated by continued freight rail use, as well as by plans by Forest Grove and Cornelius for a future TriMet MAX line extension. MAX extension is not part of the current (2035) regional TSP or TriMet's current (2013) service and capital plans.

Given current and future uses, four rail-with-trail variations are illustrated below, plus one conceptual rail-*to*-trail variation. **All illustrated rail-with-trail variations assume a multiuse trail sited along the south side of the rail corridor.** North side alignments may require expensive power pole relocations, particularly through Segment 4. The freight rail track also appears to be approximately 5 feet off-center of the corridor towards the north side. Final trail design and engineering may indicate options to switch sides at least for portions of the trail.

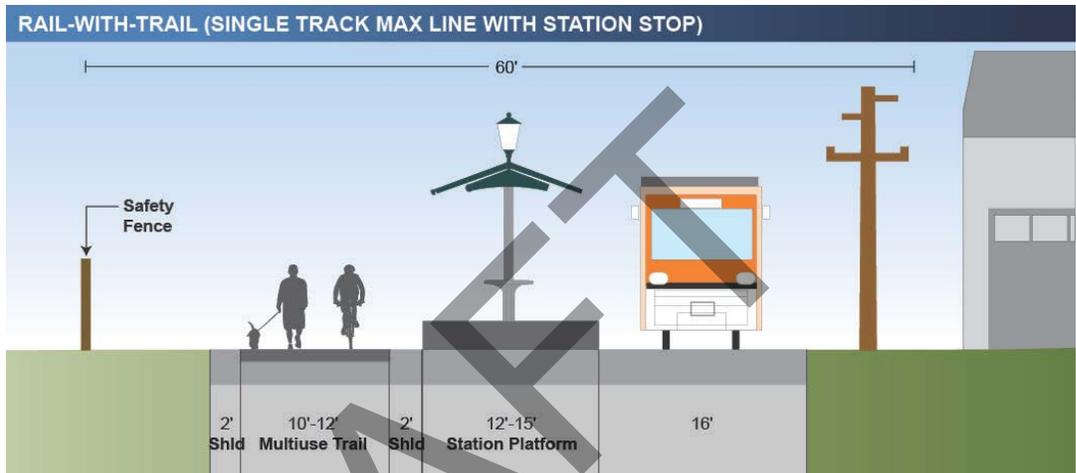
SINGLE-TRACK FREIGHT RAIL

Assumes that freight rail is still operating at time of trail development. The cross section below illustrates the minimum trail separation from low speed, low traffic freight lines suggested by Federal Highway Administration (FHWA) guidance. Exact location of the freight line will have to be surveyed and results could impact trail siting. The standard multiuse trail can be further modified to fit within the 60-foot rail corridor by reducing the rail-trail separation, eliminating one shoulder, or reducing trail width to 10 feet. Given low freight use may also be possible to site trail closer than FHWA guidance, making north side alignment more feasible.



SINGLE-TRACK MAX (WITH STATION STOPS)

TriMet requires less separation from MAX tracks than FHWA guidance. Since MAX tracks would be new, the rail alignment could also be shifted within the corridor. This trail/single-track MAX combination, including minimum width (12 feet) station stop platforms, would leave approximately 16 feet of the rail corridor for additional separation between the trail/track, amenities such as landscaping, or for intermittent passing tracks. PGE power poles would not have to be relocated.

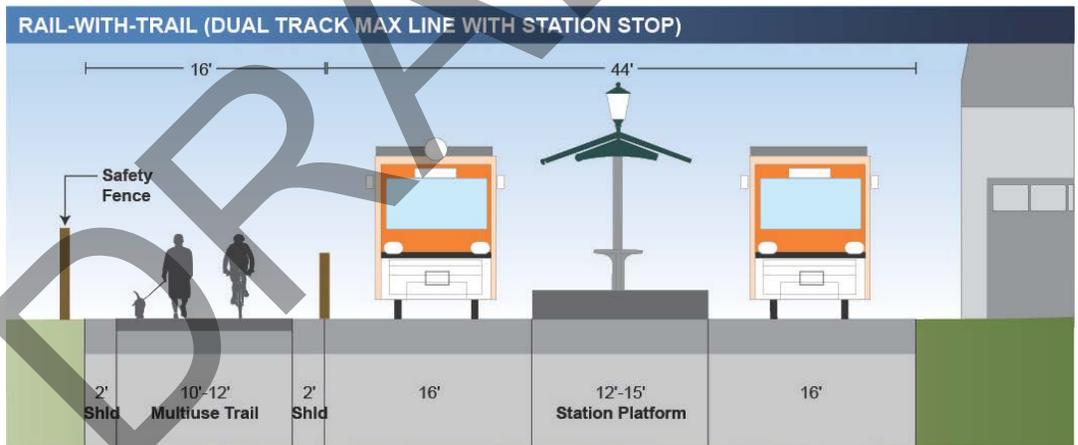
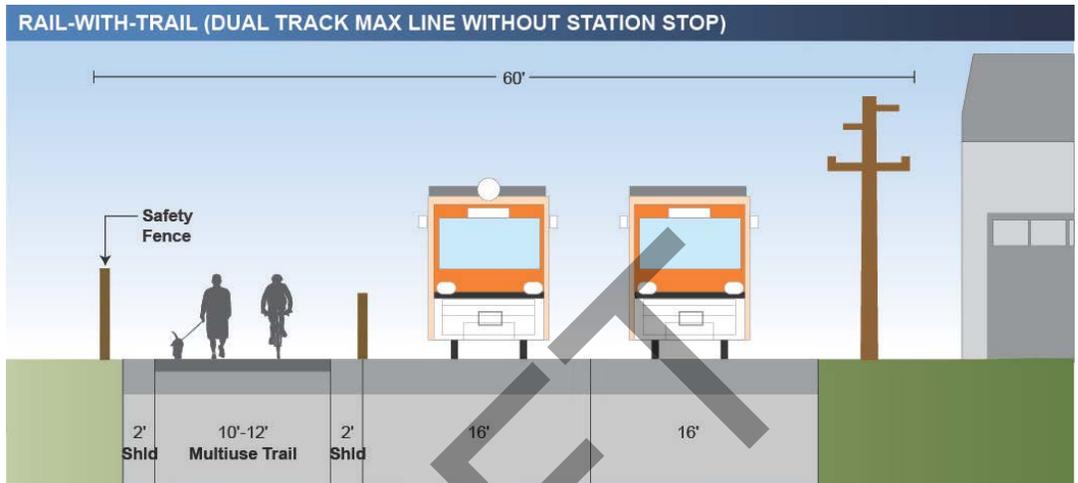


DUAL-TRACK MAX (WITH AND WITHOUT STATION STOPS)

TriMet standards allow dual-track MAX systems *without* station stops within a 32-foot wide section. This dual configuration, when combined with a 16-foot-wide trail section, leaves 12 feet for additional separation between rail-trail, trail amenities, and avoids power pole relocation.

The challenge with the dual-track is that two to three station stops *will* be required. The minimum width of a single station stop sited between tracks is 15 feet, for a total 47-foot wide MAX section. This leaves the rail corridor 3 feet too narrow to accommodate a 16-foot trail section. Additional right of way may be difficult to acquire in several sections of this corridor due to surrounding development. The standard multiuse trail section could be narrowed, use concrete surfaces to eliminate gravel shoulders, or station stop design modified to accommodate a trail.

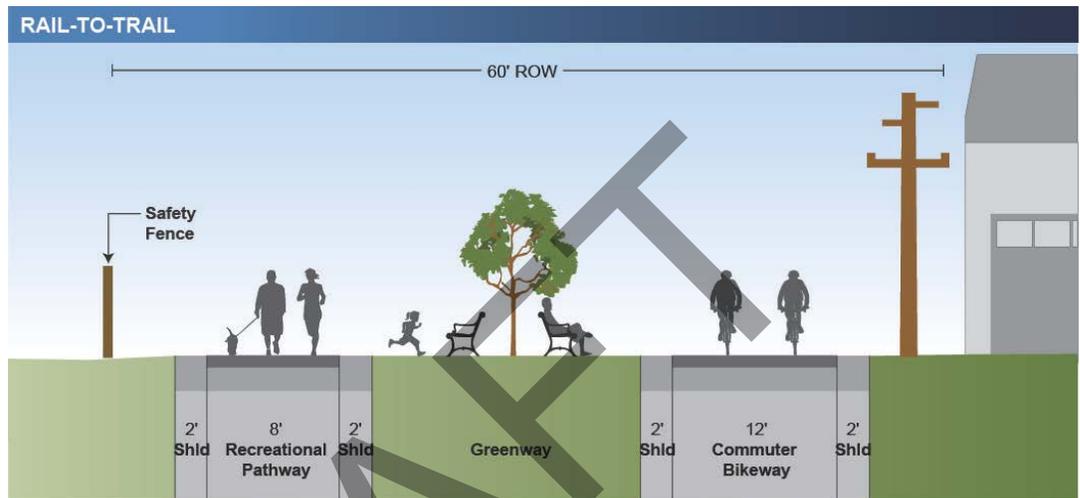
PGE power poles in the vicinity of station stops may have to be relocated.



Note: May require power pole relocation, trail width may have to be modified to accommodate station platform.

RAIL-TO-TRAIL

If freight rail vacated, and Forest Grove and Cornelius decided MAX was no longer a priority, the corridor could be used for a multiuse trail combined with greenway and recreational improvements. The trail could be located on alignments anywhere within the corridor. Parallel pathways for different users, or a trail combined with transit improvements such as high-capacity bus lanes, could also be developed. One possible scenario is illustrated below.



Note: Wide range of trail combinations possible with rail right-of-way if no future freight or passenger rail service is planned.

Other Recommend Trail Types

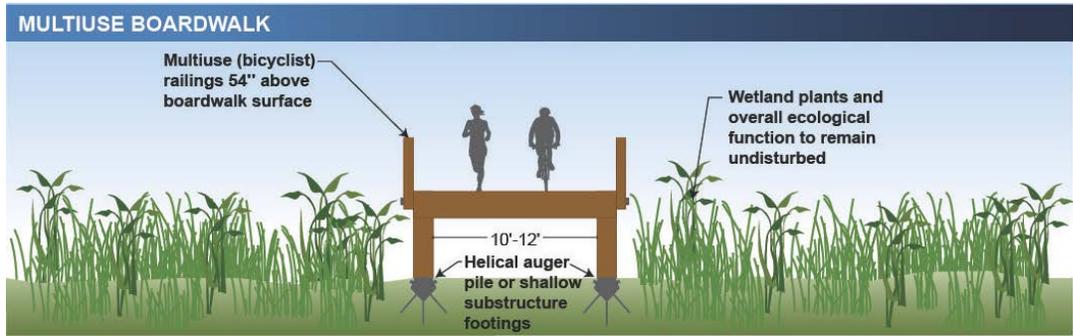
A variety of other trail designs and treatments are recommended for specific CCRT sections.

MULTIUSE BOARDWALK

A low, elevated multiuse structure set on piers across wetlands, floodplain areas, or other sensitive lands. Construction materials may vary, but steel and concrete is recommended.

Multiuse boardwalks are recommended in the following areas:

Multiuse Boardwalks	
EAST 1 Segment 2	To cross the West Fork Dairy Creek
COMMON Segment 3	Along Council Creek and Oregon 47 for approximately 2,400 linear feet southeast of NW Sunset Drive
CREEK Segment 4	Four short boardwalks along CREEK between N 19th Avenue and Jobes Ditch
CREEK Segment 6	The north end of a Metro-owned natural area



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

FLOOD-RESISTANT MULTIUSE TRAIL

This variation is suggested through areas subject to occasional but regular inundation. Trail surface materials (probably concrete) may differ from other multiuse trail types, trail surface may be elevated to stay above moderate flood events, and/or additional cross-drainage structures included. Boardwalks could be used in place of flood resistant trails.

This treatment is recommended for two sections of **CREEK** between NW 341st Avenue and Dairy Creek (Segment 6).

MULTIUSE BRIDGES

Four multiuse bridges parallel to existing roadway bridges, and one bridge replacing an existing vehicular bridge (NW Porter Road), may be required to cross streams in Segments 2 and 3. Bridge lengths are approximate but sized to limit any in-water work as part of installation. The final design and construction method for bridges will be subject to the specifics of each site.

Other solutions may be possible (existing bridge modifications, boardwalks). The existing NW Porter Road vehicle bridge may be adequate if limited to bicycle and pedestrian use.

Segments 2 and 3 Multiuse Bridges		
WEST Segment 2	West Fork Dairy Creek - NW Greenville Road	75-foot span
WEST Segment 3	Fork of Council Creek - NW Sunset Drive	25-foot span
CENTER Segment 2	West Fork Dairy Creek - Oregon 47	75-foot span
EAST 1 Segment 2	West Fork Dairy Creek - NW Evers Road	90-foot span
EAST 1 Segment 3	Council Creek - NW Porter Road	50-foot span

Four longer multiuse bridges are required to cross streams in Segment 4 (Cornelius) and Segment 6 (Hillsboro). Bridge lengths are approximate but sized to minimize any in-water work as part of installation. The final design and method of construction of each bridge will be subject to the specifics of each site.

Segments 4 and 6 Multiuse Bridges			
CREEK Segment 4	Council Creek - N 10th Avenue	225-foot span	Combined with an at-grade midblock crossing of N 10th Avenue
CREEK Segment 4	Council Creek - N 19th Avenue	150-foot span	Combined with a short boardwalk
CREEK Segment 6	Dairy Creek southeast of Killarney Golf Course	150-foot span	Crossing Dairy Creek to Metro natural area
RAIL1 Segment 6	Dairy Creek south of confluence with McKay Creek	390-foot span	Parallel to the existing RAIL 1 railway bridge. If rail service is abandoned on RAIL 1 , the existing rail bridge could be adapted for trail use.



Multiuse bridge

*Courtesy Gregg
Everhart*

Street Solutions

Various trail type alternatives using the structure of vehicular roadways within road right of way are possible.

SHARED ROADWAY

Shared-use allows trail users to travel on vehicular roadways, with signing and road surface markings and striping to assure safety. This solution is only practical and safe on low-speed, low-traffic roadways.

Shared-Use Sections			
CENTER Segment 2	NW Spreadborough or Vandehey	Short section	Low traffic side road to Oregon 47
EAST 1 Segment 2	Verboort community loop	Two legs	Other two legs widened shoulder, new sidewalk
CREEK Segment 4	NW Spiesschaert Drive	Between N 10th Avenue and N 19th Avenue	Low traffic local gravel road
CREEK Segment 6	NW 334th Avenue	Short section of north-south lane	Golf course gravel access road
CREEK Segment 6	Hillsboro streets	Local and collector streets	Includes bikeway streets in the Hillsboro TSP

Vehicle traffic counts along many sections of **EAST 1** (NW Evers Road, NW Osterman Road, NW Visitation Road, NW Porter Road) are low enough that on-street solutions—shared-use and/or roadway shoulder widening—can be economic and safe trail alternatives, particularly as interim solutions until funding and land is secured to build functional multiuse trail sections.

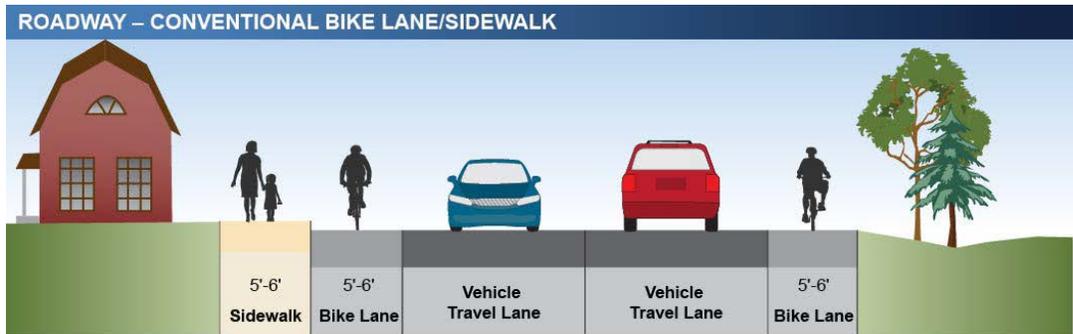


Note: Functional for low speed, low vehicle traffic roadways.

BICYCLE LANE-SIDEWALK

Conventional bicycle lanes, designated by road surface striping/signing, with a parallel pedestrian sidewalks, are recommended for two CCRT sections:

- Connecting **CREEK** and **RAIL 1** (Segment 4) along N 29th Avenue (AKA NW Hobbs Road) to **HOBBS** (Segment 5) multiuse trail.
- Connecting **RAIL 1** to downtown Hillsboro MAX station along NW Washington Street between NW Dennis Avenue and the station. Most of this section is developed with sidewalks and bicycle lanes.



Note: Can include sidewalks on both sides.

Crossing Structures

ROADWAY CROSSINGS

The CCRT will cross a variety of urban and rural local, collector, and arterial roadways at existing intersections and at midblock locations. CCRT roadway crossings are all at-grade, with the exception of the recommended undercrossing of Oregon 6 south of the City of Banks (Segment 1).

The final determination of intersection and midblock crossing treatments should be based on the adopted methodology and standards used by Washington County or the local city. Collector and arterial midblock and intersection crossing points are shown on segment maps in DRAFT Plan Report No. 3.

Existing signals and pavement markings at the Oregon 6 ramp at Main Street (Segment 1) and the Oregon 47 and NW Sunset Drive intersection (Segment 3) are adequate with the addition of trail wayfinding signage.

The CCRT's crossing of Oregon 47 (Quince Street) at NW Martin Road is assumed to be part of the planned traffic circle upgrade to this complex intersection. This trail crossing is common to **WEST, CENTER, EAST 1, CREEK,** and **RAIL 1.**

INTERSECTION

Trail crossings at established collector and arterial intersections will use traffic stop signals or signing, crosswalk signing and striping, and other traffic controls. Upgrades may be required on a case-by-case basis in accordance with municipal or ODOT standards.

LOCAL MIDBLOCK

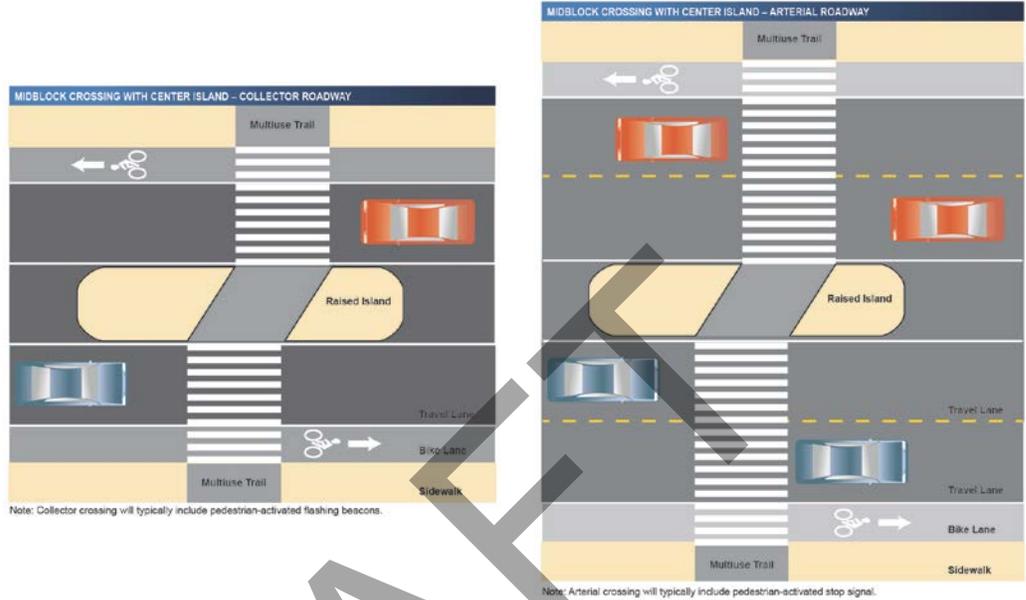
Local street crossings use conventional crosswalk signing and striping.

COLLECTOR MIDBLOCK

Collector crossings use crosswalk signing and striping and pedestrian-activated flashing beacons. A raised center refuge island is preferable.

ARTERIAL MIDBLOCK

Arterial crossings use crosswalk signing and striping and pedestrian-activated full stop signals. A raised center refuge island is highly preferable.

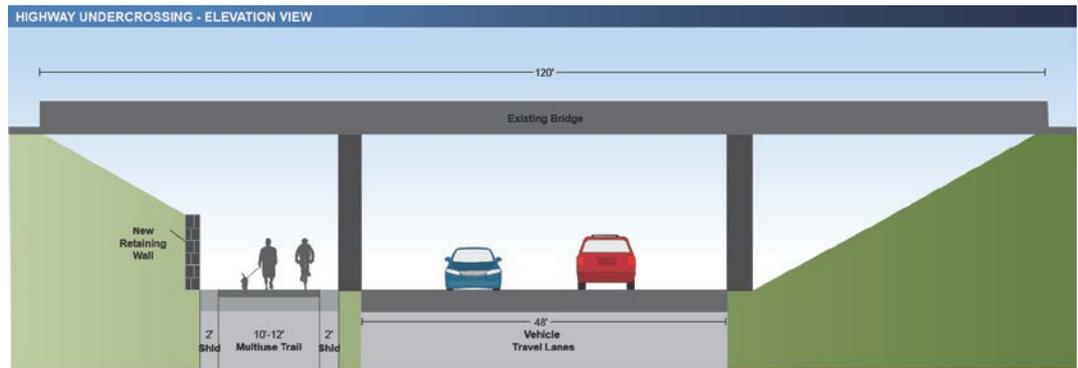


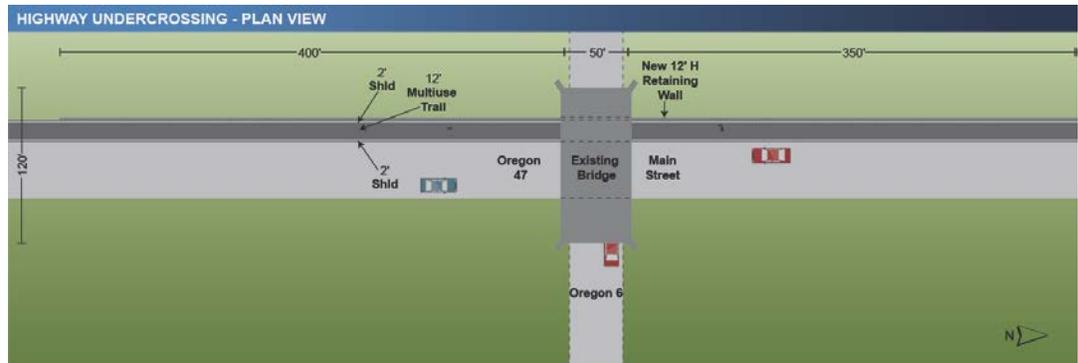
Conceptual Midblock Crossings for Collector (left) and Arterial (right) Streets

HIGHWAY UNDERCROSSING

A highway undercrossing is recommended south of downtown Banks (Segment 1). The trail will follow the west side of Main Street (Oregon 47) south out of the city, cross under Oregon 6, and continue south into Segment 2.

Requires a 16-foot widening to the west side of existing highway undercrossing. Trail paving should be concrete through the undercrossing. Existing retaining slope would be cut back and replaced with an approximate 50-foot-long retaining wall. Slope cuts and varying height retaining walls would be required for trail's north (350 linear feet) and south (400 linear feet) approaches to the undercrossing.





Note: Not the same scale as elevation view.

MINOR STREAM CROSSINGS

Minor stream trail crossings are made by modifying existing conveyance structures (such as by lengthening culverts), installing short new culverts, or by using signing and striping over existing crossing structures. “Major” stream crossings use bridges. The terms “minor” and “major” refer to the scale of crossing improvement recommended, not to stream size.

All solutions are plan-level and conceptual. New or lengthened culverts may require permitting from Clean Water Services (CWS) or other local agencies, and from federal agencies for fish bearing streams. See Chapter 9 of DRAFT Plan Report No. 3 for more information.

RAIL CROSSINGS

HOBBS (Segment 5) would require permitting and construction of a new rail crossing. This trail segment and the crossing would be part of the future NW Hobbs Road/N 29th Avenue extension. The rail crossing treatment and cost will be determined as part of the larger road project. No other new CCRT rail crossings are contemplated.

Other Possible Trail Types and Structures

TRAILHEADS

Conceptual trailhead locations are shown on segment maps. These locations are intended to identify the general areas within which a trailhead facility would be desirable, *and are not property specific*. When a preferred trail alignment alternative is selected, conceptual trailhead locations may be reconsidered.

Trailhead facilities can include vehicle parking, wayfinding and interpretive signing, restrooms, shelters, and picnic areas. Site design and amenities may vary greatly based on location. Shared-use trailheads at school sites and commercial centers are a possibility.

Two trailheads are effectively already in place:

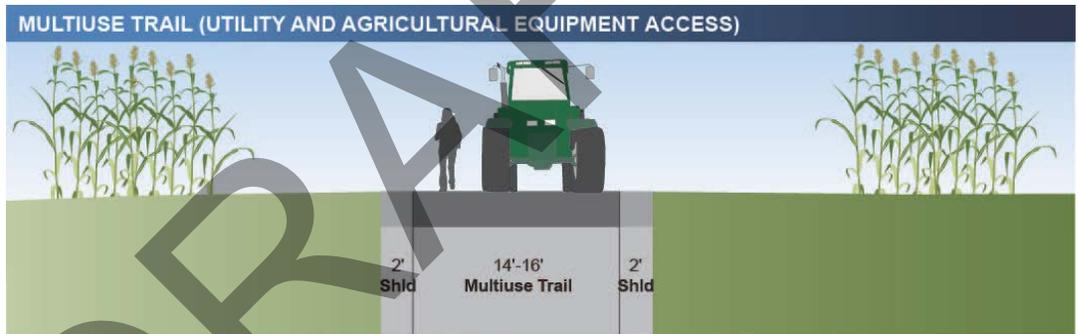
Existing Trailheads

Segment 1	The Banks-Vernonia trailhead in Banks
Segment 6	In the immediate vicinity of downtown Hillsboro MAX station where a wide range of facilities and amenities can accommodate trail users

MULTIUSE TRAIL SUPPORTING AGRICULTURAL/UTILITY VEHICLES

In Segments 1, 2, and 3, extended sections of the CCRT may follow farmland edges along roadways, and may utilize the BPA power corridor (**WEST**). By constructing the trail to support heavier vehicle loads, utility and agricultural neighbors could cross over the trail route without causing physical damage. BPA requires increased load capacity for trails within power corridors.

Widened trail surfaces (14 to 16 feet) could also provide the agricultural community with an off-road option for moving heavy farming equipment, particularly at night. While there might be potential conflicts with daytime trail users, this trail type is a potential opportunity to secure farming community cooperation in trail development.



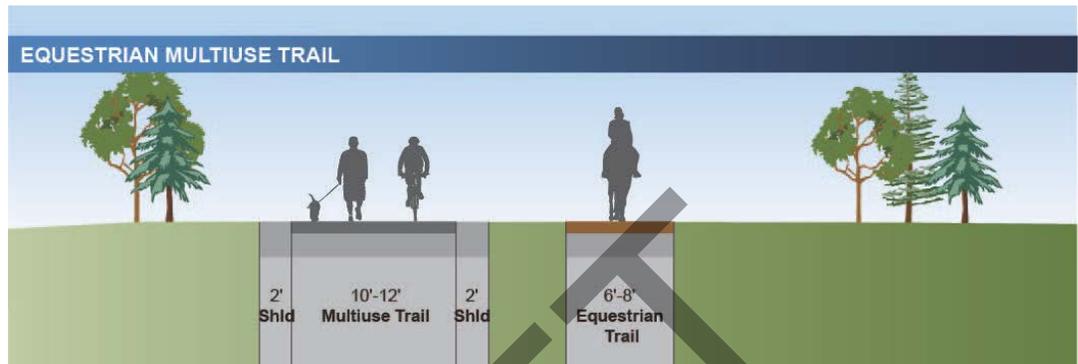
Note: Trail widened and constructed to support heavier vehicle loads to allow occasional utility vehicle use and nighttime use by agricultural equipment.



Segment 2 - NW Evers crossing of West Dairy Creek

EQUESTRIAN TRAIL

Equestrian trails in rural areas provide expanded trail user recreational opportunities. Joint use of trails by bicycles and horses is however NOT recommended. Soft surface equestrian trails paralleling rural multiuse trails is a possibility, but additional right of way would be required.



COMMUNITY TRAIL

Community trails (also termed pedestrian trails) are used for localized travel and to connect users to the regional trail system. The roadway analogy is that regional trails are the arterials and community trails are the collectors. Community trails are typically 6 to 8 feet wide and either paved or soft-surface. Community trails may require a nearby route suitable for touring and commuting bicyclists.

Once the preferred CCRT trail alignment alternative is determined, conceptual community trail alignments will be added to CCRT mapping.

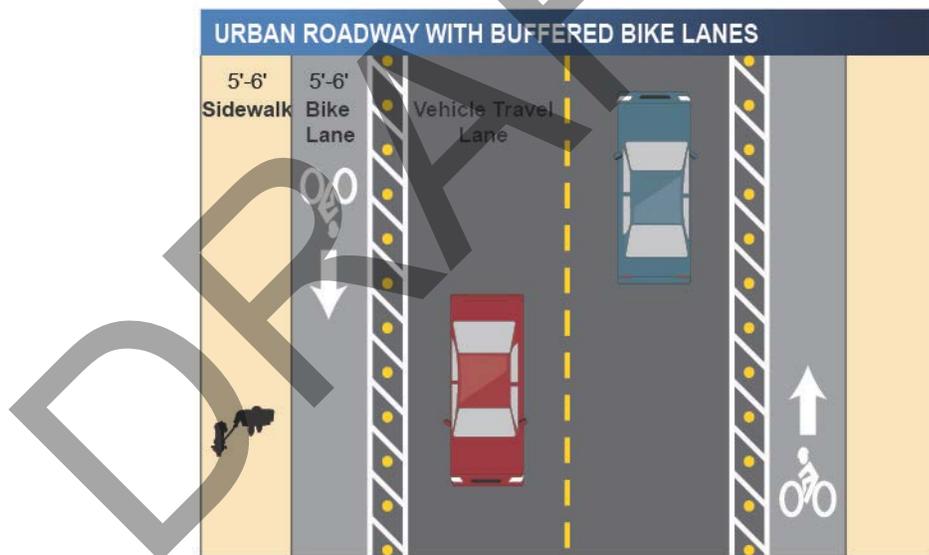


CYCLE TRACK

Cycle tracks are primarily an urban solution using road right of way with buffered or protected bicycle lanes paralleled by sidewalks. A wide range of buffering treatments are possible - buffer markings on the road surface, bollards, planters, or parallel vehicle parking - to keep vehicle and bicycle traffic safe and separate. Differing surface materials and elevations between the vehicle and bicycle lanes can also be used.

Few CCRT alignments lend themselves to cycle tracks. Exceptions may be:

Cycle Track	
Segment 1	As part of the new Banks Westside Circulator Roadway if the trail and the roadway are built simultaneously.
Segment 4	Where CREEK crosses Oregon 47 at NW Martin Road. The trail could be integrated into the north rim of the planned new traffic circle with a cycle track treatment.
Segment 5	HOBBS along planned NW Hobbs Road/N 29th Avenue extension.



Note: Bollards and other fixed barriers can be added within buffer.

WIDENED ROADWAY SHOULDERS

Widened roadway shoulders are a possible rural solution. Widened shoulders can reduce vehicle conflicts and increase safety for touring bicyclists that use the vehicle roadway. Other users such as recreational and family bicyclists and pedestrians may, however, not greatly benefit, except perhaps on a lower-traffic **EAST 1** roadway such as NW Visitation Road through Verboort.

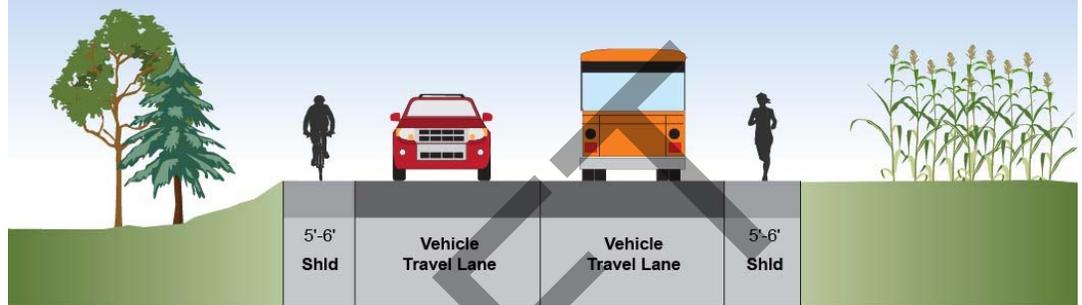
Widened shoulders could also serve as interim solutions until other trail facilities are built.

Widened Roadway Shoulders

WEST - EAST 1 Segments 2 and 3 Washington County plans to widen shoulders on portions of the Tualatin Valley Scenic Bikeway. **WEST** overlaps with the scenic bikeway on NW Greenville Road and NW Kansas City Road. **EAST 1** overlaps with the scenic bikeway on NW Visitation Road and NW Porter Road.

EAST 1 Segment 2 Widened shoulders or new sidewalks are recommended for two legs of the Verboort community loop.

ROADWAY – CONVENTIONAL WIDENED SHOULDERS



5. Trail Cost Estimates

Tables 1 and 2 summarize construction and design/engineering costs, and order of magnitude land acquisition costs, for each trail alignment alternative in each trail planning segment. Cost estimating assumptions are described in the next section of this chapter of DRAFT Plan Report No. 3. See Appendix C for additional details.

Table 1. Cost Estimates by Overall Trail Alignment Alternative

Banks to Forest Grove^a (Segments 1, 2, and 3)	
WEST	\$28,379,400
CENTER	\$21,836,700
EAST 1	\$22,273,600
Forest Grove to Hillsboro (Segments 4 and 6)	
CREEK	\$14,999,300
RAIL 1	\$16,462,700
Jobs Ditch Spur Trail (Segment 5)	
HOBBS ^b	\$2,290,200

a All Banks to Forest Grove alternative estimates include the Banks: Segment 1 WEST estimate which is common to all three alternatives.

b HOBBS does not include cost of new crossings of Oregon 8 or UPRR rail line. These costs are assumed to be part of planned Hobbs Road extension, without which HOBBS spur trail is not possible.

Table 2. Cost Estimates by Segment Alignment Alternative

Segment	Trail Length	Land Acquisition Length	Land Acquisition	Construction ^a	Total
1: BANKS					
WEST	7,629	1,398 ^b	\$48,000	\$4,422,900	\$4,470,900
2: WASHINGTON COUNTY NORTH					
WEST	33,320	33,320	\$324,750	\$14,956,100	\$15,280,850
CENTER	20,892	19,993	\$207,000	\$10,258,800	\$10,465,800
EAST 1	29,037	25,201	\$261,000	\$13,903,000	\$14,164,000
3: FOREST GROVE					
WEST	15,785	2,700 ^c	\$20,200	\$8,604,450	\$8,624,650
CENTER	11,066	4,905	\$56,600	\$6,843,400	\$6,900,000
EAST 1	8,645	6,970	\$48,000	\$3,590,700	\$3,638,700
4: CORNELIUS					
CREEK	15,912	9,553	\$841,300	\$8,887,600	\$9,728,900
RAIL 1	15,379	0	0	\$9,681,400	\$9,681,400

Segment	Trail Length	Land Acquisition Length	Land Acquisition	Construction ^a	Total
5: JOBES DITCH					
HOBBS	7,630	3,464	\$120,000	\$2,489,200	\$2,609,200
6: HILLSBORO					
CREEK	16,293	3,990 ^d	\$41,200	\$5,229,200	\$5,270,400
RAIL 1	8,906	0	0	\$6,290,000	\$6,781,300

a Includes engineering, permitting, contingencies.

b WEST Segment 1: No land acquisition north of Oregon 6 – ROW acquired as part of future roadway.

c WEST Segment 3: No land acquisition in Urban Reserve – BPA corridor preserved by development.

d CREEK Segment 6: Assumes approximate 12,000 linear foot shared street solution through Hillsboro.

COST ESTIMATE ASSUMPTIONS

Construction

CCRT trail section lengths and the number of special features (such as boardwalks and midblock crossings) are based on the conceptual trail routes mapped as an outcome of refined trail alignments documented in Chapter 3 of DRAFT Plan Report No. 3.

Trail linear foot distances were measured from GIS-based mapping. Unit costs for different trail types were multiplied by these linear distances. Trail types are those identified in Chapter 4 of DRAFT Plan Report No. 3 and on Chapter 3 segment maps.

Unit costs were based on information derived from recent Portland metropolitan region trail master plan projects and similar trail construction projects. Other sources included ODOT construction data. Trail type unit costs are listed in Appendix C.

Additional cost assumptions are:

- **Shared-use** pavement markings and safety signing: \$2,000 for every 1,000 linear feet of roadway (\$2 per linear foot).
- **Highway undercrossing** and **bridge** costs estimated based on site-specific solutions (see Chapter 4 of DRAFT Plan Report No. 3).
- **Midblock street crossing** costs include “refuge” island. Midblock crossings are differentiated by flashing beacon (collector) or user-activated signal (arterial). All crossings could be upgraded to user-activated signals at the time of trail construction if traffic volumes so dictate.
 - Midblock collector: \$375,000 per crossing
 - Midblock arterial: \$400,000 per crossing
- **Collector and arterial street intersection crossings** requiring new signals or beacons: \$375,000 per crossing.

- **Local or neighborhood street midblock crossings** use high visibility pavement markings and warning signage: \$5,000 per crossing.
- **Minor stream crossing:** \$25,000 per crossing, assuming culvert extension. Engineering may indicate other solutions, and construction costs and permitting requirements may vary.
- **Trail amenities** such as wayfinding signs and benches: \$4,000 for every 1,000 linear feet.
- **Trailheads:** \$500,000 per new facility. Sites shown on segment maps are conceptual only and indicate a general, not specific, location. Trailhead costs may vary greatly based on actual location and conditions, and are not included in individual segment estimates.

Design and Engineering

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

- **Preliminary engineering and permitting:** 25 percent
- **Construction engineering:** 15 percent
- **Construction contingencies:** 15 percent

Property Acquisition

Property requirements used in DRAFT Report No. 3 are based on acquisition of right of way for all multiuser trail options crossing private property, multiplied by the linear distance of each particular trail section. Actual width of acquisition parcels will vary based on local site conditions and final trail design and engineering. Widths could range from under 20 feet to as much as 50 feet. For estimating purposes, a width of 30 feet is used.

All acquired property is assumed to be unimproved (i.e., no habitable residential dwellings or functioning agricultural, industrial, or commercial buildings; and for Urban Reserves or unincorporated UGB lands, no installed urban water or sewer services). Acquisitions could also be in the form of easements or use permissions that may alter values. A variety of real estate and economic development reports were examined to arrive at the order of magnitude values in Table 3.

Table 3. Per Acre Cost by Property Type

Property Type	Dollar Amount per Acre
Unincorporated Rural Reserves (utility corridors)	\$10,000.00
Unincorporated Rural Reserves	\$15,000.00
Unincorporated Urban Reserves	\$50,000.00
Unincorporated future residential in UGB	\$75,000.00
Unincorporated future industrial in UGB	\$150,000.00



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6. Jurisdictional Authority

Municipal parks authority is generally considered a prerequisite for trail funding, construction, and maintenance. Increasingly, however, fully functional transportation systems are being defined to include trails. As such, jurisdictions without full service parks authority may consider a road authority to be sufficient basis to undertake building and operating trails.

Trail construction or operation and maintenance agreements may have to be developed. Other agreements may be needed to expand the responsibilities of a parks provider, change current maintenance practices, and/or outright assume trail construction or maintenance responsibility outside of usual jurisdictional authority.

For trail segments with current parks providers with ongoing operation and maintenance responsibilities, formal agreements may not be required beyond CCRT adoption or acceptance by the government’s elected body. The cities of Banks, Forest Grove, Cornelius, and Hillsboro all exercise full parks authority.

Table 4. Jurisdictional Authority

Jurisdiction	Segments	Jurisdictional Authority					Challenges
		Parks	Road	Funding	Construction	Operating	
Banks	Portion of 1	Yes	Yes	Yes	Yes	Yes	Limited City funds
County	All of 2, portions 1, 3, 4, 5, 6	No	Yes	Limited	Limited	Limited	Not parks provider, can build/maintain within road ROW
Forest Grove	Portions 3, 4	Yes	Yes	Yes	Yes	Yes	Limited City funds
Cornelius	Portions 4, 5, 6	Yes	Yes	Yes	Yes	Yes	Limited City funds
Hillsboro	Portion of 6	Yes	Yes	Yes	Yes	Yes	Limited City funds
Metro	Areas within UGB only	Yes	Planning authority only	Yes	Limited	Limited	Rural portions of trail not in Metro
ODOT	All segments	No	Yes	Yes	Yes	Yes	Does not typically build/operate urban regional trails



WASHINGTON COUNTY

Portions of all six CCRT planning segments are within the jurisdiction of Washington County. Segment 2 is wholly within the county. The County operates a very limited number of parks, such as Hagg Lake; but made an explicit decision over two decades ago to not operate as a parks provider.

The County does, however, build and operate bicycle and pedestrian facilities within road right of way. While a standard multiuse trail would not qualify, the street-adjacent trails proposed for use in rural sections of the CCRT may in part be within existing right of way. Any additional property acquired would have to be in the form of road right-of-way and contiguous to the existing right of way to qualify for construction and maintenance under the County's road authority.

OTHER JURISDICTIONS

Other government agencies and nonprofit organizations build and maintain regional trails. Such entities may be sources of capital development and/or operational funding and support. For instance, Oregon Parks and Recreation operates the Banks-Vernonia Trail at the north end of the CCRT.

Governmental agencies, and public and private utilities, may also control trail development and operations indirectly through regulation or directly through trail corridor ownership. BPA and PGE power corridors, TVID easements, and Metro and CWS-owned natural areas may be possibilities. For more information see Chapter 9 of DRAFT Plan Report No. 3.

7. Funding Opportunities

Trail design and construction funding sources are summarized in Table 5. 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.

Transportation and parks system development charges (SDC) are assessed by trail partner 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 against regional trail sections with the jurisdiction's boundary. Other jurisdictions collect street utility fees to underwrite operations and maintenance costs, another possible funding source for trails.

Table 5. Trail Design and Construction Funding Sources

Agency	Program	Funding Cycle	Local Match Percentage	Range of Funds Available
Washington County	Major Streets Transportation Improvement Program (MSTIP) 3d funds	5-year cycle	0%	\$170M total
Washington County	MSTIP 3d - Opportunity Funds for Bike / Ped Projects	5-year cycle	Undetermined	\$5M total
Metro	Metropolitan Transportation Improvement Program Regional Flexible Funds (2016–2018)	3-year cycle	10%	\$94.6M total
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 V (2015–2018)	Each biennium	20%	\$42M

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
Metro	Restoration and Enhancement Grants	Annual	100%	\$10,000 to \$30,000
Metro	Nature in Neighborhoods Capital Grants	Annual	200%	Minimum of \$50,000
Metro	Natural Areas Bond Acquisition Funds	Varies	Varies	Varies
Metro	Regional Travel Options	Biannual	10%	Minimum of \$50,000
Oregon Parks and Recreation	Measure 66 lottery funds for parks and trails	Biannual	Varies	Varies
Oregon Parks and Recreation	Local Government Grant	Annual	20% to 50%	\$40,000 to \$1M
Oregon Parks and Recreation	County Opportunity Grant Program	Annual	25% to 50%	\$5,000 to \$200,000
Oregon Parks and Recreation	Recreational Trails Grants	Annual	20%	Minimum of \$5,000
Oregon Parks and Recreation	Land and Water Conservation Fund (LWCF)	Annual	50%	Minimum of \$12,500
Oregon Watershed Enhancement Board	Restoration Grants	Annual	25%	Varies
Oregon Watershed Enhancement Board	Small Grants	Annual	25%	Up to \$10,000
Oregon Community Foundation	Oregon Historic Trails Fund	Annual	N/A	Up to \$40,000
Oregon Community Foundation	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

8. Comparative Trail Alternative Evaluations

EVALUATION CRITERIA

Trail evaluation levels are a matter of degree and intended as guidance in making relative comparisons of alternatives within the same trail segment. Eight evaluation categories are applied to the relative strengths and weaknesses of proposed trail alternatives. Evaluation categories are not weighted, assigned numerical value, nor listed in order of importance.

Evaluation levels strongest to weakest are:

- A. **STRONGEST** alternative: Impact is primarily positive, and/or best meets project goals and objectives.
- B. **ACCEPTABLE** alternative: Impact is neutral, and/or positive and negative impacts are approximately balanced.
- C. **WEAK** alternative: Impact is primarily negative, and/or is contrary to project goals and objectives.
- D. **UNACCEPTABLE** alternative: Significantly or fatally flawed due to multiple and extensive adverse impacts, and/or is entirely contrary to project goals and objectives.

Evaluation outcomes are not used as an absolute indication that one alternative is better than another, except for **UNACCEPTABLE**. Trade-offs are to be expected, especially in highly constrained segments where a given alternative may have rated well for most categories but poorly for one or two others.

EVALUATION CATEGORIES AND FEATURES

Trail Types

A variety of trail types may be used to accommodate a variety of trail users and to respond to local conditions. Three multiuse trail types are preferred:

- Multiuse regional-scale trail on an alignment separate from any road route.
- Street-adjacent multiuse trail (same typology as multiuse trail but closely follows streets, separated by a buffer).
- Multiuse rail-with-trail.

Other trail types, in approximate descending order of desirability are:

- Requiring special treatments, such as retaining walls, boardwalks, bridges, and flood-resistant structures.

- Shared-use, or widened shoulders or sidewalks, along lower traffic volume roadways, or cycle tracks within higher traffic road right of way.
- Variations from standard multiuse trail types, such as reduced width or alternate surfaces.
- Trails (including soft-surface trails) with pedestrian and bicycle users separated onto different routes.
- Bike lanes/sidewalks.

Trail User Experience/Connectivity

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

- Accesses and/or passes near to attractive views, parks, natural areas and features, recreational facilities, and similar sites.
- Passes through or near to quiet neighborhoods, local community downtowns, historic sites, and other attractions and destinations.
- Provides good connectivity to public schools and other educational institutions, government and community offices and services, commercial shopping areas, and employment areas.
- Avoids noise and safety impacts from higher speed/volume roadways, industrial activities, and other major activity generators.
- Provides trailheads or other facilities accommodating trail users.
- Provides connections to other transportation opportunities such as transit, light rail, other regional trails and local trails.

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 rates strongest.
- Detours or slightly longer routes providing more functionality with respect to connectivity, environmental features, safety and security should be considered.

Safety and Security

Features that can impact trail user safety, security, and accessibility. Safety and accessibility features that rate stronger include:

- Off-street trails (e.g., separate from street surfaces) rate stronger than on-street solutions (bike lanes/sidewalks or shared use of vehicular street surfaces).
- Lower speed/volume roadways used for shared-use or bike lane/sidewalk solutions rate stronger than higher speed/volume roadways.
- 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 that simplify ADA accessibility compliance.

Environmental and Cultural Resources

Trail routes can have positive and/or adverse impacts on existing habitats, other environment features, and cultural resources. Alternatives that best avoid adverse impacts or provide opportunities for on-site enhancements rate stronger. Factors to consider include:

- Opportunities as part of trail development for habitat restoration and enhancements.
- Degree to which trail improvements may degrade environmental features.
- Requirements, if any, to create environmental mitigation areas (such as restored wetlands), either on-site or off-site.
- Degree to which trail improvements may degrade cultural, historic, or archeological resources.

Plans and Regulations

The relative degree that special plans or regulations may apply to a given trail alternative compared to other possible routes in the same segment. Alternatives with simple and efficient regulatory and permitting requirements rate strongest. Complicating factors to consider include:

- Special or complex land use approvals.
- Permitting required across a wide range of regulations and agencies.
- Major variations required 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 or transportation such as water quality regulations.

Cost

The relative cost of building a given trail alternative as compared to other possible routes in the same trail segment. The more cost-efficient alternatives rate stronger. Cost factors may include:

- Construction, design, and engineering including the degree to which special structures (boardwalks, ramps, bridges, etc.) are required.
- Property or easement acquisition.
- Relocation requirements such as the cost of moving transmission-level power lines or a residence.
- Mitigation efforts such as replacing or restoring wetlands degraded as an outcome of trail installation.

Property Ownership

Trail development may require property acquisitions or easement purchases. Outright cost and relative permitting complexity is accounted for under Cost and Plans and Regulations categories. Other factors to consider are:

- The fewer property acquisitions required, the stronger the alternative.
- The smaller the area to be acquired, the stronger the alternative.

COMPARATIVE EVALUATION BY SEGMENT

RESERVED – Comparative evaluation of trail alternatives will be completed after input on the alternatives is received at the project's 3rd open house (November 5, 2014).

Segment 1: Banks and Segment 5: Jobes Ditch

These two segments were not subject to comparative evaluations. As an outcome of Plan Report No. 2, only one viable trail alternative was identified in each of these segments. See Plan Report No. 2 and Chapter 3 of DRAFT Plan Report No. 3 for more information.

Segment 2: Washington County (North)

Criterion	Segment Alternative		
	WEST	CENTER	EAST 1
1. Trail Type			
2. User Experience-Connectivity			
3. Directness			
4. Safety/Security			
5. Environmental/Cultural			
6. Plans/Regulations			
7. Cost			
8. Property Ownership			

Segment 3: Forest Grove

Criterion	Segment Alternative		
	WEST	CENTER	EAST 1
1. Trail Type			
2. User Experience-Connectivity			
3. Directness			
4. Safety/Security			
5. Environmental/Cultural			
6. Plans/Regulations			
7. Cost			
8. Property Ownership			

Segment 4: Cornelius

Criterion	Segment Alternative	
	CREEK	RAIL 1
1. Trail Type		
2. User Experience-Connectivity		
3. Directness		
4. Safety/Security		
5. Environmental/Cultural		
6. Plans/Regulations		
7. Cost		
8. Property Ownership		

Segment 6: Hillsboro/Washington County (East)

Criterion	Segment Alternative	
	CREEK	RAIL 1
1. Trail Type		
2. User Experience-Connectivity		
3. Directness		
4. Safety/Security		
5. Environmental/Cultural		
6. Plans/Regulations		
7. Cost		
8. Property Ownership		



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9. Regulatory and Jurisdictional Requirements/Guidelines

TRAIL DEVELOPMENT PARTNERS

The CCRT is within the jurisdiction of the Cities of Banks, Forest Grove, Cornelius, and Hillsboro, and Washington County. Metro is the regional planning authority, and ODOT manages three state highways within the study area. These entities are the formal jurisdictional partners for planning and developing the CCRT.

Other governmental authorities such as stormwater and irrigation utility districts, and private entities such as power utilities and railroads, may have to be consulted or partnered with on a case-by-case basis.

Trail right of way or easements may have to be acquired from private property owners. As noted in Chapter 3 of DRAFT Plan Report No. 3, right-of-way acquisition, if required, will be conducted on a willing seller basis only, not through powers of eminent domain.

Table 7. Probable Route Permission or Acquisition Partners

Segment	Utility	Road	Rail	Parks	Private Owner
1: Banks	X	X		X	X
2: County	X	X			X
3: Forest Grove	X	X	X	X	X
4: Cornelius	X	X	X	X	X
5: Jobes Ditch	X	X	X		X
6: Hillsboro	X	X	X	X	X

TRAIL STANDARDS

Key partner jurisdiction policies, plans, and standards may have a direct bearing on CCRT implementation. Transportation system plans, parks and open space plans, and bicycle and pedestrian plans may include standards that define or influence trail development. Additional information is in Plan Report No. 1 – Existing Conditions.

All policies, plans, and standards are subject to periodic updates and revisions. The current versions of these plans should be referenced at the time of trail design and engineering. Presently, both Metro and Washington County are updating some of the guidelines and policy documents listed herein.

Long-Range Plan Consistency

The CCRT master plan provides the detailed planned basis for trail alignments and types, design and engineering, and construction considerations. As documented in Plan Report No. 1 – Existing Conditions (pages 5-1 to 5-2), the CCRT is consistent with all long-range plans of all jurisdictional partners.

No significant local plan amendments or exceptions are anticipated as a result of CCRT master plan adoption or trail development, although updates to local plans may be necessary. No amendments to Metro regional planning documents are likely, again except for updates recognizing the CCRT master plan. No exceptions or actions under the State of Oregon’s land use laws or policies are anticipated.

Oregon Department of Transportation

OREGON BICYCLE AND PEDESTRIAN DESIGN GUIDE

ODOT adopted the American Association of State Highway Transportation Officials (AASHTO) guidelines for path design standards. The ODOT *Bicycle and Pedestrian Design Guide*³ includes chapters for on-road bikeways, walkways, street crossings, and intersections, as well as “shared-use paths.” Shared-use paths (what the CCRT reports call multiuse trails) are those used by pedestrians, joggers, skaters, and bicyclists

The guide notes that trail design must consider the varying needs of different users, and that “there are circumstances where economics or physical constraints make it difficult to meet standards. A reasonable approach must be taken, so extraordinary sums are not spent on a short section of path; nor would the natural landscape be excessively disturbed.”

Table 8 summarizes key ODOT standards. Concrete surfaces are recommended for heavily used trails to maximize the longevity of the surface, although asphalt surfaces are acceptable for most paths.

³ <http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/planproc.aspx>

Table 8. Trail Width Based on Level of Use

Two-way cyclists and pedestrians (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'+
High mixed use of multiple modes	Add separate soft surface trail on one side
Very high use by both bicycles and pedestrians	16' (two 5' bike lanes and one two-way walking area, striped)
Extremely high use by both bicycles and pedestrians	18'–20' (tripled in proportion to expected users; separate paths for each mode)

Adapted from ODOT *Oregon Bicycle and Pedestrian Design Guide*

Metro

GREEN TRAILS: GUIDELINES FOR ENVIRONMENTALLY FRIENDLY TRAILS

*Green Trails: Guidelines for Environmentally Friendly Trails*⁴ suggests that natural resource opportunities and challenges should be identified early in trail planning and development processes so trails are designed to preserve sensitive natural resources.

Green Trails provides “recommendations to complement existing standards and guidelines adopted by local cities, counties, park providers and watershed groups in the region.” The focus is on “trails in environmentally sensitive areas and recommends strategies for avoiding or limiting the impacts on wildlife, water quality and water quantity.”

The chapter on types, dimensions and materials suggests that “trail surface materials reflect the kind and intensity of use expected and the environmental sensitivity of the site.” Table 9 illustrates how to select trail widths and surface materials based on level of use.⁵

⁴ *Green Trails: Guidelines for Environmentally Friendly Trails*. Metro 2004.

⁵ Table 8-2, *Green Trails: Guidelines for Environmentally Friendly Trails*.

Table 9. Trail Width and Surface Material Based on Level of Use

Level of use and trail type	Very low use (less than 25) ¹	Low (25–100) ¹	Moderate (100–200) ¹	High (200–400) ¹	Very high (greater than 400) ¹
Multiple-use hard surface	8'	8'	8'	10' ²	10' ²
Crusher fines surface, bikes	4'–5'	6'	8'	8'–10'	7'–10'
Natural surface ³	18"–2'	2'–3'	3'–5'	4'–6'	5'–7'

Adapted from Green Trails: Guidelines for Environmentally Friendly Trails, Table 8-2.

1 Estimated total number of users on a typical busy day in the busiest season.

2 Note to Table 8-2 states that the Portland metropolitan area uses trail widths of “up to 12 feet or more, where practicable.”

3 Note to Table 8-2 also states that natural surfaces may require high and expensive maintenance, and recommends a surface of crusher fines when trails are wider, when hillside cross slopes are more than 20 percent, or when soil is not well-drained.

Green Trails contrasts asphalt and concrete for trail surfacing and stability in natural resource protection areas (see Table 10 below).

Table 10. Trail Surface Suitability in Natural Resource Areas

Asphalt	Concrete
Not suitable for wet areas	Holds up well in wet areas
Will deform to accommodate tree roots	Not as prone to buckling from tree roots as asphalt
Porous grades can be used to facilitate infiltration	Better accommodates imperfections in the subgrade

Source: Green Trails: Guidelines for Environmentally Friendly Trails.

OTHER ENVIRONMENTALLY FRIENDLY TRAIL GUIDANCE

Metro published two documents that could be used for reference in designing and engineering environmentally friendly trails:

- *Wildlife Crossings: Providing Safe Passage for Urban Wildlife* (2009).
- *Westside Trail Master Plan, Chapter 6: Wildlife Corridor* (2014). Although this trail master plan concentrates on prairie grassland habitat within a wide power transmission corridor, it contains useful guidelines, practices, and techniques for restoring and conserving other habitats, as well as for wildlife-friendly trail crossing and structure treatments.

LIVABLE AND GREEN STREETS

Metro published two other guidelines that may provide context and suggestions applicable to trail development, particularly where trail sections use on-street solutions. The *Green Streets* document could also apply to rural roads and stream crossings.

- *Creating Livable Streets: Street Design Guidelines* (2002).
- *Green Streets: Innovative Solutions for Stormwater and Stream Crossings* (2002).

Washington County

COMMUNITY DEVELOPMENT CODE

Section 408-9, Accessway and Greenway Design, of Washington County code contains standards applicable to trail design.⁶ The code allows for modifications to the following design standards if strict compliance (such as maximum longitudinal slope or minimum width) due to constrained site conditions is not practicable.

- Maximum slope of 5 percent wherever practical.
- 10-foot-wide paved surface to safely accommodate both bicycles and pedestrians.
- Asphalt surfacing according to the Washington County Road Standards or other all-weather surfaces (including pervious paving materials) as approved by the county engineer.
- 9-foot 6-inch vertical clearance to accommodate bicyclists.
- Removable, lockable posts (bollards) that prevent use by unauthorized motor vehicles at all intersections with streets.

PEDESTRIAN AND BICYCLE PLAN (2010)

The County's current pedestrian and bicycle plan provides for policy, design guidelines, and needs assessments for pedestrian and bicycle facilities. This plan is currently undergoing an update, and the final adopted version should be used for all design and engineering of CCRT sections in the county.

⁶ Accessways are defined as "any off-street way intended for the primary use of pedestrians and/or bicycles." Greenways are defined as "any off-street way intended for travel use by pedestrians and bicyclists, but also intended for recreational use."

BICYCLE FACILITY DESIGN TOOLKIT (2012)

This toolkit provides guidance in selecting bicycle facility options as well as design summaries, cross sections, and photographs of different options and treatments. Many of the options are similar to those described and illustrated in DRAFT Plan Report No. 3.

SIGNAGE

Guidance on various forms of signing are available from several sources including guidance specific to the Portland metropolitan region. Strong Hispanic community participation in CCRT master plan public review processes indicates that Spanish speakers will be important trail users. All wayfinding, educational, and interpretive signage should be bilingual.

- **Regulatory and warning signs** – AASHTO's *Guide for the Development of Bicycle Facilities*. This type of signage needs to be closely coordinated with city, county, and ODOT standards.
- **Wayfinding, educational and interpretive signage** – Following the Intertwine's *Regional Trails Signage Guidelines* will help support a consistent look and feel for the trail as it passes through different jurisdictions and rural and urban areas.

SURFACE ROADWAYS

Surface roadway crossings and trail intersections within the trail corridor are cataloged under Plan Report No. 1 and analyzed under Plan Report Nos. 2 and 3. Refined trail crossing recommendations and design typology are included in DRAFT Plan Report No. 3. Concurrence on appropriate trail crossing treatments and associated permits must be obtained from the jurisdiction that owns and manages the surface roadway.

Oregon Department of Transportation

ODOT has jurisdiction over three state highways in the study area: Oregon 6 (Segment 1), Oregon 47 (Segments 1, 2, and 3), and Oregon 8 (Segments 4, 5, and 6). In addition, ODOT may be the largest single funder of trail development either directly or through a variety of “pass-through” programs with local jurisdictions (see Chapter 7 of DRAFT Plan Report No. 3).

The information included in CCRT Plan Report Nos. 1, 2, and 3 with respect to trail alignments, typology, and costs will be an essential aid in developing competitive and responsive grant applications to ODOT and other funders. ODOT requires that construction projects utilize a project prospectus as part of a request for project construction funding and development. Elements of the ODOT prospectus that can be derived from CCRT plan reports are listed in Table 11.

Table 11. ODOT Project Prospectus Requirements

Part 1 Project Request	Part 2 Project Details	Part 3 Project Environmental Classification*
<ul style="list-style-type: none"> • Cost Estimates • Project Components • Right of way • Project Justification 	<ul style="list-style-type: none"> • Activity Responsibilities • Permits and Clearances • Right of way • Number of Acquisitions and Relocations • Suggested Base Design • Structures • Segment-by-Segment Typology (existing and proposed) 	<ul style="list-style-type: none"> • Right of way • Traffic • Land Use and Socioeconomic • Wetlands, Waterways and Water Quality • Biological, and ESA Species • Archeological and Historical • Park and Visual • Hazardous Materials • Potential Areas of Concern • Public/Stakeholder Concerns

*Part 3 requires an indication of the probable project classification under NEPA and poses questions with respect to any proposed “categorical exclusion” from NEPA. The environmental classification prospectus requires a brief project description and estimated impacts.

Washington County

The recommended standard and process for developing midblock roadway crossings is the Washington County *Pedestrian Mid-block Crossing Policy*.⁷ The Washington County standards are also recommended for crossing designs for non-County roads in the CCRT.

Table 12. Midblock Crossing Standards

	Standard Treatments	Additional Treatments to be Considered
Tier 1	Crosses a 2-lane road with or without an island refuge. Install high visibility mounted signs and markings.	Refuge islands, curb extensions, staggered pedestrian refuges.
Tier 2	Crosses a 3-lane road with island refuge. Install high visibility signs and markings.	Flashing beacons, pedestrian-actuated signal/beacon.
Tier 3	Crosses a 3-lane road without island refuge or a 4-lane road with island refuge. Install high visibility signs and markings or pedestrian-actuated signal.	Pedestrian-actuated signal/beacon.
Tier 4	Crosses a 4-lane or greater road without an island/refuge. Install pedestrian-actuated signal or beacon.	Pedestrian-actuated signal, pedestrian over- or undercrossing.

⁷ <http://www.co.washington.or.us/LUT/upload/MidblockCountyPolicy2010.pdf>.

ENVIRONMENTAL AND USE REGULATIONS

Engineering, permitting, and construction requirements may vary based on the physical conditions of a given segment, differences in local regulations and processes, and even the source of development funding.

Table 13 lists the most likely environmental and use permitting and/or compliance processes that may impact trail development. A review of Plan Report No. 1 – Existing Conditions will help to identify the particular trail sections or structures to which different permitting might apply. Table 13 can also be referenced as a general indicator of potential funding sources. Many agencies offer programs to assist in meeting regulatory requirements.

Table 13. Possible Permitting Processes

Agency	Method
Federal	
Federal Highway Administration	<ul style="list-style-type: none"> National Environmental Policy Act (NEPA)
Executive Orders	<ul style="list-style-type: none"> EO 11988 Floodplain Management Compliance EO 11990 Protection of Wetlands Compliance EO 12898 Environmental Justice Compliance
National Marine Fisheries Service	<ul style="list-style-type: none"> Endangered Species Act Section 7 Consultation Magnuson-Stevens Fishery Conservation and Management Act Consultation Fish and Wildlife Coordination Act
U.S. Fish and Wildlife Service	<ul style="list-style-type: none"> Endangered Species Act Section 7 Consultation Migratory Bird Treaty Act Compliance Fish and Wildlife Coordination Act Coordination
U.S. Army Corps of Engineers	<ul style="list-style-type: none"> Clean Water Act Section 404 Permit
State of Oregon	
State Historic Preservation Office	<ul style="list-style-type: none"> National Historic Preservation Act Section 106 Consultation
Department of Environmental Quality	<ul style="list-style-type: none"> Clean Water Act Section 401: Water Quality Certification Clean Water Act Section 404 Permit Review National Pollutant Discharge Elimination System Program Construction Stormwater Discharge Permit
Department of State Lands	<ul style="list-style-type: none"> Wetland Delineation Clearance Removal-Fill Permit or General Authorization

Department of Fish and Wildlife	<ul style="list-style-type: none"> • Oregon Fish Passage Law Compliance • Oregon Endangered Species Act Compliance • Habitat Mitigation Policy
Department of Transportation	<ul style="list-style-type: none"> • Permit to occupy or perform operations upon state highways
Local Government, Special Districts, Railroads	
County, Banks, Forest Grove, Cornelius, Hillsboro	<ul style="list-style-type: none"> • Land use permits and approvals (conditional use, development, and/or environmental) • Natural resource overlay zone reviews • Floodplain development permits • Roadway construction permits
Clean Water Services	<ul style="list-style-type: none"> • Environmental review, development review, storm water permits
Tualatin Valley Irrigation District	<ul style="list-style-type: none"> • Must grant permission to follow or cross major irrigation lines
ODOT Rail/Portland and Western Rail	<ul style="list-style-type: none"> • Must agree to use of rail corridor for rail-with-trail
Metro	<ul style="list-style-type: none"> • Dairy and McKay Creek target area refinement plan (2007) may impact trail development in these areas

Wetlands, Nonwetland Waters, Floodplains

The CCRT may cross, pass through, or pass near many water bodies, streams, wetlands, floodplains, and associated riparian areas. Regulatory compliance requirements may have to be considered. Impacts from trail construction may have to be mitigated, and restoration or enhancement may have to be undertaken.

Detailed information on wetlands, nonwetland waters, and floodplains in the study area is in Plan Report No. 1. The wetlands and other water features crossed by CCRT segments are summarized in Table 14.

Table 14. Wetlands, Nonwetland Waters, and Floodplain Crossings

Segment	Wetlands	Streams	Floodplains	Other
1: Banks	X		X	
2: County	X	X	X	Ponds/Reservoirs
3: Forest Grove	X	X	X	Ponds/Reservoirs
4; Cornelius	X	X	X	Ponds/Reservoirs
5: Jobes Ditch	X	X	X	Tualatin River
6: Hillsboro	X	X	X	

CLEAN WATER SERVICES

While many partner jurisdictions have regulations and policies that apply to water bodies and wetlands, Clean Water Services (CWS) is the surface water management regulatory authority for urban Washington County. CWS manages and regulates, and in some cases outright owns, stream and riparian corridors. Although CWS does not have jurisdiction outside of the UGB, CWS standards are recommended as a common reference point for mitigating environmental impacts in CCRT's rural unincorporated areas. Trail development may trigger CWS standards to protect sensitive areas and vegetated corridors, and mitigation and enhancement may be required. Different sections of CWS's *Design and Construction Standards* address location, design, and engineering considerations.

CWS standards⁸ allow pedestrian or bicycle trail crossings of vegetated corridors if impacts are minimized and mitigation is provided. Trails have to be designed and constructed to protect water quality and mitigate any impacts to public stormwater systems. Vegetated swales and/or dry basins are required to provide on-site treatment of all stormwater runoff from paved trails. Paths up to 12 feet wide, including any structural embankments, are allowed if:

- Constructed so as to minimize disturbance to existing vegetation and maintain slope stability.
- For the Tualatin River, located no closer than 30 feet from the 2-year, 24-hour design storm elevation.
- For all other sensitive areas, the path is located in the outermost 40 percent of the vegetated corridor.
- The area of the path beyond the first 3 feet of width is mitigated in accordance with Section 3.08, Replacement Mitigation Standards.
- Path construction does not remove native trees greater than 6 inches diameter at breast height.

Paths between 12 and 14 feet wide are considered an allowed use if they are constructed using low impact development approaches in accordance with Chapter 4⁹ (Runoff Treatment and Control). If these conditions cannot be met, the project shall be reviewed in accordance with Section 3.07 (*Encroachment Standards*).¹⁰

⁸<http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%203%20DC%20Amendment%20RO%2008-28.pdf>.

⁹

<http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%204%20Amendment%20RO%2007-20.pdf>.

¹⁰

<http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%203%20DC%20Amendment%20RO%2008-28.pdf>.

Chapter 3, Sensitive Areas and Vegetated Corridors, also includes standards for percent covered by native trees, shrubs and groundcover. These could apply to trails through riparian corridors. Coverage is defined for degraded, marginal and good conditions. More than 50 percent tree canopy has to be preserved, or variances obtained or off-site mitigation provided. Invasive nonnative species are to be removed, and a native plant re-vegetation plan to restore the corridor to “good condition.”

METRO

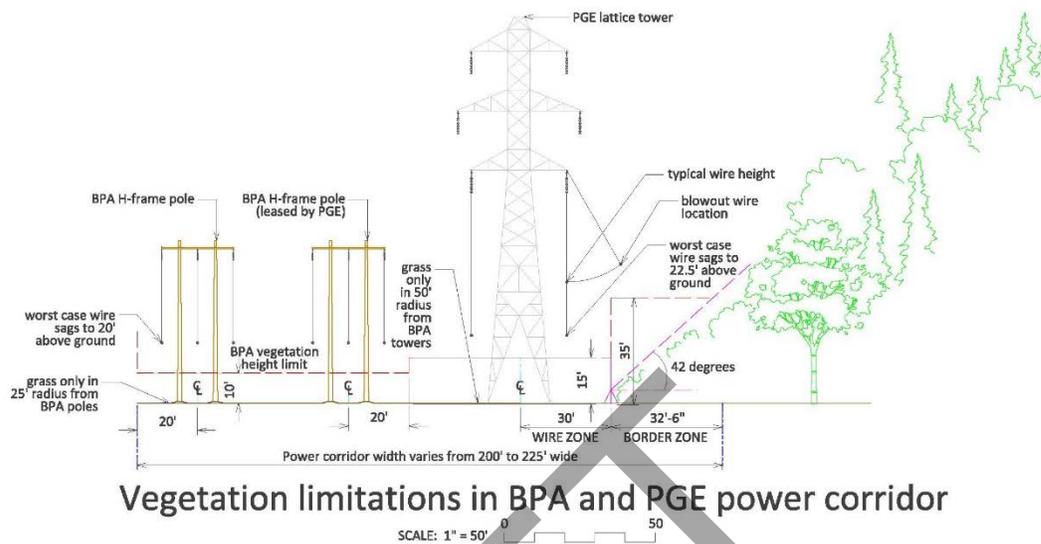
Related to water bodies and wetlands, Metro adopted the Dairy/McKay Creek Target Area Refinement Plan (2007) to provide guidance for acquiring and restoring natural areas along these two stream corridors. This plan may provide useful guidance to trail design and engineering through Segment 6, particularly in Metro-owned natural areas.

POWER UTILITIES

Three transmission-scale power corridors within the study area may impact or are impacted by possible trail alignment alternatives.

- The Bonneville Power Administration (BPA) operates a transmission line through the west side of Segments 2 and 3.
- Portland General Electric (PGE) operates a transmission line that follows Oregon 47 and local county roads through the center and east side of Segments 2 and 3.
- PGE also operates a transmission line system along the rail corridor through Forest Grove, Cornelius and Hillsboro in Segments 4 and 6.

PGE and BPA follow their usual and customary maintenance practices power utility corridors. Maintenance practices suitable for open lands under power lines may not be compatible with corridors developed for bicycle and pedestrian traffic. In addition, both utilities have restrictions with respect to structures, trees and other vegetation that may interfere with power piles and lines. The illustration below combines BPA and PGE standards into a single reference graphic.



Courtesy Gregg Everheart

Bonneville Power Administration (BPA)

The BPA power corridor through Segments 2 and 3 (**WEST**) is secured by easements across private property. BPA will have to grant specific permissions to develop with a trail within this corridor, but has indicated general willingness to do so. See DRAFT Plan Report No. 3, Appendix A for more details. Since this power corridor is secured by easement and is not owned in fee by BPA, additional agreements/easements with private owners, or outright acquisitions, will be required in order to site the trail.

BPA disclaims liability for damage to trail property and facilities or injury to trail users during maintenance, reconstruction, or future construction of BPA facilities within the power corridor. BPA also requires that paved asphalt trails within power corridors be constructed to withstand an AASHTO classified HS20 vehicle. The HS20 loading standard designates a three-axle truck and trailer with the front axle carrying 8,000 pounds and the rear axles each carrying 32,000 pounds.¹¹

Portland General Electric

The PGE power transmission poles and lines along public roadways in sections of Segment 2 (**CENTER and EAST 1**) are primarily in public road right of way. The transmission-scale power poles and line along the full length of **RAIL 1** through Segments 4 and 6 are within rail right of way. See DRAFT Plan Report No. 3, Appendix A for more details.

PGE disclaims any liability with respect to trail user injury or trail or property damage that might occur during maintenance, reconstruction, or future

¹¹ View an illustration of an HS20 truck and trailer at <http://precast.org/2010/07/hl93-truck-loads-vs-hs20-truck-loads/>.

construction of PGE facilities. PGE retains the right to enter the power right-of-way or easement “to erect, maintain, repair, rebuild, operate and patrol the power lines, telecommunication lines, structures and appurtenant signal or communications and all uses directly or indirectly necessary to perform its operations.”

PGE also requires that “for safety reasons, no impediments may be added that impede the ability to traverse the right-of-way with maintenance vehicles on a 24-hour-per-day 7-day-per-week basis.” This last requirement will be particularly important if this rail corridor is redeveloped to include both a regional-scale trail and MAX light rail transit.

PGE requires that paved asphalt trails be constructed to withstand up to a 60,000-pound vehicle weight. The maximum PGE maintenance vehicle length is 37 feet and the turning radius for such vehicles must also be accommodated. A similar turning radius requirement can be expected for BPA vehicles.

AMERICANS WITH DISABILITIES ACT (ADA)

Providing for a wide range of trail users with different abilities and challenges and meeting ADA standards will not be an issue in most CCRT segments and sections. The study area is primarily within the valley floor Tualatin River Watershed. Existing grades allow full compliance with ADA standards without use of special structures or trail meanders and switchbacks (see Chapter 4 of DRAFT Plan Report No. 3 for a limited number of possible exceptions).

National Guidelines

The U.S. Department of Transportation’s *ADA Standards for Transportation Facilities* (2006), along with U.S. Access Board *Accessibility Guidelines* (2004) and U.S. Department of Justice *ADA Standards for Accessible Design* (2010) form the basis for compliance with the Americans with Disabilities Act (ADA) and the associated Architectural Barriers Act. U.S. Forest Service guidelines provide an example of acceptable exempt exemption language: “if ADA compliance would cause substantial harm to cultural, historic, religious, or significant natural features or characteristics; substantially alter the nature of the setting or purpose of the facility; require construction methods or materials that are prohibited by federal, state, or local regulations or statutes; or be infeasible due to terrain or the prevailing construction practices.”¹²

¹² *Trail Design Guidelines for Portland’s Park System*, p. 8



ODOT Guidelines

ODOT suggests consulting AASHTO's *Designing Sidewalks and Trails for Access*¹³ where site conditions preclude compliance with the recommendations for average and maximum grade. This document recommends:

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; extra width is also recommended. 5 percent should be considered the maximum grade allowable for shared-use paths. For trails with primarily a recreational purpose in areas with steep terrain, these grades may be exceeded.

Alternative ADA Approaches

If local jurisdictions use their own funds for trail construction, accessibility and the degree of ADA compliance becomes a matter of local policy. Another approach to ADA compliance involves using nearby existing vehicular streets with sidewalks and bike lanes. Such streets are in effect “grandfathered.”

Flexibility is also possible if local jurisdictions have ADA compliance review processes. Variance processes must be followed to establish that a given design or alignment accommodates accessibility by other means and/or that there are extenuating circumstances. The City of Portland, Oregon has a variance procedure that could be consulted.

An additional local resource for dealing creatively with accessibility issues is Access Recreation's *Guidelines for Providing Trail Information to People with Disabilities*. This Portland, Oregon-based nonprofit published the web-based document in January 2013.

¹³ http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/index.cfm, publication FHWA-EP-01-027

10. Phasing Plan

The phasing plan provides guidance to the CCRT’s future jurisdictional builders in balancing options and pursuing construction funding. Many factors will influence actual construction sequence and timeframe. The timing and feasibility of property acquisition, which will be exclusively on a willing seller basis, and availability of construction funding are primary drivers.

PHASING CRITERIA

Phasing will inevitably be influenced by funding availability, changing jurisdictional authority and priorities, other transportation developments, and evolving regional and local plans. The building of specific trail sections and structures may also change initial phasing priorities over time.

The following phasing criteria are suggested as questions to ask in prioritizing trail sections or structures. Criteria are not in order of importance nor weighted. A sequential (1-2-3) or yearly ranking is not particularly useful over a 20-year construction horizon.

The recommended trail phasing stages are: Near-term, mid-term, and long-term. Higher priority trail segments or sections will demonstrate some combination of the following characteristics:

Phasing Criteria	
Jurisdictional Authority	The trail segment or section is within a jurisdiction with authority to fund, develop, own and/or operate trails.
Funding Availability	Wide range of funding programs are available and adequate to fund a specific trail section or structure.
User Alternatives	There are no practical or safe alternatives for trail users without constructing a specific trail section or structure.
Connectivity	A specific trail section or structure: <ul style="list-style-type: none"> • Increases connectivity to the overall system. • Connects to major activity center(s). • Extends built portion of the CCRT or intersecting built trails. • Connects to other existing or planned transportation facilities.
Functionality	A specific trail section or structure is: <ul style="list-style-type: none"> • 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. This would include lower cost “interim” solutions such as shared use streets or widened shoulders that can allow funding resources to be applied to other sections where multiuse trail solutions are necessary.



PHASING RECOMMENDATIONS

RESERVED – Phasing recommendations will be developed once the preferred alternative(s) are selected.

DRAFT

Appendix A: Stakeholder Interviews – Round 2

DRAFT

DRAFT

Project: Council Creek Regional Trail Master Plan

Activity: Key Stakeholder Interviews

Date: July – September 2014

Purpose: As an outcome of Project Advisory Committee (PAC) decisions on July 1, 2014 selecting “up to 3” trail alignment alternatives for consideration as the preferred alternative for each trail planning segment, several issues were raised, and the Consultant was asked to investigate. Other issues emerged during technical analysis and at the August 27 Open House.

1. ISSUE: Will Union Pacific Railroad (UPRR) permit a rail-with-trail along the rail right-of way identified as RAIL 2 in Plan Report #2?

Implications

A citizen in the unincorporated neighborhoods between Cornelius and Hillsboro who had concerns with RAIL 1 suggested using a more southerly rail line (now termed RAIL 2) as an alternative CCRT rail-with-trail route. RAIL 2 is distinguished from RAIL 1 by being more active (trains per day, rather than trains per month) and also UPRR owned (RAIL 1 is owned by ODOT and scheduled for eventual abandonment). Without UPRR consent, RAIL 2 is not feasible.

Process

Conducted a phone interview with Brock Nelson on July 14, 2014. Brock is Director of Public Affairs for UPRR’s Oregon/Washington Division and he said he was the “exact right” person at the railroad to ask about a rail-with-trail on the line south of Oregon 8. He was very forthcoming and helpful. I gave him a full briefing on the trail plan and the various rail options that are being considered (or were being considered), and also how we recently came to consider the rail line south of the highway.

He indicated that this is an active line (consistent with what Mary Ordal, et. al. have observed). He said quote “UPRR does not embrace the concept of rail-with-trail” on active lines - or I gathered for even less active lines that have ongoing commercial freight traffic potential. He noted that the tracks for this UPRR line as it enters Yamhill County (Yamhelas Westsider Trail) are long gone, and therefore rail-to-trail is conceptually OK for those sections. He said the north line in our study area being ODOT-owned and up for abandonment is “someone else’s call”. But UPRR would not support rail-with-trail on the south line. He said he could answer us more formally in writing if requested.

Outcomes

At the suggestion of PAC members – Derek Robbins, Mary Ordal and Dick Reynolds – we requested a written response and provided Mr. Nelson with the following details:

Thanks for responding in a timely manner again. I trust the information that follows will suffice. We are developing a trail master plan for the 15-mile long Council Creek Regional Trail. The trail will originate at the downtown Hillsboro MAX station, extend through a small area of unincorporated Washington County west of Hillsboro, thru Cornelius, and then turn north within Forest Grove, ending at the City of Banks and the Banks-Vernonia Trailhead. Three alignment options remain on the table for the trail planning segments between Hillsboro and Forest Grove

(see attached map). These are very challenging segments given prior development, ownership patterns, and environmental constraints.

- The north (or CREEK) option would follow Council Creek until entering an older neighborhood of Hillsboro, then use a shared street solution to get trail users to downtown Hillsboro. Through Cornelius especially, prior development built right up to the creek makes establishing this route very challenging, thus two rail corridor solutions are being considered. The first rail option (RAIL 1) may be used in part in conjunction with CREEK or vice versa.
- The RAIL 1 option would be a rail-with-trail solution along an ODOT-owned rail right-of-way that cuts thru the center of downtown Cornelius, then thru less densely developed portions of Washington County, and straight into the downtown Hillsboro MAX station. The current rail operator is PNWR and current rail traffic is limited to a couple of trains per month. ODOT has this line on its “abandonment” list. We believe that a 10’ to 12’ wide trail could be sited on the south side of the tracks even if the current freight rail traffic continues into the foreseeable future. There has also been talk of using this corridor for a single track MAX extension (thus rail-with-trail, not rail-to-trail). These factors notwithstanding, an abutting property owner to RAIL 1 suggested an alternative rail solution. The Project Advisory Committee (which consists of Banks, Forest Grove, Cornelius, Hillsboro, the County, Metro, and ODOT) felt it had enough merit to be added to the maps.
- This RAIL 2 option is of course the UPRR line. You can see on the map that at the east end this solution uses a “shared street” (Dennis) section to make the final connection to downtown Hillsboro. At the west end, past N 4th in Cornelius, a multiuse path built parallel to Oregon 8 will be used. Between these two points, a rail-with-trail is contemplated. The proposer of this RAIL 2 alternative indicated that there was maybe 1 train a week on your line. As we discussed over the phone, we subsequently learned this was way off the mark and that the line is regularly, if not daily, active. The PAC asked that we contact UPRR to determine your position on rail-w-trail.

In the just started next phase of the master plan, the PAC will be making a determination as to which of these 3 alternatives is the preferred solution. Please give me a call if you need more information or discussion.

In response, Mr. Nelson provided the following link - <http://www.uprr.com/reus/roadxing/industry/process/recreational.shtml> - to UPRR policy which reads (key statement in **bold**):

Recreational Trails

The Industry and Public Project Group will review all projects proposing recreational trails (Pedestrian, Hike/Bike, Sidewalks, etc.). **Union Pacific’s policy is not to permit private or public parallel at-grade trails within the railroad’s right of way. For obvious safety reasons, recreational trails crossing railroad tracks will not be permitted at grade. Grade crossings immediately adjacent to an existing public roadway crossing equipped with active warning devices will be considered.** However, all costs associated with the installation of new or modified crossing surface and modification or relocation of the warning devices will be borne by the Agency. Scope of proposed crossing work will be determined at a joint diagnostic meeting between the Railroad and Agency. Establishing new trails over the railroad track and

right of way not adjacent to existing public roadways will then require over or under grade separation structures.

RECOMMENDATION

Eliminate RAIL 2 from any further consideration or analysis as a preferred CCRT alternative.

2. ISSUE: What requirements will BPA have for using its power transmission easement between Kansas City Road and Oregon 47 for a multiuse trail, and what are the easement terms?

Implications

An extended portion of the WEST route is within the BPA transmission power easement between NW Kansas City Road and Oregon 47. Development of this route for a trail will require compliance with BPA standards addressing vegetation management and safety and preserving access to its power infrastructure (poles, lines, etc.). BPA easement restrictions may also impact land values in the event an acquisition is required from the underlying property owners.

Process

Jim Clark, BPA Right-of-Way Agent, and I had talked earlier in the project about the form of ownership (right-of-way or easement) that BPA held for this power corridor. I had promised to get back to him if use of the BPA corridor was selected for a “finalist” trail option. Sent an inquiry to Jim Mr. Clark on July 14, 2014 which resulted in an immediate call back. We discussed the issues of use permissions and underlying easement rights and he requested further information in order to provide answers. We provided him with the following:

Thanks for the quick call-back this morning. You can see that we are still looking a three major routes options for the Council Creek Trail and the BPA corridor only plays significantly into the most westerly option. The basic trail structure contemplated for both sections is a 10 to 12 foot wide asphalt surface with 2 foot gravel shoulders on each side. Attached find the two trail segment planning maps that show the sections of the BPA power corridor that the project’s advisory committee is still interested in:

- 1. NW Kemper Road to Highway 47 – this section of the power corridor is split between two maps (Segments 2 and 3). You will see that there is an alternative shown between Kemper and NW Purdin Road that crosses unencumbered (by BPA easements) farm lands. The power corridor route between Kemper and Purdin has some topographical variations that might challenge trail alignments, so we ID’ed the more uniform route across farm lands as a possible option (BPA is still preferred). Just to be clear, we need info (see questions below) on the whole stretch between Kemper and 47.*
- 2. Highway 47 to Oak Street (Segment 3) – this section of the BPA corridor will only be considered IF both 1) a trail alignment along Highway 47 west of Porter Road/Oak Street is used AND 2) a west to east rail-with-trail option is used to connect Forest Grove with Cornelius and Hillsboro.*

So our questions, as we discussed are:

- ❖ **Conceptually would BPA consent to the use of the power corridor for a trail?** Based on our work with BPA on the Westside Trail thru Beaverton we have assumed that this is possible. As I noted, both myself and my lead trail planner are also very familiar with*

BPA requirements – maintaining unimpeded access to poles/towers, clearances for overhead lines, possibility that trails would have to be engineered to withstand BPA vehicle loading, and vegetation management. Please keep in mind that this is a plan-level document and all involved are aware that anything you tell us now is fully subject to BPA policy and permitting and use agreements at the time of actual design/engineering/construction.

- ❖ **What rights does BPA for the property crossed by the power corridor?** *Based on your prior assistance, we understand that this corridor is secured by easement and is not a BPA owned right-of-way. The future builders of the trail will have to secure BPA permission AND get access permissions or buy easements/property from the underlying property owners. So we just need to get an idea as to what rights BPA has and what the property owners retain.*

Outcomes

Mr. Clark responded on July 22, 2014:

The use of BPA's Forest Grove-Tillamook No 1 transmission line corridor for the Council Creek Regional Trail's western option will be subject to BPA's technical review. If this option is chosen, you will be required to submit a Land Use Application to include specifics of location, distances to structures, planned improvements and any other uses planned within the right-of-way. Approval will be required before improvements are allowed. An application form is attached for your use.

I did a rough measure of the length of transmission line right-of-way impacted by the trail and I estimate 3.2 to 3.4 miles. BPA doesn't own the land so any planned use would be subject to the underlying landowners' approval. The Forest Grove-Tillamook No 1 transmission line is operated with rights recorded under Transmission Line Easement documents. These perpetual easements give BPA the right to enter and erect, operate, maintain, repair, rebuild and patrol one or more electric power transmission lines and appurtenant signal lines, poles, towers, wires, cables and appliances necessary, in, upon, over, under and across the 100' wide right-of-way; together with the right to clear and keep clear the land of all brush, timber, structures and fire hazards; and also the present and future right to top, limb, fell and remove all growing trees, dead trees or snags (collectively called "danger trees") located adjacent to the right-of-way, which could fall upon or against the transmission and signal line facilities. The fee owners still have rights to all other uses that property ownership affords within the legal limits and zoning of their property.

RECOMMENDATION

That the BPA corridor option for the WEST alignment alternative be given a full analysis as a potential preferred alternative.

3. **ISSUE: Will the Tualatin Valley Irrigation District (TVID) permit paved trails on the surface over major agricultural irrigation line easements?**

Implications

TVID major irrigation lines were mapped as part of the Opportunities and Constraints phase of the CCRT. Many of these lines closely follow Oregon 47 and county roads through Segments 2 and 3. SAC member Lyle Spiesschaert suggested that the easements protecting underground TVID irrigation lines along roadways may be an opportunity for siting street-adjacent multiuse trails. The premise was that as farming activities are limited in these areas that the underlying private property owners more amenable to trail ROW acquisition.

Process

Lyle suggested we talk to Tom Love, a local farmer who is Board Chairman for TVID. Lyle also indicated that these particular easements were actually held by the Bureau of Reclamation (BRec) not TVID, and that he expected that just like with BPA power corridor easements, any trail use would require separate permissions from the underlying property owner.

Interviewed Mr. Love and Joe Rutledge, executive director of TVID on August 4, 2014. They confirmed that TVID easements were held by BRec and that the easements only secure rights for irrigation infrastructure. Rights for a trail development would have to be acquired from the individual property owners and operations. We provided them with a brief overview of the trail project and alternatives between Banks and Forest Grove. They asked to be notified on project meetings via emails to Joe. They also commented that the EAST trail option seemed the best.

We submitted two supplemental questions on August 5 – how wide are the easements and what is the size(s) of the irrigation lines? Never received a response, nor did they attend the August 27 Open House that we were aware of, although there was one individual at the Open House who wanted to discuss the irrigation lines issue after the Q&A. Unfortunately in the press of events she left before we could discuss. Did not get her name or contact info, nor if she was a TVID representative.

Outcomes

They indicated that BRec is unlikely to grant rights to use the easements for a paved trail, even if the underlying property owner agreed. Stated that BRec would simply not have an interest in making the single purpose easements “more complex”. BRec would probably however be able to grant rights to cross the easement on a case by case basis. TVID was concerned at two levels: impacts on the lines from trail construction activities, and issues arising from trail damage and conflicts as TVID exercised its rights to operate, maintain, repair and replace irrigation lines and associated infrastructure. The irrigation lines are only buried 4 feet deep. Subsequently Derek Robbins indicated he knew of instances in Forest grove where TVID lines were under city sidewalks.

RECOMMENDATION

As with PGE transmission power poles/lines (see discussion re PGE elsewhere in this report), it may be that the alignments of street-adjacent trails can be along the outside edge of the irrigation easements, which would in effect service as the buffer between the road and the trail.

4. **ISSUE: Will TriMet permit a single-track MAX extension between downtown Hillsboro and downtown Forest Grove along RAIL 1?**

Implications

In 2006, Forest Grove commissioned a rail study that recommended a single track MAX extension along RAIL 1. Direction from the beginning of the CCRT effort was to assume that a rail-to-trail conversion was not acceptable and that use of the rail corridor for a future MAX extension had to be accommodated. Up until the July 1 PAC the project had been proceeding on the assumption that a single track was acceptable to all parties. Preliminary siting analysis indicated that a parallel trail was possible, whether a single track freight line as at present or a future single track MAX. At the July 1 PAC, a concern was raised as to whether TriMet would require a dual track MAX, as this is its usual solution.

Process

Contacted Alan Lehto, TriMet Director of Planning and Policy and asked the following:

I am consulting PM for the master plan for this trail on behalf of Banks, Forest Grove, Cornelius, Hillsboro, and Washington County (Metro and ODOT are also project partners). The trail will begin at the downtown Hillsboro MAX station and end at the Banks-Vernonia Trailhead just north of downtown Banks, some 15 miles in all and passing thru all the noted municipalities plus portions of unincorporated County. My question has to do with one of the options identified between Hillsboro and Forest Grove. This would be a rail-with-trail solution between downtown Hillsboro and Oregon 47 (Quince Street) in Forest Grove that follows an older rail line (once Oregon Electric). The rail corridor cuts thru a stretch of unincorporated County and downtown Cornelius.

See the attached map. The line in question is the middle route (RAIL 1). As presently operated there is only freight traffic on this single track a couple of times a month, and it is listed by ODOT for eventual abandonment. A 10' to 12' wide multiuse trail with adequate separation from the tracks could fit (not easily but it could) within the rail right-of-way along the south side (north side has added limitations due to PGE transmission power poles). The jurisdictions have had prior discussions with the ROW owner (ODOT) and rail operator (PNWR).

As you probably know, local jurisdictions, particularly Forest Grove, also have an ongoing interest in a MAX extension along this corridor. In 2006, Forest Grove commissioned a "Rail Concept Study". There are no citations in the study regarding the City's consultant having some level of discussion with TriMet on this matter but I assume this must have happened. This study proposed a single track operation, except for a passing track somewhere between 10th and 26th in Cornelius, and up until a couple of weeks ago we were operating on that assumption (e.g.: that a single track MAX and a trail could co-exist).

Nonetheless, couple of weeks ago, the Project Advisory Committee did raise a concern – "what if TriMet would only consider a dual line solution?" So this is the question to you. As best I can figure looking at the 2035 Regional TSP, this area isn't identified as a mobility corridor prioritized for a corridor refinement plan, and the corridor (#24) write-up only appears to get as close as noting that Hillsboro to Forest Grove is a "developing regional priority in the HCT study". Your

Westside Transit Enhancement Plan only indicates bus transit improvements between Hillsboro and Forest Grove. All this is to say we aren't looking for a specific answer. But - given what TriMet knows thru current studies, potential ridership, and current policy, and all other things being equal – IF there was a MAX extension in the future would single track be conceptually acceptable?

Alan responded on July 20 with:

The only easy answer is “no”. Any single-track section significantly limits schedule flexibility. For a single line, that’s not such a big deal. For a line that interacts with other lines it is. In fact, the two short single-track sections on the Red Line to the Airport dictate the schedule for the entire network of four MAX lines. If a BRT were the eventual solution in the corridor, it might change the answer but it would depend on a number of factors. But I don’t want to just give you a curt answer. I’m not sure about your timing, but suggest we three (at least) have a conversation around the issues and see what possibilities there are.

As a result of this exchange, a conference call was held on July 23, 2014 with myself, Alan, and Derek Robbins plus Tom Gamble and John Holland of Forest Grove.

Outcomes

Alan indicated that, as all were aware, a Hillsboro to Forest Grove MAX extension is not on current regional transportation planning or TriMet priority lists. High Capacity Transit (HCT) improvements were listed long-term but were not rail-based. If the MAX extension was intended to provide direct service from Forest Grove/Cornelius to Hillsboro, Beaverton and Portland, a dual track would be required. However if a MAX service that required a transfer to a separate train at Hillsboro to access points east was acceptable, then a single track would work.

Alan also indicated that a dual line MAX could fit in a 32' wide section and that separations between MAX lines and trails could be narrower than for freight lines (for RAIL 1 we are using FHWA guidance that indicates for low volume, low speed freight lines that the separation from edge of trail to centerline of rail could be as low as 15' with appropriate security fencing). So if a dual MAX line was desired/required, a 12' wide trail with a 2' wide shoulder on the far side would have the potential for a maximum 14' separation from MAX within a 60' wide right of way. Alan also indicated that MAX stations could be sited between the two rails, mitigating possible conflicts with the trail and the stations.

Alan provided the following in follow-up:

To follow up on our conversation today. Given that the right-of-way width is 60' (or sometimes more) and your pathway width is 12' plus 2' shoulders, there should be enough width for a potential future double-track MAX as well as the pathway. Attached you will find Chapter 3 from TriMet’s Design Criteria. There are several figures starting on page 16 of the document that show typical cross-sections of track with widths. The retained track and median running fit within 32'. The typical ballasted track is more than 32' but only because of the “typical” (not “required”) clearance from edge of right-of-way to center line of track on each side.

I’ve cc’d Jeff Owen, who is our Active Transportation Planner. He’ll send along a little more detail. Among other things he has been working with the City of Gresham on the path they are designing along the MAX right-of-way in Gresham. This project is near 100% design and going to bid in the next few months with completion sometime in 2015. You’ll see more in the drawings,

but the basic template is a 6' high chain link fence separating the path from the rails. The fence needs to be grounded, but otherwise is standard and is only 6' to encourage people to not try to climb it. There can be breaks in the fence with appropriate safety treatments at all pedestrian and roadway crossings.

He'll send along a few drawings from the Gresham MAX path. I'm fairly certain the right-of-way there is 60' total and we have two operating tracks and they are putting in a 12' wide path with 2' shoulders on both sides with a chain link fence separating the path from the tracks, all within the 60' total. Once you get past conceptual and into more detail design, there would be more questions to look into such as what to do at stations, where the right-of-way would need to get wider.

NOTE: Follow-up information from Jeff Owns indicated the rail ROW in Gresham was actually 100' wide but engineering drawings provided illustrated separations consistent with Alan's input. Jeff also followed up with respect to widths of station stop platforms. For a platform between and serving two lines a minimum width of 15' is required. For station stop to the side of the track a minimum 12' wide platform is required. The 15' is 3' wider than can be accommodated within a 60' ROW with standard two-line (32') and multiuse trail (16') cross-sections but minor narrowing of the trail or trail shoulders at the station stops, or integrated could accommodate TriMet requirements.

Based on some questions raised at the August 27 Open House, Seth Brumley of ODOT (member of PAC) was asked to re-check with ODOT Rail, which owns RAIL 1, if there were any use or ownership reversion issues with this rail corridor. Seth's question to ODOT Rail and their response follows:

Q: We had an Open House for the Council Creek Regional Trail last night and there were a number of questions about the rail line between Hillsboro and Forest grove (see maps and reports here <http://www.oregonmetro.gov/public-projects/council-creek-regional-trail-master-plan>). We wanted to confirm:

- 1. Does ODOT own the ROW?*
- 2. Can this ROW be used for a trail while a limited number of freight trains are still using this section?*
- 3. If freight abandons the line, can the ROW be used for the trail?*

A: ODOT owns most of the rail except for in Hillsboro where it crosses Adams Street. Union Pacific owns that segment. P&W Rail has an operating agreement on the line and any decision to use the ROW for a trail would require their approval. I have attached their contact info. If the line is abandoned by P&W then there would be a number of options including trail and light rail, but that would have to be revisited if P&W makes that decision.

RECOMMENDATION

That planning for a rail-with-trail solution along RAIL 1 move forward with conceptual trail alignments accommodating continued present freight rail and future MAX conversion.

5. ISSUES:

- a. Does Washington County intend to proceed with the closure of the Porter Road Bridge to vehicular traffic?**

b. Can Washington County build and maintain trails within current or acquired County road right of way?

Implications

- a. If the Porter Road Bridge is closed to vehicular traffic, the only vehicle traffic on Porter Road would be generated by the 14 residences/farms on the roadway. The resulting low vehicle traffic volumes would permit a shared-use solution for the EAST 1 option between Oregon 47 and NW Verboort Road.
- b. County does not exercise a parks authority, which is typically considered a prerequisite for building and maintaining trails. There would be no alternate short or long-term trail builder/operator for any portions of the CCRT in unincorporated Rural Reserve areas.

Process

Corresponded with Shelley Oylear, Washington County bicycle coordinator (and alternate County representative to the PAC).

- a. At the project's Existing Conditions phase, Seth Brumley of ODOT had indicated that he understood that the Porter Road Bridge may be closed to vehicular traffic due to structural issues. Shelley had indicated during a subsequent SAC meeting that this was probably the case.
- b. We sent the following question to Shelley re: County trail authority:
We reviewed the draft 2035 County TSP active transportation chapter earlier in the CCRT process and see any direct statement re: County authority (or not) to build and operate separate multiuse trails, except for a statement along the lines of (paraphrasing) the County would "coordinate" with builders/operators of parallel but separate trails (which implies the County still wouldn't be the operating authority). We are re-using the bike/ped treatment from the County's West Union pathway study for the CCRT, albeit making the illustrations more generic since some elements were somewhat specific to West Union. If, as with West Union, ROW widening acquisitions were made for the trail would the County conceptually be able to build/maintain a trail along the lines of the rural cross-section (4-9) in the West Union report?

Second issue – has the County grappled with the issue of impacts of road widening or trail building over top of TVID irrigation lines? Had a very good conversation with TVID officials yesterday BUT they were emphatic that while short crossings of irrigation lines would be possible, building along and atop the lines would not.

Outcomes

In response to a further inquiry, Shelley responded as below:

- a. *We are moving in the direction of closing the (Porter Raod) bridge for vehicles and using the existing bridge for bike/peds or possibly replacing the bridge with a new bike/ped bridge in the future. The timing for this is unknown right now, but discussions are continuing. An on-street shared section along Porter Road is a reasonable solution for this segment.*
- b. *Jim, I think that I have some answers for you. Yes - the County could build and maintain a path along the roadway right of way as per Figure 4-9 (in West Union study). We don't do much widening of roads in the rural area that require building over irrigation lines, so it hasn't come up – so we would defer to TVID on this one.*

RECOMMENDATIONS

- a. Revise the previously recommended trail type along Porter Road (street-adjacent multiuse trail) to a shared use alternative(s) where bicyclist/pedestrians and motorized vehicles share the road safely through signing and striping.
- b. Proceed under the assumption that, subject to County road ROW acquisition, Washington County could be the builder/operator of street-adjacent trails along County roads.

ISSUE: What will be the approximate cost of relocating PGE transmission-scale single pole lines from a) the north side of RAIL 1, and b) south of NW Greenville Road for CENTER option and along NW Visitation Road for EAST?

Implications

PGE-owned transmission power lines closely follow both Oregon 47/NW Visitation (CENTER and EAST 1 options) and the RAIL 1 rail line. The relocation of these transmission power poles and lines may be expensive, perhaps even more expensive especially in rural areas than acquiring additional private property for the trail.

Process

Contacted PGE's Tina Tipton who worked on the Westside Trail Master Plan. Tina referred us to PGE's Service Coordination division that requested we submit our request in writing. Our request:

Tina Tipton, a PGE real estate agent that I have worked with on prior regional trail planning project, referred me to you. I talked with your service desk this morning and I was asked to document our request in writing. We are currently leading alignment master planning for the future Council Creek Regional Trail. The jurisdictional partners for this trail are the cities of Banks, Forest Grove, Cornelius, and Hillsboro, Washington County, Metro and ODOT. The trail will extend from downtown Banks south to Forest Grove thru unincorporated farmlands, turn east on the north side of Forest Grove, then extend thru the center of Cornelius to downtown Hillsboro.

At the current stage of the planning process, we have identified 2 to 3 possible trail alignments across 6 planning segments. Three of these alignments may impact PGE transmission-level power poles. These areas are:

1. *The PGE line that extends from the substation near the County Jail and the downtown Hillsboro MAX station along the north side of a rail line thru Cornelius to a substation in Forest Grove near Oak Street. This is labeled **RAIL 1** on the attached Segment 4-5-6 map.*
2. *The line that follows the east side of NW Visitation Road from the intersection with NW Verboort Road, thru the community of Verboort, to the intersection with NW Osterman Road. This is labeled **EAST 1** on the Segment 1-2-3 map.*
3. *The same line as it parallels the east side of Oregon Highway 47 from the intersection with NW Osterman/NW Kemper Road to the intersection with Oregon Highway 6. This is labeled **CENTER** on the Segment 1-2-3 map.*

Our trail type proposed along these routes is a 10' to 12' wide paved asphalt trail. In the case of the RAIL 1 option, the actual trail will be setback approximately 15' from the centerline of the rail

to accommodate safety issues. In the case of the EAST 1 and CENTER options, the trail will be set back from the edge of the street by a minimum 5'-6' separation to accommodate open swale drainage. Our analysis to date indicates the south side of the rail line is probably preferred for the RAIL 1 trail alignment. But for the EAST 1 and CENTER options a variety of factors, excepting the power pole locations, indicate that the east side is the preferred trail location. This would put the trail down the line of the poles.

So with this in mind, we would like to discuss probable pole relocation costs. This would be an order of magnitude cost estimate best translated to per pole if possible. We need to have some numbers to help make relative cost comparisons between varying options.

Outcomes

On August 5, 2014 I received a call from Scott Stocker of PGE's Transmission Division, and provided him with additional information on the preceding trail routes. He met with me in-person on August 7 to look over the plans in more detail, and then on his own made field visits to the two routes, and provided me with an email summarizing his findings and cost estimates.

RAIL 1: We discussed the 4 trail possibilities for this 60 foot wide corridor. For the first 3 options (freight rail with trail, single track MAX line with trail, or a trail corridor with no rail service), explained that it was highly unlikely that PGE poles would have to be relocated. For a dual line MAX, at least in areas with station stops, the entire 60' would be needed for the combined MAX/trail but given station length perhaps only a couple of poles would need to be relocated, although Steve speculated that if this corridor was rebuilt as part of any MAX extension that the entire power transmission system would probably be replaced.

In general, it was indicated that any pole relocation in this restricted rail corridor would probably mean replacement of the current wood poles with steel poles. Cost of a single transmission-scale pole is \$100,000.

CENTER (Oregon 47 - Greenville to Kemper) and **EAST 1** (Visitation). We discussed possibilities and challenges of the trail being on one side or the other of these roads. The side opposite power poles on these routes are typically encumbered by irrigation lines easements. Our rule of thumb is a 20 foot wide acquisition for a street-adjacent trail. Leaving either the power poles or the irrigation lines undisturbed by the trail could double the ROW acquisition requirements and also increase the possibility that land improvements (homes, barns, etc.) being negatively impacted.

Scott indicated that he expected that poles along Oregon 47 and Visitation were in road right of way (his subsequent field visit and aerial mapping inspection generally confirmed this but he cautioned that only a survey could tell definitively). Visual inspection revealed that most of the power poles in question were usually at the outside edge, if not partly within, roadside drainage ditches. This would support Scott's indication that the poles were in road right of way. This being the case, a street-adjacent trail could be sited with private property acquisitions limited to a 20 foot wide band or less..

To the extent pole relocation was required, as long as the new pole site was more or less in line with other poles, cost would be \$20,000 each. Wooden poles would be replaced with like.

RECOMMENDATION

As with TVID irrigation lines (see discussion re TVID earlier in this report), it may be that the alignments of street-adjacent trails can be along the outside edge of the power poles and drainage ditches, limiting or eliminating the need for pole relocations.

ISSUE: Washington County owns most of the property between Oregon 47 and Council Creek from Sunset Drive to Porter Road. This property was required as mitigation for wetland impacts when Oregon 47 was widened and improved.

Implication

A possible trail section common to the WEST and CENTER options would follow the edge of these County parcels using boardwalks and multiuse trail types. Although incursion into wetland areas is limited thru careful siting of the conceptual trail alignment, the terms and conditions of County ownership may limit or not permit trail development.

Process

The County ownership along the north side of Oregon 47 was identified as part of the Existing Conditions phase of the project, but information on the status and use of these parcels was not in hand. Contacted Washington County's property manager Kristi Bollinger with a request for information:

Thanks for looking into this. Our concern is ... are there any restrictions tied to the County's ownership that might limit possibilities for locating a regional trail thru these properties? We are up to speed on issues like wetlands, possible CWS regulations, etc. but we need to know if there is some restriction(s) that would simply prohibit trail siting. For example, there is a Port of Portland site elsewhere in the trail study area that was acquired for wetland mitigation purpose and no other activity can go on or thru the site. As I noted, our Forest Grove client initially said he thought these parcels on 47 might be ODOT mitigation sites.

Kristi replied with 2 emails:

1. *After my initial research, these parcels were acquired by LUT, and three, possibly four of the parcels are mitigation sites. I have spoken with LUT but with it being summer, there have been several people out of the office that will have input on this. I'm waiting to hear back on their final answer.*
2. *LUT replied about the Hwy 47 properties. As suspected, they indicated that a trail through wetland mitigation areas is not preferred.*

Outcomes

Subsequently talked to Joe Younkins at the County Land Use and Transportation (LUT) Department on September 9, 2014 to understand what "not preferred" meant, and exactly which parcels were the mitigation sites. Joe indicated that 4 of the 6 parcels between Sunset Drive and Porter Road were mitigation sites owned by the County. The 4 County parcels are contiguous. The other 2 parcels (those closest to Porter Road) are owned by Forest Grove and privately.

He said he did not know the specific terms and conditions of the conservation agreements applied to these 4 sites and that a title search would be necessary. There had been restoration undertaken in the past for mitigation purposes, and the parcels were in the floodplain and outside the UGB. He felt all these factors would greatly complicate location of the trail on this alignment, even with use of boardwalks located along the edges of the site as close to the highway as possible. He did note that the right of way in this area varied between 45 and 80 feet from centerline, so there might be some area through which to locate a trail.

RECOMMENDATION

If WEST or CENTER options are selected for preferred alternative, conduct some additional analysis to determine more precisely how much of trail structures could be within highway right of way.

DRAFT

DRAFT

Appendix B: Open House Comments and Questionnaires

OPEN HOUSE– AUGUST 27, 2014

- ❖ Transcription of Open House Q&A and comments on trail alignments recorded at segment resource tables
- ❖ Submitted questionnaires
- ❖ Submitted questionnaires

DRAFT

DRAFT

Project: Council Creek Regional Trail Master Plan

Activity: Public Open House

Date: August 27, 2014

Purpose:

1. Provide additional participation opportunity for residents and property owners.
2. Preview the “up to 3” alignments selected by Project Advisory Committee on July 1, 2014 for consideration as the preferred alternative(s)
3. Address public safety concerns expressed at June 4, 2014 Open House (individuals from THPRD, Washington County Sheriff, and Friends of Banks-Vernonia Trail attended and spoke)

Attendees: 25 individuals signed in, total attendance was in range of 50-60. Nine questionnaires were submitted, along with two letters and a packet of information/articles on public safety issues along trails elsewhere.

Q&A Comments, Questions, and Statements

Comments and questions from Q&A session were recorded by member of consulting team. Due to the nature and length of the Q&A and participants posing questions and statements effectively simultaneously, and since consultant staff was also engaged for part of Q&A in answering one-on-one questions, these notes are not comprehensive. Also, attribution of the speakers or identification of the properties referenced was also usually not possible.

- This trail will go thru my property? – I don’t want it there.
- Q. How did the project get to this point without talking to people? A. Forest Grove: *The project has a Stakeholders Advisory Committee and this is the second Open House.*
- Even having the trail adjacent to my property is a problem.
- Will you ever get all property owners along a section of trail to agree? I can’t spare even a 10’ wide strip of land.
- Will you contact all land owners adjacent to trail? Many property owners don’t want trail.
- Don’t go in farmland.
- Q. Will land be taken? Condemned? A. Forest Grove and Consultant: *This question was repeated frequently and the answer was always that eminent domain/condemnation had not been used in the region to secure property for trail development. Metro and other jurisdictions buy from “willing sellers.”*
- We can’t police the trails that we have now.

- This study is based on opinions of people in cities not the people living/working in the country whose life would be impacted. A. Forest Grove: *Oregon State Parks and Recreation does a recreational use survey every five years. Over half of those surveyed – in every part of the state – desire trails.*
- I operate a slaughterhouse. I don't want visitors nearby.
- What about issues with the agricultural (TVID) irrigation system?
- The rail line is right next to my property.
- Metro may talk to us about things like this trail, but they will do what they want no matter what we think.
- I'm a neighbor to the Banks-Vernonia Trail and have lived here 33 years. Banks is already feeling the impact of the trail and there will be even more visitors with the Salmonberry Trail.
- Is there any coordination with the Wine Tour and Scenic Bikeway routes?
- Forget this trail, just use the Sunset Highway.
- Did anyone here get surveyed by the State? The population surveyed is more urban, not those who live in rural areas.
- Lyle Speisschaert: I am on the Stakeholder Advisory Committee. One trail route would impact my property, and I'm not sure whether or not I support it. But Washington County has chosen to urbanize. People are already biking on the roads. Dog walkers use the BPA lines. Everyone wants a livable community. Even though NW Purdin Road is posted no bikes, but it is used. People want to use modes other than cars. I would rather have designated routes than people biking and walking all over the place
- The trail starts at the end of the light rail line and will attract undesirable.
- There is potential use by people on horseback.
- I know and use some of the linear park trails in Beaverton. It's nice but doesn't really connect to urban areas.
- I am concerned that people might hideout on the trail, that it will bring riffraff.
- How can this be patrolled? There won't be enough patrols.
- It looks as if the only option is the rail right of way or road right of way, both are either in front or behind houses.
- Q. How much money has been spent? A. Consultant: *About half the \$237,000 study budget. There are no cost estimates or funding for the trail yet. Cost of 10 to 12 foot wide multiuse trail can range up to \$2M/mile.*
- Who pays for security along trails, what does it cost? A. THPRD security manager: *I manage the security staff for Tualatin Hills Parks and Recreation District. Security costs about 1% of the*

whole THPRD budget. We patrol from 9am to 10 pm, or midnight in the summer. We have a good relationship with the local police, call them or are called as needed. Also have park watch groups who know who to call.

- Light rail isn't policed. I think that 30% of the late night sirens that I hear are for activities along the light rail line. Don't build something that will cause more problems.
- Oregon Rose representative: I have a nursery business with 1.5 miles of property along Council Creek. We built two new homes on site because we could have peace and quiet. This trail would hamper our nursery operations.
- I wonder what kind of trail facilities pedestrians or cyclists want? I think they wouldn't want to be right next to a road or railroad. I own some forest land and think the creek would be nicer. But it's marshy and wet, hard to put in a trail. Council Creek is poorly defined and floods.
- Q. You keep mentioning recreation and I have heard that Washington County would only support the trail if used for transportation purposes. A. Forest Grove: *All the jurisdictions including the County agreed the study would establish route(s) for multi-use trail, with both recreation and transportation use.*
- There is no money to build this. Use money on education.
- Mike Hyman: I farm in this area. How do you plan to maintain this? We have had metal theft, assault. I am concerned with homeless encampments. Who will do cleanup of human feces, trash, and drug equipment?
- Why should landowners have to worry about security or cleanup while others infringe on property rights? We have been good stewards of land for generations.
- Q. Can we go to stakeholder committee? Speak there? Where? When? A. Forest Grove: *For information on the project meetings and progress, go to Metro website and search for "Council Creek Regional Trail."*
- Q. How can we say "no" to every route? A. Consultant: *There will be a draft CCRT Master Plan. The draft plan will have to go to each jurisdiction for adoption. Residents can testify at those governing bodies.*
- Q. I was told that I could not come to the stakeholder advisory committee. A. Forest Grove: *I'm sorry, I may have misunderstood the request.*
- This project is going to cause property values to go down and crime to go up. I have articles on trail problems, including from the Seattle Times. On the Burke-Gilman Trail, one article states that lower rates of property growth means that \$50 million in taxes has been lost. There are rapes and other problems. Note: this individual handed the packet of these articles and reports to a consultant staff at the end of the Open House. This packet is retained in the project record. A. Washington County Sheriff staff: *I am with the Washington County Sheriff and have worked west of Hillsboro for seven years. This includes the B Street and Banks-Vernonia Trail and I haven't observed an increase in crime. At the Sheriff's Office, our rules is "when you call, we come." We have very good rural deputies. We would like to be involved in design of the trail so*

that there aren't issues getting to the trail, seeing along trail. We need enough width so that we can drive it. We work with each jurisdiction. Recently when we had an issue with campers, we did an exclusion and Forest Grove did the site cleanup.

- I live near Gales Creek and there are problems with illegal drugs and metal theft. A tweaker threatened me with angle iron, while I was on hold with 9-1-1. A neighbor had their fence cut. A. Sheriff: *Dispatch sometimes has problems but deputies go as soon as they get information.*
- Any trail will just give easy access for drugs and burglary.
- Q. Why isn't the bicycle lane and sidewalk option along the Tualatin Valley Highway still on the map? This means that rail and along the creek are only options. Rail owner doesn't want a trail, and there's no way to get multiple owners to give up land along creek. A. Forest Grove: *PAC eliminated this TV Highway option on July 1.*
- The rail line is adjacent to neighbors and business. You won't ask adjacent property owners if they like this options. If you do, they will say no, and you will ignore their response.
- How often would trail be patrolled? Need 24/7 security. Lucky if get any response from Sheriff or City police even now. What about adding lights? Have you considered damage to adjacent properties? Already have theft, vandalism, debris on rail property and neighboring property.
- Why interrupt our lives?
- Q. Won't Tualatin Valley Highway be improved with bike lanes and sidewalks? Use that route. A. Forest Grove: *Riding along a major highway isn't as safe or pleasant. PAC took it off the map.*
- Don't waste money. A. Forest Grove: *The study is funded by federal dollars, and it only a plan, there is no construction funding yet.*
- This will disrupt many lives for a few users.
- What about graffiti, crime? I moved here for serenity. With a trail, I will have to pack heat. This will bring folks on light rail into our backyards, running our quality of life.
- Q. What impacts on police budget will result from policing the trail? A. Sheriff: *Security on any trail would be included in budget. We have \$84 million/year, about 1/3 is on patrols, most of the rest to operate the jail system. A trail in the rail corridor would be very easy to patrol.*
- What about camping off the trail? U People will use the trail to get to illegal camp sites like along the Springwater Trail.
- The postcard announcing the Open House was the first time we ever heard about this trail and we are right next to the rail line. We don't want to have to watch for trouble outside our windows.
- I have an idea for funding the trail. All landowners get to use it for free, everyone else pays \$50/visit.

- You need to show us that you will listen. There were 22 organizations that you were going to consult and you only picked a few. Eight people attended one meeting. You need to add more land owners. What happened to the Oregon Farm Bureau? Note: *this comment refers to the original list of possible SAC members. Service was voluntary and many possible members did not respond or volunteer.*
- To be valid, this project needs to start over with bigger team, businesses included. The SAC is one-sided.
- Q. What is realistic time frame to do anything? Will it be my children or grandchildren be able use this? A. Consultant: *For example, the Westside Regional Trail thru Beaverton has been on the books for close to 20 years and THPRD has completed perhaps 2/3rds. And they have designated funding source through voter approved binds. Council Creek can compete for funding once the master plan is adopted.*
- Q. What are next steps? A. Consultant: Between now and October a technical analysis and costing of remaining options will be completed. A 3rd Open House will be held, and then a joint meeting of the project's SAC and PAC will be convened In November to select preferred alternatives. PAC/SAC recommendation will then be packaged into a draft master plan that will be forwarded to participating jurisdictions in Winter 2015
- If you depend on willing sellers and don't have any, that means the trail will have to go along county roads and the railroad.
- If you ride a bike, should pay for a license to help pay for trail construction. Should work with bike organizations to cleanup trails rather than using tax dollars.

Resource Table Input

Resource tables were set-up one each for Segments 1, 2, 3, 4/5, and 6, plus a table for Spanish speakers. Detailed maps showing the possible trail alignments as of July 1, 2014 were on display. Comments were recorded on flip charts and are transcribed below. In addition, several parties marked specific properties on the maps "No" or "Not for Sale". This information has been transferred to a consolidated July 1 map atlas and is included in project records.

Unless illegible or written in personal shorthand, flip chart notes are transcribed as-is. Notes in *italics* to address a few of the comments.

Segment 1: Banks

- People have shared problems with dirty diapers, trash and needles in the ditches and cow pasture; unhappy.
- It would be nice to see the alignment on an aerial photo map. Note: *the alignment map was on an aerial base*
- How is this related to the scenic bikeway route?
- Who will pay for it? Our roads are in bad condition.
- For economic development, Main Street would be a better route.

- Don't go through farmland. Main Street is very important so utilize it. Note: *the City of Banks specifically requested that Main Street not be the regional trail route*
- Grant just awarded to Banks for Ped-Bike planning.
- What percentage of trail proponents are urban versus rural?
- I don't know if I'm for or against the trail, but I want to study it.
- I'm ok with recreational trails, but I'm worried about them connecting to urban areas and undesirable uses.
- Use Hwy 47 option!

Segment 2: Washington County

- Concern with trail users getting into adjacent farmland and farmers being liable for accidents – farm equipment considered “attractive nuisance” – need to fence the trail as part of construction cost
- Favors CENTER option
- Favor WEST option
- Favor EAST option
- No trail – waste of money.
- Bikes and pedestrians don't pay gas taxes
- No one will sell their farmland
- No trail on railroad
- Bike shoulders might help – need to stay single file and obey stop signs.
- Fertilizes land on EAST with cow manure
- Question about Oregon recreational trail survey – urban input, rural input; legality of using rail right of way for trail?

Segment 3: Forest Grove

- Don't want any trails
- Porter Road route would be greatly preferred over previous route over Council Creek
- Make updated maps more accessible on website. Note: *July 1 maps had been posted on Metro website, as well as maps from June 4 meeting*
- Very concerned about increased crime, trash, and homelessness along trail connected to urban areas.
- Would be an asset if managed well.
- Difficult to justify cost in current economy
- “I'm from Forest Grove, most people want and need a project like this, please go on!”
- If, as was stated at the August 27th, 2014 meeting no landowners will lose their land without their permission to build – then routes will become just a zigzag path – money is being wasted pursuing such routes.
- Riparian mitigation concerns on creek routes.

Segment 4: Cornelius and Segment 5 (Jobs Ditch)

- At the southernmost point near 345th there is no/little reason or need for a trail to commute. Transients are already an issue in the area, there is no reason to further give them access to our land and homes.
- What are your plans for security? Litter? Restrooms? Vandalism? Theft?
- Ditto to all of the above – in regard to RAIL 1 option, as well.
- This is an agricultural area with unattended equipment and buildings as well as crops. These are easy targets if access is opened up in this area.
- If someone leaves agricultural equipment unattended with keys (which is their right on their own land) and a child/person is injured, or breaks the equipment, who then becomes liable?
- What happens to our adjacent property values and homeowners' insurance rates as crime and accidents increase?
- Federal funds aren't flexible to local needs and desires. Using local funds would be better but we need those for other purposes.
- We need safety improvements on Hwy 8 for pedestrians.
- I'm a Washington County biker and I'd rather see the existing Hwy 8 bike lanes improved from Forest Grove/Cornelius to Hillsboro. Maybe it could be a protected bike lane.

Segment 6: Hillsboro – Washington County East

- Concern about the survey representation – representative of urban & rural responses. *Note: This comment in the context of the evening appears to relate to the State survey mentioned in the Q&A.*
- Legality of using rail ROW?
- Would like to equestrian use allowed on portions of the trail.
- Keep trail segment between Hillsboro and Cornelius on Hwy 8 – easiest, cost effective, easier to patrol, pick up garbage, etc. Don't duplicate by building another trail.
- Request for speed limit sign on county roads.
- Consider north side of RAIL 1 if extra ROW needed. Fewer property owners on north side compared to south side
- Consider adding more land owners to SAC.
- Need better engagement strategy to do targeted outreach
- Consider adding previous alternatives back onto list.
- Keep trail off Hwy 8

Spanish Language Comments

- Ruta 1
 - No transitada, diputar mas, mirar algo
 - Diferente
 - Menos probabilidad de accidentes
 - Ruta mas directa para la bicicleta
- General
 - Residente que si quieren que exista un sendero, no asistieron a la reunión
 - Que un sendero no se puede construir al par de las vías del tren

- Como están comunicándole a la comunidad sobre este proyecto.

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8-27-2014 Council Creek Regional Trail Open House - Questionnaire Responses

Responder	Name	Address	City	State	Zip	Email	Phone	Please add me to the project list	Please mark the trail area(s) you are most interested in:	Why are you most interested in the trail areas you identified above?	What do you think? Do you have a preferred alignment and why? Are there other existing conditions that we should know about?	Which community do you live in?	Which community do you work in?	How would you use the Council Creek Regional Trail?	How often would you use the CCR?	Please tell us how you heard about this open house.	Is there anything else you would like to tell us about the trail.
1	Mike Mlynski			OR		mlynski@integrity.com		Yes	5,6	For Segments 5 and 6, your best bet is to use and improve the bike lane already in place on TV Highway. Expand your concept of what a "trail" is!	Improve the farm-to-market roads between Forest Grove/Cornelius and Banks - install more bike lanes.	Cornelius	Cornelius	Walking, jogging, biking, commuting to work, recreation, to reach shopping or other community destinations	A few times a week		
2	Walt Van Dyke for Ralth and Virginia Van Dyke	2590 NW Martin Rd.	Forest Grove	OR	97116	vandykewalt@yahoo.com	541-216-1617	Yes	3	There seems to be an interest by government to force a trail through private lands along Council Creek	My preferred alignment would be to the path follow existing county roads and ROWs	Private landowner on Council Creek		Would not use the trail	Never	Local property owner meeting	We do not think it is necessary and proposed routes are poorly designed.
3	Larry and Barbara Remington	6640 NW Marsh Road	Forest Grove	OR	97116	We should already be on planning list from county		Yes	2,3,4	We live in Washington County area. This is not a trail but a road - not Council Creek but complete watershed (McKay and Dairy Creeks). Increased crime; the handicapped have no access	Sanitation; first aid; police patrols? Police are overextended now. We just had another log truck lose its load on Martin Road (8/26/2014). Police will be required to maintain order; alcohol excess; and to remove homeless as in Gresham area; bikes do not carry liability insurance; who will pick up the litter? Used diapers, needles, drugs, containers, clothes - look at our beaches!	Unincorporated Washington County	Unincorporated Washington County	Would not use the trail	Never	Postcard	The trail will be a hazard to all. Pedestrians will be run over by bikes - farmers can't move in their fields. If we do not protect our farms you not only will be hungry but you will lose taxes; if nurseries need labor they should provide buses like the berry farmers.
4	Tonya Van Dyke			OR					2,3,4	I am a property owner and a farmer in this community. We have had no representation in this project. This nature trail is not a good idea because it brings the public out into private property - this does not help people in community - it increases crime and lowers property value.	You need to revisit the Hwy 8/47 route that does not impose on private property - public trails belong on public land.						
5	Betty Gilstrap	455 NW 338th Ave.	Hillsboro	OR	97214	gbgilstrap@msn.com	503-648-7648	Yes		We do not want the trail.							
6	Glen Gilstrap	455 NW 338th Ave.	Hillsboro	OR	97214	gbgilstrap@msn.com	503-648-7648	Yes		We do not want the trail.							
7	Brigette Martel	350 SW 345th Ave.	Hillsboro	OR	97123	martells1@gmail.com			5	This project was supposed to be a transportation trail, not a trail for entertainment & recreation - why is it expanding from the original plan? This is a completely agricultural area with equipment and buildings that are unattended. These and other agriculture related items will be stolen, messed with, broken, vandalized, etc. by introducing an easy access, crops will be affected as trail users find opportunity for some extra "fun."						mailing	
8	Fred and Jean Teufel	1550 NW Porter Rd.	Forest Grove	OR	97116	fiteuf@gmail.com	503-357-0012	Yes	4	Operations in general, irrigation, harvesting anything to do with nursery plants for floral use; even stirred up dust is a problem for sales to florists		Forest Grove	Forest Grove	Would not use the trail			It would be a major inconvenience for our nursery operation

9	Katie Hyneman	1804 NW Martin Road		OR		vp.ori@coho.net	503-319-1895		All	It provides a hidden passage for homeless, gangs, criminals, and drug addicts; easier access to my property and extra places to hide.	Keeping the bike lanes that already exist will help save the tax payers in the local communities extra cost in policing, crime, and garbage cleanup. The police and litter patrol are already stretched thin on the existing trails. We are constantly picking up garbage on Martin and Porter Roads - we also had police check a hole that was cut in our cyclone fence under the razor wire on Aug. 15, 2014	Forest Grove	Forest Grove	I use the existing trail - it's fine	Never	A neighbor initially told me about the project so I told Derek to email me a postcard	I have researched many other bike trails and found where they have been a burden to the community, and property owners who live along them have had their property value diminished. Due to loss of local control and lack of continued funding to maintain and control the safety of the community.
10	Rita Williams	4965 NW Visitation Road	Forest Grove	OR	98116		503-357-3777	Yes	None	Because cars speed down this road; there is large farm equipment that uses the road; it is narrow; our front lawns would be shortened and traffic would be quite close to our homes. There is a school on this road - how would you prevent perverts from the road, drugs, etc; plus, who would pick up the garbage that would increase; this is zoned farm land - not recreational land!		Unincorporated Washington County		Would not use the trail	Never	Neighbor and church bulletin	I really believe if you want to place a bike trail go to Hwy. 47 - it is wider and as much "scenic" as through the neighborhoods. Also it would be busier and less likely to attract criminals. Hwy. 47 also has more room to widen!
11	Roberta Summer	2258 N. Irvine St.							4	The segment that runs behind Council Creek Estates. No worries - I'm all for this! I'm so pleased that I'll be able to walk out my back gate and hop on the trail.		Cornelius	Buxton/Portland	Walking, jogging, biking, to reach shopping or other community destinations, to experience nature	A few times a week	From an email through my employer (ORPD)	Don't be deterred by the nay sayers and disgruntled folks. There's a way to make this happen :)
12	Toni Clark	7155 NW Kansas City Road	Forest Grove	OR	97116	riggatoni@frontier.com	503-805-3062	Yes	2	Kansas City Rd. - West route	I don't want the trail near my property. I moved out here because I don't want people walking by my house. I have no issue with a bike lane, but if you are doing a trail for commuting you should stick to the 47 route. I have horses and people walking by create a safety issue as people seem to think they can just come in and feed and/or pet the horses; and my horses are not that safe for people who know nothing about them.	Unincorporated Washington County	Unincorporated Washington County		Never	Postcard	I think it's a waste of money if commuting is a primary purpose then bike lanes on existing roads is the way to go.
13	Darsy Schaal	33955 NW Iona Ct.	Hillsboro	OR	97124	bradley.schaal@frontier.net	503-648-0898	Yes	6	I live close to NW 341st Ave. on NW Iona Ct.	Use the existing train tracks from Nort Street twist to 341st to create a new trail - TV Highway is too dangerous and without sidewalks to walk or ride bikes safely on.	Unincorporated Washington County	Hillsboro	Walking, jogging, biking, commuting to work, recreation, to reach shopping or other community destinations, to experience nature	Daily	Saw it online	
14	Kelly Evers	P.O. Box 51	Gaston	OR	97119	kevers@stella-jones.com	503-816-0633	Yes	(Ranked by importance:) 4,3,2,5,1,6	These trails will directly affect my family, friends, co-workers, and all private property owners adjacent or in the vicinity of these trails. The majority of these situations which will come with the trails will prevent the landowners from using their property in the manner in which they are accustomed to and required to farm, graze, or enjoy their property.	This whole plan has disregarded the private landowners and their property rights. If you are ever going to put trails in they should follow existing roads and/or powerline or railroad right-of-ways. This would save on land acquisition. You also need to look at and supply for the maintenance, security, clean up (trash and human waste) and fencing to prevent trail users access to the private property owners - all of these services should be paid for by a bikers fee and not from dmv fees or taxes. It seems like much of this trail planning is around what the bikers say they want or what they would like. If they really want it so bad they should be willing to pay for it through bike fees. On another note - how many of them would allow us to walk through their front or back yard and use it for a picnic area or a rest room?	Unincorporated Washington County	Forest Grove	Access to my neighbors fields for hunting (when I have permission)	A few times a year - if I could access hunting areas from the trail.	From a neighbor	I cannot believe that you expect the taxpayers to pay for these trails and the landowners to relinquish some of their property rights for the small percentage of bikers that would ever use these trails. I am disappointed that you have already spent this much time and money on this low priority project. In the future you need to include all adjacent landowners in your proposals.
15	David Buck	510 NW 341st Ave	Hillsboro	OR	97124	david.buck@onemaildrop.com	503-681-2205	Yes	5, 6	Our property lies on the boundary of both study areas - one of the proposed trail alignments is along the rail line adjacent to our property (RAIL 1)	Having a trail on the north side of RAIL 1 impacts fewer landowners (less lots on north side) and provides for a more scenic trail than the south side. With brush removal, north side trail would offer creek & pasture views.	Unincorporated Washington County	Beaverton	Walking, jogging, biking, recreation	A few times a week	From neighbors	I do not believe the regional trail will provide an effective option for commuting, unless trails/corridors are developed to intel campuses or silicon forest off evergreen parkway, people will still prefer cars or public transportation.

Appendix C: Trail Cost Estimate Details

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Cost Estimate Details by Segment
August 2014

Segment	Option	Total Length (feet)	\$200 LF Multiuse (10'-12' wide)	\$250 LF Multiuse Cut-Fill-Wall	\$250 LF Street Adjacent (10'-12' wide w/buffer)	\$250 LF Rail with Trail (10'-12' wide w/fencing)	\$800 LF Boardwalk (10'-12' wide elevated)	\$300 LF Flood Resistant (10'-12" wide special surface)	\$25,000 EA Minor Stream Crossing	\$125,000 EA New Culvert	cost / EA Bridge or Under-crossing	\$230 LF Shoulder Widening (2 sides)	\$2 LF Shared Use (markings-signing)	\$145 LF Retrofit-Widen Sidewalk	\$5,000 EA Local Road Crossing	\$375,000 EA Collector Midblock Crossing*	\$400,000 EA Arterial Midblock Crossing	\$4,000 EA Trail Amenities (per each 1,000')	25%	15%	15%	Total Segment Total Estimated Cost				
1	Banks WEST	7629			7303						\$ 570,000			326	1	1		8				\$ 2,853,490	\$ 713,372	\$ 428,023	\$ 428,023	\$ 4,422,909
2	Washington Co WEST	33232		5621	27604				7		\$ 285,000					2		33				\$ 9,649,076	\$ 2,412,269	\$ 1,447,361	\$ 1,447,361	\$ 14,956,068
	CENTER	20892			19993				5		\$ 285,000					3		21				\$ 6,618,584	\$ 1,654,646	\$ 992,788	\$ 992,788	\$ 10,258,805
	EAST 1	29037			24097		1104		1		\$ 330,000	1437	1797	602	4	2	1	29				\$ 8,969,625	\$ 2,242,406	\$ 1,345,444	\$ 1,345,444	\$ 13,902,919
3	Forest Grove WEST	15778	8831		4483		2464			5	\$ -				1			16				\$ 5,551,262	\$ 1,387,816	\$ 832,689	\$ 832,689	\$ 8,604,456
	CENTER	11065			8599		2464		2		\$ 200,000							11				\$ 4,415,083	\$ 1,103,771	\$ 662,262	\$ 662,262	\$ 6,843,379
	EAST 1	8645			8144				1		\$ 220,000		500					9				\$ 2,316,580	\$ 579,145	\$ 347,487	\$ 347,487	\$ 3,590,699
4	Cornelius CREEK	15912	11797	2085			514				\$ 1,200,000		1515			1	2	16				\$ 5,733,947	\$ 1,433,487	\$ 860,092	\$ 860,092	\$ 8,887,618
	RAIL 1	15379			1265	14113			1		\$ -				3	4	2	15				\$ 6,246,041	\$ 1,561,510	\$ 936,906	\$ 936,906	\$ 9,681,364
5	Jobs Creek HOBBS	7630	3435		1663						\$ -		1884	649		1		8				\$ 1,605,943	\$ 401,486	\$ 240,892	\$ 240,892	\$ 2,489,212
6	Hillsboro CREEK	16283		665			1130	2062	1		\$ 490,000		12426			3		16				\$ 3,418,840	\$ 854,710	\$ 512,826	\$ 512,826	\$ 5,299,201
	RAIL 1	8906				7741					\$ 1,690,000		1166		4	1		9				\$ 4,058,082	\$ 1,014,521	\$ 608,712	\$ 608,712	\$ 6,290,028

* Also includes collector and arterial intersection crossing upgrades

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Appendix D: Tualatin Valley Scenic Bikeway

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Tualatin Valley Scenic Bikeway

State Parks and Rec. Info
(800) 551-6949

State Park Reservations
(800) 452-5687



Nature
HISTORY
Discovery

SCENIC
BIKEWAY

- Bikeway
- Banks-Vernonia State Trail
- Mileage from Rood Bridge Park
- Caution

- Food
- Parking
- Drinking Water
- Restrooms
- Transit station
- Trailhead
- Convenience Store
- TriMet MAX
- Full Services Available



The Banks-Vernonia State Trail is the northern 20-mile section of the Scenic Bikeway route.

