



**FOREST GROVE PLANNING COMMISSION MEETING**  
**COMMUNITY AUDITORIUM, 1915 MAIN STREET**  
**MONDAY, FEBRUARY 15, 2016-- 7:00 P.M.**

**PLANNING COMMISSION**

**Tom Beck, Chair**

**Lisa Nakajima**  
**Carolyn Hymes**  
**Dale Smith**

**Hugo Rojas**  
**Phil Ruder, Vice Chair**  
**Sebastian B. Lawler**

The Planning Commission welcomes your attendance and participation. If you wish to speak on an agenda item, please feel free to do so. However, in fairness to others, we respectfully ask that you observe the following:

- \* Please follow sign-in procedures on the table by the entrance to the auditorium.
- \* Please state your name and address clearly for the record.
- \* Groups or organizations are asked to designate one speaker in the interest of time and to avoid repetition.
- \* When more than one citizen is heard on any matter, please keep your comments to five minutes and avoid repetition in your remarks. Careful attention to the previous speaker's points will help in this regard.
- \* The Planning Commission carefully considers all the facts before a decision is made. Brief statements are most helpful in reaching a decision based on sound judgment.

Planning Commission meetings are electronically recorded and are handicap accessible. Assistive Listening Devices (ALD) or qualified sign language interpreters are available for persons with impaired hearing or speech. For any special accommodations, please contact the City Recorder at 503.992.3235, at least 48 hours prior to the meeting.

**AGENDA**

(1.) Roll Call

(2.) Public Meeting

1. Public Comment Period for Non-Agenda Items
2. Public Hearing:

**A. Recommendation to assign the Campus Employment Comprehensive Plan designation to approximately 38 acres of land located south of the BPA power line transmission easement and south of the Elm Street terminus.**

**Record # 311-15-00032-PLNG.**

**B. Amend the Forest Grove Transportation System Plan to incorporate the preferred alignment of the Council Creek Regional Trail. Record # 311-15-000033-PLNG.**

3. Action Item: None Scheduled
4. Work Session Items:

(3) Business Meeting

1. Approval of Minutes
2. Reports from Commissioners/Subcommittees
3. Director's Report
4. Announce next meeting
5. Adjourn



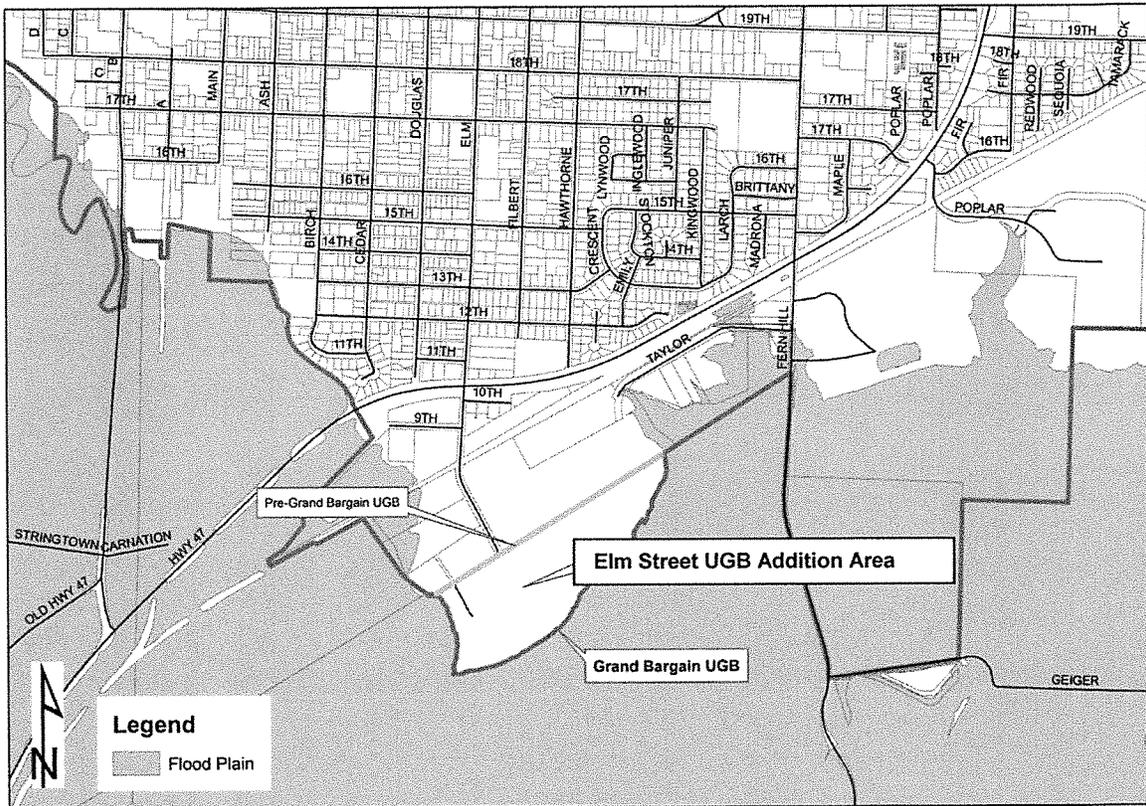
**Comprehensive Plan Map Amendment  
Staff Report and Recommendation**  
Community Development Department, Planning Division

Report Date:	February 8, 2016
Hearing Date:	February 15, 2016
Request:	Planning Commission recommendation to assign the Campus Employment Comprehensive Plan designation to approximately 38 acres of land located south of the BPA power line transmission easement and south of the Elm Street terminus
File Number	311-15-00032-PLNG
Property Location:	2014 Urban Growth Boundary addition area south of the Taylor Industrial Park
Legal Description:	1S3070000100, 1S306D000700
Owner/Applicants:	Owner: Hally L. and Mary J. Haworth Applicant: City of Forest Grove
Comprehensive Plan Map Designations	Washington County FD-20 to City of Forest Grove Campus Employment
Zoning Map Designations	Washington County FD-20
Review Process	Type III (Quasi-Judicial)
Applicable Standards and Criteria	Statewide Land Use Planning Goals Forest Grove Comprehensive Plan Policies Oregon Transportation Planning Rule (OAR 660-012-0060) Metro Framework Plan Metro Urban Growth Management Functional Plan Metro Regional Transportation Functional Plan
Reviewing Staff	Daniel Riordan, Senior Planner Jon Holan, Community Development Director
Recommendation	Staff recommends the Planning Commission recommend City Council approval of the proposed Comprehensive Plan Map amendment to designate the 38 acre urban growth boundary addition area Campus Employment.
Report Contents	Section I: Background Section II: Existing Conditions Section III: Alternatives Analysis Section IV: Review Criteria and Findings of Fact Section V: Recommendation

## I. BACKGROUND

In 2014, the Oregon Legislature approved House Bill which modified and then enacted urban and rural reserves for Washington County. The bill, also known as the “Grand Bargain”, modified the Portland regional urban growth boundary including two locations adjacent to the Forest Grove planning area. One UGB modification resulted in the addition of 235 acres of land north of David Hill Road and west of Highway 47. Land use in the David Hill area is being considered as part of the Westside Planning Project. The other modification to the UGB made by HB 4078 is the addition of approximately 38 gross acres into the urban growth boundary south of the Taylor Industrial Park shown on the map below. It is the second modification that is the subject of this report as explained below.

**Vicinity Map**



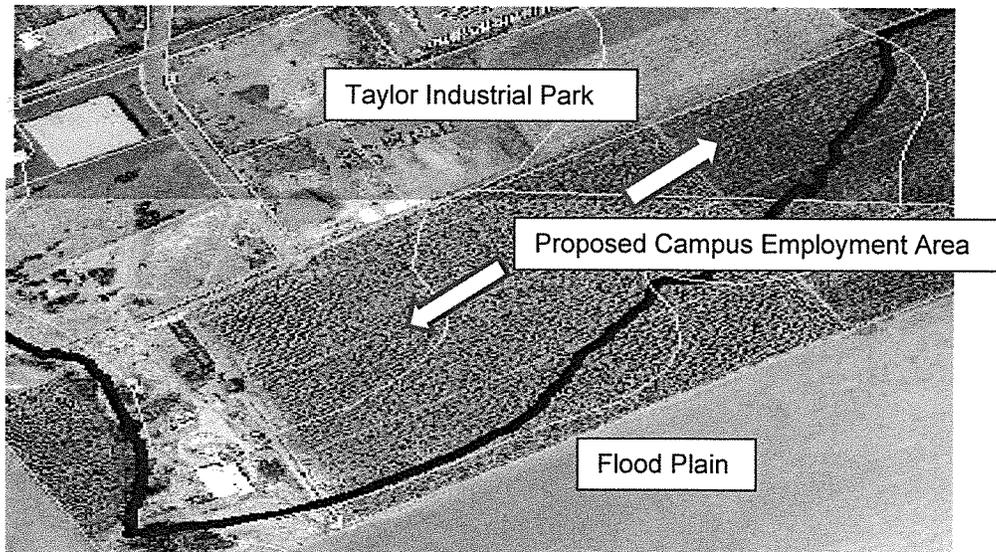
Now that the area is in the UGB, the City is required, under Title 11 of the Metro Urban Growth Regional Functional Plan, to assign a Comprehensive Plan designation to the property. The Comprehensive Plan designation shows how land may be developed in the future. The Comprehensive Plan designation also guides the zoning of property when annexed by the City.

The Planning Commission has several alternatives to consider regarding a Comprehensive Plan designation for the new UGB area. In general, alternatives include applying the City's General Industrial, Light Industrial or the new Campus Employment designation created as part of the Comprehensive Plan update in 2014. These alternatives are described in detail in Section III of this report. For the reasons discussed in this report the staff recommendation is to apply the Campus Employment Comprehensive Plan designation to subject property.

## **II. EXISTING CONDITIONS**

Since the area was added to UGB, and is currently outside the city limits, the subject property has a Washington County Comprehensive Plan designation. The existing Washington County Comprehensive Plan and Zoning designation is FD-20 (Future Development with a 20 acre minimum lot size). This is a "holding zone" applied to unincorporated areas intended for future urban development. The Washington County zoning designation will remain until the area is annexed. Typically, when property is annexed the new zoning designation applied to the property will be the one that most closely matches the City's Comprehensive Plan designation.

As noted above, the subject property is approximately 38 gross acres in area. The property consists of parts of two tax lots under single ownership. As the image below indicates, the site is vacant and is currently being farmed. The entire 38 acre area is located above the pending/revised 100-year floodplain which follows the urban growth boundary (shown by the red line). The subject area is generally unconstrained by natural features. The property is general flat with a slight slope toward the Tualatin River floodplain. Given these site characteristics the area is suitable for future development.



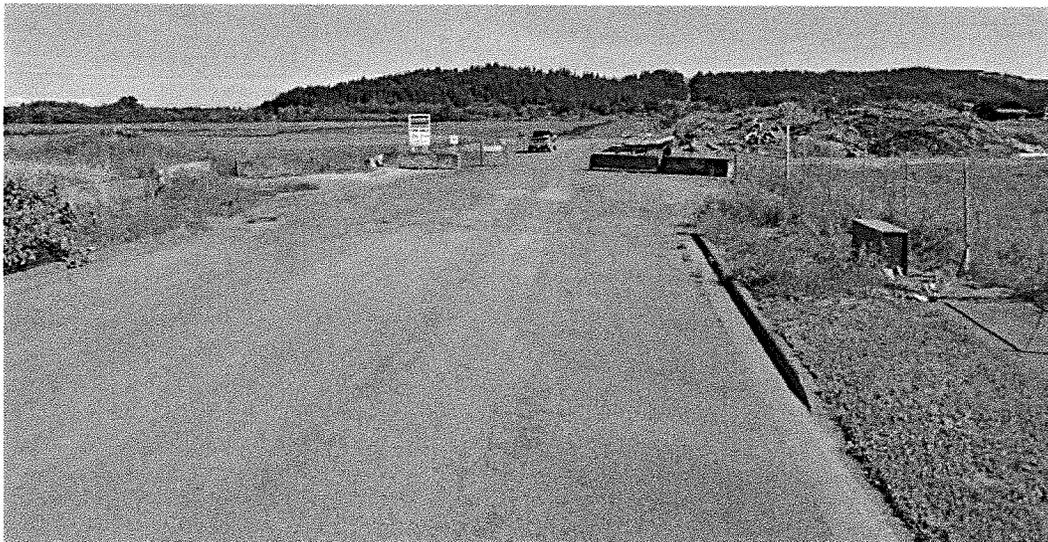
## Transportation

The subject property is located at terminus of Elm Street. Elm Street is classified as a collector street in the Forest Grove Transportation System Plan (2014). Elm Street in this area is two lanes. Elm Street provides direct access to Oregon Highway 47.

The image below shows Elm Street looking north toward Highway 47 in the vicinity of the subject property. Elm Street is two lanes with a parkway and sidewalks on both sides.



The image below shows Elm Street near its terminus with subject property. The subject property is in the distance near the vehicle shown in the picture.



Highway 47 is classified as a primary arterial road in the Forest Grove Transportation Plan. Highway 47 functions as a bypass route and is classified as a regional route in the Oregon Highway Plan. The image below shows Highway 47 looking northeast at the Elm Street intersection. Highway 47 is two lanes with a turn lane at the intersection.



The image below shows Highway 47 looking southwest near the Elm Street intersection. This image shows the through lane and left turn lane from Highway 47 onto Elm Street.



Data for 2013 from the Oregon Department of Transportation indicates that average daily traffic on Highway 47 at Elm Street is approximately 11,400 vehicles per day. This amount is lower than shown in the TSP at 14,500 vehicles per day. This lower traffic volume may be due to the 2008/2009 economic downturn. The Forest Grove Transportation System Plan indicates that approximately 10% of the average daily traffic is freight traffic. An assessment of potential traffic impacts is provided below in the alternatives analysis. The traffic assessment is based on a comparison of possible Comprehensive Plan designations that could apply to the subject property.

### Water

Municipal water is available near the subject property. The area is served with two water lines. One line is located in the Elm Street right-of-way approximately 600 feet to the north of the site. The other line serves the Kerr and Woodburn properties immediately to the north of the subject property. Water lines must be extended to serve development in the UGB addition area. Possible extension of water lines will be addressed at time of development review.

### Storm Sewer

The Forest Grove Stormwater Master Plan Update shows an 18" storm water conveyance line in the Elm Street right-of-way approximately 600 feet to the north of the subject property. Necessary storm water conveyance improvements will be addressed at time of development review.

### Sanitary Sewer

The City's Sanitary Sewer Master Plan shows a line approximately 300 feet to the north of the subject property. Required sanitary sewer improvements to serve development will be addressed as part of the development review process. The ability to provide sanitary sewer to the entire UGB addition area may be a limiting factor as to how much of the 38 acre site is developable. The constraint to sanitary sewer conveyance is due to the depth and slope of the existing sanitary sewer line. The reason for this is sewage is typically conveyed for treatment by gravity.

## **III. ALTERNATIVES ANALYSIS**

The Planning Commission has several alternatives to consider for designating the subject property. Alternatives include:

- General Industrial;
- Light Industrial; or
- Campus Employment

The Alternatives above were selected based on the existing development pattern and the site's location adjacent to the Taylor Way Industrial Park. The options are discussed further below.

### General Industrial

Article 3 of the Development Code describes the General Industrial zone as intended for industrial uses generally incompatible with residential development due to operational characteristics. Uses within the General Industrial zone typically require extensive outdoor areas for business activities, product storage or display. General Industrial uses include those involved in the processing of raw materials into refined products and/or industrial uses that have external impacts.

### Light Industrial

Article 3 of the Development Code describes the Light Industrial zone as intended for a wide variety of manufacturing and other industrial uses with controlled external impacts. Such industries are often involved with secondary processing of materials into components, the assembly of components into finished products, transportation, communications and utilities, wholesaling and warehousing. Activities associated with these uses occur within enclosed buildings. On a limited basis, supporting commercial and offices are permitted in the Light Industrial zone.

### Campus Employment

Campus Employment is a new employment designation described in the updated Forest Grove Comprehensive Plan. The Campus Employment designation is intended for development of industrial and office parks with a high level of amenity value including landscaping and open space. Typical uses include high technology companies, call centers, research and development firms, and business incubators. Similar to light industrial activities take place with enclosed structures. The Campus Employment designation includes limited supportive retail development, business services and offices.

The Planning Commission considered amendments to the Development Code to establish a zoning district – the Business Industrial Park zone - to implement the Campus Employment Comprehensive Plan designation. The text of the Business Industrial Park zone is attached for reference. The attached indicates the permitted, limited, and conditional uses allowed by the zone.

### Economic Opportunities Analysis

The Forest Grove Economic Opportunity Analysis (EOA) identifies a need for campus employment uses. The UGB addition area provides an opportunity to fulfill this need as explained below.

The EOA shows that Forest Grove has growth potential to create demand for between 56 and 71 acres of business park land some of which could be absorbed by the Campus Employment designation. The EOA goes on to say, although demand is not sufficient for a single typical, 50 acre business park site, business park development is estimated as the largest category of demand among office spaces classes which include business parks, medium-size office sites, small-size office sites).

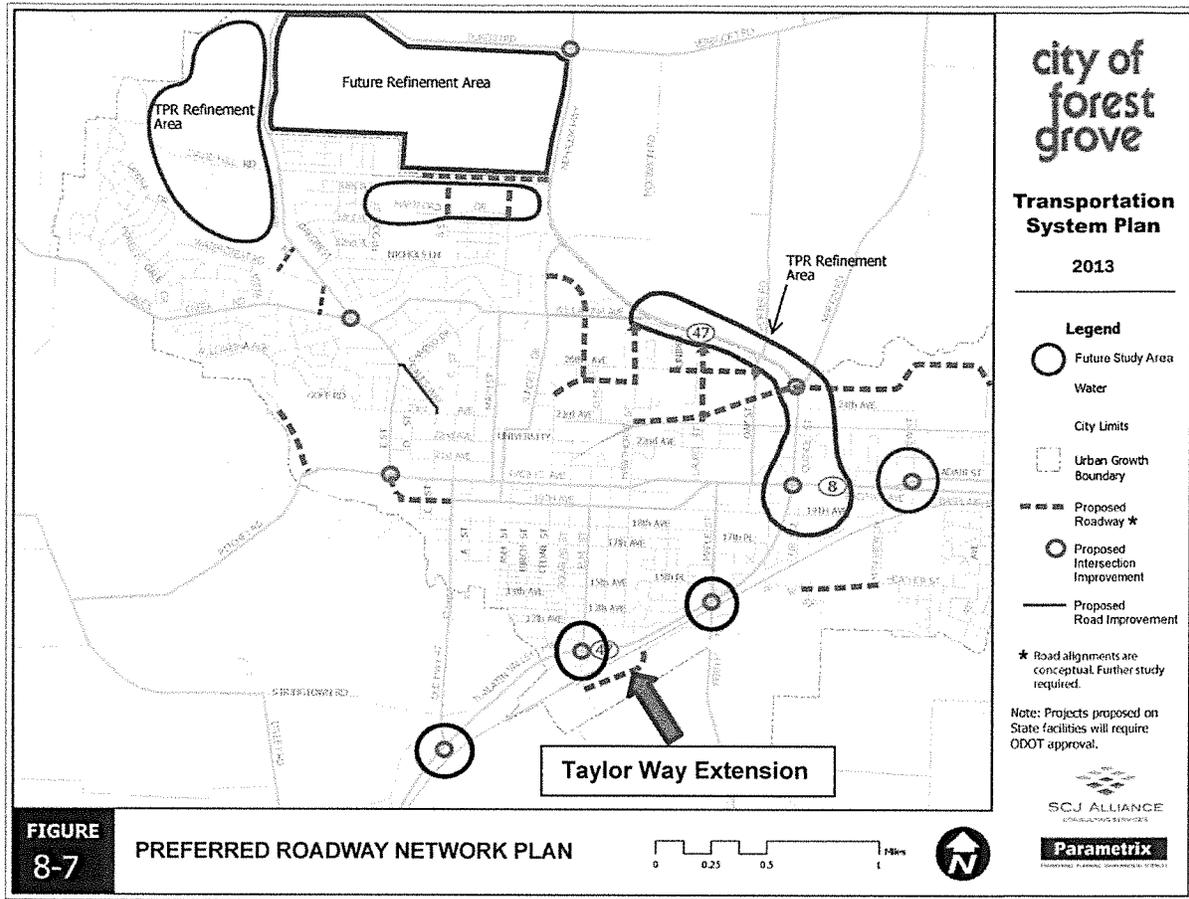
The EOA also states Forest Grove currently has a total supply of 2 vacant, buildable acres, suitable for office development. All of this supply is in the small category (10 acres or less). Furthermore, this supply is located in downtown Forest Grove. The EOA underscores that Forest Grove has no site availability suitable for larger, predominantly office park development and outside downtown Forest Grove.

Finally, the EOA indicates Forest Grove has an oversupply of approximately 127 acres of industrial land for the 20-year planning period covered by the EOA (planning horizon Year 2028). Applying the Campus Employment designation to the subject 38 acres provides an opportunity for the City to address an unmet land use need for business park development. Whereas, applying either the General Industrial or Light Industrial designation exacerbates the documented oversupply of land in the industrial category.

Given the existing development pattern near the property, including the property's location adjacent to the Taylor Way Industrial Park to the north and agricultural land to the south, the recommended plan designation for this site is Campus Employment. The Campus Employment designation will provide a transition from more intensive development near Highway 47 and agricultural activities. The Campus Employment designation also responds to a need for business park land as described in the EOA and elsewhere in this report.

### Traffic Analysis

The proposed Comprehensive Plan amendment will allow for development of the subject property when annexed and zoned by the City. Future development will impact the Highway 47/Elm Street intersection. The traffic analysis presented in this section assumes that all traffic flows through the Highway 47/Elm Street intersection. As shown below, the TSP includes a future extension of Taylor Way from its terminus to Elm Street. When completed, some trips could be diverted to Fern Hill Road via Taylor Way from the proposed Campus Employment area.



The table below shows that the Highway 47/Elm Street intersection operates within acceptable standards. The minimum acceptable level of service adopted by the City is LOS D. The table also shows the current volume to capacity ratio is well below the operational standard of 0.99

### Current PM Peak Hour Intersection Level of Service

No.	Intersection	Operational Standard	Level of Service (LOS) <sup>1</sup>	Average Delay* (Seconds) <sup>2</sup>	Volume / Capacity (V/C) <sup>2</sup>
<i>Unsignalized Intersections</i>					
18	Highway 47/Elm Street	V/C=0.99	A/D	31.3	0.45

1 First value is free movement (Highway 47), second value is worst stopped movement (Elm Street).

2 Worst (Elm Street) stopped movement for minor street average delay reported for unsignalized intersections.

Operation of the Highway 47/Elm Street intersection is expected to degrade by the year 2035. The table below expected operational characteristics with new street connections identified in the TSP. The table does not show how the intersection may operate with intersection improvements such as a traffic signal. Therefore, this is a

worst case scenario. It should also be noted the Highway 47 movement operates at a level of service A in 2035. It is the Elm Street movement that operates below standard. To address future operation of the intersection the TSP includes a project for future intersection improvements. The TSP shows that the Highway 47/Elm Street intersection meets preliminary warrants for a traffic signal and is a possible solution. Installation of a traffic signal requires ODOT approval as owner of Highway 47.

**2035 PM Peak Hour Traffic Operations with Added Local Street Connectivity**

No.	Intersection	Operational Standard	2035 Preferred Alternative		
			Level of Service (LOS) <sup>1</sup>	Average Delay (Seconds) <sup>2</sup>	Volume / Capacity (V/C) <sup>2</sup>
18	Highway 47/Elm Street	V/C=0.99	A/F	172.2	1.20

3 First value is free movement (Highway 47); second value is worst stopped movement (Elm Street).  
 4 Worst (Elm Street) stopped movement for minor street average delay reported for unsignalized intersections.

The proposed Comprehensive Plan amendment will allow for future development after the property is annexed and assigned a City zoning designation. The subject property was added to the UGB after the Transportation System Plan was updated. Therefore, traffic resulting from future development will be above what was assumed in the TSP. Several land uses from the Institute of Traffic Engineers (ITE) Trip General Manual, Seventh Edition, was used to assess potential traffic impacts related to the proposed comprehensive plan amendment. The results from the analysis are provided below. The results are based using three ITE land use classifications. The ITE classifications are:

Industrial Park (ITE 130): Industrial parks contain a number of industrial or related facilities. The area characterized by a mix of manufacturing, service and warehouse facilities with a wide variation in the proportion of each type of use. Industrial parks may contain a number of small businesses or one or two dominant industries. The Campus Employment designation would also allow for limited office and support services such as banks, restaurants, and service stations.

General Heavy Industrial (ITE 120): According to the ITE Manual, 7<sup>th</sup> Edition, heavy industrial facilities usually have a high number of employees per industrial plant and could also be categorized as manufacturing facilities (ITE Land Use 140). Heavy industrial uses are limited to the manufacture of large items.

Light Industrial (ITE Land Use 110): According to the ITE Manual, 7<sup>th</sup> Edition, light industrial facilities usually employ fewer than 500 persons. Light industrial facilities have emphasis on activities other than manufacturing and typically have minimal office space. Light industrial uses include processing, assembling, packaging or treatment of finished products from previously prepared materials or components.

The following analysis presents a worst case scenario since the entire 30.4 net acre area likely won't be developed in its entirety due to limited ability to provide sanitary sewer to the entire site.

The following tables show estimated traffic generation for the three ITE classifications during the morning and afternoon peak. The ITE land use classifications for the traffic analysis are consistent with selected uses identified in the Washington County Industrial Site Readiness Project. Selected uses for the subject area identified in the Washington County project include food processing, general/advanced manufacturing business park, general advanced manufacturing (single user) or advanced high technology manufacturing campus. Based on the Washington County analysis it is believed the subject property identified for the Campus Employment Plan designation could accommodate up to 480,000 square feet of industrial space.

The tables provide data for trip generation by acre, employee and building area in square feet. The estimated traffic generation ranges from 195 to 484 additional trips during the morning peak and 128 to 518 additional trips during afternoon peak depending on land use and basis of analysis (acre, employee or building area). The Campus Employment land use falls in the middle of the range.

#### **AM PEAK TRIPS PER ACRE**

Land Use (ITE)	Acres (Net)	Average Rate Weekday AM Peak	Trips Weekday AM Peak
Option 1: Campus Employment/Industrial Park (130)	30.4	8.29	252
Option 2: General Heavy Industrial (120)	30.4	6.41	195
Option 3: Light Industrial (110)	30.4	7.96	242

#### **AM PEAK TRIPS PER EMPLOYEE<sup>1</sup>**

Land Use (ITE)	Employees	Average Rate Weekday AM Peak	Trips Weekday AM Peak
Option 1: Campus Employment/Industrial Park (130)	513	0.43	221
Option 2: General Heavy Industrial (120)	513	0.40	205
Option 3: Light Industrial (110)	513	0.42	215

<sup>1</sup> Employment calculated using 16.9 employees per net acre for industrial uses based on the City's Economic Opportunity Analysis.

**AM PEAK PER 1,000 SQUARE FEET OF GROSS FLOOR AREA**

Land Use (ITE)	Square Feet	Average Rate per 1,000 Square Feet Weekday AM Peak	Trips Weekday AM Peak
Option 1: Campus Employment/Industrial Park (130)	480,000	0.82	393
Option 2: General Heavy Industrial (120)	480,000	0.51	244
Option 3: Light Industrial (110)	480,000	1.01	484

**PM PEAK TRIPS PER ACRE**

Land Use (ITE)	Acres (Net)	Average Rate Weekday PM Peak	Trips Weekday PM Peak
Option 1: Campus Employment/Industrial Park (130)	30.4	8.67	264
Option 2: General Heavy Industrial (120)	30.4	4.22	128
Option 3: Light Industrial (110)	30.4	8.77	267

**PM PEAK TRIPS PER EMPLOYEE**

Land Use (ITE)	Employees	Average Rate Weekday PM Peak	Trips Weekday PM Peak
Option 1: Campus Employment/Industrial Park (130)	513	0.45	230
Option 2: General Heavy Industrial (120)	513	0.40	205
Option 3: Light Industrial (110)	513	0.48	246

**PM PEAK PER 1,000 SQUARE FEET OF GROSS FLOOR AREA**

Land Use (ITE)	Square Feet	Average Rate per 1,000 Square Feet Weekday PM Peak	Trips Weekday PM Peak
Option 1: Campus Employment/Industrial Park (130)	480,000	0.86	412
Option 2: General Heavy Industrial (120)	480,000	0.68	326
Option 3: Light Industrial (110)	480,000	1.08	518

Since Highway 47 is projected to operate at a level of service (LOS) A in 2035, Highway 47 has the capacity to absorb these trips generated by the UGB addition area. Furthermore, the TSP includes two project benefitting the transportation system near the subject property. First, the TSP identifies a project to improve the operation of Highway 47/Elm Street (e.g. traffic signal). This intersection improvement is intended to reduce future delay on Elm Street. Second, the TSP identifies the extension of Taylor Way from its current terminus northeast of the site to Elm Street. This improvement should distribute some trips from Elm Street to Fern Hill Road. This should reduce potential impacts to the Highway 47/Elm Street intersection.

The Oregon Transportation Planning Rule (TPR) requires an analysis to determine if an amendment to the Comprehensive Plan will require improvements to the transportation system to ensure that roads operate at an acceptable level of service. The Forest Grove Transportation System Plan establishes a minimum acceptable level of service of LOS D. The Oregon Department of Transportation minimum acceptable level of service is a volume to capacity ratio of 0.99. This analysis is discussed further in the next section.

The Transportation System Plan includes an analysis of the operation of the Highway 47/Elm Street intersection. The analysis was done for current and expected future conditions. The results of this analysis are attached for reference (Attachment B). The analysis shows that traffic volumes on Elm Street are heaviest in the southbound movement north of Highway 47. Northbound traffic on Elm Street is about half of the southbound traffic. The 2035 mitigated volume on Highway 47 is 734 vehicles per hour for the westbound through movement and 488 vehicles in the eastbound through movement. The northbound movement from the industrial park on Elm Street is about 45 vehicles per hour for all movements (Attachment C). The southbound movement on Elm Street from the Town Center is about 270 vehicles per hour.

#### **IV. REVIEW CRITERIA AND FINDINGS OF FACT**

Amendments to the Comprehensive Plan Map are reviewed based on the following considerations:

1. Consistency with applicable Comprehensive Plan policies
2. Consistency with Metro Regional Framework Plan
3. Consistency with Metro Regional Functional Plan and Regional Transportation Functional Plan
4. Consistency with Oregon Statewide Land Use Planning Goals

Each of the considerations identified above are discussed in detail below.

##### **1. Comprehensive Plan Policies**

The Comprehensive Plan contains policies governing where certain Comprehensive Plan designations should apply. The land use location factors for the Campus Employment designation include:

- A. Greater than 25 acres:

Finding: The subject property is 38 gross acres which is greater than 25 acres

- B. Direct access to arterial:

Finding: The subject property has access to an arterial street (Highway 47) via Elm Street. This access is direct as it is the shortest route.

C. Buffered from surrounding residential and agricultural uses:

Finding: The site is not adjacent to residential areas.

Finding: the Floodplain provides a natural buffer with agricultural uses.

Finding: Article 2 of the Development Code requires site Development Review. This review applies to all development on vacant sites. The review criteria require that site plan ensures reasonable compatibility with surrounding uses.

In addition to the findings above, the Campus Employment designation implements Comprehensive Plan policies related to ensuring an adequate supply of land for office campus development. The Comprehensive Plan (Policy 8.2) supports designating between 55 and 70 acres of land for office and office campus development outside the Town Center. Applying the Campus Employment designation to the 38 acre UGB expansion area will help achieve the Comprehensive Plan policy.

The proposed Campus Employment designation complies with the Comprehensive Plan policies as described above.

## 2. Statewide Land Use Planning Goals

Goal 9: Economic Development (To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon's citizens).

- A. Campus Employment designation consistent with EOA findings
- B. Provides for a supply of land for a variety of industrial and office activities consistent with the comprehensive plan
- C. Compared with residential or community commercial the Campus Employment Designation is compatible with adjacent industrial area to north and agricultural areas to south.

Finding: Assigning the Campus Employment Comprehensive Plan designation to the subject property will create direct benefits in terms of traded-sector jobs since the designation limits uses to primarily industrial or traded-sector industries including offices associated with traded-sector industries. Anticipated retail will be incidental to industrial or traded sector development.

Goal 12: Transportation (To provide and encourage a safe, convenient and economic transportation system).

Finding: Goal 12 is implemented through Oregon Administrative Rules (OAR) Chapter 660-0012-0060. This chapter is also called the Oregon Transportation Planning Rule (TPR). Under OAR 660-0012-0060 an analysis must be done to demonstrate whether a proposed comprehensive plan amendment may have a significant effect on a transportation facility. Findings related to the TPR analysis are provided below.

Under the TPR a plan amendment significantly affects a transportation facility if it would:

- a. Change the functional classification of an existing or planned transportation facility;
- b. Change the standards implementing a functional classification system;
- c. Result in any of the following effects:
  - a. Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility
  - b. Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or degrade performance of an existing or planned transportation facility that it is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

The preceding considerations are discussed below.

- a. Finding: The proposed Comprehensive Plan amendment to designate the subject property Campus Employment will not change the functional classification of an existing or planned transportation facility. Elm Street is designated a collector and Highway 47 is designated a primary arterial in the Forest Grove Transportation Plan. The Oregon Highway Plan designates Highway 47 as a regional route. These classifications will not change as a result of the proposed amendment.
- b. Finding: The proposed amendment will not change the standards implementing the functional classification system contained in the TSP. The functional classification system provides a street hierarchy is based on access, mobility, multi-modal transportation and facility design. The subject property is located adjacent to a collector street (Elm Street) which feeds directly into a primary arterial roadway (Highway 47). The proposed amendment does not require changing the functional classification of either Elm Street or Highway 47.
- c. Finding: The type of traffic (auto and freight) and level of traffic described in this report is not inconsistent with the functional classification of existing facilities. This includes Elm Street (collector) and Highway 47 (primary arterial).

The proposed Comprehensive Plan amendment could degrade the performance of the Highway 47/Elm Street intersection such that it would not meet performance standards identified in the TSP and Comprehensive Plan. Both the TSP and Comprehensive Plan establish a minimum acceptable level of service as LOS D. On ODOT owned facilities the minimum level of services is based on a volume to capacity (v/c) ratio. The minimum acceptable v/c ratio is 0.99. Currently, the TSP shows the Highway 47/Elm Street intersection functions with LOS A/D and v/c ratio of 0.45. Currently, the intersection meets or exceeds acceptable standards. As noted above, ADT at the Highway 47/Elm Street intersection has fallen from 14,205 vehicles to 11,400 vehicles. This suggests

the intersection has capacity to absorb additional traffic and maintain current level of service. The 2035 preferred alternative mitigated intersection analysis for the TSP update shows an ideal flow of 1,800 vehicles per hour per lane during the afternoon peak. The 2035 mitigated volume on Highway 47 is 734 vehicles per hour for the westbound through movement and 488 vehicles in the eastbound through movement. The northbound movement from the industrial park on Elm Street is about 45 vehicles per hour for all movements (Attachment C). The southbound movement on Elm Street from the Town Center is about 270 vehicles per hour. This indicates that traffic generation from the industrial park is not a problem. Rather, traffic on Elm Street from the Town Center is more of a concern.

The Forest Grove TSP projects future intersection operations for the Year 2035 based on added local street connectivity. The Highway 47/Elm Street intersection is projected to operate at a level of service of A/F with a v/c ratio of 1.20. The level of service on the ODOT-owned facility remains at a level of service of A. The Elm Street traffic, however, will likely encounter average delay of 172 seconds if current intersection control remains with stops signs on Elm Street.

The Highway 47/Elm Street intersection meets Manual of Uniform Traffic Control Device (MUTCD) preliminary traffic signal warrants (Attachment C). As such, the Highway 47/Elm Street intersection is a possible candidate for full traffic signal control. Such improvement could improve intersection performance to acceptable standards. It should be noted, however, that meeting traffic signal warrants does not guarantee that a signal will be installed but provides data that could be used with engineering judgment. While the Highway 47/Elm Street intersection meets preliminary traffic signal warrants the City recognizes that approval of the proposed Comprehensive Plan map amendment may result in additional motor vehicle traffic congestion and that other facility providers (ODOT) is not expected to provide additional capacity for motor vehicles in response to this congestion.

In addition to intersection optimization to improve traffic transportation demand management (TDM) programs could help alleviate traffic. TDM Programs include increasing transit service. A more complete bicycle network could also help reduce vehicle demand.

Under the TPR, if a local government determines there would be a significant effect from the proposed amendment, then the local government must ensure that the land use allowed by the amendment are consistent with the identified function, capacity and performance standards of the facility measured at the end of the planning period. This can be approached in a number of ways including amendment the TSP to include transportation improvements adequate to support the proposed land uses. The TSP includes a project to improve the operation of the Highway 47/Elm Street intersection. As required by the TPR (OAR 660-012-0060-4(b)) the project is included on the financially constrained project list meaning funding is expected to be available during

the planning period. The estimated project cost is \$520,000 with anticipated completion within the next six to ten years. Actual timing will be largely dependent on development. An amendment to the TSP is not necessary to support the proposed amendment.

The TPR provides the option to mitigate potential traffic impacts including requiring a condition of development approval or through a development agreement or similar technique. The Forest Grove Development Code allows for the use of development agreements to implement goals, policies or programs of the Comprehensive Plan (including the Transportation System Plan) or for the development of land.

The Development Code (Section 10.1.225) describes land use application requirements. As part of the land use application process, the Community Development Director may require a transportation study when a proposed project would have potential traffic circulation or safety impacts, need for off-site improvements or would increase traffic on City streets by at least 50 peak hourly trips, or a transportation study is required by the Oregon Department of Transportation. This provision ensures that potential traffic impacts are mitigated through the development approval process.

Goal 14: Urbanization (To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities).

Finding: The subject property was added to the urban growth boundary in 2014. Currently, the subject property is zoned Future Development by Washington County. As noted earlier this is a County holding zone applied to urbanizable land within the urban growth boundary. Applying a City Comprehensive Plan Designation to the subject property promotes the efficient transition from rural to urban land by removing one obstacle to development.

### 3. Metro Regional Framework Plan

The following section demonstrates how the proposed Comprehensive Plan Map amendment complies with the Metro Regional Framework Plan. The Metro Regional Framework Plan establishes the regional vision for growth. The Framework Plan address land use, transportation, parks and open space, water, and geological hazards. Land use and transportation are the elements pertinent to the proposed Comprehensive Plan amendment as described below.

The proposed Comprehensive Plan amendment is consistent with the following policies contained in the Framework Plan:

Policy 1.4.1 Economic Opportunity: Locate expansions of the UGB for industrial or commercial purposes in locations consistent with this plan and where, consistent with state statutes and statewide goals, an assessment of the type, mix and wages of existing and anticipated jobs within subregions justifies such expansion.

Finding: The UGB expansion is adjacent to the Taylor Way Industrial Park. The area is suitable for the types of industrial activities promoted by the Campus Employment designation. The designation is consistent with state statutes and statewide goals including statutes and goals related to land use and transportation. The designation is consistent with statewide goals related to economic development as described by Land Use Planning Goal 9 (Economic Development). Goal 9 requires that Comprehensive Plans and policies contribute to a stable and healthy economy in all regions of the state. Designating the subject for Campus Employment development is consistent with Goal 9 since the designation will expand local employment opportunities contributing to a stable economy.

Policy 1.4.2 Economic Opportunity: Balance the number and wage level of jobs within each subregion with housing cost and availability with that subregion.

Finding: The proposed Comprehensive Plan amendment increases the opportunity for jobs in the western-Washington County. Designating the subject property Campus Employment will help balance the number and wage level of jobs within the western-Washington County. The Campus Employment designation provides opportunity for a variety of activities including in the high-technology sector. As stated in the EOA, the high-technology sector enjoys a relatively high average wage per worker of \$75,838. This type of employment will balance lower wage levels of retail and service jobs in Forest Grove.

Policy 1.5.3 Economic Opportunity: Ensure that all neighborhoods and all people have access to opportunity and share the benefits, as well as burdens, of economic and population growth in the region.

Finding: Designating the site Campus Employment provides opportunity for local residents to share in economic benefits through increased employment opportunities.

Policy 1.7.1 Urban/Rural Transition: Ensure that there is a clear transition between urban and rural land that makes best use of natural and built landscape features and that recognizes the likely long-term prospects for regional urban growth.

Finding: The southern boundary of the property subject to the Comprehensive Plan amendment is coterminous with the urban growth boundary. As such the property is at the urban/rural interface. The Campus Employment designation promotes a transition between agricultural uses to south and more intensive industrial activities to the north. As stated in the Comprehensive Plan, the Campus Employment designation is intended to promote industrial and office parks with high amenity value including landscaping and open space. The emphasis on landscaping and open space provides the opportunity for a clear transition between urban and rural land by taking advantage of the natural and built landscape features in site design.

Policy 1.9.3 Urban Growth Boundary: Use the regional UGB, a long-term planning tool, to separate urbanizable from rural land, based in aggregate on the region's 20-year projected need for urban land.

Finding: The southern boundary of the property affected by the proposed Comprehensive Plan map amendment is coterminous with the urban growth boundary. The area south of the urban growth boundary is designated rural reserve by Washington County. As such, the urban growth boundary establishes the long term boundary between urbanizable and rural land. Under current state law, rural reserves are intended to protect rural land from urban use for a 50-year period of time.

Policy 2.4.1 Consistency Between Land Use and Transportation Planning: Ensure the identified function; capacity and level of service of transportation facilities are consistent with applicable regional land use and transportation policies as well as the adjacent land use patterns.

Finding: Development anticipated within the proposed Campus Employment area is expected to increase traffic volumes above what is anticipated in the Forest Grove Transportation System Plan. This will impact the Highway 47/Elm Street intersection. The Transportation System Plan shows that the volume to capacity ratio will exceed 0.99 by 2035. The TSP includes a project to improve operation of the intersection. The intersection meets preliminary traffic signal warrants as noted in the TSP. Signalization could improve operation of the intersection to acceptable standards. Signalization requires ODOT approval as owner of Highway 47.

The proposed Comprehensive Plan amendment is also consistent with Metro Code Section 3.07.1120 (Planning for Areas Added to the UGB). Under this Metro Code section the city responsible for comprehensive planning shall adopt comprehensive plan provisions and land use regulations for an area added to the urban growth boundary. This includes assigning a specific plan designation to the area.

Finding: The proposed Comprehensive Plan amendment will result in designating the area added to the urban growth boundary Campus Employment. Assigning a comprehensive plan designation to the subject property addresses the requirement of Metro Code Section 3.07.1120 that the city responsible for comprehensive planning adopt a plan designation for new urban growth areas. Adopting the plan designation allows the City to zone and apply land use regulations to the property upon annexation.

The purpose of Metro Regional Framework Plan Land Use Policy 1.5.3 is to ensure that all neighborhoods and all people have access to opportunity and share the benefits, as well as burdens, of economic and population growth in the region. The recommended expands local opportunities for employment. As such, the amendment furthers the intent of Policy 1.5.3 by promoting employment for Forest Grove residents so that residents participate in the benefits of a strong local economy.

The Metro 2040 Growth Concept, implemented through Metro Regional Framework Plan, encourages the mixing of various types of employment. The Campus

Employment Comprehensive Plan designation and corresponding Business Industrial Park zone allows for a variety of employment activities meeting employment needs identified in the City's Economic Opportunities Analysis adopted in 2009. Such uses include industrial services, manufacturing, call centers, research and development, warehousing, wholesale sales, office, and limited retail. These activities meet the intent of the Metro 2040 Growth Concept.

#### 4. Metro Regional Functional Plan and Regional Transportation Functional Plan

Finding: The recommended Comprehensive Plan amendment is consistent with Title 4 of the Metro Regional Functional Plan. Title 4 addresses industrial and other employment areas in the regional. The purpose and intent statement of Title 4 promotes a strong regional economy. To improve the economy, Title 4 seeks to cluster activities in proximity to one another rather than in dispersed locations. The recommended amendment provides an opportunity to zone land near existing industrial areas to provide complementary employment activities. Such activities include industrial services, warehousing, and uses serving employees working in industrial areas.

#### Regional Transportation Functional Plan

Finding: Title 5 of the Regional Transportation Functional Plan addresses amendments of City and County Comprehensive and Transportation System Plans. Under Title 5, when a city or county proposes to amend its comprehensive plan or its components the city or county shall consider certain strategies as part of the analysis required by the Transportation Planning Rule (OAR 660-012-00060). These strategies include:

- A. Transportation System Management strategies including localized transportation demand management, safety, operational and access management improvements;
- B. Transit, bicycle and pedestrian system improvements;
- C. Traffic-calming designs and designs.
- D. Land use strategies in OAR 660-012-0035(2) to help achieve applicable thresholds and standards.
- E. Connectivity Improvements to provide parallel arterials, collectors or local streets that include pedestrian and bicycle facilities, consistent with the connectivity standards in the RTP in order to provide alternative routes and encourage walking, biking, and access to transit.
- F. Motor vehicle capacity improvements, consistent with the RTP Arterial and Throughway Design and Network Concepts.

Each strategy is discussed below in turn.

- A. Transportation system and demand management strategies are identified in the Transportation System Plan. Appropriate measures to mitigate potential traffic impacts resulting from the proposed Comprehensive Plan amendment will be considered during the development review process. The TSP identifies safety

and operational improvements to the Highway 47 and Elm Street intersection to mitigate potential traffic impacts. Such improvements will be considered during the development review process. Improvements to the intersection will require ODOT approval as owner of Highway 47.

- B. Improvement to Elm Street to accommodate pedestrian and bicycle circulation will be considered during the development review process.
- C. Not applicable.
- D. OAR 660-012-0035(2) establishes a process for evaluation of transportation system alternatives to meet identified transportation system needs. The TSP includes two projects to address transportation needs in the vicinity of the area affected by the proposed Comprehensive Plan Map amendment. These projects are the Highway 47/Elm Street intersection improvement and Taylor Way extension. Since the TSP currently includes projects addressing transportation needs in the area no further evaluation is necessary since no additional projects are proposed.
- E. The TSP identifies an extension to Taylor Way. This local street extension will provide improved connectivity to the site.
- F. This strategy is not applicable to the proposed Comprehensive Plan amendment.

## **V. RECOMMENDATION**

Staff recommends the Planning Commission recommend City Council approval of the proposed Comprehensive Plan Map amendment to designate the 38 acre urban growth boundary addition area Campus Employment.

## **ATTACHMENTS**

- A. Business Industrial Park Zone Text
- B. Highway 47/Elm Street Intersection Analysis
- C. Highway 47/Elm Street Signal Warrant Analysis

## **INDUSTRIAL ZONES**

### **10.3.500 PURPOSE**

The City of Forest Grove has established two industrial zones to implement the Industrial designation of the Comprehensive Plan. Non-industrial uses are restricted to protect industrial lands for employment and to minimize land use conflicts.

### **10.3.510 LIST OF INDUSTRIAL ZONES**

#### **A. Light Industrial (LI)**

The LI zone is intended for a wide variety of manufacturing and other industrial uses with controlled external impacts. These types of industries are often involved in the secondary processing of materials into components, the assembly of components into finished products, transportation, communication and utilities, wholesaling and warehousing. Industrial activities occur within enclosed buildings. On a limited basis, supporting commercial and office uses are permitted in the LI zone.

#### **B. General Industrial (GI)**

The GI zone is intended for industrial uses that are generally not compatible with residential development because of their operational characteristics. This district is also intended for uses that may require extensive outdoor areas to conduct business activities or for product storage or display. General industrial uses include those involved in the processing of raw materials into refined products and/or industrial uses that have external impacts. The purpose of this district is to permit the normal operations of any industry that can meet and maintain compliance with established state and federal performance standards. The district is intended to contain supportive retail development. Commercial or retail uses that do not primarily serve the needs of people working or living in the employment and industrial areas are prohibited in this district. New residential uses are not permitted in the GI zone.

#### **C. Business Industrial Park (BIP)**

The BIP zone is intended to implement the Campus Employment designation of the Forest Grove Comprehensive Plan through the identification of allowed uses and the establishment of development standards. The BIP zone allows a mixture of light industrial, employment, and office uses, together with some small-scale commercial uses. The development standards within the zone require well-landscaped, attractive and cohesive developments.

### **10.3.520 USE REGULATIONS**

Refer to Article 12 for information on the characteristics of uses included in each of the Use Categories.

- A. Permitted Uses. Uses allowed in the Industrial zones are listed in Table 3-14 with a “P”. These uses are allowed if they comply with the development standards and other regulations of this Code.
- B. Limited Uses. Uses that are allowed subject to specific limitations are listed in Table 3-14 with an “L”. These uses are allowed if they comply with the limitations listed in the footnotes to the table and the development standards and other regulations of this Code.
- C. Conditional Uses. Uses that are allowed if approved through the conditional use process are listed in Table 3-14 with a “C”. These uses are allowed provided they comply with the conditional use approval criteria, the development standards, and other regulations of this Code. Section 10.2.200 contains the conditional use process and approval criteria.
- D. Prohibited Uses. Uses listed in Table 3-14 with an “N” are prohibited. Existing uses may be subject to the regulations of Section 10.7.700, Nonconforming Development.
- E. Accessory Uses. Uses that are accessory to a primary use are allowed if they comply with specific regulations for accessory uses and all development standards.

**Table 3-14**  
**Industrial Zones: Use Table**

<b>USE CATEGORY</b>	<b>LI</b>	<b>GI</b>	<b>BIP</b>
<b><u>RESIDENTIAL</u></b>	L <sup>[1]</sup>	L <sup>[1]</sup>	
Household Living	N	N	N
Group Living	N	N	N
Transitional Housing	N	N	N
Home Occupation	N	N	N
Bed & Breakfast	N	N	N
<b><u>CIVIC / INSTITUTIONAL</u></b>			
Basic Utilities	P	P	P
Major utility transmission facilities	C	C	C
Colleges	N	N	N
Community Recreation	N	N	C
Cultural Institutions	N	N	C
Day Care	L <sup>[2]</sup>	L <sup>[2]</sup>	L[2]
Emergency Services	C	C	C
Postal Services	C	N	C
Religious Institutions	N	N	N
Schools	L <sup>[3]</sup>	L <sup>[3]</sup>	L[3]
Social/ Fraternal Clubs / Lodges	N	N	N

<b>COMMERCIAL</b>			
Commercial Lodging	N	N	<i>C</i>
Eating & Drinking Establishments	L <sup>[4]</sup>	L <sup>[4]</sup>	<i>L[4]</i>
Entertainment – Orientated:			
- Major Event Entertainment	N	N	<i>N</i>
- Outdoor Entertainment	N	N	<i>N</i>
- Indoor Entertainment	N	N	<i>C</i>
General Retail:			
- Sales – Orientated	N	L <sup>[4]</sup>	<i>L</i>
- Personal Services	N	N	<i>P</i>
- Repair – Orientated	N	N	<i>P</i>
- Bulk Sales	N	N	<i>C</i>
- Outdoor Sales	N	N	<i>C</i>
- Animal - Related	N	N	<i>C</i>
Medical Centers	N	N	<i>C</i>
Motor Vehicle Related:			
- Motor Vehicles Sale / Rental	N	N	<i>N</i>
- Motor Vehicle Servicing / Repair	N	N	<i>N</i>
- Motor Vehicle Fuel Sales	N	N	<i>N</i>
Non-Accessory Parking	N	N	<i>N</i>
Office	L <sup>[5]</sup>	L <sup>[5]</sup>	<i>P</i>
Self-Service Storage	N	P	<i>P</i>
<b>INDUSTRIAL</b>			
Industrial Services	L <sup>[6]</sup>	P	<i>P</i>
Manufacturing & Production:			
- Light Industrial	P	P	<i>P</i>
- General Industrial	N	P	<i>P</i>
Call Centers	P	P	<i>P</i>
Railroad Yards	N	P	<i>N</i>
Research & Development	P	P	<i>P</i>
Warehouse / Freight Movement	P	P	<i>P</i>
Waste – Related	C	C	<i>C</i>
Wholesale Sales	P	P	<i>P</i>
<b>OTHER</b>			
Agriculture / Horticulture	P	P	<i>P</i>
Cemeteries	N	N	<i>N</i>
Detention Facilities	C	P	<i>C</i>
Mining	N	C	<i>N</i>
Wireless Communication Facilities	L <sup>[7]</sup>	L <sup>[7]</sup>	<i>L[7]</i>
Information	P	P	<i>P</i>

Table 3-6 Footnotes:

- [1] One (1) dwelling is permitted for a watchman employed on the premises.
- [2] On-site day care for employees is permitted in the LI, GI and BIP zones. Conditional use permit approval is required for a day care facility that is intended to serve more than on-site employees.

- [3] Educational uses for high school or college level programs governed by ORS Chapter 300 et. seq. comprising no more than 20% of the floor space of a building owned by a governmental agency shall be permitted provided that the following are met: (1) the use is separated from all industrial activities located on the site; (2) the use is located totally within a building; and (3) hours of operation are limited form 7:00 to 7:00 P.M.
- [4] Supportive retail or commercial use, such as convenience store, coffee shop, deli or business service, up to 3,000 square feet per use, permitted if the Director finds that it primarily serves the needs of the people working or living in the industrial area (drive-through prohibited). Employee cafeterias are permitted as an accessory uses.
- [5] In the LI zone, up to 50% and in the GI zone, up to 20% of the total floor area of the development may consist of executive and administrative offices that relate to the industrial use of the property. Stand alone offices in association with uses allowed in the LI but are at other locations are allowed in that district. Multiple tenant office buildings are prohibited.
- [6] Industrial services in the LI and BIP zones must take place within an enclosed building.
- [7] Wireless communication facilities are regulated by the standards in Article 7.

**10.3.530 INDUSTRIAL ZONE DEVELOPMENT STANDARDS**

The development standards listed below are applicable to all development within the Light Industrial, General Industrial and Business Industrial Park zones. Development within these zones shall also comply with all other applicable requirements of this Code, including the general development standards in Article 8.

**Table 3-15  
Industrial Zone Dimensional Requirements**

<b>STANDARD</b>	<b>LI</b>	<b>GI</b>	<b>BIP</b>
Minimum lot size	10,000 sf	10,000 sf	20,000 sf
Minimum lot width	100 ft	100 ft	100 ft
Minimum lot depth	None	None	None
Minimum yard setbacks <sup>[1]</sup>	None	None	Front: 20 feet Interior Side: 10 feet Rear: 10 feet
Maximum building height <sup>[2]</sup>	None	None	45 feet
Maximum building coverage			50%
Minimum landscaping			15%

Footnotes:

- [1] A setback and buffer may be required where a LI, GI or BIP boundary abuts a less intensive zone. See screening and buffering standards in Article 8. When an industrial site is separated from a residential zone by either a dedicated public street, or a railroad main line or spur track, no setback shall be required in that yard adjacent to the residential zone.
- [2] Building height unlimited per the Building Code with the installation of a sprinkler system approved by the Forest Grove Fire Department in all buildings over two (2) stories.

**10.3.540 ADDITIONAL INDUSTRIAL ZONE STANDARDS**

- A. Site Plan Review Required. Development in the LI, GI and BIP zones is subject to a Type II site plan review process.

- B. Parking. Parking, loading and unloading areas shall not be located within a required setback area.

No loading or unloading facilities shall be located adjacent to a residential district if there is an alternative location of adequate size for loading and unloading facilities that is not adjacent to a residential district.

- C. Performance Standards. No land or structure in the LI, GI and BIP zones shall be used or occupied unless there is continuing compliance with the standards set forth by the Environmental Protection Agency, Oregon Department of Environmental Quality and Metro relative to noise, vibration, smoke and particulate matter, odors, heat and glare, and insects and rodents.

- D. Solid Waste Collection Areas. Exterior solid waste dumpsters and solid waste collection areas must be screened from the public street and any abutting residential, commercial or town center zones.

- E. Mechanical Equipment. Mechanical equipment located on the ground, such as heating or cooling equipment, pumps, or generators, must be screened from the street and any abutting residential zones by walls, fences, or vegetation tall enough to screen the equipment. Mechanical equipment on roofs must be screened from the ground level of any abutting residential zone.

- F. Outdoor Storage. Within the BIP zone, outdoor storage shall conform to the following standards:

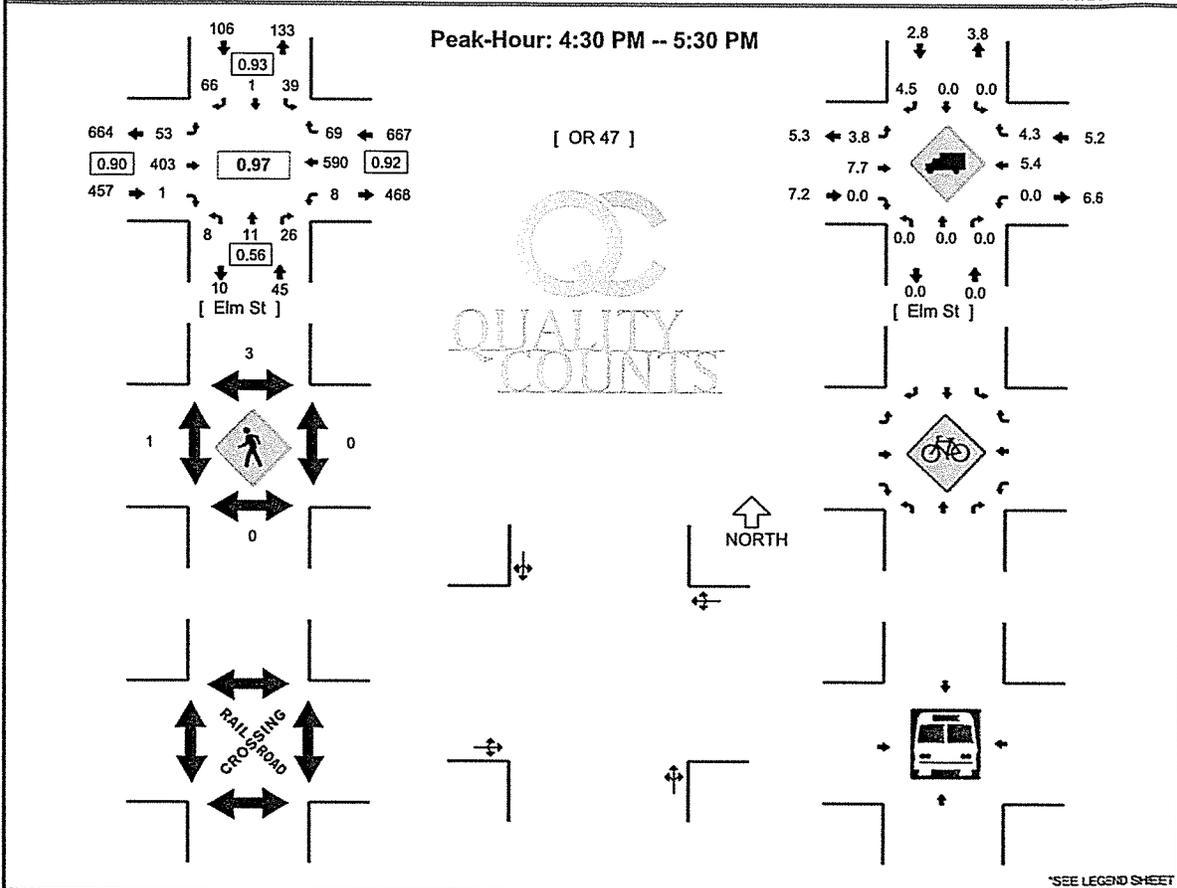
1. Storage areas shall not be located within required setbacks.
2. Storage areas shall be enclosed with a minimum 6-foot-high, sight obscuring, fence, wall, hedge or berm.
3. Materials and equipment stored shall not exceed a maximum height of 14 feet above grade; provided, however, materials and equipment more than 6 feet in height above grade shall be screened by sight-obscuring landscaping.

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

INTERSECTION: Elm St-OR 47  
WEATHER:

QC JOB #: 10261807  
DATE: 6/5/2007



\*SEE LEGEND SHEET

5-MIN COUNT PERIOD BEGINNING AT	Elm St (Northbound)				Elm St (Southbound)				OR 47 (Eastbound)				OR 47 (Westbound)				TOTAL	HOURLY TOTALS
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	1	3	0	13	0	14	0	7	89	3	0	4	102	10	2	249	
3:15 PM	2	0	2	0	8	1	10	0	11	99	1	0	1	97	14	0	246	
3:30 PM	2	2	5	0	10	2	18	0	15	90	4	0	2	109	17	1	277	
3:45 PM	3	5	8	0	10	1	13	0	20	96	2	0	2	120	12	0	292	
4:00 PM	1	2	2	0	7	1	23	0	11	89	2	0	3	133	19	0	293	1108
4:15 PM	0	2	0	0	7	4	19	0	8	96	1	0	5	150	18	0	310	1172
4:30 PM	6	4	10	0	8	0	13	0	10	117	0	0	3	126	13	0	310	1205
4:45 PM	1	0	3	0	11	0	18	0	14	100	0	0	3	151	19	0	320	1233
5:00 PM	0	4	5	0	9	1	20	0	16	92	1	0	2	163	16	0	329	1269
5:15 PM	1	3	8	0	11	0	15	0	13	94	0	0	0	150	21	0	316	1275
5:30 PM	1	2	0	0	8	0	17	0	9	113	0	0	1	133	7	0	291	1256
5:45 PM	0	2	1	0	7	0	20	0	18	77	0	0	1	145	15	0	286	1222
PEAK 15-MIN FLOW RATES	Northbound				Southbound				Eastbound				Westbound				TOTAL	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	16	20	0	36	4	80	0	64	368	4	0	8	652	64	0	1316	
Heavy Trucks	0	0	0	0	0	0	4	0	0	32	0	0	0	24	0	0	60	
Pedestrians		0				0	4			0				0			0	
Bicycles																		
Railroad																		
Stopped Buses																		

Counter Comments:

Forest Grove 2012 TSP Update  
9: Elm St & Hwy 47

2007 PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (veh/h)	53	403	1	8	591	69	8	11	26	39	1	66	
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Hourly flow rate (vph)	55	415	1	8	609	71	8	11	27	40	1	68	
Pedestrians					1						3		
Lane Width (ft)					12.0						12.0		
Walking Speed (ft/s)					4.0						4.0		
Percent Blockage					0						0		
Right turn flare (veh)													
Median type		None			None								
Median storage veh													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	683			416			1220	1225	417	1223	1190	648	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	683			416			1220	1225	417	1223	1190	648	
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	94			99			94	93	96	70	99	85	
cM capacity (veh/h)	898			1153			128	168	640	135	176	466	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1							
Volume Total	55	416	8	680	46	109							
Volume Left	55	0	8	0	8	40							
Volume Right	0	1	0	71	27	68							
cSH	898	1700	1153	1700	266	243							
Volume to Capacity	0.06	0.24	0.01	0.40	0.17	0.45							
Queue Length 95th (ft)	5	0	1	0	15	54							
Control Delay (s)	9.3	0.0	8.1	0.0	21.3	31.3							
Lane LOS	A		A		C	D							
Approach Delay (s)	1.1		0.1		21.3	31.3							
Approach LOS					C	D							
Intersection Summary													
Average Delay			3.8										
Intersection Capacity Utilization			63.0%		ICU Level of Service			B					
Analysis Period (min)			15										

Forest Grove 2012 TSP Update  
9: Elm St & Hwy 47

Preferred Land Use Alternative  
2035 PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	488	1	8	734	75	6	5	34	88	1	181
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	25	503	1	8	757	77	6	5	35	91	1	187
Pedestrians					1						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	837			504			1513	1407	505	1406	1368	798
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837			504			1513	1407	505	1406	1368	798
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			87	96	94	13	99	51
cM capacity (veh/h)	787			1071			49	135	571	104	142	382
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	25	504	8	834	46	278						
Volume Left	25	0	8	0	6	91						
Volume Right	0	1	0	77	35	187						
cSH	787	1700	1071	1700	205	203						
Volume to Capacity	0.03	0.30	0.01	0.49	0.23	1.37						
Queue Length 95th (ft)	2	0	1	0	21	399						
Control Delay (s)	9.7	0.0	8.4	0.0	27.6	240.0						
Lane LOS	A		A		D	F						
Approach Delay (s)	0.5		0.1		27.6	240.0						
Approach LOS					D	F						
Intersection Summary												
Average Delay			40.3									
Intersection Capacity Utilization			75.9%		ICU Level of Service		D					
Analysis Period (min)			15									

Forest Grove 2012 TSP Update  
9: Elm St & Hwy 47

Preferred Alternative-Mitigated  
2035 PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	488	1	8	734	75	6	5	34	88	1	181
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.90			0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1643	1666		1710	1688			1589			1568	
Flt Permitted	0.20	1.00		0.43	1.00			0.96			0.87	
Satd. Flow (perm)	346	1666		768	1688			1541			1392	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	25	503	1	8	757	77	6	5	35	91	1	187
RTOR Reduction (vph)	0	0	0	0	6	0	0	27	0	0	144	0
Lane Group Flow (vph)	25	504	0	8	828	0	0	19	0	0	135	0
Confl. Peds. (#/hr)	3					3			1	1		
Heavy Vehicles (%)	4%	8%	0%	0%	5%	4%	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	25.5	25.5		25.5	25.5			9.4			9.4	
Effective Green, g (s)	25.5	25.5		25.5	25.5			9.4			9.4	
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.22			0.22	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	205	990		456	1003			337			305	
v/s Ratio Prot		0.30			c0.49							
v/s Ratio Perm	0.07			0.01				0.01			c0.10	
v/c Ratio	0.12	0.51		0.02	0.83			0.06			0.44	
Uniform Delay, d1	3.8	5.1		3.6	6.9			13.2			14.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.4		0.0	5.6			0.1			1.0	
Delay (s)	4.1	5.5		3.6	12.6			13.3			15.5	
Level of Service	A	A		A	B			B			B	
Approach Delay (s)		5.4			12.5			13.3			15.5	
Approach LOS		A			B			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			10.8									B
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			42.9						8.0			
Intersection Capacity Utilization			75.9%									D
Analysis Period (min)			15									
c Critical Lane Group												

Forest Grove 2013 TSP Update  
9: Elm St & Hwy 47

Preferred Alternative Plus Added Streets  
2035 PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	477	1	9	679	65	8	11	29	85	2	171
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	25	492	1	9	700	67	8	11	30	88	2	176
Pedestrians					1						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	770			493			1438	1330	493	1333	1297	737
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	770			493			1438	1330	493	1333	1297	737
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			87	92	95	23	99	57
cM capacity (veh/h)	833			1081			62	150	579	114	157	414
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	25	493	9	767	49	266						
Volume Left	25	0	9	0	8	88						
Volume Right	0	1	0	67	30	176						
cSH	833	1700	1081	1700	190	221						
Volume to Capacity	0.03	0.29	0.01	0.45	0.26	1.20						
Queue Length 95th (ft)	2	0	1	0	25	330						
Control Delay (s)	9.5	0.0	8.4	0.0	30.5	172.2						
Lane LOS	A		A		D	F						
Approach Delay (s)	0.5		0.1		30.5	172.2						
Approach LOS					D	F						
Intersection Summary												
Average Delay			29.6									
Intersection Capacity Utilization			71.4%		ICU Level of Service			C				
Analysis Period (min)			15									

## SIGNAL WARRANT ANALYSIS

**Project Name:** Forest Grove TSP  
**Analyst:** SCJ Alliance  
**Date:** 3-Jan-13

**Intersection:** Highway 47 at Elm Street  
**Conditions (yr, alt., etc.):** 2035 Preferred

**GENERAL INPUT PARAMETERS:**

Number of lanes for moving traffic:	
Major approach:	1 lanes
Minor approach:	1 lanes
Peak Hour Approach Volumes*:	
Sum of major approaches:	1330 vph
Highest minor approach:	270 vph
Factor Peak Hour --> 8th Highest Hour	
Major approach:	70% (60-80% acceptable)
Minor approach:	70% (60-80% acceptable)
Factor Peak Hour --> 4th Highest Hour	
Major approach:	85%
Minor approach:	85%
Is the population < 10,000 or speed => 40	YES
Warrant Factor	70%

	INDIVIDUAL REQUIRED		80% COMBINED REQUIRED		ACTUAL VOLUMES		4TH & 8TH HIGHEST HOUR EST.		WARRANT MET ?
	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	MAJOR VOLUME BOTH APP	MINOR VOLUME HIGH APP	
WARRANT 1 - EIGHT-HOUR VEHICULAR VOLUME									YES
A - Minimum Vehicular Volume	350	105	400	120	1330	270	931	189	YES
B - Interruption of Continuous Traffic	525	53	600	60	1330	270	931	189	YES
WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME	XXXXX	60	XXXXX	XXXXX	1330	270	1130.5	230	YES
WARRANT 3 (b)- PEAK HOUR VOLUME	XXXXX	75	XXXXX	XXXXX	1330	270	XXXXX	XXXXX	YES
* SHALL ONLY BE APPLIED IN UNUSUAL CASES									



**Transportation System Plan Text Amendment  
Staff Report and Recommendation**  
Community Development Department, Planning Division

Report Date:	February 8, 2016
Hearing Date:	February 15, 2016
Request:	Amend the Forest Grove Transportation System Plan to incorporate the preferred alignment of the Council Creek Regional Trail
File Number	311-15-000033-PLNG
Property Location:	ODOT Rail Corridor, Oak Street, Hwy. 47
Legal Description:	1S3070000100, 1S306D000700
Owner/Applicants:	Applicant: City of Forest Grove
Comprehensive Plan Map Designations	Not Applicable
Zoning Map Designations	Not Applicable
Review Process	Type IV (Legislative)
Applicable Standards and Criteria	Statewide Land Use Planning Goals Forest Grove Comprehensive Plan Policies Metro Framework Plan Metro Regional Transportation Functional Plan
Reviewing Staff	Daniel Riordan, Senior Planner Jon Holan, Community Development Director
Recommendation	Staff recommends Planning Commission recommend amendments to Chapter 5 and Chapter 6 of the Forest Grove Transportation System to reflect the Council Creek Regional Trail Master Plan published May 2015.
Report Contents	Section I (Background) Page 2 Section II (Project Overview) Page 2 Section III (Proposed Amendments) Page 6 Section IV (Review Criteria and Findings of Fact) Page 11 Section V (Recommendation) Page 13

**I. BACKGROUND**

The purpose of this report is to summarize a proposed amendment to the Forest Grove Transportation System Plan to incorporate the preferred alignment options for the Council Creek Regional Trail (CCRT). The CCRT is the result of a coordinated effort between local, regional and state governments and a local stakeholder advisory committee. The preferred alignment was developed through a robust public involvement process.

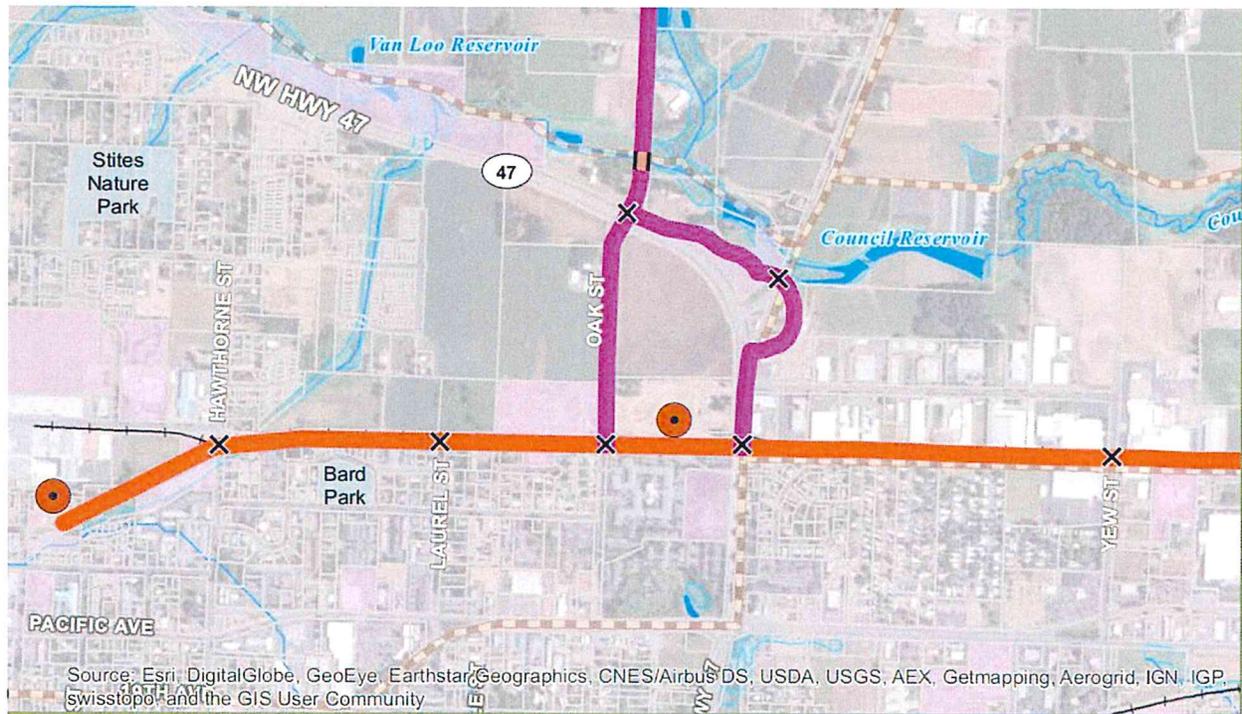
The CCRT will be a multiuse pathway for pedestrians, bicyclists, and other non-motorized travelers for both recreational and transportation purposes. The trail, when completed, will

extend from the Banks-Vernonia Trail to the TriMet Max Blue Line station in downtown Hillsboro. This trail will connect the cities of Banks, Forest Grove, Cornelius and Hillsboro.

Metro has requested that jurisdictions adopt the Council Creek Regional Trail Master Plan. This will be achieved by amending the Transportation System Plan to incorporate the preferred alignment and update specific tables and figures in the TSP. The proposed amendments are summarized in the next section of this report.

## **II. COUNCIL CREEK REGIONAL TRAIL PROJECT OVERVIEW**

Segment 3, shown below, is the portion of the Council Creek Regional Trail that would go through Forest Grove. The preferred alignment uses the Portland and Western Railroad corridor generally south of 24<sup>th</sup> Avenue. Two north/south alignment options exist. One generally follows the Highway 47 right-of-way. The other follows the Oak Street right-of-way. These options are shown below.



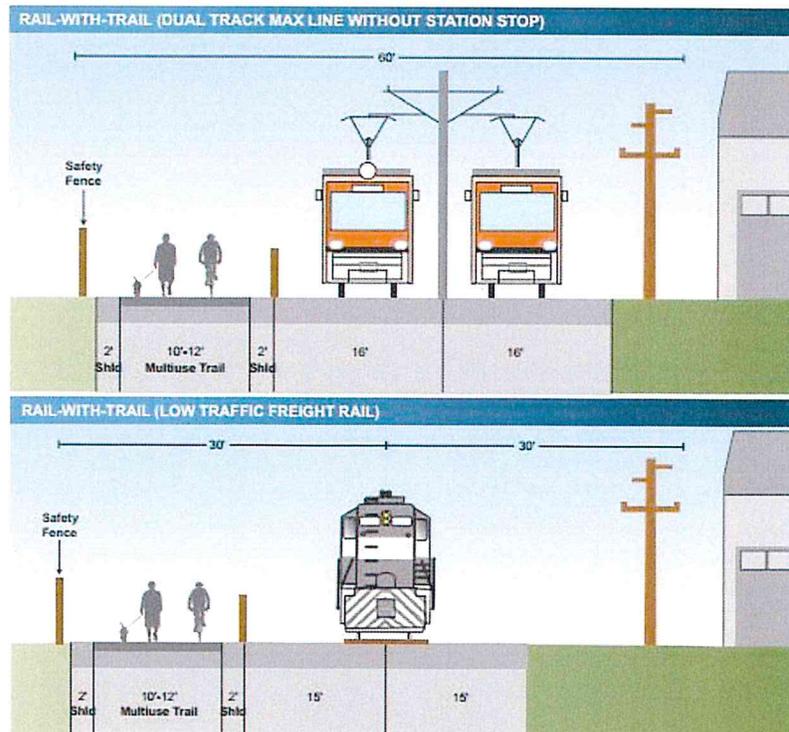
***Council Creek Regional Trail – Segment 3***

The design of the multiuse trail incorporates asphalt with a 10' to 12' improvement. The design is a rail-with trail design that may vary based on type of future rail or transit service. The length of the trail is approximately 1.05 miles to 2.0 miles depending on the north/south option selected. The estimated cost for Segment 3 through Forest Grove is \$4,565,000. The table on the next page shows the cost estimates by trail segment. Segment 3 is the portion of the project in Forest Grove. More information is available in the Master Plan (Attachment A).

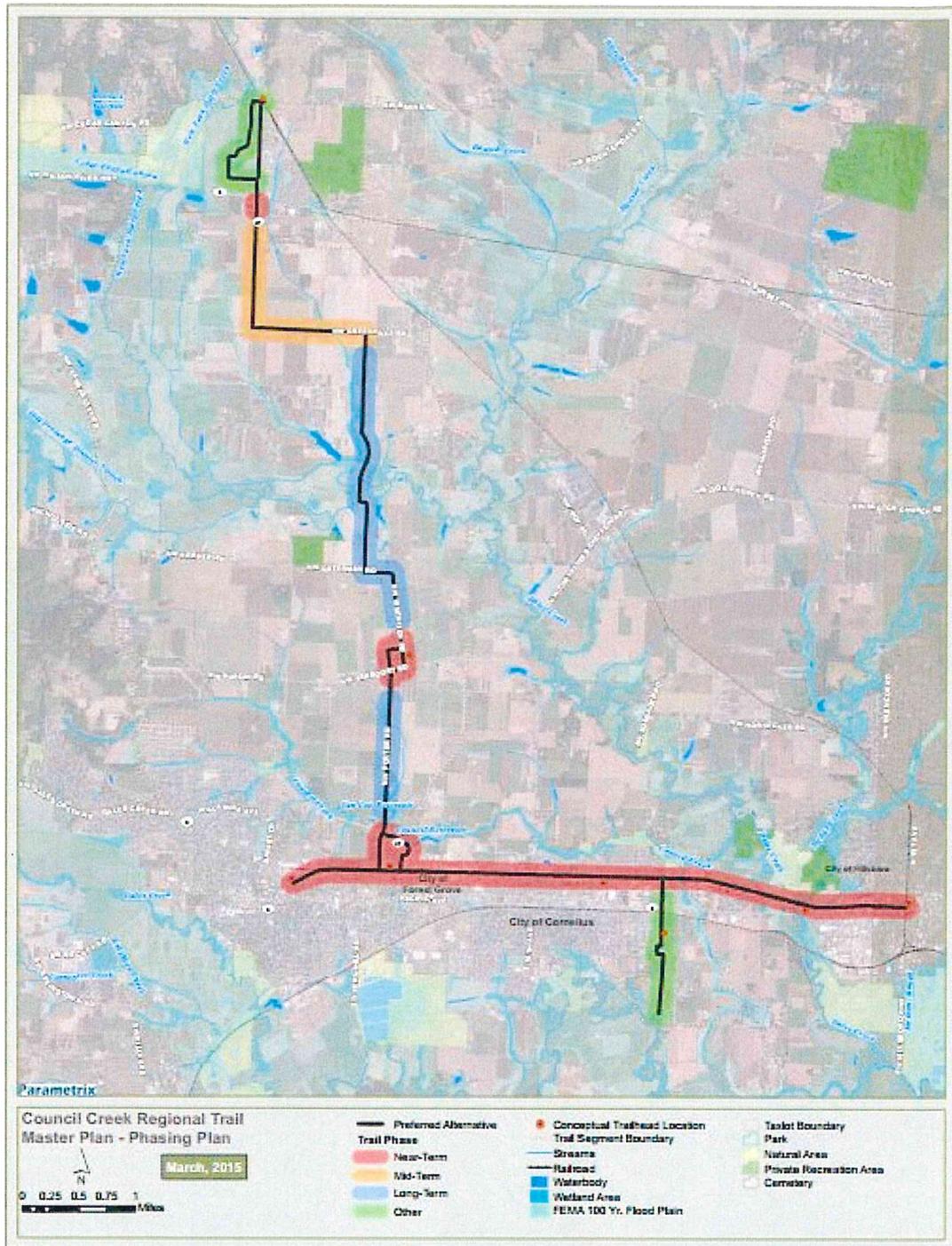
Section	Trail Length (Linear Feet)	Land Acquisition (Linear Feet)	Land Acquisition	Construction <sup>a</sup>	Total
<b>1: BANKS</b>					
WEST	7,629	1,398	\$48,000	\$4,425,200	\$4,473,200
<b>2: WASHINGTON COUNTY NORTH</b>					
EAST 1	39,416	32,171	\$309,000	\$22,367,200	\$22,676,200 <sup>b</sup>
<b>3: FOREST GROVE</b>					
RAIL 1	5,565	N/A	0 <sup>c</sup>	\$4,565,100	\$4,565,100
<b>4: CORNELIUS</b>					
RAIL 1	14,113	N/A	0 <sup>c</sup>	\$9,957,600	\$9,182,600
<b>5: JOBES DITCH</b>					
HOBBS	7,630	3,464	\$120,000	\$2,491,500	\$2,611,500
<b>6: HILLSBORO – WASHINGTON COUNTY EAST</b>					
RAIL 1	8,906	N/A	0 <sup>c</sup>	\$7,646,850	\$7,646,850

- a Includes engineering, permitting, contingencies, plus new trailheads in Segments 2, 3, 4, and 6.
- b Cost for Porter/Oak connection to Segment 4 (OR 47/Martin/Quince connection option is \$400,000 more expensive).
- c Lump-sum trailhead land acquisition cost estimate embedded in overall trailhead cost.

Given the extent and cost of the project the trail will be phased. The map on the following page shows the entire Council Creek Regional Trail including Segment 3 through Forest Grove. Segment 3 is identified as part of the initial phase of trail development. Segment 3 is likely to be staged from west to east identified in the Council Creek Regional Trail Master Plan. The diagram below shows the trail project could be designed with the presence of a dual rail line light rail or low volume freight traffic. In both cases the trail width remains 10' to 12' in width.



**Design Options**



**Council Creek Regional Trail (Hillsboro to Banks)**

In addition to local funds, potential funding sources for the project include Washington County MSTIP (Major Streets Transportation Improvement Program) opportunity funds, Metro Regional Flexible Funds, ODOT Statewide Transportation Improvement Program (STIP) and Connect Oregon.

Agency	Program	Funding Cycle	Local Match Percentage	Range of Funds Available
Washington County	MSTIP 3d - Opportunity Funds	5-year cycle	Undetermined	\$5M total
Metro	Metropolitan Transportation Improvement Program (MTIP) 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 (2015–2018)	Each biennium	20%	\$42M

Potential trail enhancement funding sources include programs administered by Metro, Oregon Parks and Recreation, Oregon Community Foundation, Bikes Belong and Cycle Oregon.

Agency	Program	Funding Cycle	Local Match Percentage	Range of Available Funds
<b>Metro</b>	Restoration and Enhancement Grants	Annual	100%	\$10,000 to \$30,000
	Nature in Neighborhoods Capital Grants	Annual	200%	Minimum of \$50,000
	Natural Areas Bond Acquisition Funds	Varies	Varies	Varies
	Regional Travel Options	Biannual	10%	Minimum of \$50,000
<b>Oregon Parks and Recreation</b>	Local Government Grant	Annual	20% to 50%	\$40,000 to \$1M
	Recreational Trails Grants	Annual	20%	Minimum of \$5,000
	Land and Water Conservation Fund (LWCF)	Annual	50%	Minimum of \$12,500
<b>Oregon Community Foundation</b>	Oregon Historic Trails Fund	Annual	N/A	Up to \$40,000
	Oregon Parks Foundation Fund	Annual	N/A	\$1,500 to \$5,000
<b>Bikes Belong</b>	Bikes Belong Grant	Quarterly	N/A	Up to \$10,000
<b>Cycle Oregon</b>	Cycle Oregon Signature Grant	Annual	N/A	\$50,000 to \$100,000

The Transportation System identifies the Council Creek Regional Trail as a project on the Financially Constrained Project List (Table 1-2 and Table 10-3). The project as listed in the TSP has an estimated total cost of \$5.2 million comprised of \$1.10 million in City funds and \$4.1 million in non-City funds. City funds include system development charge revenue from the county-wide Transportation Development Tax or local Parks SDC revenue for trail improvements. It should be noted the total estimated cost is of \$5.20 million somewhat higher than estimated in CCRT Master Plan of \$4.565 million (see table below). Staff recommends retaining the higher amount until costs are further refined. The project timing identified on the Table is contingent on funding availability and construction opportunities. Since the Council Creek Regional Trail is included on the financially constrained project list no amendment to the list is proposed.

Name	Description	Owner/ Operator	RTP Financially Constrained	Total Cost	Non-City Funds	City Funds	Project Timing
Council Creek Regional Trail	16-mile multi-use trail from Hillsboro to Banks. Multi-use trail from the end of the Westside Max in Hillsboro thru Washington County & Cities of Cornelius, Forest Grove & Banks, connecting to Banks-Vernonia State Trail, with added short trail south to Tualatin River.	TBD	Yes	\$5.20 M	\$4.1 M	\$1.10 M	6-10 Years

### III. PROPOSED AMENDMENTS

The proposed TSP text amendments are summarized below. The amendments affect TSP Chapter 5 (Pedestrian System Plan) and Chapter 6 (Bicycle System Plan)

#### TSP Chapter 5: Pedestrian System Plan

Amend Table 5-1 (Pedestrian System Projects and Programs) to remove the Council Creek Trail Feasibility Study as this has been completed. Text for removal is shown with strikethrough and text to add is shown with double underline.

<u>Project</u>	<u>Segment</u>	<u>Description</u>	<u>Planning- Level Cost Estimate (thousands)</u>
<del>Council Creek Regional Trail Feasibility Study</del> <u>Improvements</u>	<del>N/A</del> <u>Three</u>	<del>Conduct feasibility study evaluating potential alignments for the Council Creek Trail in Forest Grove</del> Construct Council Creek Regional Trail through Forest Grove consistent with the Council Creek Regional Trail Master Plan (May 2015).	<del>\$200</del> <u>\$5,200</u>
Accessway Improvements	Citywide	Conduct citywide inventory of existing neighborhood accessways, and implement improvements (e.g., paving, re-paving, etc.) as needed	\$500
Safe Routes to School improvements	N/A	Inventory bicycle/pedestrian facilities near Forest Grove schools, and identify specific deficiencies that complicate bicyclist and pedestrian travel. Design and construct infrastructure	\$1,000

		improvements, including shared use paths, neighborhood accessways, bike lanes, sidewalks, curb ramps, crosswalks, and other intersection improvements where necessary. Assign higher prioritization to projects along major bike- and walk-to-school routes	
Sidewalk Infill Program	Citywide	Fund an annual Sidewalk Infill Program to complete sidewalk gaps on existing streets	\$50 <sup>4</sup>
ADA Transition Plan	Citywide	Develop an ADA Transition Plan identifying specific projects/strategies for bringing existing sidewalks and other pedestrian facilities into compliance with ADA standards	\$50
Spot Improvement Program	Citywide	Fund an annual Spot Improvement Program to address bicycle/pedestrian system needs	\$50 <sup>4</sup>
Bikeway/Walkway Maintenance Program	Citywide	Develop and implement an annual Maintenance Program to provide regularly-scheduled maintenance activities for the on- and off-street bikeway and walkway system	\$20 <sup>4</sup>
	Total		\$5,155 \$10,355

Add a new Figure 5-4 and Council Creek Regional Trail Preferred Alignment, shown on the next page, to the Pedestrian and Bicycle System Plan Chapters of the TSP.



TSP Chapter 6: Bicycle System Plan

Amend Table 6-2 (Bicycle System Projects and Program) to add the Council Creek Regional Trail:

<b>Project</b>	<b>Segment</b>	<b>Description</b>	<b>Planning Level Cost Estimate (thousands)</b>
Pacific Ave.	B St. to E St.	Re-stripe roadway to provide bike lanes	\$7
Maple St. / Fern Hill Rd.	Hwy. 47 to Taylor Way	Re-stripe roadway to provide bike lanes	\$15
B St. <sup>1</sup>	Gales Cr. bridge to 19 <sup>th</sup> Avenue	Re-stripe roadway to provide bike lanes	\$13
Hawthorne St.	26 <sup>th</sup> Ave. to Pacific Ave.	Re-stripe roadway to provide bike lanes	\$12
Thatcher Rd.	Gales Creek Rd. to David Hill Rd.	Re-stripe roadway to provide bike lanes	\$15
Willamina Ave.	Thatcher Rd. to Sunset Dr.	Re-stripe roadway to provide bike lanes	\$18
Gales Cr. Rd.	Western UGB to Forest Gale Dr.	Construct shoulder bikeway	\$388
Thatcher Rd.	David Hill Rd. to northern UGB	Construct shoulder bikeway	\$582
Fern Hill Rd.	Southern UGB to Taylor Way	Construct shoulder bikeway	\$394
18th Ave./17th Place	B St. to Hwy. 47 Path	Develop Bicycle Boulevard	\$77
Cedar St.	Hwy. 47 Path to 24th Ave.	Develop Bicycle Boulevard	\$65
B St.	19th Ave. to David Hill Road	Develop Bicycle Boulevard	\$70
Willamina Ave./Goff Rd./23rd Ave.	Gales Cr. Rd. to Main St.	Develop Bicycle Boulevard	\$83
Bicycle Wayfinding Signage Plan	N/A	Develop citywide bicycle Wayfinding Signage Plan identifying: appropriate locations for signs, destinations to be highlighted on each sign, and approximate distance and riding time to each destination	\$20
Zoning Ordinance	N/A	Update Zoning Ordinance to establish short-term bicycle	\$10

bicycle parking requirements update		parking requirements for additional individual land uses, and to establish long-term parking requirements	
<u>Council Creek Regional Trail Improvements</u>	<u>Three</u>	<u>Construct Council Creek Regional Trail through Forest Grove consistent with the Council Creek Regional Trail Master Plan (May 2015).</u>	<u>\$5,200</u>
Total			<u>\$1,769,699</u>

#### IV. REVIEW CRITERIA AND FINDINGS OF FACT

The proposed amendment to the TSP to add the preferred CCRT alignment is consistent with the policies contained in the Comprehensive Plan, Statewide Land Use Planning Goals, Metro Urban Regional Framework Plan, and Metro Regional Transportation Functional Plan.

##### Comprehensive Plan Policies

Park Policy 3: Connect neighborhoods, schools, parks, and greenways with a network of multi-purpose trails that are accessible to people with and without disabilities.

Finding: The Council Creek Regional Trail will connect to the existing Parks Trail System contained in the Parks Trail Master Plan. This includes the existing trail along Highway 47. The Council Creek Regional Trail will also connect to the Banks-Vernonia Trail. The Council Creek Regional Trail will be constructed in compliance with Americans with Disabilities Act requirements. Therefore, the trail will be accessible to people with and without disabilities.

Park Policy 4: Continue working with other recreation program and facility providers to increase recreational opportunities to Forest Grove residents through shared resources, partnerships, and joint use agreements.

Finding: As stated in the Council Creek Regional Trail Master Plan, the trail will be developed through a public partnership between multiple cities, Washington County and Metro. As such this project exemplifies a project based on a regional partnership using shared resources. As also stated in the Council Creek Regional Trail Master Plan, this project will meet recreational and general transportation needs. As such the trail will increase recreational opportunities to Forest Grove residents.

Transportation Policy 4.2: Increase the health and well-being of citizens through walking and bicycling.

Finding: As stated above, the Council Creek Regional Trail is intended to be a recreational amenity for Forest Grove and regional residents. Use of this recreational amenity through walking or bicycling will increase the health and well-being of citizens.

Transportation Policy 7.2: Increase the use of walking and bicycling for all travel purposes.

Finding: The Council Creek Regional Trail is intended to be used for recreation and general transportation needs including commuting by walking or bicycling. As such the trail will increase the use of walking and bicycling for all travel purposes (recreational and commuting).

Transportation Policy 7.3: Improve and enhance the livability of Forest Grove residents by decreasing reliance in the automobile and increasing other modes to minimize transportation system impacts on the environment.

Finding: The Council Creek Regional Trail will be designed to support walking and bicycling. As such the trail will decrease reliance on the automobile improving and enhancing the livability of Forest Grove residents.

Transportation Policy 9.1: Coordinate and cooperate with adjacent jurisdictions and other transportation agencies to develop transportation projects that benefit the City of Forest Grove and the region as a whole.

Finding: By its very nature this project requires coordination and cooperation with adjacent jurisdictions and other transportation agencies including the Oregon Department of Transportation as owner of the railroad corridor.

Statewide Land Use Planning Goals

Goal 12: Transportation – To provide and encourage a safe, convenient and economic transportation system.

Finding: The Council Creek Regional Trail enhances the transportation system. The preferred alignment through Forest Grove is generally within public right-of-way or publicly owned land including the ODOT owned Portland and Western railroad corridor.

Metro Regional Framework Plan

Objective 3.1: Travel Choices – Achieve modal targets for increased walking, bicycling, use of transit and shared ride and reduced reliance on the automobile and drive alone trips.

Finding: The Regional Transportation System Plan and Forest Grove Transportation System Plan both contain targets for mode split including walking and bicycling. As a pedestrian and bicycle facility the Council Creek Regional Travel will help the City achieve modal targets for increased walking and bicycling and reduced reliance on the automobile and drive alone trips.

Objective 3.2: Vehicle Miles of Travel – Reduce vehicle miles traveled per capita.

Finding: As stated above the Council Creek Regional Trail will be a pedestrian and bicycle facility for recreational and commuting purposes. As such it will help the City reduce automobile vehicle miles traveled per capita.

Metro Urban Growth Management Functional Plan

Finding: The Metro Urban Growth Management Functional Plan is not applicable to this amendment.

## Regional Transportation Functional Plan

The Regional Transportation Plan establishes an outcomes-based framework that is performance-driven and includes policies, objectives and actions that direct future planning and transportation investment decisions. The Regional Transportation Functional Plan implements the RTP's outcome based approach.

The RTFP requires that City TSPs include a pedestrian plan for an interconnected network of pedestrian routes within the City.

Finding: Chapter 5 of the TSP includes a pedestrian plan including an interconnected network of pedestrian routes within the City. Table 5-1 of the TSP identifies the pedestrian system projects and programs. The Council Creek Regional Trail is included on Table 5-1 which will be updated with this amendment. Figure 5-3 depicts the pedestrian plan. A figure will be added to Chapter 5 to show the preferred Council Creek Regional Trail alignment.

The RTFP requires that City TSPs include a bicycle plan for an interconnected network of bicycle routes within the City.

Finding: Chapter 6 of the TSP includes a bicycle plan including an interconnected network of bicycle routes within the City. Table 6-2 of the TSP identifies the bicycle system projects and programs. This amendment will update Table 6-2 to include the Council Creek Regional Trail as a bicycle route. A figure will be added to Chapter 6 to show the preferred Council Creek Regional Trail alignment.

The RTFP requires that each City shall update its TSP to incorporate regional and state transportation needs identified in 2035 RTP and its own transportation needs.

Finding: This amendment will incorporate a regional and local need into the Forest Grove Transportation System Plan. The need includes an interconnected system of pedestrian and bicycle routes and need to comply with modal split targets for walking and bicycling contained in the TSP. For the Forest Grove Town Center and Pacific Avenue corridor the mode target is 45% to 55% non-single occupant vehicle trips. For the City's employment areas the mode target is 40% to 45% non-single occupant vehicle trips.

## **V. RECOMMENDATION**

Staff recommends Planning Commission recommend amendments to Chapter 5 and Chapter 6 of the Forest Grove Transportation System to reflect the Council Creek Regional Trail Master Plan published May 2015.

## **ATTACHMENTS**

- A. Council Creek Regional Trail Master Plan



# Council Creek Regional Trail Master Plan

*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*  
May 2015

**ATTACHMENT A**

**Citation**

Parametrix. 2015. Council Creek Regional Trail Master Plan

Prepared by Parametrix, Portland, Oregon. March 2015.

Cover photographs courtesy Adelante Mujeres, City of Forest Grove, City of Hillsboro, and Jim Rapp.

Report photographs all courtesy Jim Rapp, Gregg Everhart, or Robert Spurlock.

## Acknowledgments

The following individuals advised on and assisted in development of the Council Creek Region Trail Master Plan.

### Project Management Team

Lake McTighe – Metro  
 Derek Robbins – City of Forest Grove  
 Michele Thom – ODOT  
 Dick Reynolds – City of Cornelius  
 Michael Cerbone – City of Cornelius  
 Mary Ordal – City of Hillsboro  
 Joy Chang – Washington County

### Project Advisory Committee

Jolynn Becker – City of Banks  
 Seth Brumley – ODOT  
 Shelley Oylear – Washington County  
 Tom Gamble – City of Forest Grove  
 Bill Bash – City of Cornelius  
 Robert Spurlock – Metro

### Stakeholder Advisory Committee

Glenn VanBlarcom – Forest Grove citizen  
 Greg Vandervelden – Cornelius Parks Board  
 Howard Sullivan – Chamber of Commerce  
 Peggy Harris – CPO 15  
 Steve Boughton – County Bicycle Transportation Coalition  
 April Olbrich – Tualatin River Watershed Council  
 Bridget Cooke – Adelante Mujeres  
 Jose Eduardo Rivera – Centro Cultural  
 Juana L. Meraz – Centro Cultural  
 Lyle Spiesschaert – Local resident and farmer  
 Tom Beck, Forest Grove Planning Commission

### Parametrix

Jim Rapp – Project Manager  
 Gregg Everhart – Lead Trail Planner  
 Sara Morrissey – Planning  
 Nora Foote – Planning  
 Michael Pyszka – Trail Engineering  
 Dan McIntier – Bridge Engineering  
 Ellen Dorsey – Mapping and GIS  
 Chad Tinsley – Mapping and GIS  
 Sara Granberg – Graphic Design  
 Sandra Powell – Publications  
 Becky Mellinger – Publications

### Others Assistance Provided

Arturo Villaseñor – Adelante Mujeres  
 Kaely Summers – Adelante Mujeres  
 Kathryn Harrington – Metro Councilor, District 4  
 Matt Pihl – Friends of Yamhelas Westsider Trail  
 Michael Alexander – Sargent, Washington County Sheriff's Office  
 Mike Janin – Superintendent of Security Operations, Tualatin Hills Park and Recreation  
 Janie Schutz – Police Chief, City of Forest Grove  
 Beverly J. Maughan – City of Forest Grove  
 Leo Cortes – City of Forest Grove  
 Sheila Lardy – City of Forest Grove  
 Karla Antonini – City of Hillsboro  
 Maria Davila Bores – City of Hillsboro  
 Jeff Owen – TriMet  
 Alan Lehto – TriMet  
 Scott Stocker – Portland General Electric  
 Jim Clark – Bonneville Power Administration  
 Brock Nelson – Union Pacific Railroad  
 Tom Love – Tualatin Valley Irrigation District  
 Joe Rutledge – Tualatin Valley Irrigation District



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Appendices A, B, and C are major documents ranging upward of 100 pages each in length. These appendices can be downloaded from the link below.

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

## Executive Summary

### Trail Purpose

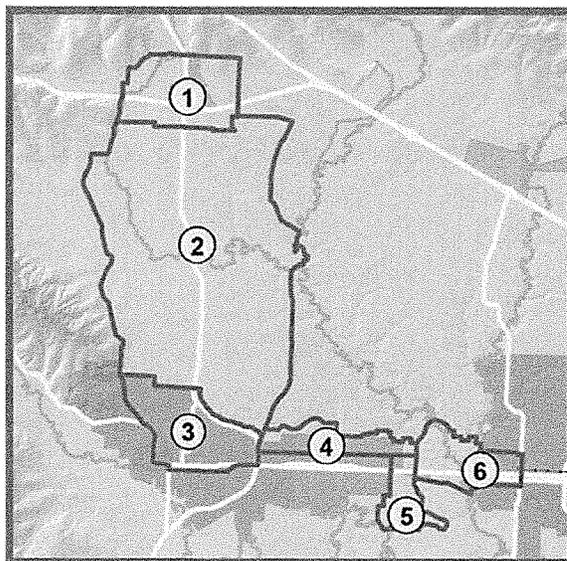
The Council Creek Regional Trail will be a multiuse pathway for pedestrians, bicyclists, and other nonmotorized travelers for both recreational and transportation purposes. The trail will extend almost 15 miles from the Banks-Vernonia Trail in Banks to the TriMet Blue Line MAX station in downtown Hillsboro. The regional trail will connect the cities of Banks, Forest Grove, Cornelius and Hillsboro, a large expanse of productive farmlands between Banks and Forest Grove, and some smaller areas of still unincorporated land within the urban growth boundary (UGB) between Forest Grove and Hillsboro.

This regional trail will pass through rural, suburban, and urban areas—residential neighborhoods, farms, downtowns, commercial, and industrial; cross or follow state highways Oregon 6, Oregon 8, and Oregon 47; and numerous urban and rural roadways; and follow and cross an Oregon Department of Transportation (ODOT) owned rail line. Council Creek will connect to six other existing or planned regional trails and greenways, and to local trail systems.

### Study Area

The Council Creek Regional Trail study area consisted of two corridors—North-South and West-East. Smaller segments within these two corridors were identified for planning purposes. Some segment boundaries were modified as outcomes of the existing conditions and trail alignment analysis phases of the master planning process. Two segments defined earlier in the process were combined, and some trail alignments were initially considered that were outside of the original segment boundaries.

**Trail Planning Segments**



## Master Plan

The Council Creek Regional Trail Master Plan is the culmination of a community vision that stretches back almost a decade. Work on the master plan began over 2 years ago. The master plan will provide implementation guidance as local and regional partners embark on efforts to fund, design and build the trail.

The master plan is the product of a combined effort by local, regional, and state governments, a local stakeholder advisory committee, and the many individuals and groups that contributed their ideas. The active government partners are the Cities of Banks, Forest Grove, Cornelius, and Hillsboro, as well as Washington County, Metro and ODOT. Some or all of these jurisdictions may be responsible for the final design, engineering and building of sections of the trail.

In the course of master plan development, trail sections were adjusted or eliminated; trail alignments were decreased, altered or added; and some underlying assumptions were modified, all to reflect partner, public, and stakeholder comments and recommendations. All illustrated trail alignments and trail types in the master plan are plan level, meaning that they have not been subject to survey, final design, or engineering.

The entire process of the Council Creek Regional Trail Master Plan is documented in three plan reports that are included as appendices to the master plan report:

- Plan Report No. 1 – Existing Conditions (February 2014)
- Plan Report No. 2 – Trail Alignment Analysis (July 2014)
- Plan Report No. 3 – Implementation Strategy (December 2014)

## Public Review

In addition to technical reviews and analysis conducted by the project consultant and supported by the staff of the partner jurisdictions, a series of advisory committee and public reviews were conducted.

October 2013	Project Advisory Committee (PAC) considered and approved project goals and objectives, scope of work and schedule, and public involvement process.
January 2014	PAC considered existing conditions information.
April 2014	Stakeholder Advisory Committee (SAC) reviewed existing conditions information and full range of possible trail alternatives.
June 2014	Public open house review of the full range of possible trail alignments within the study area.
June 2014	SAC reviewed first public open house outcomes and considered recommendations on the trail alternatives to advance to the next phase.
July 2014	PAC considered trail alignment alternatives and recommendations on the alignments to advance to the preferred alternative phase.
August 2014	Open house review of the trail alignment alternatives identified by the PAC for consideration as the preferred alternatives.
November 2014	Open house review of preliminary preferred trail alternatives and costs, development phasing, and implementation actions.
December 2014	PAC and SAC met jointly to review the outcomes of project open houses, and make recommendations for preferred trail alternatives.

## Trail Highlights

**North-South** – The preferred trail alignment for this corridor extends approximately 9 miles from the north side of the City of Banks to the northeast side of the City of Forest Grove. The corridor is primarily rural and in active agricultural use, except for sections in Banks. The preferred alignment passes through Banks, farmland in rural unincorporated Washington County, the unincorporated community of Verboort, and to the edge of Forest Grove. Outside of Banks, the multiuse trail aligns along the edges of existing county roadways, minimizing impacts on farmlands, stream corridors and wetlands. As private land acquisition for the north-south trail will be on a willing seller basis, an interim trail solution relying on shared-use of these county roadways is also included as part of the master plan.

**West-East** – The second trail corridor extends approximately 5.5 miles from downtown Forest Grove to downtown Hillsboro. Sections are in Forest Grove, Cornelius, and Hillsboro, and urban unincorporated Washington County between Cornelius and Hillsboro. A north-south “spur” trail to the Tualatin River is also included. The corridor is primarily urbanized, or planned for residential, commercial and industrial uses. Except for the Tualatin River spur, the entire west-east trail will be located within an existing rail right-of-way. A rail-with-trail solution is proposed, but final design could vary depending on changes in the future use of the corridor for freight or commuter train or other transit service.

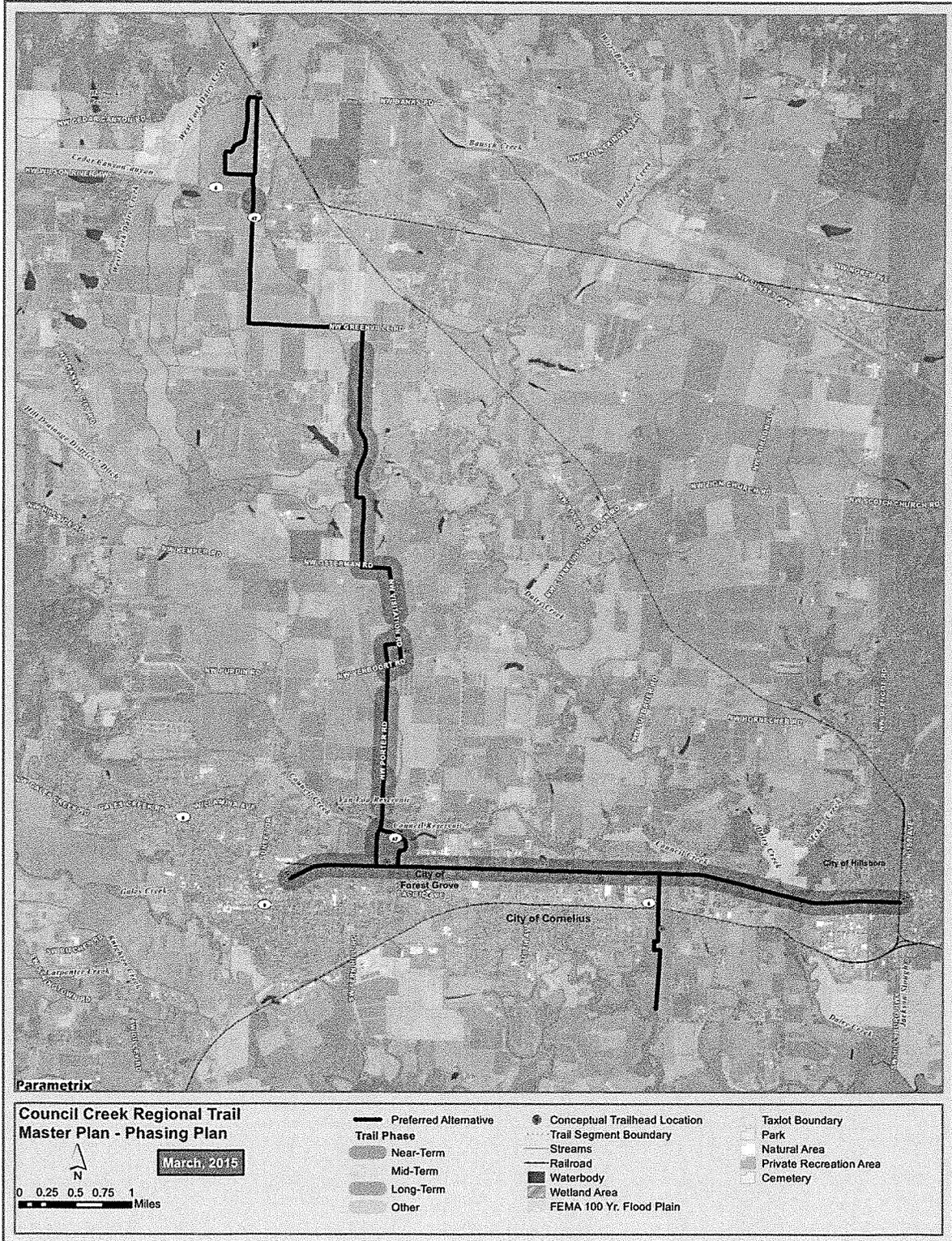
## Plan Implementation – Trail Cost and Phasing

Cost estimates are plan level and subject to change based on survey, design and engineering, actual property acquisition costs, and the timing of trail development.

Banks to Forest Grove (Segments 1 and 2)	\$27,149,400
Forest Grove to Hillsboro (Segments 3, 4 and 6)	\$22,164,550
Tualatin River Spur Trail (Segment 5)	\$2,611,500

Many factors will influence trail construction phasing and time frames. The timing and feasibility of property acquisition and availability of construction funding are primary drivers. Phasing will also be influenced by changing jurisdictional authority and priorities, public and private development, and evolving regional and local plans. The preferred trail alignments in both corridors and suggested phasing at the time of completion of this master plan are illustrated on the map that follows.

## Council Creek Regional Trail Preferred Alignment and Phasing Plan



# 1: Plan Background and Development

## Project Context and Location

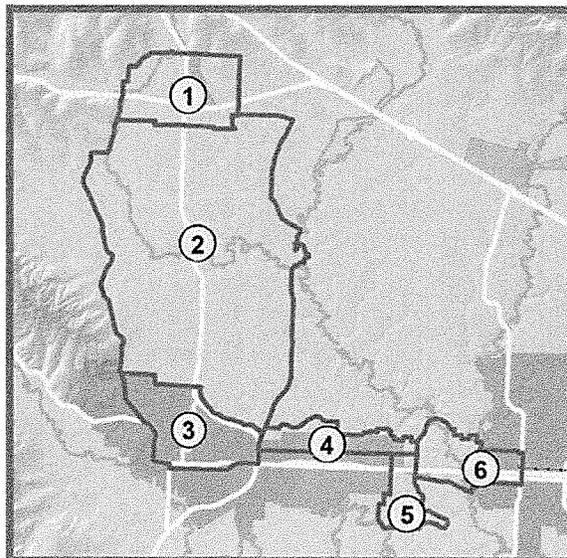
The Council Creek Regional Trail (CCRT) will be a multiuse pathway for pedestrians, bicyclists, and other nonmotorized travelers for both recreational and transportation purposes. The trail will extend almost 15 miles from the Banks-Vernonia Trail in Banks to the TriMet Blue Line MAX station in downtown Hillsboro. The CCRT will connect through rural, suburban, and urban areas—residential neighborhoods, farms, downtowns, commercial, and industrial. The CCRT will cross or follow state highways Oregon 6, Oregon 8, and Oregon 47; and follow and cross a rail line and numerous urban and rural roadways.

The CCRT Master Plan is a partnership of the cities of Banks, Forest Grove, Cornelius, and Hillsboro, Washington County, Metro and the Oregon Department of Transportation (ODOT). Some or all of these jurisdictions may be responsible for the final design, engineering and building of sections of the trail. The CCRT will pass through the four cities, a large expanse of productive farmlands between Banks and Forest Grove, and some smaller areas of still unincorporated land within the urban growth boundary (UGB) between Forest Grove and Hillsboro.

## Trail Planning Corridors and Segments

The CCRT study area consists of two corridors – North-South and West-East. Smaller segments within these two corridors were identified for planning purposes. See Map 1 below. Some segment boundaries were modified as outcomes of the existing conditions and trail alignment analysis phases of this planning process. Two segments defined earlier in the process were combined, and some trail alignments were considered that were outside of the segment boundaries.

**Map 1. Trail Planning Segments**



## North-South Trail Corridor

The preferred alternative for this corridor extends approximately 9 miles from the north side of the City of Banks to the City of Forest Grove. The original corridor was bounded by NW Thatcher Road and NW Kansas City Road on the west, and on the east by NW Martin Road, NW Marsh Road, and NW Roy Road (3 to 4 miles wide). The corridor is primarily rural and in active agricultural use, except for Banks and portions of Forest Grove. The preferred trail alternative will pass through the City of Banks, rural reserves south of Banks in rural unincorporated Washington County, through the unincorporated community of Verboort to Oregon 47, and to the north edge of Forest Grove.

Planning segments within the North-South Corridor are:

- **Segment 1: Banks**
- **Segment 2: Washington County North**

## West-East Trail Corridor

The second trail corridor is less than 3,000 feet wide in some places and extends for approximately 5.5 miles from downtown Forest Grove to downtown Hillsboro. Council Creek is generally the original corridor's northern boundary, and Oregon 8 was generally the southern boundary. Portions of this corridor are in the cities of Forest Grove, Cornelius, and Hillsboro, and in urban unincorporated Washington County between Cornelius and Hillsboro. A north-south "spur" trail to the Tualatin River is also included. The corridor is primarily urbanized, or planned for residential, commercial and industrial uses. There are some high value natural resource lands along stream corridors and two remaining active commercial agricultural areas.

Planning segments within the West-East Corridor are:

- **Segment 3: Forest Grove.** This segment was originally included in the North-South Corridor, but was shifted when the joint PAC/SAC decision was made to extend the trail along the rail corridor into downtown Forest Grove.
- **Segment 4: Cornelius.** The west end of this segment includes areas of incorporated Forest Grove.
- **Segment 5: Jobs Ditch.** North-south in orientation. Accommodates a spur trail to the Tualatin River that would connect to the CCRT main stem trail at the east end of Segment 4.
- **Segment 6: Hillsboro – Washington County East.** This segment includes urban unincorporated lands that were brought within the Cornelius UGB in 2014.

## Master Plan Reports

The CCRT Master Plan was developed in four phases, and each phase is reported in a standalone plan report:

- **Plan Report No. 1 – Existing Conditions (February 2014)** – Described and mapped factors that may impact trail planning and development by each planning segment, as well as by existing conditions, including existing plans, design opportunities and challenges, natural resources, transportation, land uses and structures, and major utility corridors (see CCRT Master Plan Appendix A).

- **Plan Report No. 2 – Trail Alignment Analysis (July 2014)** – Analyzed and mapped a range of trail alignment alternatives and trail types. This report documents public, stakeholder, and advisory committee processes and outcomes through July 2014, including alignment alternatives recommended for further analysis as the preferred alternative (see Appendix B).
- **Plan Report No. 3 – Implementation Strategy (December 2014)** – Analyzed the alignments identified for additional consideration in the preceding phase, and provided trail design typology and conceptual cross sections, cost estimates, assessments of partner jurisdiction authority for trail development and operations, regulatory requirements, and a preliminary phasing plan (see Appendix C). This report also documents public, stakeholder and advisory committee processes and outcomes after July 2014, including preferred trail alternative recommendations made by the Project Advisory Committee (PAC) and Stakeholder Advisory Committee (SAC) meeting jointly in December 2014.
- **Master Plan** – The master plan describes and maps the preferred alternatives recommended in December 2014, and summarizes key existing conditions and implementation strategies developed as part of Plan Report Nos. 1 and 3. Recommended trail alignments, trail types, and roadway and stream crossings shown in the master plan have not been subject to survey, final design, or engineering.

## Goals and Objectives

The CCRT Master Plan *Project Delivery and Quality Control Plan* details overarching master plan project goals, objectives and processes (Appendix D). This document states:

*The Council Creek Regional Trail (CCRT) Master Plan will recommend a comprehensive strategy, including trail alignment alternatives and implementation actions, for the development of an uninterrupted 15-mile-long regional trail corridor from downtown Hillsboro through the cities of Cornelius and Forest Grove and then north across rural unincorporated farming areas in Washington County to the City of Banks. Specific master planning process objectives are to:*

- *Coordinate the inputs and actions of the various project jurisdictional partners, and other stakeholders.*
- *Engage local jurisdictions, property owners, citizens, businesses, and other stakeholders in the CCRT's development.*
- *Collect and summarize baseline information on the existing conditions within the CCRT corridor and in immediately abutting areas.*
- *Analyze specific trail segments within the trail corridor addressing opportunities and constraints with respect to roadway and railway crossings, stream and wetland impacts, urban and rural land uses, and other opportunities and limitations, to best assure trail sections and segments can be constructed to regional trail standards.*
- *Develop implementation and phasing strategies.*
- *Produce draft CCRT Master Plan documents available for jurisdictional, stakeholder, and public review and distribution.*
- *Produce a final CCRT Master Plan to guide local jurisdictions in the planning, design, permitting, and development of the trail.*

## Advisory Committees

The master plan process benefited from the input and guidance of three committees. Committee membership is listed on the Acknowledgments page of this master plan report. Committee roles and responsibilities, and the original project meeting schedule, are included as Appendix E.

### Project Management Team (PMT)

The PMT met regularly over the course of the project to review project schedules, processes and preliminary deliverables; and to address issues raised during project outreach events such as public open houses. The PMT consisted of a staff representative from the Cities of Forest Grove, Cornelius, and Hillsboro, as well as from Washington County, Metro, and ODOT.

### Project Advisory Committee (PAC)

The PAC consisted of PMT members, plus a staff representative from the city of Banks, and one additional official each from Forest Grove, Cornelius, Washington County, and Metro. The PAC met four times in the course of the master plan process.

- **October 2013:** Considered and approved project goals and objectives, scope of work and schedule, as well as public involvement processes.
- **January 2014:** Considered existing conditions information.
- **July 2014:** Considered trail alignment alternatives and recommendations on the alignments to advance to the preferred alternative phase.
- **December 2014:** Joint meeting with the Stakeholder Advisory Committee (SAC) to review the outcomes of project open houses, and make recommendations for preferred trail alternatives.

### Stakeholder Advisory Committee (SAC)

SAC membership was drawn across a wide range of interests including the environmental, bicycling, neighborhood, business and agricultural communities. The SAC met three times in the course of the planning effort.

- **April 2014:** Reviewed existing conditions information and full range of possible trail alternatives.
- **June 2014:** Reviewed first public open house outcomes and considered recommendations on the trail alternatives to advance to the next stage of the planning process.
- **December 2014:** Met jointly with PAC.

## Stakeholder and Community Engagement

The project's Public Involvement Plan (PIP) stated the following goals. The full PIP is included as Appendix F.

- *Ensure effective coordination and communication between jurisdictional partners and stakeholders and related projects taking place within the trail study corridor.*
- *Engage local jurisdictions, utilities, neighborhoods, property owners, citizens, bicycle and pedestrian advocates, area nonprofits, businesses, and other stakeholders directly in master plan development.*

- *Guide jurisdictional partners on future planning, design, permitting, and development of the trail.*
- *Host activities and provide tools that will add value to the project and genuinely engage the community in an open and transparent process.*
- *Keep the public informed with accurate, up-to-date information.*
- *Build trust and a long-term relationship with the community.*
- *Maintain a level of flexibility with the process.*

In the course of the master plan process, the PMT determined that the timing and number of outreach and advisory committee meetings as scheduled in the original PIP should be moved forward to better assure early and effective stakeholder and public input. Accordingly, SAC and PAC meetings, and an open house originally scheduled for presentation of the draft final master plan, were moved to the trail alignment analysis and implementation strategy phases of the project. Washington County, through the support of county staff and approval by the county commission, provided additional funding to hold a third public open house.

### **Hispanic Community Outreach**

The CCRT Public Involvement Plan (see Appendix F) included a section specifically addressing Hispanic community outreach. The cities and rural areas of western Washington County have large Spanish speaking populations. As participation in project open houses proved, the Hispanic community strongly supports improved bicycle and pedestrian options. Local nonprofits Adelante Mujeres and Centro Cultural had representatives on the project's Stakeholder Advisory Committee. Arturo Villaseñor of Adelante Mujeres worked with the Project Management Team to coordinate outreach efforts.

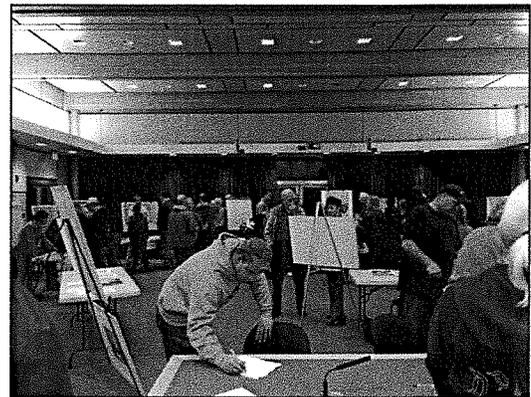
Through the support of Metro staff and the Metro Council (Resolution No. 14-4511), in particular Councilor Kathryn Harrington, additional funding was provided to engage the Hispanic community in this master plan. This funding provided for:

- Production of a written project overview in Spanish distributed through Adelante Mujeres and Centro Cultural, and the City of Forest Grove.
- Translation of public notices, project materials and display posters into Spanish for use at project open houses and for other outreach efforts such as farmers markets.
- Spanish translators provided by Adelante Mujeres and Centro Cultural at project open houses, and an open house resource table staffed with Spanish speakers. In addition, Parametrix, using the services of a native Spanish speaker on staff, recorded and transcribed open house notes in Spanish. The City of Hillsboro also assigned a native Spanish speaker on staff to the open houses.
- Booths at Summer 2014 farmers markets staffed by Spanish speakers and project information and surveys in Spanish and English.

### **Public Open Houses**

The first and third open houses were held at the Forest Grove Community Auditorium. The second open house was held at the City of Cornelius Council Chambers.

- **June 4, 2014:** Reviewed the full range of possible trail alignments within the study corridor. Approximately 60 individuals attended this meeting. Public input on concerns and ideas for trail development was recorded. In addition, 47 project questionnaires were submitted. Open house records are included in Plan Report No. 2.
- **August 27, 2014:** Reviewed the set of trail alignment alternatives identified by the PAC for consideration as the preferred alternatives, and solicited public comments and suggestions for additional alternatives. Approximately 60 individuals attended. In addition, 15 project questionnaires were submitted. Open house records are included in Plan Report No. 3.
- **November 5, 2014:** Reviewed preliminary preferred trail alternatives and costs, development phasing, and implementation actions. Approximately 50 individuals attended. In addition, 15 project questionnaires were submitted. Open house records are included in Plan Report No. 3.



### Stakeholder Interviews

Supplementing the community open houses, members of the project team met formally and informally with individual stakeholders throughout the planning process. Twelve formal interviews were conducted. Records of these interviews are included as appendices in Plan Report Nos. 2 and 3. Metro hosted a project website providing opportunities for interested parties to review all draft and final plan reports, and this master plan report.

## 2: Existing Conditions

Existing conditions within the CCRT study area present a wide range of opportunities and challenges for trail development. These include existing and planned land uses, property ownership and control, natural resources and other physical features, and transportation. For a complete review see Plan Report No. 1 – Existing Conditions (Appendix A). Additional existing conditions information and impacts, particularly with respect to applicable jurisdictional guidelines and regulations, are summarized in Plan Report No. 3.

Key conditions and features that may impact the preferred north-south and west-east trail corridors and preferred trail alignments and types include:

**Table 1. North-South Corridor (EAST 1) Existing Conditions and Features**

Condition or Feature	Impact
Private land ownership	<ul style="list-style-type: none"> <li>• Extensive land acquisition required for multiuse trail alignment</li> </ul>
Multiple jurisdictions	<ul style="list-style-type: none"> <li>• Banks has authority to build trails</li> <li>• County can only build trails in road right of way, preference for trails along street edges makes County participation feasible</li> </ul>
Wetlands/nonwetland waters/floodplain	<ul style="list-style-type: none"> <li>• New or improved crossing structures and bridge over West Fork Dairy Creek and associated wetlands/floodplain</li> <li>• May require special permitting and mitigation</li> <li>• Opportunity for habitat enhancement</li> </ul>
Vegetative cover	<ul style="list-style-type: none"> <li>• Native vegetation highly altered, primary trail impact will be on wetlands and riparian vegetation</li> </ul>
Fish and Wildlife	<ul style="list-style-type: none"> <li>• Limited ESA species reduces trail siting challenges</li> <li>• All structures—boardwalks, bridges, culverts—should be wildlife passage friendly</li> </ul>
Flat topography	<ul style="list-style-type: none"> <li>• No special structures or treatments required to be ADA-compliant</li> </ul>
Highway crossings	<ul style="list-style-type: none"> <li>• Crosses OR 6 by widening existing undercrossing, eliminates need for new crossing</li> </ul>
Lower traffic local roadways	<ul style="list-style-type: none"> <li>• Provides for safer and better quality bicycling and walking experience</li> <li>• Several collector and arterial roadways will be crossed, requiring bike/ped safety improvements</li> <li>• Trails along street edges in County will require right-of-way widening</li> </ul>
Land uses/structures	<ul style="list-style-type: none"> <li>• Passes through community of Verboort</li> <li>• Close to agricultural uses and buildings, making property acquisition more complex and requiring variations in trail type</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>• Transmission power poles along some road sections will constrain trail siting</li> <li>• Irrigation lines along some road sections will limit siting options, particularly where transmission power poles are opposite</li> </ul>

**Table 2. West-East Corridor (RAIL 1) Existing Conditions and Features**

Condition or Feature	Impact
Private land ownership	<ul style="list-style-type: none"> <li>Trail entirely within road or rail right of way except in Segment 5.</li> </ul>
Wetlands/nonwetland waters/floodplain	<ul style="list-style-type: none"> <li>New or improved crossing structures over Jobes Ditch and Dairy Creek, and associated wetlands/floodplain</li> <li>May require special permitting and mitigation</li> <li>Opportunity for habitat enhancement</li> </ul>
Vegetative cover	<ul style="list-style-type: none"> <li>No major native vegetation impacts</li> </ul>
Fish and wildlife	<ul style="list-style-type: none"> <li>Limited ESA species reduces trail siting challenges</li> <li>Boardwalks, bridges, culverts should be wildlife passage friendly</li> </ul>
Flat topography	<ul style="list-style-type: none"> <li>No special structures or treatments required to be ADA-compliant</li> </ul>
Highway crossings	<ul style="list-style-type: none"> <li>Jobes Ditch spur trail (Segment 5) crosses a state highway (OR 8)</li> <li>Crosses OR 47 in Forest Grove. Two conceptual options proposed (see Chapter 6).</li> </ul>
Higher traffic roadways	<ul style="list-style-type: none"> <li>Several collector and arterial roadway will be crossed requiring bike/ped safety improvements</li> </ul>
Rail	<ul style="list-style-type: none"> <li>Sharing MAX or freight rail with trail complicates design solutions (see Chapter 4)</li> </ul>
Land use/structures	<ul style="list-style-type: none"> <li>Direct impacts to land use/structures negligible as trail is primarily within rail right of way</li> <li>Some indirect impacts from increased use of rail corridor; safety and security fencing recommended</li> <li>Commercial/industrial section of rail lessens visual quality of bicycling and walking experience</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>Power lines along north side of rail may impact trail siting (see Chapter 4)</li> </ul>

## Existing Plans

A variety of regional and local government plans and policies will impact CCRT development. These include plans related to conventional transportation, active transportation (including trails), parks and open space, and land use.

The most significant finding regarding the 22 regional and local plans reviewed at the outset of this project is that with one exception (see Local Plans on the next page) all either support the CCRT directly or support trails and active transportation alternatives to motorized travel. Nine other statewide or local guidance and regulatory policy documents were reviewed later in the process. Results are documented in Plan Report No. 3, and are summarized in Chapter 5 of this master plan.

### Regional Plans

Metro is responsible for regional planning on behalf of Washington County and three of the four local government jurisdictions participating in the CCRT planning effort (Banks is not within Metro). Three Metro planning documents support pedestrian and bicycle systems and regional trail development.

- Regional Transportation Plan (2013)
- Regional Active Transportation Plan (2014)

- Regional Trails and Greenways Plan (2014)

### Local Plans

Washington County and the four partner cities have adopted numerous long-range plans addressing land use, trails and bicycle/pedestrian systems, parks and open space, and transportation. All plans reviewed, except for the Forest Grove Rail Concept Study (which nonetheless indirectly supports alternative transportation options), supported pedestrian and bicycle systems and trails and, in many cases, specifically identified the CCRT. See Plan Report No. 1 (Appendix A) for complete information.

## Natural Resources

### Vegetative Cover

Farming and forestry practices, and gradual urbanization in the CCRT study area have greatly altered woodland, valley, and stream corridor vegetation from historic patterns. Because of these losses, remaining native vegetation will present few constraints to trail development, except where associated with wetlands and riparian woodlands. Opportunities for wetland and riparian enhancement and prairie grassland restoration may arise as part of trail development.

There are four major habitats crossed or along the preferred trail alignments:

#### Farmlands

There are extensive and productive farmlands between Banks and Forest Grove (Segments 1 and 2). Segments 5 and 6 between Cornelius and Hillsboro also have remaining areas of farmland.

Farmlands in the valley floor were once prairie grassland habitat with oak savannah and other tree species. Although agricultural practices have greatly altered historic ecosystems, many grassland species, such as pollinators, insects, small mammals, and birds, are still present.

#### Urbanized Lands

Significant portions of Segments 1, 3, 4, and 6 are highly urbanized. Development has greatly reduced intact contiguous areas of native vegetation, and landscaping practices have introduced many nonnative plant species.

#### Valley Woodlands

Nonriparian woodland remnants include small woodlots surrounded by agricultural lands, and wooded residential areas. Many woodland wildlife and bird species will forage into farmlands and nearby suburban areas.

#### Wetlands and Riparian Woodlands

Wetlands and riparian areas crossed by the preferred trail alignments are along West Fork Dairy Creek (Segment 2), the main channel of Council Creek (Segment 3), and Dairy Creek near the confluence with McKay Creek (Segment 6). There are also numerous minor stream and drainage corridors, but many of these have been highly altered by channelization, draining, and/or the removal of riparian vegetation.

Wetlands and riparian habitats support pollinators and insects, smaller and larger mammals, and a variety of water-dependent reptiles and amphibians. Bird species that favor wetter environments are also common. Bridges and boardwalks, and careful trail siting along habitat edges or through previously disturbed areas, are recommended to avoid impacts. Trail development should be an opportunity to restore and improve these habitats.

### **Streams and Water Bodies**

Streams crossed by the preferred trail alignments include the West Fork of Dairy Creek (Segment 2), Council Creek (Segment 3), and Dairy Creek near the confluence with McKay Creek (Segment 6).

Trail crossings of streams should be avoided if at all possible, and bridges and boardwalks, rather than culverts, should be used if a crossing is necessary. The design of crossing structures should take into careful consideration the preservation of stream and riparian habitat and passage for fish and wildlife. Bridges and boardwalks, and careful trail siting along habitat edges or through previously disturbed areas are recommended to avoid impacts. Trail development should be an opportunity to restore and improve these habitats.

### **Floodplains**

East of Oregon 47, the West Fork Dairy Creek floodplain begins to narrow from the broad floodplain west of the highway (Segment 2). The Council Creek floodplain in Segment 3 is considerably more proscribed than that of West Fork Dairy Creek. Within Segment 6, the 100-year floodplain created by the confluence of Council, Dairy, and McKay Creeks significantly broadens.

Trails across floodplains should be avoided if possible, but trail alignments and treatments can be more flexible and adaptive than in wetland or riparian areas. Siting of trails outside of 10-year and 50-year floodplains and along edges of the 100-year floodplain will reduce the possibility of inundation. Trail structures in floodplain areas should be constructed to withstand intermittent flooding, and elevated structures such as boardwalks should be considered to avoid impeding floodwaters.

### **Fish and Wildlife**

Although there are some federal Endangered Species Act (ESA)- and state-listed fish and wildlife species present within the CCRT study area, preferred trail alignments avoid most areas of high fish and wildlife value—stream corridors and associated riparian zones and wetlands. High value areas impacted by the preferred alignments are limited to improving two existing crossings of West Fork Dairy Creek (Segment 2) along NW Evers Road, improving or replacing the existing NW Porter Road bridge across Council Creek (Segment 3), and reuse or replacement of an existing railroad bridge across Dairy Creek (Segment 6).

Roadways and rail lines, and the lack of suitable connecting habitat due to urbanization and farming, are the primary barriers to wildlife movements across and along the preferred trail alignments. Higher traffic volume and wider streets in particular pose difficulties to wildlife passage, as can active rail lines. Future trail builders should consult Metro's Westside Trail Master Plan (2014) Chapter 6, Wildlife Corridors, for principles of habitat restoration and conservation and wildlife friendly passage treatments developed within the context of the Tualatin Valley.

### **Environmental Overlay Zones/Mitigation Areas**

Some CCRT municipal partners have established land use regulations defining environmental or natural resource overlay zones. Only the City of Hillsboro's overlay around Dairy Creek (Segment 6) may be impacted by a preferred trail alignment, but the location of this section of trail within an established rail corridor will greatly limit or eliminate potential conflicts. No designated environmental mitigation sites are crossed by a preferred trail alignment.

### **Steep and Unstable Slopes**

The preferred trail alignments are mostly along flat valley bottomland. Topography should not be a significant challenge to trail siting. The West Fork Dairy Creek (Segment 2), Council Creek (Segment 3), and Dairy Creek (Segment 6) have steeper slopes along stream banks. Slope impacts will be mitigated by using boardwalks and bridges for trail crossings.

The Oregon Department of Geology and Mineral Industries (DOGAMI) documents unstable slope conditions. According to the DOGAMI records, there are no unstable slopes along the preferred alignments.

### **Hazardous Materials**

The preferred trail alignments do not cross or abut any hazardous materials sites documented by the Oregon Department of Environmental Quality (DEQ).

### **Soils and Geology**

Except for soils associated with streams and wetlands, none of the soils along the preferred trail alignments pose significant constraints to trail development.

## **Transportation**

### **Rail**

The rail line extending from near the Pacific University campus in Forest Grove to the vicinity of the MAX station in downtown Hillsboro presently supports limited freight rail service. This line is a possibility for a future MAX light rail extension or some other form of high capacity transit.

This rail line corridor is the preferred west-east CCRT alignment.

### **Roadways**

The preferred CCRT alignment will require several new arterial and collector roadway intersection or midblock crossing improvements. See Chapter 4.

### **Regional Trails and Bikeways**

The CCRT preferred trail alignments will connect to, cross, or parallel the following existing or planned regional trails, bikeways, and greenways.

**Table 3. Regional Trails**

Segment 1	Banks-Vernonia Trail, Path to the Pacific Trail
Segments 1, 2, and 3	Tualatin Valley Scenic Bikeway
Segment 3	Gales Creek Trail*
South of Segment 3	Yamhelas Westsider Trail*
Segment 5	Tualatin River Greenway
Segment 6	Dairy Creek Greenway

\*Connects via local trails that are or will be part of Forest Grove’s “Emerald Necklace” trails vision.

**Transit**

TriMet provides transit and bus services within Segments 3, 4, and 6. The eastern terminus of the CCRT will be in downtown Hillsboro in the vicinity of the MAX Blue Line light rail station near N First Avenue (Segment 6). A possible extension of light rail or high capacity transit from Hillsboro to downtown Forest Grove could use the freight rail line that crosses Segments 3, 4, and 6.

**Land Uses and Structures**

The preferred CCRT trail alignments will connect to major destinations or activity generators such as schools, outdoor recreation areas, and civic and commercial centers. Existing land uses and structures can also significantly reduce the options for trail siting. A range of land uses and structures are documented in Plan Report Nos. 1 and 2.

Lands between Segment 1 and Segment 3 in unincorporated Washington County are primarily designated Rural Reserves under Metro authority and zoned Exclusive Farm Use under County code. Specific land use standards in the County’s Rural/Natural Resources Plan and Community Development Code may apply to trail development.

**Historic and Archaeological Resources**

Oregon State Parks and Recreation (OPRD) manages a historic and archaeological preservation inventory program which identified the following resources near the preferred trail alignment.

**Table 4. Historic Resources**

Segment 1	Fifteen historic sites or within the city limits of Banks.
Segment 2	There are over a dozen historic sites and buildings in Segment 2 in or near to the community of Verboort.
Segments 3, 4, and 6	Only one designated historic or archaeological resource (Hillsboro Pioneer Cemetery), although the rail line itself is historically significant given its original function as an early 20th Century electric rail commuter service connecting Forest Grove to Portland.

Conflicts between documented historic resources and the preferred CCRT alignments should not be a factor. Historic sites and buildings are destinations for pedestrians and bicyclists, particularly where there are larger concentrations of such sites, as is the case around the community of Verboort (Segment 2).

## Utility Corridors

### Electrical Transmission Corridors

Electrical transmission structures can challenge trail routing. Pole or tower relocation can be very expensive (up to approximately \$100,000 per pole set, plus permitting). With transmission-level infrastructure, relocations often involve multiple poles or towers. Utility requirements for maintenance access and vegetation management around and under power transmission infrastructure (wires, poles and towers) can also limit trail options. See Plan Report No. 3 (Appendix C) for more details.

**Bonneville Power Administration (BPA):** A BPA transmission-scale power line system enters and crosses the larger CCRT study area, but has no direct impact on preferred trail alignments. A BPA power substation near Oak Street (Segment 3) is near the intersection of the north-south and west-east preferred trail alignments, and power lines may pass over short sections of the trail in this location.

**Portland General Electric (PGE):** A PGE transmission line follows the east edge of Oregon 47 from Banks to NW Kemper Road through Segments 1 and 2. This transmission line then follows local roadways through the community of Verboort. The location of PGE transmission poles may constrain opportunities to site the preferred street-adjacent multiuse trail in these areas.

A PGE transmission line also follows the north side of the preferred CCRT rail corridor alignment through Segments 4 and 6. The location of these power poles may challenge trail-with-rail solutions.

### Agricultural Irrigation

**Tualatin Valley Irrigation District (TVID):** Routes over or along major agriculture irrigation lines operated by TVID are possibilities for street-adjacent multiuse trail siting along the preferred alignment in Segment 2. These TVID lines parallel nearly the entire preferred alignment through these segments, except for the trail section along Oregon 47 south of Banks.

Trail use is limited by TVID and Bureau of Reclamation policy and would require special agreements with these agencies and with the underlying private property owners. PGE

transmission lines on the opposite side from TVID lines along NW Visitation Road and a portion off NW Osterman Road further complicates CCRT siting.

**Sewer and Water**

No preferred trail alignments conflict with major sanitary sewer and drinking water lines or structures.

**Natural Gas and Petroleum Pipelines**

No preferred trail alignments conflict with major natural gas or petroleum pipelines.

### 3: Preferred Trail Alignments

#### Overview

Plan Report No. 1 – Existing Conditions (Appendix A) provides the essential background and context to the technical analysis reported in Plan Report No. 2 – Trail Alignment Analysis (Appendix B). This analysis established the set of trail alternatives advanced to consideration as preferred alternatives. Plan Report No. 3 – Implementation Strategy (Appendix C) documents the considerations and processes that resulted in preferred alternative recommendations by the SAC and PAC.

All illustrated trail alignment alternatives and trail types are conceptual and plan-level and have not been subject to survey, final design, or engineering.

#### Master Plan Evolution

CCRT alignments and trail types evolved significantly as an outcome of technical analysis, public input, and advisory committee review. Comparative trail alternative criteria were developed and approved by the PAC. These criteria were applied to the range of alternatives published as part of Plan Report No. 3 (see Chapter 8). The selection of preferred alternatives in December 2014 also reflected stakeholder and public input, including identification of an interim shared-use on-street solution through the North-South Corridor (Segments 1 and 2).

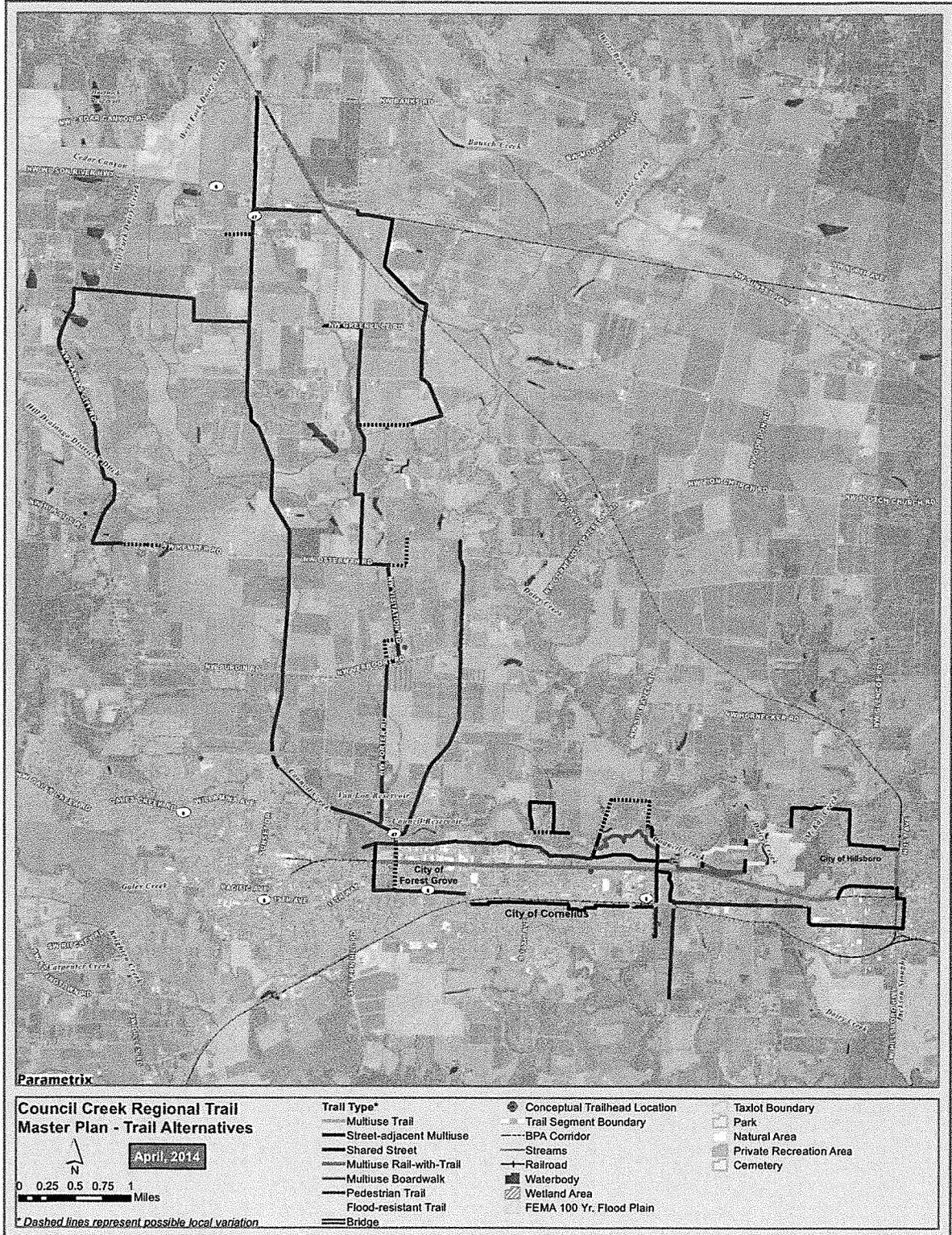
Key changes and decisions with respect to trail alignments and types over the course of the project are summarized in Table 5 below, and illustrated on the three maps that follow (Maps 2, 3, and 4) showing the alternatives under consideration in April, July and October 2014. Capitalized names below (WEST, RAIL, CREEK, etc.) are those applied to various alignment alternatives. See Plan Report Nos. 2 and 3 for details and complete mapping. Map 5 shows the preferred alternatives selected by the SAC and PAC in December 2014. The preferred alternatives are described and mapped in more detail in the balance of Chapter 3 of this master plan report.

**Table 5. Changes to Trail Alignments and Types (April 2014 to November 2014)**

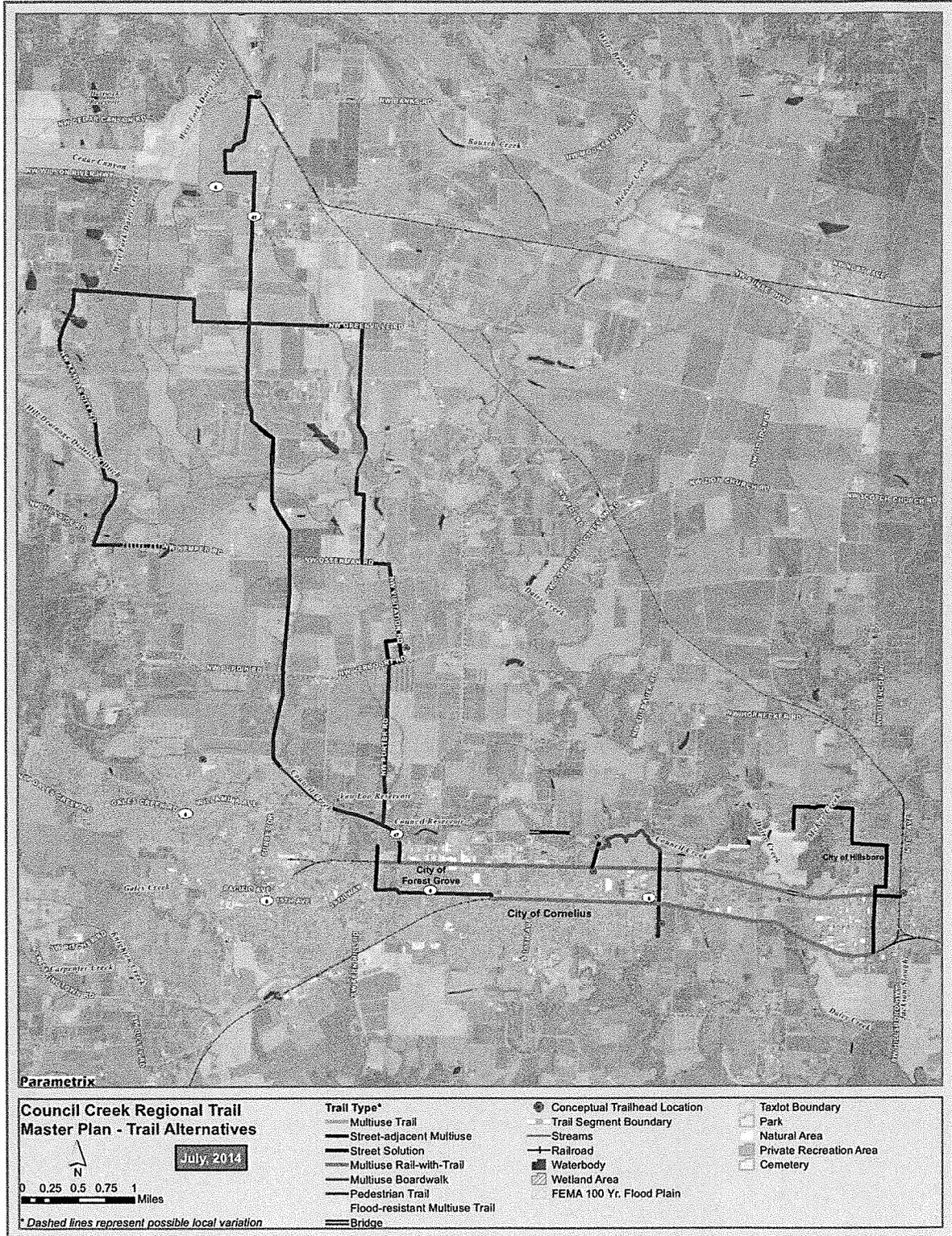
<b>Segment 1: Banks</b>
Original WEST option dropped to avoid extended crossings of farmland and a new crossing of OR 6.
Original CENTER option dropped at request of City to avoid undue impacts on Main St (OR 47) through downtown Banks. In late 2015, new City trail system plan may recommend use of Main St.
Added new combined WEST/CENTER option that used planned City collector road alignment and existing OR 6 undercrossing.
<b>Segment 2: Washington County North</b>
WEST and EAST connector routes to OR 47 shifted from local roads to collector (NW Greenville Rd) to align with Tualatin Valley Scenic Bikeway, and to eliminate farmland crossings.
All trail alignments involving crossings of farmland dropped, except for BPA corridor (WEST).
Only trail alignments along street edge of farmlands used, except BPA WEST.
Use of NW Thatcher Rd (WEST) dropped – too many farm impacts.

On-street solution used through Verboort community rather than separate trails, including for last 500 feet on NW Visitation Rd before NW Heesacker Rd.
Shared-use on-street option retained as interim alternative for all of EAST 1, except OR 47 approaching Banks.
On-street option retained as interim alternative for all of EAST 1.
On-street option recommended as permanent solution for first 500 feet at north end of NW Porter Rd to avoid impacts on farm improvements.
<b>Segment 3: Forest Grove</b>
West-East trail route along rail corridor extended into downtown Forest Grove.
<b>Segment 4: Cornelius</b>
Use of future N Holladay St roadway extension between OR 47 and N 10th Ave identified as possible route alternative to the along-the-creek CREEK option.
CREEK between N 10th Ave and N 19th Ave realigned to use street ROW and willing seller property only.
All trail alignment options north of Council Creek between N 19th Ave and NW Hobbs Rd dropped.
Use of north side of RAIL 1 further analyzed with ODOT, TriMet, and PGE input (south side remains the more technically feasible and cost effective option).
RAIL 2 option added at suggestion of urban unincorporated property owners (subsequently dropped based on Union Pacific Rail policy).
<b>Segment 5: Jobes Ditch</b>
Option along NW 334th Ave impacting rural reserve farm properties dropped, recommended option (N 29th Ave extension) exclusively in UGB.
<b>Segment 6: Hillsboro/Washington County East</b>
CREEK modified to use on-street option rather than separate trail along portion of golf course.
Use of north side of RAIL 1 further analyzed with ODOT, TriMet, and PGE input (south side remains the more technically feasible and cost-effective option).
New connector option between CREEK and RAIL 1 added to allow combination of two options.
RAIL 2 option added at suggestion of urban unincorporated property owners (subsequently dropped based on UPRR policy).

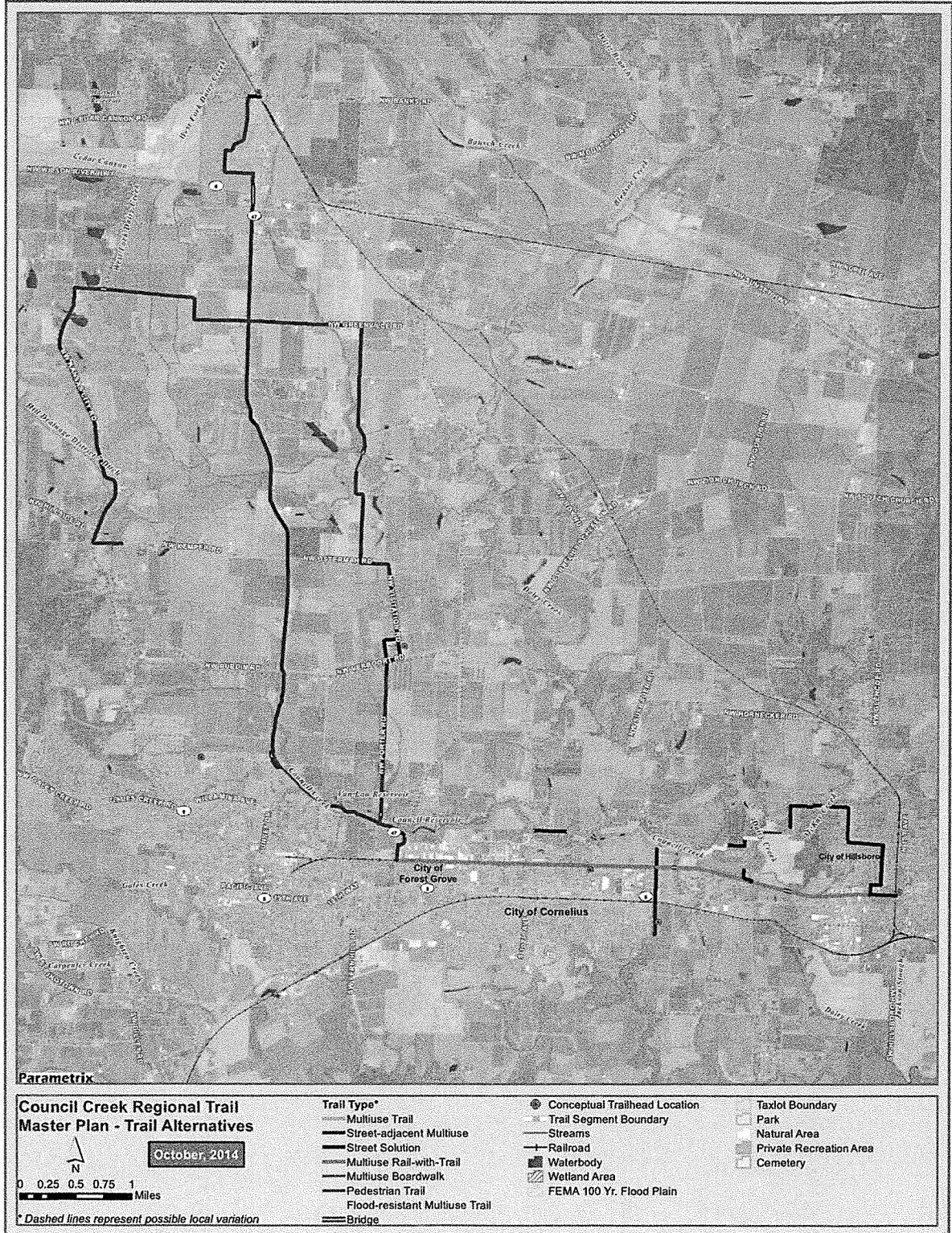
Map 2. Trail Alignment Alternatives – April 2014



Map 3. Trail Alignment Alternatives – July 2014



Map 4. Trail Alignments Alternatives – October 2014

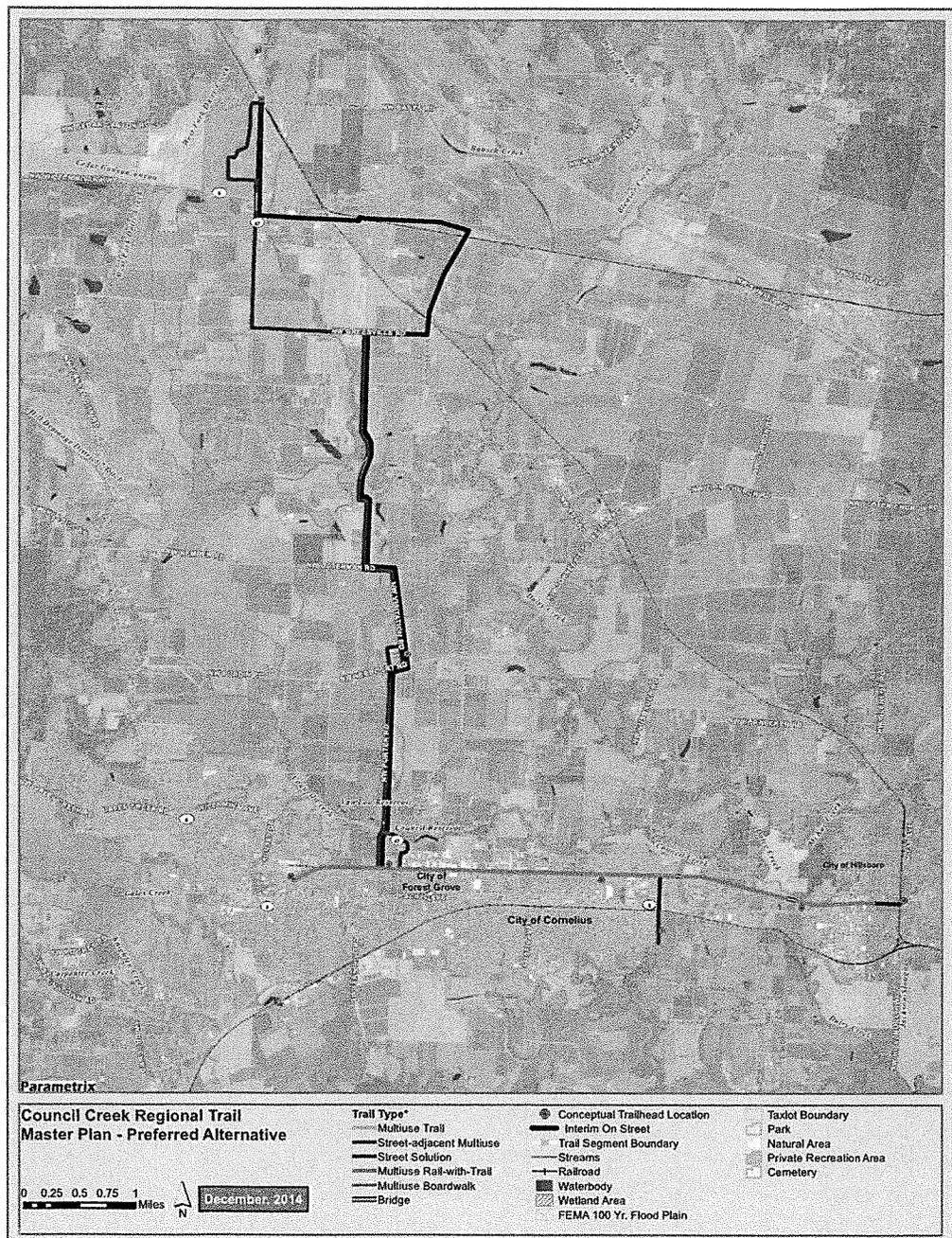


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## Preferred Trail Alternatives

Overall and north-south and west-east corridor maps follow illustrating the preferred alignments and trail type alternatives as recommended by the PAC and SAC in December 2014. The preferred alternatives for each trail planning segment are also mapped and key information listed (jurisdiction, trail types, trail design, trail length, estimated costs, and phasing). Conceptual trail type cross sections in each segment are also illustrated. Details of the interim on-street solution shown on Map 5 below can be found in Chapter 6.

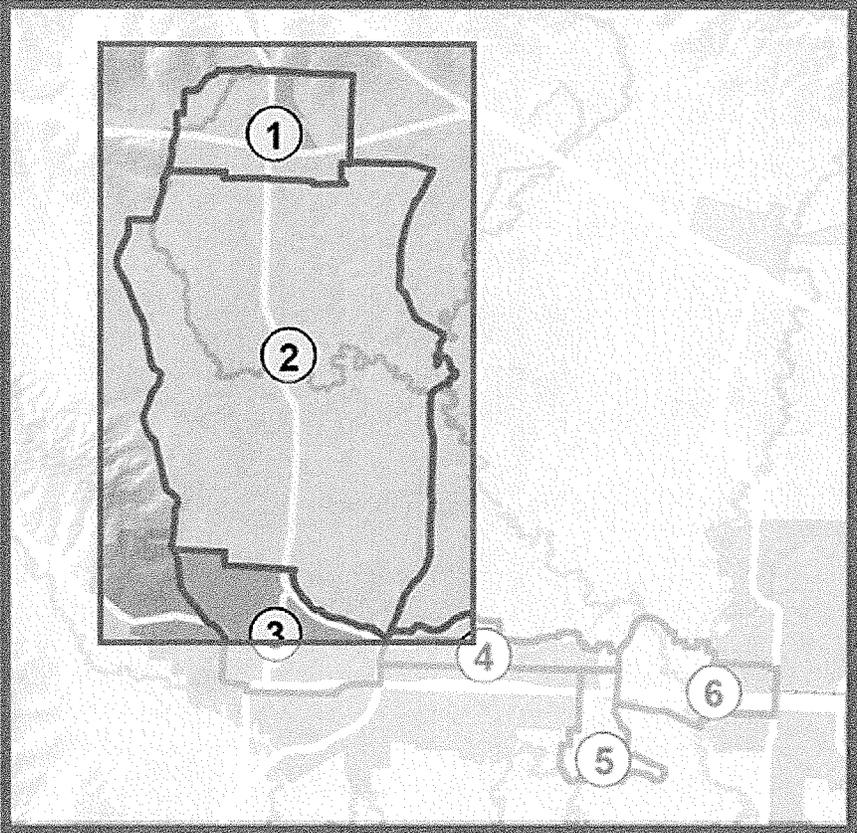
**Map 5. Preferred Trail Alternative - December 2014**



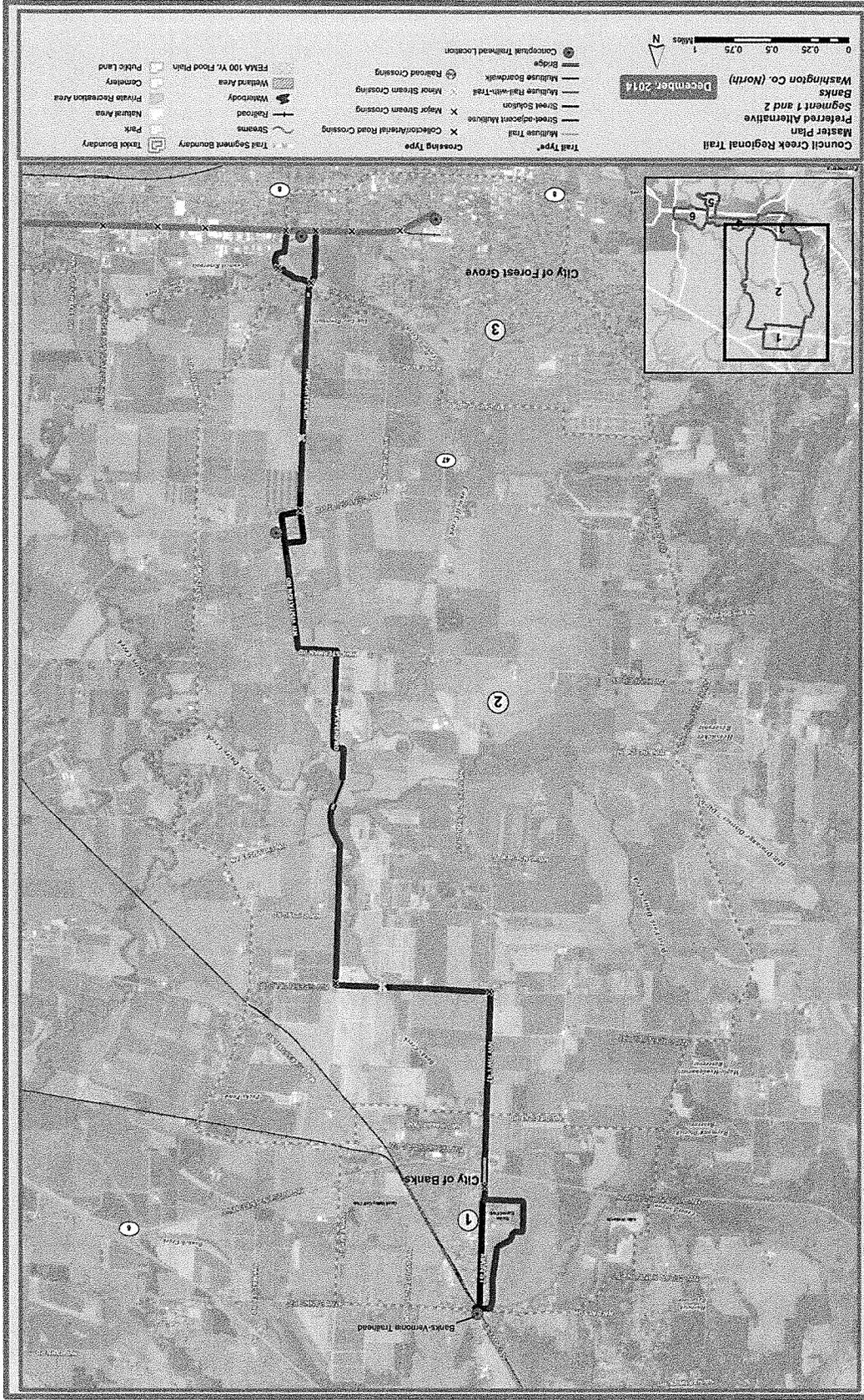
# Preferred Trail Alternatives

Segment 1: Banks

Segment 2: Washington County North



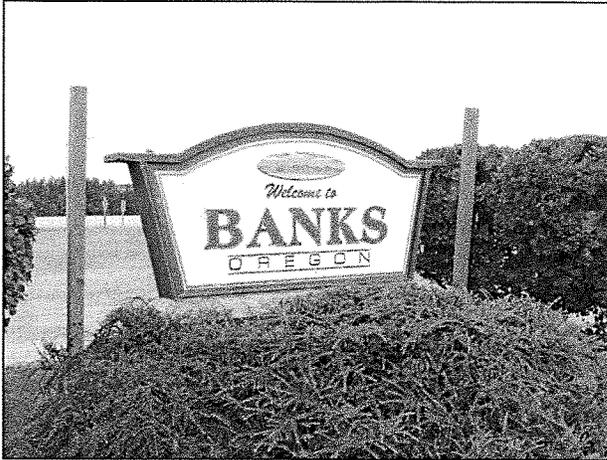
Map 6. Segments 1 and 2 | North-South Corridor



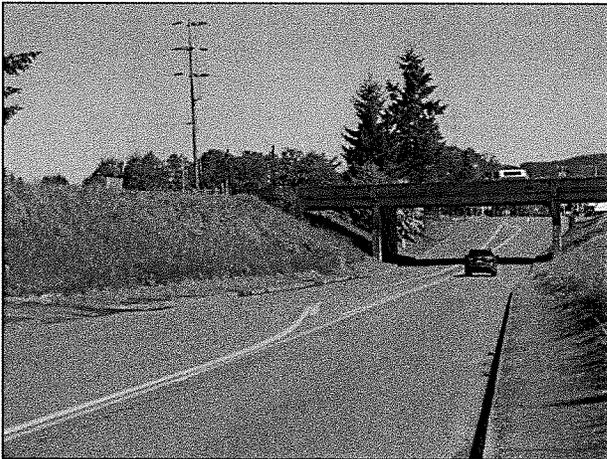
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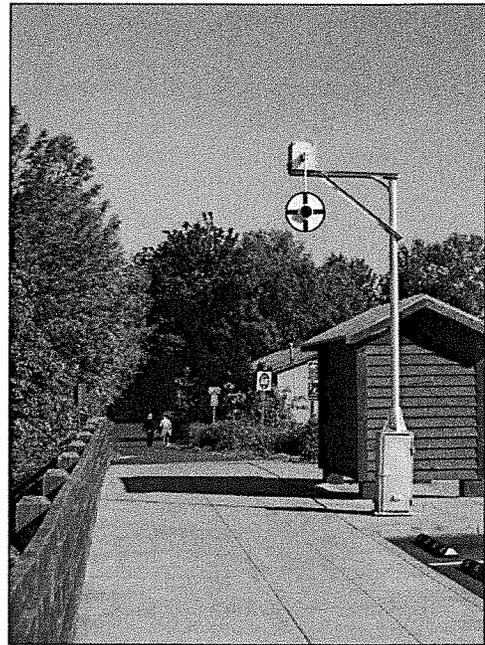
## Segment 1: Banks



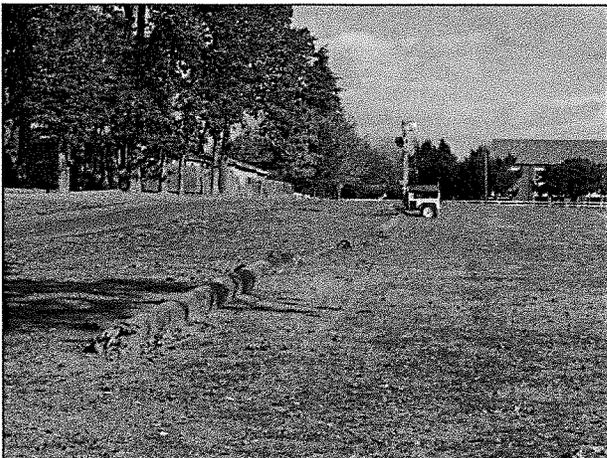
*City of Banks Welcome Sign*



*Oregon 6/Oregon 47  
undercrossing looking south*



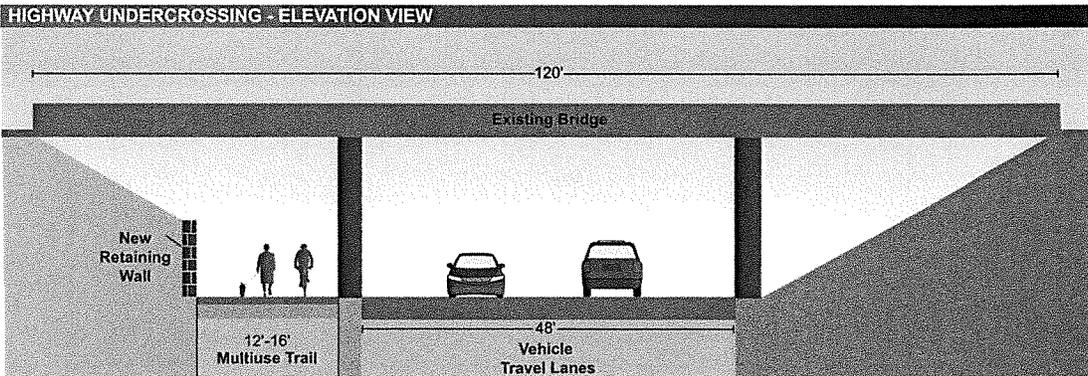
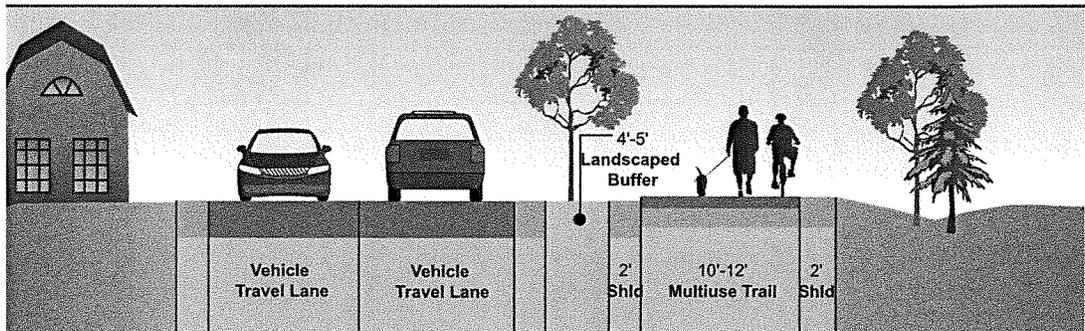
*Banks-Vernonia Trailhead*



*Proposed Westside Circulator  
Roadway route*

### Segment 1: Banks

<b>Jurisdiction</b>	City of Banks		
<b>Trail Types</b>	<ul style="list-style-type: none"> <li>• Urban street-adjacent multiuse on west side of downtown</li> <li>• Urban street-adjacent multiuse without buffer approaching and through OR 6 undercrossing, extensive retaining walls</li> <li>• Rural street-adjacent multiuse south of OR 6</li> </ul>		
<b>Design</b>	<ul style="list-style-type: none"> <li>• Asphalt, 10'-12' wide, gravel shoulders</li> <li>• Undercrossing: 14'-16' wide, concrete surface</li> </ul>		
<b>Length</b>	1.44 mile	<b>Cost Estimate</b>	\$4,473,200
<b>Phasing</b>	<ul style="list-style-type: none"> <li>• OR 6 undercrossing/approach trails: NEAR-TERM</li> <li>• Along OR 47, south of OR 6: MID-TERM</li> <li>• West side of downtown: As new roadway is developed</li> </ul>		
<b>Notes</b>	Undercrossing/approach trails on west side of Main St/OR 47; uses existing Banks-Vernonia Trailhead; trail on west side of downtown requires planned new collector roadway; City trail system plan scheduled for late 2015 adoption may recommend Main St rather than new collector for CCRT route; land acquisition required.		



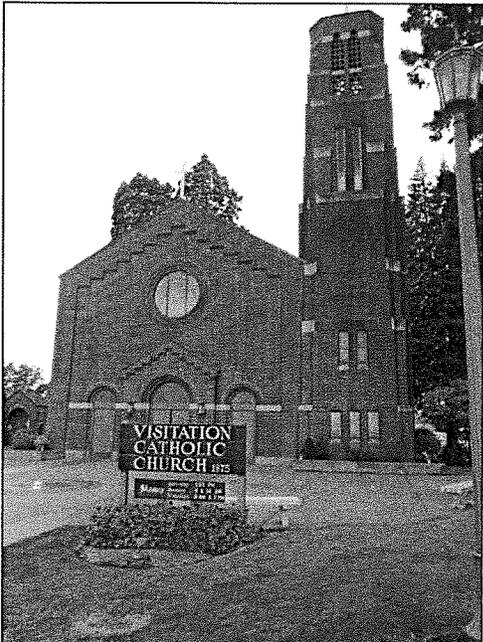
Note: Trail surface under bridge may be concrete and/or widened.



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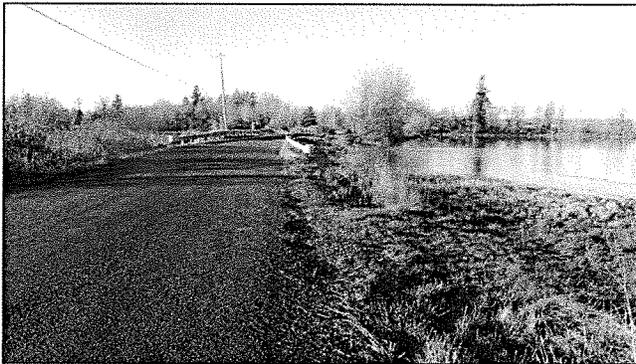
### Segment 2: Washington County North



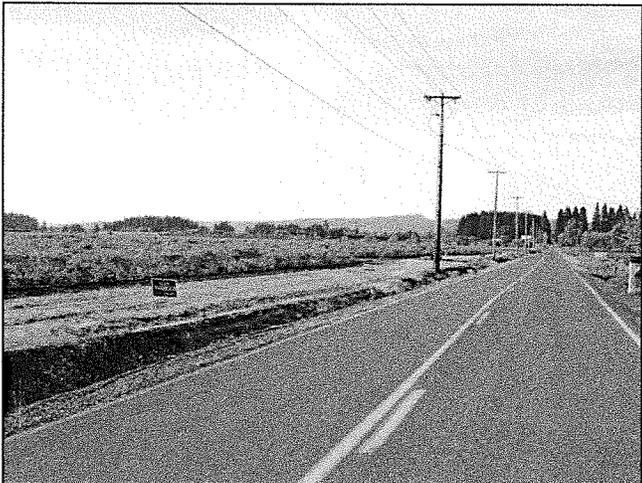
*Visitation Church in Verboort*



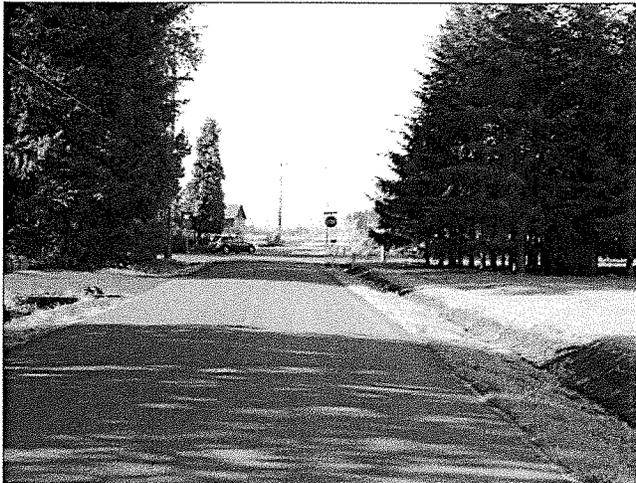
*NW Evers Road*



*NW Evers Road crossing of West Dairy Creek*



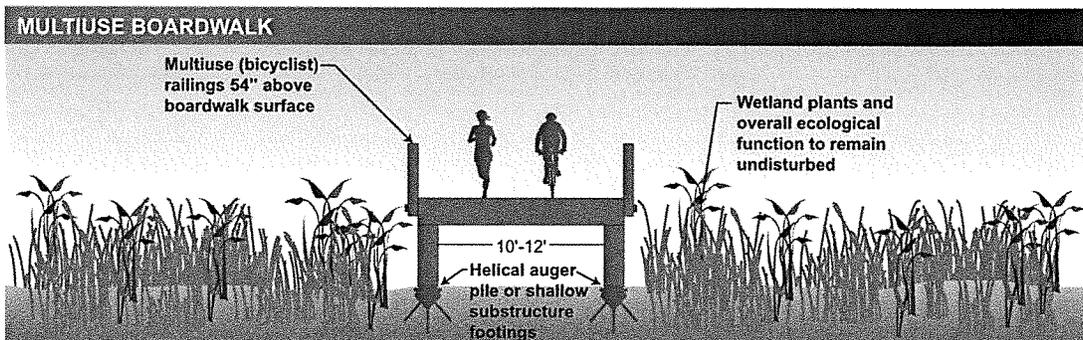
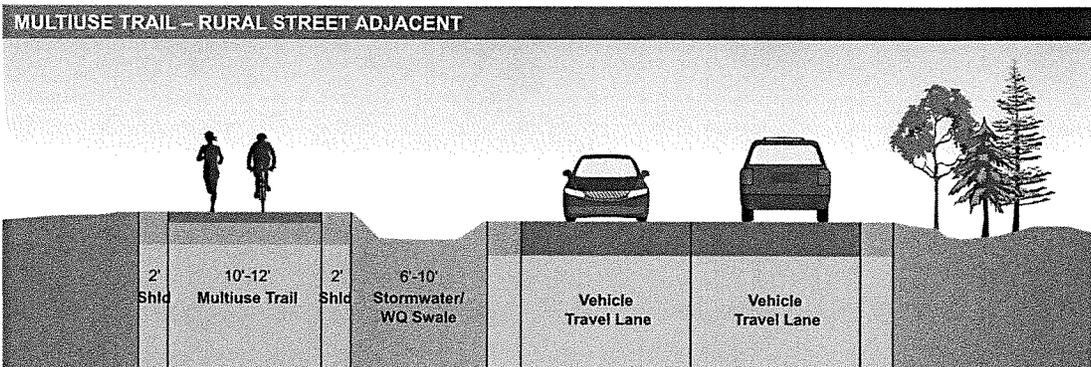
*Porter Road showing TVID setback*



*NW Heesacker Road nearing Verboort*

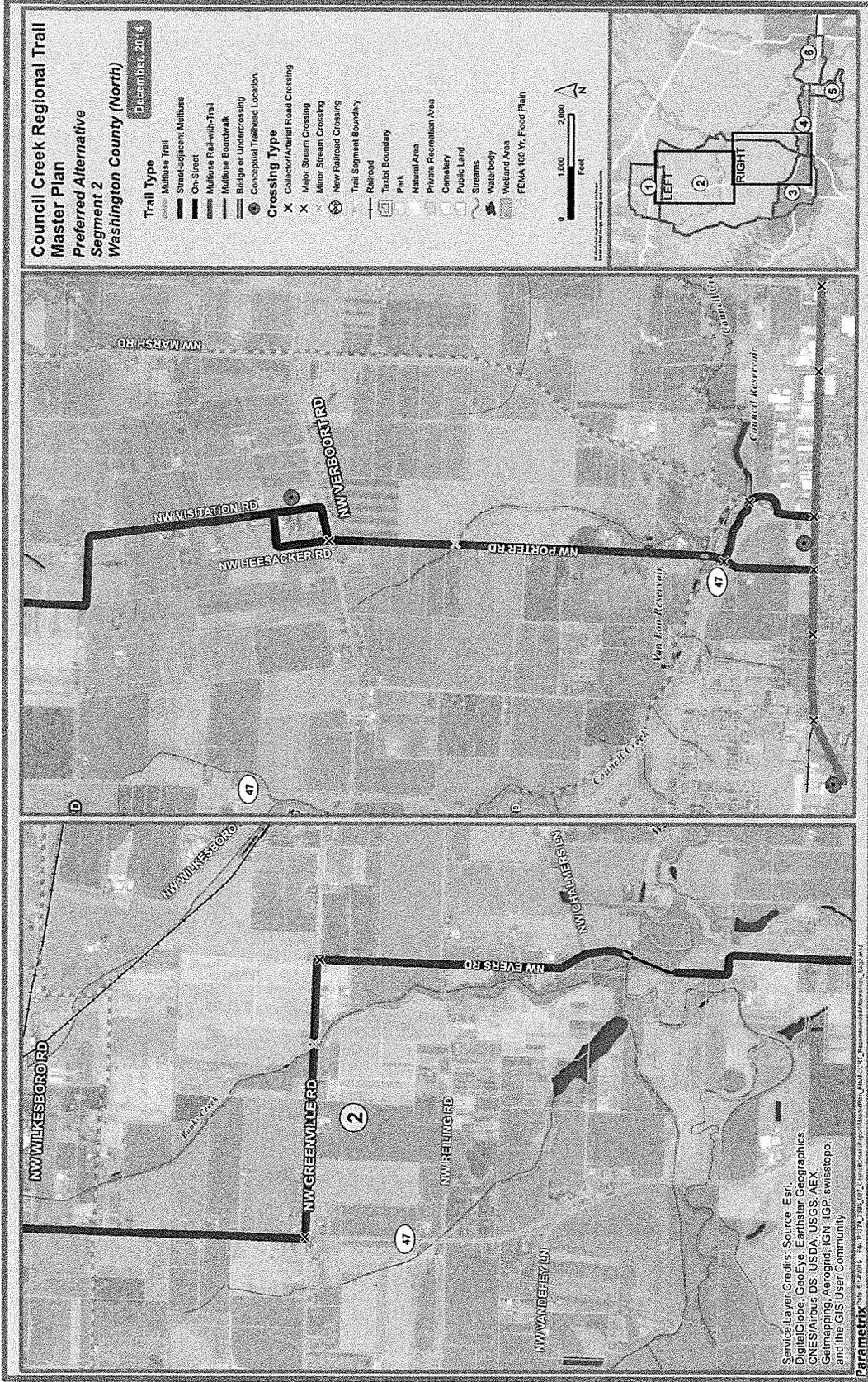
## Segment 2: Washington County North

<b>Jurisdiction</b>	Washington County		
<b>Trail Types</b>	<ul style="list-style-type: none"> <li>Rural street-adjacent multiuse, buffer may be narrowed or eliminated to reduce impacts on farm buildings.</li> <li>Multiuse boardwalk/bridge (crossing West Fork Dairy Creek)</li> <li>Combination of widened shoulders, widened sidewalks, and shared-use roadway to create loop through community of Verboort</li> </ul>		
<b>Design</b>	<ul style="list-style-type: none"> <li>Asphalt, 10'-12' wide, gravel shoulders</li> <li>Boardwalk, 10'-12' wide, steel structure, concrete surface</li> <li>Widened shoulders and sidewalks in Verboort</li> </ul>		
<b>Length</b>	7.5 miles plus Verboort loop	<b>Cost Estimate</b>	\$22,676,200
<b>Phasing</b>	<ul style="list-style-type: none"> <li>Through community of Verboort: NEAR-TERM</li> <li>OR 47/Greenville Rd: MID-TERM</li> <li>Balance of Segment 2: LONG-TERM</li> </ul>		
<b>Notes</b>	New multiuse boardwalk across West Fork Dairy Creek combined with 90-foot-span bridge; new trailhead in vicinity of Verboort; crosses one arterial and four collector roadways; land acquisition required.		



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

Map 8. Segment 2: Washington County North



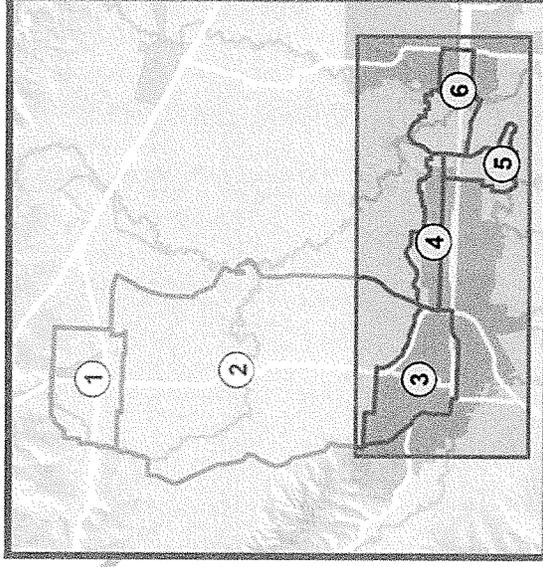
Preferred Trail Alternatives

Segment 3: Forest Grove

Segment 4: Cornelius

Segment 5: Jobs Ditch

Segment 6: Hillsboro – Washington County East



Map 9. Segments 3, 4, 5 and 6: West-East Corridor



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### Segment 3: Forest Grove



*Oak Street/Oregon 47/Porter Road*



*Rail corridor near Hawthorne Street*



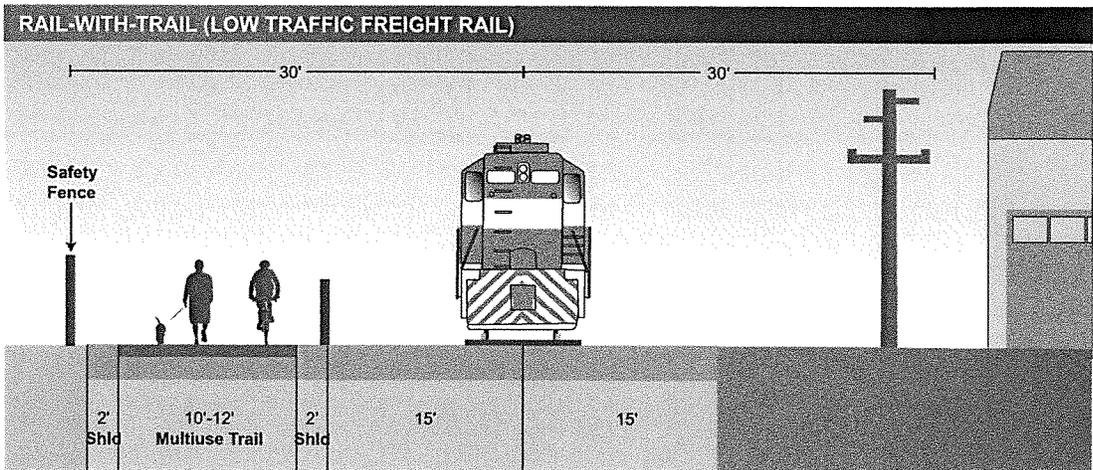
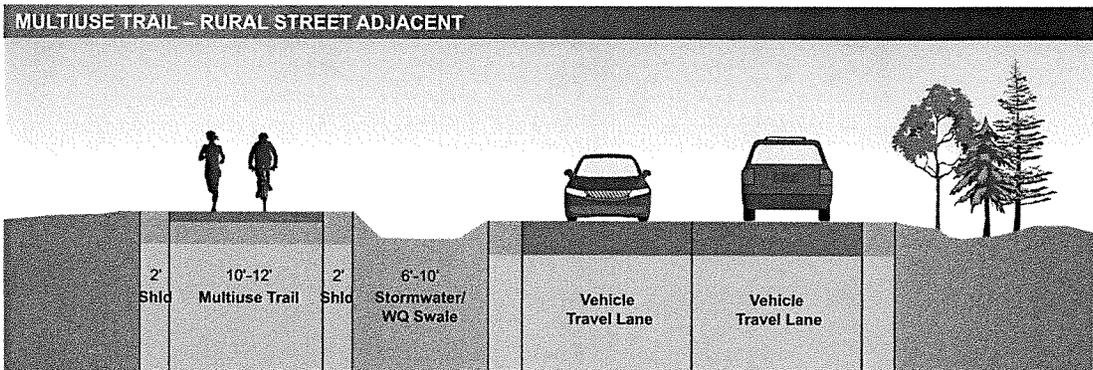
*Pacific University*



*Rail corridor near BPA substation*

### Segment 3: Forest Grove

<b>Jurisdiction</b>	City of Forest Grove		
<b>Trail Types</b>	<ul style="list-style-type: none"> <li>• Urban street-adjacent multiuse (along Oak Street)</li> <li>• Rail-with-trail (section west of OR 47)</li> <li>• Connection across OR 47 in Forest Grove TBD (see page 79)</li> </ul>		
<b>Design</b>	<ul style="list-style-type: none"> <li>• Asphalt, 10'-12' wide, gravel shoulders</li> <li>• Rail-with-trail design may vary based on type of future rail or transit service</li> </ul>		
<b>Length</b>	1.05 mile	<b>Cost Estimate</b>	\$4,565,000
<b>Phasing</b>	<ul style="list-style-type: none"> <li>• Rail-with-trail: NEAR-TERM</li> <li>• Connection across OR 47: NEAR-TERM</li> </ul>		
<b>Notes</b>	<p>Uses improved or replacement Porter Road Bridge; two options for crossing OR 47 in Forest Grove and connecting to rail-with-trail (see page 79); new trailhead in vicinity of Oak St/BPA power substation; uses downtown facilities as second trailhead; two to three arterial roadway crossings. See pages 54-57 for the full range of possible rail-with-trail or other transit solutions.</p>		





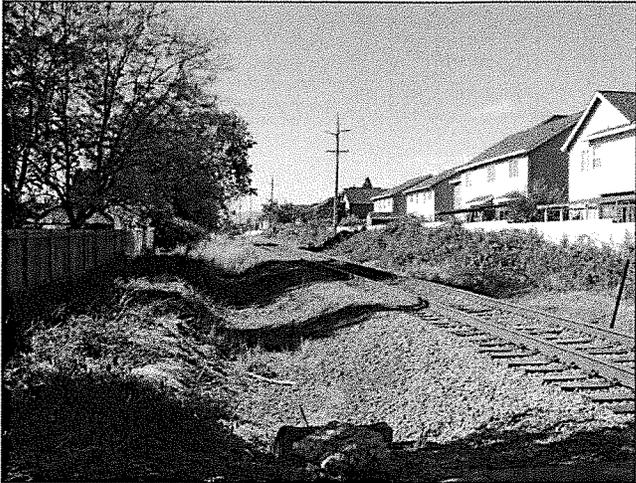
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### Segment 4: Cornelius



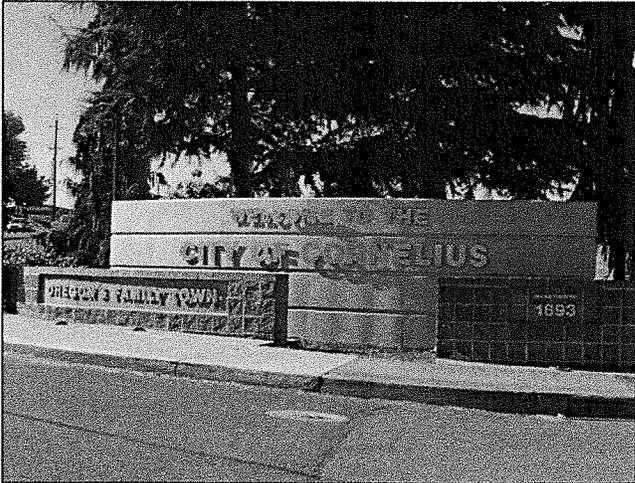
*Rail corridor through Cornelius*



*Rail corridor through Cornelius*



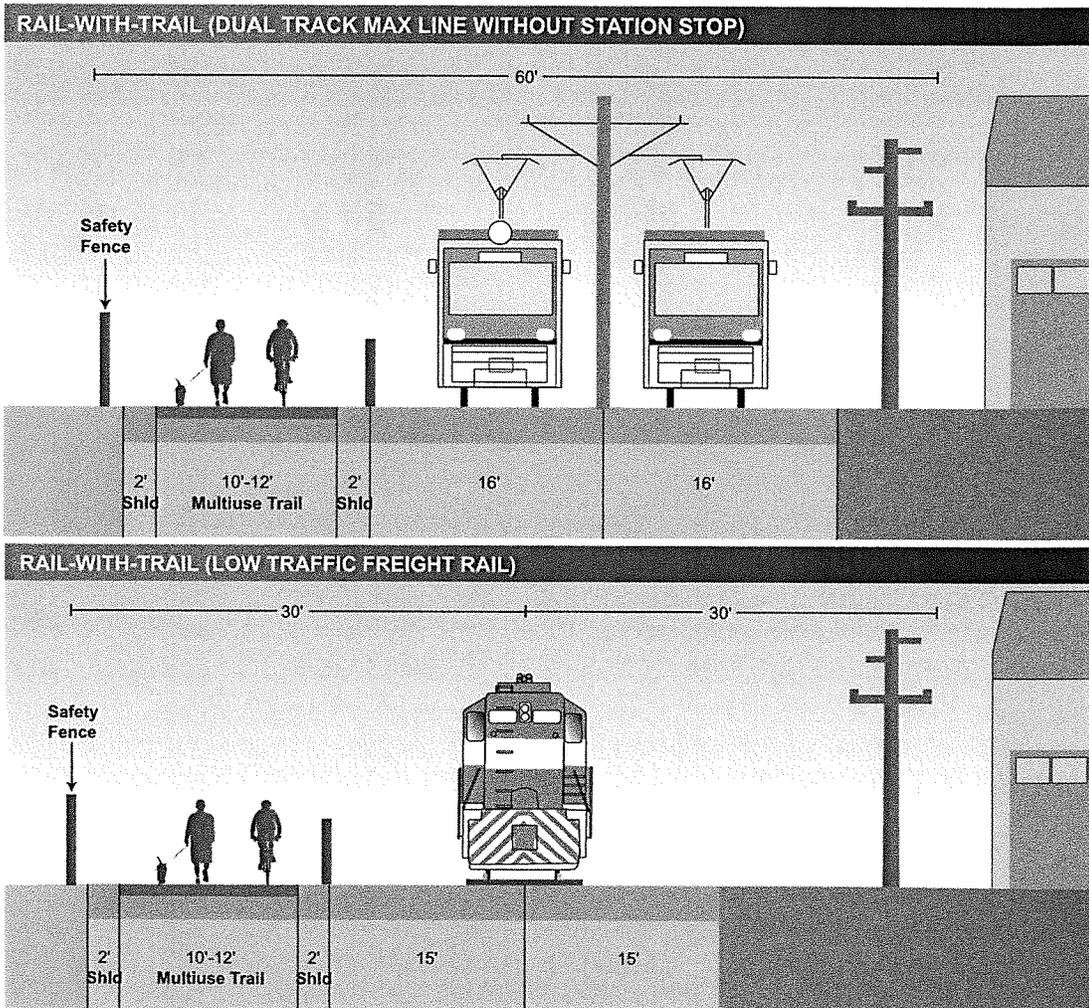
*Rail siding west of N 10th Ave.*



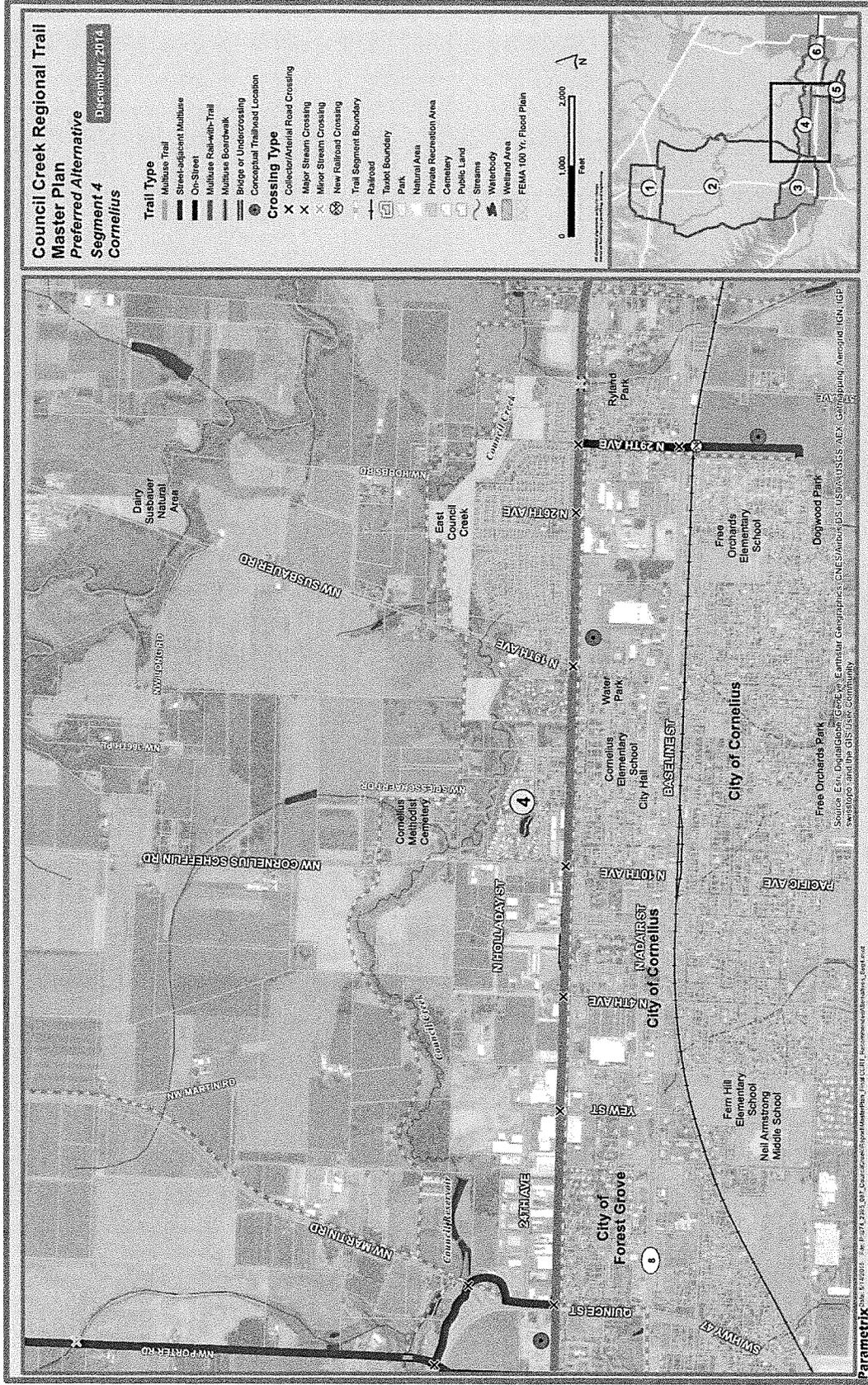
*Cornelius welcome sign*

### Segment 4: Cornelius

<b>Jurisdiction</b>	City of Forest Grove – west of Yew Street City of Cornelius – east of Yew Street		
<b>Trail Type</b>	• Rail-with-trail (section east of OR 47)		
<b>Design</b>	• Asphalt, 10'–12' wide, gravel shoulders • Rail-with-trail design may vary based on type of future rail or transit service		
<b>Length</b>	2.67 miles	<b>Cost Estimate</b>	\$9,957,600
<b>Phasing</b>	• Staged west to east – NEAR TERM		
<b>Notes</b>	Trail on south side of rail right of way; location and design may vary based on possible future MAX extension or high capacity transit; four collector and two arterial roadway crossings; one minor stream crossing (Jobes Ditch); new trailhead on south side of rail along N 19th Ave. See pages 54–57 for a range of possible rail-with-trail or transit solutions.		



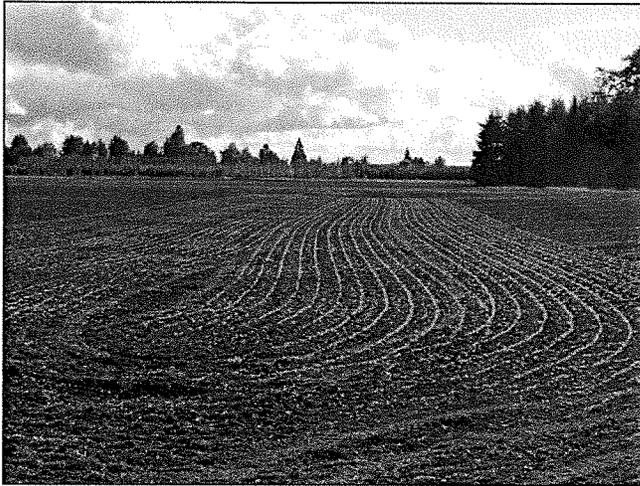
Map 11. Segment 4: Cornelius



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### Segment 5: Jobes Ditch



*Jobes Ditch Spur Trail corridor  
near Dogwood Park*



*Jobes Ditch Spur Trail corridor  
looking toward Oregon 8*



*Looking toward Tualatin River from  
SW Cook Street*

### Segment 5: Jobs Ditch (HOBBS Alternative)

**Jurisdiction** City of Cornelius – North of OR 8  
 Washington County – South of OR 8 to Tualatin River (area will eventually be annexed to Cornelius)

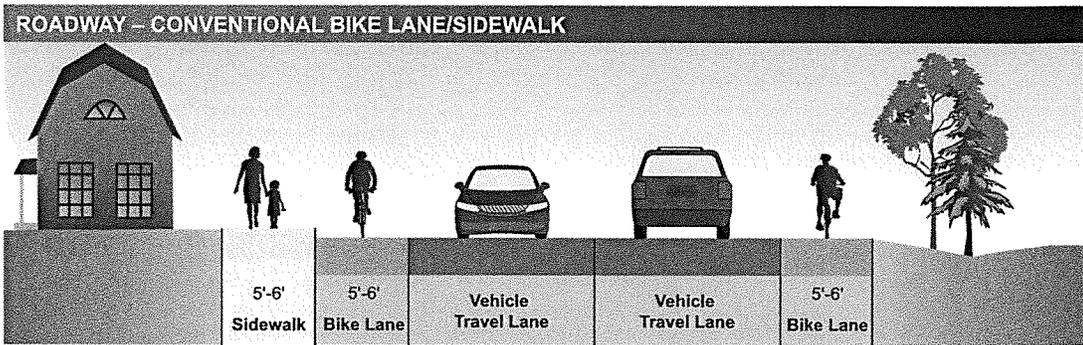
- Trail Types**
- Bike lanes/sidewalks – RAIL 1 to OR 8
  - Urban street-adjacent multiuse – OR 8 to Dogwood St
  - Standard multiuse – Dogwood St to Tualatin River

**Design** • Asphalt, 10'-12' wide, gravel shoulders

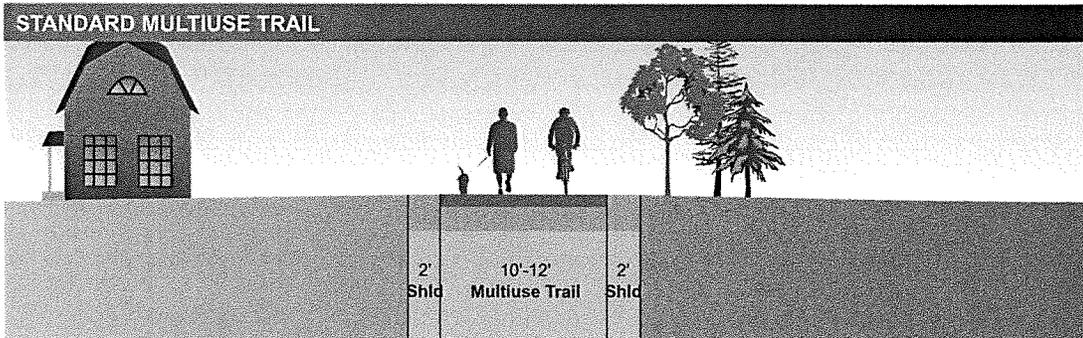
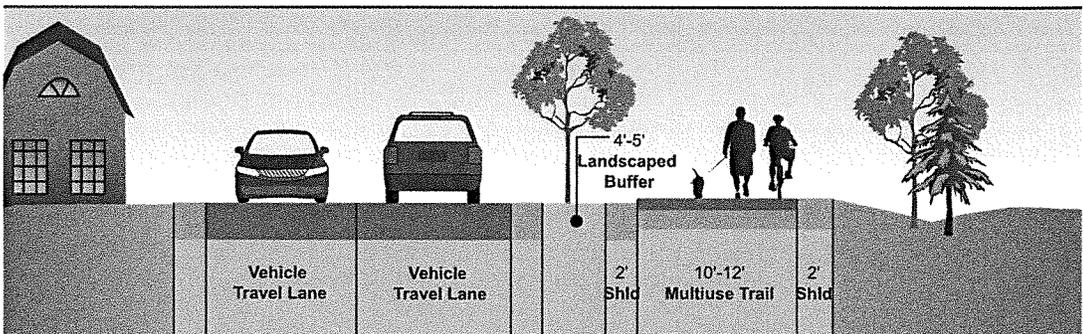
**Length** 1.44 miles      **Cost Estimate** \$2,491,500  
 (excludes cost of new highway and railroad crossings)

**Phasing** • As funding is obtained and building of street and rail crossings occur

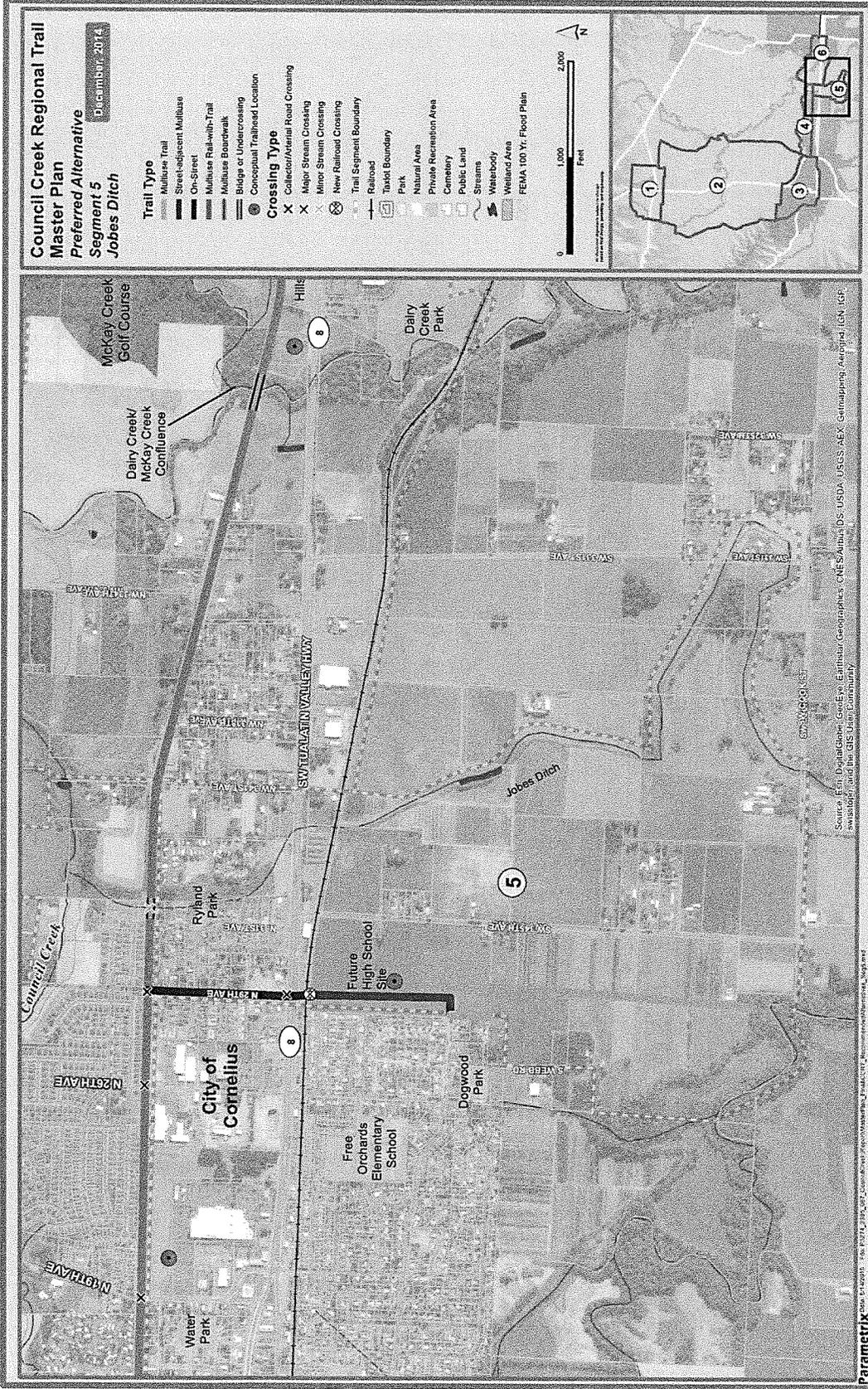
**Notes** Will require building of N 29th Ave extension including new highway and rail crossing; new high school and new development south of Dogwood St. could include sections of trail; shared-use trailhead at new high school; requires property acquisition.



Note: Can include sidewalks on both sides.



Map 12. Segment 5: Jobs Ditch



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### Segment 6: Hillsboro – Washington County East



*Rail corridor near Dairy Creek*



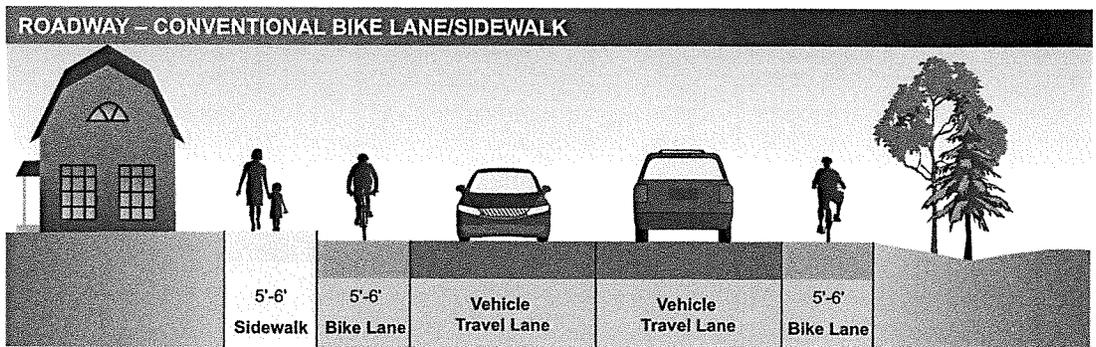
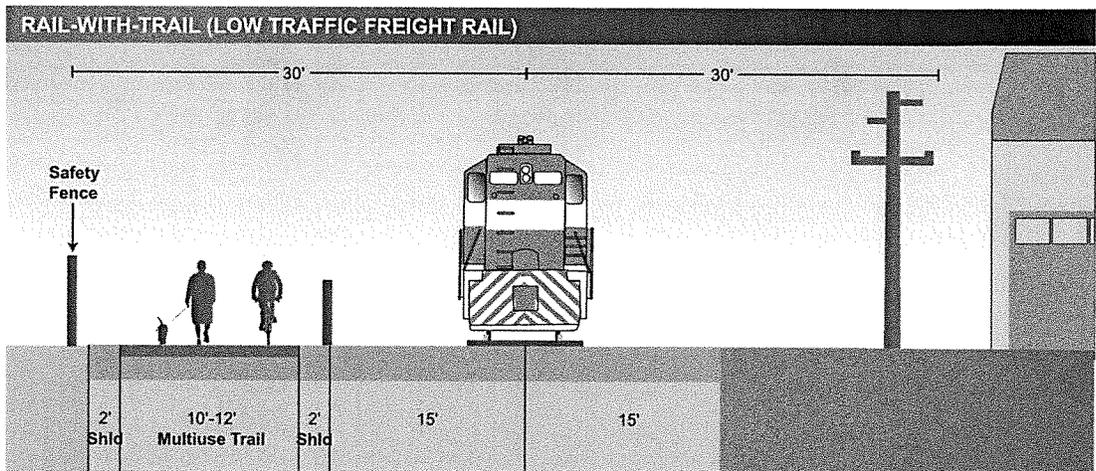
*Wider rail right of way east of NW 334th Avenue*



*MAX Station in downtown Hillsboro*

### Segment 6: Hillsboro – Washington County East

<b>Jurisdiction</b>	Washington County* – West of Dairy Creek City of Hillsboro – East of Dairy Creek <small>*Most of area between Segment 4 and Dairy Creek is in UGB and will annex to Cornelius</small>		
<b>Trail Types</b>	<ul style="list-style-type: none"> <li>• Rail-with-trail</li> <li>• Sidewalks/bike lanes – Washington St in Hillsboro</li> </ul>		
<b>Design</b>	<ul style="list-style-type: none"> <li>• Asphalt, 10'–12' wide, gravel shoulders</li> <li>• Rail-with-trail design may vary based on type of future rail or transit service</li> <li>• 390-foot-span bridge across Dairy Creek</li> </ul>		
<b>Length</b>	1.69 miles	<b>Cost Estimate</b>	\$7,646,800
<b>Phasing</b>	• NEAR-TERM to MID-TERM (probably last section of rail-with-trail to be built)		
<b>Notes</b>	Trail on south side of rail right of way; location and design may vary based on future MAX extension or other transit solution; two collector roadway crossings; if freight rail is abandoned, rail bridge over Dairy Creek could be reused; one new and one shared-use trailhead. See pages 54–57 for a full range of rail-with-trail and other transit solutions.		



Note: Can include sidewalks on both sides.



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## 4: Trail Types and Treatments

### Overview

Lengthy multijurisdictional trails such as Council Creek must reflect changing opportunities and constraints along the trail route. City and county transportation, bicycle/ pedestrian, and parks and open space plans may define local standards. Trail width and treatments, surface materials, and structures may need to vary to accommodate trail use types and volumes, neighboring development, vegetation, streams, topography, and roadway patterns.

Trail design standards should incorporate such local standards and conditions. Standards should also apply reasonably consistent design and treatments that provide a common template creating economies in both construction and maintenance, and a uniform sense of place for trail users. Chapter 4 provides the following information:

- **Trail Types and Treatments:** Baseline standards for designing and building different trail types that are compatible with the varying landscapes along the trail corridor. Conceptual trail cross-sections and some plan views are provided.
- **Trail Crossings:** Conceptual guidelines and cross sections for crossings at major road intersections, midblock, and grade-separated.

**Table 6. Trail Types and Treatments by Segment  
NORTH-SOUTH CORRIDOR – EAST 1**

Section	Description	Trail Type	Width	Surface
<b>Segment 1: BANKS</b>				
WESTSIDE	Follows future City Westside Circulator Roadway <sup>a</sup>	Urban street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
UNDERCROSSING	Includes 750 linear feet of approach trail w/retaining walls; passes under OR 6	Multiuse highway undercrossing	12'–16' (no buffer)	Asphalt, concrete
HIGHWAY	Follows west side of OR 47 across city limits/UGB into Segment 2	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
a City trail system plan scheduled for late 2015 adoption may change this section to bicycle lanes and sidewalks along Main Street.				
<b>Segment 2: WASHINGTON COUNTY NORTH</b>				
HIGHWAY	Follows west side OR 47 from Banks UGB to NW Greenville Rd	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
GREENVILLE	North side of NW Greenville Rd to NW Evers Rd	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt
EVERS	West or east side of NW Evers Rd to north side section along NW Osterman Rd	Rural street-adjacent multiuse	10'–12' (2' gravel shoulders)	Asphalt

Section	Description	Trail Type	Width	Surface
VISITATION	West or east side of NW Visitation Rd to just north of NW Heesacker Rd	Rural street-adjacent multiuse	10'-12' (2' gravel shoulders)	Asphalt
VERBOORT	Verboort Loop w/some shoulder widening and sidewalk improvements	Shared-use	Existing roadways	Asphalt, concrete
PORTER	West or east side of NW Porter Rd to OR 47	Rural street-adjacent multiuse	10'-12' (2' gravel shoulders)	Asphalt

**WEST-EAST CORRIDOR – RAIL 1**

Section	Description	Trail Type	Width	Surface
<b>Segment 3: FOREST GROVE</b>				
OAK <small>(For alternate route see Chapter 6.)</small>	Along Oak St from OR 47 to RAIL 1	Urban street-adjacent multiuse	10'-12' (2' gravel shoulders)	Asphalt
RAIL 1	Follows south side of rail ROW; safety and security fencing recommended	Rail-with-trail	10'-12' (2' gravel shoulders)	Asphalt
<b>Segment 4: CORNELIUS</b>				
RAIL 1	Follows south side of rail ROW; safety and security fencing recommended	Rail-with-trail	10'-12' (varying shoulders)	Asphalt
<b>Segment 5: JOBES DITCH</b>				
N 29TH	Follows N 29th Ave to OR 8; may require some retrofit sidewalks	Bike lanes/sidewalks	N/A	Concrete, asphalt
HIGH SCHOOL	OR 8 to S Dogwood St; build with N 29th Ave extension	Urban street-adjacent multiuse	10'-12' (2' gravel shoulders)	Asphalt
RIVER	S Dogwood St to Tualatin River; build as part of urban development	Standard multiuse	10'-12' (2' gravel shoulders)	Asphalt
<b>Segment 6: HILLSBORO – WASHINGTON COUNTY EAST</b>				
RAIL 1	Follows south side of rail ROW; safety and security fencing recommended; new bridge at Dairy Creek	Rail-with-trail	10'-12' (varying shoulders)	Asphalt
WASHINGTON	Some retrofit sidewalks required north side of Washington St	Bike lanes/sidewalks	N/A	Concrete

## Preferred Trail Types

The CCRT preferred trail type is a multiuse trail accommodating the full range of users—touring, commuter, family, and recreational bicyclists; 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. Two multiuse trail variations are primarily recommended for of the CCRT—street-adjacent multiuse and rail-with-trail. The common features are:

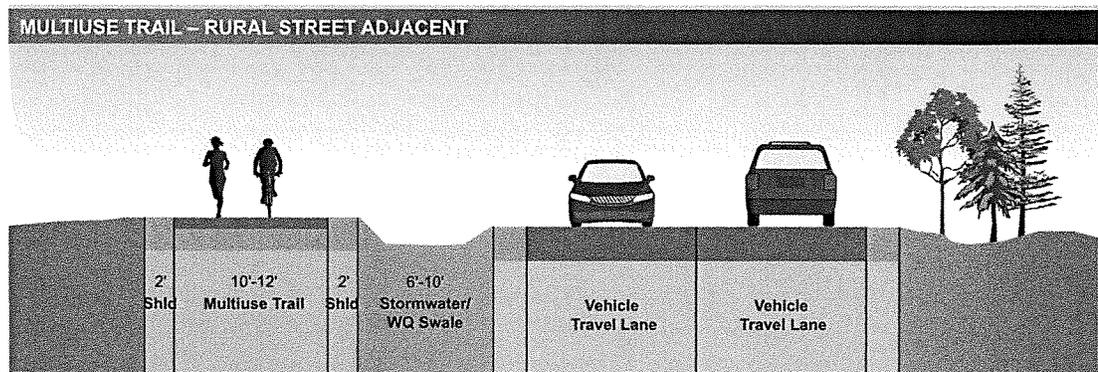
- Surface width of 10 to 12 feet, with 2-foot-wide graveled shoulders (10-foot width is practical for lower volume rural trail sections)
- Asphalt or other hard surface (concrete does not require graveled shoulders – can be used to narrow trail sections in constrained areas)
- ADA-compliant grades (less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

### Street-Adjacent Multiuse

Alignments that closely parallel roadways distinguish street-adjacent multiuse trails from the standard multiuse trail (see page 57 for standard multiuse cross section). The street-adjacent trail is separated from the roadway by a landscaped buffer or drainage swale between edge of road and trail.

#### Rural Street-Adjacent Multiuse

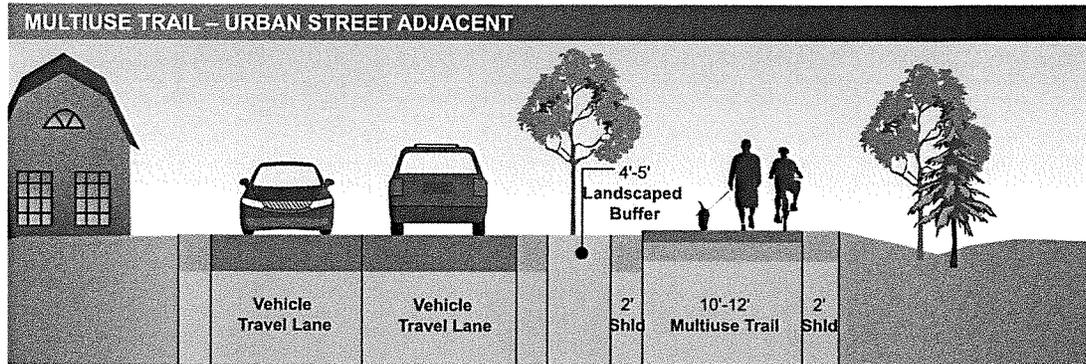
For roadways where stormwater conveyance and treatment is handled by open drainage swales, typically in rural areas. Swales act as the trail buffer. The rural street-adjacent multiuse type is the primary solution for the North-South Corridor. The greatest challenge for this trail type will be conflicts with other infrastructure—TVID irrigation lines or PGE power transmission poles—that also closely follow existing roadways. Relocation of these lines or the purchase of additional right of way may be necessary.



### Urban Street-Adjacent Multiuse

For streets where stormwater is conveyed through culverts and piping, typically in urban areas. Includes a landscaped buffer between edge of road and trail. The urban street-adjacent multiuse trail is recommended for the following trail sections:

- **Segment 1:** West side of downtown Banks.
- **Segment 3:** Along Oak Street south of Oregon 47.
- **Segment 5:** Section of the Jobes Ditch/HOBBS spur trail developed as part of the future extension of N 29th Avenue and construction of a new high school.



### Rail-with-Trail

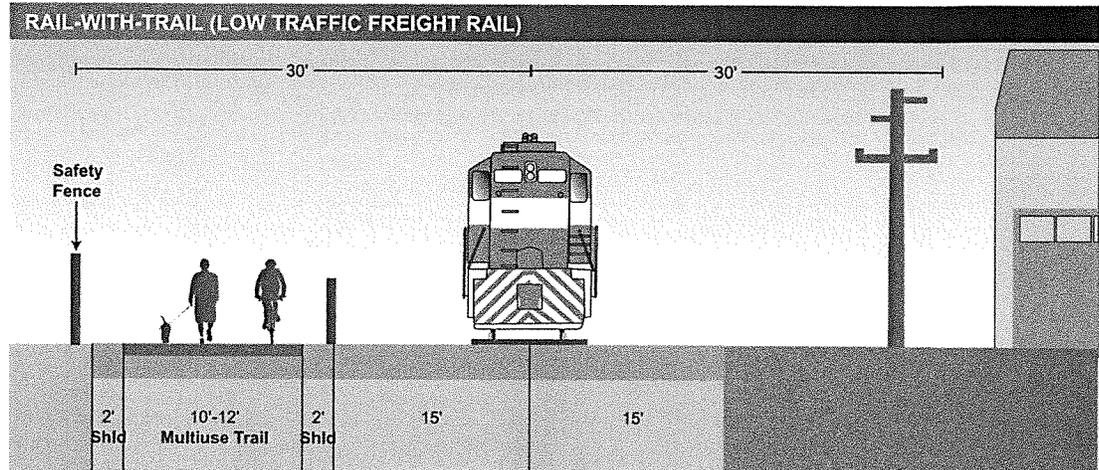
A rail corridor (RAIL 1) from downtown Forest Grove through downtown Cornelius to downtown Hillsboro is the preferred CCRT alignment through Segments 3, 4 and 6. This rail corridor is owned by the State of Oregon and leased to a private freight rail operator. The rail corridor is primarily 60 feet wide and occupied by single-track freight line with very limited low speed traffic. The freight rail track is approximately 5 feet off-center of the corridor towards the north side. Specific trail solutions are complicated by continued freight rail use, plans for a future TriMet MAX line or high capacity transit extension, and a PGE transmission-scale power line along the north edge of the rail corridor from Oregon 47 to Hillsboro.

Given current and future uses, four rail-with-trail variations are illustrated. All variations assume a multiuse trail sited along the south side of the rail corridor. North side trail alignments may require expensive power pole relocations, particularly through Segment 4. Final trail design and engineering may find room to switch sides for portions of the trail, or offer siting or design solutions providing five or more extra feet of separation between the south edge of the rail corridor right of way and the planned trail.

Any decision to extend MAX to downtown Forest Grove will be preceded by abandonment of the rail line for freight services, and a range of planning and transportation corridor studies. See page 57 for an illustration of one concept to re-use the rail corridor without freight or MAX lines. High capacity transit with a multiuse trail is another option for the future of the corridor.

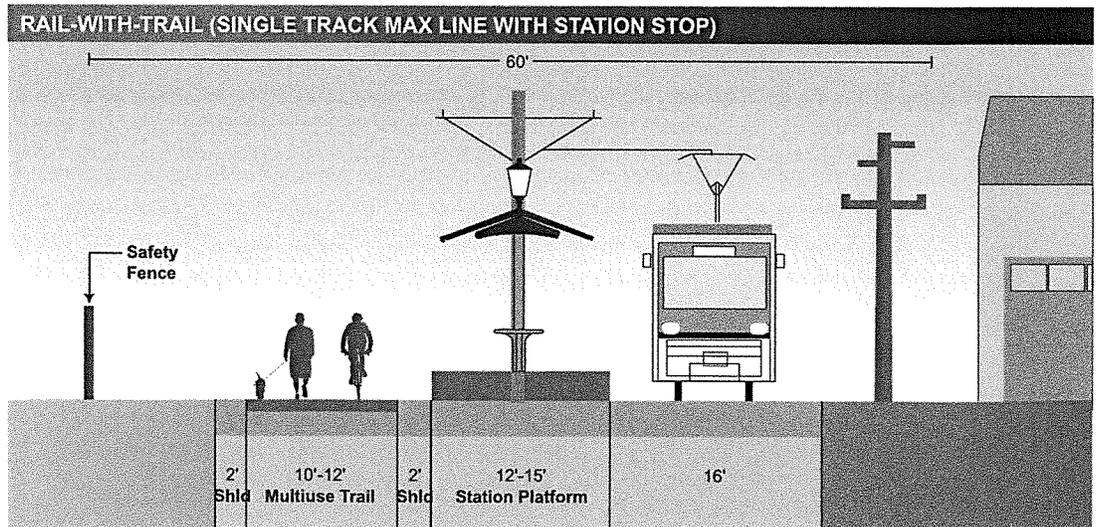
### Single-Track Freight Rail

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. The multiuse trail can be further modified to fit within the 60-foot rail corridor by eliminating one shoulder or reducing trail width to 10 feet.



### Single-Track MAX (with Station Stops)

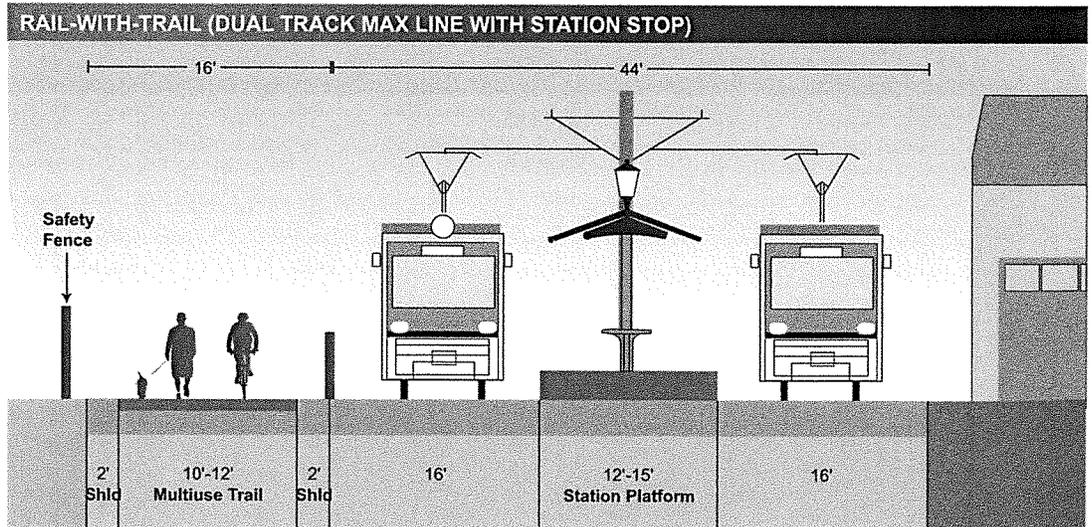
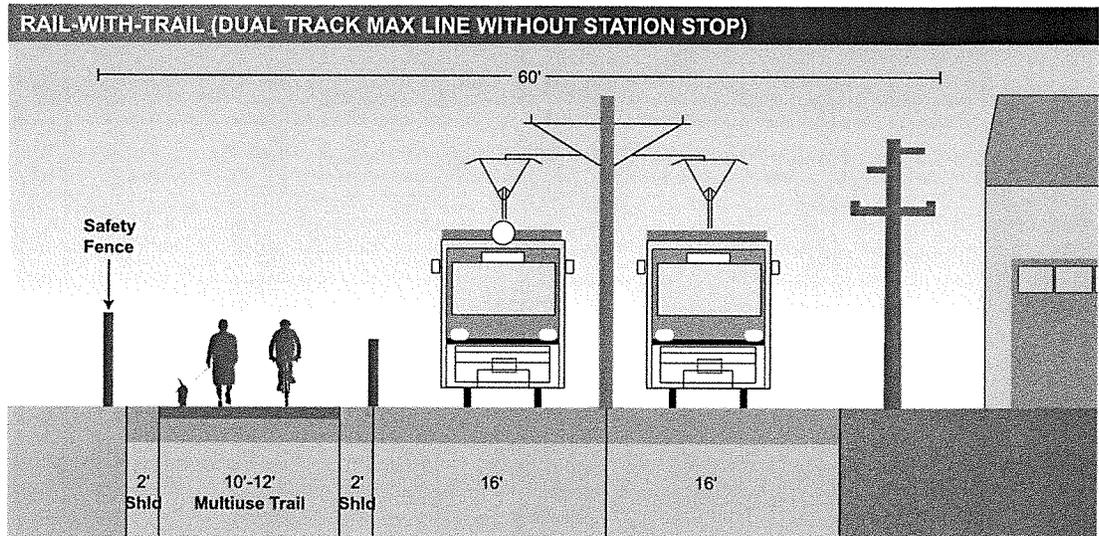
TriMet requires less separation from MAX tracks than FHWA guidance. Since MAX tracks would be new, the rail alignment could also be shifted within the corridor. This trail/single-track MAX combination, including minimum width (12 feet) station stop side platforms, would leave approximately 16 feet of the rail corridor for additional separation between the trail and track, for intermittent passing tracks, or for amenities such as landscaping. 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-track configuration, when combined with a 16-foot-wide trail section, leaves 12 feet for additional separation between the tracks and the trail. It also avoids power pole relocation.

The trail siting challenge with the dual-track is that station stops will be intermittently required. The minimum width for a station stop **center** platform 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 due to surrounding development. The multiuse trail section could be narrowed or use concrete surfaces to eliminate gravel shoulders. Station stop design could also narrow the platform width. PGE power poles in the vicinity of station stops may have to be relocated.



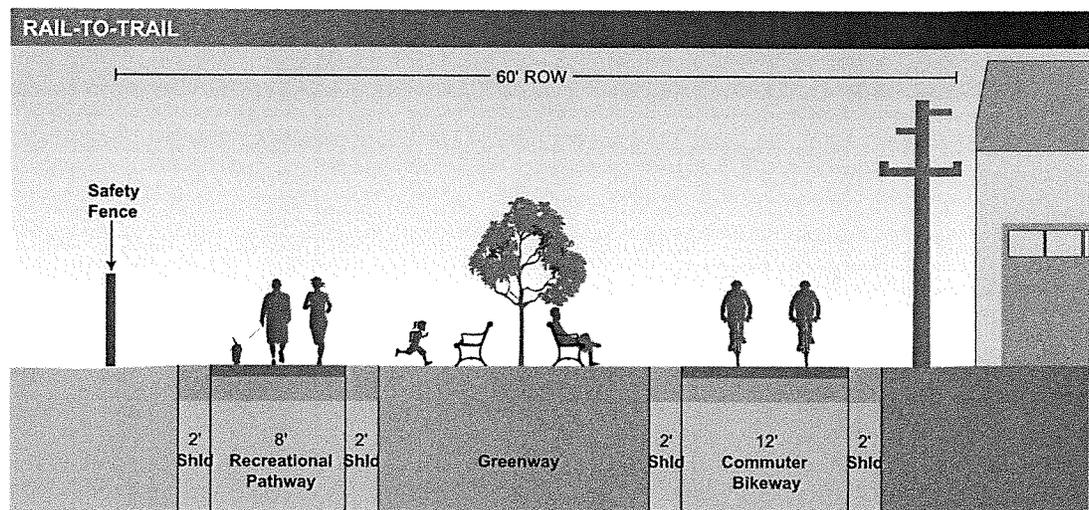
Note: May require power pole relocation, trail width may have to be modified to accommodate station platform.

## Other Trail Types

A variety of opportunities and constraints suggest or require other trail types to establish a continuous and fully functional regional-scale trail accommodating all users.

### Rail-to-Trail

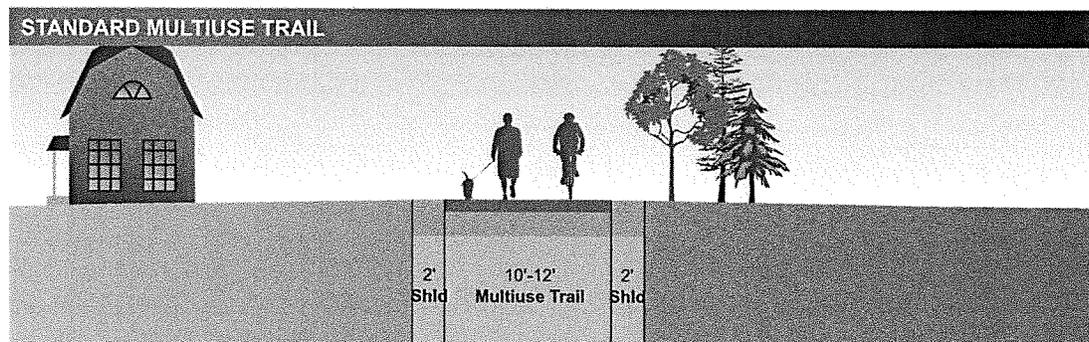
If freight rail vacates the West-East Corridor, and the MAX extension does not occur, a multiuse trail combined with greenway and recreational improvements is possible. One possible scenario is illustrated below. High capacity bus transit with a multiuse trail is another option.



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

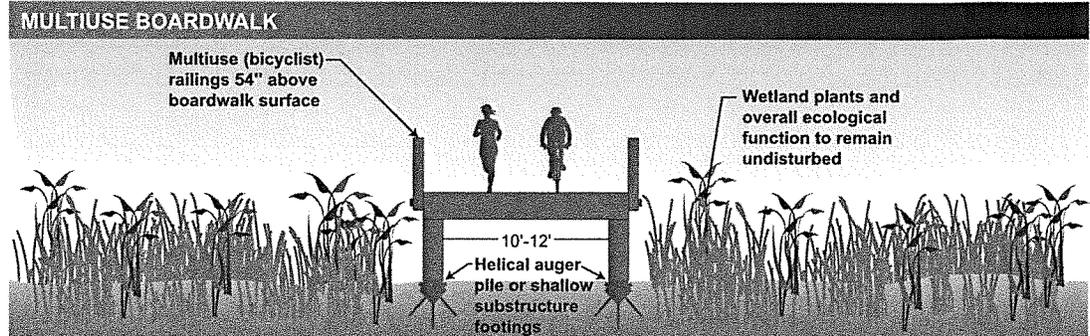
### Standard Multiuse

The standard multiuse trail follows an off-road alignment, completely separate from and on a different route from roadways. The standard multiuse trail type is applied to the Segment 5: Jobs Ditch/HOBBS trail section south of S Dogwood Lane.



### Multiuse Boardwalk

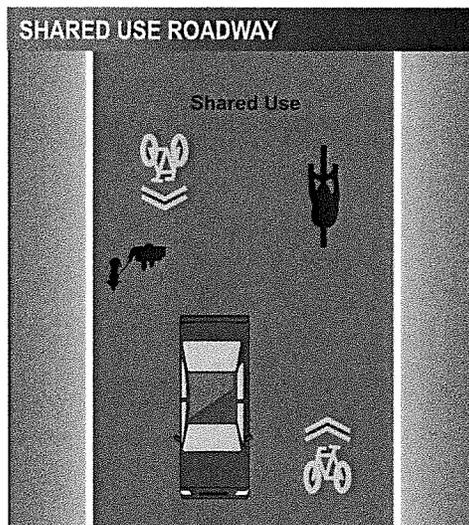
Elevated multiuse boardwalk structures set on piers across wetlands, floodplain areas, or other sensitive lands can reduce or eliminate many environmental impacts. Multiuse boardwalks combined with new or existing bridges are recommended to cross the West Fork Dairy Creek (Segment 2). Boardwalk materials can vary: wood, steel, concrete, etc. Steel structures with concrete surfaces are recommended.



### Shared-Use Roadway

Shared-use roadways allow all trail users to use vehicular roadways, with signing and road surface markings to assure safety. This solution is only practical and safe on low-speed, low-traffic roadways. See page 78 for an interim shared-use trail alignment solution for the North-South Corridor (EAST 1).

The EAST 1 preferred alternative proposes a permanent shared-use solution through Verboort. This includes sections of NW Visitation Road, NW Heesacker Road, and NW Porter Road; a widened shoulder on NW Visitation Road; and a widened sidewalk on the north side of NW Verboort Road.

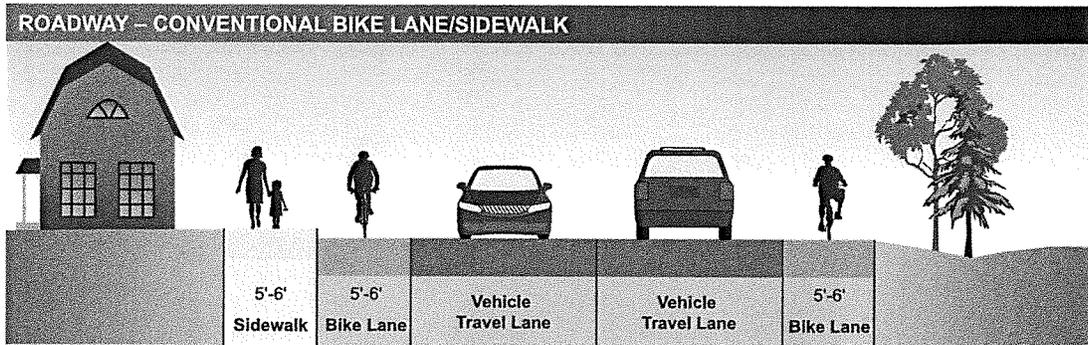


Note: Functional for low speed, low vehicle traffic roadways.

**Bicycle Lane–Sidewalk**

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

- Along N 29th Avenue to the Jobs Ditch/HOBBS multiuse trail (Segment 5).
- Along NW Washington Street between NW Dennis Avenue and the downtown Hillsboro MAX station (Segment 6). Most of this section is already developed with sidewalks and bicycle lanes.



Note: Can include sidewalks on both sides.

In addition, the City of Banks is expected to adopt a new bicycle/pedestrian and trail system plan by the end of 2015. Early in the CCRT process the City requested that Main Street (Segment 1) **not** be part of the CCRT route. The City’s new plan may reverse this recommendation.

**Crossing Structures**

**Multiuse Bridges**

Up to three new bridges crossing streams will be required (Segments 2, 3 and 6). Bridge lengths are approximate but conceptually sized to limit any in-water work. The final design and construction method for bridges will be subject to the specifics of each site.

**Table 7. Multiuse Bridges**

Segment 2	West Fork Dairy Creek – NW Evers Rd	90-foot span
Segment 3	Council Creek – NW Porter Rd	Existing restored bridge
Segment 6	Dairy Creek – south of confluence with McKay Creek	390-foot span

The new Dairy Creek trail bridge in Segment 6 would parallel the existing railway bridge. If freight rail is abandoned, the existing bridge could be adapted for trail use.



*Example multiuse bridge*

### Other Stream Crossings

Minor stream crossings may require modifying existing conveyance structures (such as by lengthening culverts), installation of short new culverts, or signing and pavement markings over existing bridge structures. 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 Plan Report No. 3 for more information.

### Roadway Crossings

The CCRT will cross a variety of urban and rural local, collector, and arterial roadways at existing intersections and at midblock. Collector and arterial midblock and intersection crossing points are shown on segment maps. CCRT roadway crossings are all at-grade, with the exception of the recommended undercrossing of Oregon 6 south of Banks (Segment 1). The final determination of intersection and midblock crossing treatments should be based on local jurisdiction or Washington County standards. Local street midblock and intersection street crossings use conventional crosswalk signing and striping.

Crossings in *italics* are at the same point as a rail crossing. To the extent freight rail or light rail is operating at the time of trail development, improvements to rail crossing infrastructure and surfaces may also be required.

**Table 8. Arterial and Collector Crossings**

Segment 1	NW Banks Rd at new Westside Circulator Roadway
Segment 1	OR 47/Main St Undercrossing of OR 6
Segment 2	NW Greenville Rd at OR 47 and NW Evers Rd
Segment 2	NW Verboort Rd at NW Porter Rd
Segment 3	NW Porter Rd/Oak St at OR 47 or NW Martin Rd
Segment 3	Two options (see Chapter 6) connecting the north-south and west-east preferred alignments
Segment 3	<i>Hawthorne St</i>
Segment 3	<i>Laurel St</i>

Segment 3	Oak St
Segment 3	OR 47/Quince St
Segment 4	Yew St
Segment 4	N 4th Ave
Segment 4	N 26th Ave
Segment 4	NW Hobbs Rd/N 29th Ave
Segment 5	N 29th Ave at OR 8
Segment 6	W Main St
Segment 6	NW Dennis Ave

### Arterial and Collector Intersections

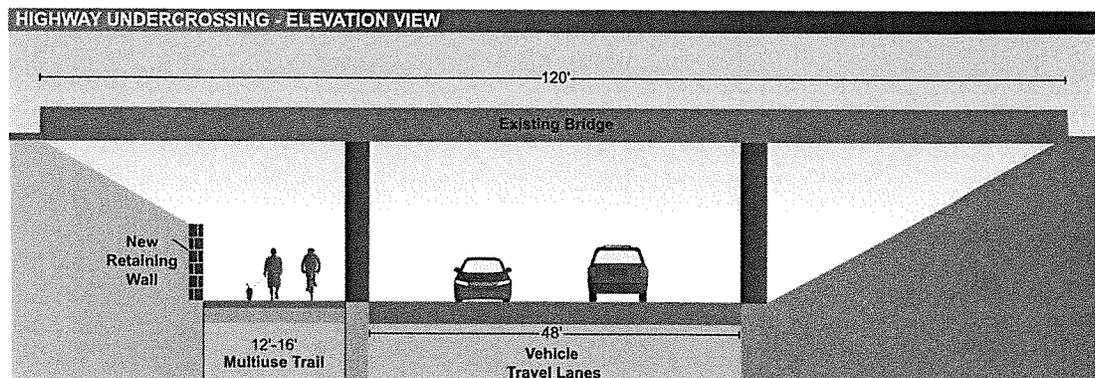
Trail crossings at established collector and arterial intersections will use traffic stop signals or signing, crosswalk signing and striping, and other traffic controls. Upgrades may be required on a case-by-case basis in accordance with municipal or ODOT standards.

### Arterial and Collector Midblock

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

### Highway Undercrossing

An undercrossing of Oregon 6 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. This solution requires a 14- to 16-foot widening of the existing undercrossing. The undercrossing 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 the trail's north (350 linear feet) and south (400 linear feet) approaches to the undercrossing. Although street-adjacent, the approach trails would **not** include the standard 4- to 5-foot buffer. Trail paving should be concrete through the undercrossing and may be asphalt for the approaches.



Note: Trail surface under bridge may be concrete and/or widened.

## Rail Crossings

Although the west-east trail alignment will follow a rail line for its entire distance, the trail will only cross rail lines in two places. ODOT Rail will have to be consulted for all rail crossings and issue applicable crossing orders and permits.

- **Segment 3:** EAST 1 will have to cross to the south side of the rail line at either Oak Street or Oregon 47 (Quince Street) to connect to the west-east trail alignment on the south side of the rail right of way.
- **Segment 5:** Jobes Ditch/HOBBS will require permitting and construction of a new rail crossing as part of the future NW Hobbs Road/N 29th Avenue extension. This rail crossing treatment and cost will be determined as part of the larger road project.

## Other Trail Structures

### Trailheads

Trailhead facilities can include vehicle parking, secure bicycle parking, wayfinding and interpretive signing, restrooms, shelters, and picnic areas. Site design and amenities may vary greatly based on location and expected usage. Trailheads that share parking and other facilities at government centers, schools, and commercial areas are an economical alternative to standalone sites.

In areas along the CCRT without nearby trailhead facilities or available commercial center or institutional facility parking, appropriate “no parking” and other traffic control signing should be installed. In particular, trail crossings of residential and agricultural area roadways, or where other trails intersect, should be signed.

Trailhead locations shown on segment maps are intended to identify the general areas within which a trailhead facility would be desirable, *and are not property-specific*. Conceptual trailhead locations are listed in Table 9. A lump-sum land acquisition estimate is included in estimated overall trailhead costs. Trailhead sites with probable private property acquisition requirements are in *italics* in Table 9.

**Table 9. Conceptual Trailhead Locations**

Segment 1	Existing Banks-Vernonia Trailhead, Banks
Segment 2	<i>NW Visitation Rd, Verboort</i>
Segment 3	Downtown Forest Grove: Shared-use with existing commercial center or government offices
Segment 3	<i>Near Oak St south of OR 47, Forest Grove</i>
Segment 4	<i>Near N 19th Ave south of rail corridor</i>
Segment 5	Shared-use with future high school
Segment 6	<i>North side of OR 8 near Dairy Creek</i>
Segment 6	Downtown Hillsboro: Shared-use with existing commercial center or government offices

## 5: Implementation

### Cost Estimates

Tables 10 and 11 summarize construction and design/engineering costs, and order of magnitude land acquisition costs, for each trail alignment alternative in each trail planning segment. Cost assumptions and more detailed cost breakdowns are included in Plan Report No. 3 (see Appendix C). Plan Report No. 3 cost information includes all the trail alternatives being considered as of November 2014. The cost estimates below represent refinements based on PAC/SAC recommendations in December 2014.

**Table 10. Cost Estimates by Overall Trail Corridor**

<b>Banks to Forest Grove (Segments 1 and 2)</b>	
North-South: EAST 1 <sup>a</sup>	\$27,149,400
<b>Forest Grove to Hillsboro (Segments 3, 4 and 6)</b>	
West-East: RAIL 1 <sup>b</sup>	\$22,169,550
<b>Jobes Ditch Spur Trail (Segment 5)</b>	
HOBBS <sup>c</sup>	\$2,611,500

a Includes WEST option through Banks, and use of Porter/Oak connection to RAIL1. The OR 47/Martin/Quince connection option to RAIL 1 would be part of a larger intersection improvement and is more expensive by \$400,000.

b Includes cost of extension of RAIL 1 to Douglas St in Forest Grove

c HOBBS does NOT include cost of new crossings of OR 8 or UPRR rail line. These costs are assumed to be incurred as part of planned NW Hobbs Rd/N 29th Ave extension, without which HOBBS spur trail is not possible.

**Table 11. Cost Estimates by Segment Alignment Alternative**

Section	Trail Length (Linear Feet)	Land Acquisition (Linear Feet)	Land Acquisition	Construction <sup>a</sup>	Total
<b>1: BANKS</b>					
WEST	7,629	1,398	\$48,000	\$4,425,200	\$4,473,200
<b>2: WASHINGTON COUNTY NORTH</b>					
EAST 1	39,416	32,171	\$309,000	\$22,367,200	\$22,676,200 <sup>b</sup>
<b>3: FOREST GROVE</b>					
RAIL 1	5,565	N/A	0 <sup>c</sup>	\$4,565,100	\$4,565,100
<b>4: CORNELIUS</b>					
RAIL 1	14,113	N/A	0 <sup>c</sup>	\$9,957,600	\$9,182,600
<b>5: JOBES DITCH</b>					
HOBBS	7,630	3,464	\$120,000	\$2,491,500	\$2,611,500
<b>6: HILLSBORO – WASHINGTON COUNTY EAST</b>					
RAIL 1	8,906	N/A	0 <sup>c</sup>	\$7,646,850	\$7,646,850

a Includes engineering, permitting, contingencies, plus new trailheads in Segments 2, 3, 4, and 6.

b Cost for Porter/Oak connection to Segment 4 (OR 47/Martin/Quince connection option is \$400,000 more expensive).

c Lump-sum trailhead land acquisition cost estimate embedded in overall trailhead cost.

## Trail 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 (except for Banks). ODOT manages three state highways crossed by the preferred trail alignment (Segments 2, 3, and 5). These are the formal jurisdictional partners for planning and developing the CCRT.

## Acquisition Partners

Other governmental authorities such as stormwater and irrigation utility districts, and private entities such as power utilities and railroads, may have to be partnered with on a case-by-case basis. Trail right of way or easements may have to be acquired from private property owners. Right of way acquisition will be conducted on a willing seller basis only, not through powers of eminent domain.

TriMet may be a partner if the MAX line or high capacity transit is extended down RAIL 1. MAX design standards combined with a multiuse trail may require a widened rail right of way. TriMet **does** acquire private property through eminent domain.

**Table 12. Possible Acquisition Partners**

Segment	Utility	Road Authority	Rail	Parks Authority	Private Owner
1: Banks		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-County	X	X	X	X	X

## Development and Operating Authority

Parks authority is traditionally considered a prerequisite for local governments to participate in trail funding, construction, and maintenance. Increasingly, fully functional transportation systems are defined to include trails. As such, jurisdictions without full service parks programs may consider a road authority to be sufficient basis to undertake building and operating trails. The cities of Banks, Forest Grove, Cornelius, and Hillsboro all exercise full parks authority. Both ODOT and the Oregon Parks and Recreation Department build and operate trails. Washington County authority is more limited (see discussion below).

Portions of all six CCRT planning segments are currently within the jurisdiction of Washington County. The County is not a parks or trail provider. Washington County may partner with neighboring jurisdictions or other parks providers to build and maintain trails in these segments. The County does, however, build and operate bicycle and pedestrian facilities within road right of way. The street-adjacent trails proposed for use in rural sections of the CCRT (primarily Segment 2) may in part be within existing right of way. Any additional property needed would have to be in the form of road right of way contiguous to an existing right of way to qualify for consideration for construction and maintenance under the County's road authority.

Table 13. Trail Development Authority

Jurisdiction	Segment	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, 4, 5, 6	No	Yes	Limited	Limited	Limited	Not parks or trail provider, but can build/maintain within road ROW
Forest Grove	All of 3, portions of 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

## Trail Standards

Jurisdictional and other partner policies, plans, and standards may have a direct bearing on CCRT implementation. Plans and policies for transportation systems, parks and open space, and natural resource and surface water protection may include standards that define or influence trail development.

Key standards are highlighted below. All policies, plans, and standards are subject to periodic updates and revisions. Current versions or new policies should be reviewed and used at the time of trail design and engineering. Additional information can be found in Plan Report No. 1 – Existing Conditions and Plan Report No. 3 – Implementation Strategy.

### Oregon Department of Transportation

ODOT has jurisdiction over three state highways crossed or followed by the preferred trail alignments: Oregon 6 (Segment 1), Oregon 47 (Segments 1, 2, and 3), and Oregon 8 (Segment 5). ODOT Rail owns the rail right of way used for the preferred West-East (RAIL 1) CCRT alignment.

#### Oregon Bicycle and Pedestrian Design Guide

ODOT has adopted the American Association of State Highway Transportation Officials (AASHTO) guidelines for path design standards. The ODOT *Bicycle and Pedestrian Design Guide*<sup>1</sup> includes chapters for on-road bikeways, walkways, street crossings, and

<sup>1</sup> <http://www.oregon.gov/ODOT/HWY/BIKEPED/pages/planproc.aspx>

intersections, as well as “shared-use paths.” Shared-use paths (termed multiuse trails in this master plan) 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 14 summarizes key ODOT standards. Concrete surfaces are recommended by ODOT for heavily used trails to maximize the longevity of the surface, although asphalt surfaces are acceptable for most paths. The CCRT Master Plan primarily recommends asphalt surfaces.

**Table 14. ODOT Trail Width Standards**

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
	16'
Very high use by both bicycles and pedestrians	(two 5' bike lanes and one two-way walking area, striped)
	18'–20'
Extremely high use by both bicycles and pedestrians	(tripled in proportion to expected users; separate paths for each mode)

Adapted from ODOT Oregon Bicycle and Pedestrian Design Guide

### Washington County

#### Community Development Code

Section 408-9, Accessway and Greenway Design, contains design standards applicable to trail design. Modifications to these standards are allowed if strict compliance 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.

**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 in the CCRT Master Plan.

**Pedestrian Midblock Crossing Policy**

The recommended CCRT standard for midblock roadway crossings is the Washington County Pedestrian Midblock Crossing Policy. These standards are also recommended for crossing designs for non-County roads.

**Table 15. Midblock Crossing Standards**

	<b>Standard Treatments</b>	<b>Additional Treatments to be Considered</b>
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.

**Metro**

**Green Trails: Guidelines for Environmentally Friendly Trails**

Green Trails 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 Green Trails 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.” Tables 16 and 17 illustrate how to select trail widths and surface materials based on level and type of use.

**Table 16. Trail Width and Surface Material Based on Level of Use**

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

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.

**Table 17. 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 Metro Guidance

Metro has published two other 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.

### Other Jurisdictions

Other government agencies and nonprofit organizations build and maintain regional trails. 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 indirectly control trail development and operations through regulation or directly through trail corridor ownership. For more information, see Chapter 9 of Plan Report No. 3.

## Trail Features and Amenities

Structural and amenity features include bridges, boardwalks, signage, lighting and trail furniture. These features support an overall design framework that communicates a unified sense of place, appearance, and experience. CCRT Master Plan Chapter 4 and ODOT, Metro, and applicable Intertwine<sup>2</sup> guidelines should be used to support overall consistency in design and construction. At the time of actual engineering of particular trail sections, current standards and updated trail use information should be reviewed, and appropriate changes to recommended CCRT trail types and design made.

<sup>2</sup> <http://theintertwine.org/>

### Americans with Disabilities Act Compliance

CCRT preferred alignments are within the flat valley floor of the Tualatin River Watershed. Longitudinal slopes are primarily under 5 percent and cross slopes under 2 percent. These existing grades allow full compliance with ADA standards without extensive use of special structures or trail meanders and switchbacks.

The limited exceptions are where the trail crosses the West Fork Dairy Creek (Segment 2), Council Creek (Segment 3), and the main stem of Dairy Creek (Segment 6). Stream banks may exceed longitudinal and cross slope maximums. These can be readily mitigated using boardwalk and bridges.

### 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 native Spanish speakers will be significant trail users. Appropriate wayfinding, educational, and interpretive signage should be bilingual.

- FHWA’s Manual on Uniform Traffic Control Devices and the Oregon supplement provide guidance on regulatory and warning signs. This type of signage needs to be closely coordinated with city, county, and ODOT standards.
- The Intertwine’s *Regional Trails Signage Guidelines* should be used to support a consistent look and feel for wayfinding, educational, and interpretive signage.

### Environmental Regulations

The CCRT preferred alignments cross or pass near to streams, wetlands, floodplains, and associated riparian areas. Regulatory compliance requirements will have to be considered, impacts from trail construction mitigated, and restoration or enhancement may have to be undertaken. 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.

### Wetland and Nonwetland Waters

Detailed information on wetlands, nonwetland waters, and floodplains in the larger CCRT study area can be found in Plan Report No. 1. Features potentially impacted by the preferred alternatives are summarized in Table 18. Wetland and stream impacts in Segments 3 and 4 are relatively minor.

**Table 18. Wetlands, Nonwetland Waters, and Floodplain Crossings**

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

### Clean Water Services (CWS)

CWS is the surface water management regulatory authority for urban Washington County. Trail development may trigger CWS standards to protect sensitive areas and vegetated corridors, and mitigation and enhancement may be required. Although CWS does not have jurisdiction outside of the UGB, CWS standards are recommended in CCRT's rural unincorporated sections (Segment 2).

CWS standards<sup>3</sup> allow pedestrian or bicycle trail crossings of vegetated corridors. 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. Standards for percent covered by native trees, shrubs and groundcover could particularly apply to trails through riparian corridors. 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 revegetation plan developed to restore the corridor to "good condition."

Paths between 12 and 14 feet wide are an allowed use if constructed using low impact development approaches in accordance with Chapter 4,<sup>4</sup> Runoff Treatment and Control. If these conditions cannot be met, this wider pathway must be permitted in accordance with Section 3.07, Encroachment Standards.<sup>5</sup> Paths up to 12 feet wide, including any structural embankments, are permitted outright if:

- Constructed 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.

### Other Permitting Processes

Table 19 lists the most likely trail development environmental and use permitting and/or compliance processes. Plan Report No. 1 – Existing Conditions provides additional information to help identify the particular trail sections or structures to which different permitting might apply.

<sup>3</sup> <http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%203%20DC%20Amendment%20RO%2008-28.pdf>.

<sup>4</sup> <http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%204%20Amendment%20RO%2007-20.pdf>.

<sup>5</sup> <http://www.cleanwaterservices.org/Content/Permit/DAndC%20Chapters/Chapter%203%20DC%20Amendment%20RO%2008-28.pdf>.

**Table 19. Possible Permitting Processes**

<b>Agency</b>	<b>Method</b>
<b>Federal</b>	
Federal Highway Administration	National Environmental Policy Act (NEPA)
Executive Orders	EO 11988 Floodplain Management Compliance
	EO 11990 Protection of Wetlands Compliance
	EO 12898 Environmental Justice Compliance
National Marine Fisheries Service	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	Endangered Species Act Section 7 Consultation
	Migratory Bird Treaty Act Compliance
U.S. Army Corps of Engineers	Fish and Wildlife Coordination Act Coordination
	Clean Water Act Section 404 Permit
<b>State of Oregon</b>	
State Historic Preservation Office	National Historic Preservation Act Section 106 Consultation
Department of Environmental Quality	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	Wetland Delineation Clearance
	Removal-Fill Permit or General Authorization
Department of Fish and Wildlife	Oregon Fish Passage Law Compliance
	Oregon Endangered Species Act Compliance
Department of Transportation	Habitat Mitigation Policy
	Permit to occupy or perform operations upon state highways
<b>Local Government, Special Districts, Railroads</b>	
County, Banks, Forest Grove, Cornelius, Hillsboro	Land use permits and approvals (conditional use, development, and/or environmental)
	Natural resource overlay zone reviews
	Floodplain development permits
Clean Water Services	Roadway construction permits
Tualatin Valley Irrigation District	Environmental review, development review, storm water permits
ODOT Rail/Portland and Western Rail	Must grant permission to follow or cross major irrigation lines
	Must agree to use of rail corridor for rail-with-trail

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## 6: Phasing Plan

Many factors will influence actual CCRT construction phasing and time frames. 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 will also be influenced by changing jurisdictional authority and priorities, public and private development, and evolving regional and local plans. The building of specific trail sections and structures may change phasing priorities over time. Phasing should be periodically reviewed and adjusted in light of such factors.

### Phasing Criteria

The following phasing criteria are not in order of importance nor weighted. Higher priority trail segments or sections will demonstrate some combination of the following characteristics:

**Table 20. Phasing Criteria**

Criterion	Description
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 and Functionality	<ul style="list-style-type: none"> <li>• Connects to major activity center(s).</li> <li>• Extends built trails</li> <li>• Connects to existing or planned transportation facilities</li> <li>• Functional in and of itself (e.g., if other sections were never built, would still be useful)</li> <li>• Crucial link without which other sections would not be functional.</li> </ul>
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.

### Corridor Phasing

Development of the West-East Corridor – RAIL 1 (Forest Grove to Hillsboro) has general priority over the North-South Corridor – EAST 1 (Banks to Forest Grove). The reasons for prioritizing RAIL 1 over EAST 1 are:

- RAIL 1 will serve larger urban concentrations of commuting and recreational users of all types and modes.
- There are no suitable interim options for a trail from Forest Grove to Hillsboro.
- There are no land acquisition costs or timing constraints (other than funding availability) on RAIL 1.
- Motorized vehicle traffic volumes along most of EAST 1 are relatively low. Interim shared-use solutions may suffice in the near-term.

**Table 21. Trail Phasing Priorities**

**Near-Term**

<b>EAST 1: Banks to Forest Grove</b>	<ul style="list-style-type: none"> <li>• OR 6 undercrossing and approach trail options</li> <li>• Verboort area improvements</li> <li>• Interim on-street shared-use improvements</li> </ul>
<b>RAIL 1: Downtown Forest Grove through incorporated Cornelius</b>	<ul style="list-style-type: none"> <li>• Douglas St in downtown Forest Grove to OR 47/Quince St (including new arterial roadway crossing improvement)</li> <li>• OR 47/Quince St to Yew St or N 4th Ave</li> <li>• Yew or N 4th Ave to N 10th Ave</li> <li>• N 10th Ave to N 19th Ave</li> <li>• N 19th Ave to NW Hobbs Rd/N 29th Ave/Ryland Park (this stage could utilize shared-use on N Holladay St as an interim solution)</li> </ul>
<b>EAST 1 – RAIL 1 Connection</b>	See page 79.

**Near-Term to Mid-Term**

<b>RAIL 1: Cornelius (N 29th Ave/Ryland Park) to Downtown Hillsboro</b>	This relatively long section of RAIL 1 would be built last. Due to the need for a new bridge across Dairy Creek, and the challenges with user access and neighborhood impacts if the section were built in multiple stages, this section would probably have to be constructed in a single stage.
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**Mid-Term**

<b>EAST 1: OR 6 to NW Greenville Rd</b>	Street-adjacent multiuse trail along west side of OR 47 and northeast side of NW Greenville Rd from OR 6 to NW Evers Rd. An at-grade bicycle/pedestrian crossing of OR 47 at NW Greenville Rd may be required.
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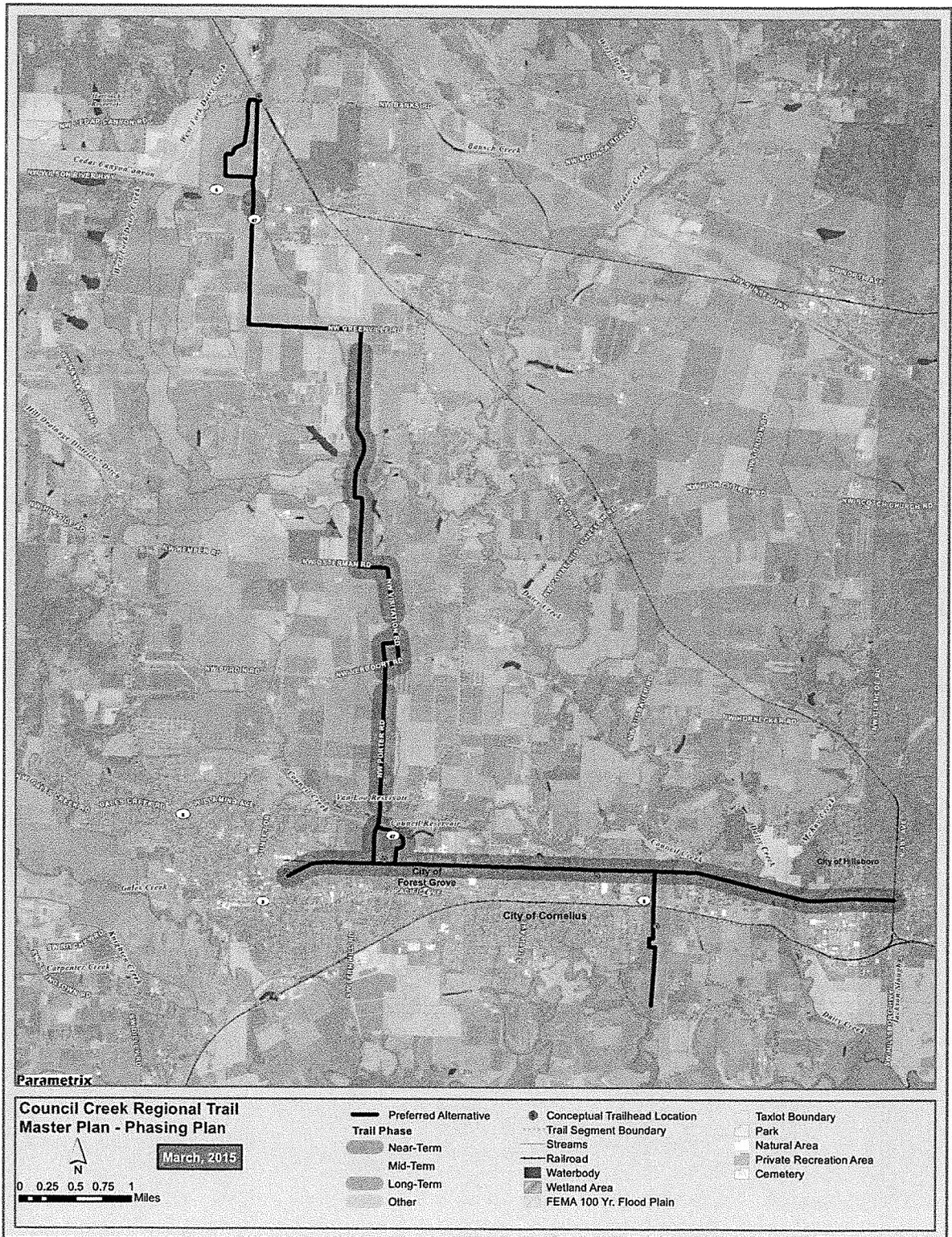
**Long-Term**

<b>EAST 1: NW Evers Rd to south end of NW Porter Rd</b>	<ul style="list-style-type: none"> <li>• NW Evers Rd – Greenville to NW Osterman Rd</li> <li>• Osterman/NW Visitation Rd – to community of Verboort</li> <li>• NW Porter Rd – community of Verboort to OR 47</li> </ul>
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**Other**

<b>EAST 1: NW Banks Rd to OR 47/Main St</b>	Extends from NW Banks Rd near the Banks-Vernonia Trailhead around the west side of downtown Banks and back to OR 47/Main Street between Sunset Park and the northwest OR 6 ramp. Would be built as part of planned roadway improvements on the west side of the City. City may elect to use improved bicycle lanes and sidewalks along Main St for this section of CCRT,
<b>Jobs Ditch/HOBBS: OR 8 to Tualatin River</b>	Trail development is dependent on a new crossing of OR 8, a new UPRR rail crossing, and development of a new high school immediately south of the UPRR line. The south end of this trail section from the high school site to the Tualatin River can be established as part of planned future urbanization.

Map 14. Phasing Plan



## Rail-with-Trail Phasing (RAIL 1)

The phasing of RAIL 1 is complicated by current freight rail service and future MAX or high capacity transit service. The recommended multiuse rail-with-trail improvement has an estimated total cost of over \$22 million and will almost certainly have to be phased. The linear nature of RAIL 1 does not lend to easily defined stages. Although jurisdictional boundaries could be used, staged sections generally defined by major cross streets are suggested.

The staging of RAIL 1 from west to east is recommended. The west and center sections of RAIL 1 primarily cross through urbanized areas with multiple options to enter and exit the trail – cross streets, sidewalks, and bicycle lanes. Higher density urban populations would immediately benefit from a linear trail spanning Forest Grove and Cornelius.

On the east end of RAIL 1 toward Hillsboro, lower densities and fewer cross streets could result in trail users being left with no acceptable options (to both the users and surrounding neighborhoods) to exit and enter the trail until RAIL 1 was completely constructed. In addition, west to east phasing will provide additional time to determine if the existing rail bridge across Dairy Creek (Segment 6) could be re-used, thus saving the \$2.6 million needed for a complex-to-engineer new trail bridge paralleling the existing rail bridge.

## North-South Trail Corridor (EAST 1)

Development of the North-South Corridor is generally a LONG-TERM priority. Multiuse trail development for EAST 1 should be managed so that continuous trail sections between major road intersections are built as single stages. For example, the NW Porter Road multiuse trail section should not be built until all required right of way between NW Verboort Road and Oregon 47 is secured.

Staging sections notwithstanding, the actual phasing of the North-South Corridor street-adjacent multiuse trail will be primarily dependent on the acquisition of additional right of way. Partner jurisdictions must be ready to identify and act on opportunities to acquire necessary right of way along the Greenville-Evers-Osterman-Visitation-Verboort-Porter sections of EAST 1, with the long-term goal of assembling enough land to build functional rural street-adjacent multiuse trail sections that gradually replace the near-term interim shared-use solution (see pages 77–78).

## Corridor Phasing Exceptions

The following north-south trail sections should be given NEAR-TERM priority.

### **EAST 1: Undercrossing of Oregon 6 at Oregon 47/Main Street (Banks)**

Considerable safety and functionality benefits accrue from a relatively inexpensive (estimated at \$750,000) widening of the Oregon 47/Main Street undercrossing of Oregon 6. Conflicts between bicycle/pedestrian and motorized vehicle traffic crossing under the highway would be significantly reduced, and access to existing bike lanes and sidewalks in downtown Banks and to the Banks-Vernonia Trailhead greatly improved.

This undercrossing improvement would require approach trails on the west side of Oregon 47/Main Street from the northwest ramp of Oregon 6 intersecting with Main

Street to the unsignalized intersection of Oregon 47 and NW Wilkesboro Road just south of Oregon 6. A future extension of a street-adjacent trail on the west side of Oregon 47 and an arterial roadway crossing improvement at NW Greenville Road will be needed to connect to the balance of the future EAST 1 street-adjacent trail.

### **EAST 1: Community of Verboort**

Recommended NEAR-TERM improvements include:

- Shared-use signing and/or pavement markings on NW Heesacker Road, the south 500 feet of NW Visitation Road, and the north 500 feet of NW Porter Road.
- Shoulder widening on NW Visitation Road, and a widened sidewalk on the north side NW Verboort Road, as well as signing and pavement markings.
- Improved arterial bicycle/pedestrian roadway crossing of NW Verboort Road at the intersection with NW Heesacker Road.

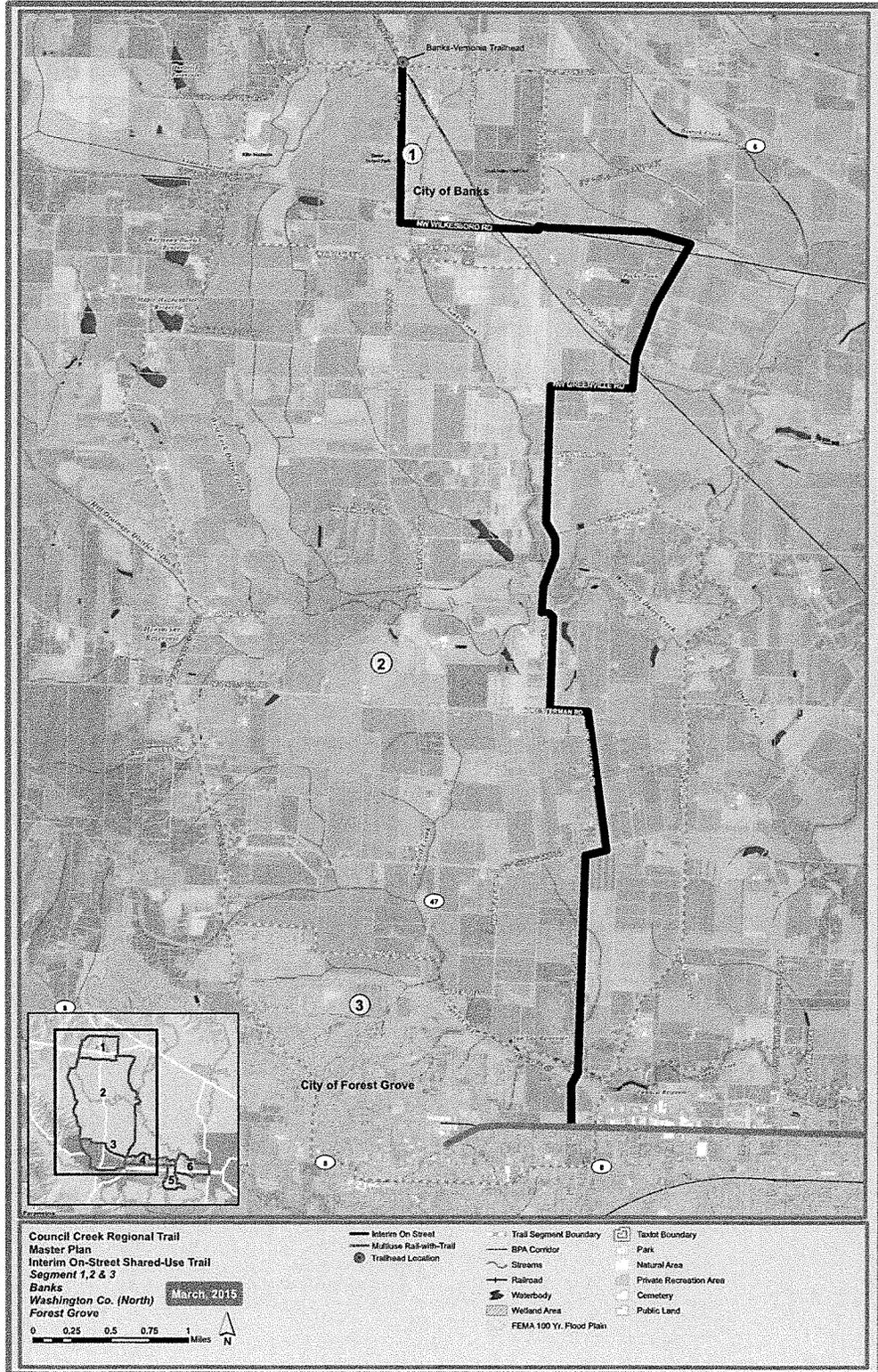
### **EAST 1: Interim Shared-Use On-Street Improvements**

Vehicle traffic volumes along many sections of EAST 1 (NW Evers Road, NW Osterman Road, NW Visitation Road, NW Porter Road, and possibly NW Greenville Road) are low enough that on-street shared-use solutions and/or roadway shoulder widening may be economic and safe trail alternatives. Portions of this route are also along the Tualatin Valley Scenic Bikeway (TVSB), which may be programmed by the County for spot improvements in the NEAR-TERM.

Shared-use is therefore recommended as a practical **interim** solution through Segments 1, 2, and 3 until funding and property is secured to build functional multiuse trail sections.

- Bicycle route signing and/or pavement markings for shared-use should be added or improved along EAST 1 roadways to establish an interim CCRT route generally following the recommended long-term street-adjacent trail alignment between Banks and Forest Grove. The TVSB overlaps with EAST 1 along NW Greenville Road, NW Osterman Road, NW Visitation Road, and NW Porter Road.
- As the Oregon 47 section of EAST 1 (Segment 2) carries higher motorized-vehicle volumes and speeds making shared-use potentially unsafe, the CCRT interim shared-use solution should be temporarily extended along the NW Greenville-NW Roy-NW Wilkesboro section of the TVSB, rejoining Oregon 47 immediately south of the Banks and Oregon 6 interchange at NW Wilkesboro Road.

**Map 15. Interim On-Street Shared-Use Trail Segments 1, 2, and 3**



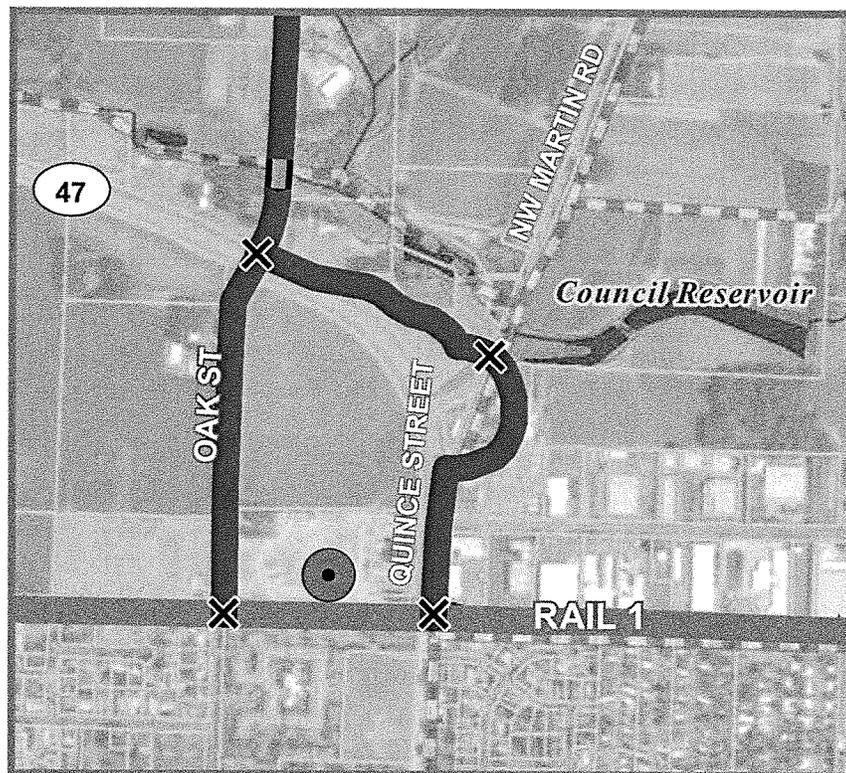
### EAST 1 and RAIL 1: Connecting Trail and Highway Crossing

A critical improvement impacting the functionality of the entire CCRT is the need for a new arterial roadway crossing and connecting trail sections between Segments 2, 3 and 4 in the vicinity of the intersection of Oregon 47/Quince Street and NW Martin Road.

Two conceptual connector options are illustrated below (Map 16). Selection will be driven by ODOT determination of new permissible signalized or user-activated crossings and the final design and timing of a planned rebuild of the Oregon 47/NW Martin Road intersection. The Oak Street alternative is simpler and less expensive than the NW Martin Road alternative but requires two new arterial roadway bicycle/pedestrian crossings of Oregon 47 (at Oak Street and the rail crossing). The major future intersection improvements at NW Martin Road will require only one new arterial bicycle/pedestrian crossing.

The cost of bicycle and pedestrian facilities and trail sections associated with the Oregon 47/Martin Road option are estimated to be \$400,000 greater than the Oak Street option, even though Oak will require an additional arterial crossing.

**Map 16. Oregon 47 Connection Option**



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## 7: Funding Opportunities

Trail development and enhancement funding sources are summarized in Tables 22 and 23. Terms and conditions will change from time to time, new programs may emerge or others may sunset, and funding cycles and levels will vary. Funding or construction planning should be preceded by a review of current programs and cycles.

### Construction Funding

Transportation and parks system development charges (SDC) 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 to regional trail development within a jurisdiction's boundary. Other jurisdictions collect street utility fees to underwrite operations and maintenance costs, another possible funding source for trails.

**Table 22. Trail Design and Construction Funding Sources**

Agency	Program	Funding Cycle	Local Match Percentage	Range of Funds Available
Washington County	MSTIP 3d - Opportunity Funds	5-year cycle	Undetermined	\$5M total
Metro	Metropolitan Transportation Improvement Program (MTIP) 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 (2015–2018)	Each biennium	20%	\$42M

### Enhancement Funding

Funding may also be available to underwrite specific elements or types of trail construction, or to provide enhancements or mitigation within trail corridors. Such funds are summarized in Table 23. 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 23. Potential Trail Enhancement Funding Sources**

<b>Agency</b>	<b>Program</b>	<b>Funding Cycle</b>	<b>Local Match Percentage</b>	<b>Range of Available Funds</b>
<b>Metro</b>	Restoration and Enhancement Grants	Annual	100%	\$10,000 to \$30,000
	Nature in Neighborhoods Capital Grants	Annual	200%	Minimum of \$50,000
	Natural Areas Bond Acquisition Funds	Varies	Varies	Varies
	Regional Travel Options	Biannual	10%	Minimum of \$50,000
<b>Oregon Parks and Recreation</b>	Local Government Grant	Annual	20% to 50%	\$40,000 to \$1M
	Recreational Trails Grants	Annual	20%	Minimum of \$5,000
	Land and Water Conservation Fund (LWCF)	Annual	50%	Minimum of \$12,500
<b>Oregon Community Foundation</b>	Oregon Historic Trails Fund	Annual	N/A	Up to \$40,000
	Oregon Parks Foundation Fund	Annual	N/A	\$1,500 to \$5,000
<b>Bikes Belong</b>	Bikes Belong Grant	Quarterly	N/A	Up to \$10,000
<b>Cycle Oregon</b>	Cycle Oregon Signature Grant	Annual	N/A	\$50,000 to \$100,000

## Appendix A: Plan Report No. 1 – Existing Conditions

Appendix A is a major document ranging upward of 100 pages in length. This appendix can be downloaded from the link below.

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



## Appendix B: Plan Report No. 2 – Trail Alignment Analysis

Appendix B is a major document ranging upward of 100 pages in length. This appendix can be downloaded from the link below.

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



## Appendix C: Plan Report No. 3 – Implementation Strategy

Appendix C is a major document ranging upward of 100 pages in length. This appendix can be downloaded from the link below.

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



# Appendix D: Project Delivery and Quality Control Plan



# **COUNCIL CREEK REGIONAL TRAIL (CCRT) MASTER PLAN**

## **Project Delivery and Quality Control Plan**

### **Budget and Expenditure Controls**

Parametrix shall:

- Produce and submit monthly reports along with invoices to City of Forest Grove and ODOT highlighting key activities for the prior month and documenting project expenditures for the billing period and to-date.
- Use the Parametrix “Crystal Reports” project monitoring system to provide PMT with weekly budget updates as needed. Crystal Reports document project hours billed and other costs accrued on a task and sub-task basis, and are updated every seven (7) calendar days (reports issued every Tuesday).

### **Master Plan Content QA/QC**

The Parametrix Bellevue, Washington Office will provide independent peer review and quality control for each of the Plan Reports (excluding the *Public Involvement Plan*) and for the draft and final versions of the Master Plan.

### **Review and Acceptance of Deliverables**

The City of Forest Grove and ODOT are responsible for the final review and official acceptance of all Master Plan deliverables. The PMT, PAC, and SAC will review and comment on Master Plan deliverables.

Consensus comments by the PAC and SAC, and input from public open houses, on the Master Plan, will be delivered to the PMT in the form of meeting notes prepared by Parametrix. In addition, any additional individual comments or input provided directly by or through PAC or SAC members will be delivered to the PMT. The City of Forest Grove is responsible for consolidating all comments and input and providing formal direction to Parametrix for any modifications to the draft deliverables through a single comment memorandum and/or “track changes” version of the submitted draft deliverable. The project’s WOC further details these processes.

### **Contingency Tasks**

No formal contingencies are contemplated by the project’s work order contract. Contingencies may be considered on a case-by-case basis by ODOT and the City of Forest Grove in consultation with Parametrix, based on agreed to additional project needs and the availability of additional funding.

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# Appendix E: Advisory Committee Roles and Responsibilities



# COUNCIL CREEK REGIONAL TRAIL MASTER PLAN

## Committee Roles and Responsibilities

Three advisory committees will assist in developing the Council Creek Regional Trail Master Plan (Master Plan). The Project Advisory Team (PMT) will generally be the initial review body for each Master Plan task deliverable, followed by review by the Stakeholder Advisory Committee (SAC), then review in public open houses as applicable, and finally review by the Project Advisory Committee (PAC). The PAC shall consider input from the PMT, SAC, and from public open houses, and make the final advisory recommendations on the three (3) project task Plan Reports, and on the draft Master Plan that is forwarded to the jurisdictional partners that will adopt the Master Plan.

### Committee Responsibilities

The members of all three project committees shall have the following responsibilities. PAC and SAC members may choose an alternate representative but are encouraged to use this representative only when unavoidable circumstances arise. Consistency in committee participation is a key factor in delivering an effective Master Plan.

- Review all meeting materials in advance and attend all meetings.
- Assist in gathering existing conditions information including environmental and land use information and stakeholder contact information.
- Provide advice on Master Plan trail alignment alternatives and other deliverables.
- Assist in public outreach, such as by identifying strategies, venues, and invitees; helping to staff such outreach events.
- Act as project liaisons to the organizations and constituencies they represent. Committee members will be asked to verbally report on their prior liaison activities at each committee meeting.

### Committee Types and Membership

PAC and SAC members may choose an alternate representative but are encouraged to use this representative only when unavoidable circumstances arise. Consistency in committee participation is a key factor in delivering an effective Master Plan.

### Project Management Team (PMT)

The PMT will help to ensure completion of tasks and deliverables in accordance with the Master Plan scope, schedule and budget; and provide policy and technical guidance. The PMT shall review and comment on draft Plan Reports prior to distribution to the PAC, SAC, appointed and elected officials, and the public.

Four (4) PMT meetings shall be held over the duration of the Master Plan project. PMT meetings shall be held to coincide with delivery of the draft Plan Reports associated with project Tasks 3, 4, and 5, and with delivery of the internal draft Master Plan (Task 6). In addition, the PMT shall participate in the project kick-off meeting. The project kick-off meeting and the meeting for project Task 3 shall be held jointly with the PAC as single meetings. All other PMT meetings will be held separate from the PAC and be one (1) hour in length and conducted by teleconference.

The PMT membership shall be the following entities and specific persons:

- City of Forest Grove      Derek Robbins    (City Project Manager)
- City of Cornelius         Dick Reynolds   (Collaborative Project Manager)
- Metro                         Lake McTighe    (Collaborative Project Manager)
- ODOT                         Michele Thom    (ODOT Project Manager)
- Parametrix                 Jim Rapp         (Consultant Project Manager)

The City Project Manager shall facilitate the PMT meetings. Consultant shall lead meeting discussions on technical issues. Specific responsibilities of City Project Manager, with the assistance of other PMT members and the Consultant, related to the functioning of the PAC and SAC include:

- Facilitating PAC and SAC meetings to begin and end on time, stay on topic, consider all issues on the agenda, afford all members the opportunity to express their views and concerns, and to the extent possible, reach consensus on Master Plan alternatives and recommendations.
- Providing the PAC and SAC with timely meeting agendas and materials.
- Preparing and distributing PAC and SAC meeting summaries.
- Arriving early and remaining after each PAC and SAC meeting to manage meeting set-up and take-down logistics.
- Providing general Master Plan project updates and information on upcoming project activities and events notices as part of each meeting.
- Sharing agency, stakeholder, and public input; and other information that may have been received between PAC and SAC meetings.

#### **Project Advisory Committee (PAC)**

The PAC will provide technical assistance, feedback, review, and provide advisory recommendations on project task deliverables; and provide policy guidance and act as a sounding board over the course of the Master Plan project.

Four (4) PAC meetings shall be held over the duration of the Master Plan project. PAC meetings shall be held to coincide with delivery of the draft Plan Reports associated with Master Plan project tasks 3, 4, and 5, and with delivery of the external draft Master Plan (Task 6). In addition, the PAC shall participate in the project kick-off meeting. The project kick-off meeting and the meeting for project Task 3 shall be held jointly with the PAC as single meetings. All PAC meetings will be two (2) hours in length and be held at City of Forest Grove offices or at other locations convenient to PAC members, as determined by the City.

The PAC membership shall include one (1) representative from each of the following entities. PMT members shall also serve on the PAC. Each jurisdiction shall have one "vote" in arriving at PAC recommendations. The Parametrix representative shall be "non-voting". PAC representatives for the City of Forest Grove and City of Cornelius are in addition to its member on the PMT. The cities are the local government managing agencies for the Master Plan project, and the additional PAC representation will allow its PMT representative to concentrate on project contractual and management issues.

- City of Forest Grove
- City of Banks
- City of Hillsboro

- City of Cornelius
- Washington County

### **Stakeholder Advisory Committee (SAC)**

The SAC shall advise the PMT and PAC on constituency and community concerns and issues, assist in public outreach, review and provide comment on Master Plan alternatives and deliverables, serve as a forum to provide information and contacts that will help advance the Master Plan, and help to build community consensus on Master Plan recommendations.

Three (3) SAC meetings will be held over the duration of the Master Plan project. SAC meetings shall be held to coincide with the delivery of the draft Plan Reports associated with Master Plan Tasks 4 and 5, and with delivery of the external draft Master Plan (Task 6). All meetings will be two (2) hours in length and be held at City of Forest Grove offices or at other locations convenient to SAC members, as determined by the City. PMT and PAC member participation in SAC meetings shall be ex-officio.

The SAC membership may include but not be limited to one (1) representative from each of the following entities or interests.

- Forest Grove Recreation Commission
- Cornelius Parks Advisory Board
- Forest Grove Economic Development Commission
- Forest Grove Chamber of Commerce
- Cornelius Chamber of Commerce
- Rural Roads Operations & Maintenance Advisory Committee (RROMAC)
- Washington Transportation Association (WTA)
- Citizen Participation Organization (CPO) 15
- Salmonberry Corridor Coalition
- Friends of Yamhelas Westsider Trail Coalition
- Friends of Banks-Vernonia Trail
- Banks Chamber of Commerce
- Washington County Visitors Association
- Washington Co. Bicycle Transportation Coalition
- Tualatin Soil & Water Conservation District
- Hillsboro Chamber of Commerce
- Hillsboro Economic Development Commission
- Tualatin River Watershed Council
- Adelante Mujeres
- Forest Grove Committee for Citizen Involvement
- Verboort Citizen Advisory Board
- Oregon Farm Bureau

### **Committee Meeting Purpose and Schedule**

The three committees will meet several times over the course of the Master Plan process. Meeting dates below are “**the business week of**” and preliminary, and may be subject to modification over the course of the Master Plan process, based on adjusting timing to coincide with key deliverables, to maximize committee participation, or to account for other variables that may arise. Committee decision-making processes, protocols, and limitations are summarized elsewhere in the Roles and Responsibilities document.

- **Kick-off Meeting (Task 1.2.1)**
  - PMT and PAC                      Week of October 7, 2013
 

**Purpose:** Present project history, study area, and overview; review project scope and schedule, “Committee Roles and Responsibilities” and “Project Delivery and Quality Control Plan” documents, and SAC membership.

**Materials:** Full ODOT-approved project scope, project mapping, draft “Roles and Responsibilities” and “Quality Control” documents.

**Outcomes:** Modify or accept project schedule, “Roles and Responsibilities” and Quality Control” documents, and SAC membership.
  
- **Public Involvement Plan, Existing Conditions Report, Trail Alignment Criteria (Task 2.1, Task 3, Task 4.1)**
  - PMT and PAC                      Week of January 13, 2014
 

**Purpose:** Review draft Existing Conditions Report; draft Public Involvement Plan; and draft trail alignment criteria.

**Materials:** Draft Existing Conditions Report and draft Public Involvement Plan.

**Outcomes:** Modify or accept Existing Conditions Report, Public Involvement Plan, and Trail Alignment Criteria.
  
- **Trail Alignment Analysis (Task 4.2)**
  - PMT                                      Week of April 14, 2014
  - SAC                                      Week of April 28, 2014
  - Open House                      Week of May 27, 2014
  - PAC                                      Week of June 9, 2014

**Purpose:** Review draft Trail Alignment Report and mapping identifying up to 3 alignments in each of 7 trail segments.

**Materials:** Draft Trail Alignment Report and Map Atlas.

**Outcomes:** Modify or accept project schedule, “Roles and Responsibilities” and Quality Control” documents, and SAC membership.
  
- **Plan Implementation Report (Task 5)**
  - PMT                                      Week of October 27, 2014
  - SAC                                      Week of November 4, 2014
  - PAC                                      Week of November 17, 2014

**Purpose:** Review Plan Implementation Report, which will include a “preferred” trail alignment for each segment and revised map atlas, trail design typology, cost estimates, and report on other implementation factors.

**Materials:** Draft Plan Implementation Report

**Outcomes:** Modify or accept Plan Implementation Report including selection of preferred trail alignment for each trail segment

- **Master Plan Production (Task 6)**

- PMT Week of March 23, 2015
- SAC Week of March 30, 2015
- Open House Week of April 20, 2015
- PAC Week of May 18, 2015

**Purpose:** Review full draft Master Plan and map atlas.

**Materials:** Draft Plan Implementation Report

**Outcomes:** Modify or accept Plan Implementation Report including selection of preferred trail alignment for each trail segment

- **Final Master Plan Submitted to City** Week of June 29, 2015
- **Jurisdictional Reviews** July – September 2015

## **Committee Meeting and Communication Protocols**

### **Decision-making Processes**

All three project committees will strive to reach consensus decisions on Master Plan deliverables and recommendations. The PMT's Parametrix representative shall be "non-voting".

- Consensus is defined as the point where all committee members agree on the best option, even if it is not each member's personal preference.
- If consensus cannot be reached, the committees will be encouraged to narrow the possibilities by making majority/minority recommendation(s). Any committee member that still has a strongly held divergent viewpoint may ask that their position be included in the meeting record.
- While committee input is highly valued and essential to the success of the Master Plan project, all actions of the three committees are advisory. The City of Forest Grove and ODOT reserve the final decision-making authority for all Master Plan recommendations and for directing the activities of Parametrix.

### **Meeting Agreements**

Committee members are volunteers and will have limited time to consider Master Plan findings and deliverables. In addition, the Master Plan project budget and scope is set by contract with ODOT. The ability to extend meetings, re-consider recommendations, or add or extend tasks will be highly constrained. In order to assure that committee meetings are the most productive, the following meeting agreements are suggested:

- Treat fellow committee members, project staff, and audience members, if any, with respect.
- Share the floor – let others speak once before speaking twice. Listen carefully with the intent of understanding the positions and statements of other committee members.
- Collaborate with other committee members, and project staff and consultants, in seeking to find consensus.
- Help create an atmosphere in which differences can be raised, discussed and melded into group decisions. Divergent views and opinions are expected and are to be respected.
- Be an active member of the committee. Make every effort to attend every committee meeting. The committees will not revisit information provided or decisions made in your absence.

- Represent your designated constituents, but ultimately strive to set aside personal or constituent interests in order to seek the best solutions for all stakeholders and future users of the trail.
- Focus questions and comments on the subject at hand and on the published agenda, unless committee members agree by consensus to add or remove agenda or discussion items.
- When discussing agenda items and project issues, apply your comments to the subject at hand, not to personalities or personal disagreements. Raise issues honestly, clearly and early, and share differences of opinion – silence is considered consent.
- Turn off cell phones, pagers, laptops, and other communication devices, except when using such devices will help to move forward issues associated with the agenda.
- Refrain from conducting non-project business during committee meetings. If you must take a priority call or have to conduct a necessary time-specific non-project conversation, please excuse yourself from the meeting and return as soon as possible. The committees will not revisit information provided or decisions made in your absence.
- Notify the City of Forest Grove if you are unable to attend a meeting or project event. Indicate if an alternate representative will be attending in your place.

### **Communications**

Acting as liaisons to constituents, appointed and elected officials, the public, and other groups and stakeholders is a key responsibility of all committee members. Outside communications by committee members on the Master Plan process and findings are encouraged. However these communications need to be consistent. The following guidelines are suggested:

- Members will be expected to report at each committee meeting on their liaison activities and what they are hearing back from constituents and the public.
- Members will not engage in outside actions or discussions in a manner that misrepresents committee processes or decisions. Members are free to express their disagreement or issues with committee decisions, but should do so in the context of accurately representing the decisions and recommendations of the full committee.
- Members will refrain from trying to reverse or change committee decisions or recommendations by engaging with outside parties to unduly influence other committee members. Disagreement or dissent is legitimate but it should be expressed in the context of committee decision-making processes and recorded as a minority or individual position.
- Members can suggest agenda items by contacting the City project manager. Between committee meetings, members should also provide the City project manager with reports of any comments, issues, or concerns they are hearing from outside sources or constituents.
- Members will notify the City project manager about any news media inquiries, and refer requests for official statements or viewpoints.

## Appendix F: Public Involvement Plan



# COUNCIL CREEK REGIONAL TRAIL MASTER PLAN

## PUBLIC INVOLVEMENT PLAN

### INTRODUCTION and OVERVIEW

The Council Creek Regional Trail Public Involvement Plan (PIP) serves as a guide for outreach activities throughout the Master Plan process. The PIP will be implemented with two distinct audiences in mind. The first audience includes stakeholders with specific advocacy, location, property, or jurisdictional interests in the Master Plan. The second audience is the general public that may engage as it relates to specific concerns or general interests.

Public involvement activities will include both traditional and social media, a project web site, and coordination with the Master Plan's jurisdictional partners. Targeted interactions with specific groups and interests through key stakeholder interviews and the project's broad-based stakeholder advisory committee, and general interactions at project open houses will be publicized through a variety of media and direct notice activities that will assure a high level of contact with and participation by multiple audiences.

In addition to the specific outreach events described in this PIP, a Stakeholder Advisory Committee (SAC) will meet three (3) times in the course of the Master Plan process to provide advice and recommendations. The SAC will be an important means for engaging stakeholders, encouraging deliberation in the formation of recommendations and building understanding about Master Plan decisions. Details on the SAC's purpose, membership and meeting schedule are included in *Attachment A - Committee Roles and Responsibilities*.

### PROJECT GOALS

The Master Plan will recommend a comprehensive strategy for the completion of an uninterrupted 15-mile long regional trail from downtown Hillsboro, Oregon through the cities of Cornelius and Forest Grove, thence north through unincorporated Washington County to the City of Banks. The trail study corridor is divided into seven segments based on the differing attributes along the corridor, which include older neighborhoods, business and industrial areas, riparian stream corridors, and rural farmlands.

### PUBLIC INVOLVEMENT GOALS

- Ensure effective coordination and communication between jurisdictional partners and stakeholders and related projects taking place within the trail study corridor.
- Engage local jurisdictions, utilities, neighborhoods, property owners, citizens, bicycle and pedestrian advocates, area non-profits, businesses, and other stakeholders directly in master plan development.
- Guide jurisdictional partners on future planning, design, permitting, and development of the trail.

- Host activities and provide tools that will add value to the project and genuinely engage the community in an open and transparent process.
- Keep the public informed with accurate, up-to-date information.
- Build trust and a long-term relationship with the community.
- Maintain a level of flexibility with the process.

## **OBJECTIVES and OUTCOMES**

In order to achieve the preceding goals, the project will offer multiple opportunities to engage:

### **One-on One Involvement**

Key stakeholder interviews will be a primary strategy for early outreach, enabling the project team to understand the corridor's opportunities and challenges from a local level. As each stakeholder or group of stakeholders is interviewed, new stakeholders are likely to be identified.

### **Information Sharing**

- Project updates available on the project web site and from links on project partner web sites, as well as by project postcards, newsletters and newsfeeds.
- Formal open houses as specified in the project consultant's contract.
- Jurisdictional partners will share project information at key milestones via a number of methods depending on the desired audience, information to be shared, feedback needed and timing. This could include outreach by jurisdictional partners at other community events, at community centers, or other community gathering places. The jurisdictional partners may also hold targeted meetings with stakeholders as needed.

### **Comments and Preferences**

Throughout the development of the master plan, the overall public process will allow interested parties to engage with the project. The communication process will provide the public with easy access to project information, the ability to get questions answered and the ability to provide feedback on the plan and process.

## **AUDIENCES and OUTCOMES**

Target and general audiences will be asked to review project information, share it with those they know, engage with each other, and provide comments and preferences in writing or at public open houses.

- Residents/Neighbors – those who live within the trail study corridor that may be impacted most directly by trail route options.
- Businesses – those who operate businesses or work in the trail study corridor.
- Commuters – those who travel through the trail study corridor.

- Advocacy groups – groups with a particular interest in the trail, for example groups focused on increasing travel by foot or by bicycle, etc.
- Underrepresented populations - particularly the trail study corridor’s large Hispanic population.

## KEY MESSAGES

Key project messages may be refined as the master plan progresses. Some messages may be emphasized at certain times based on the event purpose, timing and audience. Key messages are:

**1. The Council Creek Regional Trail will create new connections within communities and between communities.**

Linking diverse community destinations along the trail corridor will increase opportunities to bike and walk for recreational, shopping, and commuter purposes. The trail will provide access between homes, commercial destinations, schools, and transit, as well as provide a continuous bicycle and pedestrian link from the city of Hillsboro to the city of Banks with access to Cornelius, Forest Grove, and farming communities in Washington County in-between.

**2. The Council Creek Regional Trail will support increased health and well-being through recreation and exercise, as well as improving air quality by providing for safe and convenient non-motorized transportation options.**

Motorized transportation is responsible for nearly 40% of all greenhouse gas emissions, and is a significant source of air pollution. Studies show that households living near a greenway or trail are more likely to meet nationally recognized measures of health.

**3. The Council Creek Regional Trail is supported by local communities, and has already been included in nearly all regional and local land use plans in the area.**

**4. The Council Creek Regional Trail will keep dollars in the local economy by providing safe alternative means to make trips between neighborhoods, shops and jobs.**

As automobile, fuel and insurance prices rise, the percentage of household dollars going to transportation significantly increases. Biking and walking are an affordable and healthy alternative. Studies have shown that businesses are investing in locations accessible by trails to attract and retain employees.

**5. Local governments are working together with residents, businesses and community organizations to create the Council Creek Regional Trail.**

First and foremost, the purpose of this trail is to serve neighborhoods, citizens, businesses, commuters, and recreational users. They serve on the master plan advisory committees and are guiding the process. Local governments and jurisdictional partners include the cities of Banks, Forest Grove, Cornelius and Hillsboro; Washington County; Metro; and the Oregon Department of Transportation.

**DIVERSITY OUTREACH**

Targeted public outreach activities to the significant concentration of the Hispanic population (see table below) in the vicinity of the project study corridor is a priority. 2010 U.S. Census figures report the City of Cornelius and City of Forest Grove area as having the greatest concentration and highest growth rate of Hispanics in Washington County. The Hillsboro area also has a significant Hispanic population.

**Study Area Hispanic Population (2010)**

Location	Total Population	Hispanic or Latino (of any race)	% Hispanic
City of Banks	1,777	124	7.0%
City of Cornelius	11,869	5,948	50.1%
City of Forest Grove	21,083	4,874	23.1%
City of Hillsboro	91,611	20,726	22.6%
Washington County	529,710	83,270	15.7%
Oregon	3,831,074	450,062	11.5%

Source: U.S. Census Bureau

Targeted information and notifications to Hispanic communities and populations within the Council Creek Regional Trail Master Plan project area will be accomplished through:

- Publication in the *El Hispanic News*.
- Emailed project notices requesting re-posting to churches specifically serving Hispanic populations in Western Washington County.
- Emailed project notices requesting re-posting to businesses in Hillsboro, Cornelius, Forest Grove and Banks specifically serving Hispanic populations.
- Postings and take home materials distributed to schools and libraries within the Forest Grove, Banks and Hillsboro School Districts with large Hispanic student bodies.
- Postings to on-line calendars to the following non-profits and health centers that serve the Hispanic population in Western Washington County: Adelante Mujeres, Centro Cultural and the Virginia Garcia Memorial Health Clinic.

See *Attachment B – Hispanic Community Outreach* background for more information

**TOOLS and TASKS**

A successful master plan will reflect the interests and desires of the local community. A variety of public information materials and activities will be developed and refined in the course of master planning and public outreach processes to keep interested parties informed and to invite participation at key milestones. Informational materials (e.g., newsletters and meeting

advertisements) will be disseminated at specific points in the master plan process and made available on an ongoing basis through the project website and other media platforms. A stakeholder database will be developed and expanded as the master plan progresses.

### **Stakeholder Interviews**

Interviews will be conducted with key stakeholders. Interviewed stakeholders will include but are not limited to citizen participation organizations (CPO), other neighborhood associations, utilities and railroads owning or controlling lands within the trail corridor, property owners, governmental service providers not otherwise represented on a project committee, bicycle and trail advocacy associations, and area non-profits.

### **Stakeholder Advisory Committee**

This committee will advise the project team on constituency and community concerns and issues, as well as serve as a forum to provide information and contacts that will help advance the master plan, review and evaluate master plan findings and deliverables, assist in considering options and alternatives, and build consensus recommendation(s) as to draft and final master plan findings and conclusions. Members will also serve as liaisons to their constituents by sharing information and gathering additional input.

### **Electronic Media**

Information will be continually updated on the project web site and the jurisdictional partners will use other social media tools to provide people with an understanding of the current work of the project as well as background and next steps. Opportunities for public engagement will be clearly delineated. Jurisdictional partners will also be encouraged to provide links on their organizational web site to project resources.

### **Email Alerts**

Email addresses available through the project mailing list will be used to send updates at project milestones. The jurisdictional partners may also share information through other communication networks as appropriate.

### **Media Outreach**

The jurisdictional partners will proactively work with local media to describe the project, explain its timeline, highlight opportunities for involvement, discuss relevant issues and frame intended outcomes. Articles, event listings, and public notices will be submitted to community newspapers and newsletters and other media outlets as appropriate.

### **Presentations**

Presentations will be a primary avenue for communications with stakeholders, the public, and the appointed and elected decision-making bodies of jurisdictional partners. Open houses featuring project presentation will be held, and meetings will be scheduled to present the draft master plan to elected or appointed bodies.

### **Public Events**

To share information and request public feedback, the project team will hold an open house at two master plan milestones. Participants will have an opportunity to ask questions and offer comments on project proposals and ideas.

Outreach events associated with the trail alignment alternative and draft master plan milestones will open with presentations on current master plan outcomes and findings at the time of the milestone. The two events will also include a facilitated question and answer session, followed by participant interaction in an “open house” setting. The meetings will include a comment form/online survey to capture public feedback. The project team will also capture public comments at the events.

### **Meeting Materials**

A meeting announcement will be sent in advance of the two outreach events to all property owners within the trail study corridor and to other interested parties that have requested notification or that have been identified by the jurisdictional partners. The following materials will be produced in conjunction with each round of outreach events:

- One project informational postcard, one newsletter article, one Metro newsfeed release, one power point presentation and one public web-based survey.
- Project website content.
- One set of large format informational displays.
- Posters distributed to local businesses and organizations in the project area.

### **Displays, visual renderings, illustrations**

Display boards, PowerPoint presentations, sketches, renderings, illustrations or still photographs may be used to describe potential trail alignments and other master plan findings and recommendation at outreach events.

### **PROJECT SCHEDULE**

Public engagement will be ongoing throughout the entire master plan process. The detailed project schedule is included in *Attachment A - Committee Roles and Responsibilities*.

### **MEASUREMENT and EVALUATION**

A summary of all public involvement activities and outcomes will be compiled at the conclusion of the master plan. The summary will include individual public event records, stakeholder interviews, public comments, survey responses and also describe how public and stakeholder input helped shape the master plan.

Successful communication will be evidenced by a clear understanding of the project alternatives and timeline and participation in opportunities for engagement and the decision-making process. This will be measured by the following:

- The overall attendance and the number of documented direct contacts made with community members at outreach events, and the number of “hits” on the project website.
- The number of community members submitting comments on the master plan through outreach event surveys, the project website, and by other means; and/or requesting follow-up information.
- The outreach participants that indicate that the master plan outreach program was effective based on outreach event surveys, the project website, and from other input.
- An assessment of the degree to which targeted audiences and populations were engaged in project development.
- The level and type (i.e., positive or negative) of media interest in the project.

### **PIP AMENDMENTS**

PIP amendments may be necessary as master plan findings, outcomes and recommendations emerge. Changes will primarily relate to the type, frequency, locations and targeted audiences for outreach events and activities.

### **Attachments**

- A. Committee Roles and Responsibilities
- B. Hispanic Community Outreach Background

## COUNCIL CREEK REGIONAL TRAIL MASTER PLAN

### Hispanic Community Outreach Background

The Council Creek Regional Trail is located at the western edge of the Portland metropolitan region to serve as a primary transportation and recreational facility for bicycle and pedestrian travel. The Project study area includes four (4) cities and portions of unincorporated Washington County. The study area extends from the City of Hillsboro Regional Center at the existing western terminus of the region's MAX light rail system, through the City of Cornelius, City of Forest Grove and unincorporated Washington County to the City of Banks, a distance of approximately fifteen (15) miles.

Between 2000 and 2010, the population of the cities and counties in the study area has grown at a faster rate than the state average of 12% (Table 1). The smallest jurisdiction in the study area, Banks, has grown by nearly 40% and the City of Hillsboro has seen an overall population increase of 30.5%. Much of this growth is attributed to a large increase in the Hispanic population in the area.

**Table 1. Total Population Change from 2000 to 2010**

Location	2000 Population	2010 Population	% Change
City of Banks	1,286	1,777	38.2%
City of Cornelius	9,652	11,869	23.0%
City of Forest Grove	17,708	21,083	19.1%
City of Hillsboro	70,186	91,611	30.5%
Washington County	445,342	529,710	18.9%
Oregon	3,831,074	3,899,353	12.0%

Source: U.S. Census Bureau

Oregon's Hispanic population grew by nearly 64% from 2000-2010, and continues to grow (Table 2). The City of Banks had an increase of 150% while the other cities in the study area saw their Hispanic population increase by over 50%. More than 80 percent of Hispanics in Oregon are of Mexican ancestry. Washington County is the metro area's most racially diverse area, with people of color accounting for three of 10 residents (The Oregonian, 2011).

**Table 2. Hispanic Population Growth from 2000 to 2010**

Location	2000 Population	2010 Population	% Change
City of Banks	49	124	153.1%
City of Cornelius	3,609	5,948	64.8%
City of Forest Grove	3,065	4,874	59.0%
City of Hillsboro	13,262	20,726	56.3%
Washington County	49,735	83,270	67.4%
Oregon	275,314	450,062	63.5%

Source: U.S. Census Bureau

The City of Cornelius has the most diverse population with over 50% of its population being Hispanic. Over 20% of the population in City of Forest Grove and Hillsboro are also Hispanic. Table 3 demonstrates the Hispanic population as a percentage to the total population in each city, county and state.

**Table 3. Percent of Population that is Hispanic**

Location	Total Population	Hispanic or Latino(of any race)	% Hispanic
City of Banks	1,777	124	7.0%
City of Cornelius	11,869	5,948	50.1%
City of Forest Grove	21,083	4,874	23.1%
City of Hillsboro	91,611	20,726	22.6%
Washington County	529,710	83,270	15.7%
Oregon	3,831,074	450,062	11.5%

Source: U.S. Census Bureau

The Council Creek Trail Master Plan will seek feedback from interested and affected parties, diverse communities and environmental justice populations. Strategies for outreach to the area’s Hispanic populations include posting open house announcements and communications in Spanish to the following sources:

- Adelante Mujeres
- El Hispanic News
- Centro Cultural de Washington County
- Hillsboro Futsal
- Local churches and schools with large Hispanic populations
- Hillsboro Arts & Culture Council

Community events are excellent locations in which to engage the community and there are various located throughout the study area. Farmers markets are popular in Washington County and have high rates of attendance from community members. The follow table lists the farmers markets in the study area. Local athletic events, such as soccer games, are also venues in which large numbers of the community attend, pose as potential venues for outreach.

**Table 4. Farmers Markets in the Area**

Name	Location	Time	Day / Week	Duration
Forest Grove	Main Street between Pacific and 21st avenues	4 p.m. to 8 p.m.	Wednesday	May 15 - Oct 30
Banks	41905 N.W. Arbor Park Loop	3 p.m. to 7 p.m.	Friday	June 7 - Sept. 27
Cornelius	220 N. Adair St. (Walmart parking lot)	11 a.m. to 3 p.m.	Sunday	May - August
Hillsboro	Downtown Hillsboro (between 1st and 3rd Ave.)	9 a.m. to 1:30 p.m.	Saturday	May 4 - Oct 26

Hillsboro	MAX Orenco Station	10 a.m. to 2 p.m.	Sunday	May 5 - Oct 27
Hillsboro	Tanasbourne (NW Cornell Rd. and Stucki Ave.)	4 p.m. to 7:30 p.m.	Wednesday	June 5 - Aug 28
Hillsboro	Tuality Hospital (Baseline and 8th Ave.)	11 a.m. to 1:30 p.m.	Thursday	July 11 - Aug 22

Adelante Mujeres, a non-profit in Forest Grove that works to educate and empower low-income Latina women, recently completed a “Photovoice” project with Oregon Walks titled “Walking: para vida, familia, y comunidad”. In the project, more than twenty women from Adelante Mujeres’ English class took photos and shared their stories to demonstrate why walking matters and what is needed to make their communities safer and more walkable. Working with Adelante Mujeres will ensure there is participation, input and engagement from the Hispanic community on the Council Creek trail project.

Metro also offers the ‘¡Vámonos!’ project which encompasses a bilingual mapping project to help people in Cornelius, Forest Grove and Hillsboro learn about great places to walk and bike in their communities. The maps are free to the public and highlight points of interest, history, commerce and transit stops as well as highlight parks, trails and natural areas.

## Appendix G: Conceptual Community Trails

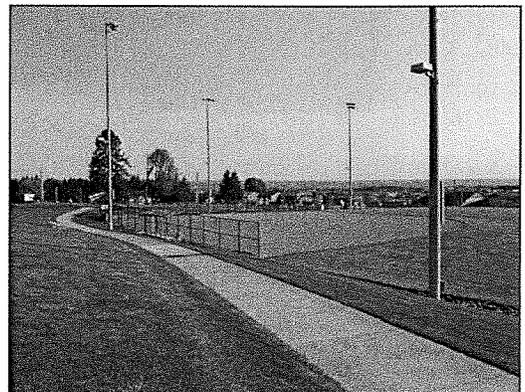
In recommending preferred regional trail alignments and types, the PAC and SAC also considered the need for additional community and local-scale trails connecting to the CCRT. Such trails could provide access from the CCRT to schools, streams and natural areas, and community services.

As such trails will be the sole responsibility of local jurisdictions or public property owners, the PAC/SAC decided not to make specific recommendations. The committees did, however, direct that a map be prepared conceptually showing the general locations of possible community trail routes and included as an appendix to this master plan report (see Map 17).

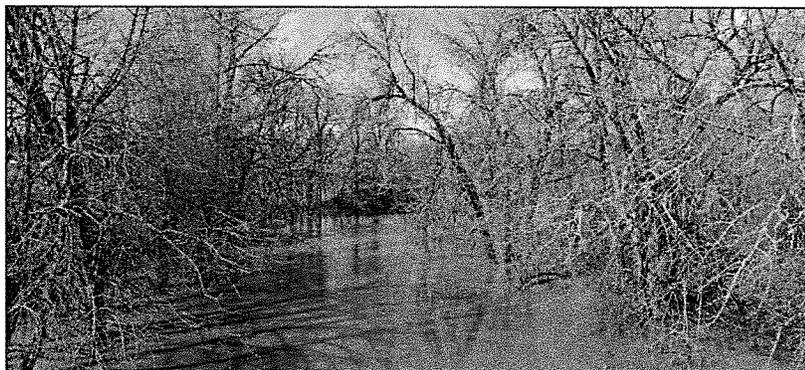
In addition, the City of Forest Grove has adopted a trail and bicycle/pedestrian system plan termed the "Emerald Necklace." See Forest Grove's Community Trails Plan, Comprehensive Plan, and Transportation System Plan, as well as the Washington County Transportation System Plan for more details on the Emerald Necklace. The cities of Banks and Hillsboro are in the final stages of new trail system plans, and these efforts should also be integrated into the development of the CCRT.



*Council Creek*



*Thatcher Park*



*Dairy Creek*



Map 17. Conceptual Community Trail Connections

