Council Creek Regional Trail Master Plan

Report No. 1

EXISTING CONDITIONS

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

Prepared by

Parametrix

Date

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1. Background

The Council Creek Regional Trail (CCRT) will provide a multiuse pathway for pedestrians and bicyclists for recreational and commuting purposes. Trail design standards (e.g., width, surface, grades) will be primarily based on State of Oregon bicycle/pedestrian standards, as well as Portland metropolitan regional government (Metro) and American Association of State Highway and Transportation Officials (AASHTO) design guidelines. Local conditions such as roadways and railways, stream corridors and waterbodies, urban or rural development, and other factors, may require alternative solutions to these standards. Alternative trail types could include, but are not limited to, on-street (sidewalks and bike lanes, or shared roadways), street-edge (multiuse trails are physically separated from but closely paralleling streets), soft-surface, and split-mode (e.g., directing different types of users to different types of trails). The trail will not be designed specifically for equestrian use, but equestrians may be accommodated in some areas using parallel soft-surface pathways.

The CCRT Master Plan is being undertaken in four phases—Existing Conditions, Trail Alignment Analysis, Implementation Strategy, and finally production of a full master plan including preferred trail alignments. This CCRT Plan Report No. 1 – Existing Conditions identifies and maps a variety of planning policies, environmental and land use factors, design opportunities and challenges, and transportation crossings and features that may influence trail alignments. Existing conditions describe opportunities and challenges associated with future development of the CCRT, including factors that may effectively be prerequisites for trail routing or that represent potentially significant impediments or “fatal flaws.”

Information in this existing conditions report is based on previously documented conditions within the study corridor, those conditions readily identifiable through geographic information system (GIS) and other data sources, and on available street view and aerial mapping. The master plan’s jurisdictional partners—Metro, Washington County, and the Cities of Banks, Forest Grove, Cornelius and Hillsboro—and other cooperating agencies, such as Clean Water Services, provided much of the current information and data that are reported herein. Specific field investigations were not conducted as part of this existing conditions report, although some observations made during master plan start-up site visits are reflected, and a general site visit was conducted in December 2013. The findings in this report may be amended in the course of the overall master plan process as additional information becomes available.

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2. Methodology

In conducting existing conditions assessments, the following methods were used:

- Literature search identifying existing conditions and factors within the trail corridor including those potentially impacting trail development within the corridor.
- Review of prior plans, studies, technical reports, and other evaluations provided by project partners and participating jurisdictions.
- Review of GIS-based information and other existing mapping and aerial photography.
- Limited field observations.

EXISTING CONDITIONS CATEGORIES

Existing Plans

Existing plans and studies that may influence trail development include transportation, parks, natural area, land use, and other trail plans.

Design Opportunities and Challenges

Design opportunities and challenges include significant views, existing or potential trail connections, existing public land holdings, adjacent land uses, potential generators of bicycle and pedestrian traffic to which the CCRT could connect, significant historic and natural features, and other factors that could impact trail development and usage.

Natural Resources

Natural resources and other environmental conditions and factors within the study area that may influence trail alignments and development include:

- Fish and wildlife species
- Major wildlife movement barriers
- Vegetative cover
- Wetlands and nonwetland waters
- Riparian areas

- Floodplains (up to 100-year)
- 1966 Department of Transportation Act Section 4(f)
- 1965 Land and Water Conservation Act Section 6(f)
- Clean Water Services' resources and resource buffer zones
- Existing environmental mitigation areas
- Steep or unstable slopes
- Hazardous materials (including contaminated soils)
- Geology and soils

Transportation

Current and future functional classifications and built conditions of roadways, rail lines, trails, and other transportation systems crossed by or intersecting the study area, as well as proposed regional and community trails.

Land Use

Current land use classifications and special designations such as urban growth boundaries, regional urban and rural reserves, and environmental overlay zones; and schools, municipal buildings, outdoor recreation facilities, historic or archeological resources, and other land uses.

Utilities

The location of aboveground power transmission lines, and buried sewer, water, and irrigation mainlines.

EXISTING CONDITIONS MAPS

Applicable existing conditions data are described in this report. Mappable data are incorporated into map sets for each of six trail segments. Because the segments differ in size, please note that the map scales are not uniform. These maps are included in Chapter 4. Each map set includes three maps illustrating specific conditions:

- Design opportunities and challenges (including utility corridors)
- Natural resources
- Transportation and land use

3. Study Corridors

TRAIL CORRIDORS

The CCRT study area includes developed rural, suburban, and urban areas including residential neighborhoods, farms, commercial and industrial lands, as well as public open spaces and natural areas. The CCRT will pass through residential and industrial areas and open spaces in the four incorporated Cities of Banks, Forest Grove, Cornelius and Hillsboro, and cross two areas of unincorporated Washington County.

The trail may cross or follow state highways Oregon 6, Oregon 8, and Oregon 47, up to four rail lines, and numerous urban and rural roadways. The trail may utilize existing power transmission line corridors, rail lines, or road right of way, or public open spaces in some cases. Acquisition of new right of way or private lands may be required.

In addition to providing opportunities to access communities and other transportation modes and limiting conflicts with existing human uses, any preferred trail alignments will have to provide opportunities to enhance the environment and minimize negative impacts to natural resources.

The study area includes several major tributary streams of the Tualatin River. Turning southward from Banks, the CCRT may cross West Fork Dairy Creek and Council Creek and several tributaries and major drainage ditches. From west to east, the trail may follow or cross Council Creek and several tributaries, and Dairy Creek and McKay Creek. These stream systems include wetlands, floodplains, and riparian zones that need to be protected and that may benefit from restoration.

The overall study area is divided into two distinctive subcorridors and six trail segments. The segments are described in detail later in this report. Based on analysis of opportunities and challenges in both the Existing Conditions and Trail Alignment Analysis phases of this master plan process, the subcorridor and segment boundaries may be modified slightly to accommodate the most effective trail route options.

North-South Trail Subcorridor

This subcorridor includes Segments 1, 2, and 3, is north-south in orientation, and primarily rural (except for the City of Banks and portions of incorporated Forest Grove). This broad corridor extends approximately 7.5 miles from the north side of Banks to the north side of Forest Grove and is 3 to 4 miles wide in some places. This subcorridor passes through active agricultural lands

where farmers produce a wide range of crops and is bounded on the west by NW Thatcher Road and NW Kansas City Road and on the east by NW Martin Road, NW Marsh Road, and NW Roy Road. The trail may pass through unincorporated areas around Banks, rural reserves south of Banks in unincorporated Washington County, the unincorporated community of Verboort, and urban or rural reserve lands immediately north of Forest Grove. The trail will then turn east/southeast along the urbanized north edge of Forest Grove.

The trail may utilize existing rail lines, power transmission line corridors, or road right of way within this subcorridor. There are fewer public lands in this subcorridor than in the west-east corridor described below, and most are natural resource areas which may not be suitable for a regional-scale multiuse trail. The preferred trail alignments may require private land acquisition.

West-East Trail Subcorridor

The second subcorridor includes Segments 4, 5, and 6, is west-east in orientation, and is primarily urban. The corridor is developed for residential and industrial uses, except for some high-value natural resource lands along stream corridors and two remaining agricultural areas. This subcorridor is less than 1,000 feet wide in some places and extends for approximately 5.5 miles from the northeast end of Forest Grove to downtown Hillsboro. Council Creek is generally the corridor's northern boundary, and Oregon 8 is generally the southern boundary. Portions of this west-east corridor are in the Cities of Forest Grove, Cornelius, and Hillsboro, and in unincorporated Washington County. Acquisition of new right of way or private lands may be required.

REGIONAL RESERVE CLASSIFICATIONS

Urban and rural reserves are designated by Metro under State of Oregon Administrative Rule 660. Urban and rural reserves are areas where the Portland metropolitan region's urban growth boundary (UGB) may (urban reserve) or may not (rural reserve) expand over the next 40 to 50 years. Around the City of Banks in Segment 1 there are unincorporated lands outside of the UGB that are undesignated as either form of reserve. These lands may be subject to review before the next full round of UGB decisions.

The largest unincorporated area within the study area is within Segments 2 and 3 between Banks and Forest Grove. These segments are primarily classified as a rural reserve except for an urban reserve area west of Oregon 47 between NW Purdin Road and NW David Hill Road and some unincorporated urban land within the City of Forest Grove.

Between Forest Grove and Hillsboro some unincorporated lands are within the UGB, particularly within Segment 4, and an urban reserve overlays the

west half of Segment 5. A small area of urban reserve is at the east end of Segment 4 between Council Creek and a rail line. The east half of Segment 5 and west half of Segment 6 are in unincorporated Washington County and classified as rural reserves.

Rural reserve designation does not limit the development of trails. For more information on urban and rural reserves, please see Metro's website.[1]

JURISDICTIONAL AUTHORITY

The CCRT will pass through several jurisdictions. Each jurisdiction may have local trail plans, trail development standards, trail funding sources, and varying levels of operational abilities to maintain trails. These variables will influence the nature and pace of CCRT development and will be evaluated in the Implementation Strategy phase of this master plan.

As part of considering the findings in this existing conditions report, it is important to keep in mind that a parks authority is generally regarded as a prerequisite for a jurisdiction to fund, build, and operate regional trails. Washington County, which has current jurisdiction over Segments 2 and 5 and portions of Segments 1, 3, 4, and 6, only exercises limited parks authority specific to a few facilities in the county (such as Hagg Lake south of Forest Grove). This may be a significant challenge for development and management of the CCRT.

[1] http://www.oregonmetro.gov/index.cfm/go/by.web/id=30155

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4. Existing Conditions by Trail Segment

This report presents existing conditions information by segment (in Chapter 4) and by category (in Chapter 5). The sorting of existing conditions by segment *and* category makes it easier for the reader to access specific information. For example, a resident of Cornelius can see what the full range of impacts might be in that community by referring to Segment 4 in Chapter 4, while a bicyclist most concerned with the number of road crossings over the entire corridor can reference the Transportation section of Chapter 5.

Chapter 4 includes existing conditions summarized by trail segment based on five broad categories:

- Design opportunities and challenges
- Natural resources
- Transportation
- Land use
- Utilities

Design Opportunities and Challenges

Design opportunities and challenges is an overarching category that assesses many factors that may influence or, in some cases, dictate trail options and alignments. Features discussed under the other four categories listed above may in fact be design opportunities or challenges in and of themselves. Generally only those opportunities and challenges that don't fit clearly into one of the other four categories ("views" are an example) are summarized under the specific design opportunities and challenges sections of this report.

Existing conditions are illustrated on the segment map sets included in Chapter 4. Each set of segment maps is accompanied by a facing page table highlighting key opportunity and challenge factors. Lettered icons referencing these tables are shown on opportunities and challenges maps. Some of the icons refer to features that occur in multiple locations, such as agricultural landscapes. In these cases the icons only identify examples of the opportunity or challenge feature. Mapped design factors are divided into:

- Possible trail routes
- Views
- Destinations

- Natural resources
- Transportation
- Land use – Utilities

Some challenges and opportunities are also identified with other labeling icons and with map overlays.

TRAIL SEGMENTS

See Figure 4-1 for the overall trail corridor study area map which illustrates the original seven trail segments by number and location. Subsequent to the initial development of existing conditions mapping, and in consultation with the CCRT Project Advisory Committee (PAC), boundary modifications to all segments were made. The two subcorridors described in the Study Corridors chapter of this report are now divided into a total of six segments for trail alignment alternative analysis purposes. The most significant changes were the merging of Segments 6 and 7, and revision of the boundary between Segments 2 and 3. These initial changes can be seen by comparing the segment boundaries illustrated in the Chapter 4 segment maps with those shown on Figure 4-1.

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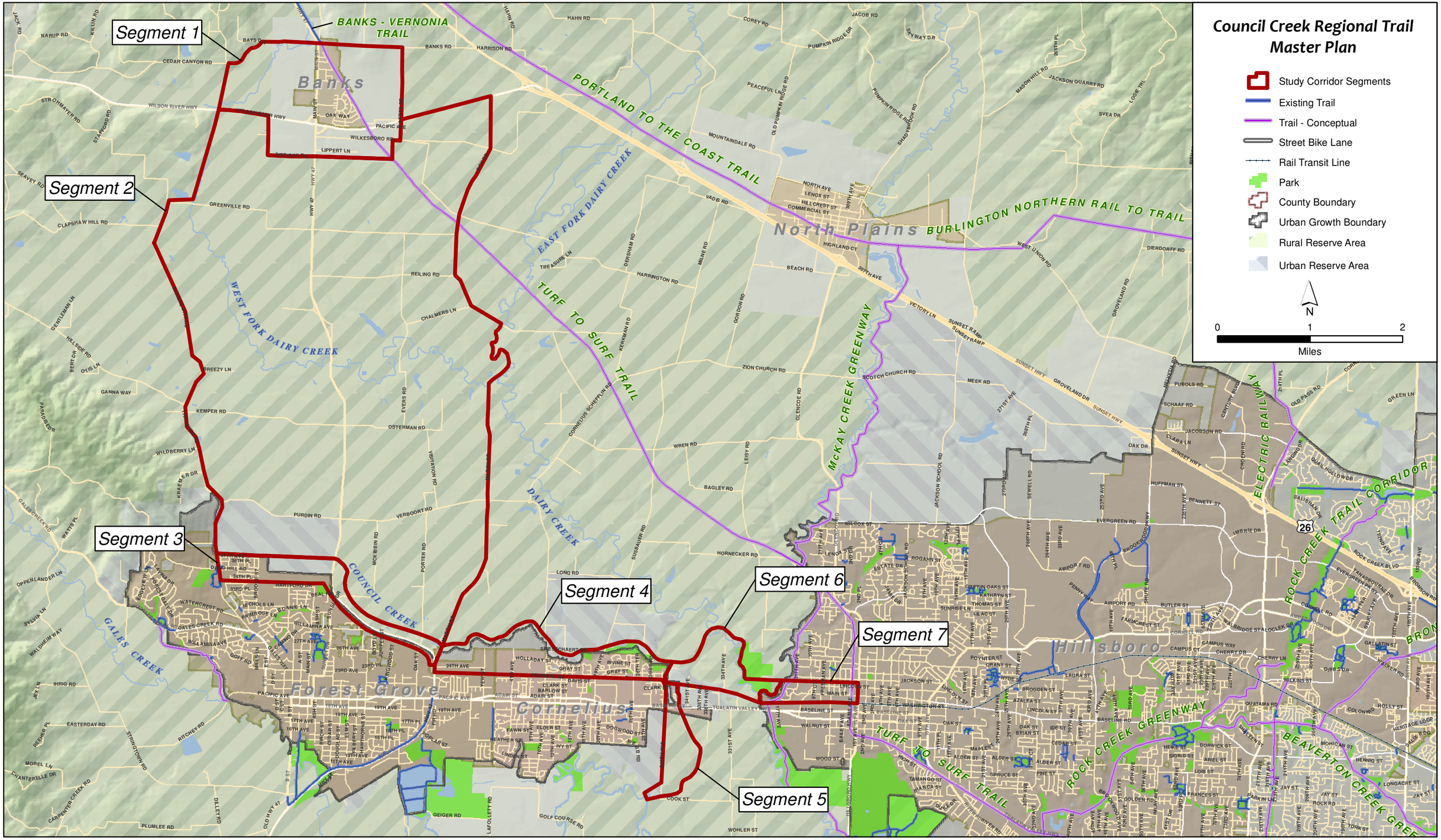

Map 4-1
Original Council Creek Regional Trail Study Segments

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Segment 1: Banks

The City of Banks is compact and bounded by rail lines, state highway Oregon 6, a large private golf course, and agricultural fields that flood periodically. Segment 1 encompasses an area considerably larger than the current city limits and the lands that may eventually be incorporated into the city. The segment area considered for the CCRT is bounded by NW Banks Road on the north, the Quail Valley Golf Club and NW Aerts Road on the east, the approximate line of NW Dierickx Road on the south, and the Killin Wetlands Natural Area on the west.

Design Opportunities and Challenges

Trail Entry and Exit from Banks

Connectivity to the Banks-Vernonia trailhead just north of downtown Banks is a key consideration in developing the CCRT alignment through Segment 1. While perhaps the most obvious trail exit point from Banks is due south down Main Street and Oregon 47, some other trail alignments might work better with potential routes in Segment 2. These routes could exit Banks from the west or east side of downtown. A trail starting at the Banks-Vernonia trailhead or NW Banks Road could also potentially bypass downtown altogether.

There are up to seven conceptual possibilities for the trail to cross through and exit Segment 1, each with distinct opportunities and challenges.

- Between the West Fork Dairy Creek floodplain and Banks city limits
- Main Street and Oregon 47
- Two planned roadways identified in the City's 2010 Transportation System Plan (TSP). These roadways are illustrated on Map 4-4.
- Banks Creek east of Oregon 47
- Railroad crossings east of Oregon 47
- NW Aerts Road east of downtown

Intercity Trail Options

The primary north-south vehicular route through Banks from Oregon 6 is along Oregon 47, which is named Main Street within the city limits. Main Street is the address of many businesses, city hall, Banks High School, and Sunset Park. Main Street has bike lanes on both sides and sidewalks fronting developed parcels (continuously on east side) all the way to NW Banks Road and the trailhead at the southern end of the Banks-Vernonia Trail.

Main Street could be used as the CCRT route from the Banks-Vernonia trailhead to the southern end of Banks. The increase in bicycle traffic through downtown Banks that might result could enhance business development.

Other trail route possibilities within the city are the planned new roadway paralleling Main Street in the west side then looping around Sunset Park, and a second planned new roadway paralleling the east side of the Port of Tillamook Bay (POTB) rail line. Banks Creek, just east of downtown, is a fourth potential route through the city and could be combined with some existing local neighborhood trails.

Views

There are fine views over agricultural lands and the wetlands from many places in the segment. The best long distance views are from the foothills traversed by NW Banks Road.

Natural Resources

Wetlands and Floodplain

Most of Segment 1 is fairly flat. It includes an extensive 100-year floodplain and wetlands in the western half of the segment associated with West Fork Dairy Creek. Much of the wetlands and floodplain on the west side of Banks is within the Killin Wetlands Natural Area. Major portions of the Killin Wetlands are under Metro ownership. This significant natural area would provide many opportunities for CCRT trail users to access the area for wildlife viewing and passive recreation.

While remnant farm roads are present, the wetlands are not currently open to the public. The challenge to trail alignment would be impacts on wetlands and the natural environment from trail construction and usage, as well as the potential for trail damage from periodic flooding. This 100-year floodplain and some wetlands extend into the Banks city limits at a couple of points.

Banks Creek

The Banks Creek channel is east of Main Street. To the north, the creek is crossed by NW Banks Road which is a short distance from the Banks-Vernonia trailhead. Outside of the city limits to the south, Banks Creek crosses some rural residential properties, and exits Segment 1. The creek then crosses or follows several local roadways which could be avenues for the CCRT. Within the city limits, some local neighborhood pedestrian trails

exist along the creek corridor. These trails appear to be associated with residential subdivisions.[2]

Given prior channelization and other alterations to this minor stream corridor, there may be opportunities to contribute to stream and riparian area enhancement as part of CCRT development.

Transportation

Roadways

The primary and most challenging roadway crossing for the trail through Segment 1 will be Oregon 6. All possible CCRT alignments will be constrained by the need to cross this highway. Oregon 6 is classified as a freeway east of Oregon 47 and as a principal arterial west of Oregon 47. The preferred point of crossing will also be significantly influenced by the preferred trail alternatives for Segment 2.

Crossing possibilities include locations just west of Oregon 47 using a new overcrossing or at-grade crossing, at Oregon 47 by widening the existing Oregon 6 undercrossing, east of Oregon 47 at rail line crossings, and an existing at-grade crossing at NW Aerts Road (on the east edge of the segment boundary). For a route using Banks Creek, as discussed in the prior section, there is no obvious direct crossing solution and a Banks Creek route would probably involve a detour to the Oregon 47 undercrossing.

Use of the Oregon 47 or rail line crossings will be highly constrained by current physical dimensions and structures. Modifications may have to be made to accommodate a trail.

There are also two local rural roadways within Segment 1 south of the city—NW Wilkesboro Road and NW Lippert Road—that the trail may have to cross.

Railroads

Rail lines owned and operated by Portland and Western Railroad (PNWR) and the POTB enter and exit Banks on the east side of downtown. The POTB ownership ends southeast of Banks near NW Zion Church Road outside the boundary of Segment 2. PNWR is in the final stages of acquiring this POTB rail line section. The physical line continues to downtown Hillsboro and is owned by PNWR.

This rail line could in part be used as a trail-with-rail option, although the line moves eastward and out of the study boundary in the north end of Segment 2.

[2] These trails were observed on aerial and street-level photography; available GIS mapping does not show these facilities.

This route is also designated for the proposed Path to the Pacific interregional trail.

Use of the rail crossings of Oregon 6 is an opportunity for the CCRT to cross the highway, even if the actual rail line is not used as the trail route. From this point of crossing Oregon 6, a multiuse trail could be aligned through the agricultural lands east of Oregon 47 in Segment 2.

Whether as part of a trail-with-rail option or simply as a point to cross the highway, the co-use of the rail line for trail purposes is challenged. Rail line ownership is changing, and the rail operator may have safety and operational concerns with trail development given the relatively confining crossing structures.

Land Use

Although most of the undeveloped or vacant land in Segment 1 that immediately surrounds Banks is agricultural, the Quail Valley Golf Club and the historic Union Point Cemetery on the east side of the community provide open space destination opportunities that trail alignments could access.

The presence of the golf club will also challenge trail alignments. A route along the fairways would likely not be agreed to by the facility operator. This effectively limits possible CCRT alignments east of the current city limits to golf course edges, the rail corridor, or NW Aerts Road.

Utilities

No major utilities constrain this segment. A Portland General Electric (PGE) power transmission line along Oregon 47 does not enter the city. This line splits into two at a substation on NW Wilkesboro Road and heads west and east along Oregon 6.

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SEGMENT 1: BANKS

Design Opportunities and Challenges

Possible Trail Routes

A. New at-grade or bridge crossing west of Oregon 47
B. Existing Main Street/Oregon 47 undercrossing
C. Along Banks Creek using Oregon 47 undercrossing
D. Existing railroad crossings east of Oregon 47
E. Existing NW Aerts Road at-grade crossing
F. Proposed city roadways – west of Main Street or along rail line

Views

G. Valley from higher elevations along NW Banks Road
H. Agricultural landscapes
I. Wetland areas

Destinations

J. Downtown Banks – Sunset Park – Banks High School
K. Banks-Vernonia Trailhead
L. Quail Valley Golf Club
M. Killin Wetlands Natural Area

Natural Resources

N. Extensive floodplain and wetlands constrain trail routing
O. Banks Creek restoration associated with possible trail route

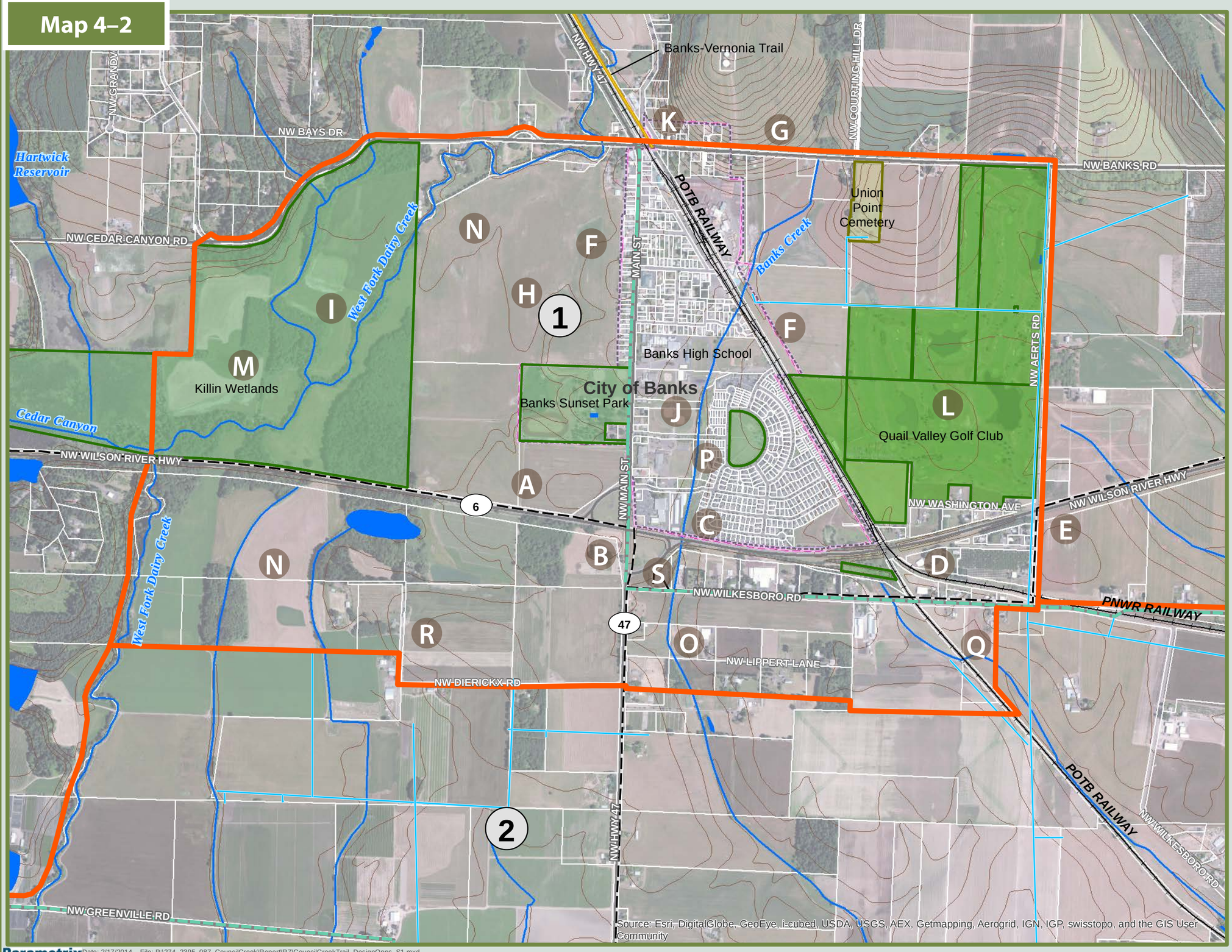
Transportation

P. Possible connections to local neighborhood trails
Q. Possible trail-with-rail solution
R. Possible use of rural roadways for shared use solutions

Land Use-Utilities

S. PGE power lines and substation along Oregon 47 may constrain trail route

Map 4–2



Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 1
Banks

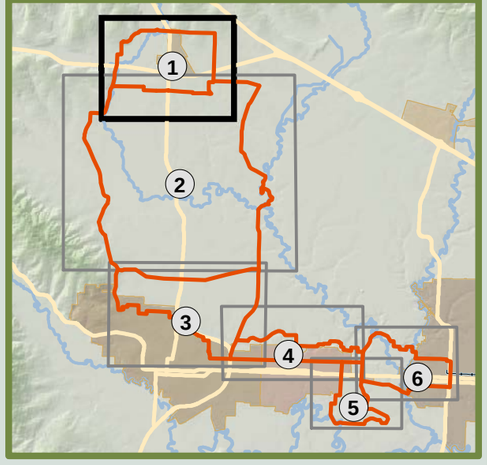
- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Tualatin Valley Scenic Bikeway
- Cemetery
- Public Open Space
- Private Recreation Area
- PGE Transmission Line
- Irrigation Water Line

N

0 1,000 2,000

Feet

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



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Map 4–3

Council Creek Regional Trail Master Plan

Natural Resources

Segment 1
Banks

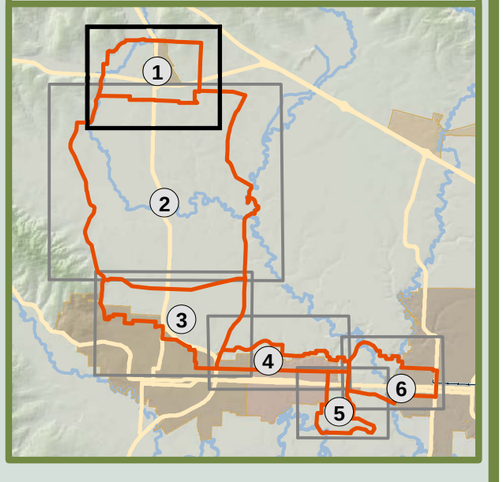
- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail

N

0 1,000 2,000

Feet

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



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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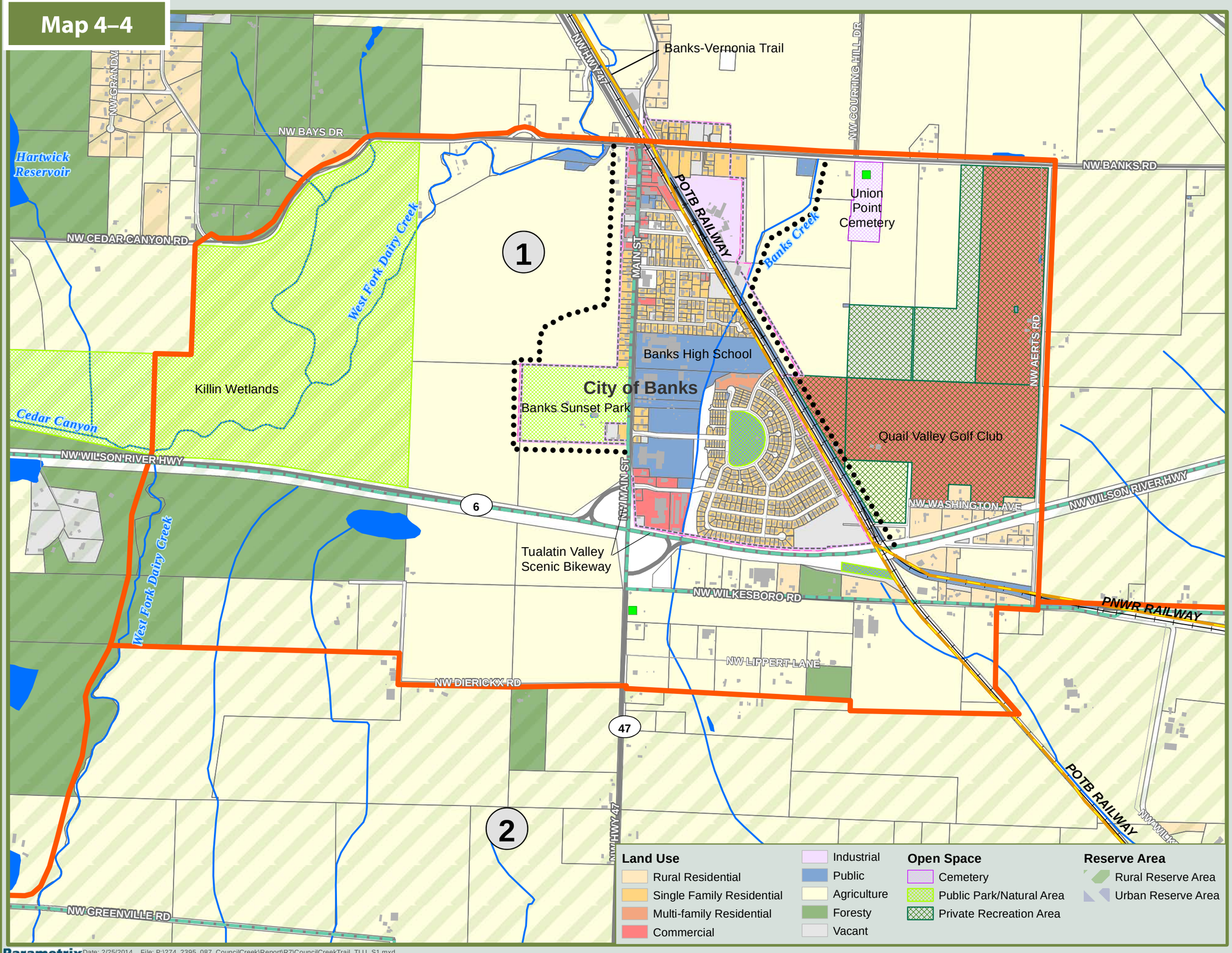
Map 4–4

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 1
Banks



Land Use
- Rural Residential
- Single Family Residential
- Multi-family Residential
- Commercial
- Industrial
- Public
- Agriculture
- Foresty
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area

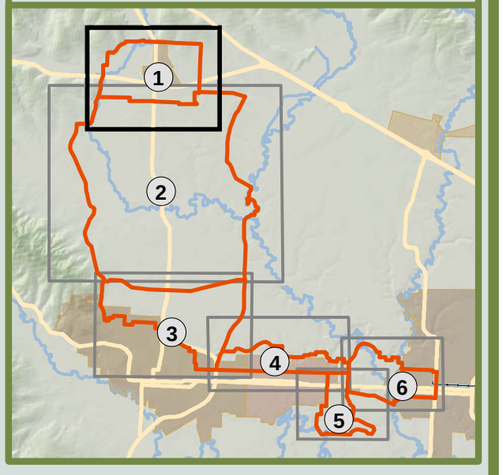
- (1) Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Proposed City Streets
- Historic Site

N

0 1,000 2,000

Feet

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



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Segment 2: Washington County (North)

This segment is the largest in the study area and extends from the approximate west-east line of NW Dierickx Road immediately south of Oregon 6 and Banks to the line of NW Purdin Road and NW Verboort Road north of the City of Forest Grove. The western boundary of this segment is a portion of West Fork Dairy Creek, NW Kansas City Road, and NW Thatcher Road. The east boundary is approximately NW Roy Road, NW Marsh Road, and NW Martin Road. This entire segment is in unincorporated Washington County.

Design Opportunities and Challenges

The unincorporated portion of Washington County between Banks and Forest Grove is a productive agricultural landscape with farmsteads located throughout the segment. Crops include annuals such as wheat and corn, perennials such as grapes and berries, and nursery production. There are also scattered remnant woodlands in the segment.

Views

The most frequently encountered views in the segment are of farmsteads and small woodlands, as well as of the numerous streams that crisscross the area. Areas along West Fork Dairy Creek could provide many views and possible recreational opportunities. Farm ponds provide views of open water and/or wetland vegetation. Plant nurseries grow a broad range of plants, although some nurseries are bounded by hedges which block views.

The higher elevations along NW Kansas City Road and NW Thatcher Road on the west edge of the segment provide longer views of the valley below and foothills to the north. On clear days the views can extend farther east to hills near Portland.

Community of Verboort

The unincorporated community of Verboort at the south end of Segment 2 is already a bicycling and tourist destination. The steeple of a historic church is a landmark visible from a distance, and the annual Verboort Sausage Festival draws large crowds. A concentration of historic buildings and sites is in and around Verboort.

Natural Resources

Slopes

Segment 2 is fairly flat except for along the western edge. Slopes approach and exceed 10 percent. Given the many flatter options in this segment, a CCRT route along NW Thatcher Road is probably not the most viable.[3]

Streams and Riparian Areas

West Fork Dairy Creek is the largest watershed in the segment. This system generally has well defined creek banks and riparian areas. There are also numerous south-flowing minor creeks and channels in Segment 2.

These features notwithstanding, the upper portions many of the minor creeks have been channelized, and riparian vegetation has been removed. Some lower portions have a wider riparian area of trees and shrubs. Developing a trail alignment parallel to one of these altered creek channels could provide an opportunity to include stream restoration programs as part of trail development.

Floodplains

Because of low stream gradients, the 100-year floodplain for many streams in Segment 2 is quite wide and sometimes merges between two or three parallel creeks. Between the line of NW Dierickx Road on the north and NW Kemper Road on the south, over three-quarters of Segment 2 west of Oregon 47 is within the 100-year floodplain. Although trail alignments would preferably avoid the 100-year floodplain because of the potential for damage to or closure of the trail during flood periods, other factors may suggest locating the CCRT through such areas. Elevated trails or other designs for occasional flooding may be necessary.

Transportation

Roadways

Oregon 47 bisects this segment north to south. Several collector roadways and two arterials partly bound the limits of the segment, and a handful of paved collector routes cross the segment. Otherwise there are relatively few developed public roads in this segment. Segment 2 includes:

- Oregon 47 – a north-south principal arterial
- Two county arterials:

[3] The CCRT conceptual route shown in Metro, Washington County, and Forest Grove long-range plans follows the line of NW Thatcher Road and NW Kansas City Road.

  - NW Verboort Road, the south boundary of Segment 2
  - NW Martin Road, the east boundary of Segment 2
- Six county collector roadways:
  - NW Greenville Road
  - NW Purdin Road, the extension of NW Verboort west of Oregon 47
  - NW Roy Road, the east boundary of Segment 2 north of West Fork Dairy Creek
  - NW Thatcher Road and NW Kansas City Road form a continuous route and are the west limits of Segment 2
  - NW Kemper Road, a west-east collector just south of West Fork Dairy Creek

The roadways in this segment are built primarily to rural standards (e.g., some widened shoulders, few if any sidewalks or defined bike lanes, and open swale drainage). Local classification roadways cross the segment both west-east and north-south. All local public streets in Segment 2 are named on the existing conditions maps. Prospective trail alignments could use a combination of shared or street-edge solutions along existing local roads and possibly farm roadways. Use of shared use or street-edge trail solutions could reduce trail right-of-way acquisition requirements.

Some roadway surfaces are asphalt or gravel without center striping. Private farm access roads have packed earth or gravel surfaces. Many existing roads have adjacent landscaping and vegetation and open drainage ditches that may limit options to improve or widen shoulders or to build street-edge multiuse trails.

In the course of developing portions of this report using available street view photography,[4] the presence of bicycles was frequently noted. This suggests that using rural local roads to meander the CCRT through Segment 2 might be a feasible solution that reflects current bicycle usage patterns. Use of local roads may also reduce existing conflicts with motorized vehicles and farm equipment on more traveled routes such as Oregon 47 and the roadways that form the boundaries of the segment.

[4] Google Maps was the primary source of street view photography.

Bikeways

The Tualatin Valley Scenic Bikeway[5] crosses Segment 2 in several places. This bikeway is an opportunity to co-develop the CCRT route, although as presently configured the scenic route uses existing road sections and shoulders and is most suitable for experienced riders. This route is shown on the transportation and land use map (Map 4-7).

Land Use

Segment 2 is almost entirely agricultural with some rural residential and commercial uses associated with farming. The only concentration of population is in and around Verboort.

Utilities

A PGE power transmission line follows the east side of Oregon 47 to NW Osterman Road, turns east on this roadway then south on NW Visitation Road through the community of Verboort, turns east along NW Verboort Road to NW Martin Road, and then south into Segments 3 and 4. The location of this transmission line may be a constraint for street-edge trail solutions.

A Bonneville Power Administration (BPA) power transmission line crosses the west side of Segment 2 between NW Kemper Road and NW Purdin Road. Combined with floodplain and wetland restrictions, this portion of the transmission corridor is probably too far west to be a viable option for a trail alignment.

There are numerous major irrigation lines operated by the Tualatin Valley Irrigation District within Segment 2. Where these lines do not follow public roadways and cross private properties there may be limited opportunities to consider the lines as possible trail routes to the extent that surface areas over the lines are not actively used for other purposes (such as farming).

[5] This is an Oregon Parks and Recreation Department designation. See this link for more information, http://www.oregon.gov/oprd/BIKE/Pages/TVSB.aspx.

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SEGMENT 2: WASHINGTON COUNTY (NORTH)

Design Opportunities and Challenges

Possible Trail Routes

A. Major floodplain and wetland areas constrain trail route on west side
B. Oregon 47 street-edge solution
C. Banks Creek is a possible trail route
D. Use local roadways for shared use solutions

Views

E. Views of valley from higher elevations along west side
F. Views of streams and ponds
G. Agricultural landscapes

Destinations

H. Sunset Grove Golf Club
I. Community of Verboort historic buildings and farming center

Natural Resources

J. Numerous streams cross segment and floodplains merge
K. Many smaller streams highly channelized, trail routing could leverage stream restoration
L. Steep slopes along NW Thatcher Road
M. West of Oregon 47 only the areas near highway are outside of floodplain

Transportation

N. Possible use of trail-with-rail solution
O. Many local roads already heavily used by bicyclists
P. Link with Tualatin Valley Scenic Bike Route
Q. Rural open ditch drainage and lack of shoulders constrain shared-use solutions

Land Use-Utilities

R. BPA power lines near NW Thatcher Road – possible trail route
S. PGE power lines along Oregon 47 and through Verboort may limit street-edge solutions

Map 4–5

Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 2
Washington County (North)

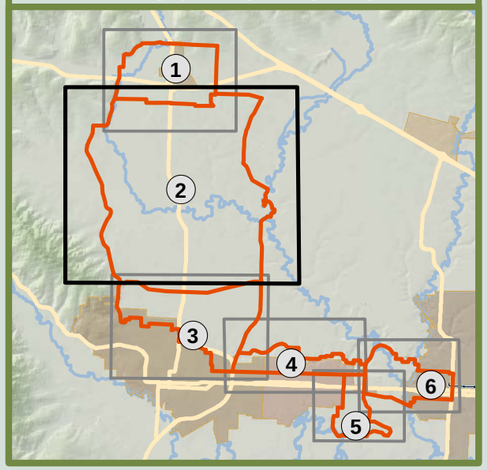
- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Tualatin Valley Scenic Bikeway
- Public Open Space
- Private Recreation Area
- PGE Transmission Line
- Irrigation Water Line

N

0 1,000 2,000

Feet

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



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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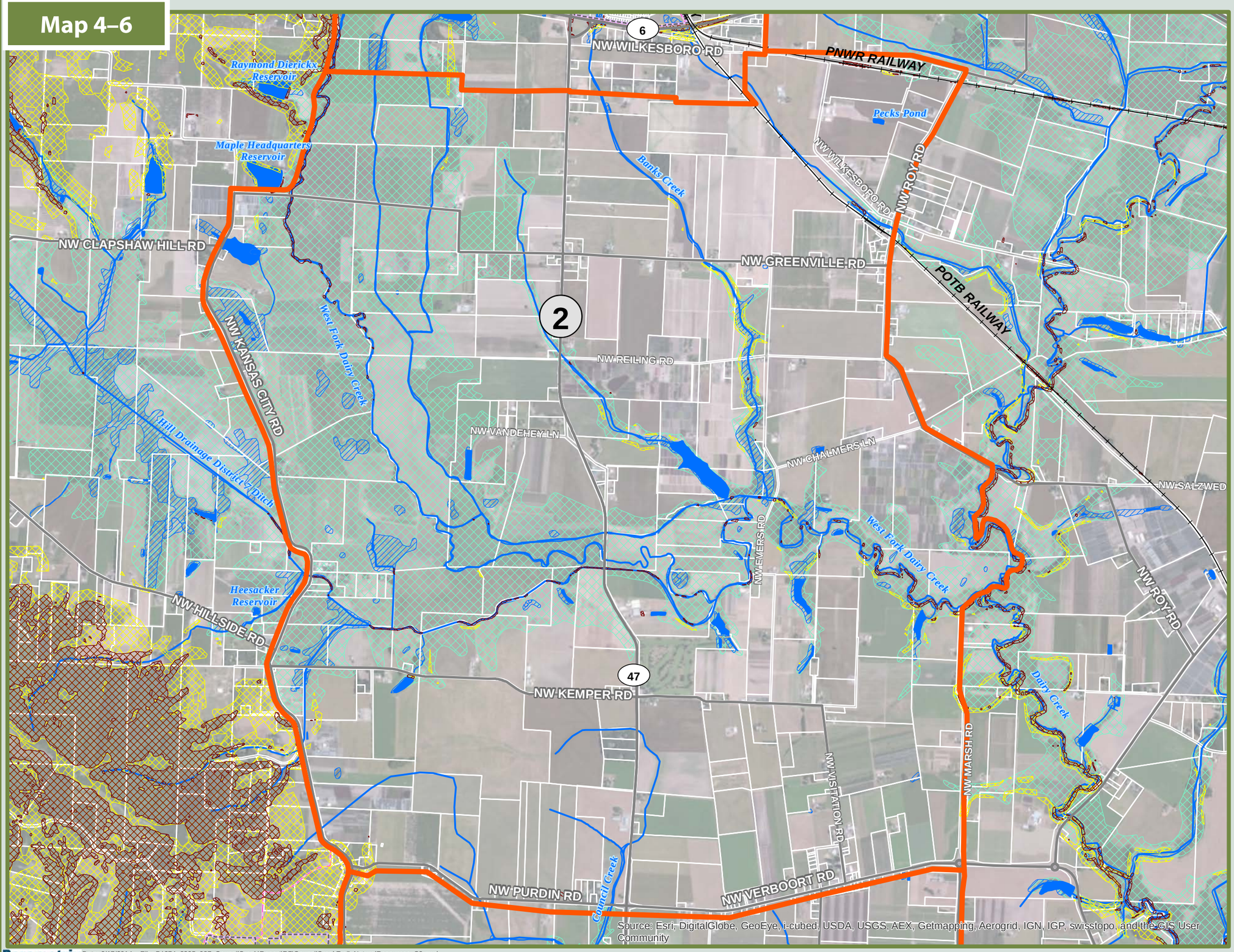
Map 4–6

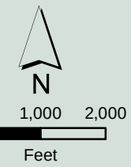
Council Creek Regional Trail Master Plan

Natural Resources

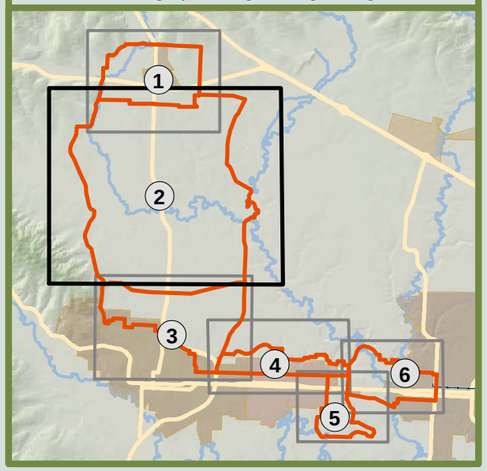
Segment 2
Washington County (North)



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



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



- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail

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Map 4–7

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 2
Washington County (North)

- Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Historic Site

N

0 1,000 2,000

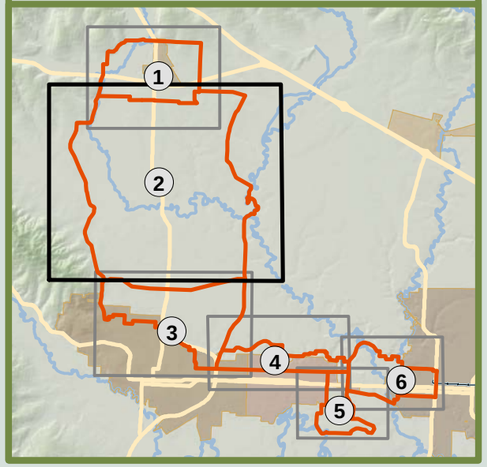
Feet

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

Land Use
- Rural Residential
- Single Family Residential
- Commercial
- Public
- Agriculture
- Foresty
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area



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Segment 3: Forest Grove-Washington County (South)

This segment extends from NW Thatcher Road on the west to NW Martin Road on the east. The segment include areas north of NW David Hill Road and Council Creek in unincorporated Washington County and lands within the city limits of Forest Grove. The line of NW Purdin Road and NW Verboort Road is the north limit. The northern edges of downtown Forest Grove and residential neighborhoods south of Oregon 47 are the segment's south boundary. Between NW Purdin Road and NW David Hill Road west of Oregon 47 unincorporated lands are designated as an urban reserve and, therefore, will presumably be within the UGB and city limits of Forest Grove at some point in the future.

Design Opportunities and Challenges

The western boundary of this segment may be adjusted to account for the preferred north-south trail alignment through Segment 2. Trail sections extending out to NW Thatcher Road that end up being west of the preferred north-south trail "main stem" will be mapped, but designated as community-level trails.

Up to five broad options may be possible:

- A short distance north of NW Sunset Drive, the trail could turn west off of Oregon 47 and follow the line of NW David Hill Road to NW Thatcher Road.
- The CCRT could follow the Oregon 47 corridor across the entire segment.
- Portions of the constrained areas along Oregon 47 could be bypassed by using the BPA power transmission corridor that crosses the highway and Council Creek over the east half of the segment.
- The CCRT could follow the corridor of Oak Street and NW Porter Road.
- The CCRT could follow the corridor of NW Martin Road.

Views

Rural meets urban in this segment. The very west edge of this segment is one of the few areas in the study area with elevations that afford a clear panoramic view of the valley floor. Bicyclists and walkers traveling through the western portion of the segment will witness a gradual transition from rural farmlands to residential subdivisions, while users and residents along the

eastern portions will see familiar neighborhoods on the south side of Oregon 47 and Council Creek wetlands and riparian areas and farmlands to the north.

Natural Resources

Streams and Wetlands

The main stem, channelized headwaters, and tributaries of Council Creek cross into Segment 3 at several points between NW Purdin Road and NW David Hill Road. The stream system crosses NW Purdin Road twice, as well as Oregon 47 several times.

The entire upper Council Creek system north of NW David Hill Road is highly channelized with few associated wetlands or riparian areas remaining. A trail alignment parallel to one of the channelized tributaries or channels where riparian vegetation has been cleared could provide an opportunity for stream restoration.

The Forest Grove section of Council Creek that parallels Oregon 47 has a lower quality vegetated riparian area but a reasonably continuous set of wetlands in view of the highway. There are several tributaries that drain out of downtown Forest Grove and cross under Oregon 47 to reach the creek's main stem.

Transportation

Roadways

Segment 3 includes portions of Oregon 47, a principal arterial, and NW Martin Road, a county arterial. There are bike lanes on both sides of Oregon 47 between Sunset Drive and NW Martin Road, but the 40 mph posted speed may not be suitable for younger or less experienced bicyclists.

There are six existing or planned collector roadways in this segment:

- NW Thatcher Road
- Brooke Street
- NW David Hill Road – the future extension of NW David Hill Road to Oregon 47 will include bike lanes and sidewalks and is planned for 2018. This extension may be an opportunity to include street-edge trail sections along this right of way, although the 2013 Forest Grove TSP illustrates a separate David Hill Trail, south of the future road alignment, that loops around the west side of the city and connects to the planned Gales Creek Regional Trail.
- NW Sunset Drive – after crossing Oregon 47 and Council Creek and entering unincorporated Washington County this roadway is classified

as a local road and is first named NW Beal Road then NW McKibbon Road.

- Oak Street-NW Porter Road – Oak becomes Porter in Washington County after crossing Oregon 47 and Council Creek. The Oregon Department of Transportation reports that the Porter Road Bridge across Council Creek may be limited to nonvehicular traffic in the near future.
- N Holladay Street – the 2013 Forest Grove TSP shows the N Holladay Street collector originating in Cornelius being extended into Segment 3 through the Oregon 47/NW Martin Road intersection and across Oak Street.

Trails

There is a street-edge trail along the south side of Oregon 47 from NW Sunset Drive to NW Martin Road that offers good connections to the adjacent residential developments. This trail is narrower than the 10- to 12-foot-wide regional trail width standard, and in some places abutting residential development affords little opportunity to widen the pathway. Long-range plans show connections between this section of the CCRT and the planned David Hill Trail and Gales Creek Trail that will loop around the west end of the city.

Land Use

North of NW David Hill Road and the line of Council Creek this segment is presently farmed. Land west of Oregon 47 is designated as urban reserve. The eastern portion of the segment is primarily farmland under a rural reserve designation and open space associated with Council Creek, except along the south side of Oregon 47 where existing residential development constrains the corridor.

Utilities

A BPA power transmission line is within this segment. A portion of this transmission line corridor, from the electrical substation on Oak Street to NW David Hill Road, cuts diagonally across the highway and Council Creek.

SEGMENT 3: FOREST GROVE – WASHINGTON COUNTY (SOUTH)

Design Opportunities and Challenges

Possible Trail Routes

A. Extension of NW David Hill Road to NW Thatcher or BPA line
B. Along Oregon 47
C. BPA power corridor crossing Oregon 47 and Council Creek
D. Oak Street/Porter Road
E. NW Martin Road

Views

F. Agricultural landscapes
G. West end of segment will eventually convert to urban use
H. Views of valley from higher elevations
I. Council Creek visible to nearby homes and travelers on Oregon 47

Destinations

J. Thatcher Park
K. Forest Grove High School
L. Downtown Forest Grove – City Offices – Pacific University

Natural Resources

M. Channelized upper tributaries of Council Creek in rural areas provide opportunity for restoration
N. Main stem of Council Creek has better wetlands than tributaries
O. Other Council Creek tributaries feed out of city into main stem

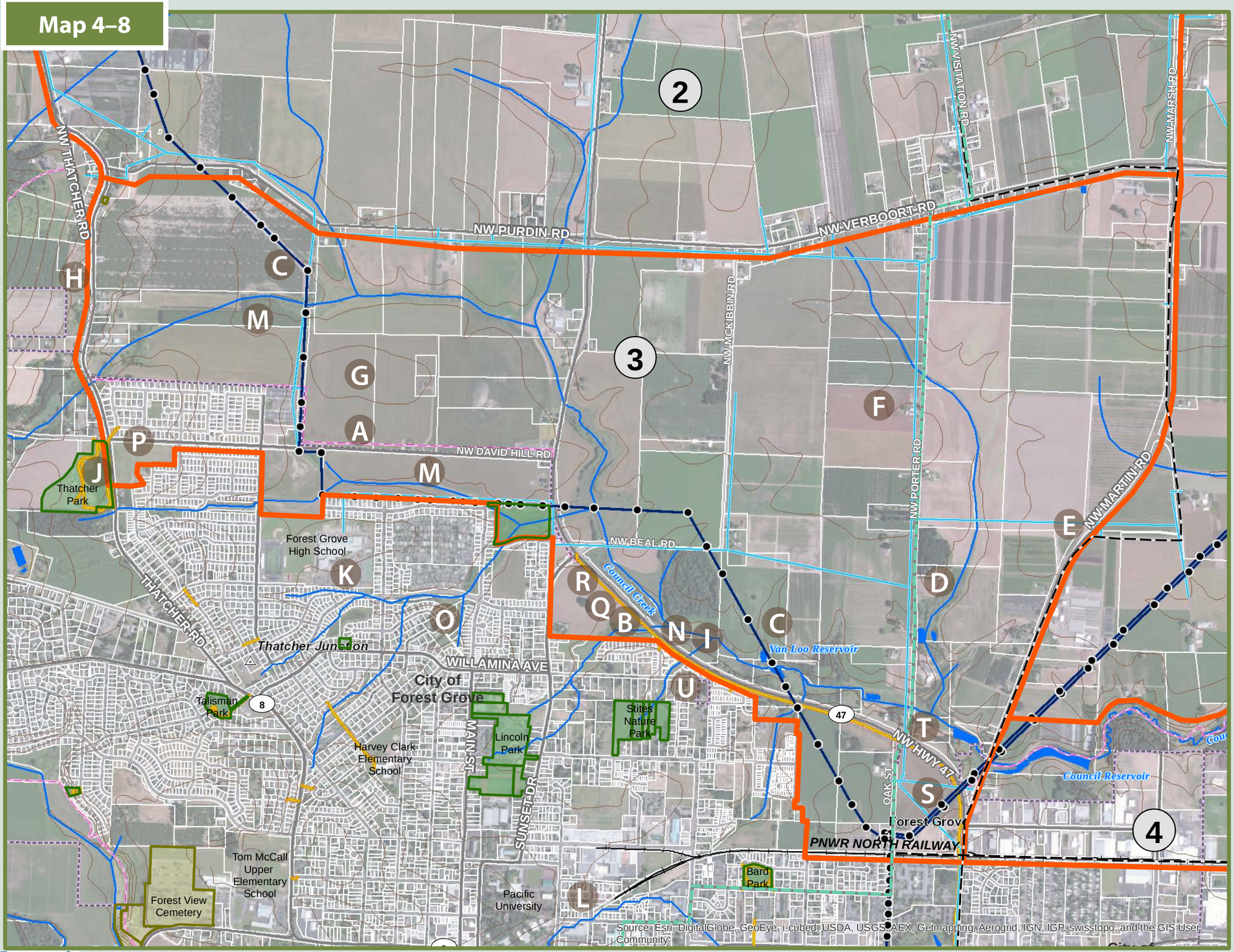
Transportation

P. West-end trail reclassified as community trail if main route turns north before Oregon 47
Q. Bike lanes on Oregon 47, but 40 mph posted speed may not be suitable for all cyclists
R. Existing street-edge trail on Oregon 47 not to regional standard and constrained by development
S. Future extension of N Holladay Street
T. Porter Road Bridge may be reclassified for nonmotorized traffic only

Land Use-Utilities

U. Residential development on portions of south side of Oregon 47 constrains trail options

Map 4–8



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 3
Forest Grove

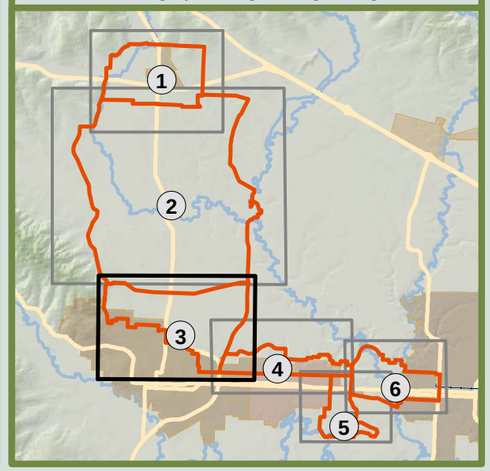
- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Tualatin Valley Scenic Bikeway
- Cemetery
- Public Open Space
- Private Recreation Area
- PGE Transmission Line
- BPA Transmission Line
- BPA Transmission Towers
- Irrigation Water Line

N

0 1,000 2,000

Feet

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



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Map 4–9

Council Creek Regional Trail Master Plan

Natural Resources

Segment 3
Forest Grove

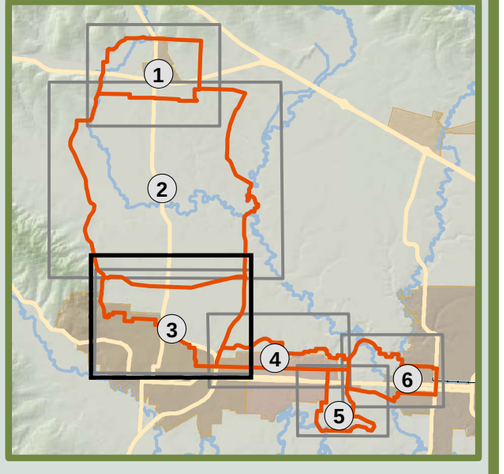
- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- DEQ Hazardous Materials Site

N

0 1,000 2,000

Feet

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



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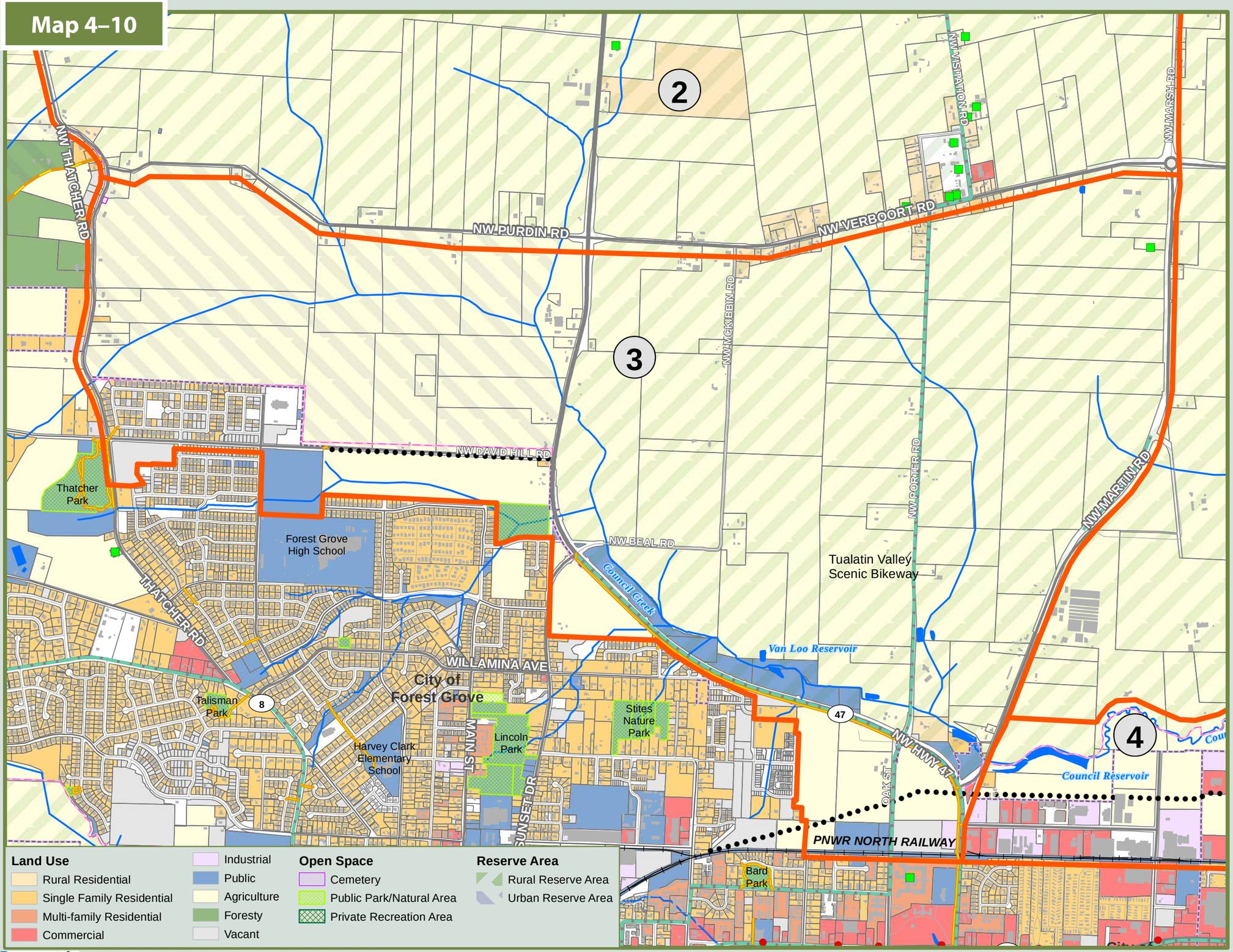
Map 4–10

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 3
Forest Grove



Land Use
- Rural Residential
- Single Family Residential
- Multi-family Residential
- Commercial
- Industrial
- Public
- Agriculture
- Foresty
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area

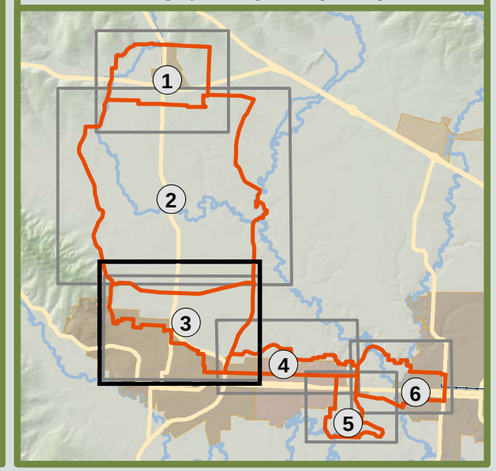
- 3 Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Proposed City Street
- Historic Site
- Bus Stop

N

0 1,000 2,000

Feet

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



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Segment 4: Cornelius

Segment 4 extends from the intersection of Oregon 47 and NW Martin Road to a short section of Jobes Ditch and NW 341st Avenue just east of the Cornelius city limits. The segment is primarily within Cornelius with some property in Forest Grove and unincorporated Washington County. Council Creek generally forms the north boundary of this segment, and the northerly PNWR rail right of way forms the south boundary. There are lands immediately along the north side of the creek corridor included in the segment, some of which are in public ownership. The north and south boundaries of this segment may be incrementally adjusted to reflect outcomes of the Trail Alignment Analysis phase of this master plan.

Design Opportunities and Challenges

Council Creek is highly visible to many of the residents and businesses in Segment 4. On the west end of the segment, agricultural lands provide a potential opportunity to develop a multiuse trail alignment that strikes a balance between proximity to the creek and avoiding impacts to the riparian corridor. There are also publically owned natural areas and some vacant lands along both sides of Council Creek in the east half of the segment.

Although master plan objectives include the trail remaining on the south side of Council Creek, the opportunity afforded by three existing bridge crossings—N 10th Avenue, N 19th Avenue, and NW Hobbs Road—offers the potential to locate portions of the trail on the north side of the creek without significantly reducing connectivity to downtown Cornelius.

Natural Resources

The north boundary of the segment is generally defined by the main stem of Council Creek. There are no tributaries flowing from the south into the creek. The only significant tributary flowing from the north drains through the Cornelius Methodist Cemetery located on the north bank of the creek near mid-segment.

Council Creek along Segment 4 is at a lower elevation than adjacent developed lands, has well defined banks with 10 percent to 25 percent slopes, relatively narrow wetlands and floodplains, and has healthier riparian vegetation than many creek sections in Segments 2 and 3.

The west end of this segment is open and undeveloped enough that the CCRT could be designed to closely follow the stream without encroaching into natural resource areas. Steep creek side slopes could challenge trail alignments at the east end, as residential development leaves limited area to align a streamside trail.

Transportation

Roadways

The 2035 Washington County TSP and the 2005 Cornelius TSP indicate that the presently noncontinuous sections of N Holladay Street will eventually be connected from Oregon 47 along 24th Avenue then to NW Hobbs Road. *Note: The 2013 Forest Grove TSP shows the connection to Oregon 47 as being north of 24th Avenue on a new alignment.* While establishing a shared roadway or bike lane/sidewalk solution along this collector roadway may be challenging, there are numerous permitting requirements, natural resource issues, and property constraints that may make a trail alignment along the creek even more challenging.

Segment 4 is crossed by:

- Two arterials – N 10th Avenue and N 19th Avenue. North of the creek and outside of the city limits of Cornelius and the study area these two arterials become NW Cornelius-Schefflin Road and NW Susbauer Road, respectively.
- Two west-east collectors – 24th Avenue and N Holladay Street.
- Four north-south collectors – Yew Street, N 4th Avenue, N 26th Avenue, and NW Hobbs Road.

Bridges

The bridges over the creek at N 10th Avenue and N 19th Avenue are relatively new and include sidewalks and bike lanes. The NW Hobbs Road bridge over Council Creek has been classified by Washington County as having weight-limited status. Presently vehicular traffic is still allowed.

Rail Lines

A PNWR rail line forms the south boundary of this segment. Possibilities for a rail-to-trail solution are limited as this particular rail line is the potential route for a light rail extension into Forest Grove.

A trail-with-rail solution is more feasible. Rail traffic is limited and declining, and speeds are low. The single-car light rail service that is being contemplated would also be low speed, especially given the number of stops suggested in the 2006 Forest Grove Rail Concept Study.

The rail right of way is approximately 60 feet wide. Published Federal Highway Administration guidance suggests that trails along low traffic/low speed lines should be set back 25 to 30 feet from the rail centerline. This would put any trail over the edge of the right of way, but the same guidance

suggests that reduced setbacks of 12 to 15 feet are possible in “constrained” corridors with appropriate safety controls and barriers.

There are also two rail sidings on the north side of the railroad that may interfere with a trail alignment.

Trails

Residential development between N 19th Avenue and NW Hobbs Road includes a narrow local loop trail system along the creek edge and through portions of the subdivision. The development pattern, especially the close proximity of private residential lots to the upper bank of the stream, makes widening this trail system to regional standards unlikely. These pathways could, however, potentially accommodate pedestrians in conjunction with a shared roadway solution for road bikes on N Holladay Street.

Land Use

Most portions of Segment 4 are highly urbanized. The west half of Segment 4 between Oregon 47 and N 10th Avenue is primarily in industrial and commercial use south of the line of 24th Avenue and N Holladay Street. North of this line up to Council Creek both incorporated and unincorporated lands tend to still be in agricultural use.

Most of the east half of this segment is developed as residential neighborhoods. Although there are some creekside local trails and open spaces, many residences closely abut the stream bank. Space to align a new regional-scale trail along the creek is extremely limited.

Between NW Hobbs Road and NW 341st Street there is a small subdivision west of Jobes Ditch and unincorporated farmland east of the Ditch.

Utilities

A PGE power transmission line is on the north side of the PNWR rail line that crosses this segment. Field observations indicate that the transmission line is set far enough back from the rail line to allow a trail-with-rail or possibly a separated multiuse trail, although safety considerations, drainage, possible rail siding conflicts, and some abutting development may complicate such solutions.

SEGMENT 4: CORNELIUS

Design Opportunities and Challenges

Possible Trail Routes

A. Shared use of N Holladay Street collector when fully extended and connected
B. West end agricultural lands and east end public natural areas along Council Creek
C. Sections of trail north of Council Creek are a possibility
D. Trail-with-rail along north PNWR rail line

Views

E. Creek highly visible to many of area residents and businesses

Destinations

F. Downtown Cornelius – City Offices – Schools
G. Industrial employment areas in west end of segment

Natural Resources

H. Defined banks steep slopes could challenge trail routes
I. Relatively narrow wetlands and floodplain, healthy riparian vegetation

Transportation

J. Three existing bridge crossings of Council Creek between N 10th Street and NW Hobbs Road
K. Rail line is constrained – right-of-way width, sidings, abutting development
L. North PNWR rail line is possible MAX extension
M. N Holladay Street shared-use solution requires two new connections and one extension
N. Local neighborhood trail may support split-mode solutions
O. One rail crossing at east end near Jobes Ditch spur trail – NW Hobbs

Land Use-Utilities

P. Residential development highly constrains route options in east end
Q. Vacant and agricultural land offers more routing flexibility in west end
R. Public natural areas along both sides of Council Creek
S. PGE power transmission line along north PNWR rail line may constrain possible trail route

Map 4–11

Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 4
Cornelius

- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Cemetery
- Public Open Space
- Private Recreation Area
- PGE Transmission Line
- BPA Transmission Line
- BPA Transmission Towers
- Irrigation Water Line

N

0 1,000 2,000
Feet

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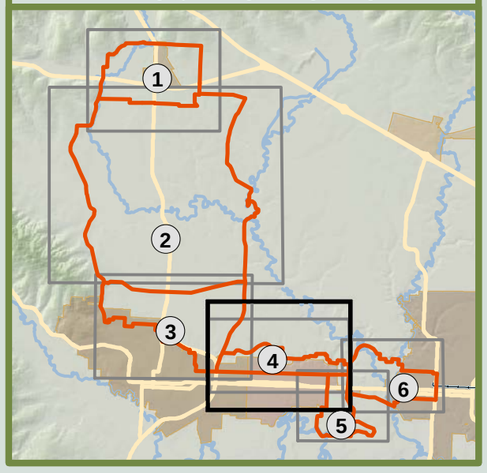

NW PORTER RD
NW MARTIN RD
NW CORNELIUS SCHEFFLIN RD
NW 366TH PL
NW LONG RD
NW SUSBAUER RD
NW HOBBS RD
NW SPIESSCHAERT DR
Dairy Susbauer Natural Area
Cornelius Methodist Cemetery
East Council Creek
Council Creek
Council Reservoir
N 4TH AVE
N HOLLADAY ST
YEW ST
24TH AVE
N 19TH AVE
N 26TH AVE
N 10TH AVE
PNWR NORTH RAILWAY
PNWR SOUTH RAILWAY
QUINCE ST
PACIFIC AVE
N ADAIR ST
BASELINE ST
SW HWY 47
City of Forest Grove
City of Cornelius
Cornelius Elementary School
City Hall
Water Park
Ryland Park
Fern Hill Elementary School
Neil Armstrong Middle School
Free Orchards Elementary School
Free Orchards Park
Dogwood Park
47
8
3
4
5

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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Map 4–12

Council Creek Regional Trail Master Plan

Natural Resources

Segment 4
Cornelius

- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- DEQ Hazardous Materials Site

N

0 1,000 2,000

Feet

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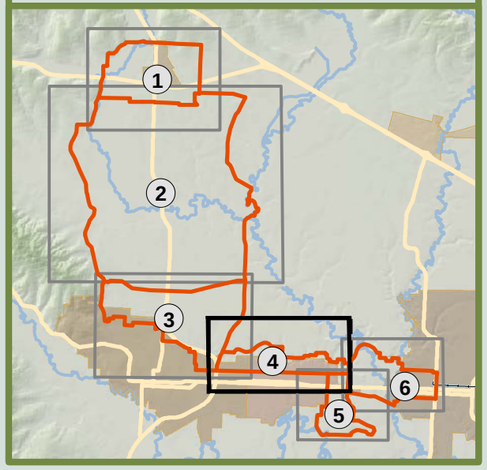

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Map 4–13

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 4
Cornelius

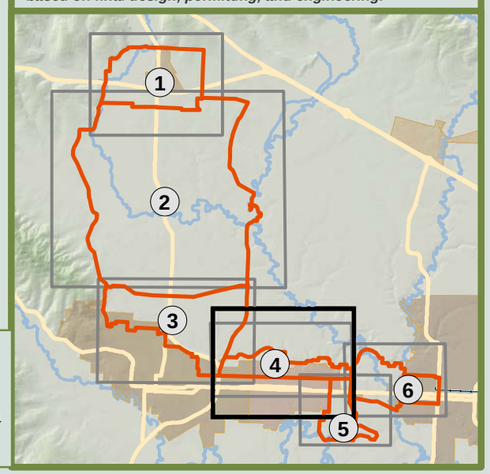
- Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Proposed City Street
- Bus Stop

N

0 1,000 2,000

Feet

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



Land Use
- Rural Residential
- Single Family Residential
- Multi-family Residential
- Commercial
- Industrial
- Public
- Agriculture
- Forestry
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area

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Segment 5: Jobes Ditch

Jobes Ditch is a historical place name for an old irrigation canal that defines this trail segment. Segment 5 extends from the north PNWR rail line, crosses the southerly rail line and Oregon 8, and ends at the Tualatin River. NW Hobbs Road is the west boundary and the east boundary is the line of NW 341st Avenue and Jobes Ditch. The future Jobes Ditch spur trail will turn south from the main stem of the CCRT between these points. Between the creek and the north PNWR rail line the Jobes Ditch Spur Trail will be in Segment 4.

Except for some land at the very north end of the segment that is in Cornelius, the segment is in unincorporated Washington County. Between the two rail lines, property in the segment is incorporated and developed or in urban reserve. The west half of the segment that lies south of the more southerly of two PNWR rail lines crossing the area is urban reserve and the east half is in rural reserve.

Design Opportunities and Challenges

The future CCRT trail will access the Tualatin River, the only direct connection of the trail with the defining river for the Tualatin Valley. A trail connection with the river will offer access to viewing areas, to riverside passive amenities, and to facilities along the Tualatin River Greenway. A new Cornelius high school is scheduled to be built within this segment and could be an important destination and traffic generator for the trail.

Natural Resources

North End

The north end of the segment has limited wetlands and minimal riparian vegetation making a trail alignment along the Jobes Ditch channel possible while presenting an opportunity for associated habitat restoration. The floodplain is narrow in the section. Slopes of 10 percent and 25 percent along both sides of the Jobes Ditch channel combined with residential subdivisions to the west and rural homesites and mobile homes to the east will challenge a Ditch trail alignment. A small local park (Ryland Park) may also impact any trail alignment.

South End

From the point Jobes Ditch crosses Oregon 8 and the southerly of two rail lines, there are even fewer wetlands than at the north end. Continued slopes of up to 10 percent and a broadened floodplain will still challenge a trail alignment along the Ditch. Jobes Ditch flows southeast at this point, away

from the site of the new Cornelius high school and the Tualatin River. This further reduces the Ditch's effectiveness as a potential multiuse trail route.

Transportation

Roadways

Oregon 8 crosses this segment west-east along the north end. South of Oregon 8 the segment is bisected by SW 345th Avenue, a local street. The SW 345th Avenue right of way is 55 feet wide and divides future urban development on the west from continued rural and agricultural uses to the east. Since the street may need to be redeveloped to serve urbanizing lands and the new Cornelius high school, a separate street-edge trail or sidewalks and bike lanes could be developed as part of roadway upgrades.

Along the west side of this segment, NW Hobbs Road, which now crosses the north PNWR line, is identified in the Washington County 2035 TSP and the Cornelius 2005 TSP for extension across Oregon 8 and the second PNWR rail line in the segment. This extension will pass behind the new high school. This road extension is an opportunity to develop the trail as part of developing the new roadway and the high school.

Rail

The segment is crossed west-east by two PNWR rail lines. Permitting of new trail crossings of the two rail lines will be a significant challenge with any spur trail alignment. For this reason, existing crossings should be utilized if at all possible. NW Hobbs Road currently crosses the north rail line, but a new permit would be needed to cross the south rail line. This could be done in conjunction with crossing permits for the roadway extension. NW 345th Avenue only crosses the south rail line.

Land Use

This segment has residential development on the west side of Jobes Ditch between the two parallel PNWR rail lines, larger-lot residential to the east, and some commercial development along Oregon 8. South of the southerly PNWR rail line the segment is agricultural land, but the plans for a new high school and the urban reserve designation west of SW 345th Avenue suggest that some of the segment could see urbanization in the relatively near future.

Utilities

PGE power transmission lines run along the north PNWR rail line and on the south side of Oregon 8.

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SEGMENT 5: JOBES DITCH

Design Opportunities and Challenges

Possible Trail Routes

A. Future extension of NW Hobbs Road to new high school and neighborhoods
B. Street-edge trail along SW 345th as street redevelops to serve new residences
C. Following the line of Jobes Ditch

Views

D. Tualatin River to the south
E. Agricultural lands to the east

Destinations

F. Ryland Park
G. Tualatin River and Tualatin River Greenway
H. New Cornelius high school

Natural Resources

I. Steep slopes along the ditch may challenge trail routing
J. The ditch is highly channelized with some wetlands and minimal riparian vegetation
K. Habitat restoration opportunities along the ditch
L. Broadened floodplain south of Oregon 8 challenges ditch-side route
M. The ditch flows away from the high school and the nearest point to the river

Transportation

N. The trail is crossed west to east by PNWR rail line making permitting of new trail crossing difficult
O. One existing rail crossing at SW 345th

Land Use-Utilities

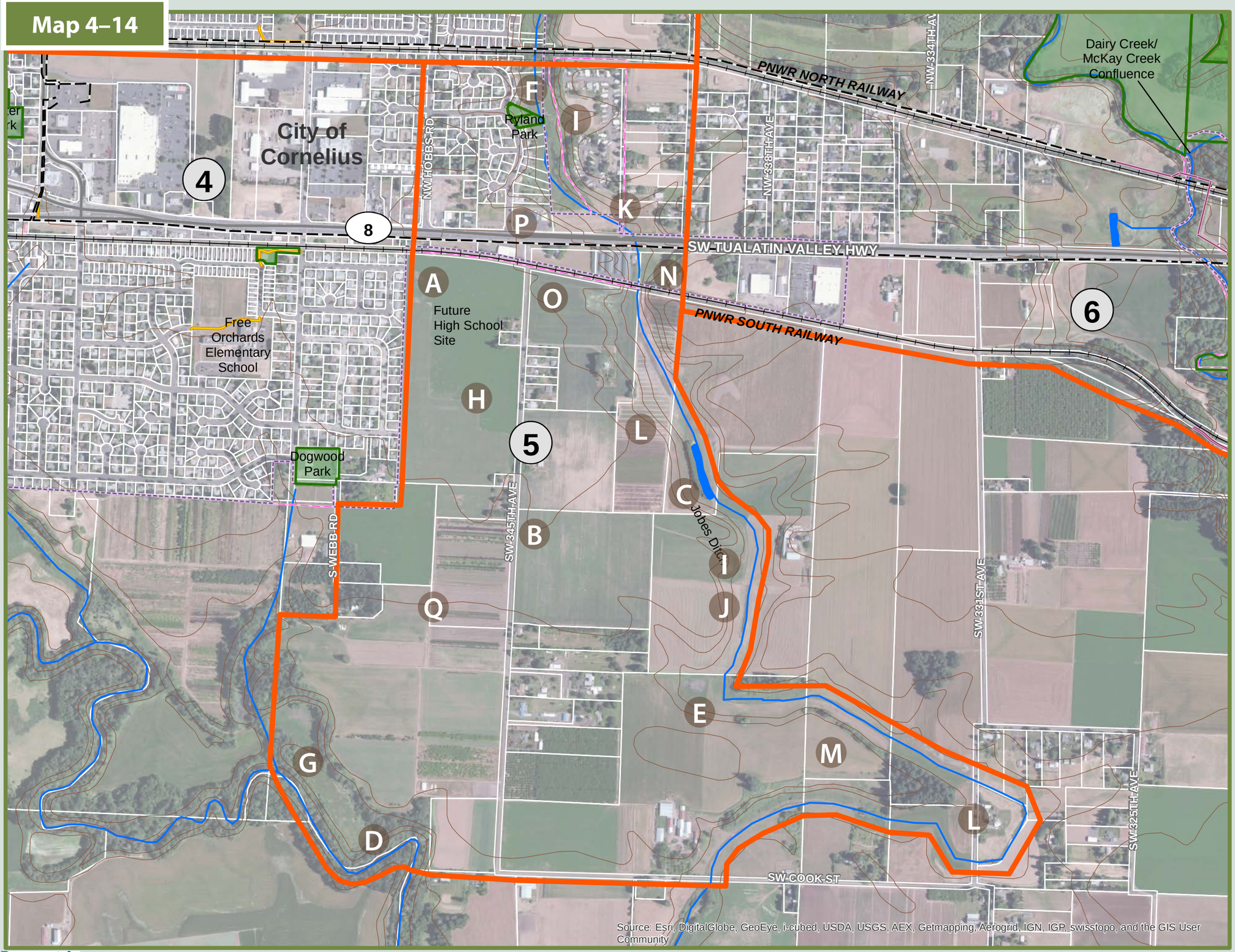
P. Variety of urban uses closely bracket the ditch at the north end of the segment
Q. Future urban development planned south of the new high school

Map 4–14

Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 5
Jobes Ditch



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

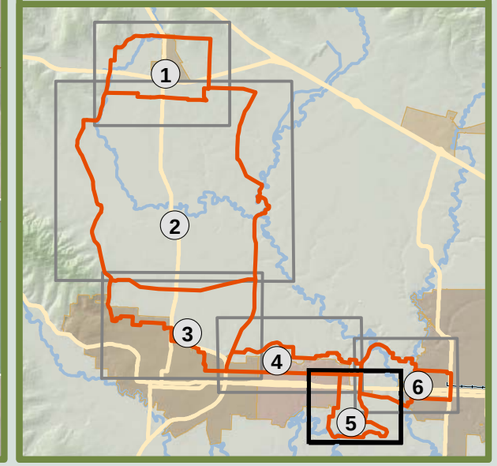
- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Cemetery
- Public Open Space
- Private Recreation Area
- PGE Transmission Line
- Major Sewer Line
- Irrigation Water Line

N

0 1,000 2,000

Feet

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



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Map 4–15

Council Creek Regional Trail Master Plan

Natural Resources

Segment 5
Jobes Ditch

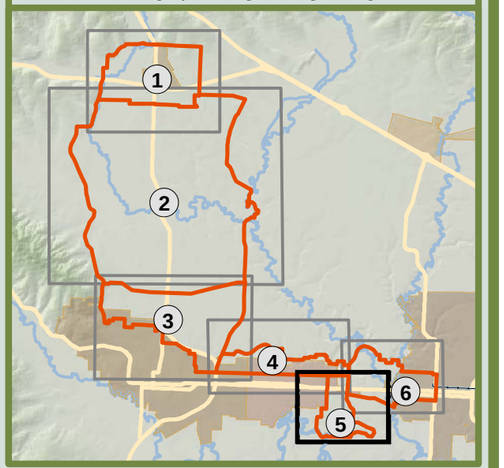
- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- DEQ Hazardous Materials Site

N

0 1,000 2,000

Feet

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



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

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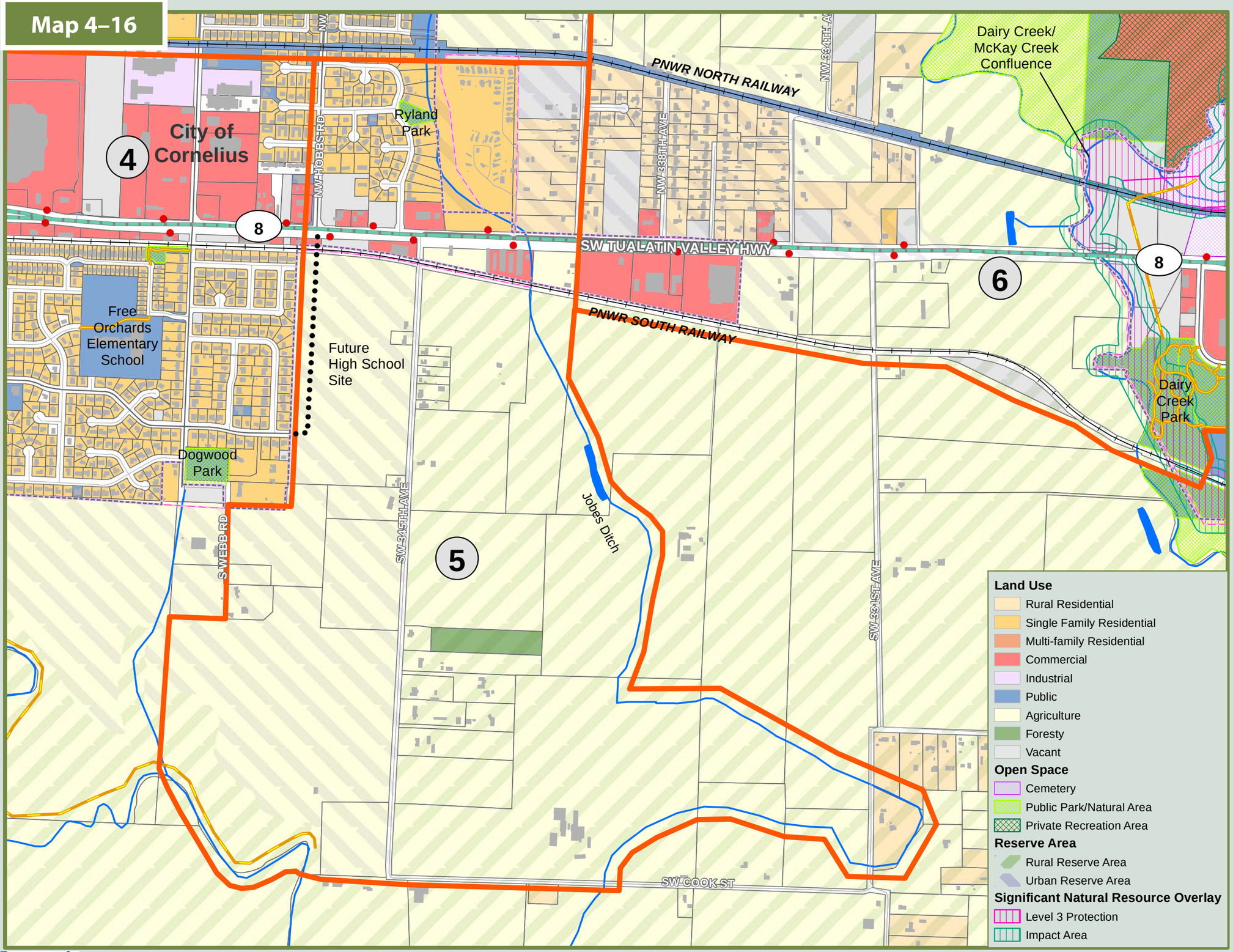
Map 4–16

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 5
Jobes Ditch



Land Use
- Rural Residential
- Single Family Residential
- Multi-family Residential
- Commercial
- Industrial
- Public
- Agriculture
- Foresty
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area

Significant Natural Resource Overlay
- Level 3 Protection
- Impact Area

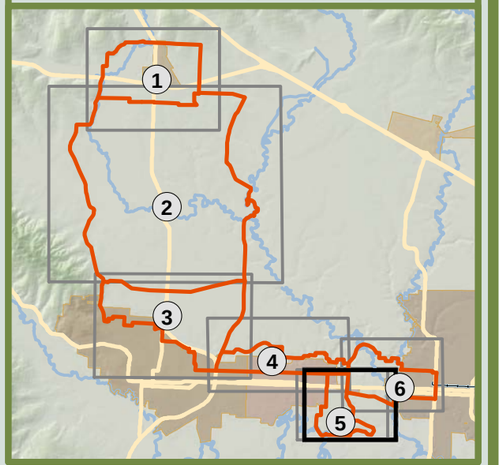
- 5 Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Proposed City Street
- Historic Site
- Bus Stop

N

0 1,000 2,000

Feet

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



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Segment 6: Hillsboro-Washington County (East)

Segment 6 extends from the line of NW 341st Avenue to North/South First Avenue in downtown Hillsboro. The main stem of Council Creek, natural resource lands and two golf courses, and NW Jackson Street are the north boundary of this segment. The south boundary is the southernmost PNWR rail line, Dairy Creek Park, and SW Walnut Street. The segment is entirely within Washington County west of McKay Creek and the portion of Dairy Creek south of Oregon 8, and within Hillsboro east of these two creek sections. The north and south boundaries of Segment 6 may be incrementally adjusted to reflect outcomes of the Trail Alignment Analysis phase.

Design Opportunities and Challenges

This segment between urbanized Cornelius and urbanized Hillsboro includes agricultural uses; the confluence of McKay and Dairy Creeks and associated wetlands, floodplains, and steep bank slopes; extensive publically owned natural areas and an environmental mitigation site; two golf courses; three cemeteries, one of which is historic; two west-east rail lines, one of which is a potential light rail extension; residential subdivisions along the north side of Oregon 8 in Washington County and Hillsboro; and commercial and industrial uses on both sides of the highway.

This combination of natural resources and land uses makes Segment 6 particularly challenging for trail routing. Multiuse trail options may be restricted by the locations of the golf courses, stream crossings, and extensive floodplains. The northerly rail line is a possible trail-with-rail route, but potential conflicts with current and future rail uses may have to be mitigated in trail design. A split-mode solution (e.g., pedestrians on one route and bicyclists on a second) is another possibility. Otherwise, the trail alignment may need to consider on-street or street-edge options on Oregon 8, a heavily used arterial.

The less than 1000-foot-wide area between the creek confluence, the north PNWR rail line, and Oregon 8 is the most constrained point in this segment. Solutions could require use of a short side channel that drains out of Hillsboro residential neighborhoods, new bicycle/pedestrian bridges and boardwalk structures, fill (and attendant mitigation), property acquisition, flood-resistant pathways, and/or modification and use of existing rail and/or highway bridges over Dairy Creek.

Natural Resources

Designated natural areas and mitigation sites, the extent of a 100-year floodplain, steep slopes along floodplain edges, and the possible need to

construct a new pedestrian/bicycle bridges across Dairy Creek and/or McKay Creek combine to substantially challenge trail routing through this segment.

North of and between the confluence of Dairy Creek and McKay Creek, the segment includes extensive publically owned natural resource lands. The Port of Portland also owns a large environmental mitigation site along the west side of Dairy Creek.

Wetlands and Floodplain

The confluence of Council Creek and Dairy Creek and the confluence of Dairy Creek and McKay Creek create a 100-year floodplain that takes up the entire segment west of Dairy Creek and north of the northerly PNWR rail line. There are also remnant wetlands and floodplain along the east side of McKay Creek that extend into residential subdivisions. A short side stream channel with considerable associated wetlands extends through Fir Lawn Cemetery and into adjacent Hillsboro residential neighborhoods.

South of the north rail line and Oregon 8 the Dairy Creek floodplain and some associated wetlands take up a considerable area, essentially all that is not developed for urban uses on both sides of Oregon 8.

In addition to extensive floodplains and wetlands, steep slopes up to 25 percent are present, some associated with stream banks but others that bound the floodplain.

Transportation

Roadways

Oregon 8 is a west-east arterial that crosses the entire segment. Most of Oregon 8 through Hillsboro is a one-way couplet (SW Baseline Street and SW Oak Street).

In Washington County portions of this segment only a few local roadways access subdivisions and commercial uses. North of the PNWR rail line there is only one local public street: the north-south NW 334th Avenue. Based on existing road patterns, or rather the lack of existing public roads, and assuming a trail alignment through built residential and commercial lands would not be feasible, no road crossings would be required for the CCRT in the west half of Segment 6, except potentially across NW 334th Avenue.

Within Hillsboro, the east limit of Segment 6 is bounded by the primary north-south arterial through the downtown: First Avenue. NW Jackson Street is a neighborhood route (formerly termed minor collector) and bounds the north side of the segment. SW Walnut Street is a collector roadway accessing industrial uses and is the southern limit of the segment.

Other collector routes within the Hillsboro portion of Segment 6 include two north-south collector streets—SW Dennis Avenue and NW Connell Avenue—that enter but do not fully cross the segment. West Main Street crosses the eastern portion of the segment and turns south to intersect with SW Washington Street and Oregon 8, crossing the northerly PNWR rail line in the process.

West-east roadways such as NW Jackson Street, West Main Street, and SW Walnut Street are possible CCRT routes, at least for bicycle traffic.

Rail

Two PNWR-owned west-east rail lines cross this segment. One is north of Oregon 8 and the other is south. As discussed previously under Segment 4, a rail-to-trail alignment using the north line is probably not feasible due to the potential future use of this line for a light rail extension.

Given the numerous environmental constraints in this segment, use of a trail-with-rail using the north rail line would avoid many routing challenges. However, the steep banks where the rail line crosses Dairy Creek, power transmission lines on the north side of the rail line, and a historic cemetery on the south side of the rail line still create substantial constraints.

Land Use

Much of the land within this segment is designated as sensitive natural resource areas. Two golf courses—Killarney West and McKay Creek—occupy large areas of the segment, and areas along both sides of Oregon 8 are developed for residential and commercial purposes. This combination will challenge the routing of a regional trail.

There are also three cemeteries in Segment 6, one of which—the Hillsboro Pioneer Cemetery—is a designated historic resource. Substantial areas of all three cemeteries lie within 100-year floodplain.

Utilities

Two PGE power transmission lines cross Segment 6. One follows the north PNWR rail line and the second follows Oregon 8. There appears to be some room between the transmission lines and the rail line for a trail alignment in this segment, but as noted above the presence of the transmission line only further complicates an already challenging trail-with-rail solution.

SEGMENT 6: HILLSBORO – WASHINGTON COUNTY (EAST)

Design Opportunities and Challenges

Possible Trail Routes

A. Through golf courses and natural areas between confluence of Dairy and McKay Creeks
B. At narrow 1000-foot-wide confluence of Dairy and McKay Creeks and Oregon 8
C. Trail-with-rail along north PNWR rail line
D. On-street or street-edge options on Oregon 8 (SW Baseline Street)
E. Shared use on NW Jackson, NW Main, and/or SW Walnut

Views

F. Wetlands and three creeks

Destinations

G. Killarney West and McKay Creek Golf Courses
H. Public natural areas
I. Downtown Hillsboro – City/County offices – County Museum
J. Downtown MAX station
K. Dairy Creek Park

Natural Resources

L. Extensive floodplain takes up nearly entire northwest segment above north PNWR rail line
M. Considerable floodplain between Oregon 8 and the south PNWR rail line
N. Steep slopes at west end bound the floodplain
O. Small stream channel/wetland drains neighborhood presenting both challenge and opportunity
P. Steep slopes, floodplains, wetlands constrain trail routes

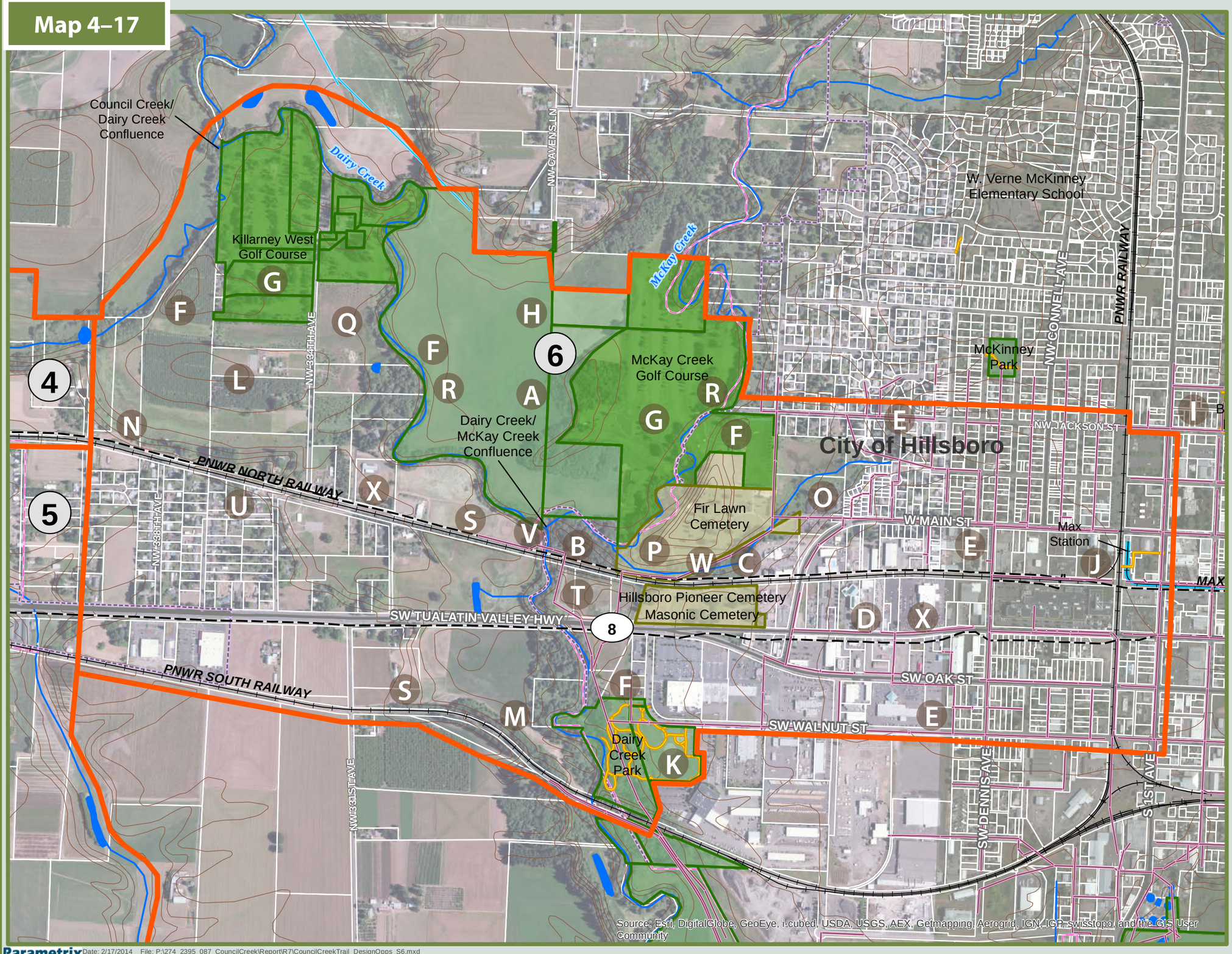
Transportation

Q. Few public roads in northwest segment above north PNWR rail line
R. Possible need for new pedestrian/bicycle bridges across Dairy Creek/McKay Creek
S. Two PNWR-owned rail lines cross segment west to east
T. North rail line constrained by right of way, bridged stream crossing, and power lines
U. North rail line is possible MAX extension into Forest Grove
V. Trail in 1000-foot-wide wide area may require bridges, elevated structures, special design

Land Use-Utilities

W. Three cemeteries (one historic) create additional trail routing challenges
X. Two PGE transmission lines (north rail line and Oregon 8) cross segments west to east

Map 4–17



Council Creek Regional Trail Master Plan

Design Opportunities and Challenges

Segment 6
Hillsboro, Washington County (East)

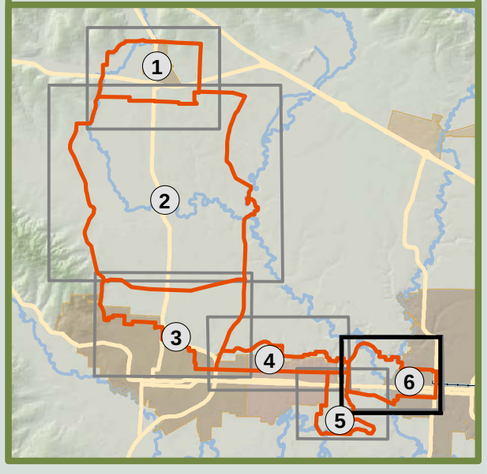
- Trail Segment Boundary
- Opportunity / Challenge
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- 10 Ft. Contour
- Stream, Ditch, Waterway
- Waterbody
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- Cemetery
- Public Park / Natural Area
- Private Recreation Area
- PGE Transmission Line
- Major Sewer Line
- Irrigation Water Line

N

0 1,000 2,000

Feet

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



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Map 4–18

Council Creek Regional Trail Master Plan

Natural Resources

Segment 6
Hillsboro, Washington County (East)

Council Creek/ Dairy Creek Confluence
Killarney West Golf Course
Dairy Creek
McKay Creek
NW CAVENS LN
W. Verne McKinney Elementary School
PNWR RAILWAY
NW CONNELL AVE
McKinney Park
NW 328TH AVE
Port of Portland Mitigation Site
McKay Creek Golf Course
NW JACKSON ST
Dairy Creek/ McKay Creek Confluence
City of Hillsboro
PNWR NORTH RAILWAY
NW 338TH AVE
Fir Lawn Cemetery
W MAIN ST
Max Station
MAX
Hillsboro Pioneer Cemetery
Masonic Cemetery
SW TUALATIN VALLEY HWY
SW OAK ST
PNWR SOUTH RAILWAY
SW WALNUT ST
Dairy Creek Park
NW 331ST AVE
SW DENNIS AVE
S 1ST AVE

4 5 6 8

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

- Trail Segment Boundary
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- FEMA 100 Yr. Flood Plain
- Wetland Area
- Slope > 25%
- Slope > 10%
- Arterial/Collector Roadway
- Railroad
- Existing Trail
- DEQ Hazardous Materials Site

N

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Feet

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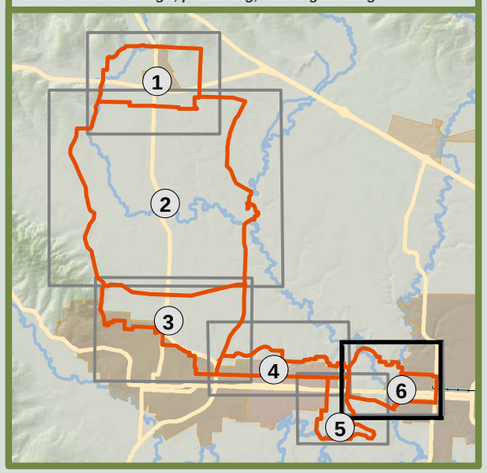

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Map 4–19

Council Creek Regional Trail Master Plan

Transportation and Land Use

Segment 6
Hillsboro, Washington County (East)

Council Creek/ Dairy Creek Confluence
Killarney West Golf Course
Dairy Creek
NW-GAVENS LN
McKay Creek
W. Verne McKinney Elementary School
PNWR RAILWAY
NW-CONNELL-AVE
McKinney Park
McKay Creek Golf Course
Dairy Creek/ McKay Creek Confluence
City of Hillsboro
NW-JACKSON-ST
Fir Lawn Cemetery
W-MAIN-ST
Max Station
MAX
PNWR NORTH RAILWAY
NW-334TH-AVE
NW-338TH-AVE
SW-TUALATIN-VALLEY-HWY
PNWR SOUTH RAILWAY
SW-OAK-ST
SW-WALNUT-ST
Dairy Creek Park
NW-331ST-AVE
DENNIS-AVE
SW-1ST-AVE
4
5
6
8

Land Use
- Rural Residential
- Single Family Residential
- Multi-family Residential
- Commercial
- Industrial
- Public
- Agriculture
- Foresty
- Vacant

Open Space
- Cemetery
- Public Park/Natural Area
- Private Recreation Area

Reserve Area
- Rural Reserve Area
- Urban Reserve Area

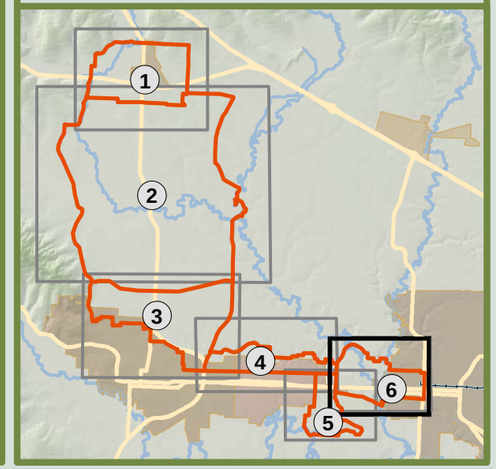
Significant Natural Resource Overlay
- Level 3 Protection
- Impact Area

- 6 Trail Segment Boundary
- Building Footprint
- Taxlot Boundary
- City Boundary
- Urban Growth Boundary
- Stream, Ditch, Waterway
- Waterbody
- Freeway / Highway
- Arterial
- Collector
- Local
- Designated Bikeway
- Railroad
- Existing Trail
- Proposed Regional Trail
- Historic Site
- Bus Stop

N

0 1,000 2,000
Feet

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



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5. Existing Conditions by Category

EXISTING PLANS

A variety of regional and local government plans and policies may impact CCRT development. These include plans related to conventional transportation, active transportation (including trails), parks and natural areas, and land use. This existing conditions report contains numerous references to these plans and to programs and policies that more directly impact on-the-ground implementation, such as Clean Water Services' regulations for trail development along streams and wetlands and Washington County standards for midblock road crossings.

Many trail alignment impacts will come from specific policies or regulations or from decisions regarding other forms of infrastructure. Specific impacts will be detailed and considered in the course of the Trail Alignment Analysis and Implementation Strategy phases of this master plan.

The most significant finding regarding the regional and local plans listed below is that with one exception all the documents either support the CCRT directly or support the development of trails and other active transportation alternatives to motorized travel.

Regional Plans

Metro exercises its responsibilities on behalf of Washington County and the four local government jurisdictions participating in the CCRT planning effort: the Cities of Banks, Forest Grove, Cornelius and Hillsboro. Metro has adopted three planning documents which strongly support the principles behind pedestrian and bicycle trails and regional trail development. The CCRT is specifically named and mapped in these plans.

- Regional Active Transportation Plan (2014)
- Regional Transportation Plan (2013)
- Regional Trails and Greenways Plan (2003) – currently (2014) being revised, CCRT is included

Local Plans

Washington County and partner cities have adopted numerous long-range plans addressing land use, parks and open space, and transportation. All the documents reviewed for this report, except for the Forest Grove Rail Concept

Study (which nonetheless indirectly supports alternative transportation options) indicated clear support pedestrian and bicycle trails and, in many cases, specifically identify the CCRT. These include:

- Banks Park and Recreation Master Plan
- Banks Comprehensive Plan
- Banks Transportation System Plan
- Forest Grove Park, Recreation, and Open Space Master Plan
- Forest Grove Community Trails Master Plan
- Forest Grove Sustainability Action Plan
- Forest Grove Comprehensive Plan
- Forest Grove Transportation System Plan
- Forest Grove Rail Concept Study
- Cornelius Comprehensive Plan
- Cornelius Transportation System Plan
- Cornelius Parks and Recreation Master Plan
- Hillsboro Transportation System Plan
- Hillsboro Comprehensive Plan
- Hillsboro Downtown Framework Plan
- Hillsboro Downtown Urban Renewal Plan
- Hillsboro Parks and Recreation Master Plan
- Washington County Transportation System Plan (2020 and 2035)
- Washington County Pedestrian and Bicycling Plan

DESIGN OPPORTUNITIES AND CHALLENGES

The design opportunities and challenges maps included in Chapter 4 highlight key factors that may influence development of the CCRT. Some of these opportunities and challenges are also identified on the natural resources and transportation-land use maps. Other design opportunities and challenges associated with environmental conditions, transportation, land use, and utilities are noted in the sections below.

NATURAL RESOURCES

Fish and Wildlife

Although there are some Endangered Species Act (ESA)-listed fish and wildlife species that may occur within the CCRT study area, impacts from the CCRT should be limited by careful trail routing and design. Areas of high fish and wildlife value, such as stream corridors, riparian zones, and wetlands, should be avoided if at all possible as trail routes. Where use of such lands for an alignment is necessary, mitigation and habitat enhancement should be associated with trail design and construction. Specific sites that are home to protected species should be relatively easy to avoid, e.g., an eagle's nest tree.

Perhaps the biggest potential challenge in preserving habitat will be along Council Creek, Dairy Creek, and McKay Creek in Segments 4 and 6. These areas are highly constrained due to prior development and natural resource designations. Steeper slopes along the creek corridors, and rail, street, and electrical transmission infrastructure, all present additional challenges. Trail solutions using riparian and wetland areas along the streams may be necessary.

Fish Species

A 1996 Tualatin River Basin fish population study identified 25 species (see Table 5-1 below). This 1996 report focused on the identification of species present, and relative or absolute populations were not documented or estimated. Winter run steelhead has also been documented in the basin. Some Oregon populations of coho and steelhead salmon are listed under the ESA as threatened, but the Tualatin River Basin runs are not. Pacific lamprey is ESA-listed as a species of concern. Several species are introduced exotics.

Table 5-1. Fish Species

Brook lamprey	Goldfish	Warmouth
Pacific lamprey	Largescale sucker	Black crappie
Coho salmon	Yellow bullhead	White crappie
Cutthroat trout	Brown bullhead	Yellow perch
Rainbow trout	Mosquitofish	Reticulate sculpin
Redside shiner	Three-spined stickleback	Prickly sculpin
Speckled dace	Largemouth bass	Torrent sculpin
Northern shad	Bluegill	Winter run steelhead
Fathead minnow	Pumpkinseed	

Wildlife Species

Several publications and lists were consulted in understanding the range of wildlife present in the CCRT study area. These databases are exhaustive, and are not reproduced in this report, but will be reconsulted as necessary in the course of the Trail Alignment Analysis and Implementation Strategy phases.

The U.S. Fish and Wildlife Service maintains regularly updated lists[6] specifically covering Washington County for endangered and threatened, proposed, candidate, and delisted species under the ESA, as well as species of concern. The Oregon Department of Fish and Wildlife publishes and updates similar lists. For a broader range of potential species within the CCRT study area, the Oregon Wildlife Explorer Wildlife Viewer[7] generates lists by county, eco-regions, basin, and watershed. The data for this site are developed and maintained by the Oregon Biodiversity Information Center.

As noted under the following Vegetation Cover section of this report, there are three major habitats within the study area: farmlands, urban lands, and riparian and wetland areas; as well as more limited remnant woodlands.

Many woodland species will forage into farmlands and even nearby suburban areas. Woodland remnants in the study area include small woodlots surrounded by agricultural lands, riparian areas along streams, and wooded residential areas. More substantial woodlands occur near the higher elevation west edges of Segments 1 and 2. Larger mammalian species that may be present or common in the area are Roosevelt elk, black bear, deer, coyote, raccoon, and skunk. A range of bird species that favor wooded environments is also found.

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

Wetlands and riparian habitats associated with the Tualatin River, McKay Creek, Dairy Creek, Council Creek, and a variety of other stream and drainage corridors are within the study corridor. These areas 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.

Wildlife species that are expected or anticipated to utilize habitat within the study area are listed in Table 5-2 below. The table only includes species that are less common in the area and those with particular habitat needs that may

[6] www.fws.gov/oregonfwo/Species/Lists

[7] www.oregonexplorer.info/wildlife/WildlifeViewer

be served by future habitat restoration or enhancement measures within the corridor. Species marked with an asterisk (*) appear as endangered, threatened, or species of concern on either federal or state lists.

Table 5-2. Wildlife Species

Spotted towhee	Savannah sparrow	Kinglets
Streaked horned lark*	Peregrine falcon	Bald eagle
Short-eared owl	Olive-sided flycatcher	Rufous hummingbird
Short-billed dowitcher	Willow flycatcher	Neo-tropical migratory birds
Bobcat	Bats	Open-country insectivores
Oregon spotted frog*	Clouded salamander	Western toad
Northern red-legged frog*	Northern Pacific pond turtle*	Painted turtle
Butterflies/moths	Cavity nesters	

Wildlife Barriers

Roadways, other transportation corridors, and the lack of suitable connecting habitat due to urbanization and farming practices are the primary barriers to wildlife movement in the study area.

Higher-volume and wider streets in particular pose difficulties to wildlife, as can rail lines. Roadways and the rail lines that may be crossed by the CCRT are identified in the Transportation section of this report. Once preferred alignments for the trail are determined, a set of general principles for improving wildlife passage will be provided.

Vegetative Cover

Four primary habitats are present within the CCRT study area. Locations of these habitats can be readily observed on the design opportunities and challenges and natural resources maps. Farming and forestry practices and gradual urbanization have greatly altered woodland, valley, and stream corridor vegetation from historical patterns. Most valley floor land would have been prairie grassland habitat or oak savannah before agricultural conversion or urbanization. Some valley floor woodlands may also have been present to a greater extent than they are currently.

Because of the significant loss of native vegetation, present vegetation in the study area will present few constraints to trail development except where associated with stream corridors, wetlands, and riparian corridors. Opportunities for prairie grassland restoration and riparian and wetland enhancement may arise depending on the trail alignment selected.

Farmlands

There are extensive, productive farmlands between Banks and Forest Grove (Segments 1, 2 and 3). Segments 5 and 6 between Cornelius and Hillsboro also have significant areas of farmland.

Urbanized Lands

Portions of Segments 3, 4, 5, and 6 between Forest Grove and Hillsboro are highly urbanized. Development has greatly reduced intact contiguous areas of native vegetation, and landscaping practices have introduced many nonnative plant species.

Woodlands

The east flank of the Coast Range near the western edges of Segments 1, 2, and 3 has the greatest density of woodlands near or within the study corridor. Contiguous woodlands on these slopes intermittently approach but do not cross the two roads that make up the western boundaries of both segments (NW Thatcher Road and NW Kansas City Road).

Other woodland remnants occur within the study area including small woodlots surrounded by agricultural lands, riparian areas along streams, and wooded residential areas.

Wetlands and Riparian Areas

The fourth primary habitat within the CCRT study area includes wetlands and riparian areas associated with West Fork Dairy Creek, and the main channels of Dairy Creek, Council Creek, and McKay Creek. There are also numerous minor stream and drainage corridors within the study area, but many of these have been highly altered by channelization, draining, and/or the removal of riparian vegetation.

Wetlands and Nonwetland Waters

Study Area Resources

Wetlands and nonwetland waters are shown on design opportunities and challenges and natural resources maps. Metro has acquired wetlands and riparian areas within the study area—Segments 1, 4, and 6—as part of its significant natural area acquisition program. Forest Grove, Cornelius, and Hillsboro also own some wetland resource lands. There are numerous ponds, particularly in Segment 2, associated with agricultural operations.

Major wetlands include:

- Areas along West Fork Dairy Creek, in particular the Metro-owned Killin Wetlands west of Banks. This wetland is also an Audubon Society Important Bird Area candidate.
- Areas along Council Creek and near the confluence of Dairy Creek and McKay Creek.

Opportunities and Challenges

Wetland and pond areas would provide opportunities for views and wildlife observation from the trail. Wetlands should be avoided if at all possible as sites for trail development, unless low-impact low-use trails and boardwalks are used. Under some circumstances wetlands can serve as routes for heavier-use regional trails, provided extreme care is taken in siting and selecting the types and sizes of trail structures.

In areas of Segments 1, 2, and 6 the combination of wetlands and 100-year floodplain will greatly challenge CCRT alignment options.

Streams and Riparian Areas

Study Area Resources

Riparian areas are shown on the design opportunities and challenges and natural resource maps. Many of the riparian areas associated with the streams listed below have been significantly reduced in size by channelization, agricultural clearing, or urbanization. These areas can be seen on natural resources maps.

Significant streams with associated riparian zones include:

- West Fork Dairy Creek
- Council Creek
- Dairy Creek
- McKay Creek
- Tualatin River

Opportunities and Challenges

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. In areas of Segments 1, 2, and 6 the combination of wetlands and 100-year floodplain associated with major streams and

remaining riparian corridors will greatly challenge CCRT trail alignment options.

Riparian areas should also be avoided if at all possible as sites for trail development, excepting for low-impact/low-use trails and boardwalks. Under some circumstances riparian corridors can serve as routes for higher-use regional trails, provided extreme care is taken in siting and in determining the type and size of trail structures used.

Streams and riparian areas provide opportunities for views and wildlife observation from the trail.

Floodplains

Federal Emergency Management Agency–designated 100-year floodplains are illustrated on the natural resources maps. To the extent that many forms land use developments in floodplains are restricted, these areas offer a more open corridor for trail siting. Floodplains should, nonetheless, be avoided for trail development if possible, but trail options and routes can be more flexible and adaptive than in wetland or riparian zones.

Trail pathways in floodplain areas should be constructed to withstand intermittent flooding, and elevated structures should be considered to avoid impeding floodwaters. Siting of trail routes outside of 10-year and 50-year floodplains and along the edges of the 100-year zone will reduce the possibility of inundation.

Trails through floodplain areas can provide opportunities for views and wildlife observation.

North-South Subcorridor

In areas of Segments 1 and 2 the combination of wetlands and 100-year floodplain will greatly challenge CCRT trail alignment options. West Fork Dairy Creek in particular has a broad floodplain west of Banks and Oregon 47. This floodplain stretches from NW Banks Road on the north to NW Kemper Road on the south and takes up significant areas within the west halves of these two segments. West Fork Dairy Creek turns and flows east just north of NW Kemper and eventually crosses Oregon 47. East of Oregon 47 this creek's floodplain begins to narrow but is still substantial. The Council Creek floodplain in Segments 2 and 3 is considerably more proscribed than that of West Fork Dairy Creek.

West-East Subcorridor

The 100-year floodplain of Council Creek in Segment 4 is constrained by steep creek banks. Within Segments 5 and 6, the 100-year floodplain created by the confluence of Council, Dairy and McKay Creeks significantly broadens.

Prior development may make avoiding the use of floodplains for trail routing in the west-east subcorridor more challenging than in the north-south subcorridor.

U.S. Transportation Section Act 4(f) Lands

Section 4(f) of the U.S. Department of Transportation Act of 1966 provides that the Federal Highway Administration may only approve the use of a significant publicly owned park, recreation area, wildlife or waterfowl refuge, or historic site for a transportation facility after having made a determination that there is no feasible and prudent alternative and that the action includes all possible planning to minimize harm.

Use occurs when land from a Section 4(f) site is acquired for a transportation project, and (1) there is an occupancy of land that is adverse in terms of the statute's preservationist purposes, or (2) the proximity impacts of the transportation project on the Section 4(f) site, without acquisition of land, are so great that the purposes for which the Section 4(f) site exists are substantially impaired.

CCRT existing conditions maps illustrate a wide variety of public parks, recreation areas, and natural areas within the study area. As part of determining preferred trail alignments, any such lands impacted will be identified for Section 4(f) purposes.

Land and Water Conservation Fund Section 6(f) Lands

The Land and Water Conservation Fund (LWCF) Act assists local, state, and federal agencies' efforts in meeting the demand for outdoor recreation sites through grants for land acquisition, park amenities, and other development costs. Land and park appurtenances acquired through LWCF may only be converted after coordination with the National Park Service. Mitigation is also required.

No LWCF lands or sites within the CCRT study area were identified.

Clean Water Services

Clean Water Services (CWS) is the surface water management agency for urban Washington County. CWS provides for a range of regulations and programs to protect water resources, including acquiring resource lands outright, establishing overall regulations protecting water quality, and in some cases establishing site-specific protections including buffers and other protective measures.

CCRT development may trigger CWS requirements to protect sensitive areas and vegetated corridors. In addition, mitigation and enhancement may be required. These protections relative to trails are summarized below.

Study Area Resources

Areas subject to CWS regulation overlap to a great extent with the streams, waterbodies, wetlands, and riparian corridors within Segments 3, 4, and 6. These features are shown on the natural resources maps. As part of the Trail Alignment Analysis phase, any specific impacts where the trail may cross and pass through such areas will be identified. CWS standards will also be applied to test trail feasibility in unincorporated areas.

CWS standards allow trail crossings of water resource areas if impacts are minimized and mitigation is provided. Trail facilities have to be designed and constructed to protect water quality and to 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.

Within the urban portions of the CCRT study area, CWS variances may have to be obtained or off-site mitigation or enhancements provided. That being said, given the already reduced quality of many of the streams, wetlands, and riparian areas in the study corridor, CWS-dictated restoration may be a real opportunity to improve habitat in conjunction with trail development.

CWS Regulations and Policies

Paths up to 12 feet in width, including any structural embankments, are an allowed use if certain conditions are met:

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

Paths between 12 and 14 feet wide are considered an allowed use if constructed using low-impact development approaches in accordance with the CWS Design and Construction Standards Manual[8] Chapter 4 (Runoff Treatment and Control). If these conditions cannot be met, the project will be reviewed in accordance with manual Section 3.07 (Encroachment Standards).

[8]http://www.cleanwaterservices.org/PermitCenter/DesignAndConstruction/DandCTable.aspx

Environmental Overlay Zones and Mitigation Areas

Environmental Overlays

Some CCRT municipal partners have established land use regulations defining environmental or natural resource overlay zones to protect natural resources. Such overlay zone boundaries in the study area are shown on the natural resources maps.

- Cornelius and Hillsboro have environmental overlay zones applied to Council Creek, Dairy Creek, and McKay Creek. Cornelius explicitly allows pedestrian trails within its Natural Resource Overlay zone. Hillsboro permits low-impact trails.
- Forest Grove has generally identified buffer areas around streams within the community, but there are no overlay zones or geographically bounded designations of these areas.
- Information on environmental overlay zones was not received from Banks or Washington County.

Mitigation Areas

One environmental mitigation site within the study area was identified by the City of Cornelius. The Port of Portland owns five contiguous tax lots within Segment 6 between Dairy Creek and NW 334th Avenue. This site is shown on the Segment 6 natural resources and transportation-land use maps. Forest Grove and Hillsboro did not identify any mitigation sites within the study area. Information on mitigation sites was not received from Banks or Washington County.

Examinations of aerial photography made in the course of developing this existing conditions report revealed a few areas within the study area that have the appearance of being wetland or stream restoration sites. To the extent that possible trail alignments cross or approach such sites, a determination will be made during the Trail Alignment Analysis phase as to any formal mitigation site status.

Steep and Unstable Slopes

Steep Slopes

The study corridor is mostly flat valley bottomland. In such areas, topography should not be a significant challenge to trail siting. The tradeoff constraint is that flat valley lands feature numerous stream and drainage corridors which broaden into large wetland and floodplain areas which can challenge trail routing options.

There are steeper slopes along the north and west edges of Segment 1 and the west side of Segments 2 and 3. These slopes are illustrated on the natural resources maps. These steeper slopes are primarily along the edges of the study area and should have little significant impact on trail alignment options, excepting for a potential alignment along NW Thatcher Road or NW Kansas City Road.

There are some intermittent steeper slopes along stream corridors that may challenge trail siting. In Segment 6, and to a lesser extent Segment 4, the combination of steeper slopes along stream corridors and the 100-year floodplain with riparian corridors and wetlands may make trail siting extremely challenging.

Unstable Slopes

The Oregon Department of Geology and Mineral Industries (DOGAMI) documents unstable slope conditions According to the DOGAMI records, there are no unstable slopes anywhere within the CCRT study area.

Hazardous Materials

Table 5-3 lists hazardous waste sites within or immediately abutting the CCRT study area as identified and cataloged by the Oregon Department of Environmental Quality (DEQ). None of these sites is expected to be a significant constraint to trail routing or development. The sites are shown on the natural resources maps.

Table 5-3. DEQ Hazardous Materials Sites

Trail Segment	Site Name	Site Location	Status
6	Professional & Budget Dry Cleaners	126 S 1st Avenue Hillsboro, OR	No Further Action
6	Ag-Chem Warehouse	160 W Main Street Extension Hillsboro, OR	State Basic Preliminary Assessment Recommended
2	Oregon Roses Soil Disposal Site Area 2	NW Martin Road Area Forest Grove, OR	Site Screening Recommended
2	Oregon Roses Soil Disposal Site Areas 3 and 4	NW Martin Road Area Forest Grove, OR	Site Screening Recommended

Soils and Geology

Study area geology is comprised of Columbia River basalt formations in the northernmost sections giving way to mixed valley bottom sediments. Alluvium and colluvium soils derived from weathered basalts mark the northern

foothills; these give way to locally sourced and Missoula flood-derived sediments mixed by fluvial processes.

Soil types are very complex in the study area. This notwithstanding, except for soils associated with streams and wetlands, none of the soils in the study corridor poses a significant constraint to trail development.

TRANSPORTATION

General Considerations

Opportunities

In some cases the CCRT may have to cross areas constrained by environmental conditions and prior development. Separately aligned 10- to 12-foot-wide multiuse pathways may not be possible. Roadways or roadway edges may be the only practical routing choice. Roads can be a significant opportunity for street-edge parallel multiuse trails. Where road right of way is narrow or existing road surfaces occupy much of the right of way, widened road shoulders or sidewalks combined with on-street bike lanes can be developed. For lower traffic roadways, shared use controlled by signing and striping is possible.[9]

In rural CCRT segments, local streets could accommodate street-edge or shared-use trail route solutions. Taking bicycle traffic off of more trafficked rural roadways with limited or no shoulders could reduce conflicts with motorized vehicles and slow-moving farm equipment. Rail right of way is another opportunity, using rail-to-trail solutions or, as is more likely in the CCRT study area, trail-with-rail designs.

Challenges

The physical space to add street-edge pathways, bike lanes, and sidewalks to existing roadways may simply not be there due to prior development or natural features. Additional road or rail right of way may not be available or may be prohibitively expensive to acquire. The alignment of a road or rail line also may not make the most sense for a trail route. Safety and noise concerns can become an issue.

While all the managing road authorities in the study area support active transportation and trail options, other transportation priorities may prevail. For instance, private railroad operators may not have the same perspective as public road authorities with respect to compatibility with trails.

[9] Shoulder widening and sidewalk/bike lane and shared solutions are collectively referred to as “on-street” in this report.

Roadways

Freeways and Arterials

The study area includes the following highways and arterial roadways that may be crossed or followed in developing the preferred trail alignment. Arterial and collector streets are highlighted on transportation and land use maps. Classifications within the CCRT study area are as per the 2035 Washington County TSP and city transportation system plans.

Freeways and Principal Arterials

- Oregon 6 (Segment 1) – classified as freeway east of the interchange with Oregon 47 and as a principal arterial west of the interchange. Also called Wilson River Highway.
- Oregon 47 (Segments 2 and 3) – classified as principal arterial. Also called the Nehalem Highway and Quince Street for a short section in Forest Grove. Oregon 47 is a possible route for a street-edge section of the CCRT.

Arterials

- NW Verboort Road (Segment 2).
- NW Martin Road (Segments 2 and 3) – classified as arterial south of the intersection with NW Verboort Road. NW Martin Road is the east boundary of Segments 2 and 3 and is a possible route for a street-edge section the CCRT.
- N 10th Avenue (Segment 4) – within the City of Cornelius. Called NW Cornelius-Schefflin Road as it crosses Council Creek and enters unincorporated Washington County.
- N 19th Avenue (Segment 4) – within the City of Cornelius. Called NW Susbauer Road as it crosses Council Creek and enters unincorporated Washington County.
- Oregon 8 (Segments 5 and 6) – also called Tualatin Valley Highway and a variety of local street names. This highway splits into a one-way couplet at the east end of Segment 6. This highway is a possible route for a street-edge or on-street section of the CCRT.
- North and South 1st Avenue (Segment 6).

Collector Roadways

A number of collector roadways may be crossed or followed by the CCRT. Some collectors may also be opportunities for CCRT on-street trail alignment

solutions. Classifications are as per the 2035 Washington County TSP and city transportation system plans.

West-east collectors in Segments 1, 2, and 3 are the roadways more likely to be crossed by the CCRT. In Segments 4 through 6, north-south collectors are the most likely to be crossed. These are noted below.

West-East Collectors

- NW Banks Road (Segment 1).
- NW Greenville Road (Segment 2).
- NW Kemper Road (Segment 2) – to intersection with Oregon 47.
- NW Purdin Road (Segment 2) – the extension of NW Verboort Road west of Oregon 47.
- NW David Hill Road (Segment 3) – the east half of this roadway connecting to Oregon 47 is not scheduled to be built until 2018.
- 24th Avenue (Segment 4) – between Oregon 47 and Yew Street.
- N Holladay Street (Segments 3 and 4) – designated under the 2035 Washington County TSP and the Forest Grove and Cornelius TSPs for extension from Yew Street across Oregon 47 and Oak Street into Segment 3, as well as another connecting extension between N 10th Avenue and N 19th Avenue. If completed this connected roadway could be an on-street trail solution.
- West Main Street (Segment 6) – turns south for a short stretch at its west end to connect to Oregon 8. This roadway could be a route for an on-street trail solution.
- NW Jackson Street (Segment 6) – classified as a Neighborhood Route (previously termed a minor collector). This roadway could be a route for an on-street trail solution.
- SW Walnut Street (Segment 6) – this street could be a route for an on-street trail solution.

North-South Collectors

- NW Roy Road (Segment 2).
- NW Kansas City Road (Segment 2).
- NW Thatcher Road (Segments 2 and 3).

- Brooke Street (Segment 3) – on the west side of Forest Grove High School, connects to the built portion of NW David Hill Road.
- NW Sunset Drive (Segment 3).
- Oak Street/NW Porter Road (Segment 3).
- Yew Street (Segment 4).
- N 4th Avenue (Segment 4).
- N 26th Avenue (Segment 4).
- NW Hobbs Road (Segments 4 and 5) – designated in the 2035 Washington County TSP and 2005 Cornelius TSP for extension south of Oregon 8, past the site of the new high school, and then along the west edge of Segment 5 to S Dogwood Street.
- SW Dennis Avenue (Segment 6).
- NW Connell Avenue (Segment 6).

Midblock Roadway Crossings

Preferred trail alignments will in all likelihood cross many roadways and other transportation corridors. In some cases, these crossings may be possible at controlled intersections using cross walks, signals, and stop signs. Some of the trail crossings, however, will probably be midblock (i.e., not at an existing intersection). The extent, location, and nature of the crossings will be determined as part of the Trail Alignment Analysis phase.

Midblock crossing facilities will need to be designed and constructed to assure the functionality of the CCRT and safety of trail and roadway users. The midblock standards used for the CCRT will be those in the 2010 Washington County midblock pedestrian crossing policy. The tiered standards for midblock crossings are summarized in Table 5-4.

Table 5-4. Midblock Crossing Standards

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

Source: Washington County TSP 2035, Draft Existing Conditions and Future Needs Report.

Trails and Bicycle/Pedestrian Routes

Existing Regional Trails

Council Creek Trail (Segment 3)

One potential section of the CCRT has already been built along the south edge of Oregon 47 between the highway's intersections with NW Sunset Drive and NW Martin Road. This street-edge trail is not to full regional standard width.

Banks-Vernonia Trail

CCRT will connect to the Banks-Vernonia State Trail at that trail's southern trailhead just north of downtown Banks. Further northwest, the Banks-Vernonia State Trail will connect to the planned Salmonberry Trail which will cross the Coast Range and end in Tillamook, Oregon.

Proposed Regional Trails

Several regional trails may eventually be developed in close proximity to, intersect with, or share the CCRT alignment. These regional trails are shown on transportation and land use maps. Further details can be found in the 2035 Washington County TSP, Section 4.2.5, and in Metro's 2003 Regional Trails and Greenway Plan.

Path to the Pacific Trail

Metro's Regional Trails Plan and the Washington County TSP identify a regional trail from Banks and the Banks-Vernonia trailhead that will follow the PNWR rail line that runs through Banks to downtown Hillsboro. This trail-with-

rail concept is part of a major proposed interregional trail sometimes called the Turf-to-Surf Trail or Portland-to-Coast Trail. Conceptual mapping for this trail incorporates sections of the CCRT, Banks-Vernonia Trail, and the Salmonberry Trail.

Gales Creek Trail

Metro's Regional Trails and Greenways Plan, the 2035 Washington County TSP, and the 2007 Forest Grove Trail Plan identify a regional trail intersecting with the CCRT north of Forest Grove and looping around the west edge of the city to cross Oregon 47 and end at the Tualatin River. Recent Forest Grove transportation maps refer to portions of this trail as the David Hill Trail or the West UGB Trail.

Yamhelas Westsider Trail

The Yamhelas rail-to-trail project extends north from McMinnville and follows a partly abandoned Union Pacific rail right of way along Oregon 47. This 17-mile trail will pass through the communities of Carlton and Yamhill and end near Gaston, Oregon. Between Gaston and Forest Grove this rail line is still active, but the Yamhelas Trail could eventually connect to the CCRT and Gales Creek Trail.

Dairy Creek Greenway

The Metro Regional Trails Plan and the Washington County TSP illustrate a major greenway and trail connection along the line of Dairy Creek through Segment 6 to the Jackson Bottom Wetland Preserve and the Tualatin River. This greenway route is not part of the CCRT but will be an important future connection.

Local Trails

A variety of short community and local trail sections have been developed within the study area. These are mapped in the Chapter 4 segment maps.

Bikeways and Sidewalks

Designated bikeways are shown on existing conditions maps. The most prominent in the study area is the Tualatin Valley Scenic Bikeway.

Bike lanes and sidewalk conditions were also reviewed as part of the research for this report. The information is at a level of complexity and detail that does not lend itself to being legibly illustrated on existing conditions maps. The 2035 Washington County TSP Chapter 4, Active Transportation and Transit, was referenced. Sidewalk and bike lane inventories are found in the 2035 TSP, Figures 4.5 and 4.13, and in local transportation plans. These reports will be referenced in the course of the Trail Alignment Analysis phase.

Rural Pedestrian Activity Centers

The 2035 Washington County TSP Section 4.2.8 defines “rural pedestrian considerations” and County TSP Figure 4.12 identifies two rural pedestrian activity areas within the CCRT study area. These pedestrian activity centers are the community of Verboort in Segment 2 and unincorporated areas of Washington County in Segment 6. The 2035 Washington County TSP will be referenced in assessing the feasibility and compatibility of any CCRT alignment options in these two areas.

Transit

Transit Stops and Stations

TriMet provides transit and bus services within the study area. Bus stops are illustrated by icons on transportation and land use maps. The eastern CCRT terminus (Segment 6) will be in downtown Hillsboro in the vicinity of the MAX Blue Line light rail station near N First Avenue.

Light Rail Extension

Extension of light rail to Forest Grove has long been considered using the existing north PNWR rail line that crosses Segments 4, 5, and 6. This master plan will consider the impact of light rail plans in determining the feasibility and compatibility of using the PNWR rail corridor for the CCRT alignment through these segments.

Rail Lines

The CCRT may cross or follow four rail lines. The two rail operators are PNWR, a short line operator that has purchased rail lines in Washington County in the last two decades, and the POTB which presently owns the rail line between Banks and NW Zion Church Road to the east of Segment 2.

PNWR (Segment 1)

This short stretch of rail line runs parallel to the POTB rail line within Banks and then turns east and almost immediately exits the study area. Except for potentially using the rail undercrossing of Oregon 6 for the CCRT crossing of this highway, this rail line is not a factor in this master plan.

POTB (Segments 1 and 2)

This rail line runs along the eastern edge of Banks parallel to the PNWR line in Segment 1and then on the diagonal toward Hillsboro, exiting the study area near NW Roy Road. This line is part of the proposed Path to the Pacific interregional trail-with-rail. Northwest of Banks this rail line is being

decommissioned and is being actively planned as the route for the Salmonberry Trail to coastal Tillamook, Oregon.

POTB ownership only extends to NW Zion Church Road, which is outside of the study area. At the time this report was written, it was understood that the section of the POTB rail line southeast of Banks was being acquired by PNWR. Southeast of NW Zion Church Road this rail line is already owned by PNWR and enters Hillsboro and intersects with two PNWR rail lines that cross Segments 4, 5, and 6.

PNWR (Segments 4, 5, and 6)

North Line

The north PNWR line extends from near the Pacific University campus in Forest Grove to the vicinity of the MAX station in downtown Hillsboro. This line was part of the Oregon Electric Railway that provided electric train service from downtown Portland to Forest Grove until 1932. This north line is considered as the route for a possible MAX light rail extension from downtown Hillsboro to downtown Forest Grove.

South Line

The south line comes north out of Yamhill County along Oregon 47 and is in part proposed for the Yamhelas Westsider rail-to-trail. The portion of this line being considered for the Yamhelas Trail is owned by Union Pacific. Ownership of the rail right of way changes to PNWR north of Gaston and traverses Segments 5 and 6 south of Oregon 8.

LAND USES AND STRUCTURES

Land use designations within the study area are shown on the transportation and land use maps, as are building footprints and special uses such as historic sites and buildings. Significant built sites such as schools, municipal buildings, cemeteries, and private recreation facilities are labeled on all CCRT existing conditions maps. Land uses and buildings are included on the design opportunities and challenges maps.

General Considerations

Opportunities

Prior development is an opportunity to consider trail routes that approach major destinations or activity generators such as schools, outdoor recreation areas, and civic and commercial centers. 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 in Segment 2.

Challenges

Prior land use developments can significantly reduce the options for trail siting, particularly in urban areas where the pattern of vacant lands may not coincidentally conform to feasible routes. In highly developed areas, such as portions of Segments 3, 4, and 6, the only significant "vacant" lands may be designated natural areas, mitigation lands, or golf courses unavailable for trail siting. Even nominally more "open" lands, such as the farm fields in Segments 1, 2, 3, and 5, may not be practical for trail routes, as the physical trail could divide the fields in manner that is not compatible with farming practices.

Historic and Archeological Resources

Conflicts between documented historic resources and the preferred CCRT alignment should not be a factor. Oregon State Parks and Recreation (OPRD) manages a historic and archeological preservation inventory program. This OPRD website was consulted, and most of the sites listed below or located on transportation and land use maps are derived from this database.[10]

- There are approximately 15 historic sites or buildings in Segment 1 within the city limits of Banks, plus two others outside of the city limits including the Union Point Pioneer Cemetery on the south side of NW Banks Road.
- There are over a dozen historic sites and buildings in Segment 2. Several resources have community of Verboort addresses, including a 1921 granary and the Visitation Catholic Church. Many historic resources within Segment 2 have Forest Grove addresses.
- Although the Forest Grove area has large inventory of historic sites and buildings, only one within Segment 3 is documented by OPRD and is in unincorporated Washington County near NW Martin Road.
- There are no designated historic or archeological resources in Segment 4.
- Two historic sites are within Segment 6: the Tongue Estate Residence at 328 SW Main Street and the Hillsboro Pioneer Cemetery located on the north side of Oregon 8.

[10] http://www.oregon.gov/oprd/HCD/SHPO/pages/survey.aspx

MAJOR UTILITY CORRIDORS

Electrical power transmission corridors and water and sewer trunk line utility corridors are shown on the design opportunities and challenges maps.

Electrical Transmission Corridors

Both BPA and PGE have specific requirements for maintenance access and vegetation management around power transmission infrastructure (poles and towers) that can limit trail options. If power transmission corridors are identified for preferred trail alignments, information on power utility corridor management practices and requirements will be provided in the Implementation phase of this master plan.

Bonneville Power Administration

BPA is the regional supplier of wholesale electrical power. Two BPA transmission corridors enter or cross the CCRT study area.

A transmission line system consisting of two sets of dual-pole structures and lines briefly enters and crosses Segments 3 and 4 in the vicinity of the intersection of NW Martin Road and Oregon 47. These transmission lines then enter a BPA substation located on the southeast edge of Segment 3 at Oak Street. Based on the location of this two-set line relative to the study area, there are no opportunities or advantages to using this particular section of power corridor for a trail route.

One BPA dual-pole transmission line heads due south from the Oak Street substation and exits the study area. The second set is routed diagonally northwest from the substation through eastern portions of Segment 3 and crosses Oregon 47 and Council Creek in the vicinity of the Van Loo Reservoir. These transmission lines then turn west, recross Oregon 47, and pass the north side of Forest Grove High School. From this point the BPA lines turn north over NW David Hill Road and NW Purdin Road toward the west side of Segments 2 and 3 and finally exit the study area in the vicinity of NW Kemper Road. This section of the power transmission line corridor appears to be secured by easement and may be a possibility for a trail alignment.

Portland General Electric

PGE sells electrical power at retail rates to direct consumers in the study area. PGE transmission infrastructure in the study area appears to consist exclusively of single poles. This is significant as single poles are easier to route trails around than dual poles or steel lattice towers, and, if pole relocation is necessary, cost much less to move.

PGE typically secures transmission routes through easements. This may limit use of the underlying private property for trails. Also single poles do not require as wide of a corridor as other transmission pole and tower variations.

Opportunities

Transmission line corridors can be excellent avenues for the routing of trails. The corridors can be wide (up to 100 feet or greater), and power utility maintenance practices keep these routes clear of major woody vegetation.

Conversely, not all transmission line corridors are within right of way owned by the utilities. Many are secured by easements where the underlying property owners retain use rights so long as access and maintenance of the transmission lines and structures is not impaired. Both BPA and PGE lines within the study corridor appear to be secured by easement.

Two opportunities for CCRT routing are possible:

- The potential trail route along Oregon 47 and Council Creek in Segment 3 is highly constrained by prior development. Use of the BPA transmission line corridor as the trail route would be an opportunity to bypass these constrained areas. The BPA route would require at least one and possibly two new midblock crossings of the highway and one and possibly two new crossings of Council Creek.
- The BPA transmission corridor west of Oregon 47 would take the CCRT out to the west edge of the study area. To avoid a trail route through 100-year floodplain or wetlands north of NW Kemper Road, the CCRT would have to turn east and backtrack almost 1.3 miles to Oregon 47.

Challenges

Trail alignment conflicts with transmission structures can challenge trail routing. The cost of relocation can be very expensive (up to approximately $50,000 per pole set, plus permitting). With transmission-level infrastructure, relocations often involve multiple poles or towers.

Beside relocation costs, new utility right of way or easements may be required. The BPA transmission line corridor appears to be secured by easement meaning that underlying private property ownership and rights still apply.

The PGE power line corridors may also challenge trail siting:

- PGE transmission lines follow the east edge of Oregon 47 from Banks to NW Kemper Road through Segments 1 and 2. This transmission line then follows along collector and local roads through the community of

Verboort, the east side of NW Martin Road into Forest Grove (Segment 3), and then into Cornelius. The location of this transmission line may constrain opportunities to site a street-edge trail.

- PGE transmission lines follow the north side of the northerly PNWR rail line through Segments 4, 5, and 6. These lines challenge the possibilities for a trail-with-rail solution through these segments.

Sewer and Water Trunk Lines

CWS (sanitary sewer), the Joint Water Commission (JWC, drinking water supply), and the Tualatin Valley Irrigation District (irrigation water) all manage major lines within the study area. Major sewer and water trunk lines can accommodate trail alignment corridors. Such lines are buried at depths that allow use of the surface area under which the trunk lines pass. The utilities would retain the right to cut into or remove trail surfaces for maintenance purposes.

This notwithstanding, sewer and water lines tend to be in narrower corridors than power transmission lines and typically do not reserve enough surface area, even with easements, to accommodate a regional-scale trail. Furthermore, most waterlines, even major ones, are under road right of way.

GIS files locating major water trunk lines were requested from JWC. JWC staff indicated that such data were not releasable for plan-level efforts. The City of Hillsboro provided data but this included all public water lines in the study area. The Hillsboro data verified that public water lines of all sizes are almost exclusively located under roadways.

Major sanitary sewer trunk lines tend to be located at the lowest point in a given area to accommodate gravity feed. These low points are often stream corridors, as is the case with CWS sewer trunk lines along Council Creek between Forest Grove and Hillsboro and along Dairy Creek in the vicinity of Hillsboro. As these creek corridors are often reserved with environmental overlays, public ownership, natural area regulations, etc., the coincidence of a sewer line surface easement creates little or no practical advantage for regional trail routing.

Major water irrigation lines are possibilities for trail routing in rural Segments 2 and 3, not because the irrigation lines are necessarily larger or surface easements wider, but because these lines are sometimes not under or along roadways. Where lines cross private property, the land owner may be amenable to a trail route that follows the irrigation line. Tualatin Valley Irrigation District water lines are illustrated on the design opportunities and challenges maps.

Natural Gas and Petroleum Pipelines

Natural gas transmission pipelines may cross the study area. Information with respect to locations and alignments is difficult to obtain and is still forthcoming. Jurisdictional partners were unaware of any transmission-level natural gas lines in the study area.

Information from the master plan's jurisdictional partners indicated that no petroleum transmission pipelines were present in the study area. Petroleum pipeline companies are often reluctant with respect to paving over transmission-level lines. These lines also raise safety or pollution concerns and are best avoided for use as trail corridors.