PUBLIC MEETING NOTICE
FOR THE
WASHINGTON COUNTY PLANNING COMMISSION

ZOOM VIRTUAL MEETING

WEDNESDAY, DEC. 15, 2021 PUBLIC MEETING 6:30 PM

NOTE: Planning Commission meetings are being held virtually, until further notice, via Zoom.

Join online: https://us02web.zoom.us/j/84682842345
Online participants will be able to see and hear the proceedings. Online participants' microphones will be muted, unless they are called upon to speak/testify. Participants' cameras will not be activated at any time.

Join by phone: +1-346-248-7799 or +1-669-900-6833; Webinar ID: 846 8284 2345
Participants on phones will be able to hear the proceedings. Phone participants' microphones will be muted, unless they are called upon to speak/testify.

Prior to scheduled public hearing items, the Planning Commission conducts a Work Session to receive briefings from County staff. No public testimony is taken on Work Session items.

Following the Work Session, the Planning Commission considers agenda items, including scheduled public hearing items and consideration of minutes. The public is welcome to speak during the public hearings and time is limited to 3 minutes. The public may also speak on any item ***not*** on the agenda during Oral Communications. Time is generally limited to 5 minutes for individuals and 10 minutes for an authorized representative of a Citizen Participation Organization (CPO). The Chair may adjust time limits.

To provide **oral communications or testimony**, for an agenda item, please go to the Planning Commission testimony sign-up page, at least 2 hours before the meeting.

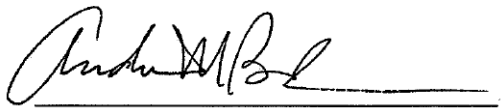
To provide **written testimony**, please go to the Planning Commission testimony sign-up page for more details on where to send.

To testify, either phone in or log in to Zoom (see instructions above): When your name is called, your microphone or phone will be unmuted. You will have five seconds to begin speaking.

If you do not speak, the next topic/speaker may be called. Please follow these guidelines:

- When your name is called, state your name and home/business address for the record.
- Groups or organizations making a presentation must designate one spokesperson in the interest of time and to avoid repetition.
- When there is more than one speaker on any topic, please avoid repetition.

If you need a sign or spoken language interpreter, please call 503-846-3519 (or 7-1-1 for Telecommunications Relay Service) at least 48 hours prior to this event.



Andy Back
Planning and Development Services Division Manager

PUBLIC MEETING DATES	
BOARD OF COMMISSIONERS WORK SESSIONS 8:30 a.m. 1st and 3rd Tuesdays 2 p.m. 4th Tuesday **BOARD OF COMMISSIONERS MEETINGS** 10 a.m. 1st and 3rd Tuesdays 6:30 p.m. 4th Tuesday	**PLANNING COMMISSION MEETINGS** 1:30 p.m. 1st Wednesday 6:30 p.m. 3rd Wednesday ***Note: Occasionally it may be necessary to cancel or add a meeting date.***

WASHINGTON COUNTY
OREGON

PUBLIC MEETINGS BEFORE THE PLANNING COMMISSION

WEDNESDAY DEC. 15, 2021 6:30 PM

ZOOM VIRTUAL MEETING

Join online: https://us02web.zoom.us/j/84682842345
Online participants will be able to see and hear the proceedings. Participants' microphones will remain muted unless called upon to speak/testify. Participants' cameras will remain off at all times.

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AGENDA

CHAIR:	DEBORAH LOCKWOOD
VICE-CHAIR:	BLAKE DYE
COMMISSIONERS:	MARK HAVENER, STACY MILLIMAN, RACHEL MORI BIDOU, JEFF PETRILLO, SUSHMITA PODDAR**,** AND MATT WELLNER

PUBLIC MEETING

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **DIRECTOR'S REPORT**
4. **ORAL COMMUNICATIONS** (limited to items not on the Agenda)
5. **PUBLIC HEARINGS**
   a. **Ordinance No. 882**
   An ordinance amending the Transportation System Plan (TSP) element of the Comprehensive Plan relating to future extension of Tile Flat Road
   b. **Ordinance No. 883**
   An ordinance amending the TSP element of the Comprehensive Plan relating to future extension of Cornelius Pass Road
6. **WORK SESSION**
   a. **House Bill (HB) 2001 sidewalk and right-of-way improvements**
7. **CONSIDERATION OF MINUTES**
   a. **Nov. 3, 2021**
   b. **Nov. 17, 2021**
8. **PLANNING COMMISSION COMMUNICATIONS**
9. **ADJOURN**

Department of Land Use & Transportation · Planning and Development Services
Long Range Planning
155 N. First Ave., Suite 350, MS14 · Hillsboro, OR 97124
Phone: 503-846-3519 · Fax: 503-846-4412
www.co.washington.or.us · lutplan@co.washington.or.us

WASHINGTON COUNTY PLANNING COMMISSION (PC)
MINUTES OF WED., NOV. 3, 2021

ALL PUBLIC MEETINGS ARE RECORDED

1. **CALL TO ORDER -** 1:30 p.m. Zoom virtual meeting
   The meeting was called to order by Chair Lockwood.

2. **ROLL CALL**
   PC Members Present: Blake Dye, Deborah Lockwood, Mark Havener, Stacy Milliman, Rachel Mori Bidou, Jeff Petrillo and Matt Wellner; Absent: Sushmita Poddar

   Staff Present: Andy Back, Planning and Development Services (PDS); Theresa Cherniak, Erin Wardell, Steve Kelley, Anne Kelly, Jessica Pelz, Suzanne Savin, Todd Borkowitz, and Susan Aguilar, Long Range Planning (LRP); Jacquilyn Saito, County Counsel

3. **DIRECTOR'S REPORT** - Andy Back, Manager of PDS
   Updates
   - The County's recruitment period for the District 4 PC vacancy closed on Nov. 2. The Board is scheduled to discuss candidates in its Nov. 30 Work Session and could make the appointment at the Dec. 4 Board meeting.
   - On Nov. 2, the Board adopted Ordinance No. 877 – minor amendments to the Community Development Code (CDC) to align it with state law, focused on the rural area.
   - On Nov. 2, the Board adopted Resolution & Orders to extend two current temporary policies related to land use and transportation. The policies are tied to the Board's Covid-19 emergency declaration, which the Board is expected to end on Nov. 9. They allow:
     - Virtual or hybrid online Neighborhood Meetings for certain land use applications for a duration determined by the County Administrator; and
     - Temporary business expansions into private parking lots in the unincorporated area until Dec. 30, 2022.

   Tonight's PC Meeting
   - Public hearing on Ordinance No. 881 – Transportation System Plan (TSP) Amendments
     - TSP amendments for extensions of Tile Flat Road and Cornelius Pass Road are in other ordinances scheduled for PC public hearings on Dec. 15.
   - Follow up by the Chair on the PC norms training

   Upcoming PC Meetings
   Nov. 17 (night) and Dec. 1 (day)
   - Staff will brief the PC on House Bill (HB) 2001 implementation topics.

4. ORAL COMMUNICATIONS

- Jim Long, Chair of Community Participation Organization (CPO) 4M
  - Commented that an update of the Oregon Land Use Board of Appeals (LUBA) remand on Ordinance No. 869 is not on the Agenda and that the omission could affect PC decision making on other Agenda items.

5. PUBLIC HEARING

a. Ordinance No. 881

Steve Kelley, Senior Planner with the LRP Transportation Planning group, gave a PowerPoint presentation on this ordinance, including an overview of the TSP, the proposed TSP amendments, background studies that informed the proposed TSP amendments, and feedback from partner cities in the county.

Staff Recommendation

- Conduct the public hearing and hear oral testimony.
- Recommend approval of Ordinance No. 881 to the Board.

Written Testimony

- Danielle Desrochers
- Fran Warren, on behalf of Committee for Community Involvement (CCI) Significant Natural Resources (SNR) Subcommittee
- Haddy El-Mansy
- Kathy Gray (18366 SE Florendo Lane, Beaverton, OR)
- Ken Seymour, Vice Chair of CPO 6
- Regina R. Goodman (8995 SW Mayberry Place, Beaverton, OR)

Oral Testimony

- Peter Ploem (1113 SW 175th Avenue, Beaverton, OR)
  - Stated that realignment of the 175th Avenue curves will be a big expense, will not slow speeding drivers or result in fewer crashes, and will not aid traffic.
- Ken Seymour, Vice Chair of CPO 6
  - Stated that impacted property owners oppose the 185th Avenue extension and seek to preserve the natural character of the area.
  - Highlighted that privately contracted traffic engineering studies do not support a need for the proposed extension.
  - Stated there is a lack of transparency by staff and that affected property owners were not made aware Ordinance No. 881 was being heard by the PC.
  - Recommended the 185th Avenue extension be removed from the ordinance.
- Youssef El-Mansy (18820 SW Gassner Road, Aloha, OR)
  - Indicated opposition to the 185th Avenue extension because of impacts on the natural character of the area and a lack of need for the project.
  - Indicated frustration that previous alignment options are no longer being considered.
- Haddy El-Mansy (8680 SW 190th Avenue, Aloha, OR)
  - Stated opposition to the 185th Avenue extension because the area is at development capacity since immediate neighbors have no interest in developing their property.
  - Agreed that the current alignment of 175th Avenue helps maintain slower speeds.

- Bill Waite (11233 SW 175th Avenue, Beaverton, OR)
  - Questioned how property owners impacted by the realignment of the 175th Avenue curves will be fairly compensated.
  - Doubted that resulting faster speeds will benefit impacted property owners.
- Richard D. Cartwright (8995 SW Mayberry Place, Beaverton, OR)
  - Indicated that bad weather can make driving on Cooper Mountain dangerous.
  - Shared concerns that trees and wildlife on Cooper Mountain will be impacted by the proposed changes and that property owners do not want to see changes.
- Fran Warren, CCI (835 SW Touchmark Way, Portland, OR)
  - Commented that since Ordinance No. 869 (Significant Natural Resources) issues have not yet been resolved and the 185th Avenue extension bisects or is adjacent to a natural resource area, it is premature for the PC to make recommendations on Ordinance No. 881.
  - Highlighted that many species travel from the Tualatin River National Wildlife Refuge through Cooper Mountain Nature Park and a ravine to the creeks below, that property owners along the proposed rerouting have expressed interest in conservation in this corridor, and that some areas are not intended for new subdivisions.
  - Requested that the PC not make recommendations on Ordinance No. 881 until clear and objective policies exist, and sufficient tree and wildlife inventories are conducted.
  - Indicated that straightening road kinks often results in more speeding.
  - Recommended that the PC not approve Ordinance No. 881 contingent upon a letter of support from the City of Beaverton that has not yet been submitted.
- Maria Ponzi (14665 SW Winery Lane, Beaverton, OR)
  - Questioned the purpose of the Urban Growth Boundary (UGB) given how much focus there is on planning for future urban development that impacts nearby rural areas, including lower water tables, reduced air quality due to increased emissions, and continued loss of natural resources, habitat, and rich soils.
- Eric Squires (17172 SW Rider Lane, Aloha, OR)
  - Recommended that Ordinance No. 881 be continued due to insufficient public notice and involvement and inattention to yet unresolved issues related to the County's protection of significant natural resources in areas where the projects are proposed.
  - Commented that the realignment of 175th Avenue without a middle lane will result in traffic being blocked by turning vehicles, and that without turnouts on steeper roads, trucks and other slow vehicles will hinder traffic flow.
  - Shared concerns that straightening 175th may result in increased roadway fatalities.

<u>PC Deliberations</u>

- Comments:
  - Lines on a map are significant and may be difficult to change or omit in the future.
  - The PC is not prepared to recommend this ordinance to the Board, especially before receipt of a letter of support from Beaverton.
  - Many neighboring property owners do not support plans for 185th Avenue extension.
  - Straightening roads and providing sufficient width will improve emergency response time.
  - 20-year projections can be flawed given the uncertainties of transportation in the future.
  - The proposed improvements are generally tied to new UGB expansions and urban reserve areas, and unfortunately people who are not residents of these areas and/or are benefitting from their development may still have to bear some of their burden.

- Questions on:
  - How project feasibility was determined.
  - The estimated cost of the 185th Avenue extension.
  - What prompted the changes proposed in this ordinance.
  - Beaverton's opinion on proposed changes in the Cooper Mountain areas and whether Beaverton would communicate its response to this ordinance at a future PC meeting.
  - When the proposed improvements will get built.
  - The significance of identifying an improvement in the TSP.
  - How landowners get notified.
  - Why the County is making decisions for roads that will be within Beaverton's boundaries.

Vote

PC member Wellner moved to continue the public hearing on Ordinance No. 881 to the Nov. 17, 2021 PC meeting. PC member Petrillo seconded the motion. **Vote: 7-0. Motion passed.**

Yes: Dye, Havener, Lockwood, Milliman, Mori Bidou, Petrillo, and Wellner

6. PC COMMUNICATION

- Chair Lockwood spoke about three facilitated PC trainings meetings on communication norms, including exercises that PC members participated in and whether it wants to create a consensus document that summarizes the trainings and how members will hold one another accountable in future PC meetings. Chair Lockwood shared a PowerPoint developed by LRP staff containing a draft summary of ideas she created from what PC members said were important to them. Chair Lockwood asked for feedback from other PC members.

PC Discussion and Comments

- This is a helpful tool for everyone to have.
- This could be an item for a future work session in the new year but not something the PC should finalize today.

7. CONSIDERATION OF MINUTES

a. Oct. 6, 2021

PC Lockwood moved to adopt the Oct. 6, 2021 PC minutes with correction on page three, bullet four to read, "Commissioner Poddar questioned staff about a potential conflict interest of a PC member." **Vote: 7-0. Motion passed.**

Yes: Dye, Havener, Lockwood, Milliman, Mori Bidou, Petrillo, and Wellner

8. ADJOURN – 3:54 p.m.

_____ _____

Deborah Lockwood, Chair
Washington County Planning Commission

Andy Back, Secretary
Washington County Planning Commission

Minutes approved this _____day of _____, 2021

Submitted by LRP Staff.

WASHINGTON COUNTY PLANNING COMMISSION (PC)
MINUTES OF WED., NOV. 17, 2021

ALL PUBLIC MEETINGS ARE RECORDED

1. **CALL TO ORDER -** 6:30 p.m. Zoom virtual meeting
   The meeting was called to order by Chair Lockwood.

2. **ROLL CALL**
   PC Members Present: Blake Dye, Mark Havener, Deborah Lockwood, Stacy Milliman, Rachel Mori Bidou, Jeff Petrillo, Sushmita Poddar (arrived at 6:42 p.m.), and Matt Wellner

   Staff Present: Andy Back, Planning and Development Services (PDS); Theresa Cherniak, Erin Wardell, Steve Kelley, Jessica Pelz, Todd Borkowitz, and Susan Aguilar, Long Range Planning (LRP); Alan Rappleyea, County Counsel

3. **DIRECTOR'S REPORT** - Andy Back, Manager of PDS

   Updates
   - County Counsel representative to the PC Jacquilyn Saito is transitioning away from representing Land Use & Transportation (LUT) to being Counsel for Housing Services. Former County Counsel Alan Rappleyea will be serving as the interim Counsel representative to the PC and for a limited slate of LUT projects until a permanent replacement is hired.
   - The Board is scheduled to discuss candidates for PC appointment at its Dec. 7 Work Session and could make an appointment at the Dec. 14 Board meeting.
   - On Nov. 9 the Board adopted Ord. No. 879, amending the Washington County – Tigard Urban Planning Area Agreement, which the PC in October recommended for Board adoption.

   Tonight's PC Meeting
   - Work Session on Cooper Mountain area planning
   - Continued public hearing on Ordinance No. 881 – Transportation System Plan (TSP) amendments

   Upcoming PC Meetings

   Dec. 1 (day)
   - Briefing on HB 2001 implementation topics

   Dec. 15 (night)
   - Hearings on Ordinances No. 882 and 883 – TSP amendments

4. **ORAL COMMUNICATIONS** (None)

5. WORK SESSION

a. Cooper Mountain Area Planning

Jessica Pelz, Senior Planner with the LRP Transportation Planning group, and Brian Martin and Cassera Phipps with the City of Beaverton, gave a PowerPoint presentation on the transportation planning history in Cooper Mountain and on Beaverton's recent planning for the area.

PC Discussion and Comments

- Questions:
  - What the allowances and implications are when preserving right-of-way.
  - What the history of the current alignment is and what influenced the proposed changes of the proposed Transportation System Plan (TSP) ordinances.
  - Whether improvements can be made to the existing alignment.
  - How natural resources were considered in planning for the area.

6. PUBLIC HEARING

a. Ordinance No. 881 (continued from Nov. 3, 2021)

Steve Kelley, Senior Planner with the LRP Transportation Planning group gave a PowerPoint presentation, including an overview of the PC's Nov. 3 public hearing on Ordinance No. 881, staff's response to PC questions on Exhibits 1 through 4, and staff's response to public testimony.

Staff Recommendation

- Conduct the second public hearing and hear oral testimony.
- Recommend approval of Ordinance No. 881 to the Board of Commissioners.

Written Testimony

- Regina R. Goodman (8995 SW Mayberry Place, Beaverton, OR)
- Danielle Desrochers
- David & Elsa Desrochers (Atlantic Beach, NC)
- Kathy and Scott Gray
- Heather Maulding
- Deborah Rotman
- Rich Salerno & Katherine Schuler
- Mary Beth Self
- Ken Seymour, Vice Chair of Community Participation Organization (CPO) 6
- Alyssa J. Sleva-Horine
- Christi Still
- Eric Squires (17172 SW Rider Lane, Aloha, OR)

Oral Testimony

- Haddy El-Mansy (8680 SW 190th Avenue, Aloha, OR)
  - Stated strong opposition to the 185th Avenue extension because he believes it:
    - Does not improve 190th Avenue between Gassner Road and Kemmer Road;
    - Has greater elevation change and poses more danger than this stretch of 190th Avenue;
    - Is a wildlife corridor and habitat and is productive farmland.
  - Recommended the 185th Avenue extension be removed from Ordinance No. 881 and not be considered until the next full TSP update.

- Youssef El-Mansy (18820 SW Gassner Road, Aloha, OR)
  - Stated that 190th Avenue is a sufficient alternative to the 185th Avenue extension.
  - Shared that immediate neighbors have no interest in developing their property.
  - Recommended the 185th Avenue extension be removed from Ordinance No. 881.
- Jeffrey Butts (18266 SW Jeremy Street, Beaverton, OR)
  - Shared concern about safety and danger of steep Cooper Mountain slopes.
  - Believes that 190th Avenue is a more cost-effective alternative to the 185th Avenue extension.
  - Highlighted negative impacts to natural drainage area, wildlife habitat, and green space.
- Ken Seymour, Vice Chair of CPO 6 (18640 SW Gassner Road, Aloha, OR)
  - Noted the presence of a pond within a riparian area near the proposed 185th Avenue extension, which he believes may be the headwaters to nearby creeks and provides area for wildlife.
- Richard D. Cartwright (8995 SW Mayberry Place, Beaverton, OR)
  - Believes staff's presentation on Ordinance No. 881 was misleading by not recognizing the hazardous conditions on Cooper Mountain caused by severe weather, nor the significant wildlife habitat that exists near the proposed 185th Avenue extension.
- Regina Goodman (8995 SW Mayberry Place, Beaverton, OR)
  - Highlighted that few middle Cooper Mountain residents supported bringing the area into the Urban Growth Boundary (UGB) and annexing into Beaverton.
  - Stated that once Ordinance No. 881 passes, property values will decline because prospective buyers will be fearful of "unsubstantiated" travel projections.
  - Recommended the 185th Avenue extension be removed from Ordinance No. 881.

<u>PC Deliberations</u>

- Comments:
  - While local knowledge is important, staff provided well thought out assessments that informed recommendations in Ordinance No. 881.
  - The County should consider omitting the 185th Avenue extension from the ordinance because doing so allows more time for analysis and discussion on effective, community informed solutions while not jeopardizing long-term transportation planning for Cooper Mountain.
  - There is not an obvious alternative to the 185th Avenue extension and it's difficult to justify removing a road concept in an area targeted for future urban growth.
  - It is important to provide options for safe and accessible alternative forms of transportation, especially for people without the means to own a car.
  - The PC should be mindful that omitting one proposal may add undue stress to other components of the ordinance or to the overall transportation network.
  - The proposals are within the UGB – areas that are intended to be developed – and will serve the entire community, not just immediate neighbors.
  - An engineering feasibility analysis is not a comprehensive analysis of all the impacts that could result from adding these projects to the TSP.
  - Emergency vehicles must be able to transport people safely and efficiently in an emergency; the TSP proposals enable this need.

- Questions:
  - Whether the PC should postpone action to the next PC meeting so PC members have sufficient time to read all public testimony submitted.
  - Whether staff believes they conducted sufficient community engagement for the TSP ordinances.
  - Whether traffic projections justifying the proposed improvements will realistically materialize.

Votes

PC member Petrillo moved to recommend approval by the Board of Ordinance No. 881 with omission of the 185th Avenue extension. PC member Mori Bidou seconded the motion. **Vote: 3-5. Motion failed.**

Yes: Mori Bidou, Petrillo, and Poddar; **No:** Dye, Havener, Lockwood, Milliman, and Wellner

PC member Poddar moved to continue a vote on Ordinance No. 881. The motion failed for lack of a second.

PC member Wellner moved to recommend approval of Ordinance No. 881 to the Board. Vice Chair Dye seconded the motion. **Vote: 4-4. Motion failed.**

Yes: Dye, Havener, Lockwood, and Wellner; **No:** Milliman, Mori Bidou, Petrillo, and Poddar

PC member Havener moved to recommend approval by the Board of Ordinance No. 881 with no recommendation on the 185th Avenue extension. PC member Wellner seconded the motion. **Vote: 4-4. Motion failed.**

Yes: Dye, Havener, Lockwood, and Wellner; **No:** Milliman, Mori Bidou, Petrillo, and Poddar

PC member Poddar moved to continue Ordinance No. 881 to the Dec. 1 PC meeting. PC member Petrillo seconded the motion. PC member Poddar withdrew the motion.

PC member Poddar moved that the PC continue Deliberations of Ordinance No. 881 to the Dec. 1 PC meeting and close all public testimony, including written submissions. PC member Petrillo seconded the motion. **Vote: 6-2. Motion passed.**

Yes: Lockwood, Milliman, Mori Bidou, Petrillo, Poddar, and Wellner; **No:** Dye and Havener

7. PC COMMUNICATION (None)

8. ADJOURN – 10:01 p.m.

_____ _____

Deborah Lockwood, Chair
Washington County Planning Commission

Andy Back, Secretary
Washington County Planning Commission

Minutes approved this _____ day of _____, 2021
Submitted by LRP Staff

WASHINGTON COUNTY
OREGON

Dec. 8, 2021

To: Washington County Planning Commission

From: Andy Back, Manager
Planning and Development Services

Subject: **PROPOSED LAND USE ORDINANCE NO. 882 – An Ordinance Amending the Transportation System Plan Element of the Comprehensive Plan Relating to an Extension of Tile Flat Road**

STAFF REPORT

For the Dec. 15, 2021 Planning Commission Hearing
(The public hearing will begin no sooner than 6:30 p.m.)

I. STAFF RECOMMENDATION

Conduct the public hearing; recommend approval of Ordinance No. 882 to the Board of Commissioners.

II. OVERVIEW

Ordinance No. 882 proposes to amend the Transportation System Plan (TSP) to add an extension of SW Tile Flat Road between SW Scholls Ferry Road and SW Roy Rogers Road on rural lands. The extension would require an exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public Facilities and Services) and 14 (Urbanization) to allow the TSP to include a new roadway outside the regional Urban Growth Boundary (UGB). Attachment A to this staff report provides a Goal Exception Analysis that demonstrates the extension meets the requirements for this type of Goal Exception.

Ordinance No. 882 also proposes a refinement area identifying the need for a future extension of SW Tile Flat Road from SW Bull Mountain Road to SW Beef Bend Road. The specific alignment is not yet identified and therefore no Goal Exception is necessary for the refinement area.

Ordinance No. 882 is the result of planning projects conducted by Washington County and the cities of Tigard and Beaverton. These are discussed in detail in the Background section of this staff report. Each project included community engagement through multiple channels including individual community members, community groups, stakeholders and city councils. Each of the planning projects identified the need for additional network connectivity in this area to support planned land uses and provide redundancy and resiliency for the existing system. The City of Tigard has requested that Metro add the Urban Reserve area crossed by this proposed collector roadway to the regional UGB, which is why this ordinance is timely. Including it in the TSP now preserves the necessary right-of-way to build the project at some point in the future when development occurs, or the roadway is determined to be of high need.

III. BACKGROUND

Ordinance No. 882 proposes adding the SW Tile Flat Road extension to the Washington County TSP. Ordinance No. 882 was authorized by the 2021-22 Long Range Planning (LRP) Work Program, Task S1.3.

Issue Paper 2015-01B

Issue Paper 2015-01B considered the extension of SW Tile Flat Road from its existing terminus at SW Scholls Ferry Road to connect to SW Roy Rogers Road (section E on page 8). Issue Paper 2015-01B is provided as Attachment C to this staff report. The staff recommendation in Issue Paper 2015-01B was to not pursue the extension of SW Tile Flat Road until a Goal Exception Analysis that demonstrates the extension meets the requirements for this type of Goal Exception was conducted. The issue paper did not presuppose when or if the Board would authorize the work necessary to advance the planning. Since that time, additional planning work for lands in the vicinity has occurred and the Goal Exception Analysis has been completed.

Washington County transportation planning staff have completed two studies related to long-term transportation needs to serve future development in areas newly added to the regional UGB and in the County's urban reserve areas: the Cooper Mountain Transportation Study and the Urban Reserves Transportation Study.

Cooper Mountain Transportation Study

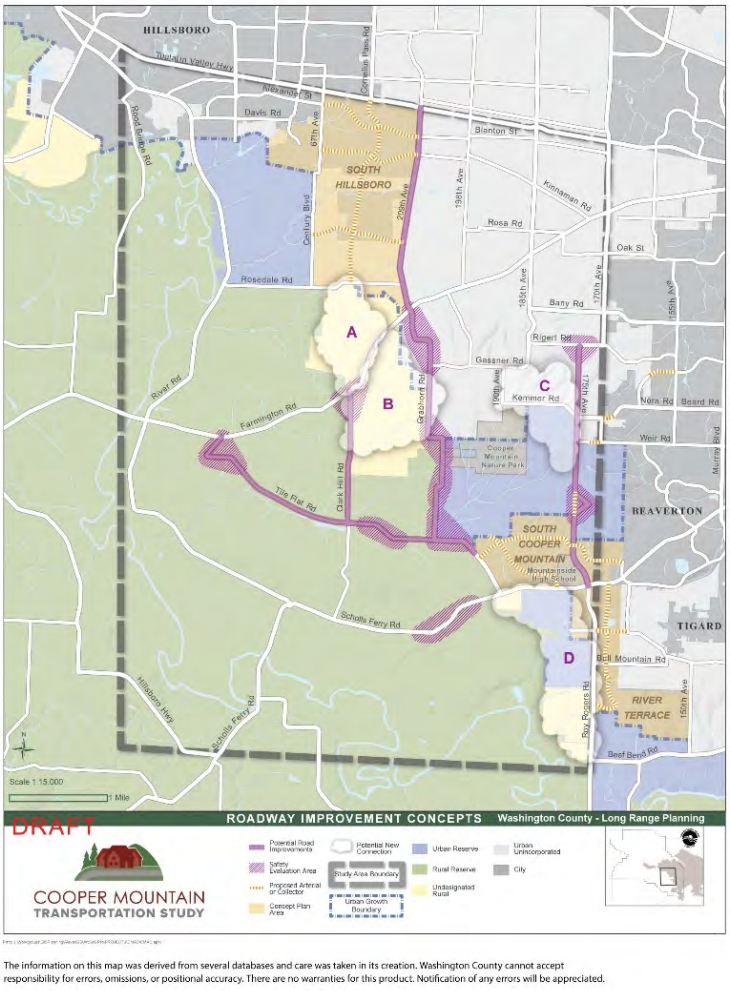
The Cooper Mountain Transportation Study began in fall 2017 with the primary goal of identifying a long-term multimodal transportation network for the Cooper Mountain area, along with the measures necessary for implementation. The Study evaluated several transportation improvement concepts to address traffic resulting from future regional growth and development. The improvement concepts consider how best to improve traffic and connectivity through the Cooper Mountain area.

The Cooper Mountain Transportation Study considered the existing urban traffic in the rural area and the impacts of continued urban development on rural area traffic. The study considered the existing transportation network and identified opportunities for improvements

in both the urban and rural areas to address existing and anticipated travel. The focus of the study was to provide alternatives to urban traffic use rural roads. The study concluded that the urban roadway network does not provide for the most direct or fastest travel route between existing urban areas. Therefore, some travel between these urban areas would likely continue to use the rural roadway network.

A number of improvement concepts to both urban and rural roads were considered. As a result of the evaluation several urban and rural safety and capacity improvements were identified. The Cooper Mountain Transportation Study considered a wide range of transportation improvement concept packages for the study area shown in the graphic on the following page.

Cooper Mountain Transportation Study Area



The information on this map was derived from several databases and care was taken in its creation. Washington County cannot accept responsibility for errors, omissions, or positional accuracy. There are no warranties for this product. Notification of any errors will be appreciated.

The Cooper Mountain Transportation Study graphic above was adopted into the 2018 Regional Transportation Plan (RTP) by Metro on Dec. 6, 2018 (Metro Ordinance No. 18-1421).[1]

The Cooper Mountain Transportation Study included a public outreach effort to inform area residents, adjacent cities and other stakeholders about the study; give an overview of the study area and potential improvement concepts; and discuss the project schedule and next steps. Project outreach materials included a project website and two handouts that were distributed to the nearby community participation organizations (CPOs). Staff met with and presented the project overview to the various groups, cities and stakeholders, including:

- 175th Avenue Neighborhood Association "Core Team" – April 30, 2018
- Beaverton Neighbors Southwest Neighborhood Association Committee (SW NAC) – May 16, 2018
- CPO 10 – May 17, 2018 and May 16, 2019
- CPO 6 – June 7, 2018 and May 2, 2019
- City of Beaverton staff – May 21, 2018
- City of Tigard staff – June 5, 2018

[1] Page 8-7 of the Metro 2018 RTP.

- City of Hillsboro staff – June 11, 2018
- Department of Land Conservation & Development (DLCD) – June 6, 2018
- 1,000 Friends of Oregon – July 9, 2018
- Oregon Department of Agriculture (ODA) – July 10, 2018
- Urban Road Maintenance District Advisory Committee (URMDAC)/Rural Roads Operations and Maintenance Advisory Committee (RROMAC) joint meeting – Feb. 14, 2019
- Washington County Board of Commissioners – Dec. 11, 2018
- Washington County Planning Commission (PC) – Feb. 6, 2019

The Cooper Mountain Transportation Study recommended that the preferred improvement concept package, including the SW Tile Flat Road extension, be further studied and refined through the County's Urban Reserves Transportation Study. In addition, because the Cornelius Pass Road extension and the Tile Flat Road extension required specialized analysis related to goal exception findings required by Oregon Administrative Rule 660, the County hired an outside consultant to complete the necessary alternatives analysis and findings for these two recommended projects.

Urban Reserves Transportation Study

The Urban Reserves Transportation Study was funded by a Metro a Planning and Development Grant, awarded to Washington County by Metro Council in 2018. The Urban Reserves Transportation Study built on the results of the Cooper Mountain Transportation Study to look at future development impacts in all of the County's urban reserve areas and the three areas added to the regional UGB in late 2018: Middle Cooper Mountain, Kingston Terrace and Witch Hazel Village South.

The Urban Reserves Transportation Study considered the cumulative transportation impacts of future development in the County's urban reserve areas to help inform future concept and comprehensive planning for these areas. The Urban Reserves Transportation Study included:

- Coordination with Washington County cities to determine future development assumptions.
- Analysis to identify areas with future capacity and improvement needs.
- Engineering feasibility analysis of several identified improvements, including the SW 185th Avenue extension from SW Gassner Road to SW Kemmer Road, SW 175th Avenue "kink" realignment, SW Beef Bend Road realignment and SW Basalt Creek Parkway overcrossing.
- Creation of an infrastructure funding plan toolkit to provide a best practices framework to local jurisdictions.

The Urban Reserves Transportation Study travel demand modeling showed that the improvements recommended by the Cooper Mountain Transportation Study would be needed to help accommodate traffic from future growth in the County's urban reserve and UGB areas. The analysis done for the Urban Reserves Transportation Study supported adopting TSP amendments to support future growth in the County. The recommended TSP

amendments reflect the outcomes from the Urban Reserves Transportation Study and will help the County be prepared for future development impacts to its transportation network.

The Urban Reserves Transportation Study included close coordination with city and agency partners, stakeholders and community groups. Project outreach materials included a project website and handout. Staff met with and presented the project overview and recommendations to the following groups:

- CPO 6 – March 5, 2020 and May 6, 2021
- RROMAC – Feb. 13, 2020
- Washington County PC – May 20, 2020 and May 19, 2021
- Washington County Board of Commissioners – July 28, 2020 and Feb. 9, 2021
- Beaverton City Council – Oct. 20, 2020
- Tualatin City Council – July 13, 2020
- Tigard City Council – Sept. 15, 2020
- Washington County Coordinating Committee – May 17, 2021
- Individual property owner meetings and phone calls

Stakeholder Committee including representatives from DLCD, ODA, 1000 Friends of Oregon and the Homebuilders Association of Metro Portland.

Ordinance Notification

Notice 2021-07 regarding proposed Ordinance No. 882 was mailed Oct. 27, to parties on the General and Individual Notification Lists (CPOs, cities, special service districts and interested parties). A copy of the notice and ordinance was provided to the PC at that time. A display advertisement regarding the ordinance was published Oct. 29 in *The Oregonian* newspaper.

Supplemental Public Notification

A supplemental notice was mailed Oct. 22 to property owners potentially affected by the SW Tile Flat Road extension. An online question and answer session regarding Ordinance No. 882 was held on Oct. 25. Four community members and one Tigard staff member attended. Discussion focused on the timing of Tigard's application for a UGB expansion, requests for more information about the River Terrace 2.0 concept plan and how the Urban Reserves were designated.

IV. ANALYSIS

Ordinance No. 882 proposes to amend the TSP to add an extension of SW Tile Flat Road between SW Scholls Ferry Road and SW Roy Rogers Road on rural lands. The purpose of this TSP amendment is to ensure that ongoing and future planning efforts can consider the roadway. This amendment allows future planning to size other roadways and infrastructure considering the SW Tile Flat Road extension.

The SW Tile Flat Road extension is proposed to be located on land that is outside the UGB. Most of this land area has designated as urban reserve. However, a smaller portion has not designated as either urban reserve or rural reserve; it is considered to be rural undesignated. Since the extension would be located outside the UGB, the extension would require an

exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public Facilities and Services) and 14 (Urbanization) to allow the TSP to include the roadway outside the UGB. Attachment A to this staff report provides the analysis necessary for Washington County to adopt an exception from these planning goals for the SW Tile Flat Road extension.

The City of Tigard is actively planning for the urban reserve area that includes the SW Tile Flat road extension. Tigard refers to the area as 'River Terrace 2.0' and has recently completed a concept plan for the area.

Coordination and Comprehensive Planning

Consideration of the SW Tile Flat Road extension has been incorporated into the updated Urban Planning Area Agreement between the City of Tigard and Washington County, adopted by the Board of Commissioners on Nov. 9, 2021 via Ordinance No. 879.

The City of Tigard has submitted an application to Metro to request that the River Terrace 2.0 planning area be considered for inclusion in the regional UGB as part of Metro's 2022 midcycle UGB expansion review.

The River Terrace 2.0 planning area includes both the River Terrace West urban reserve area, which includes the SW Tile Flat Road extension, and the River Terrace South urban reserve area on the east side of SW Roy Rogers Road. As a part of the required elements of a UGB expansion request, the City of Tigard prepared the River Terrace 2.0 concept plan, which includes the SW Tile Flat Road extension and identifies the need for the collector facility.

When UGB expansion does occur in this area, the SW Tile Flat Road extension will provide a framework for the development of the concept plans and the transportation network for the planning area. Identifying the roadway alignment in advance of the potential land use designation change allows for consideration of an appropriate transportation network to serve the broader community.

Ordinance Contents

Ordinance No. 882 includes one exhibit with four pages, as follows:

- Page 1 shows the general, planning level, Collector alignment. New roadway alignments shown on the TSP are generalized. Often the roadway alignment will be adjusted during the project development, engineering and construction processes. The key aspect of most generalized roadway alignments shown on the TSP is identifying the specific properties that may be affected by the roadway.
- Page 2 adds a "Roadway Exception Corridor" to the TSP. This is a new type of graphic that has not been included in the TSP previously. The exception corridor designates the area within a rural roadway alignment for which an exception has been taken. Adjustments during project development, engineering and construction must be within the identified corridor. Identifying this corridor complies with OAR 660-012-0070(3)(a).
- Page 3 adds a "Refinement Area" to the TSP. The traffic and travel demand forecasts show continued deficiencies further south of SW Bull Mountain Road on SW Roy Rogers Road. The proposed Refinement Area identifies this as a transportation need

but does not propose a specific roadway alignment at this time. County staff recognize the potential environmental and natural resource constraints of this area. The intent is that the specific alignment, or other solutions, would be considered during the development of concept or comprehensive planning in this area or in nearby areas.

- Page 4 adds the appropriate text to the TSP for the map amendments discussed on the other pages of the exhibit.

As discussed in the Background section above, years of technical analysis and community engagement have resulted in a recommendation for the proposed SW Tile Flat Road extension. Attachment A to this staff report, the Tile Flat Road Extension Goal Exception Analysis, documents the requirements and provides the factual information necessary to take an exception from Oregon Statewide Planning Goals.

SW Tile Flat Road Extension

The SW Tile Flat Road extension is proposed as a Collector roadway. For the purposes of this analysis, the design is assumed to be consistent with the Road Design and Construction Standards for a rural Collector roadway. However, it is likely that the SW Tile Flat Road extension would be built in the future along with urban development of the area. Adding the roadway alignment to the TSP at this time does not determine the final roadway design; design is determined at the time of funding.

It appears likely that much of the rural land affected by the roadway corridor may be designated as urban land before roadway construction would occur. However, the urban designation has not yet occurred. It is important for long-term coordinated planning to consider the entire network of roadways anticipated to be needed to accommodate future growth throughout the County. The coordination allows planning to proceed without oversizing other roadway improvements to accommodate future growth.

Refinement Area

The reason for the refinement area designation is that additional coordination, planning and analysis is needed between Washington County and the City of Tigard to determine the best location for the roadway extension in this area. This future planning and coordination will likely occur along with comprehensive planning for the River Terrace South area (also part of the larger River Terrace 2.0 planning area) on the east side of SW Roy Rogers Road, Tigard's park planning for the future Lasich Park near the intersection of SW Roy Rogers Road and SW Beef Bend Road, and future development of the Kingston Terrace planning area.

Tile Flat Road Extension Goal Exception Analysis

Attachment A to this staff report presents an analysis of the transportation system consistent with the regional planning requirements, utilizing the applicable performance measures and standards. The analysis in Attachment A considers the exception corridor shown in Exhibit 1, page 2. This analysis demonstrates that the proposed SW Tile Flat Road extension addresses a significant transportation system deficiency.

The applicable performance standard is determined by the Interim Washington County Motor Vehicle Performance Measures. In urban areas, the acceptable performance measure is the maximum volume to capacity (v/c) ratio standard of 0.99. The forecast for the intersection of SW Roy Rogers Road and SW Scholls Ferry Road exceeds this standard with any reasonable urban improvements, and the SW Tile Flat Road extension addresses the deficiency.

It is necessary to add the SW Tile Flat Road extension to the TSP to mitigate the deficiency and comply with the requirements of the Oregon Transportation Planning Rule and Regional Transportation Functional Plan. In addition, the proposed extension provides additional emergency access, system redundancy and connectivity for travelers moving within and through the planning area. SW Tile Flat Road bounds the South Cooper Mountain development area north of SW Scholls Ferry Road and connects to SW Clark Hill Road and the future Cornelius Pass Road extension further north, thus providing an important link in the regional transportation network. Attachment A also addresses the lengthy planning processes and range of alternatives considered. No other solutions have been identified that would provide for an acceptable or cost-effective solution to the identified deficiencies. The evaluation in Attachment A meets the applicable requirements for demonstrating that an exception to Statewide Planning Goals is allowed.

Attachment A also considers:

- The need, mode, function and general location for the proposed SW Tile Flat Road extension.
- Required thresholds to evaluate the reasonableness of the alternatives.
- Alternatives analysis for improvements and measures not requiring an exception.
- Detailed analysis of the alternatives requiring an exception.
- The net Economic, Social, Environmental and Energy consequences of an exception.
- Rural lands impact analysis.
- Goal 5 resources analysis.

Summary of Proposed Changes

Ordinance No. 882 proposes to amend the TSP to add an extension of SW Tile Flat Road between SW Scholls Ferry Road and SW Roy Rogers Road on rural lands. The extension would require an exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public Facilities and Services) and 14 (Urbanization) to allow the TSP to include a new roadway outside the regional UGB. Attachment A, the Tile Flat Road Extension Goal Exception Analysis, documents an evaluation of alternatives and demonstrates that the SW Tile Flat Road extension meets all the applicable criteria and standards for the exception. The SW Tile Flat Road extension will form part of the regional roadway framework necessary for the transportation system to serve the growing and developing communities in the area.

List of Attachments
The following attachments identified in this staff report are provided:

Attachment A: Tile Flat Road Extension Goal Exception Analysis
Attachment B: South Cooper Mountain Concept Plan Transportation Excerpt
Attachment C: LRP Issue Paper 2015-01B: Cooper Mountain Transportation Planning: Issues and Options

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Tile Flat Road Extension Goal Exception Analysis

This attachment is based the Tile Flat Road Extension Goal Exception Analysis conducted by CSA Planning and provided to Washington County on Aug. 5, 2020. Washington County staff has integrated the CSA analysis with regional planning requirements as documented in this attachment. Special thanks to the Cooper Mountain Transportation Study (CMTS) project team and CSA Planning.

Section 1: Introduction

This exception analysis is being coordinated with a parallel but separate goal exception process for the potential extension of Cornelius Pass Road. Analysis of each of these two road extensions has been conducted in tandem and as separate transportation improvement projects.

The analysis presented in this document, together with the supporting documentation, provides a factual basis for an exception from Statewide Planning Goals for the Tile Flat Road extension. Completing this goal exception process will allow more detailed design work to be undertaken and future construction funding to be considered for these projects and balanced against funding for other projects in the County. Washington County anticipates actual construction of this project will be many years in the future. The primary purposes of obtaining a goal exception at this point in time is to:

- Enable the preservation of the future right-of-way (ROW) needed for the road extension.
- Coordinate land use and transportation planning within a regional system that is adequate to accommodate future travel needs.

1.1 Tile Flat Road Extension Planning and Background

Transportation planning in and around Cooper Mountain has been discussed by the County and its municipalities for many years. In the 1980s and 1990s, planning efforts included the Western Bypass and the Land Use, Transportation and Air Quality (LUTRAQ) studies. In more recent years, the Cooper Mountain transportation network has been an ongoing topic of discussion as part of the Washington County Transportation Futures Study, the Cooper Mountain Transportation Study, the Urban Reserves Transportation Study, Concept Plans in South Cooper Mountain, River Terrace, Kingston Terrace, South Hillsboro and Sherwood West, and anticipated development of other high growth areas (Urban Reserves) on the western edge of the regional urban growth boundary (UGB).

Comments received from residents of the 175th Avenue Neighborhood Association area, along with comments to the Washington County Transportation Futures Study and the Washington County Long Range Planning Work Program, have centered around the following main ideas:

- Need for a new all-weather, generally flat and bikeable, alternative route to provide a parallel route to 175th Avenue, primarily using the following improvement ideas:
    - Extend Cornelius Pass Road south from Rosedale Road to connect with Clark Hill Road.
    - Extend Tile Flat Road to the south and east of Scholls Ferry Road, connecting to Roy Rogers Road.
- Do not invest resources to straighten the curve on 175th Avenue as it currently acts as a traffic calming mechanism.
- Need for a new limited access parkway (or freeway) to connect from Sherwood/Wilsonville to Hillsboro (more broadly, between I-5 and US 26).
- Farmland preservation and recognition that any arterial improvements should include accommodation for agricultural equipment.

A variety of proposed routes, including the "around the mountain" concept proposed by the 175th Avenue Neighborhood Association, have been evaluated to determine the transportation network benefits, costs, opportunities and constraints. These assessments have informed discussion about the long-term multimodal transportation network necessary to serve the area.

At the end of 2018, Metro added the CMTS project to the latest iteration of the Regional Transportation Plan (RTP) as a local planning effort that could help implement the RTP and/or address specific local or subarea transportation needs in the future. The RTP project description notes that the existing Cooper Mountain transportation network was "not intended to accommodate the current and projected levels of urban travelers using rural roads to go to and from urban destinations."[1] The 2018 RTP acknowledged that the Cooper Mountain Transportation Study would lead to amendments adding projects to future versions of the RTP financially constrained list and relevant RTP system maps. The Tile Flat Road Extension exception is the next step in the planning process. To adopt the road exception alignment into the TSP, a goal exception is required.

1.2 Statewide Planning Goals to Which an Exception is Taken

This section provides a brief summary of the state and local rules and regulations governing transportation improvements in rural areas. This report acknowledges that a goal exception for a new roadway in a rural area is required by ORS 215.213 and the related administrative rules, and will therefore focus on those rules and regulations specifically related to goal exceptions for new roadways in a rural area: OAR 660-027-0070 and Statewide Planning Goals 3, 4, 11 and 14. In addition, OAR 660-012-0070(2) specifies that compliance with the -0070 rule for transportation facilities is deemed to fulfill the exceptions requirements under Goal 2 and ORS 197.732(1)(c) for Goals 3, 4, 11 and 14.

Transportation improvements in rural areas are governed by the following state and local rules and regulations:

OAR 660-027-0070: Planning of Urban and Rural Reserves

Counties must maintain urban reserve land as rural until it is brought into the UGB. Minor transportation improvements are allowed, including road realignments, interchanges, turn lanes and other safety improvement projects. Projects for capacity and demand must be based on adopted growth forecasts, not on future urban reserve growth; capacity increasing projects are typically not allowed in rural areas without a goal exception. The proposed goal exception projects impact either urban reserve or rural undesignated (i.e., not rural reserve or urban reserve) land.

OAR 660-012-0065: Transportation Improvements on Rural Lands

Minor transportation improvements are allowed on rural lands, including road realignments, interchanges, turn lanes and local access improvements, subject to alternative analysis findings to determine the option with the least impact on farm or forest uses. There is some case law on this matter, specifically the LUBA case, *Friends of Yamhill County v. Yamhill County*, 39 Or LUBA 478 (2001), which found that existing roads must be considered in the alternatives analysis, with an accounting for how much it would cost to bring the road up to standard, and also found that

[1] Page 8-6 of Metro's 2018 Regional Transportation Plan

land costs could not be included in the consideration of feasibility. This rule covers uses permitted by ORS 215.213. Uses not permitted by ORS 215.213, and thus not covered by OAR 660 012 0065, must pursue an exception to be sited on rural lands. The proposed roadway is a new road extension across rural lands which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065.

OAR 660-012-0070: Exceptions for Transportation Improvements on Rural Land
Provides a process for transportation facilities and improvements which do not meet the requirements of OAR 660-012-0065 to pursue an exception. The exception analysis shall determine the need, mode, function and general location for the proposed facility or improvement and must consider alternatives. The proposed roadway is a new road extension across rural lands, which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065. Therefore, OAR 660-012-0070 is the applicable standard for analysis and justification of the proposed roadway extension. This report follows the process laid out by OAR 660-012-0070 to provide the adequate justification for a goal exception.

OAR 660-012-0035: Evaluation and Selection of Transportation System Alternatives
Minor transportation projects in urban fringe (and urban reserve) areas may be included within an adopted TSP, including road realignments, interchanges, turn lanes and local access improvements. These transportation projects can improve safety but cannot be intended to improve capacity. The rule intends all capacity increasing projects to be accommodated within the urban areas.

OAR 660-033-0130: Minimum Standards Applicable to the Schedule of Permitted and Conditional Uses
Allows transportation improvements subject to OAR 660-012-0035 and 660-012-0065, which both limit such improvements to safety needs versus capacity needs and are subject to alternative analysis findings to determine the option with the least impact on farm or forest uses. This rule also sets out the requirement to make findings of no significant impact on surrounding farm or forest practices.

ORS 215.213: Uses Permitted in Exclusive Farm Use Zones in Counties that Adopted Marginal Lands System Prior to 1993
Transportation improvements within existing ROW are allowed. Counties may improve existing facilities outside existing ROW that require acquisition of ROW, including passing and travel lanes, where no new land parcels are created. Other improvements, including new roads, would require an exception to Goal 3 or other Statewide Planning Goals.

ORS 215.296: Standards for Approval of Certain Uses in Exclusive Farm Use Zones
This statute mirrors the language found in OAR 660-033-0130 that requires local governments to make findings of no significant change to surrounding farm or forest practices. The no significant change findings are not required for improvements within a UGB or exception area.

Goal 3: Agricultural Lands
Goal 3 requires agricultural lands to be preserved and maintained for farm use. Counties must inventory agricultural land, designate it on their comprehensive plan, and zone it as Exclusive

Farm Use (EFU).[2] EFU zoning restricts development and uses unrelated to agriculture to prevent conflicts with farming. Approximately 50 acres of land within the facility corridor are located outside the UGB, are zoned EFU and are protected by Goal 3. The proposed Tile Flat Road extension will add a new transportation facility across lands protected by Goal 3, which would require an exception pursuant to ORS 215.213(10)(a). This exceptions document accounts for the interconnection between Goals 3 and 4. Washington County has many types of soils and environmental conditions such that the same property may be suitable to both forest uses and agricultural uses and appropriately protected by both Goals. As such, this exceptions document encompasses an exception to Goal 3 for lands that are planned and zoned for forest uses.

Goal 4: Forest Lands
Goal 4 protects working forests for commercial activity, while also recognizing the value that Oregon forests provide to wildlife, riparian areas and recreation. Like agricultural lands, counties are required to identify, designate and zone forest lands consistent with state rules requiring their protection. Forest land zoning restricts conflicting uses and the division of parcels to ensure lots are large enough to be managed effectively. This exceptions document accounts for the interconnection between Goals 3 and 4. Washington County has many types of soils and environmental conditions such that the same property may be suitable to both forest uses and agricultural uses and appropriately protected by both Goals. As such, this exceptions document encompasses an exception to Goal 4 for lands that are planned and zoned for agricultural uses.

Goal 11: Public Facilities and Services
Goal 11 requires cities and counties to provide a plan to meet current and long-range needs for public facilities and services. Goal 11 is primarily focused on urban levels of facilities and services for communities larger than 2,500 people. With respect to rural lands, Goal 11 prohibits certain types of urban facilities outside UGBs and urban unincorporated community boundaries. Transportation facilities in rural areas are not addressed in significant detail in Goal 11. Nevertheless, this exceptions document encompasses an exception to Goal 11 if and to any extent a Goal 11 exception is required.

Goal 14: Urbanization
Goal 14 requires that local governments provide for an orderly and efficient transition from rural to urban land uses by establishing UGBs that provide land for urban development needs and separate urbanizable land from rural land. The boundaries shall be established on an identified need for, among other items, streets and roads. Goal 14 distinctions concerning land development are comparatively easy to distinguish when compared to transportation issues. Land use densities and intensity can be described in some detail and distinctions can and have been made to differentiate between rural development and urban development.

Transportation facilities and uses are more difficult to definitively segregate. By their nature, transportation facilities and uses intermix between rural and urban activities. Urban and rural roads are used to transport resource products such as trees, grain and rock to both urban and

[2] Washington County has a class of land use districts that allow for both farm and forest uses. The districts, titled Agriculture and Forest Districts, allow both agriculture and forest uses on smaller lots that were created from a high degree of historical parcelization and diverse ownership. The districts are considered to be in compliance with Goal 3 and qualify as exclusive farm use under ORS.

rural markets. Rural roads provide urban access directly to rural markets like nurseries, wineries and farm stands. Urban streets are used by many rural users for access to key support industries like financial services, equipment purchases and repairs, construction materials and similar urban uses. The larger the urban area and more intensive the rural resource uses are, the more intermixed the rural and urban uses and activities become on transportation facilities in these areas.

County and Oregon Department of Transportation (ODOT) roads west of the Metro UGB in Washington County are in a location where some of the largest population centers and most intensive agricultural uses are in very close proximity to one another. Urban traffic uses rural County and ODOT roads to get to rural activities and uses and between urban areas. Farm, forest and aggregate resource traffic uses rural County and ODOT roads to get products to market and to access urban facilities and amenities. Because of the existing traffic patterns in the area, the Tile Flat Road goal exception will not "create" new urban traffic in a rural area where none would otherwise exist, but it is a facility that will have considerable interaction between urban and rural traffic patterns, and that is the nature of this Goal 14 exception.

Metro Urban Growth Management Functional Plan
The Urban Growth Management Functional Plan (UGMFP) implements regional growth goals and objectives, including the Metro 2040 Growth Concept and Regional Framework Plan. The UGMFP contains requirements that are binding for cities and counties of the region. The intent of the requirements is to assure that cities and counties have a significant amount of flexibility as to how they meet requirements. Performance standards are included in most titles. If local jurisdictions demonstrate to Metro that they meet the performance standard, they have met that requirement of the title. In addition, the Regional Transportation Functional Plan, adopted June 10, 2010, as Metro Code 3.08, serves as the primary transportation policy implementation of the 2040 Growth Concept. The UGMFP is applicable to plan amendments within or affecting the Metro area.

Metro Regional Transportation Functional Plan
The Regional Transportation Functional Plan (RTFP) establishes an outcomes-based framework that is performance-driven and includes policies, objectives and actions that direct future planning and investment decisions to consider economic, equity and environmental objectives. Through performance evaluation and monitoring the region can be a responsible steward of public funds and be more accountable and transparent about local and regional planning and investment choices. The RTFP implements the Goals and Objectives in the Regional Transportation Plan (RTP). The RTFP covers transportation system design for each mode. The RTFP also includes provisions for the development and update of transportation system plans, including processes for transportation needs, solutions and performance.

Washington County Community Development Code – Article VII
The Community Development Code (CDC) Article VII (Public Transportation Facilities) implements OAR 660-033-0130, ORS 215.296, OAR 660-012-0065 and ORS 215.213, and establishes levels of review for public transportation projects, including those on rural lands. The review procedures include an alternatives analysis for projects that may have a greater impact. Transportation improvements exempted from the review processes include maintenance,

operational, replacement and reconstruction projects within the existing ROW, bus infrastructure within the ROW, acquisition of ROW consistent with the TSP, and ROW acquisition and construction of bicycle/pedestrian facilities. The CDC is not applicable at this time but mentioned here to note that any new future roadway facilities would be reviewed through an Article VII process.

1.3 Measures and Alternatives for Analysis

OAR 660-012-0070(4), (5) and (6) require an analysis of measures and alternatives that would not require an exception and an analysis between alternatives that do require an exception. To conduct this analysis, the project team identified several alternatives for each category, including:

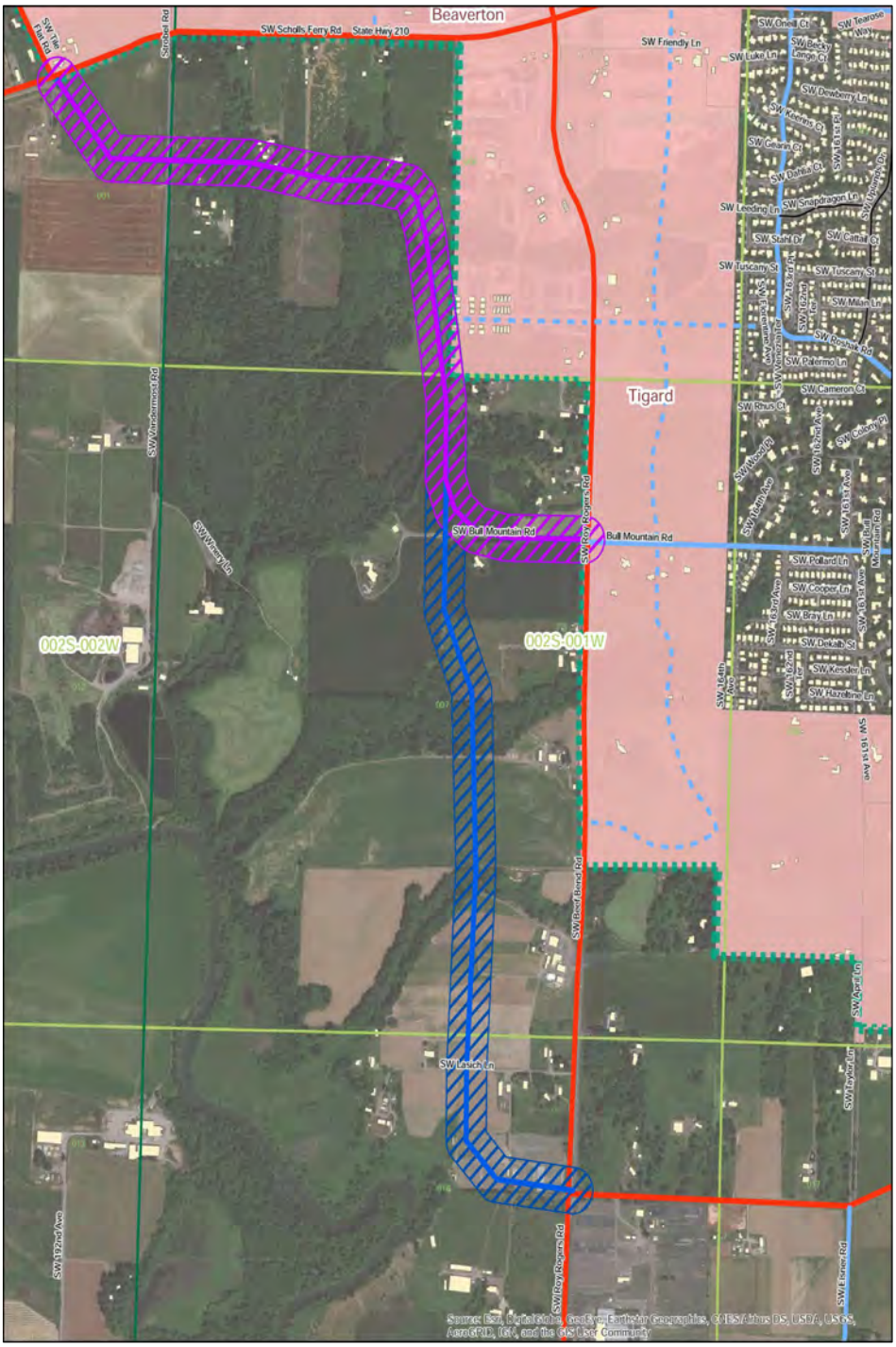
Measures and Alternatives Not Requiring an Exception

- Alternative transportation modes – see Appendix 4.
- Traffic management measures.
- Improvements to existing transportation facilities.
- Baseline Alternative – Transportation improvements in the Financially Constrained RTP (anticipated to be funded within the planning horizon); no goal exceptions required.
- Urban Full Build Alternative – Maximum reasonably achievable build out of the urban street system along with the introduction of transit to the area; no goal exceptions required.

Alternatives Requiring an Exception

These alternatives are displayed below and also in Appendix 1.

- Alternative A – Direct connection between SW Tile Flat Road and SW Bull Mountain Road at the intersection of SW Roy Rogers Road and SW Bull Mountain Road.
- Alternative B – First section of corridor identical to Alternative A but completes the entire corridor to SW Beef Bend Road, regardless of short-term performance adequacy from connection to SW Bull Mountain Road.
- Alternative C – This alternative plans a connection all the way to SW Beef Bend Road with an additional connection at SW Bull Mountain Road using the same corridor as Alternative B. However, Alternative C would provide for a delayed phase-in of the southern segment connection between SW Bull Mountain Road and SW Beef Bend Road. The improvements in this segment would be based on facility performance to be evaluated in the future.



TILE FLAT ROAD EXTENSION GOAL EXCEPTION

Alternatives

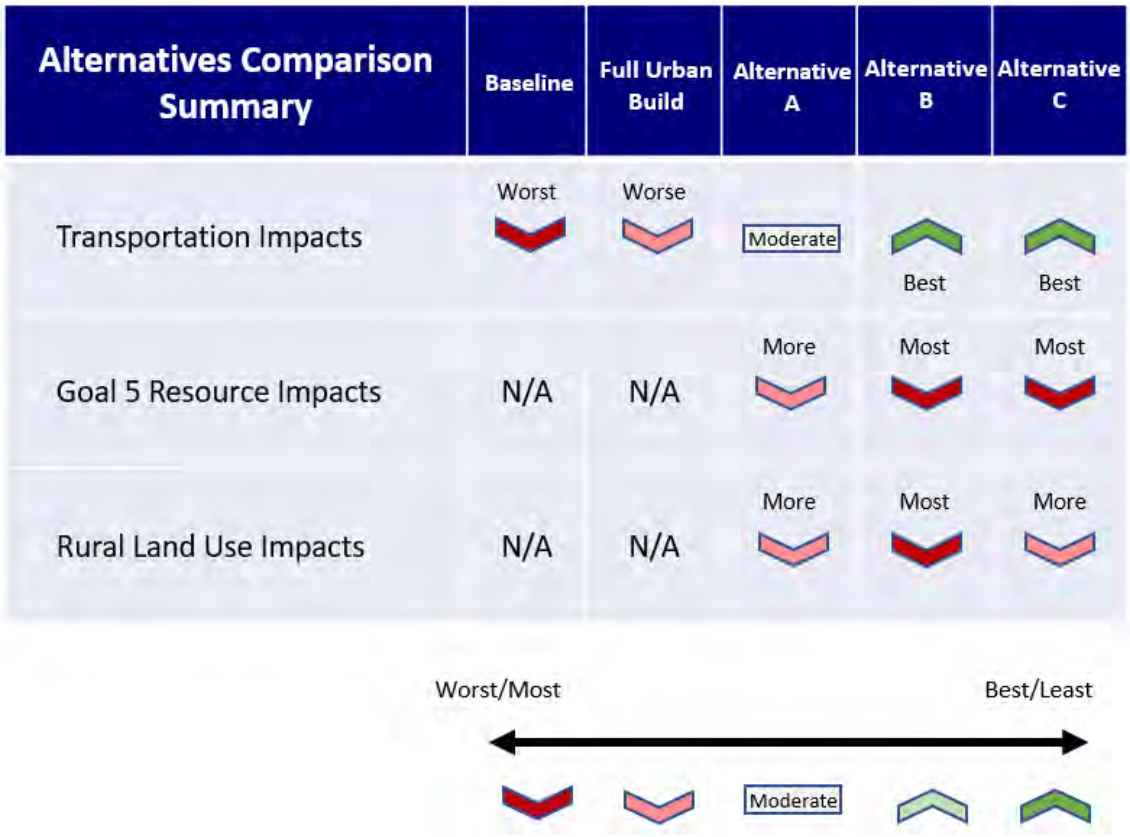
Alternative_A
Alternative_B_C
Alt_A_Buffer
Alt_B_C_Buffer
Arterial
Collector
Planned Collector
Neighborhood Route
UGB
Tax lots
Building Footprints

N

0 500 1,000 Feet

Atlas Page 22

The infographic below summarizes the results of the alternative analysis.[3] Note that three alternatives not requiring an exception do not independently satisfy the identified transportation need and are thus not fully compared with the other alternatives. A full discussion of these first three measures is found in Section 4.



[3] The infographics are provided for readability. Any question of "substantial evidence conflicts" between the infographic information and the detailed analysis in Sections 1 through 5 of the analysis herein shall be resolved in favor of the detailed analysis.

Transportation Comparison	Baseline	Full Urban Build	Alternative A	Alternative B	Alternative C
Facility Performance					
Rural road segments over threshold	32	27	27	30	30
Urban road segments over threshold	84	73	78	60	60
Freight mobility benefits	Least	Less	Some	Most	Most
Active Transportation					
Transit Benefits	Nominal	Nominal	Nominal	Nominal	Nominal
Cycling benefits	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial
Pedestrian benefits	Beneficial	Beneficial	Beneficial	Beneficial	Beneficial
Connectivity					
Out of direction travel	More	More	Less	Less	Less
Function classification	Logical	Logical	Enhanced	Enhanced	Enhanced
Cost & Constructability					
Construction complexity	Challenging	Challenging	Challenging	Extensive	Extensive
Right of way impacts	Many	Many	Many	More	More

Exception Alternative Comparison	Alternative A	Alternative B	Alternative C
Other Goal 5 Resources			
Riparian Corridors Impacted	3	6	6
Farm Impacts			
Total acreage in corridor (all farm zoned)	72.4	116.1	116.1
Number of farms divided	5	9	9
Other Rural Impacts			
Dwellings potentially directly impacted by right of way expansion	4	4	4

1.4 Reasons, in Brief, the Proposed Goal Exception is Justified

OAR 660-012-0070(4) provides that the exception shall provide reasons justifying why the applicable goals should not apply, including cost, operational feasibility, economic dislocation and other relevant factors. This report details the factors and justifications for the proposed SW Tile Flat Road extension exception. In summary, the proposed exception is justified because:

- The roadway extension would help address roadway capacity needs and system performance in the future, as many nearby roadways and intersections are projected to exceed the adopted standards with future development.
- The roadway extension would provide additional connections between southern Washington County and northern Washington County, reducing out-of-direction travel that may occur by drivers attempting to avoid congested areas on the network.

1.5 Tile Flat Road Extension Goal Exception Document Structure

The proposed Tile Flat Road extension is a new road across rural lands, which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065. Therefore, OAR 660-012-0070 is the applicable standard for analysis and justification of the proposed roadway extension. This document provides the analysis and substantial evidence required to justify an exception to Statewide Planning Goals 3, 4, 11 and 14, in accordance with the provisions of OAR 660-012-0070. The remainder of the document is structured as follows:

- Section 2 addresses the need, mode, function and general location for the proposed Tile Flat

Road extension per OAR 660-012-0070(3).

- Section 3 addresses the thresholds chosen to evaluate the reasonableness of the alternatives per OAR 660-012-0070(6).
- Section 4 is an alternatives analysis for measures not requiring an exception per OAR 660-012-0070(4).
- Section 5 is a detailed analysis of the alternatives requiring an exception and addresses several applicable rule subsections, including OAR 660-012-0070(5), (6) and (7).
- Section 6 addresses rural lands impact analysis per OAR 660-012-0070(8).
- Section 7 addresses Goal 5 resources analysis, as the proposed roadway extension crosses inventoried Goal 5 riparian areas.

Section 2: Need, Mode, Function and General Location of Proposed Exception Facility

An exception for a transportation improvement on rural lands must decide need, mode, function and general location of the proposed facility, pursuant to OAR-660-012-0070(3). It must also provide a process and standards to guide selection of the design and location within the corridor consistent with the general description of the proposed facility. The primary purpose of the analysis in this section is to provide an adequate factual basis for the exception components specified in OAR 660-012-0070(3).

2.1 Tile Flat Road Extension Need and Location

The need for the Tile Flat Road Extension is based upon traffic modeling analysis developed for the 2018 RTP financially constrained project list (the Baseline Alternative). Many portions of the road network in the 2018 RTP are forecast to be significantly over capacity by the end of the planning period. Many state highways, arterials, collectors and other locations will exceed adopted level of service (LOS) performance targets. The applicable transportation facility performance targets are described in detail in Section 3. The traffic modeling methodologies and facility performance analysis results are examined in detail for the alternatives analyses below in Sections 4 and 5.

While not all segments will operate within adopted performance standards in 2040, the Tile Flat Road Extension is needed to serve expected travel demands in the 2018 RTP as regional population and employment growth continues. A detailed discussion of performance thresholds and how they are measured is discussed in Section 3.

In addition to addressing future mobility performance deficiencies, there is also a connectivity need to plan the Tile Flat Road extension. Tile Flat Road stretches west to east from SW Farmington Road to its current terminus at SW Scholls Ferry Road. The road passes through an area with very few connections. SW Tile Flat Road intersects with SW Clark Hill Road and SW Grabhorn Road, both of which are busy north-south roadways in Washington County. Because of its geography, connections and the spacing between arterial roadways, SW Tile Flat Road is an important and heavily used road serving regional traffic in the greater Metro area. Extending SW Tile Flat Road will add an important connection to one of the most congested regional arterials in Washington County. The existing roadways in the area funnel north-south traffic to SW Roy Rogers Road and SW 175th Avenue. SW Roy Rogers Road is one of the few arterial roadways that connect between southern Washington County and the urban areas to the north. The next closest north-south arterials are OR 99W to the east and SW Scholls Ferry/Scholls-Sherwood Road to the west. Both are more than 3 miles away from the

intersection of SW Roy Rogers Road and SW Scholls Ferry Road. There is no direct route to the west from SW Roy Rogers Road between SW Scholls-Sherwood Road and SW Scholls Ferry Road, a distance of almost 3 ¼ miles.

Extending SW Tile Flat Road from its current terminus at SW Scholls Ferry Road would add a new route connecting north-south between major job centers. By providing direct connections to SW Bull Mountain Road and SW Beef Bend Road, the extension will alleviate pressure on the intersection of SW Scholls Ferry Road and SW 175th Avenue, and more efficiently disperse regional traffic.

The proposed Tile Flat Road extension is anticipated to be constructed within a ROW width of approximately 60 feet that extends from SW Tile Flat Road at SW Scholls Ferry Road to the intersection SW Roy Rogers Road and SW Bull Mountain Road. After leaving the intersection of SW Tile Flat Road and SW Scholls Ferry Road, the extension will bend to the east, using an existing crossing of a riparian area, before bending south again and traveling parallel to SW Roy Rogers Road. The entirety of the extension is situated within lands zoned and designated EFU and AF-20.

Construction of the extension is not planned for the near term. Accordingly, the goal exception analysis is for the extension corridor. The Tile Flat Road Extension goal exception corridor is depicted on Exhibit 1, page 2. The corridor for the exception is 375 feet in width. It is expected that future project development would apply the County's Rural C-1 Collector standard, which is a 36-foot paved section in a 60-foot right-of-way. The collector standard can be found in Appendix 2. Thus, with the planned ROW width, there is room to adjust the final centerline of the ROW within the corridor depicted on Exhibit 1, page 2.

2.2 Tile Flat Road Extension Mode(s)

The Tile Flat Road extension is planned to accommodate typical surface modes of travel, including automobile, freight, transit, bicycles and pedestrians. A general discussion of expected use of these facilities by mode is provided below:

> **Automobile –** There are many employers in the Beaverton and Hillsboro area, including large employers like Nike and Intel. There are several high-amenity residential areas in southern Washington County around and south of Cooper Mountain. The arrangement of land uses causes demand for north-south automobile traffic through the Cooper Mountain area. Regional traffic makes up 50% to 80% of north-south arterial trips through the study area.[4]
>
> **Freight** – Freight makes up a significant portion of daily traffic on many of the roads in the vicinity. Washington County has a truck route system that identifies routes intended to efficiently move goods and trucks while limiting impacts to residential neighborhoods. A truck route designation helps inform design and maintenance of the roads and encourages planning for truck travel. Any future improvements to roadways in the area should consider accommodations for trucks, including broader turning radii, wider lanes, inertia of heavy vehicles and more. Additionally, some County roads are classified as over-dimensional truck routes and allow operation of wide vehicles (with appropriate permits as necessary).

[4] Page 19, https://www.beavertonoregon.gov/DocumentCenter/View/10120/South-Cooper-Mountain-Concept-Plan---Final-Draft-December-2014?bidId=

In the vicinity, many of the largest and most used roads are designated as truck routes, including:

- Scholls Ferry Road west of Roy Rogers Road/175th Avenue
- Farmington Road
- Clark Hill Road
- 185th Avenue between TV Highway and Farmington Road
- 209th Avenue
- River Road
- OR 219

Routes considered over-dimensional truck routes are the following:

- Scholls Ferry Road east of Roy Rogers Road/175th Avenue
- Roy Rogers Road
- TV Highway

The connection itself does not preclude freight vehicles and may be utilized by some freight traffic. More importantly for freight travel, the Tile Flat Road extension will provide additional capacity that will relieve congestion and improve operations through the intersection of SW Roy Rogers Road and SW Scholls Ferry Road.

Transit – The ODOT 2018 Oregon Household Activity Survey estimates that of all trips (including those not work-related) taken in the Portland metro area, approximately 4% were taken via transit.[5] According to the American Community Survey's 2017 5-year estimates, approximately 6.4% of workers residing in Washington County took transit as their primary commute option.[6] The Washington County TSP cites the 2010 Regional Travel Demand Model that estimated transit mode share as 1.8% of all trips.[7] The same model forecast that 2.4% of trips would be made on public transit in 2035.[8] Given the development pattern, transit share is likely to be lower than the modelled mode share for the entire County.

Actual delivery of fixed route transit in the area is also hampered by the fact that much of the north-south travel corridor and surrounding area is located outside of TriMet's district boundaries. Only two TriMet bus routes intersect the region traveling north-south: Lines 52 and 88.

- Line 52 – Farmington/185th goes between the Beaverton Transit Center and the Portland Community College Rock Creek Campus north of Highway 26. From Rock Creek it follows 185th Ave before meeting Farmington and running east to the Beaverton Transit Center. Route 52 has a daily ridership of 4,230 boarding rides.
- Line 88 – Hart/198th goes between the Willow Creek Transit Center and the Beaverton Transit Center. The route is less direct than Route 52. From Willow Creek it primarily takes

[5] Page 75 of the ODOT 2018 Household Activity Survey: https://www.oregon.gov/ODOT/Planning/Documents/OHAS-Daily-Travel-In-Oregon-Report.pdf
[6] US Census Bureau American Community Survey table S0801 for Washington County, generated at http://factfinder2.census.gov
[7] Page 7 of the Washington County TSP reference guide: https://www.co.washington.or.us/tsp
[8] Page 7, Ibid.

198th Ave before turning east on Farmington. It takes Farmington to 170th Ave before eventually wending its way over to Murray Blvd and further on to the Beaverton Transit Center. Route 88 has a daily ridership of 1,630 boarding rides.

Following the passage of House Bill 2017, TriMet has been planning additional public transportation investments to match increased revenue from a new dedicated source of funding for transit operations, in the form of a statewide employee payroll tax. As part of the new Statewide Transportation Improvement Fund (STIF), these revenues are targeted for improved transit service to low-income communities, reducing fragmentation of services between transit providers, and other transit priorities. The Tri-County Public Transportation Improvement Plan (PTIP) was developed as a five-year plan providing the overall framework for all public transit service providers operating within the urban and rural portions of Clackamas, Multnomah and Washington counties.

Within the PTIP, three planned service improvements were identified within the vicinity, although the exact timeline for implementation is currently unknown.[9] First, Line 56 – Scholls Ferry Road is proposed to be extended west from its current terminus at Washington Square to Progress Ridge and the South Cooper Mountain neighborhood, providing a direct trip to downtown Portland for local residents. Second, Line 47 – Main/Evergreen will be rerouted to serve residential neighborhoods along Cornelius Pass Road between Main Street and the emerging South Hillsboro development. This change will allow travelers to connect with MAX light rail at Orenco and provide access to major employment centers along Century Boulevard and Evergreen Parkway. However, both of these service improvements will terminate north of the Tile Flat Road extension, limiting their effectiveness for serving travelers in this corridor.

The third improvement likely has a greater, but still limited, potential to improve transit service in the corridor. The PTIP set aside funding to plan for service in areas within the TriMet service district that are not cost-effective for the transit agency to operate with a fixed-route bus, but that could be facilitated by a third party as part of a community connector shuttle. This service model has been successfully deployed elsewhere in Washington County, as Ride Connection currently operates three deviated fixed-route shuttles in Forest Grove, Hillsboro and Tualatin. Washington County received $25,000 towards planning for a future shuttle in the area, connecting South Cooper Mountain, Aloha, Progress Ridge and Murray Scholls. The service's goal is to enhance access to employment opportunities, local destinations, and regional transit services. According to the project application, the service might include two shuttles operating 14 hours per weekday. No ridership estimates have yet been developed, making it difficult to estimate the service's impact.

While the potential viability of future transit service on the Tile Flat Road Extension is uncertain, the extension will eventually be built to collector standards that can safely accommodate full-size buses. The Tile Flat Road Extension may still be beneficial for bus or shuttle services on parallel routes by reducing congestion and allowing transit to maintain schedules.

[9] See page 95 of the PTIP: https://trimet.org/meetings/hb2017/pdfs/public-transportation-improvement-plan.pdf

Bicycle – The Tile Flat Road Extension would be constructed to accommodate bicycles with a standard rural road cross section which includes 6-foot shoulders. The expected origin/destination trip pairs made possible by the Tile Flat Road Extension are generally at least 5 miles long, which is somewhat long for bicycle trips. The Tile Flat Road Extension will provide additional connectivity in a scenic area and so it is expected to attract some cyclists but bicycle travel is not the primary need or expected mode for the facility.

Pedestrian – The Tile Flat Road Extension would be constructed to accommodate pedestrians on 6-foot shoulders. The expected origin/destination trip pairs made possible by the Tile Flat Road Extension are generally at least 5 miles long, which is very long for pedestrian trips. The Tile Flat Road Extension will provide additional connectivity in a scenic area and so it may attract some recreational trips and it will also provide a route for local rural residents, but pedestrian travel is not the primary need or expected mode for the facility.

2.3 Tile Flat Road Extension Function and Capacity

The planned functional classification of the Tile Flat Road extension is a collector. The extension will connect in the north at Tile Flat's current terminus at the intersection with SW Scholls Ferry Road. The portion of SW Tile Flat Road near the intersection is classified as an arterial level roadway. As Tile Flat travels to the north and west, the classification change to a rural local west of the intersection with SW Grabhorn Road. SW Scholls Ferry Road is a heavily used arterial. SW Tile Flat Road west of SW Grabhorn Road is anticipated to designated as a collector roadway through a separate TSP amendment.

Forecasting consistent with the 2018 RTP assumes a capacity of 900 vehicles per hour in each direction on the new Tile Flat Road extension. Freight and standard motor vehicle traffic are not calculated separately and are included in the capacity. Freight comprises a significant portion of rural traffic in Washington County, ranging from up to 22% of the volume on SW Clark Hill Road at the high end to 8% on SW 209th Avenue on the lower end. No transit routes are planned on the new extension; however, the roadway could accommodate transit vehicles.

Washington County's adopted cross section for rural collector roadways includes a 6-foot shoulder in addition to travel lanes. The 6-foot shoulder would provide adequate capacity for bicycle trips, which are expected to be limited. In this case, the presence of a bicycle facility is more important than the type or capacity.

Pedestrian traffic has a more limited distance range than bicycling and thus pedestrian trips would be expected to be lower than bicycle trips in this location. A facility that can meet the needs for bicycling would also be expected to meet the needs for foot traffic. The combined bicycle and pedestrian use of the facility would be expected to be capable of handling over a hundred combined pedestrian and bicycle trips per hour while the expected demands would likely be far less than that theoretical capacity.

2.4 Tile Flat Road Extension Road Design Process

Washington County will follow its standard transportation improvement project implementation process, consistent with CDC Article VII. The County will begin by contacting property owners and gaining right-of-entry for geotechnical and topographic data gathering within the corridor. The County

will inventory land uses and coordinate with property owners to look for opportunities to reduce right-of-way impacts and acquisition costs. Design alternatives will be developed and shared with property owners in an iterative process that seeks to reach consensus on the road alignment with minimization of impacts.

Section 3: Transportation Facility Thresholds

OAR 660-012-0070(6) provides that local governments can determine thresholds to judge whether an alternative [transportation] method or location cannot reasonably accommodate the identified transportation need or location. The chosen thresholds can be used to explain why potential alternatives do not require detailed evaluation and they may be used to evaluate alternatives in detail and explain how an exception satisfies the requirements of OAR 660-012-0070(4) and (5). The (4) and (5) rules concern the evaluation of alternative transportation facility improvements and services that would not require an exception to address the identified transportation need and the thresholds chosen by the local government provide a factual basis to evaluate the sufficiency of alternatives that would not require an exception. The chosen thresholds must, however, also be justified in the exception. The justifications for Washington County's thresholds applied in this exception document are set forth in this section.

In addition to OAR 660-012-0070(6) the RTFP provides performance thresholds that Transportation System Plans (TSPs) in the Metro region must apply to evaluate transportation system needs and solutions.

3.1 Transportation Facility Performance Thresholds

Local governments in Oregon are required to adopt TSPs, and TSPs are required by OAR 660-012-0020(3)(b) to establish performance standards for existing and planned transportation facilities. The transportation facilities at issue in this exceptions analysis concern surface road performance.

3.1.1 Washington County Performance Standards

Washington County considered the Tile Flat Road Extension utilizing the performance thresholds as required by the Transportation Planning Rule (TPR) and the RTFP. Other studies (River Terrace, South Cooper Mountain, Kingston View, the Cooper Mountain Transportation Study, and the Urban Reserves Transportation Study) may have considered a range of different scenarios and/or standards. These other studies informed the consideration and alignment of the Tile Flat Road extension. Only the applicable performance measures and standards as described in this attachment have been utilized for the development of Ordinance No. 882. The applicable performance measures and standards are outlined below.

Washington County's TSP has an established policy concerning transportation facility performance in Objective 5.3 as follows:

Objective 5.3 Utilize the Interim Washington County Motor Vehicle Performance Measures to manage congestion.

- Strategy 5.3.1 Provide a transportation system that accommodates travel demand consistent with applicable performance standards for all modes of travel where feasible.

- Strategy 5.3.2 Provide a roadway system that meets the mobility needs of Washington County residents and businesses, as defined by performance standards identified in Interim Washington County Motor Vehicle Performance Measures of this plan.
- Strategy 5.3.3 Implement Washington County projects necessary to improve performance and reduce system design deficiencies in roadway corridors and segments that are operating or forecasted to operate at less than acceptable standards as identified in the Interim Washington County Motor Vehicle Performance Measures.

The Washington County TSP adopted performance measures in order to manage congestion on County facilities and ensure that travel demands are accommodated. The standards, titled the Interim Washington County Motor Vehicle Performance Standards were adopted by A-Engrossed Ordinance No. 768. The standards were developed to ensure compliance with the RTFP. Washington County has not adopted alternative performance targets, as allowed by the RTFP.

Table 3.1: Interim Washington County Motor Vehicle Performance Measures

Maximum Volume to Capacity (V/C) Ratio Standards				
Location[2]	**AM/PM Peak Two-hour Period**			
	Target[1] Performance Measures[3]		**Acceptable[1] Performance Measures[3]**	
	First Hour[4]	Second Hour[4]	First Hour[4]	Second Hour[4]
Regional Centers Town Centers Main Streets Station Communities	.99 (E)	.9 (D)	.99 (E)	.99 (E)
Other Urban Areas	.9 (D)	.9 (D)	.99 (E)	.9 (D)
Rural Areas	.9 (D)	.9 (D)	.9 (D)	.9 (D)

[1] For development review purposes, these performance standards will be used in assessing safety improvements. For plan amendment purposes, if a plan amendment is predicted to exceed the acceptable performance standard, the performance on applicable facilities will not be allowed to deteriorate further, and mitigation may be necessary. For project development purposes, these performance standards will be used to evaluate conditions beyond the transportation plan's planning horizon, as appropriate.
[2] For location reference see 2040 Growth Concept Design Types Map.
[3] Vehicle performance shall be determined by using volume to capacity ratios. Volume to Capacity equivalencies to Level of Service (LOS) are as follows: LOS C = V/C of 0.8 or lower; LOS D = V/C of 0.81 to 0.9; LOS E = V/C of 0.91 to 0.99. Further discussion of vehicle performance is provided in the Technical Appendix.
[4] First Hour is defined as the highest hour of the day. Second hour is defined as the hour following the first hour.

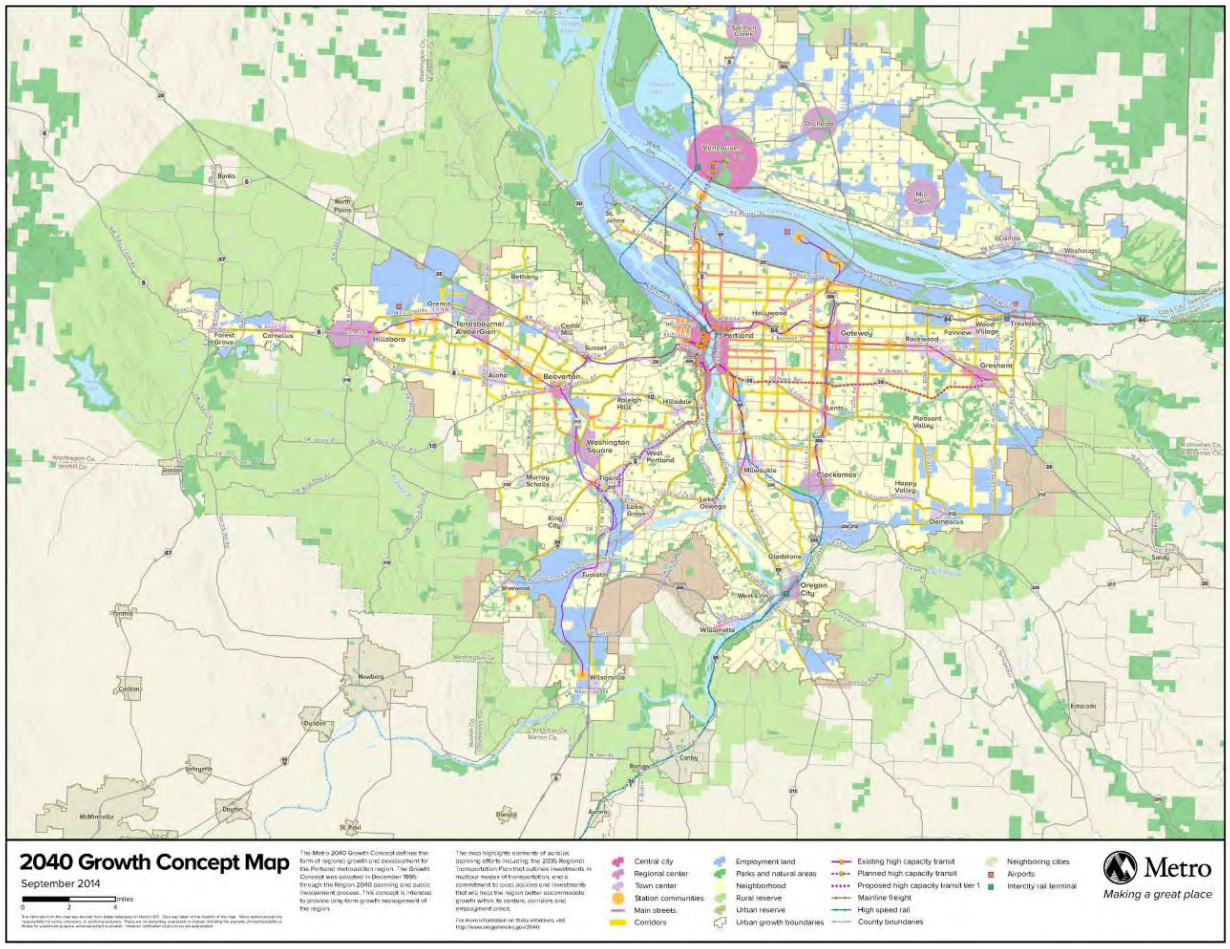
For purposes of this exception analysis, the performance standards are evaluated on a volume to capacity ratio for road segments (or "model link") basis. This road segment approach is adequate for purposes of this analysis because the Tile Flat Road extension is regional in nature; the extension itself is over a mile long. As such, localized congestion at intersections is less of a concern than overall system flow.

3.1.2 Metro Performance Standards

This area is adjacent to and could impact the Metro area, thus local plans must be consistent with Metro area requirements and standards. Metro has adopted mobility standards based on the designations

identified on the Regional 2040 Growth Concept. The 2040 Regional Growth Concept was initially adopted in 1995 and has been amended several times since. The 2040 Regional Growth Concept is presented in figure 2.1 on page 2-6 of the 2018 RTP and displayed below for reference.

Figure 3.1 - 2040 Growth Concept – an integrated land use and transportation vision



The Tile Flat Road Extension corridor is outside the UGB and thus has been designated only as "urban reserve" or left "undesignated" on the Regional 2040 Growth Concept. Areas in the vicinity have been designated as neighborhood on the Regional 2040 Growth Concept. While Roy Rogers Road is designated as a corridor on the Regional 2040 Growth Concept. The analysis of the Regional Transportation system applied the performance standards for "neighborhoods" as the applicable regional criteria. Performance standards for other facilities have been based on the appropriate 2040 designation.

2018 RTP Regional Performance Standards

Section 3.5.4 of the 2018 RTP (page 3-70) displays the interim regional mobility performance standards. The table is reproduced below for reference.

Figure 3.2 Interim regional mobility policy

Deficiency thresholds for peak hour operating conditions expressed as volume to capacity ratio targets as adopted in the RTP and Oregon Highway Plan.

Location	Target	Target	
	Mid-day One-Hour Peak [A, B]	PM Two-Hour Peak [A, B]	
		1st hour	2nd hour
Central City Regional Centers Town Centers Main Streets Station Communities	.99	1.1	.99
Corridors Industrial Areas Intermodal Facilities Employment Areas Neighborhoods	.90	.99	.99
I-84 (form I-5 to I-205)	.99	1.1	.99
I-5 North (from Marquam Bridge to Interstate Bridge	.99	1.1	.99
OR 99E (from Lincoln Street to OR 224 interchange)	.99	1.1	.99
US 26 (from I-405 to Sylvan interchange)	.99	1.1	.99
I-405 (from I-5 South to I-5 North)	.99	1.1	.99
Other state-owned routes [D] I-205 I-84 (east of I-205 I-5 (Marquam Bridge to Wilsonville) [C] OR 217 US 26 (west of Sylvan) US 30 OR 8 (Murray Boulevard to Brookwood Avenue) [C, D] OR 47 OR 99W OR 212 [E] OR 224 OR 213 [F]	.90	.99	.99

Table Notes:

A. Unless the Oregon Transportation Commission has adopted an alternative mobility target for the impacted state-owned facility within the urban growth boundary, the mobility targets in this table (and Table 7 of the Oregon Highway Plan) are considered standards for state-owned facilities for purposes of determining compliance with OAR 660-012-0060.

B. The volume-to-capacity ratios in this table (and Table 7 of the Oregon Highway Plan) are for the highest two consecutive hours of weekday traffic volumes. The 2nd hour is defined as the single 60-minute period, either before or after the peak 60-minute period, whichever is highest. See Oregon Highway Plan Action 1.F.1 for additional technical details for state-owned facilities. The mid-day peak hour is the highest 60-minute period between the hours of 9 a.m. and 3 p.m.

C. A corridor refinement plan, which will likely include a tailored mobility policy, is required by the Regional Transportation Plan for this corridor.

D. Two facilities are not designated as principal arterial throughway routes in the RTP, including OR 8 between Murray Boulevard and Brookwood Avenue and portions of 99W, which are proposed to be removed from Table 7 of the Oregon Highway Plan in the next scheduled update.

E. OR 212 is designated as a throughway route in the RTP and is proposed to be amended into Table 7 of the Oregon Highway Plan in the next scheduled update.

F. In October 2018, the OTC approved an alternative mobility target that applies to the intersection of OR 213 and Beavercreek Road such that during the first, second and third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.

3.1.3 ODOT Performance Standards

ODOT has performance targets documented in Policy 1F: Highway Mobility within the Oregon Highway Plan. ODOT performance standards are also a volume to capacity ratio standard and are often applied on a segment (or "model link") basis. As such, the analysis utilizes ODOT performance standards for comparing alternatives within the study area. Nearly all the state-owned and managed highway facilities in the vicinity are within the Metro boundaries and are thus bound by Table 7 in the Highway Plan. The performance standards from Table 7 are reproduced below:

VOLUME TO CAPACITY RATIO TARGETS INSIDE METRO[A, B]		
Locations	**Target**	
	1st hour	**2nd hour**
Central City Regional Centers Town Centers Main Streets Station Communities	1.1	.99
Corridors Industrial Areas Intermodal Facilities Employment Areas Inner Neighborhoods Outer Neighborhoods	.99	.99
I-84 *(from I-5 to I-205)*	1.1	.99
I-5 North *(from Marquam Bridge to Interstate Bridge)*	1.1	.99
OR 99E *(from Lincoln Street to OR 224 Interchange)*	1.1	.99
US 26 *(from I-405 to Sylvan Interchange)*	1.1	.99
I-405[C] *(from I-5 South to I-5 North)*	1.1	.99
Other Principal Arterial Routes I-205 [C] I-84 *(east of I-205)* I-5 *(Marquam Bridge to Wilsonville)*[C] OR 217 US 26 *(west of Sylvan)* US 30 OR 8 *(Murray Blvd to Brookwood Avenue)* [C] OR 224 OR 47 OR 213 242nd/US 26 in Gresham OR 99W	.99	.99

Highway 219, which is under ODOT jurisdiction, is located nearly entirely outside of Metro boundaries and outside of urban growth boundaries. Portions of Highway 99W are also located outside of Metro and local UGBs. The performance standards for facilities outside Metro are governed by Table 6 in the Highway Plan.

The standards from Table 6 are reproduced below:

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO[17A, B, C, D]							
Highway Category	**Inside Urban Growth Boundary**					**Outside Urban Growth Boundary**	
	STA[E]	**MPO**	**Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA**	**Non-MPO outside of STAs where non-freeway speed > 35 mph but < 45 mph**	**Non-MPO where non-freeway speed limit >= 45 mph**	**Unincorporated Communities[F]**	**Rural Lands**
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

3.1.4 Municipal Performance Standards

The performance thresholds issue is complicated by an array of municipal road jurisdictions within the surrounding area. While the TPR and RTFP require each jurisdiction to adopt performance standards in its TSP, there is no requirement that the adopted performance standards be consistent for all roads and streets. Transportation facilities operated by municipalities in the area include Hillsboro, Beaverton, Tigard, Tualatin and King City.

3.1.5 Performance Standards Threshold Determination

For the regional comparative analysis required by this goal exception analysis, Washington County's acceptable performance standards were applied. The Washington County acceptable performance standards are consistent with the Regional performance standards and ODOT's performance targets inside the Metro area.

3.2 Operational Feasibility

All the roads and projects evaluated are surface roads. Standard intersections, with or without traffic signals, or roundabouts can be implemented to address facility operations at the road connection points in accordance with MUTCD standards. New road segments or widening can be handled with standard striping in a manner that follows AASHTO design guidelines. For these reasons, it was determined that specific operational feasibility thresholds are not necessary or appropriate for the Goal Exception Analysis.

3.3 Cost and Constructability Thresholds

Washington County does not have adopted cost threshold measures or policies. Cost and constructability issues are considered in relation to specific project considerations. Road alignments seek to avoid sensitive environmental areas, especially riparian corridors and wetland areas, where costs are typically twice, or more, of the typical construction costs. Washington County also seeks road alignments that avoid areas of shallow depth to solid bedrock where expensive blasting and excavation is required.

The other issues concern widening versus new connections. There are cost trade-offs between each. If widening can be accomplished with limited or no right-of-way acquisition, then that is a potential costs savings. However, widening often requires significant portions of the existing roadbed to be reconstructed and it adds costs due to traffic flow management during the course of construction.

3.4 Economic Dislocation Thresholds

Economic Dislocation is the term utilized in OAR 660-012-0070 to evaluate and describe impacts to neighborhoods and private property from new transportation facilities, and especially improvements such as road widening or new roads that require the acquisition of right-of-way from private owners.

Any dislocation associated with a public transportation project is required, by local policy as well as state and federal laws, to provide appropriate compensation and/or relocation services.

3.4.1 Washington County

The County does not have economic development policies or specific economic dislocation thresholds. Washington County's role in economic development has traditionally been limited to assisting local municipalities by providing infrastructure and services. The draft County 2020 Strategic Plan identifies a Vision for Washington County. This vision includes many attributes but also notes that Washington County is a community in which "our economy is known for its diversity, future orientation, vitality, and commitment to the local community."

Washington County's TSP has several goals, objectives and strategies associated with economic vitality and related to dislocation from transportation projects, as follows:

Goal 5: Mobility – Promote the efficient and cost-effective movement of people, goods and services by all modes.

Objective 5.1 Provide a county roadway system that is cost-effective, designed to operate efficiently, and serves all travel modes.

Strategy 5.1.3 Address potential impacts of long-distance trips on neighborhoods or communities by:

- Ensuring that collectors and arterials of the transportation system are designed to adequately accommodate these trips.
- Designing and managing local streets to accommodate local trips and to discourage long-distance trips

Strategy 5.1.4 Prior to adding through travel lane capacity to the Lane Numbers Map, or elsewhere in the transportation system plan, consider the following strategies, in the order listed below:

- Transportation System Management strategies, including Travel Demand

Management, safety, operational and access management improvements.
- Bicycle and pedestrian system improvements.
- Appropriate lane-markings, safety improvements, and other operational devices to improve traffic flow.
- Where appropriate and feasible incorporate Land Use strategies to reduce motor vehicle congestion and peak period demand.
- Parallel connections and local street connectivity improvements.

Goal 3: Livability – Preserve and enhance Washington County's quality of life for all residents, workers and visitors.

Objective 3.4 Identify, limit and/or mitigate adverse impacts of transportation on rural, agricultural and resource areas in Washington County.

Strategy 3.4.2 Involve affected property owners early in the project development process to address land use compatibility issues adjacent to roads that form the boundary between urban areas, urban reserves, rural areas and/or rural reserves on a case-by-case basis.

Strategy 3.4.3 During the concept planning of newly-designated urban areas, strive to design the transportation system so that the traffic associated with these areas may travel primarily through the existing urban area.

Goal 2: Economic Vitality – Provide a reliable transportation system that enhances the economic health of Washington County

Objective 2.3 Invest in transportation to encourage economic development.

Strategy 2.3.4 Consider the economic benefits of additional roadway capacity for the region, both in inter-urban and intra-urban areas.

Objective 2.4 Encourage rural economic vitality in Washington County.

Strategy 2.4.1 Facilitate the safe, efficient movement of agricultural and forest products including agricultural machinery.

Strategy 2.4.3 Consider the transportation and land use needs of agricultural and forest industries when designing roadway improvements in the rural area.

Strategy 2.4.4 Facilitate safe travel for rural tourism traffic, including the safe operation of designated scenic driving and bicycling routes.

Objective 5.1 and its associated strategies 5.1.3 and 5.1.4 have system-wide implications that direct the County to plan for a roadway system that is adequate to handle regional traffic demands but seeks to balance through-put on arterials and collectors against road widening that could negatively impact neighborhoods. Objective 5.1 itself, calls for bicycle and pedestrian improvements to avoid the need for additional travel lanes. As areas are urbanized and roadways are improved, some road widening and right-of-way impacts result from the addition of urban complete streets with bicycle and pedestrian facilities. New connectivity is one of the ways that Objective 5.1 can be advanced by adding connections in a manner that avoids road widening in developed areas which is expensive and impactful to property owners and neighborhoods.

Objective 3.4 is in tension with Objective 5.1 where connectivity solutions advance Objective 5.1 to avoid additional road widening by meeting travel demand needs through parallel connections. Goal 2 and associated objectives and strategies recognize the importance of the economic contribution that

roadways provide as well as the long standing rural economy of Washington County. In summary, the TSP recognizes the important economic benefits and impacts of the transportation system as well as the nature of urban traffic utilization rural roadways and the TSP strives to manage the inherent tension between these attributes.

3.4.2 Municipal Economic Dislocation Evaluation

In addition to the tension within the Washington County TSP itself on economic dislocation issues, consideration of economic dislocation within the cities in the area is also a factor. For example, Beaverton's TSP Goal 6.2.1 and its associated Policy (a) and action items also direct that City to have proper design of transportation facilities that recognizes potential negative impacts from road widening projects. Rather than specific policy language, the Tigard TSP takes a process based approach to this issue in its transportation toolbox section which explains how the TSP projects were developed to avoid street widening and recognizes, "increases in roadway capacity through widening existing roads or constructing new roads are often prohibitively expensive in terms of construction costs, right of way acquisition and impacts to adjacent properties."

3.4.3 Economic Dislocation Threshold Determination

Washington County determines that economic dislocation thresholds are appropriate to apply in the following manner:

- Widening of urban streets or new streets within built-up areas of a city or developed urban areas of the County is not appropriate beyond those projects that are identified within adopted Municipal or County TSPs.
- In urbanizing areas added to the Metro UGB since a city's last major legislative TSP update, and where urban intensity development has not subsequently occurred, the analysis assumes any planned new streets or any planned street widening improvements in any adopted plan for the area will not cause unacceptable levels of economic dislocation. Additional widening or new streets beyond the planned improvements may cause unacceptable levels of economic dislocation and the potential impacts are examined on a case-by-case basis as part of the analysis.

The above thresholds are justified by the County's adopted and acknowledged TSP and the local municipal plans.

3.5 Goal 5 Resource Avoidance

The Washington County TSP and local municipal TSPs include policies and strategies to reduce impacts to Goal 5 resources from transportation facilities and improvements. Appendix 6 depicts Goal 5 resources in the area.

3.5.1 Washington County

The Washington County TSP includes specific language addressing Goal 5 impact issues as follows:

Goal 4: Natural Environment – Create and maintain a transportation system that first avoids, then minimizes, then mitigates impacts to the natural environment.

Objective 4.2 Reduce and/or mitigate negative impacts of the transportation system on the natural environment.

Strategy 4.2.1 Identify, and first avoid, then limit and/or mitigate adverse impacts of

transportation projects on mapped Significant Natural Resources.

Strategy 4.2.2 Transportation improvements are to be developed consistent with Oregon statewide planning goals and administrative rules, when establishing general transportation alignments, unless a special exception is allowed.

3.5.2 Municipal TSP Goal 5 Resource Policies

The Beaverton and Tigard TSPs all have language concerning Goal 5 resource avoidance, as follows:

Beaverton:

6.2.1. Goal: Transportation facilities designed and constructed in a manner to enhance Beaverton's livability and meet federal, state, regional, and local requirements.
Policies:
a) Maintain the livability of Beaverton through proper location and design of transportation facilities.

Actions:

- Design all transportation facilities to respect the characteristics of the surrounding land uses, natural features and natural hazards, and community amenities.
- Design transportation facilities consistent with habitat friendly development practices and low impact development techniques and water quality and quantity design principles, wherever practical and feasible
- Promote landscaping and pervious surfaces wherever practical and feasible.
- Continue to implement "green streets" designs.

Tigard:

Goal 1: Land Use & Transportation Coordination

6. The city shall strive to protect the natural environment from impacts derived from transportation facilities.
7. The city shall mitigate impacts to the natural environment associated with proposed transportation construction or reconstruction projects.

3.5.3 Goal 5 Resource Threshold Determination

Washington County determines that Goal 5 Resource thresholds are appropriate to apply in the following manner:

1. Widening of urban streets or new streets within built-up areas of a city or developed urban areas of the County that would negatively impact a Goal 5 resource is not appropriate beyond those projects that are identified within adopted municipal or County TSPs.

2. In urbanizing areas added to the Metro UGB since a city's last major legislative TSP update, and where urban intensity development has not subsequently occurred, the analysis assumes any planned new streets or any planned street widening improvements in any adopted plan for the area already comply with applicable Goal 5 resource avoidance policies.

3. For Goal 5 resources not covered by 1 or 2 above, potential for negative Goal 5 resource impacts that are expected to be strongly negative are not considered to comply with the

County's policy on avoidance if any other reasonable alternative exists. Examples of a strongly negative Goal 5 impact would be a transportation project that required a new bridge across the Tualatin River or a new road through the middle of a significant aggregate resource site. For Goal 5 resource impacts that are not expected to be strongly negative and are not covered by 1 or 2 above, then Goal 5 impacts are not considered a categorical threshold and will, instead, be weighed as one of the issues of evaluation when comparing the Tile Flat Extension to other alternatives.

The above thresholds are justified by the County's adopted and acknowledged TSP and the municipal TSPs.

3.6 Connectivity and Functional Classification Thresholds

Local governments in Oregon are required to adopt Transportation System Plans (TSPs) and TSPs are required by OAR 660-012-0020(2)(b) to plan a network of streets and to designate functional classifications of those streets. The functional classifications of County and City TSPs are required by the TPR to be consistent with the classifications of the State TSP and the RTP. Washington County and local municipalities in the area have adopted TSPs with the planned network of streets and functional classifications required. A map of the functional classification of roads in the area is provided in Appendix 3.

In addition, the Washington County TSP includes specific policy language concerning connectivity, as follows:

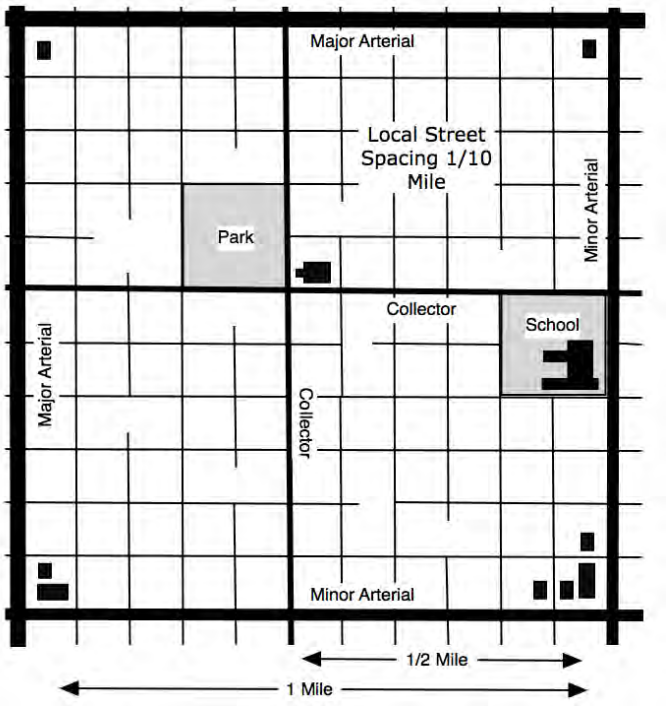
Goal 7: Connectivity – Provide improved and new transportation connections within and between developed and developing areas.

Objective 7.1: Provide an interconnected transportation network that offers multi-modal travel choices and minimizes out-of-direction travel for all modes.

3.6.1 Regional Connectivity

The Metro 2018 RTP provides a regional mobility concept that identifies the spacing standards for a complete and well-connected network. The network illustrates the multimodal transportation network as shown below.

Collector and local street network concept[10]



Note: Idealized concept for illustrative purposes showing desired spacing for collectors and local streets in residential and mixed-use areas to serve local circulation, walking and bicycling. The illustration is modeled after neighborhoods in Southeast Portland.

Regional motor vehicle network Policies augment the Regional motor vehicle network concept. The regional motor vehicle network discussion in the 2018 RTP identifies that a well-connected network of complete streets is critical to achieving the 2040 Growth Concept vision. The 2018 RTP notes that collector streets are an important supporting role to the design and optimization of the regional transportation system. Regarding collector streets the 2018 RTP states: "When travel is restricted by a lack of connecting routes, local trips are forced onto the arterial and/or throughway network, in some cases causing congestion on the regional system." This is exactly the situation and congestion identified along SW Roy Rogers Road and the SW Tile Flat Road extension is intended to provide appropriate connectivity consistent with the 2018 RTP to alleviate the situation.

3.6.2 Connectivity and Functional Class Threshold Determination

Based upon the hierarchical requirements in the TPR and the requirement that local TSPs comply with the Metro Regional Transportation Plan (RTP) and the Oregon Transportation Plan (OTP), Washington County determines that functional classification thresholds will be applied in a manner that does not

[10] Figure 3.12 Collector and local street network concept, 2018 RTP, page 3-64.

require cities to alter any adopted street functional classification that would be inconsistent with the RTP or the OTP.

With respect to Washington County facilities, functional classification thresholds are applied in a manner that will not require changes to the functional classification of any roads covered by the OTP. Functional classification implications and out-of-direction travel impacts for the Tile Flat Road extension will be evaluated in relation to other alternatives for roads under Washington County's jurisdiction.

Section 4: Alternatives Analysis Not Requiring an Exception

Statewide Planning Goal 2, Part II C(1) and C(2) are implemented by OAR 660-012-0070(4) and (5). The rule provides that the thresholds identified in Section 3 above, pursuant to OAR 660-012-0070(6) may be applied to eliminate alternatives that do not meet the identified thresholds. The thresholds identified in Section 3 above may also be applied to evaluate alternatives that do not require an exception. That evaluation must establish an adequate factual basis that an exception is required to meet the identified transportation need and that a location not requiring an exception to satisfy the identified need is not practicable.

4.1 Alternatives Development Process

The alternatives that would not require an exception were developed through collaboration between transportation planning staff within the Washington County Long Range Planning Division and the consultant team for the goal exceptions analysis, CSA Planning Ltd. The general approach was to evaluate *conservative* alternatives. In other words, to develop scenarios that made relatively generous assumptions about the potential for future transportation facility improvements and services that could meet the demand without requiring an exception. The analysis was performed during the Cooper Mountain Transportation Study and that planning process informed the alternatives identification and development.

4.1.1 Geography

The alternatives analysis used the study area identified in the Cooper Mountain Transportation Study as the generalized area to identify and evaluate potential alternatives. The rural lands immediately to the west are designated as Rural Reserves, thus making them ineligible for transportation improvements or goal exceptions. Lands to the east are within the city limits of Tigard or Beaverton. These urban areas have been suitably planned with connected urban transportation systems.

From a pure location standpoint, there is no alternative corridor that could provide the direct connectivity of Tile Flat Road extending to the intersection of SW Roy Rogers Road and SW Beef Bend Road. As such, any new road or capacity routing north to south that would connect directly from SW Tile Flat to SW Roy Rogers would cross land protected by Statewide Planning Goals and would require an exception.

Because no alternatives exist that would provide the same connectivity without an exception to Statewide Planning Goals, any potential alternatives not requiring an exception are necessarily limited to transportation alternatives that seek to meet future travel demand in other ways.

4.1.2 Alternative Transportation Modes

The alternatives analysis considered alternative transportation modes to meet future travel demand. Alternative transportation modes are all modes other than the personal automobile. For surface transportation solutions, alternative modes consist of biking, walking, and taking transit. For biking and walking trips, the transportation needs cannot reasonably be met due to travel distances. A trip length of 5 miles one-way is too far to be practical for most bicyclists and pedestrians for regular trips. This represents the shortest trip origin/destination pairs in this area. Many trip pairs are expected to be ten miles or more between the Communities of Aloha and Hillsboro to the North and Sherwood, Tigard, and Tualatin to the South.

Given the scale of the travel needs being served, biking and walking are not viable as stand-alone transportation modes to address this travel demand. Thus, the only other alternative mode with the potential to alleviate the need for the proposed Tile Flat Road extension is transit. Investigations of future transit service planning by TriMet indicated limited plans for expanded transit service in this area. Many of the current roadways in the study area may not be viable as transit routes. For example, Miller Hill Rd, while its location would grant connectivity benefits as a transit route, it is narrow, and has steep grades exceeding 10%. Nevertheless, an alternative was developed that adds transit in the area as a *best-case alternative* to avoid the need for the proposed road. This somewhat aspirational transit service is depicted in Appendix 3.

4.1.3 Traffic Management Measures

Traffic management measures involve direct intervention in the transportation system to alter transportation flows. One of the most common examples is traffic signal management. Modern Traffic signal systems can distribute and control traffic flows by using adaptive signal timing profiles. Signal usage can be optimized to coordinate flows and provide protection for vulnerable road users. These types of systems can optimize traffic flow and ensure safer vehicular progression. Another example is ramp meters at freeway interchanges. Traffic signals must provide service to all directions and modes. Traffic signals cannot create capacity but rather can be optimized in how they serve the existing capacity.

The travel models used for this analysis assumed that signals will be optimized to the extent possible given existing technology. Neither the County staff or the Cooper Mountain Transportation Study project team identified appropriate traffic management measures or techniques that represented a viable alternative for this area. Effective transportation management measures at this transportation demand scale typically require either traffic flows that vary significantly by time of day or involve facilities with very limited direct access (like ramp meters on freeways). Traffic management measures were determined to not present viable solutions in surface street areas with many connections and alternative routes.

4.1.4 Improvements to Existing Transportation Facilities

Improvements to existing transportation facilities and the construction of new street connections within the Urban Growth Boundary is the other way to add capacity to meet future travel demands in the area. Because this is a growing and developing area numerous transportation projects are already identified and planned.

The CMTS planning process as well as the exceptions alternative analysis has further developed

improvement options to provide capacity for future travel demands. Expansion of existing facilities to meet future travel demand needs has limitations in developing urban areas due to economic dislocation factors. Urban transportation facilities for arterials and collectors in Washington County include bicycle and pedestrian facilities appropriate for urban development. These typically include bike lanes (which may be buffered), curbs, stormwater treatment, planter strips and sidewalks. Expansion of rural roadways to urban width may be appropriate when repurposing County road rights-of-way for development in urban growth boundary expansion areas. Motor vehicle capacity is generally governed by the narrowest sections along a route, so the sections of roadway that cannot be widened to meet future demand due to funding or other constraints may reduce or eliminate the benefits of widening elsewhere in a given corridor.

Consistent with thresholds described in Section 3 above, all planned road widening and new street connections, were incorporated into the alternatives analysis. Additional road widening was considered where widening was feasible for an entire segment that would provide capacity benefits of the additional lanes for the entire segment. Consistent with thresholds described in Section 3 above, new road connections were considered where parallel routes would create new capacity alternatives to the capacity supplied by the Tile Flat Extension.

4.1.5 Non-Exception Alternatives Not Satisfying Thresholds for Detailed Evaluation

In considering alternatives and applying the thresholds in Section 3 above, several potential alternatives were eliminated from further evaluation, as follows:

- Creation of a new north-south connector to the east of SW River Terrace Blvd. A new connection between SW Scholls Ferry Road and SW Beef Bend Road would be of limited utility after the remainder of the planned road network is constructed. As is shown on in Appendix 5, the Urban Full Buildout scenario, SW River Terrace Blvd will not exceed traffic thresholds after its construction while SW Roy Rogers Road will still be significantly over the V/C standards. Adding additional capacity to the east will have limited ability to improve the flow of traffic on SW Roy Rogers or serve trips between southern Washington County and Hillsboro and Aloha to the north. The limited utility of capacity increases to the east is a function of the shape of the urban area and the associated origin-destination patterns for trips in the area and the limited crossings of the Tualatin River.

- Extending 190th Avenue through Cooper Mountain Nature Park to the East-West Collector planned in the South Cooper Mountain Concept Plan. Notwithstanding that the right-of-way acquisition of the land in Cooper Mountain Nature Park may be problematic, such a connection also has Goal 5 resource avoidance threshold issues that render it nonviable. Cooper Mountain Nature Park itself appears to be inventoried by Metro as a Goal 5 resource and it also contains several riparian areas that form the headwaters of McKernan Creek and any connection in this area would be a strongly negative impact on these Goal 5 resources, see Appendix 7. Such a new connection would also encourage even more regional traffic to use SW Miller Hill Road and other routes through fully urbanized residential neighborhoods. This could create significant impacts in existing developed areas which are not consistent with the adopted planning for these areas.

- Widening 175th to 5+ lanes. There are both economic dislocation issues and constructability

issues that would make this alternative problematic. To have significant transportation benefits the "kink" in 175th would need to be removed entirely and the widening would need to extent to SW Rigert Road. The segment between SW Kemmer Road and SW Rigert Road is the most problematic. There is not enough space between the existing residential communities for a significant wider facility. In other words, multiple houses would need to be removed for a 5+ lane roadway cross section in this area, which represents an unacceptable level of economic dislocation. Furthermore, completely removing the "kink" with a 5+ lane roadway would likely involve complete acquisition of multiple properties. A 5+ lane roadway in this location is challenging topographically and would be extremely impactful to the existing community.

- Widening of Grabhorn Road to 5+ lanes. To capture meaningful portions of the regional travel demand, the widening would need to connect between SW Tile Flat Road and SW Farmington Road. The section between SW Stone Creek Drive and Nancy Lane has several homes where the proximity of the residence in relation to the aggregate pit is less than 100 feet. A 5+ lane roadway would require a cut-bank on the aggregate pit to shift the widening east (unless these houses were acquired and demolished). Even more problematic are the Goal 5 resource impacts on the segment between SW Gassner Road and SW Farmington Road. Widening to even three lanes in this location may prove difficult because of impacts to the Jenkins Estate, which is on the National Register of Historic Places. Furthermore, widening to 5+ lanes would likely require the removal of numerous large trees that line Grabhorn Road along the Jenkins Estate Goal 5 Historic Resource property which would cause a strong negative impact to this Goal 5 resource. This option exceeds economic dislocation and Goal 5 resource avoidance thresholds.

4.2 Baseline Alternative (financially constrained & expected projects)

One of the two alternatives advanced for detailed evaluation is termed the *Baseline Alternative*. The Baseline Alternative is what is likely or reasonably expected to occur for future transportation improvements in the area. These facilities and improvements are those for which funding is expected during the planning horizon. No Goal Exceptions are required for these improvements to occur. The purpose of the baseline alternative is to determine adequacy of the currently planned and expected facilities and improvements to meet future transportation needs.

4.2.1 Baseline Alternative Description

The Baseline Alternative includes the following list of roadway improvements assumed to be completed in the area:

Committed Funding (includes funding source, estimated completion year):

- Widening of 175th Avenue south of Alvord Lane to 5-lanes (MSTIP High-Growth, 2018)
- Widening of Roy Rogers Road to 5-lanes between Scholls Ferry Road and UGB, just south of Bull Mountain Road (MSTIP High-Growth, 2020)
- Widening of 198th Avenue to 3-lanes between TV Highway and Farmington Road (MSTIP 3d, 2020)
- Widening of 209th Avenue to 5-lanes between TV Highway and Kinnaman Road (MSTIP 3e and MSTIP High-Growth, 2021)
- River Road paving and striping improvements between Scholls Ferry Road and Farmington Road (Road Maintenance Program, 2018-19)

New Urban Areas (Funding Strategies, including MSTIP High-Growth, Supplemental SDC's, and Development):

- South Hillsboro Concept Plan roadways (South Hillsboro supplemental SDC):
  - Cornelius Pass Road extension south to Rosedale Road as 5-lanes
  - Blanton Road extension west from 209th Avenue to Century Boulevard as 3-lanes
  - Century Boulevard/229th Avenue improvement to 3-lanes between TV Highway and Rosedale Road
  - Widening of Kinnaman to 3-lanes between 198th and 209th (MSTIP High-Growth)
  - Kinnaman Road extension west from 209th Avenue to Century Boulevard as 3-lanes
  - Murphy Lane improvement and 3-lane extension west from 209th Avenue to Century Boulevard
- South Cooper Mountain Concept Plan roadways (SCM Supplemental SDC):
  - Widening of Scholls Ferry Road to 5-lanes between Roy Rogers/175th and South Cooper Mountain North-South Collector (MSTIP High-Growth)
  - Widening of Scholls Ferry Road to 3-lanes between South Cooper Mountain North-South Collector and Tile Flat Road (MSTIP High-Growth)
  - Widening of Tile Flat Road between Scholls Ferry Road and UGB to 3-lanes (MSTIP High-Growth)
  - North-south collector between Scholls Ferry Road and East-west collector as 3-lanes
  - East-west collector between Tile Flat Road and 175th Avenue as 3-lanes
- River Terrace Concept Plan roadways (River Terrace Supplemental SDC):
  - River Terrace Boulevard between Barrows Road and approximately 3,200 feet south of Bull Mountain Road as 3-lanes
  - Jean-Louise Road between Roshak Road and Roy Rogers Road as 3-lanes

Projects Included in the Financially Constrained Regional Transportation Plan (based on 2018-2027 RTP Projects) No funding specifically identified:

- Widening of Farmington Road to 5-lanes between 170th and 185th Avenue
- Tualatin-Valley Highway Corridor Safety and Access to Transit (209th Avenue to 107th Avenue)
- Widening of Roy Rogers Road to 5-lanes between just south of Bull Mountain Road (UGB) and OR 99W
- Widening of Blanton Road to include sidewalks and turn lanes between 198th and 209th Avenue

4.2.2 Baseline Alternative in Relation to Thresholds

The baseline alternative (2018 Financially Constrained RTP) points out the need for additional transportation facilities and services in the area based upon the following:

- **TRANSPORTATION FACILITY PERFORMANCE STANDARDS:** The graphics in Appendix 5 shows that numerous road segments exceed the applicable adopted performance standards. These pages directly compare the Baseline alternative to the Tile Flat Road extension alternative. Numerous segments in the Baseline alternative, particularly on SW Roy Rogers Road, have a volume to capacity ratio (V/C) that exceeds performance standards. The addition of the SW Tile Flat extension would allow multiple segments to meet performance thresholds.

- **COST AND CONSTRUCTABILITY THRESHOLDS:** The SW Tile Flat Extension is expected to have higher

costs than the baseline alternative. The baseline alternative is expected to be cost effective and can be constructed through relatively standard implementation.

- **ECONOMIC DISLOCATION THRESHOLDS:** The Tile Flat Road extension will cause economic dislocation that is greater than the baseline alternative because the Tile Flat Road extension is in addition to all the improvements identified in the baseline alternative.

- **GOAL 5 RESOURCE AVOIDANCE:** The Tile Flat Road extension will cause some impacts to Goal 5 resources because several small streams and drainages would be crossed by the project. The alternative will likely have some Goal 5 impacts, but on whole, the impacts appear to be generally modest and likely mitigatable. See Appendix 6.

- **CONNECTIVITY AND ORIGIN/DESTINATION THRESHOLDS:** The Baseline alternative adds important and beneficial local connectivity in the area (much of this is assumed to occur as part of future development). Ultimately, these are relatively localized connections that do not reduce out of direction travel to a great degree. The meandering of the Tualatin River to the west has resulted in the construction of only four river crossings in a 10-mile distance from Highway 219 all the way to SW Roy Rogers Road (Highway 219, Highway 10 / Farmington Road, Highway 210 / Scholls Ferry Road and Roy Rogers Road). Combined with the need to go avoid impacts to the Cooper Mountain Nature Park and other Goal 5 resources, the north-south road connectivity in the area is very limited. By providing additional options, the Tile Flat Road Extension will increase connectivity in an area which lacks it.

4.2.3 Need for project under Baseline

Because the performance thresholds (V/C ratios) adopted in the Washington County TSP and the 2018 RTP are exceeded on numerous parallel routes in the baseline alternative and because the connectivity benefits of the Tile Flat Road Extension are evident, the Tile Flat Road Extension is needed when compared to the Baseline Alternative.

4.3 Urban Full-Build Alternative with Transit Service Expansion

One of the two alternatives advanced for detailed evaluation is termed the *Urban Full-Build Alternative*. The Urban Full-Build Alternative represents the "maximum" reasonably achievable build-out of the urban street system along with the introduction of transit to the area. No Goal Exceptions are required for these improvements to occur. The purpose of the Urban Full-Build alternative is to determine adequacy of all reasonably possible urban street improvements combined with adding transit service that does not currently exist to the area.

4.3.1 Urban Full-Build Alternative Description

The Urban Full-Build Alternative includes all the projects in the Baseline Alternative and includes the list of roadway improvements below. The economic viability and financial likelihood of these projects is more uncertain than the projects in the Baseline Alternative. The analysis herein is intended to demonstrate that, even with all the 2018 RTP financially constrained projects, plus additional other planned projects, there is still unmet travel demand in the area.

Additional Projects: Projects in the area listed on Washington County TSP, but not in the 2018 RTP financially constrained project list, include:

- Realignment of "kink" in 175th Avenue
- Widening of 175th Avenue between Kemmer Road and Scholls Ferry Road
- Widening of Grabhorn Road to 3 lanes inside the urban area (including improvements of rural curves)
- Widening of Bull Mountain Road to 3-lanes between Roy Rogers Road and Highway 99W

In addition to the above road improvement projects, the Urban Full-Build alternative includes new transit routes and service in the area. Appendix 4 contains a memo explaining the methodology for the transit service expansion in the area. Nothing in this analysis should be construed to mean that TriMet is planning transit in this area or that transit is potentially even a viable and cost-effective in this area. Nonetheless, the regulatory requirements for a Goal Exception require consideration of alternative modes to meet identified travel demand. Therefore, the Urban Full-Build alternative includes a generous assumption about new transit routes in the area and further includes a generous assumption about PM Peak Hour travel demand capture of 6% on roads where the "new" transit service could, theoretically, be provided.

4.3.2 Urban Full-Build Alternative Analysis in Relation to Thresholds

- **TRANSPORTATION FACILITY PERFORMANCE STANDARDS:** Appendix 5 displays the Urban Full-Build Alternative and shows that numerous road segments exceed the applicable adopted performance standards. Numerous segments in the Urban Full-Build alternative, particularly on SW Roy Rogers Road, have a volume to capacity ratio (V/C) that exceeds 1.1. The Tile Flat Road extension alternative shown would bring multiple segments in accordance with performance thresholds. The overall performance of the transportation system is improved with the addition of the Tile Flat Road Extension. SW Roy Rogers Road is projected to meet performance standards with the addition of the SW Tile Flat Road extension. However, 175th Avenue is projected to continue to exceed performance standards by a significant amount. The Tile Flat Road Extension, even when modeled with the Cornelius Pass Road extension, is not projected to resolve all the performance standards issues in the area.

- **COST AND CONSTRUCTABILITY THRESHOLDS:** The Tile Flat Road extension is expected to have higher costs than the baseline alternative but probably not more than the Urban Full-Build alternative, because the improvements are so extensive and the transit service would likely require a large annual subsidy to operate. The Urban Full-Build alternative is not expected to be cost effective from a rough comparative standpoint to the Tile Flat Road extension and some of the implementation is challenging.

- **ECONOMIC DISLOCATION THRESHOLDS:** The Tile Flat Road extension will cause economic dislocation that is greater than the Urban Full-Build alternative because the Tile Flat Road extension is, ultimately, contemplated to be needed in addition to all the improvements identified in the Urban Full-build alternative.

- **GOAL 5 RESOURCE AVOIDANCE:** The Tile Flat Road extension will cause some impacts to Goal 5 resources because several small streams and drainages would be crossed by the project. The Tile Flat Road extension corridor attempts to limit the number of crossings and to accomplish them in as efficient a manner as feasible at this level of analysis. Direct routes (right angles to

the streams) are used wherever possible to limit the area of incursion. These impacts are detailed in Section 7 below.

- **CONNECTIVITY AND ORIGIN/DESTINATION THRESHOLDS:** The Urban Full-Build alternative adds important and beneficial improvements for the area. Ultimately, these do not reduce the need for the Tile Flat Road extension significantly. The meandering of the Tualatin River to the west has resulted in the construction of only four river crossings in a 10-mile distance from Highway 219 all the way to SW Roy Rogers Road (Highway 219, Highway 10 / Farmington Road, Highway 210 / Scholls Ferry Road and Roy Rogers Road). Combined with the need to go avoid impacts to the Cooper Mountain Nature Park and other Goal 5 resources, the north-south road connectivity in the area is very limited. By providing additional options, the Tile Flat extension will increase connectivity in an area which lacks it.

The transportation modeling also depicts a "balanced" rural/urban connectivity benefit from the Tile Flat Road extension when combined with the improvements for the Urban Full-Build of the area. The modeling predicts nearly 1,400 PM Peak Hour trips would utilize the Tile Flat Road extension. This is a connectivity benefit to the rural system. It is also noteworthy that, while the volumes on the parallel urban routes are reduced, congestion is still significant. This indicates the Tile Flat Road extension is not a rural road connection that is directed solely at traffic on the urban system.

4.3.3 Need for Tile Flat Extension under Urban Full-Build Alternative

The Tile Flat Road extension is needed because transportation facility adequacy is exceeded on parallel routes in the Urban Full-Build Alternative and the new connection will improve system performance in the area overall. The Tile Flat Road extension is also needed because the connectivity benefits of the Tile Flat Road Extension indicate the new facility captures a meaningful number of trips that are a mix of rerouted trips from urban and rural facilities, indicating a connectivity benefit to the County's transportation system in this area.

Section 5: Alternatives Analysis Requiring an Exception

After determining that the identified transportation need cannot be practicably accommodated through alternatives not requiring an exception, as shown in the analysis herein above in section 4, analysis of alternatives requiring an exception is regulated by Statewide Planning Goal 2, Part II C(3) and implemented by OAR 660-012-0070(7). The exception analysis shall compare the long term economic, social, environmental, and energy consequences of proposed alternative locations requiring an exception. It shall describe the alternatives and the typical advantages, disadvantages, and consequences resulting from the transportation improvement with measures designed to reduce adverse impacts. The exception analysis also determines net adverse impacts between the alternatives to judge if any alternative has impacts that are substantially more adverse.

5.1 Alternatives Development Process

The alternatives that would require an exception were developed through collaboration between transportation planning staff within the Washington County Long Range Planning Division and the consultant for the goal exceptions analysis, CSA Planning Ltd. The general approach was to evaluate *conservative* alternatives. In other words, to develop scenarios that made relatively generous assumptions about the potential for future transportation facility improvements and services.

The development process for other alternatives requiring an exception also relied, to a significant extent on the letter from DLDC in Appendix 17. This DLCD letter expresses the opinion that the County is not allowed, under applicable rules, to take a goal exception for any new roadway alignment that would traverse Rural Reserves. This opinion limits the geographies of any potential new road alignments to areas either within an Urban Reserve or within a rural area that is "undesignated"; i.e., land that is not designated as Urban Reserve or Rural Reserve.

5.1.1 Geographic Analysis to Develop Alternatives

The alternatives analysis used the study area of the Cooper Mountain Transportation Study as the generalized area to identify and evaluate potential alternatives.

Because the additional connectivity provided by the project is needed to meet projected future travel demands, even after all reasonable urban street and road improvements are assumed to be in place as analyzed above in Section 4, any remaining alternatives would require a goal exception. Because the potential alternatives are limited to lands designated Urban Reserve or "undesignated", connectivity options further to the west of a Tile Flat Road extension are not regulatorily viable, see Appendix 10.

Development of alternatives needed to increase connectivity by connecting SW Tile Flat Road to SW Roy Rogers Road while reducing traffic pressure on the intersection of SW Scholls Ferry Road and SW Roy Rogers Road. The analysis evaluated a broad range of rural conditions including soil productivity (Appendix 8), ownership patterns (Appendix 14), farm units, and farm uses (Appendix 15 and 16).

5.1.2 Alternative Transportation Modes

It was assumed that any of the alternatives requiring an exception would have improvements and facilities that could be utilized by bicyclists and pedestrians and that any facility alternative could be used by transit, even if the development of a new transit route would be unlikely in the rural area.

5.1.3 Traffic Management Measures

The alternatives development process did not identify any traffic management measures that would have any meaningful effect on potential transportation alternatives requiring an exception.

5.1.4 Improvements to Existing Rural Transportation Facilities

Existing rural roads to the west of Tile Flat Road are in Rural Reserves, and thus increasing capacity by adding travel lanes to these roads or construction of new connections to them is precluded (based upon DLCD guidance, see appendix 17). Other than the specific alternatives described below, no other improvements to existing transportation facilities were identified that would address the identified needs for additional road capacity and connectivity.

5.2 Description of Potential Alternatives

Three alternatives were developed that would require an exception. Alternative A is the shortest alignment, ending at SW Bull Mountain Road. The other two alignments, Alternatives B and C, are longer and traverse an identical alignment, with Alternative C differentiated by the timing of the improvements. All three alternatives are depicted in Appendix 1 and reprinted below for reference. The alternatives are as follows:

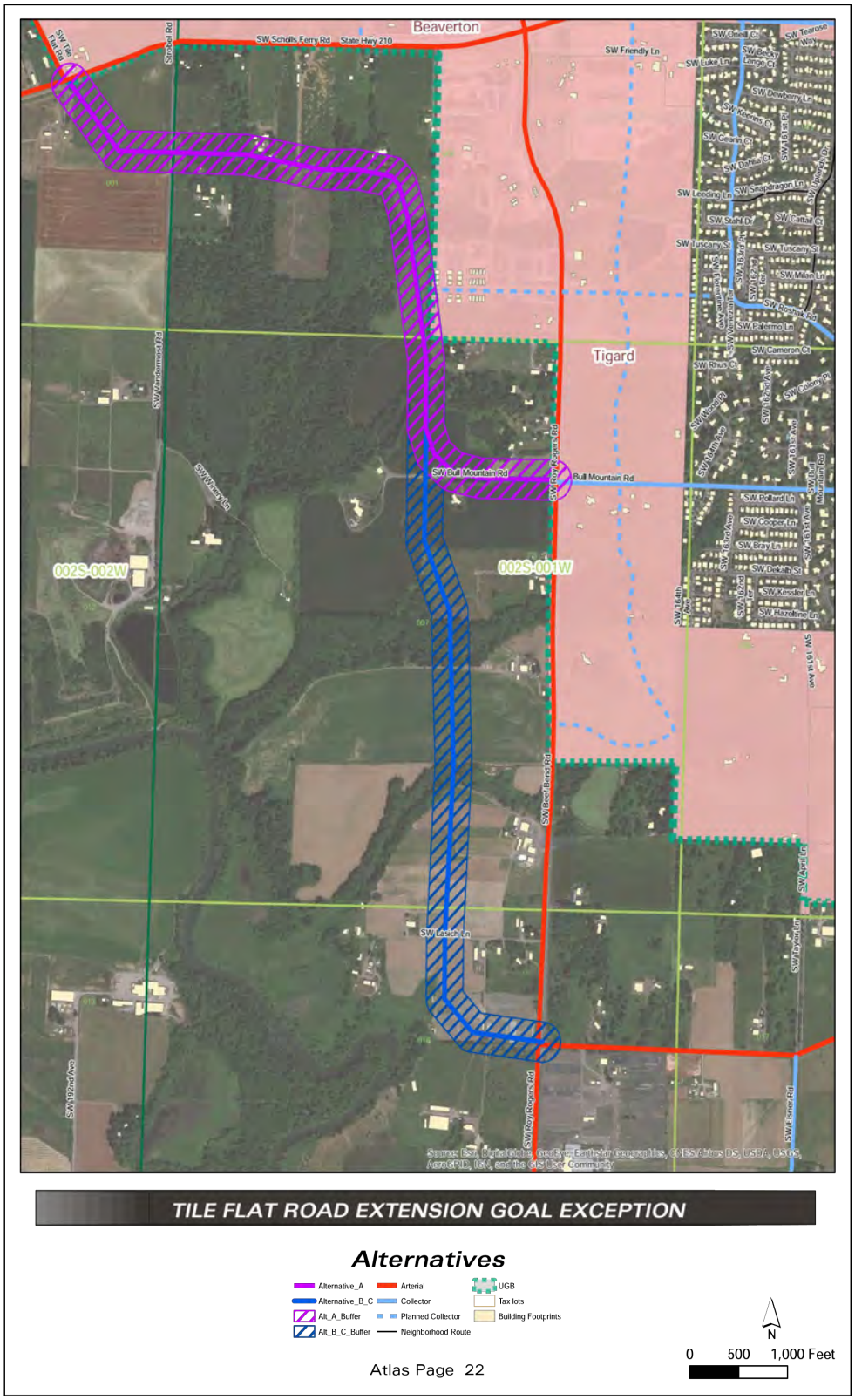
- **Alternative A**: This alternative is the shortest extension. Starting at SW Tile Flat Road,

Alternative A is coincident with the Alternative B and C. Moving south, it follows the same alignment through farms and riparian crossings. Like the Alternative B and C, it connects to SW Bull Mountain Road. Unlike the other alternatives, Alternative A ends at this point and does not continue further south.

- **Alternative B**: This alternative follows the exact same alignment as Alternative C. It begins the same as Alternative A. However, this alternative continues south after the connection with SW Bull Mountain Road, ultimately connecting to SW Beef Bend Road.

- **Alternative C**: This alternative follows the exact same alignment as Alternative B. It differs from Alternative B by providing that the long-term facility needs be evaluated through a future process including consideration of urban reserves included within the urban growth boundary and inclusion in the financially constrained RTP.

All alternatives extend SW Tile Flat Road, and the alignment through the rural properties is the same for the alternatives for the portions of the corridors they share. The alternatives have different transportation benefits and different implications for rural lands.


Beaverton
Tigard
Bull Mountain Rd
SW Bull Mountain Rd
SW Schollls Ferry Rd
State Hwy 210
SW Friendly Ln
SW Scholls Ferry Rd
SW Roy Rogers Rd
SW Beef Bend Rd
SW Lasich Ln
SW Strobel Rd
SW Tile Flat Rd
SW Pollard Ln
SW Cooper Ln
SW Bray Ln
SW Kessler Ln
SW Hazelbrook Ln
SW Cameron Ct
SW Palermo Ln
SW Tuscany St
SW Milan Ln
SW Leeding Ln
SW Snapdragon Ln
SW Dewberry Ln
SW Luke Ln
SW Greer Ct
SW Dahlia Ct
SW Cedar Ct
SW Becky Lange Ct
SW Tearaway Way
002S-002W
002S-001W
Source: Esri, Maxar, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
TILE FLAT ROAD EXTENSION GOAL EXCEPTION
Alternatives
Alternative_A
Alternative_B_C
Alt_A_Buffer
Alt_B_C_Buffer
Arterial
Collector
Planned Collector
Neighborhood Route
UGB
Tax lots
Building Footprints
N
0
500
1,000 Feet
Atlas Page 22

5.2.1 Alternative A

This alternative has the least impact on rural lands but it also has the least transportation benefits. The alternative connects to SW Bull Mountain Road but does not extend further south. As compared to Alternative B and C, this alternative results in greater congestion along SW Roy Rogers Road and at the key intersection of SW Roy Rogers Road and SW Scholls Ferry Road. It does less to bring transportation facilities into conformance with performance standards. It does avoid bisecting two large farms and one medium sized farm and requires three fewer riparian crossings than Alternative B or Alternative C. Appendix 5 displays V/C ratios and volumes of this scenario.

5.2.2 Alternative B

This alternative travels through the exact same alignment as Alternative A but continues further South to connect to SW Beef Bend Road as well as SW Bull Mountain Road. This additional extension requires impacting 3 additional farm properties and 3 additional riparian crossings as compared to Alternative A. The transportation benefits to Alternative B substantially improve conditions from Alternative A particularly along Roy Rogers Road. Unlike the Alternative C, Alternative B would construct the corridor south of SW Bull Mountain Road to SW Beef Bend Road with no further actions to confirm expected impacts or benefits. Instead, Alternative B contemplates construction of the entirety of the corridor as one or multiple phases based upon the current projected future needs. The anticipated performance of Alternative B is identical to Alternative C.

5.2.3 Alternative C

This Alternative traverses through the exact same alignment as Alternative B, and impacts the same farms, riparian crossings, and residences. It differs from Alternative B in the potential timing of its execution. Alternative C would require a future analysis to confirm that the facility performance projected in this goal exception document. The analysis would be performed when funding for the project is expected (i.e., funding identified, or the project has been added to the Metro RTP Financially Constrained Project List). Such an analysis should consider any future conditions that are different than the assumptions in this document, including: changes in the UGB line, regional growth forecast, travel forecasts, land use, farm practices or otherwise relevant assumptions. The analysis could involve a more detailed traffic analysis (i.e., Simtraffic and Synchro modeling or equivalent) to determine projected facility performance with and without connection between SW Bull Mountain Road and SW Beef Bend Road.

5.3 Description of Rural Lands and Farm Uses in Alternatives Area

CSA Planning inventoried and analyzed the rural land uses in and around the area between SW Tile Flat Road and SW Elsner Road south of SW Beef Bend Road. The inventory methodology utilized Google Earth images, NRCS soils data and field data collection. The inventory of farm uses was based upon the best available and readily obtainable data.

5.3.1 Soils Productivity and Irrigation

Soils in the area are depicted in Appendix 8. The mapped soil classification and productivity analyses assume soils are irrigated. CSA's analysis indicates that many farm uses in the area do not require irrigation, such as grass seed. Research also indicates that irrigation can generally be obtained from irrigation districts if it is required. Using the classification for irrigated soil productivity for all soils is a conservative approach in areas where acquisition of irrigation, even where it may not currently exist, is possible and economic. Soils in the area are primarily Class II agricultural soils with a substantial area of

Class III and smaller sections of Class I, IV, and V agricultural soils.

5.3.2 Farm Uses

A memo fully explaining the methodology for determining farm and forest uses can be found in Appendix 15. The area is a patchwork of farm and forest uses, intermixed with open space, riparian areas, and residences. At the intersection of SW Tile Flat Road and SW Scholls Ferry Road is a Christmas tree farm and hay field, surrounded by properties planted in grains or featuring small woodlots and open space. Further east, towards Tigard, are more woodlots and open space, intermixed with residences and a small orchard. Most of these properties in the northern portion of the corridor are between 5 to 20 acres in size. After turning south, the corridor goes through generally larger lots that range from 5 to up to 80 acres. Many of these properties are occupied by hay or alfalfa fields, rotated crops, or pasture. There is also a mixture of residences, open space, and farm accessory buildings.

5.3.3 Forest Uses

Forest uses in the area are small in scale and are limited to a minor woodlot uses on a pair of properties (Taxlots 2000 and 2100) along SW Scholls Ferry Road. Both cut approximately ~13 acres of timber in 2016 and 2018 respectively. Aerial photos do not show signs of replanting or continuing management for timber harvest.

5.4 ESEE Consequences of Alternatives Requiring an Exception

The ESEE analysis below identifies the potential consequences, positive and negative, associated with the three alternatives. The analysis is presented as a comparison to Alternative C because Alternative C is a form of *hybrid* between A and B, so the ESEE comparison to the alternatives on *either side of* Alternative C makes the ESEE somewhat less complex to understand.

5.4.1 Economic

Tile Flat Road Extension		*Alternative A*	*Alternative B*	*Alternative C*
Economic Consequences	Farm and Forest Impacts	Positive – Two large farms (75+ acres) and one medium sized farm remain intact and able to operate without impediment	Slightly Negative – Bisects two large farms and one medium sized farm and creates new road crossing for several others	Would bisect same farms as Alternative B if Project Development indicates short-term need, if not potentially allows for additional time to farm, but would introduce some uncertainty as to future timing of farm impacts. Negative when compared to Alternative A. Slightly positive when compared to Alternative B
	Transportation Facility Performance	Negative: Vehicle congestion on SW Roy Rogers is highest, with some sections exceeding performance thresholds. Regional transportation network operating to standards is important for the economy of Washington County.	Neutral: SW Roy Rogers Road would operate according to performance thresholds, reducing congestion	SW Roy Rogers Road would operate according to performance thresholds, analysis may indicate there is not short-term need for the south half of the extension. Positive when compared to Alternative A. Neutral when compared with Alternative B
	Cost and Constructability	Slightly Positive: Similar in difficulty and complexity to other Alternatives but would be shorter and less expensive.	Neutral: Longer than Alternative A and would have one additional intersection with SW Roy Rogers Road.	Slightly Negative when compared to Alternative A. Neutral when compared with Alternative B
	Economic Dislocation	Positive: Shortest route that generally follows the edges of properties resulting in the least acreage being affected. Corridor would overlap or change access for up to 17 lots.	Slightly Negative: More acreage disrupted by additional required ROW acquisition, would overlap or change access for an additional 7 lots.	Similar consequences as Alternative B if analysis indicates a short-term need, potentially allows for additional time for impacted owners to adjust but would introduce some uncertainty on timing of impacts. Negative when compared to Alternative A. Slightly positive when compared to Alternative B
	Goal 5 Resource Impacts	Positive: Would cross three fewer riparian areas than other Alternatives.	Negative: Would cross three additional riparian areas than Alternative A.	Similar consequences as Alternative B. Negative when compared to Alternative A Neutral when compared to Alternative B.
	Connectivity and Functional Classification	Negative: Would create fewest connections to SW Roy Rogers Road and connecting routes, would result in greatest congestion and delay.	Neutral: Creates improved connections to SW Roy Rogers Road and will have fewer negative congestion externalities.	Creates same improved connections as Alternative B, but timing is related to future need being demonstrated. Positive when compared to Alternative A. Neutral when compared with Alternative B.

5.4.2 Social

Tile Flat Road Extension		*Alternative A*	*Alternative B*	*Alternative C*
Social Consequences	Farm and Forest Impacts	Slightly Positive: Farms would be least impacted, reducing negative effects on rural character and aesthetic.	Slightly Negative: Additional Right-of-Way dedication would impact additional farms, leading to a reduction in green space and rural nature.	Same impacts as Alternative B, Additional Right of Way dedication would impact additional farms, leading to a reduction in green space and rural nature. Slightly Negative when compared to Alternative A. Slightly Positive when compared to Alternative B.
	Transportation Facility Performance	Negative: Vehicle congestion on Roy Rogers Road is highest, with sections exceeding performance thresholds. More people would spend more time in vehicles and the slow-moving traffic would detract from the rural aesthetic	Neutral: Facility performance improved for most roads in the area, with a few roads declining slightly.	Same impacts as Alternative B, facility performance improved for most roads in the area, with a few roads declining slightly. Positive when compared to Alternative A. Neutral when compared with Alternative B.
	Cost and Constructability	Positive: The road segment is shorter, and therefore, less expensive and will impact fewer properties.	Slightly Negative: More properties would potentially be impacted sooner, requiring additional ROW acquisition costs.	Similar impacts to Alternative B, but analysis may push impacts to some properties between Bull Mountain and Beef Bend to the future, allowing for longer rural use. Negative when compared to Alternative A. Slightly Positive when compared to shortening with Alternative B.
	Economic Dislocation	Positive: Residences and farms south of SW Bull Mountain would not be adjacent or immediately impacted by a new roadway, reducing the aesthetic, noise, and rural impact. Allows for continued use of properties as foreseen by the County Comprehensive plan and zoning.	Slightly Negative: Additional right of way may be required sooner, bringing a road closer to existing farms and residences, reducing the rural aesthetic quality of the area.	Same impacts as Alternative B, but potentially allows for additional time for farming and rural life but would introduce some uncertainty of the timing of impacts. Negative when compared to Alternative A. Slightly Positive when compared to Alternative B.
	Goal 5 Resource Impacts	Slightly Positive: Reduced impacts to aesthetic or recreation impact to the natural resources by requiring three fewer riparian crossings.	Neutral: Crosses the three additional riparian areas on private land (when compared to A) as does Alternative C	Similar impacts as Alternative B, crosses three additional riparian areas on private land. Slightly Negative when compared to Alternative A. Neutral when compared to Alternative B.
	Connectivity and Functional Classification	Negative: Commuters would be most delayed and must travel additional mileage to reach destinations.	Neutral: Same ultimate connectivity and planned functional classification as C.	Reduces congestion and delay in comparison to Alternative A and matches B, analysis may indicate no short-term need for the extension to SW Beef Bend. Positive when compared to Alternative A. Neutral when compared to Alternative B.

5.4.3 Environmental

Tile Flat Road Extension		*Alternative A*	*Alternative B*	*Alternative C*
Environmental Consequences	Farm and Forest Impacts	Positive: Least amount of farmland impacted, fewest trees and landscaping impacted.	Slightly negative: Would add impervious surfaces and require removal of trees and impact farms potentially sooner than Alternative C.	Similar to Alternative B, would add impervious surfaces and require removal of trees, but may be delayed south of Bull Mountain Road. Negative when compared to Alternative A. Slightly Positive when compared to Alternative B
	Transportation Facility Performance	Negative: Congestion would be highest and capacity lowest.	Neutral: Facility performance would be improved compared to Alternative A, and the same as C when the full-build is constructed.	Same impacts as Alternative B, facility performance improved for roads in the area and if analysis indicates short-term need, would provide the most cost-effective facility performance. Positive when compared to Alternative A. Neutral when compared to Alternative B
	Cost and Constructability	Positive: Has fewest costly riparian crossings	Neutral: Has most riparian crossings, requiring greater expense	Same impacts as Alternative B, would require most riparian crossings but construction could be delayed. Negative when compared to Alternative A. Neutral when compared to Alternative B.
	Economic Dislocation	Slightly Positive: Least amount of land impacted, fewest trees and landscaping impacted.	Neutral: Would add impervious surfaces and require removal of more trees.	Similar to Alternative B, would add impervious surfaces and require removal of more trees. Slightly negative when compared to Alternative A. Neutral when compared to Alternative B.
	Goal 5 Resource Impacts	Positive: Crosses three fewer riparian areas and less Upland Habitat.	Neutral: Crosses the same six riparian areas and Upland Habitat as Alternative C.	Crosses six riparian areas and more Upland Habitat areas than Alternative A. Negative when compared to Alternative A. Neutral when compared to Alternative B.
	Connectivity and Functional Classification	Negative: Increased out of direction travel caused by travelers avoiding congestion on SW Roy Rogers Road will increase VMT and thus GHG emissions.	Neutral: Least amount of out of direction travel and VMT.	Least amount of out of direction travel and VMT. Positive when compared to Alternative A. Neutral when compared to Alternative B.

5.4.4 Energy

Tile Flat Road Extension		*Alternative A*	*Alternative B*	*Alternative C*
Energy Consequences	Farm and Forest Impacts	Slightly Positive: Two large and one medium farm uses not required to cross new roadway created by extension, can farm more efficiently	Slightly negative: Two large and one medium sized farms would be bisected by road extension, thus making operations less efficient.	Same impact as Alternative B, but analysis may push impacts to some properties between Bull Mountain and Beef Bend to the future, allowing efficient farming for a longer period. Slightly Negative when compared to Alternative A. Slightly Positive when compared to Alternative B.
	Transportation Facility Performance	Negative: Congestion on road system highest due to less capacity and reduced connectivity. More of the road system exceeds thresholds for performance.	Slightly Negative: Facility performance improved for more roads, with a few roads declining slightly.	Facility performance improved for more roads, with a few roads declining slightly but energy to construct full improvement would coincide with short-term need. Positive when compared to Alternative A. Slightly Positive when compared to Alternative B.
	Cost and Constructability	Slightly positive: Similar in difficulty and complexity to creating a longer connection, but only ~1.5 miles in length and requires three fewer riparian crossings.	Slightly Negative: ~2 1/3rd miles in length with six riparian crossings.	2 1/3rd miles in length with six riparian crossings, energy to construct full improvement would coincide with short-term need. Somewhat Negative when compared to Alternative A. Somewhat Positive when compared to Alternative B.
	Economic Dislocation	Positive: Residences south of Bull Mountain would not have an additional road crossing, requiring less delay and the least amount of roadway constructed	Neutral: Requires that more roadway be constructed, which is a fundamentally energy intensive process, and would potentially require additional crossing by some residents to reach their homes	Requires that more roadway be constructed, which is a fundamentally energy intensive process, and would potentially require additional crossing by some residents to reach their homes Negative when compared to Alternative A Neutral when compared to Alternative B
	Goal 5 Resource Impacts	Neutral: Minimal Goal 5 energy impacts	Neutral: Minimal Goal 5 energy impacts	Similar consequences as Alternative B, but few expected energy consequences from Goal 5 Resource impacts. Neutral when compared to Alternative A. Neutral when compared to Alternative B
	Connectivity and Functional Classification	Negative: Most out of direction travel, increasing VMT and fuel usage. Insufficient capacity on SW Roy Rogers Road increases congestion.	Neutral: Least amount of out of direction travel and VMT.	Least amount of out of direction travel and VMT. Positive when compared to Alternative A. Neutral when compared to Alternative B.

5.5 Determination of Net Adverse ESEE Impacts without Targeted Mitigation

5.5.1 Economic

- Less transportation facility benefits from Alternative A, more from Alternative C
- Alternative A likely to induce most VMT and additional out of direction travel compared to other Alternatives
- Alternatives B and C have most connectivity benefits
- Alternative A has fewest negative farm and dislocation economic impacts

The least transportation benefit comes from Alternative A. This option would involve a large capital expenditure but result in more facilities that do not satisfy performance standards, do less to ameliorate performance issues for existing transportation facilities, and impose the greatest congestion costs. SW Roy Rogers Road would continue to be above performance thresholds on more sections. It would do the least to lessen congestion on a County designated freight route. The viability of the regional road network depends on adequate facilities, and Alternative A would do the least to provide them. It would also provide less connectivity benefits, which are important in an area lacking a robust network of north-south connections. The farm and forest impacts and economic dislocation of this option are likely to be the least but benefits to a limited quantity of properties is outweighed by regional costs and less regional benefit resulting from the properties that are still impacted.

Alternative B would offset congestion to a similar level as Alternative C. It would have the greatest negative farm and forest impacts, as there is no necessary delay for right-of-way acquisitions and construction of the southerly portion of the extension.

Alternative C will likely provide the greatest net economic benefits to Washington County. It results in improved level of performance for transportation facilities while providing the greatest connectivity benefits and least out of direction travel. Alternative C will provide more certainty for positive impacts. If, at a future date, the full extension to SW Beef Bend Road is not necessary to meet shorter-term transportation needs then the full extension could continue to be delayed. The farm and forest activities to continue to operate and would ameliorate such impacts until the improvements are underway. The drawback to this approach is introducing additional uncertainty to the same property owners. However, on balance, it is likely that such an analysis and potential delay is of more benefit to property owners than not.

5.5.2 Social

- Alternative B has greatest negative social impacts, Alternative A has the least
- Alternative C has many of the same ultimate negative impacts as Alternative B, but some of them may be delayed
- Least number of properties, both farms and dwellings, are affected by Alternative A

Alternative A will have the least adverse impact on properties and fewer social consequences for rural properties. Unlike Alternatives B and C, Alternative A will avoid bifurcating two large and one medium sized farm properties, impacting the farm activities. Alternative A will also avoid impacting access to properties using SW Lasich Lane. This option would, however, have a negative impact on connectivity and travel times as congestion rises on SW Roy Rogers Road with negative social consequences caused by travel delays for many travelers.

Alternative B would have greater adverse impacts to the rural character of the area when compared to the Alternative A, and a slightly more adverse impacts in relation to Alternative C. Alternative B would need more right-of-way to be acquired than Alternative A, which in turn would mean the reduction of fields, removal of trees, and impacts to local farms and residences. Alternative B option will have less out of direction travel that will reduce commute time.

Alternative C will affect the same farms and fields as Alternative B, but the impacts may be delayed. This delay may allow for the continued use of the large and medium farms, if the analysis does not show a short-term need for the full extension to SW Beef Bend Road.

5.5.3 Environmental

- Greatest direct property environmental impacts from Alternative B and C, as most trees, landscaping, dwellings, and fields would be impacted
- Alternatives B and C have least connectivity and congestion related environmental impacts
- Alternative A has fewest environmental impacts

Alternative A is expected to have fewer environmental consequences when compared to the other two alternatives. Fewer trees, landscaping, established homes, and fields would be demolished or removed to make way for the roadway. Alternative A also has three fewer riparian crossings. It would, however, have the greatest VMT and most congestion, and thus, be expected to cause the highest greenhouse gas (GHG) emissions of any of the three alternatives.

Alternatives B and C would have greater adverse impacts to the environment of the area when compared to the shorter alternative. Additional impervious surface would be created and more trees and landscapes would be altered or removed. Three additional riparian crossings, for a total of six, would be required by either alternative. Both Alternative B and C are expected to have about the same impact, as a delay of construction of Alternative C is not expected to significantly lessen long-term environmental consequences.

5.5.4 Energy

- Alternative A has significant adverse energy impacts created by additional out of direction travel when compared to Alternatives B and C.
- Alternative B and C have greatest positive impacts. Both Alternatives would save approximately 0.4 miles in trip length plus additional vehicle idling time for travelers going north to south.

Alternative A will have the most adverse energy impact of the three options. Any efficiency gains to the farms not directly impacted by this option would be greatly outweighed by the loss in performance on existing transportation facilities and additional out-of-direction travel required by travelers to reach their destinations.

Alternative B and C will have the less adverse energy consequences. System performance would be improved resulting in less vehicle idling and less out-of-direction travel, and thus, be the more fuel-efficient alternatives. Between the two, Alternative C is expected to have slightly more positive impact because the delay will add certainty to the quantity of energy benefits and may allow construction to occur at an optimal time. Although there is likely additional cost added if the southerly portion of

Alternative C is constructed later, it is expected that the benefit of the delay would make up for negative cost externalities.

5.6 Targeted Mitigation Strategies

The net adverse ESEE consequences between the alternatives are mixed without mitigation measures to reduce impacts. The actual amount of additional farmland devoted to the future right-of-way for Alternatives B and C is relatively modest, at a little under 13 acres. As a proportion of the farms it crosses, it is a small fraction of arable land. The differences in negative social and environmental impacts of the direct connection to SW Beef Bend Road results partially from this loss of farmland, but more from the potential bifurcation of existing farm units. The Goal Exception analysis includes the following mitigation measures to reduce and mitigate impacts associated with the Tile Flat road extension directly to Beef Bend Road, as follows:

1) Where feasible, locate the new right-of-way along existing property boundaries. This minimizes or eliminates problems associated with separating or bifurcating farm units.
2) Construct Farm-Access Road. Farm crossings of roads are common throughout Oregon. However, specific design considerations can reduce or minimize impacts. Where the bifurcation of a farm unit occurs, mitigation could include the construction of an access specifically designed to allow movement of farm vehicles across the road and warn traffic of the crossing with appropriate signage and sight distance.
3) Facilitate the exchange of properties. The actual construction of the Cornelius Pass Road extension is anticipated to be many years in the future. This time period provides an opportunity for property exchanges that can align farm ownerships with the future right-of-way where the bifurcation of a farm unit is anticipated. If adjacent landowners wish to exchange properties to reconfigure farm uses in cohesive units, Washington County could identify opportunities for exchanges as a part of the project design and engineering phase to align ownerships with the future right-of-way.

5.7 Determination of Net Adverse ESEE Impacts with Targeted Mitigation

Due to the regulatory constraints caused by the Rural Reserve designations, the "alternatives" are all similar. As such, the ESEE differences between the alternatives tend to be slight. With the targeted mitigation measures recommended above, the initial net ESEE consequences analysis balances in favor of Alternative B or C.

Economic: The net adverse economic consequences caused by congestion and reduced connectivity are higher for Alternative A. Alternative B does not have the additional positives of potentially delayed implementation to potentially allow farming to continue as in Alternative C. Alternative C introduces uncertainty for farmers in the area that may discourage long-term farm investments.

Social: The net consequences of an indirect route for road system users are neutral, or at least not significantly more adverse, with mitigation of the localized social consequences caused by bifurcated farm units.

Environmental: The net consequences of environmental impacts from increased out-of-direction travel and additional congestion offset, to some degree the additional riparian crossing impacts of Alternatives B and C when compared to Alternative A. Therefore,

Alternative A is still slightly positive from an environmental consequences standpoint.

Energy: The net adverse energy consequences caused by congestion and out-of-direction travel are higher for Alternative A. Alternative B does not have the potential delay of additional potential benefits introduced by Alternative C. Alternative C is expected to have slightly more positive impact because the delay will add certainty to the quantity of energy benefits and may allow construction to occur at an optimal time. Therefore, Alternative C is expected to be slightly positive from an energy standpoint when compared to the other two alternatives.

Because the Rural Reserves are so close to the urban area in this location, combined with the Tualatin River, the "alternative locations" for the range of potential transportation solutions is geographically constrained. When the potential alternative locations are so confined, the scale of net consequences from the ESEE analysis is small at the outset of the analysis. Thus, the alternatives are so similar that the ESEE analysis does not yield net consequences that "significantly more adverse" when comparing alternatives.

Because the alternatives are so similar overall, it is expected that any of the three alternatives could be adopted by Washington County leadership because no one alternative is expected to have net ESEE consequences that are significantly more adverse than the other two alternatives. The ESEE analysis presented in this exceptions document is expected to be refined and supplemented through the Article VII land use review process during project development.

Section 6: Rural Lands Analysis

This section analyzes impacts to rural lands to provide an adequate factual basis to satisfy the requirements of OAR 660-012-0070(8). As the entirety of the extension is to occur on EFU designated lands (zoned either AF-20 or EFU), the analysis of potential impacts to rural lands requires an examination of potential impacts to farm and forest lands and an examination of such lands requires an inventory of current land-use patterns, current land uses, and farm and forest capability.

6.1.1 Analysis of Impacts to Rural Lands

This section identifies the source, nature and extent of potential impacts to rural lands.

LAND USE PATTERNS: As evidenced by Appendices 11 and14 the lands within the Tile Flat Road exception corridor are in a variety of parcels or tracts under unique ownership. These range from roughly 1 acre to more than 80 acres in size. The northerly parcels are generally 10 to 20 acres. Much of these northern lots are woodlots, but other uses include Christmas trees, hay, orchards, and more. Said lots are situated along both sides of SW Vandermost Road and adjacent to SW Scholls Ferry Road. The middle portion of the extension, which runs parallel to SW Roy Rogers Road, is less uniform in uses and has a variety of different ownerships that range in size between approximately 2 acres and 80 acres. Large portions of this area are used for hay or other crops. The lower portion of the extension, near the intersection of SW Beef Bend Road and SW Roy Rogers Road, are generally larger lots with several different farm uses. These uses include hay, open space, riparian areas, row crops, pasture, residential, amongst others. At the very southern border of the extension are two unique uses in the extension area. The extension is proposed to run through a lot currently being used as a storage and

staging area for utility construction. Another large property, 132 acres in size, is located at the very southern extreme of the extension and is owned and operated by the US Department of Fish and Wildlife (USDFW), that appears to be primarily open space, along with some storage and offices.

Topography throughout the area is primarily gentle, punctuated by steeper drainages and riparian areas that run into the Tualatin River. The Tualatin river is about 1 mile to the south of where the proposed Tile Flat Road Extension would start. Alternative C would cross six different riparian corridors.

LAND USES AND CAPABILITY: As evidenced by soils data derived from Natural Resource Conservation Service (NRCS), Appendix 8, nearly all lands within the area are Class IV or better with the majority of the lands including soils with a Class II or III capability rating. These ratings indicate the natural soils are generally suitable for being put to productive agricultural use. The one exception are the drainages in the area, which are generally quite steep and classified with a Class VI capability. Water and irrigation rights were inventoried utilizing Oregon Water Resources Department (OWRD) water rights data.

As evidenced in Appendix 9 there are a few properties within the study area that receive irrigation. Generally, according to information published by the Tualatin River Irrigation District, there is ample irrigation water conveyed to and through the area by means of streams and ditches. Arguably, based on land-use designations, proximity and access to water facilities and general availability of water rights in the area, properties that do not currently receive water rights for irrigation could feasibly achieve water rights. However, the same would likely require acquisition and transfer of rights. Given the soils ratings and history of farm practices, all lands throughout the area are considered capable of being put to productive farm or forest use with or without irrigation.

See Appendix 8 (soils), Appendix 9 (Water Rights), Appendix 14 (ownership) and Appendix 11 (land use inventory) for data that depicts current ownerships, soils, irrigation and farm uses occurring throughout the immediately adjacent and nearby areas. While there are large farm parcels in the study area, only one set of parcels may be considered a large commercial farm tract (multiple large contiguous or noncontiguous lots or parcels under the same ownership that are dedicated to commercial farm operations). There are, however, a mix of low-intensive and intensive commercial farm operations occurring throughout. Farm and forest uses identified as occurring throughout the area include the following: Grass Hay; Pasture; Greenhouses; Row Crops; Nurseries; Woodlot; Compost; Vineyard; Firewood; Horse Facilities; Orchard; and Barns with miscellaneous ancillary storage and uses.

FARM AND FOREST PRACTICES: See Appendix 16 for a complete list of practices associated with each farm use occurring within the study area. The focus herein below is geared toward the manner in which the various practices associated with the individual uses may be impacted.

The northerly portion of the extension crosses lands dedicated primarily to woodlots. A segment of the extension crosses or could cross lands dedicated to Christmas trees production and a hay field. It would also run adjacent to or potentially cross a portion of an established

orchard and a residence.

The middle portion of the extension crosses through and adjacent to lands dedicated primarily to hay fields and field crops, along with open spaces and the aforementioned drainages. The extension will also be located between two residences located on SW Bull Mountain Road, although neither are expected to be in the proposed roadway corridor.

The southerly portion of the extension crosses through more field crops and pastureland. It will pass between additional residences located on SW Lasich Lane and run around the edges of USDFW property. No residences are expected to be within this portion of the extension corridor. Finally, the extension will overlap with the lot currently being used as the staging and storage area for utilities work before bending east to meet SW Roy Rogers Road and SW Beef Bend Road.

6.1.2 Adjacent Use Impact Factors

This analysis does not identify exhaustively all potential factors that contribute to whether a farm use or farm operation can or will remain viable. There are a number of factors that contribute to viability of farming. Soil productivity, terrain, irrigation, climate, market, environmental constraints, access, labor, equipment, laws, costs and management are all examples of factors that influence whether lands can be put to farm use and whether said lands will remain in farm use. This analysis of compatibility attempts to isolate the specific influence of a 60-foot right-of-way near or adjacent to particular lands and uses.

The following are ways in which the proposed road extension could potentially negatively impact the farm and forest uses within the area.

1) Direct loss of land. Once land is purchased or dedicated for public right of way, that land will no longer be available for farm or forest uses. This category includes only the land within the right of way. This category could include additional land beyond the 60-foot wide Collector right-of-way if additional easements are needed to accommodate cuts and fills associated with physical construction of the roadway.
2) Bifurcate lands. When a road crosses property, the result is a single unit of land becoming multiple units of land with potentially limited access between the multiple portions. Limited ability or inability to cross the road to access both sides of a farm unit could render portions un-useable or significantly more difficult to use. The amount of negative impact is relative to the limitations on the access, the importance of said lands to the overall farm operation and the amount of land either under production or capable of being made productive. Depending on the severity and amount of land being made unavailable, that loss or negative impact could be limited to that now-unusable portion only or could impact the entire farm operation.
3) Direct buffer beyond the right of way. Depending on the type of operations occurring adjacent to the right of way, the direct negative impacts could potentially extend beyond the right of way. For example, some farm uses require perimeter farm-access roads for equipment to maneuver around the property and crops. If a property with uses that requires perimeter farm-access roads is bifurcated, new and additional farm-access roads will likely be necessary for each resulting portion on both sides of the road, thereby reducing or displacing the crop areas within the farm unit by the amount equivalent to the additional farm access roads.
4) Indirect buffer beyond right of way. Arguably, there is some potential for farm uses to be

negatively impacted for a certain distance beyond the right-of-way due to a variety of factors related to the physical construction of the right-of-way and the ultimate automotive uses on the roads. Such factors may include noise, emissions, vibration, drainage, trespass, and garbage.

The aforementioned categories of impact related to those that are potentially negative. There are also potentially positive impacts that could and may result from the addition of right-of-way through the study area.

1) Exposure: The basic commercial function of farms is to produce a farm product that is ultimately sold[11]. As with many commercial functions, the ability to reach a target market is essential. Additional access that places an increased number of potential customers within view of farm operations provides additional exposure to target market, thereby increasing the number of potential sales for farm products. Some farm uses are more reliant of direct exposure to the public than others. For example, nurseries with an on-site direct retail component has a greater potential to bring-in potential customers versus a farm operation that grows wheat or barley that is shipped and stored in a co-op facility, openly marketed, and sold on the open market.
2) Access: New roads may result in additional or new points of access to property. New or additional points of access may result in enhanced ability to get product to market, enhanced access for customers, and additional access for labor and equipment.

6.1.3 Adjacent Use Compatibility Analysis

Given the land use pattern of the area, it is not feasible to construct the entire road extension along the perimeter of property boundaries. The resulting extension will bifurcate a number of properties and related farm operations.

Within the northerly portion of the study area, the future road corridor will cross nine taxlots, with most subject to some level of bifurcation. A few of these taxlots have owners in common, so it appears that a total of 6 distinct property owners would be affected. The first owner, adjacent to the intersection of SW Tile Flat Road and SW Scholls Ferry Road, has two lots crossed. The first, lot 1500, is currently used for Christmas tree production and is the site of a barn and associated parking. The adjacent taxlot, 1501, will also be crossed. 1501 is currently used in part to produce Christmas trees and in part for hay or grain. To achieve a logical alignment and connections with portions of the future roadway, the extension will begin at the intersection of SW Tile Flat and SW Scholls Ferry Road, where the northern lines of lots 1500 and 1501 meet. To minimize impacts to Goal 5 resources and other properties, the road will then run diagonally towards 1501's southeast corner. This will leave the northeast corner of lot 1500 entirely in the corridor and it will cut off approximately 15 acres of 1501 from the remainder of the property.

To minimize impacts to existing structure and limit additional bifurcation, the corridor continues from the southeast edge of 1501 almost directly to the east. The corridor will cross the southern portion of taxlots 2501 and 2300, which share a common owner. A small part of both lots would be in the corridor and divided from the remainder of the tracts. There appears to be a residence along the southern boundary of taxlot 2501. The extension corridor will then continue east along the property

[11] ORS 215.203(2)(a) "…farm use means the current employment of land for the primary purpose of obtaining a profit in money…"

line between taxlots 2200 and 2201. This alignment would separate lot 2200 from its flag drive. Taxlot 2200 appears to be a mostly steep woodlot and riparian area, with a residence near the flag drive and directly in the corridor.

Continuing east, the road will bifurcate the next property, taxlot 2100. The corridor would follow an existing drive on taxlot 2100 and would skirt an established orchard on the northern half of the lot (the southerly portion appears to be a woodlot). The corridor would then continue east along this drive which appears to have been constructed to cross the next drainage. By following the drive, the road would avoid another completely new drainage crossing.

Proceeding east, taxlot 2000 south of the drive appears to have been a woodlot that was recently harvested, while north of the drive it is primarily pasture. After crossing the existing drainage, the road will begin its turn to the south, bifurcating two more lots, 1901 and 1900. These two lots are owned in common and are used as hay fields, open space, and as a woodlot. The alignment was chosen to allow for a minimal crossing distance at a right angle across the next drainage and accommodate the design of a collector roadway.

As the corridor turns south, it will run along the shared property lines of taxlots 600 (forming the western border) and five taxlots forming the eastern border (500, 400, 301, 601, and 1000 respectively from north to south). Taxlot 600 has a variety of farm uses, including horse facilities, barns, and grass hay or grain production. Approximately 10 of taxlot 600's 80 acres lies within the proposed corridor. In addition, the corridor will cut across the flag drive providing access to the property. Taxlot 500 has barns, an open field or pasture and a residence that located just outside of the corridor. Taxlot 400's area in the corridor appears to be primarily open space, with perhaps a small woodlot. Taxlot 301 and 601 are owned in common and are separated by a flag drive owned by taxlot 600 to the west. The primary use of taxlots 301 and 601 appears to be grass hay or grain production. The corridor then enters taxlot 1000, bending east as it does so, this alignment creates a perpendicular crossing of a riparian area. Approximately 5 ½ acres, or the western quarter, of taxlot 1000 lies within the corridor. Any right-of-way acquisition would result in the bifurcation of a small portion of the property. This area is used primarily for the production of Christmas trees

After exiting taxlot 1000, the corridor crosses another riparian corridor located on taxlot lot 1500 (23-04), which will be bifurcated in half. The corridor runs through open space and a large field used for crops, possibly grass hay or grains. The other uses on the property, including farm buildings, barns, storage, smaller fields, and a residence, are located east of the corridor and unlikely to be directly affected.

Continuing south, the proposed corridor enters taxlot 1401, which contains a residence, and crosses another riparian area at the northern boundary of the property. The two properties to the south and southwest (taxlots 400 and 500) are under the same ownership as 1401 and it is presumed that these three lots act as one farm unit. The corridor will bifurcate both taxlots 1401 and 400. This will result in the total separation of an approximately 22-acre field used for grass hay and the bifurcation of another approximately 31-acre field used for a variety of rotated crops. Both taxlot 500 and 400 will have their primary points of access crossed by the extension.

Moving south, the corridor crosses the final set of taxlots before turning to SW Beef Bend Road. The

corridor cuts across the flag drive for taxlot 603 and 602 to the west before entering taxlot 601. After these flag lot drives, the corridor will bend east on taxlot 601, ultimately exiting the property via the eastern lot line. The portion of the taxlot where the corridor bends east contains a small area mapped as a Goal 5 water resource. Taxlot 601 is split between multiple uses. The southern half of the taxlot is used as a storage yard for a utility construction project. The northern half appears to have a barn and a residence plus a field used for the production of a variety of rotated crops. The corridor will bifurcate the field used for crop production and subsume the majority of the area used for the utility construction project. It is here that the corridor meets its terminus with the intersection of SW Roy Rogers Road and SW Beef Bend Road.

6.1.4 Impact Mitigation Measures

There may be a number of potential ways in which to mitigate negative impacts resulting from the ultimate construction and use of a new 60-foot wide Collector roadway extension through the area. The following are potential measures result in significant reductions in potential negative impacts.

1) Locate right-of-way along property boundaries. This minimizes or eliminates problems associated with separating or bifurcating farm units.
2) Construct Farm-Access Road. Where the bifurcation of a farm unit occurs, mitigation could include detailed design and construction of an access that allows appropriate movement of farm vehicles across the road and warns traffic of the crossing with appropriate signage.
3) Facilitate the exchange of properties. Where the bifurcation of a farm unit occurs, adjacent landowners may wish to exchange properties in order to better manage cohesive units. There are regulatory barriers and expenses associated with land exchanges. PLAs are often utilized as the legal mechanism to facilitate the exchange of lands. PLA's require applications and often surveys. Mitigation could include the payment of professional services, processing fees, and costs associated with qualifying land exchanges.
4) Engineer storm detention and retention facilities to minimize runoff from the roadway to adjacent lands.

Section 7: Goal 5 Resources Analysis for Tile Flat Extension

This section examines any Goal 5 resources likely to be impacted by the Tile Flat Road extension project and provides recommendations on treatment of the Goal 5 issue in the Comprehensive Plan Amendment context.

7.1.1 Wetlands and Riparian Areas

Multiple drainages and riparian areas would be crossed by the proposed Tile Flat extension alternatives. Alternative A crosses three riparian areas while Alternatives B and C cross a total of six separate riparian areas, [12] these sites are shown in Appendix 6. All six riparian corridors that could be crossed by a Tile Flat Road extension are considered as Riparian Class I habitat by Metro. Class I is the highest value riparian habitat.

[12] The Goal 5 Natural Resources Map adopted by Washington County shows 4 distinct areas classified as "Water Area & Wetland and Fish and Wildlife Habitat". However, Metro's publicly available online GIS map shows a total of 6 separate areas classified as Type I Riparian Habitat. In order to be conservative, this Goal Exception assumes that the areas shown on Metro's resources are appropriate number for analysis. Washington County's Community Development Code Section 422 "Significant Natural Resources" applies to areas identified as Regionally Significant Fish & Wildlife Habitat on Metro's current Regionally Significant Fish & Wildlife Habitat Inventory Map.

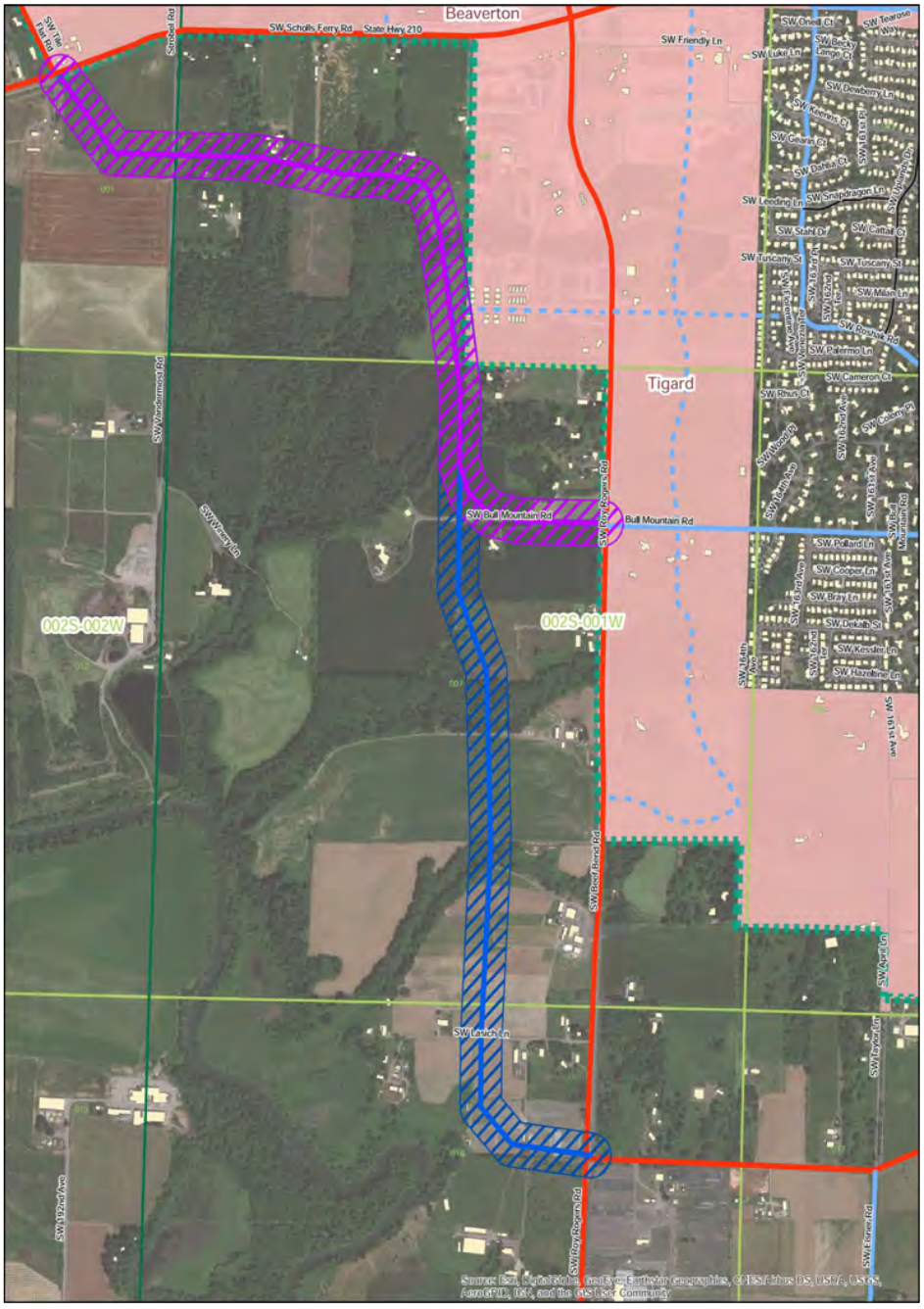
Such crossings are generally permitted by applicable land use regulations for wetlands and riparian areas. Washington County Community Development Code Section 422 "Significant Natural Resources" applies development standards to the riparian areas crossed. Section 422-3.3.A.(1) specifically allows the development of "Crossings for streets, roads or other public transportation facilities." No changes to the adopted protection programs for Wetlands or Riparian areas appear necessary to implement the Tile Flat Road extension project.

However, the proposed corridor design has taken into account the topography and arrangement of Goal 5 Natural resources. The design attempts to limit the number of crossings and to accomplish them in as efficient a manner as feasible at this level of analysis. Right angles are used wherever possible to limit the area of incursion. This has the added benefit of likely reducing the costs of the project when construction occurs.

APPENDIX

Appendix Directory

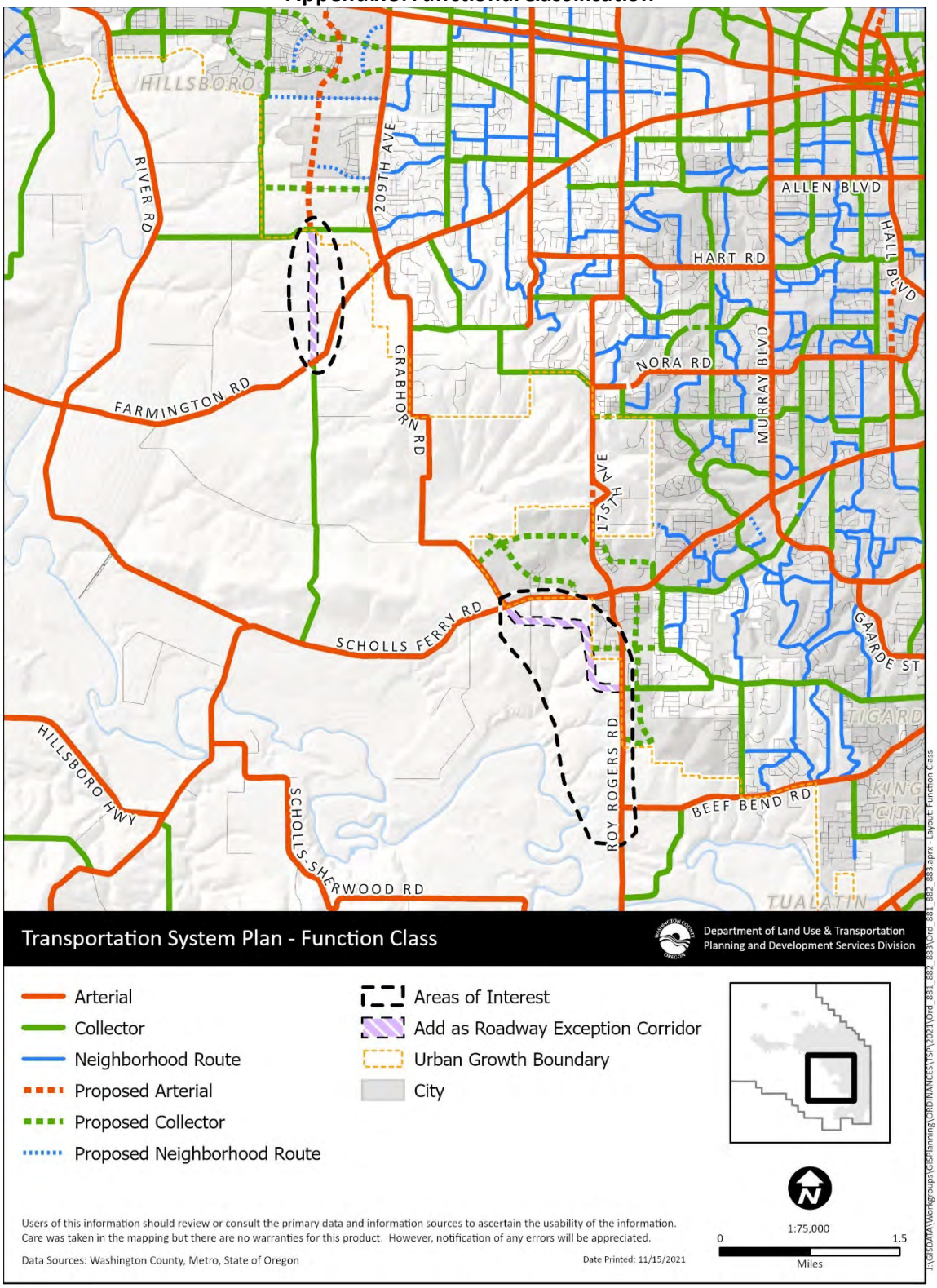
Appendix 1 – Tile Flat Road Extension Alternatives



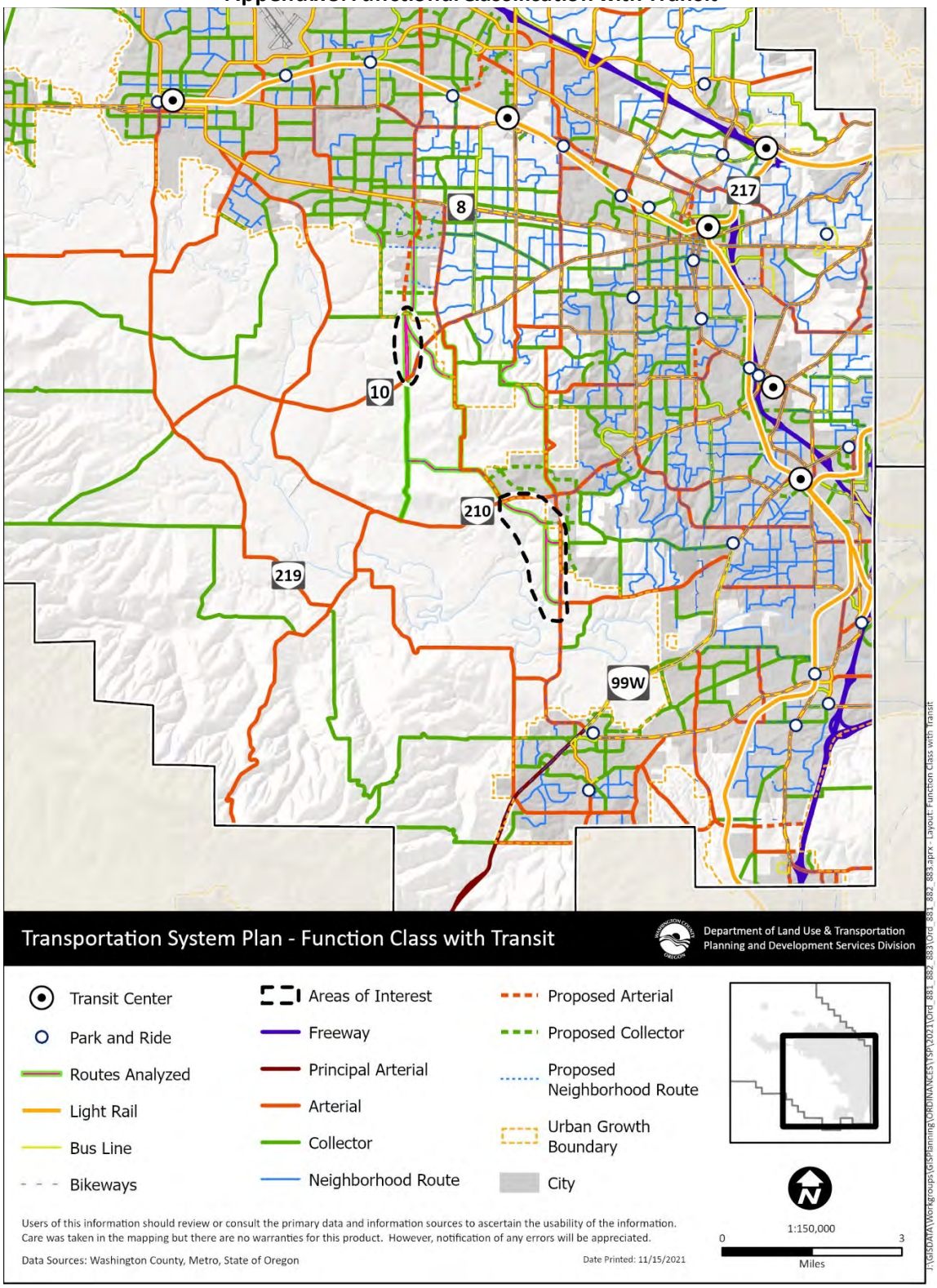
Appendix 2: Washington County – Collector Road Section graphic

<insert collector graphic here>

Appendix 3: Functional Classification



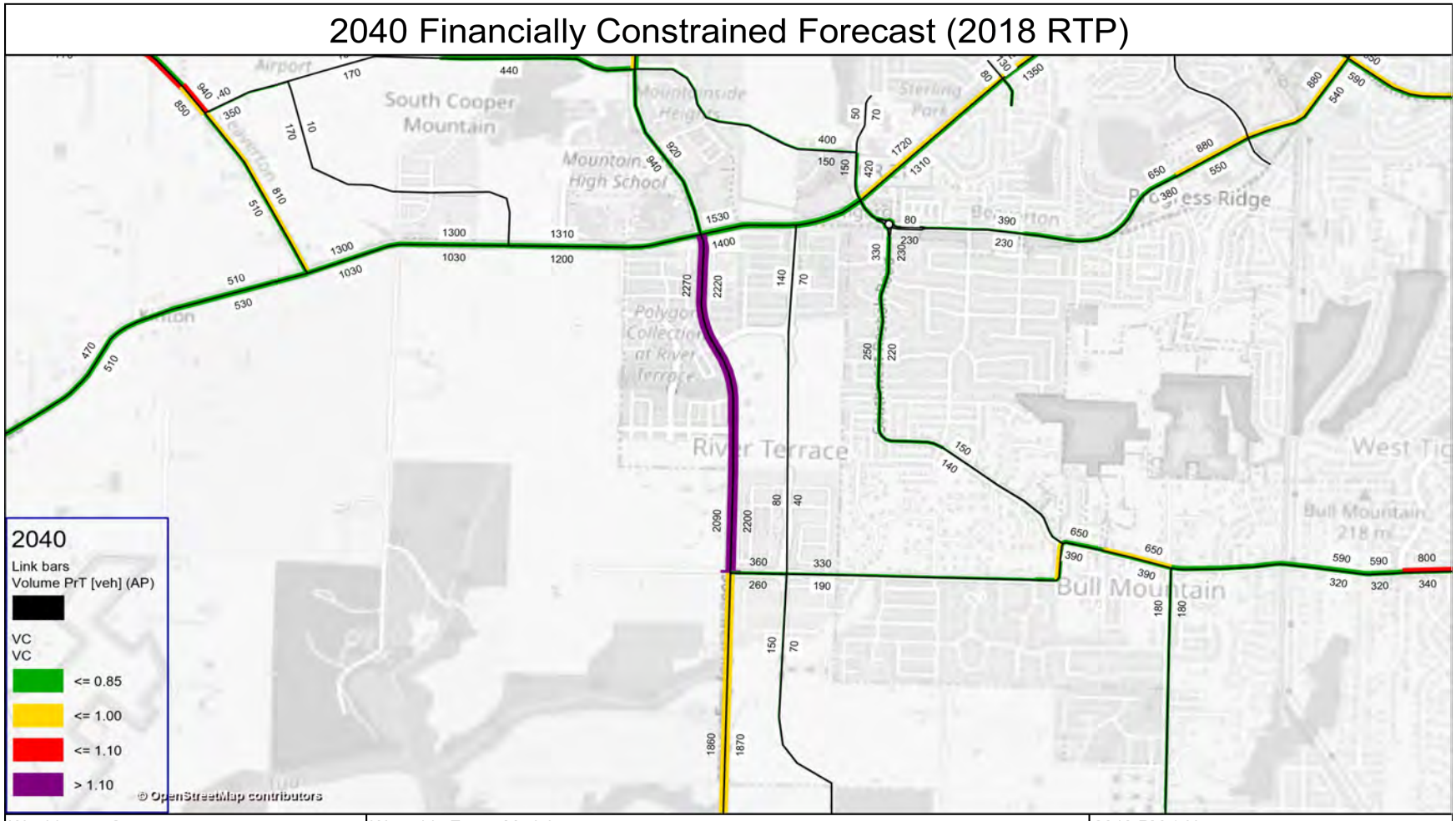
Appendix 3: Functional Classification with Transit



Appendix 4: Potential Cooper Mountain Transit Ridership

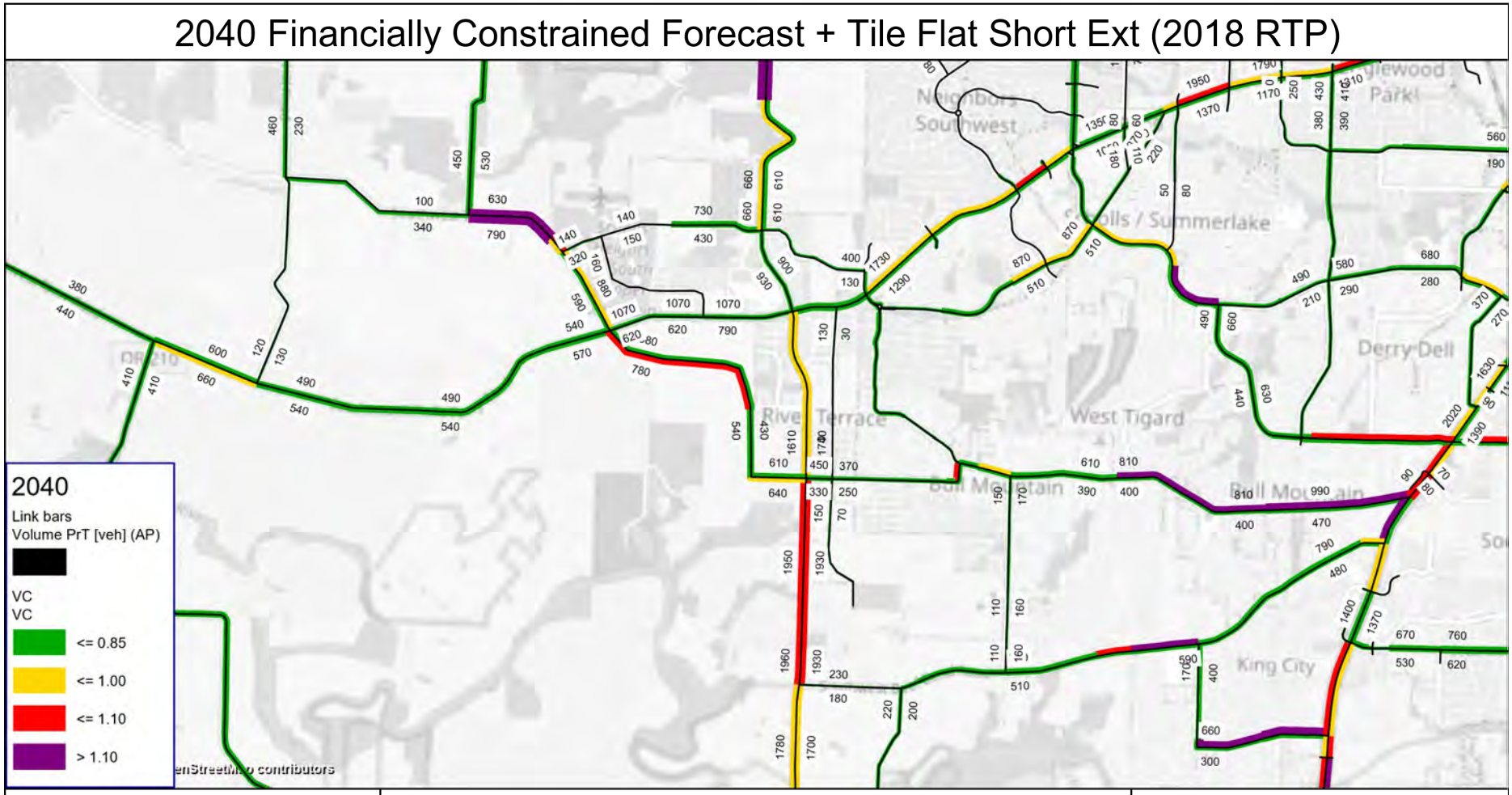
Replace this page with the Transit Ridership Share Memo [5 pages]

Appendix 5: System Performance
2018 RTP Financially Constrained Network (with Regional 2040 land use)



Washington County	Westside Focus Model	2040 PM 1-Hour
Julie Sosnovske	Metro_2040FC_WCSub_082421_20-SK-FC+GH700.ver	17.09.2021

Appendix 5: System Performance
2018 RTP Financially Constrained Network plus Tile Flat Extension (with Regional 2040 land use)

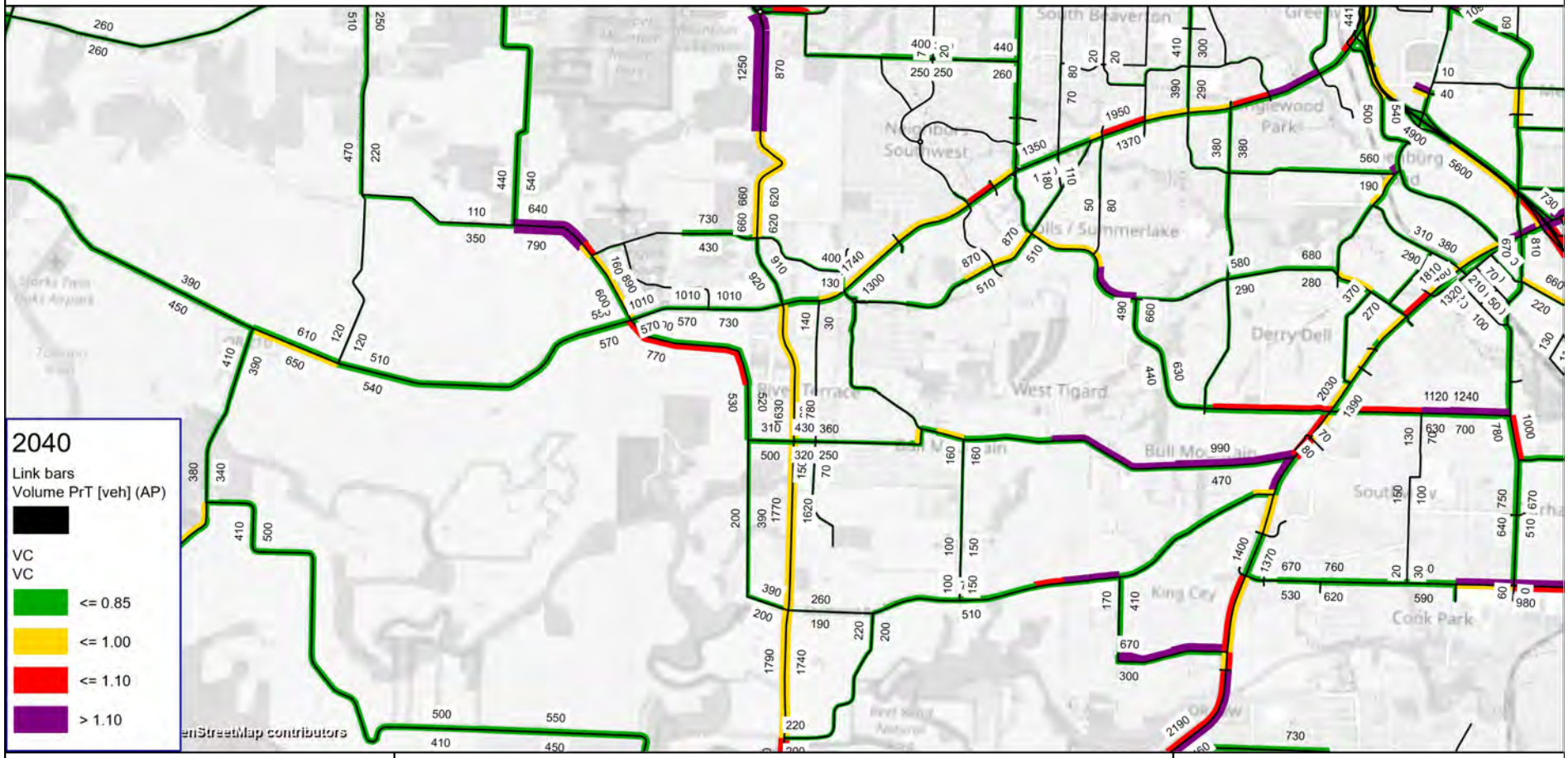


Washington County	Westside Focus Model	2040 PM 1-Hour
Julie Sosnovske	Metro_2040FC_WCSub_082421_20_TFExt-short_SK.ver	27.09.2021

Attachment A

Appendix 5: System Performance
2018 RTP Financially Constrained Network plus Long Tile Flat Extension (with Regional 2040 land use)

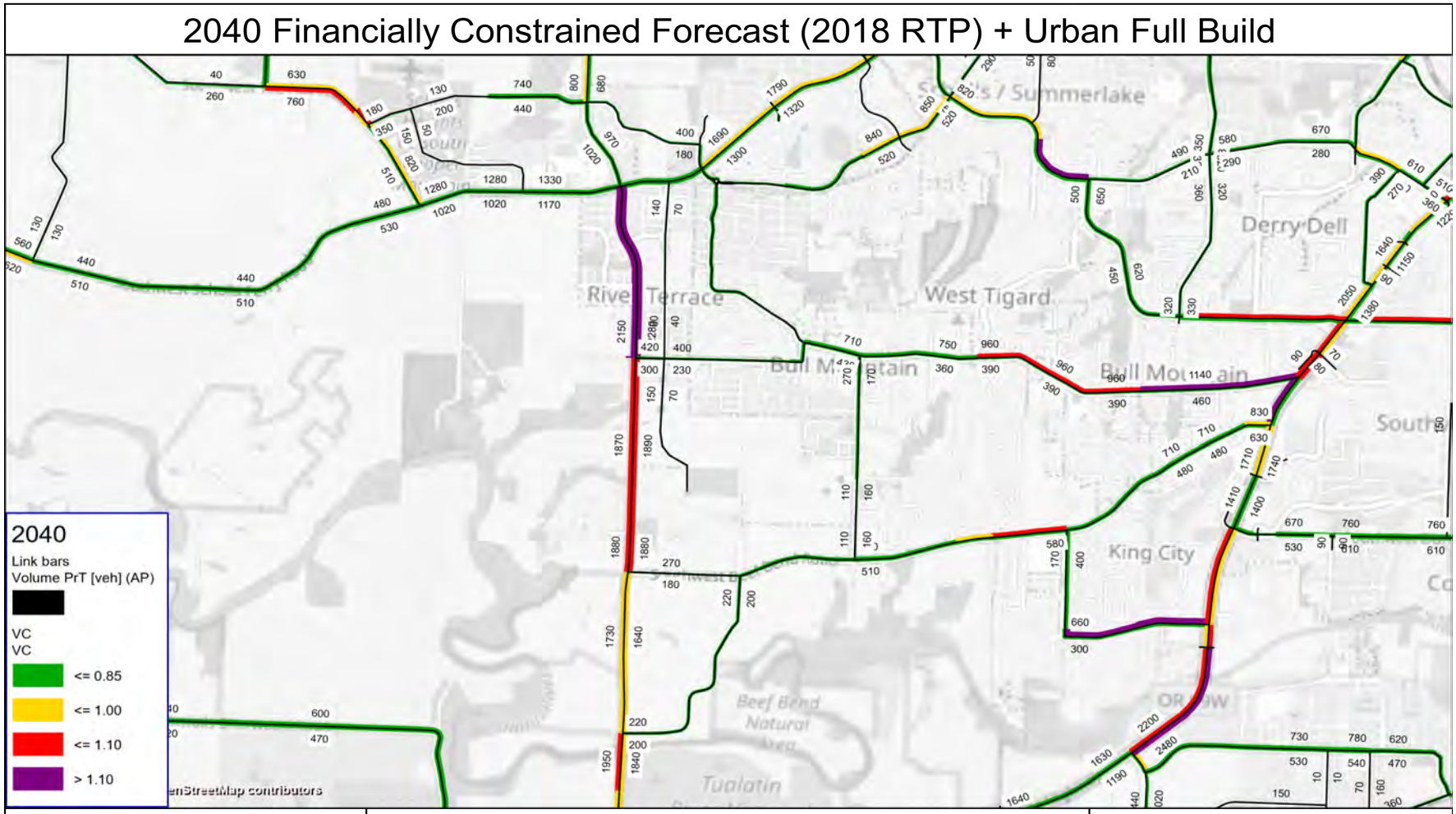
2040 Financially Constrained Forecast + Tile Flat Long Ext (2018 RTP)



Washington County	Westside Focus Model	2040 PM 1-Hour
Julie Sosnovske	Metro_2040FC_WCSub_082421_20_TFExt-long_SK.ver	27.09.2021

Attachment A

Appendix 5: System Performance
2018 RTP Financially Constrained Network (2040 land use) with the Urban Full Build Improvement Scenario



Washington County	Westside Focus Model	2040 PM 1-Hour
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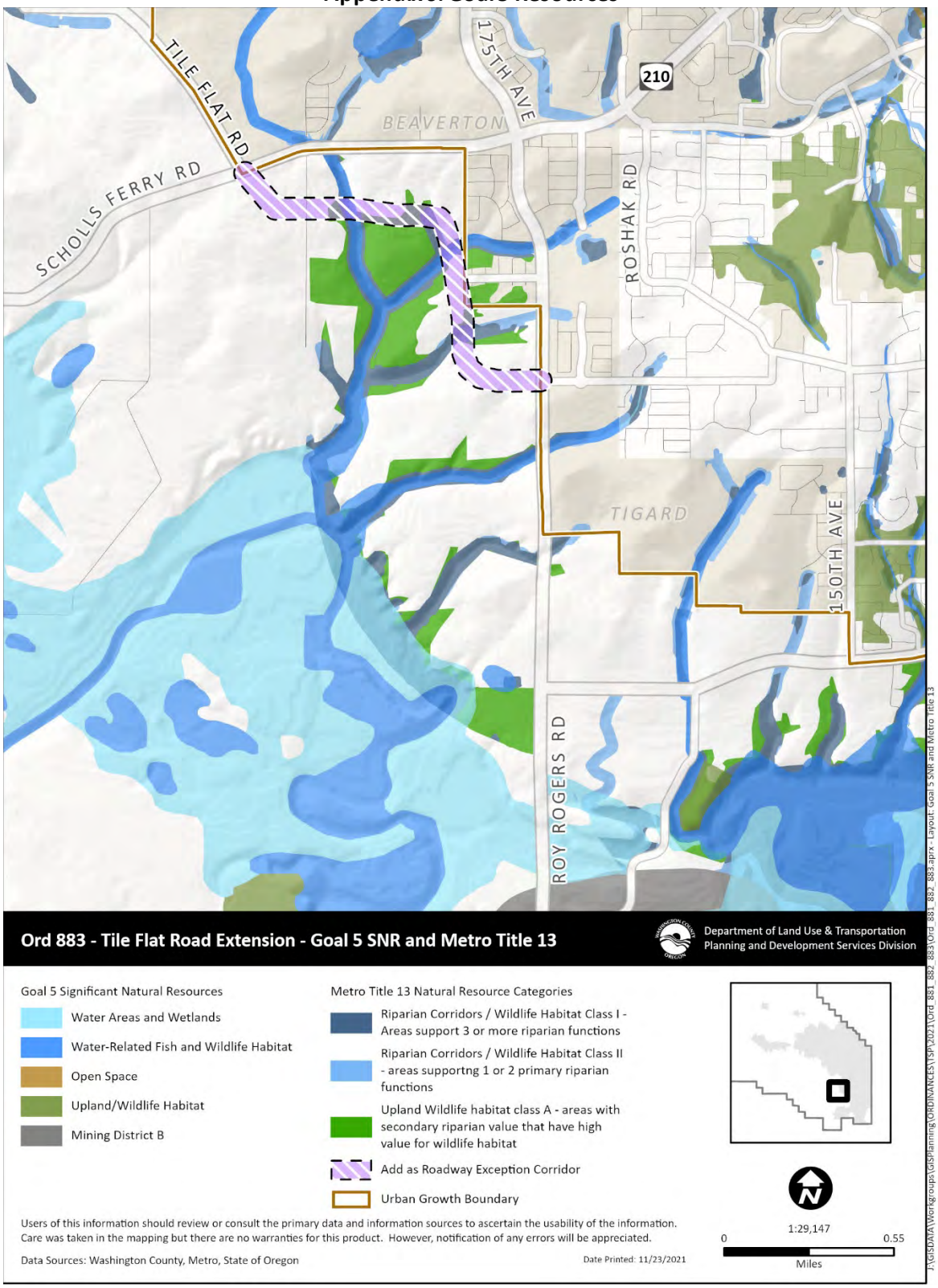
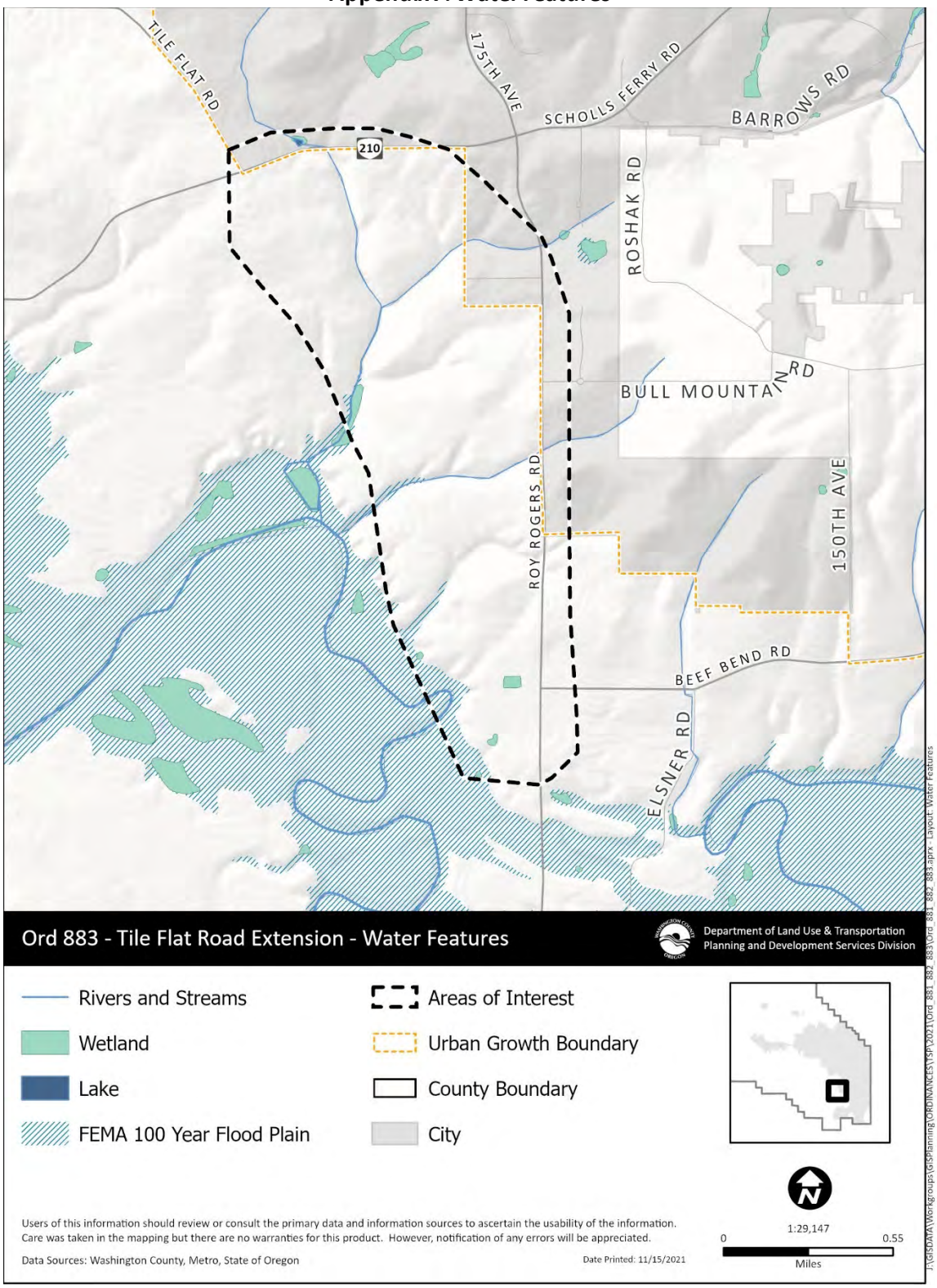
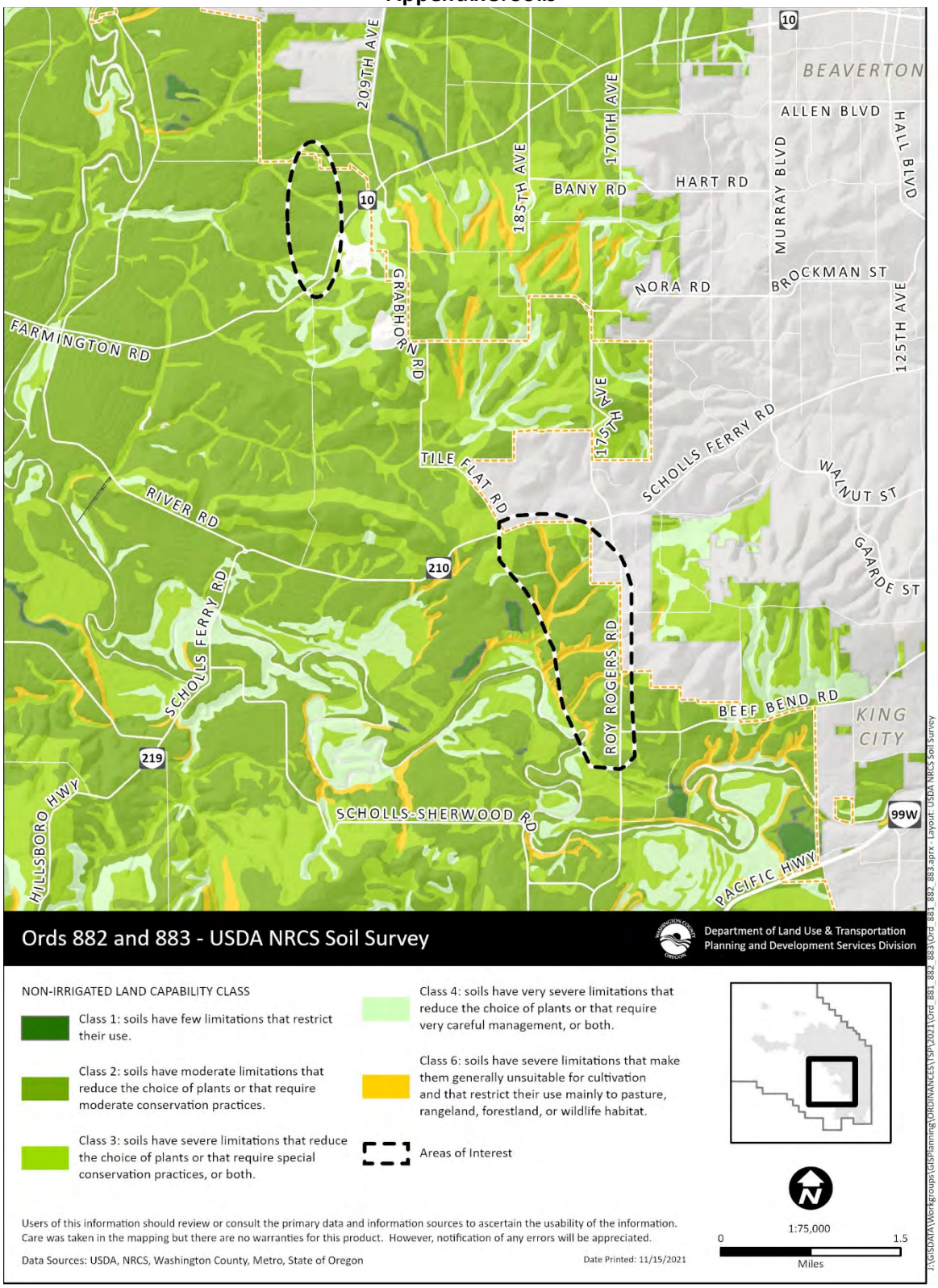
Appendix 6: Goal 5 Resources



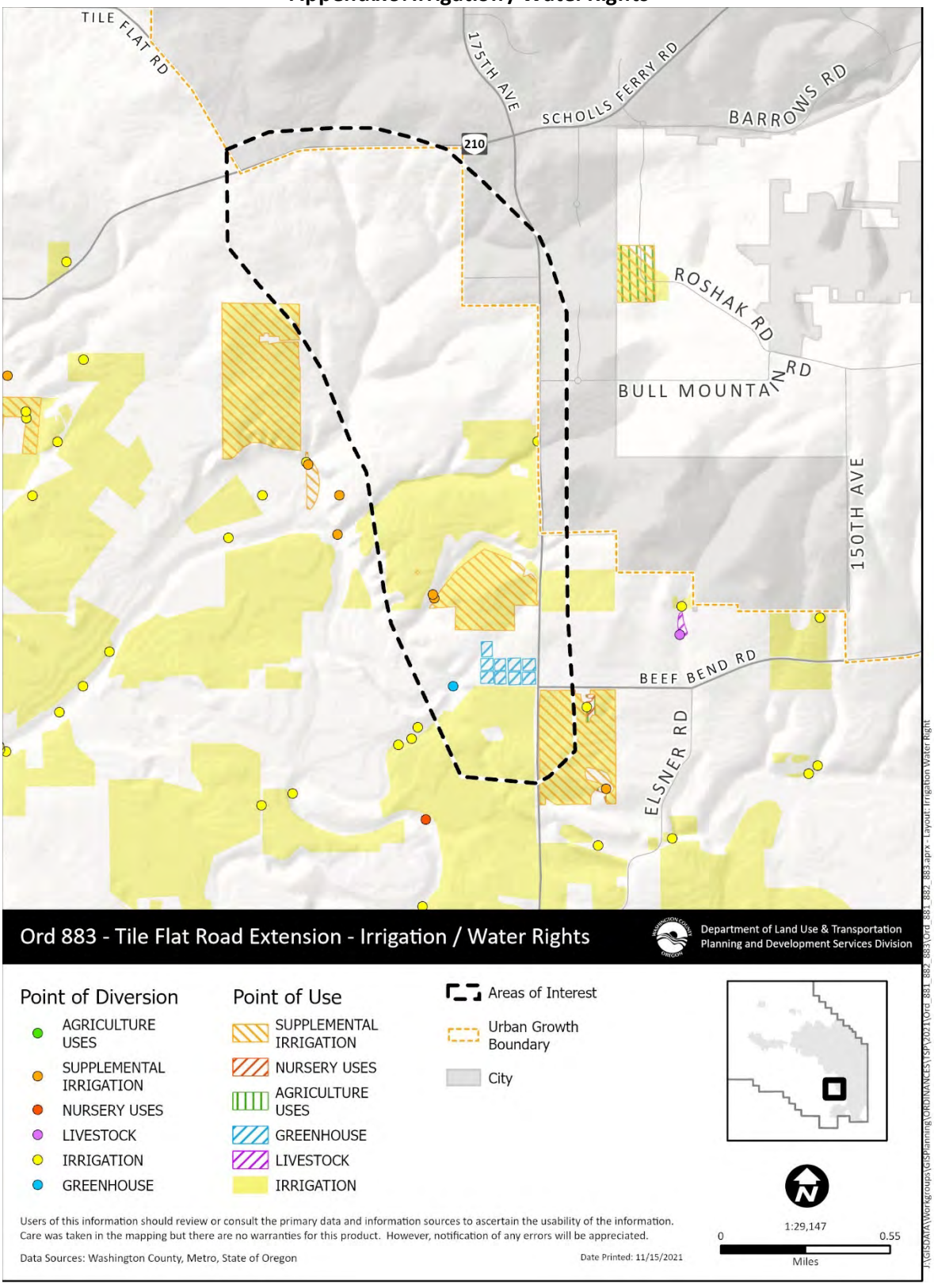
Appendix 7: Water Features



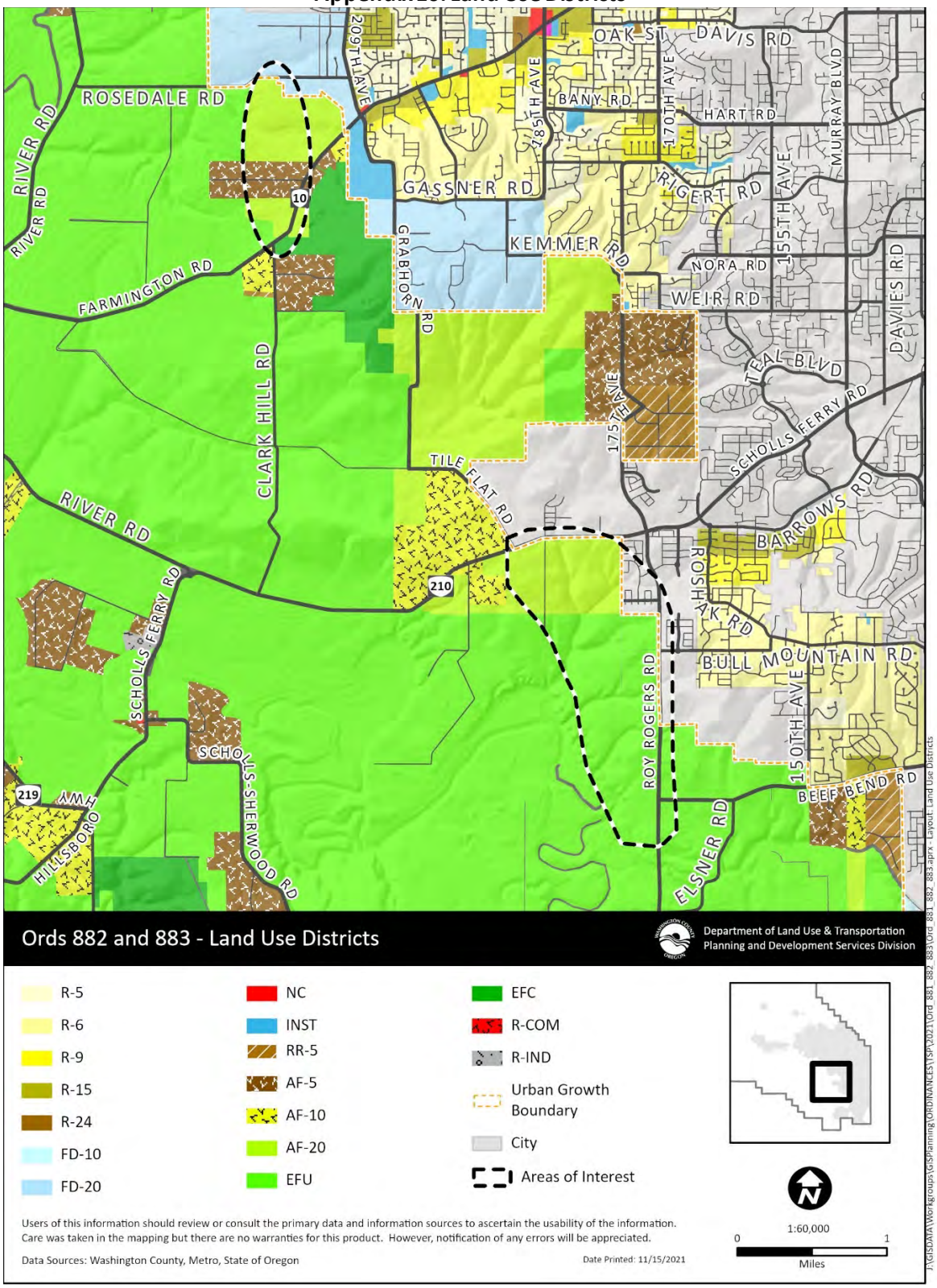
Appendix 8: Soils



Appendix 9: Irrigation / Water Rights



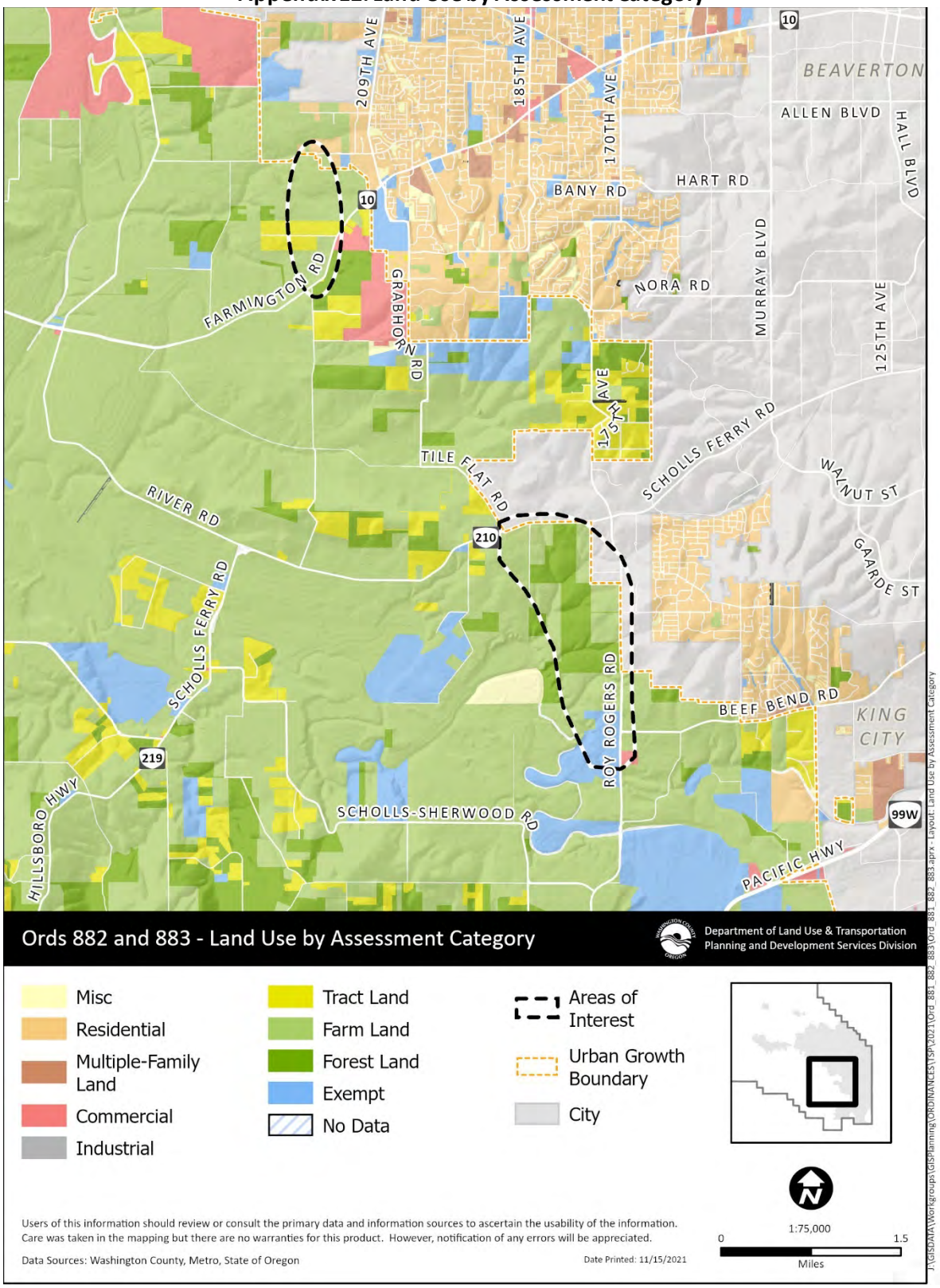
Appendix 10: Land Use Districts



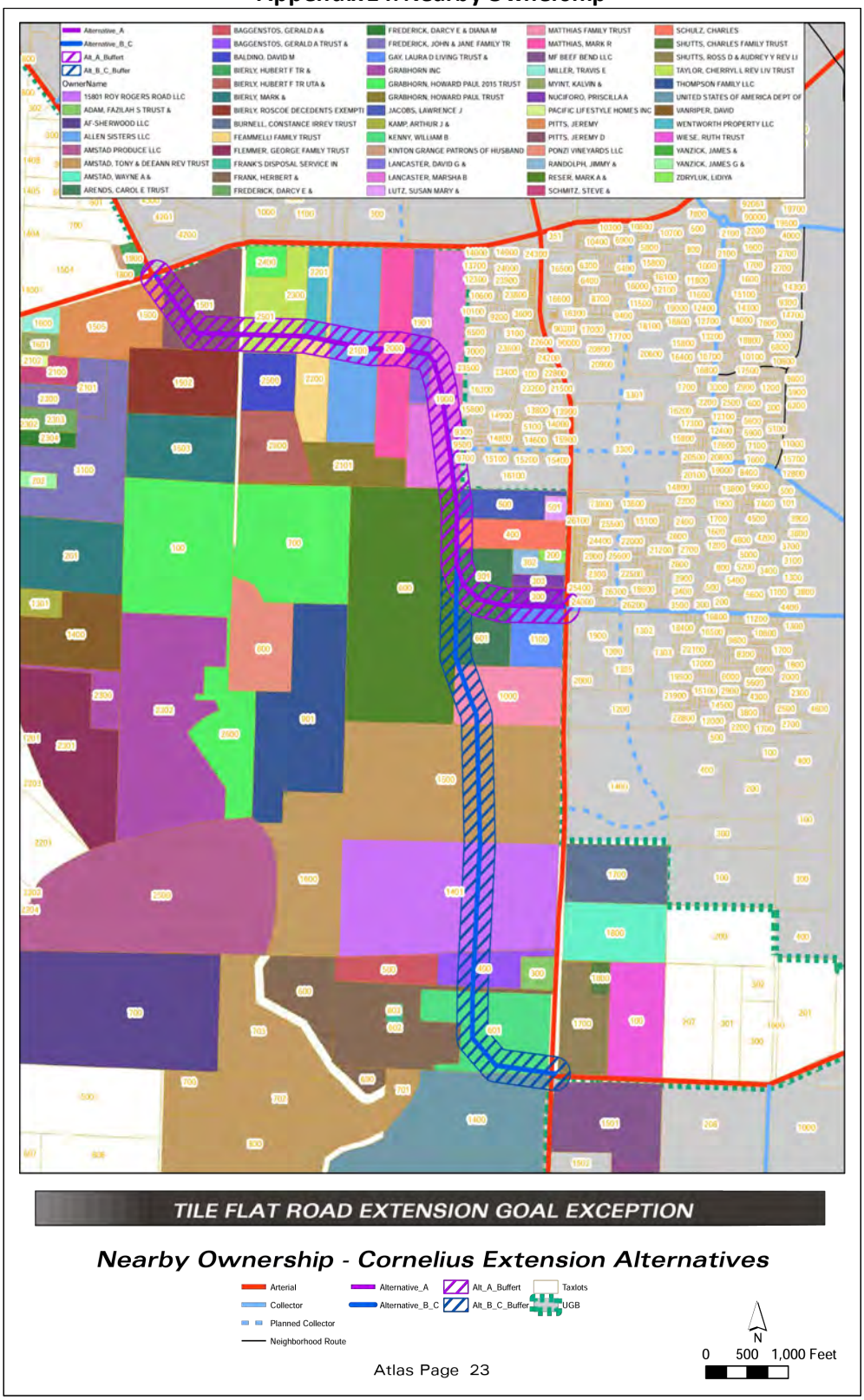
Appendix 11: Land Use Inventory

Replace this page with the Land Use Inventory PDF]

Appendix 12: Land Use by Assessment Category



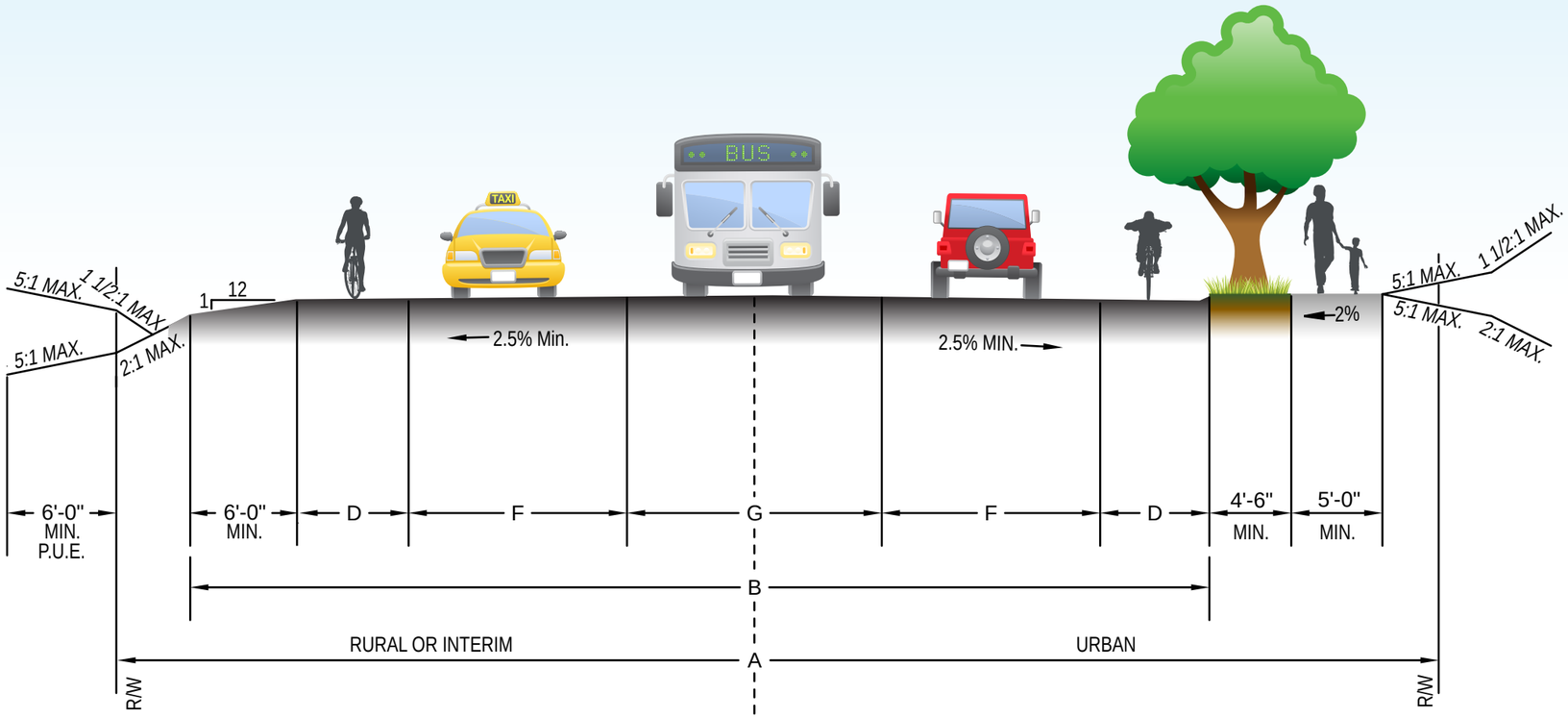
Appendix 14: Nearby Ownership



Appendix 15 Farm Use Determination Methodology Memo (4 pages)
Appendix 16 Farm and Forest Practices Memo (7 pages)
Appendix 17 DLCD letter

Attachment A

Collector Road Section



NOT DRAWN TO SCALE

DESIGN SPEED 35 MILES PER HOUR

Road Classification	Washington County Designation	Right of Way (Feet)	Paved Width (Feet)	Number of Lanes	Bike Lane/ Paved Shoulder	Travel Lane	Center Turn Lane	Parking Allowed
		A	B		D	F	G	
Collectors	C-1	74	50	3	6	12	14	NONE
	C-2	**	36 *‡	2	6	12	0	NONE

*GRAVEL SHOULDERS AND DITCHES ALLOWED FOR THESE WIDTHS ONLY. STANDARD INTERIM SECTION
** USE ULTIMATE R/W FOR PAVED WIDTH IDENTIFIED IN THE TRANSPORTATION PLAN, IF NOT KNOWN USE 74 FOOT R/W, IN RURAL AREAS 60' OF RIGHT OF WAY IS REQUIRED.
‡ P.U.E.'S REQUIRED OUTSIDE OF R/W IF SHOULDERS AND DITCHES ARE USED.

The applied "Washington County Designation" is determined by the county's transportation plan and the land use decision.
See Appendices C and D for maps of County collector roads.

Collector Road Section

Washington County Exhibit #: 2

Effective Date:

Washington County
Department of Land Use
& Transporation
Engineering Section

Attachment A

Technical Memorandum

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Medford, OR 97504
Telephone 541.779.0569
Fax 541.779.0114
Nathan@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: August 9, 2019

Subject: Potential Cooper Mountain Transit Ridership

Purpose

As part of the Goal Exception process, alternatives that do not require an exception to statewide planning goals must be examined. One such option is an increased investment in alternative transportation modes, including public transit. This memo develops a hypothetical transit mode share that could be created along a new bus route in the Cooper Mountain Transportation Study area (CMTS). In order to do so, transit routes that intersect the CMTS area were compared against traffic count data from Washington County.

Methodology

To estimate daily transit trips on a potential new route, CSA used existing transit ridership data from TriMet to estimate a daily ridership number for any given segment on local transit lines. This value was compared against daily traffic counts taken on CMTS area road segments by Washington County to estimate the proportion of trips using transit.

Simply taking the total daily ridership of a line and comparing against the traffic counts would overstate the quantity of transit trips. Unlike Washington County traffic counts, which are tied to specific sites, the ridership data is for an entire transit line. Unless the average trip length for a transit ride is identical to the route length, the level of ridership for any given location would be overstated.

For an example of how the average trip ridership calculation was made, take a hypothetical bus route that is 10 miles long and has a daily ridership of 5,000 riders. The average trip length is 5 miles. The average trip is thus 50% of the total route length. Thus, one could reasonably expect that the ridership volume on any route segment is half the total ridership. The calculation would thus look like this:

Daily Ridership x (Average Trip Length / Route Length) = Average Trip Ridership

Transit Ridership

Ridership was ultimately examined for two bus lines. The CMTS area, being partially outside of an urban growth boundary and partially outside of the TriMet service boundary, is by its nature limited in the availability of transit service. There are two bus lines that travel north-south through the CMTS area, Routes 52 and 88. There are no MAX lines and the WES runs substantially further to the east than the study area. One other bus line, the 57, runs along TV Hwy at the northernmost boundary of the CMTS area. The 57 is an east-west route on a highway that has traffic volumes greater than 40,000 vehicles per day in the study area[1]. It was thus decided to exclude it as a potential transit comparative.

Spring of 2017 ridership data was retrieved from TriMet's website[2]. Newer data is available, but because the most recent Washington County traffic counts are from the Spring of 2017 it was decided to use Spring 2017 data for the best comparison.

Route 52 is about 11.25 miles long and goes between the Beaverton Transit Center on US Route 26 and the Portland Community College Rock Creek Campus north of Highway 26. From Rock Creek it follows NW and SW 185th Ave before turning east on Farmington

[1] https://www.oregon.gov/ODOT/Data/Documents/TVT_Complete_2017.pdf
[2] https://TriMet.org/about/pdf/route/2018spring/route_ridership_report_(sorted_by_route)_weekday.pdf

toward the Beaverton Transit Center. Route 52 has a daily ridership of 4,130 boarding rides. The average ride was 3 miles in length.

Given these values, and the described methodology above, the calculation would be:

4,130 x (3.0 / 11.25) = 1,102

The average daily transit ridership on an average trip length segment on Route 52 would be expected to be about 1,102.

Route 88 is about 11.43 miles long and travels between the Willow Creek Transit Center and the Beaverton Transit Center. Its route is less direct. From Willow Creek it primarily takes SW 198th Ave before turning east on Farmington. It takes Farmington to SW 170th Ave before eventually wending its way over to SW Murray Blvd and further on to the Beaverton Transit Center. Route 88 has a daily ridership of 1,730 boarding rides. The average ride was 3.6 miles in length.

Given these values, and the described methodology above, the calculation would be:

1,730 x (3.6 / 11.43) = 545

The average daily transit ridership on an average trip length segment on Route 88 would be expected to be about 545.

Daily Traffic Counts

Washington County maintains a network of traffic counting stations for which data is collected annually. The most recent data is from 2017. The stations that overlap with the two transit routes and are in the CMTS area are listed in the tables below along with their traffic counts:

Washington County Traffic Count Data along Route 52						
COUNT STATION REFERENCE #	ROAD NAME	DISTANCE (MILES) FROM CROSS ROAD)	DIRECTION FROM CROSS ROAD	CROSS ROAD NAME	COUNT DATE	2017 TOTAL (COMBINED DIRECTIONS)
333	185th Ave	0.1	S	Kinnaman Rd	4/11/2017	13,658
332	185th Ave	0.1	S	Farmington Rd	4/4/2017	11,986
381	Farmington Rd	0.2	W	185th Ave	4/4/2017	19,613
382	Farmington Rd	0.1	E	185th Ave	4/4/2017	17,413
384	Farmington Rd	0.1	E	Kinnaman Rd	4/11/2017	28,921
385	Farmington Rd	0.08	E	170th Ave	4/11/2017	24,920
386	Farmington Rd	0.08	W	160th Ave	4/13/2017	25,234
387	Farmington Rd	0.08	E	160th Ave	4/11/2017	21,839
388	Farmington Rd	0.1	W	149th Ave	4/13/2017	23,740

Washington County Traffic Count Data along Route 88						
COUNT STATION REFERENCE #	ROAD NAME	DISTANCE (MILES) FROM CROSS ROAD)	DIRECTION FROM CROSS ROAD	CROSS ROAD NAME	COUNT DATE	2017 TOTAL (COMBINED DIRECTIONS)
335	198th Ave	0.1	S	TV Highway	4/4/2017	17,541
337	198th Ave	0.1	N	Farmington Rd	3/16/2017	6,187
380	Farmington Rd	0.1	E	198th Ave	4/4/2017	16,434
381	Farmington Rd	0.2	W	185th Ave	4/4/2017	19,613
382	Farmington Rd	0.1	E	185th Ave	4/4/2017	17,413
385	Farmington Rd	0.08	E	170th Ave	4/11/2017	24,920
323	170th Ave	0.15	N	Oak St	2/28/2017	18,811
324	170th Ave	0.1	S	Oak St	4/27/2017	17,642
325	Bany Rd	0.1	E	170th Ave	2/28/2017	11,230

On Route 52, there is approximately 2.5 miles between count station #333 and #388. This is a bit shorter than the average trip length on route 52 of 3 miles, but it is close. The average daily traffic count across the identified stations is 20,814.

On Route 88, there is approximately 3.6 miles between count station #335 on 198th Ave and #323 on170th Ave. This is approximately the same length as the average trip length on Route 88. The average daily traffic count across these identified count stations is 17,274.

Ridership Share

Using the derived average daily trips and the traffic counts for segments of approximately similar length, it is possible to estimate transit trips as a share of daily trips. To do so, the average daily ridership calculated above was divided into the average daily trips for the identified road segments. Doing so results in a transit share of 5.3% for Route 52 and 3.2% for Route 88.

Other Data

A review of other available data indicates that these figures are reasonable and in line with expectations.

The 2018 Oregon Household Activity Survey prepared for ODOT estimates that of all trips (including those not work related) taken in the Portland metro area that approximately 4% of them were taken via transit. This is consistent with the estimates developed for this analysis.

The American Community Survey 2017 1-year estimate for Washington County shows that approximately 5.7% of workers in Washington County took transit as their way to get to work. Typically, commutes to work have a higher share of transit than all trips. This again is in line with the derived transit shares.

Washington County's Transportation System Reference Guide includes transit mode share estimates. The numbers come from the Regional Travel Demand Model created by Metro and Washington County. The mode share for Washington County for all trips was estimated to be 1.8% in 2010. The same model was used to forecast the transit share in 2035. That estimate was 2.4%.

Currently Planned Transit Improvements in the CMTS Area

TriMet has been planning additional service enhancements thanks to increased funding from House Bill 2017. The planned improvements are in the Tri-County Public Transportation Improvement Plan (PTIP). Two improvements appear to be in the vicinity of the CMTS area. Line 56 is proposed to be extended to Progress Ridge/South Cooper Mountain from its current terminus at Washington Square. This proposed extension will terminate just inside of the CMTS area.

The PTIP also set aside funding for areas that are not cost effective for the transit agency to serve as a fixed route but that could be facilitated by a 3rd party or shuttles. $25,000 was awarded for a planning study of a shuttle in the CMTS area. The proposed service would run two shuttles in South Cooper Mountain, Aloha, and Progress Ridge. The service's goal is to enhance access to employment opportunities, local destinations, and regional transit services. According to the project application, the service might include 14 operation hours on weekdays by 2021.

No other planned improvements in publicly available documents were found.

Proposed Ridership Share

Much of the CMTS area is outside of TriMet's boundaries. It is also more rural, and by its nature, lower in population density than most of the metro area. This is likely reflected by the relative lack of planned transit investment in the CMTS area. Justifying a higher ridership share than what can be derived from the available data and absent significant changes to the economy or regulatory environment does not seem appropriate. It is also contrary to recent history.

Ridership as a share of all trips has been declining in the Metro area since 2012. According to TriMet figures taken from September of 2018, ridership peaked in fiscal year 2012 at a total of 103,300,944 boarding rides. In the most recent year available, 2018, the number of boarding rides was 97,067,672, representing an approximate six percent decrease from the peak. The decline in ridership has come during a growing economy, significant population growth, and relatively low fuel prices.

Given these facts, it is proposed that rounding up from the higher of the two calculated transit ridership shares of 5.3% and using 6% as the transit mode share for any proposed routes across the CMTS. This is still double Washington County's expected transit ridership share in 2035 but acts as a reasonable conservative estimate in accordance with available data on local transit.

Potential Route Description

To construct a route, CSA first assumed that any new service would be located within TriMet's service boundaries. From there, CSA tried to find a route that could connect two important destinations as close to the western edge of the CMTS as possible and serve residential neighborhoods not projected to have transit nearby.

The hypothetical transit route, see Atlas page 11, has an alignment between the Willow Creek Transit Center and Christ the King Park and Ride in Tigard. From Willow Creek, the route moves west on Baseline Rd before taking Cornelius Pass Road south to SW Rosedale Rd. From there, it takes SW Farmington Rd east and connects to SW Miller Hill Rd. The route continues moving south and east to reach SW 175th Ave via SW Kemmer Rd. It then

turns south and continues as the road transitions to SW Roy Rogers Rd, before turning east at SW Bull Mountain and following that road to the Park and Ride.

Conclusion
This potential transit route is not meant to replace actual planning for a real route. Nor is it meant to necessarily represent a route that could be built tomorrow and provide the above estimate ridership. Rather, as this memo describes, this route represents a high-level service in the CMTS area that could reduce the need for single occupancy travel. In the context of the Tile Flat Road extension exception, this represents a conservative estimate in order to study route alternatives that do not require a goal exception.

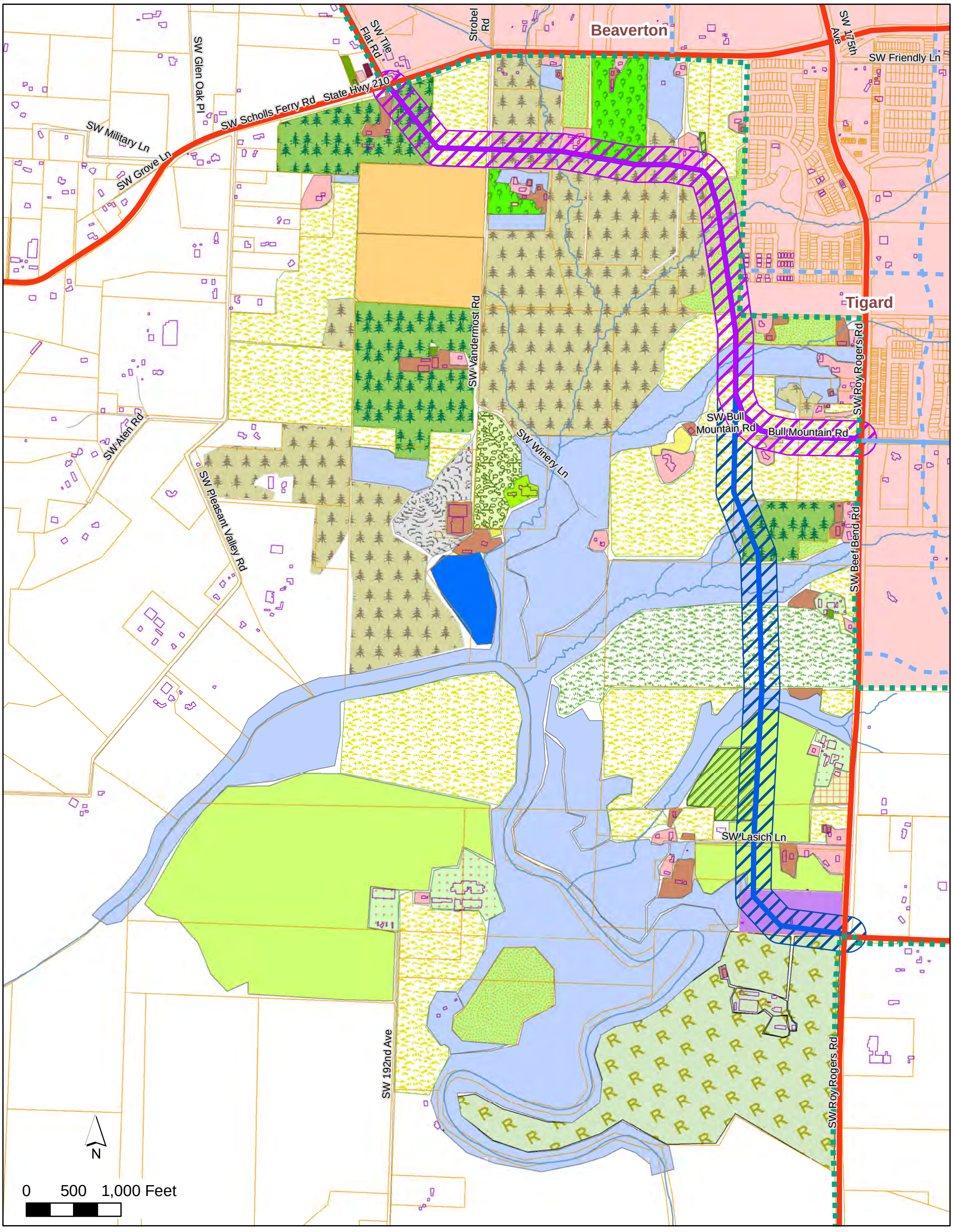
As shown in the exception analysis, a high level of ridership on this proposed route does not obviate the need and reasoning for an extended Tile Flat Road.

CSA Planning, Ltd.

Nathan Emerson
Associate

cc. File

Attachment A



TILE FLAT ROAD EXTENSION GOAL EXCEPTION

Broad Use Inventory - Tile Flat Alternatives

UGB	US Fish & Wildlife	Barns & Storage	Garden	Uncertain Facility	Residence	Winery
Taxlots	Grass Seed	Crops Uncertain	Greenhouse	Open Space & Riparian	Row Crops	Woodlot
City Limits	aggregate	Farm Facilities	Grass Hay or Alfalfa	Orchard	Vineyard	Xmas Trees
Building	Arena	Farm Store & Parking	Pasture	Ponds	Grains	Staging Area

Atlas Page 25

Attachment A

Technical Memorandum

CSA Planning, Ltd
4497 Brownridge, Suite 101
Medford, OR 97504
Telephone 541.779.0569
Fax 541.779.0114
Mike@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: August 6, 2020

Subject: Tile Flat Road Extension Farm Use Determination Methodology

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CSA Planning, Ltd. (CSA) is a professional land use planning firm with 40 years of experience in Oregon land use planning. Part of its portfolio of services includes conducting farm impact assessments. These assessments require the determination of the use of a given farm unit so that impacts can be accurately assessed from proposed improvements.

Farm Use Determination Methodology

CSA obtained GIS base data from public agencies such as the Natural Resources Conservation Service ("NRCS") and Washington County. Aerial photos from Environmental Systems Research Institute ("ESRI") and Google Earth were geo-referenced and incorporated into the GIS layers for the project.

Current site-specific inventory data was collected through fieldwork conducted by CSA. Photographic information was collected using a Nikon Coolpix W300, which has an integrated GPS data logger. Photos and field data were collected from the public right-of-way. Additional data utilized in the farm use identification and classification includes historical aerial photos available through Google Earth and United Stated Department of Agriculture (USDA) historic aerial inventories.

The identification and classification of farm uses was conducted for each tax lot within the analysis area to develop the farm use inventory. This identification and classification process requires a certain degree of subjective judgment during the initial assessment and categorization process. The classification work was conducted by Michael Savage (see Mr. Savage's resume in at the end of this memo). While all identified uses are documented, the classification process is based upon the use that appears to be the primary farm use on each tax lot. In general, the farm use classification assumed the more intensive cultivation when choosing between two or more use classifications that appear to be present on the same site.

These classification judgments were based in significant part on CSA's understanding of major crops produced in Washington County, using the data in Tables 1 and 2 below:

Table 1.
Washington County Summary Highlights (2017)[1]

Commodity	Sales (in dollars)	Percent
Total Agricultural Products	**$201,603,000**	**100%**
Grains, Oilseeds, Dry Beans and Peas	$3,796,000	1.9%
Vegetables, Melons, Potatoes, Sweet Potatoes	$5,984,000	3.0%
Fruits and Tree Nuts	$19,781,000	9.8%
Berries	$27,116,000	13.5%
Horticulture	$111,501,000	55.3%
Christmas Trees and Short Rotation Woody Crops	$3,123,000	1.5%
Other Crops and Hay	$22,613,000	11.2%
Poultry and Eggs	$268,000	0.1%
Cattle and Calves	$1,536,000	0.8%
Milk from Cows	$4,192,000	2.1%
Hogs and Pigs	$271,000	0.1%
Sheep, Goats, Mohair, Milk	(D)*	N/A
Aquaculture	(D)*	N/A
Horses, Ponies, Mules, Burros, and Donkeys	$646,000	0.3%
Other animals and animal products	$410,000	0.2%
Number of Farms by Size		
1-9 Acres	464	37%
10-49 Acres	492	40%
50-179 Acres	172	14%
180-499 Acres	68	5%
500-999 Acres	25	2%
1000+ Acres	17	1%
Revenue/Farmed Acre	**$3,179**	

*Withheld to avoid disclosing data for individual operations

[1] Data from the 2017 USDA Census of Agriculture

Table 2.
Washington County Harvested Crop Acreage (2017)[2]
(selected major crop categories)

Commodity	Acres	Percent
Corn for Silage and Greenchop	1,026	1.62%
Wheat	5,726	9.03%
Oats	1,213	1.91%
Barley	609	0.96%
Hay and Forage	7,380	11.64%
Vegetables	2,511	3.96%
Orchards	8,674	13.68%
Nursery	3,205	5.05%
Grasses and Legumes for seed	26,487	41.77%
Total Acres	**63,418**	

The classification of farm uses was based upon the most recent United States Department of Agriculture (USDA) Census of Agriculture data from 2017. The countywide data indicates a relatively diverse agricultural activity mix, with the exception that there is a significant concentration in crop value in Horticulture and grass seed occupies more acreage than any other crop by a significant amount.

Appendix L lists the acreage for the surrounding farm uses that are identified in the farm use inventory. The study area has a mix of farm uses and activities that appears typical for Washington County based upon the data from the USDA Census of Agriculture.

CSA Planning, Ltd.

Mike Savage
Consulting Planner

[2] Data from the 2017 USDA Census of Agriculture

Resume

Michael Savage

Principal

In addition to the work and other relevant experience provided as Appendix B with the original application submittal, CSA Planning, Ltd. offers this addendum as a supplement of work and related experience for Michael Savage relevant to the proposed Application and related Farm Impacts Analysis.

2008 – Current:

Consultation and project management for development projects requiring a thorough inventory and analysis of potential impacts on nearby and surrounding farm and forest lands. A sample of specific types of projects is as follows:

- Utility Corridor Farm and Forest Impacts Analysis;
- Plan Amendments, Zone Changes and Site Plans for Expansion of Regional Landfills;
- Plan Amendment, Zone Change and Planned Unit Development (PUD) Subdivision designating some 400+ acres of Nonresource land;
- Urban Growth Boundary Amendments into Agricultural Land requiring Alternative Lands Analysis and Farm Impacts Assessment;
- Nonfarm Partitions and Nonfarm Dwellings requiring Cumulative Impacts Analysis;
- Farm and Forest Dwellings requiring farm and forest impacts assessment;
- Greater Bear Creek Valley Regional Plan inventory, analysis and plan development requiring farm and forest lands impacts analysis on a large scale;

1998 - 2008:

Land-Use Planner, GIS Programmer Analyst and Permit System Administrator for Jackson County Oregon. A sample of specific duties and work performed is as follows:

- Review project proposals for development on farm and forest lands requiring a review of potential impacts on adjacent and nearby farm and forest lands and practices.
- Farm and Forest Code updates
- Coordination with a variety of local farmers and foresters and agencies including but not limited to Oregon Department of Forestry, Oregon State Department of Agriculture; Natural Resource Conservation Service; Department of Land Conservation and Development; and Irrigation Districts.
- Develop mapping and data inventory procedures for dwellings on farm and forest lands.
- Implement farm capability dwelling option – one of the few counties in the state to do so.

Other Training and Experience:

- Bachelor's Degree in Geography from Southern Oregon University with an emphasis in resource management.
- Raised on small farm in northeast Oregon. Currently own and manage an 80-acre woodlot.
- Years (est. 1980 – 1997) of working on small family-owned (less than 10 acres) and large (several thousands of acres) corporate farms in an assortment of duties including but not limited to harvesting and planting wheat, peas, beans, corn, apples, cherries, alfalfa seed, and grass hay; irrigating; logging, equipment repair, pest control; raising horses; feeding and looking over livestock and poultry including pigs, sheep, chickens and cattle.

Attachment A

Technical Memorandum

CSA Planning, Ltd
4497 Brownridge, Suite 101
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Telephone 541.779.0569
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Mike@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: August 6, 2020

Subject: Tile Flat Road Extension Farm and Forest Practices

Rural Land Impacts
Existing land use, land use patterns, and farm and forest capabilities must be inventoried in order to properly evaluate impacts to rural lands.

This inventory of practices was created by a combination of in person site visits of and nearby the proposed Tile Flat Road extension and analyzing geographic data provided by public resources and Washington County. Maps and photographs of the area evidencing farm and forest use can be found in the Atlas on pages 25 through 34.

Farm Practice Characterization
Farm units and crop disbursement varies throughout the study area. Some properties within the study area are uniform in crop or farm use type whereas others include multiple farm uses spread over multiple parcels or tracts. Ownership information derived from County Assessment records was examined, in part, to help determine farm units. Given that farm leases are common and customary – it is likely that farm units are managed beyond ownership boundaries throughout the study area.

Farm uses identified as occurring throughout the study area and nearby are summarized herein below along with commonly accepted and identified practices associated with each. The inventoried farm uses were identified separate from property boundaries.

CMTS Area Farm Practices

Farm Use	Acres
Aggregate	10.8
Arena	1.4
Barns & Outdoor Storage	18.7
Crops Uncertain	163.9
Farm Facilities	16.0
Farm Store & Parking	2.5
Grass Seed	53.5
Grass Hay & Alfalfa	265.6
Open Space & Riparian	357.9
Orchard	17.0
Pasture	38.5
Residence, Residential Accessory, Landscaping	24.8
Row Crop	10.2
Vineyard	10.6
Grains	45.2
Winery	1.7
Woodlot (interspersed with open space)	215.3

Xmas Trees	72.8

* Acreages listed reflect uses inventoried within and near the study as illustrated on Atlas Page 25 – Broad Use Inventory.

- **Orchard:** The farm inventory noted two small mature orchards totally approximately 17 acres situated at the northerly end of the study area. The predominant orchard crop is hazelnuts.

  Orchard establishment is a specific type of farm use that often occurs several years before the year-to-year operating orchard practices begin. This is a highly technical process wherein the specific cultivar is selected for a site, irrigation systems are designed and installed, and tree starts are planted according to the site orchard design. Certain sites were identified to include recently planted orchards.

  List of common practices associated with orchard production include the following in summary format:

  - Pruning for production and maintenance;
  - Intercropping and cover crop;
  - Maintenance of lands between and around trees
    - Mow grass & remove brush;
  - Fertilize with urea; potash; lime etc.;
  - Herbicide & insecticide spray;
  - Pollination;
  - Integrated Pest Management (IPM) scouting;
  - Rodent control;
  - Irrigation;
  - Nutrient analysis;
  - Leveling, raking, flailing and tillage;
  - Nut fall
  - Harvesting nuts
    - Windrowing; collection / pickup; transport
  - Washing and drying nuts;
  - Sorting, storage, containers and shipping;
  - Overall grounds maintenance

- **Grass Seed, Grass Hay, & Alfalfa:** There are a number of properties dedicated for grass seed within and near the study area. With approximately ~320 acres of lands under grass seed and grass hay production, said use is the predominant crop type occurring within and near the study area. The bulk of lands situated along SW Roy Rogers Road are under grass seed or grass hay production occurring over multiple properties and ownership. Due to the apparent similarities between grass seed and grass hay production it is difficult to discern which areas are devoted to grass seed and which might be devoted to hay or cereal grain production. From a practices standpoint, however, the uses are similar.

  The Oregon Agriculture in the Classroom Foundation website provides a good summary of grass seed production in western Oregon[1], and is recited herein below:

  *"**How Grass Seed is Grown***

  When a perennial grass field is being planted for the first time, and will be in production for many years, farmers take great care to make sure the field is properly prepared and weed free. Weed control is important to the health and

[1] http://aitc.oregonstate.edu/grown/comm_grass.htm#how

profitability of a grass field because farmers are able to get more money for a crop with no weed seeds and the field will have higher yields.

Soil tests are taken to measure the field's pH levels. Lime may be added to raise the pH levels. The heavy rain in western Oregon soils can cause the soil pH level to drop and become too acidic for grass plants.

The next step is to prepare the field by tilling it and using herbicides to make the best seed bed possible. After the soil is tilled up and loosened, it is checked for pH and other nutrient levels. Once this is done the planting can begin. Planting occurs in both fall and spring depending on the variety. Varieties that are planted in the fall can start growing in the winter when the [sic] rains.

Carbon Banding

A planting drill is used to put the seed and fertilized [sic] into the soil. To help control weeds, farmers use carbon band seeding. Carbon banding is where a slurry of activated charcoal is sprayed over the rows where the seeds have been drilled. Next, an herbicide is sprayed over the entire field to control weeds prior to the weeds or grass seed germinating. The charcoal over the drill row adsorbs the herbicide and allows the grass crop to emerge unharmed.

Once the grass is established, additional herbicides may be used to control both volunteer grass seedlings and broad leaf weeds. Grass fields are typically fertilized with nitrogen, phosphorus, and potassium in March and April.

Rusts and other diseases are serious problems in some grass seed species and fungicides are used to help control them. These diseases that can plague grass seed crops can have their biggest impact on seed yield.

Grass seed farmers grow different varieties of grass to protect themselves from a poor crop. Rain, or hot and freezing temperatures that hurt one type of seed may actually help a different variety produce more seed. Farmers may lose money on one variety at times, but hope to make money on another.

Sheep

Sheep are sometimes used to graze the forage grass seed fields. Grazing is like pruning a tree. Wherever a blade has been cut off, the plant puts up more shoots. The more shoots, the more seed a plant will produce. The animals graze on the fields during the winter months through March.

Pests

Two other creatures that feed on grass fields are geese and slugs. They can destroy crops in a matter of days. They eat the grass and roots, leaving nothing, but a poor stand (crop) and mud.

Swamp Buggies

Since very few places grow grass seed the equipment they use must either be modified or manufactured by the dealer or farmer. Swamp buggies, for example, were created to apply fertilizers and chemicals on wet fields. A swamp buggy has huge, balloon-like tires that can move across the wet fields without leaving ruts. Since grass seed is grown mostly on wet soils, swamp buggies can go on fields during the winter and spring months when normal tractors would sink in the mud.

Harvesting

Harvest time for grass seed crops begins in late June or early July. A machine called a windrower or swather cuts the grass and lays it in rows. This is done while the grass seed is still somewhat green to prevent it from shattering. Seed shattering is a natural way seeds are dispersed.

The grass then dries in the sun and wind for about 5-10 days before being harvested. A combine separates the seed from the straw and spreads the straw back on the field. The seed is then transferred from the combine to trucks and transported to the seed cleaning warehouse." "A seed cleaner is used to remove

the soil, weeds and small pieces of straw from the tons of harvested grass seed. The cleaner has several screens which move back and forth inside the cleaner and the good seed falls through the screens. The bigger pieces of weed and straw are left on the top screen. The bottom screen is finer and only the dirt and tiny weed seeds fall through. The good seed is left on top of the last screen.

Seed Certification

After cleaning, the seed is bagged and sampled for germination and purity. The price a farmer gets for the crop depends on how well the new seeds grow and if it contains any weed seeds. The definition of a weed is, "any plant where it is not supposed to be." So, if the crop is supposed to be ryegrass and the test shows Orchardgrass, then it has a lower value.

Many growers use the Seed Certification Service at Oregon State University or other private lab to test their seed. The certification program helps assure buyers the seed they buy is of a high quality. To meet certification standards, a grower's field must pass a seedling inspection, a crop inspection prior to harvest, and cleaned seed must meet germination and purity requirements.

A seed certification service inspects fields to evaluate if seed is genetically pure. The grass must be planted in rows so inspectors can easily check for weeds. These inspections are timed so off-type seeds, other crops and weed contamination can be easily detected. The inspector looks for evidence of volunteer plants, weeds or other problems that could cause problems in the genetic purity of the seed. Before each harvest, the crop is again inspected, usually when the plants are in the final stages of seed formation.

Certain harvesting practices must be followed to meet certification standards. If there are strips along the edges of a field that could be contaminated genetically by nearby fields, these must be harvested separately and seed lot records must be maintained for each lot. These isolation strips can only be sold as less profitable uncertified seed. Field equipment must also be cleaned when fields of different cultivars are harvested.

Finally, a sample from each harvested seed lot is tested for germination and mechanical purity by visual inspection.

Post-harvest residue management

In the mid-1940s open-field burning was a way growers controlled disease problems (ergot, blind seed, and seed gall nematode) and pest like rodents and slugs. Field burning was also used to dispose of straw following seed harvest. However, during the 1970s and 1980s this practice became increasingly controversial and as of 2010 is no longer an option.

By Products

As farmers adjusted to reduced field burning, a new export market developed for the straw. Over one billion pounds (600,000 tons) of grass and grain straw is now exported annually to Japan, Korea and Taiwan for dairy and beef cattle feed. These exports sales have an estimated value of $50-$60 million.

Forage grass is used for pastures for cattle and other livestock to graze on, roadside plantings, and is often used to help stop soil erosion. Turf grass seed is used for soccer and other types of sport fields, and is used on the fields of premier sporting events including the Super Bowl, World Cup Soccer, the Olympics and major golfing events. The straw from both types of grass is baled and sold for livestock feed.

Grass Species

There are many different kinds of grass seed and each type is used for a specific location and purpose.

Annual Rye - *Lolium multiflorum - (forage grass) It is a fast growing forage grass planted along roadsides and other areas requiring quick,*

economical ground cover. Annual Ryegrass is often used on hillsides to curb wind and water erosion problems.

Perennial Rye - *Lolium perenne - (turf and forage grass) This is the most widely used grass in the world. It is used in the northern states for permanent turf and forage pastures and for overseeding of dormant grasses in the southern U.S.. It has been s[sic] cultivation as a forage grass since the 17th century.*

Tall fescue - *Festuca arundinacea - (turf and forage grass) This is a popular grass in the transition zone between northern cool-season grass species and warm-season southern species.*

Bentgrass - *Agrostis capillaries - (turf grass) Oregon produces nearly all the Bentgrass seed grown in the United States. Predominantly a Willamette Valley crop, Bentgrass seed is exported in large quantities to Europe and the central and northern states for use in turf mixtures. This grass is widely used on golf courses throughout the world.*

Fine Fescue - *Festuca rubra spp. rubra - (turf grass) This group of grasses is used for golf courses. It grows well in shaded areas and is very drought tolerant.*

Orchardgrass - *Dactylis glomerata (forage grass) This grass is used in the northern states for pastures and grass hay. Oregon is the nation's leading producer of orchard grass seed and it is most commonly used for cattle feed."*

- **Pasture / Livestock:** The inventory identified a few pasture sites associated with livestock. There were a few open grass fields, particularly near riparian areas near the southerly portion of the study area along the Tualatin River, with fencing that might be seasonally or sporadically used for livestock rearing. Practices generally associated with livestock / pasture use often involve field fencing construction and maintenance, livestock medical treatments, animal feeding during times of low food sources, pasture rotations, livestock watering, and related activities. The pasture itself might be irrigated. Rodent control practice is typically employed. Occasional chemical treatments including weed control and nutrient supplies are common.

- **Field Crops & Vegetables**: The Baggenstos Farm, which appears to have changed production methods in 2018, was historically predominantly field crops (such as corn) and vegetables. This farm contributed most of the acreage for vegetables, field and row crops in the area. The property may now have switched to predominantly grass hay or alfalfa. In the past, Baggenstos field crops appear to have included pumpkins, u-pick vegetables, berries, and corn. The region also features numerous gardens used as personal use vegetable gardens. Individual vegetable gardens that are not operated for a profit are not farm uses pursuant to the definition of "farm use" in ORS 215.203. Based upon the experience of applicant's agent, CSA Planning, Ltd., the following are the expected activities associated with the production of field crops. First, the farming practices consist of plowing, seeding and fertilizing (with the use of a tractor), spraying the crops with insecticides (as needed) and harvesting with a tractor or combine. Some crops are fertilized at the time of planting. Harvested crops are often transported by the operator to a barn or other covered structure where they are stored before being sold. At harvest, some crops are baled. Wheat is thrashed with a combine. Aircraft are sometimes used to manage crops. Harvested crops are transported by truck after they are sold.

  Generally, field crops and vegetables are somewhat limited in their level of mechanization except as part of very large commercial operations for singular crop types which were not observed in the inventory data collection for surrounding lands. Smaller operations require more manual labor and overall higher labor inputs when compared to other farm

uses that can achieve greater levels of mechanization. Most smaller-scale field and vegetable crop operations utilize a standard tractor with attachments appropriate to their crops such as discs, sprayers, trailers, and more specialized harvesters if appropriate.

- **Vineyard:** Critical to vineyard farming practice is the siting and designing of the vineyard itself. It is necessary to select the proper varietals for a particular terroir. The vineyard should be designed to take maximum advantage of solar and micro-climate effects. Only one small ~10-acre vineyard was identified within the impact analysis area.

  Vineyards are a high intensity agricultural practice. According to Oz Clarke's Wine Atlas, Wines & Wine Regions of the World, (Little, Brown and Company, 1995) and OSU's Enterprise Budget for Pinot Noir Wine Grapes in the Willamette Valley (EM8969 – 2008), the farming practices associated with ongoing viticulture are:

  - In winter, grape vines are pruned as a way to control the yield. Sometimes the vines are chip budded to change varieties.
  - New planting is done in the spring once the ground has warmed and the risk of frost is reduced. Spring is also the time fertilizers and pesticides are applied to the grape vines, which is typically done mechanically but can also be done by hand.
  - Throughout the growing season, new foliage is tied to the wood and wire supports that are common to viticulture throughout the world.
  - In spring, mechanical spray equipment is used to treat the vines with chemicals to prevent or suppress mildew and other diseases common to grapes.
  - Irrigation is applied, as needed, throughout the growing season – typically by overhead sprinklers or drip irrigation. Water management is critical to wine grape quality to obtain optimum sugar levels at the time of harvest.
  - The vines are pruned again in summer to prevent excess foliage from shading the grapes. Methods are often employed to protect grapes from birds once the grapes begin to ripen.
  - In the fall, grapes are constantly monitored for sugar content. Harvesting occurs (either mechanically or by hand) during a very short window when grape sugar content is optimal for wine production of the particular varietal being cultivated. The grapes are processed then into wine.
  - After the grapes have been harvested, winter pruning is undertaken in preparation of the next season.

- **Christmas Trees:** Christmas tree farming involves the planting of conifers (typically firs such as noble, grand and Douglas). Approximately 72 acres of Christmas Tree farms were identified, including near the intersection of the proposed Tile Flat extension and SW Scholls Ferry Road. Some Christmas tree farms utilize a direct to consumer sales model where customers come to the farm and select their desired tree. Others farms harvest and transport them to retail sales lots in more populated market areas. Trees can be planted from starts from conifer nurseries or from seed. Trees are routinely pruned to produce "full" trees. Market ready trees typically take 6 to 10 years from seedling. Irrigation may be used to establish trees. Precipitation in western Oregon is typically sufficient to allow trees to grow without supplemental irrigation after establishment. Varying levels of nutrient management occur for a given farm operation, which can be done by tractor or by hand. Final pruning occurs before sale to optimize tree aesthetics.

- **Woodlot**: Based upon the experience of applicant's agents, the following are the expected activities commonly associated with Woodlot use. Trees may be native and may have planted naturally, or trees have been planted post prior removal. Irrigation is not typically involved in raising trees for woodlot purposes. Within the Willamette Valley, seasonal

precipitation and climate are generally sufficient for the growing of trees. Similarly, nutrients and fertilizers are not generally used due to relatively deep rich soils. As trees grow, they are often thinned to achieve optimal growth and overall health. Trees removed during thinning processes are often too small to be profitable or merchantable for lumber and as such are often cut into rounds, split and sold as firewood. Firewood may be transported from the site by the property owner to the home of the purchaser or the purchaser may come to the site for pick up. Trees raised to merchantable size are fell, bucked, loaded and either milled on-site or delivered to a mill. Felling of trees is done either by hand with a chainsaw or with machinery using feller-buncher. Limbing and bucking trees is done either by hand with a chainsaw or by machinery using feller-buncher. Logs are loaded onto log trucks with either separate loaders or with a truck that has a self loader. Limbs and material cut from the logs are often chipped and spread onsite or are piled and burned during wetter months. Sometimes the woody debris is utilized for compost. Sometimes chips are hauled away to be used as fuel.

A few properties in the study area with woodlots appear to be small-scale and primarily used as landscaping or for personal firewood use. Additional acreage located near the northerly portion of the study area may be a mixture of open space and woodlot.

CSA Planning, Ltd.

Mike Savage
Consulting Planner

Attachment A

Oregon
Kate Brown, Governor

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Community Services Division
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Salem, Oregon 97301-2540
Phone: 503-373-0050
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March 13, 2019

Email

Erin Wardell, AICP, Principal Planner
Jessica Pelz, AICP, Senior Planner
Washington County Land Use & Transportation
155 N First Avenue, Suite 350 MS16
Hillsboro, OR 97124

Ms. Wardell and Ms. Pelz:

I am responding to your request to provide our department's interpretation of Oregon Administrative Rule (OAR) 660-0027-0070, Urban and Rural Reserves in the Portland Metro region, as it pertains to transportation-related land uses. In particular those land uses permitted on lands planned and zone for exclusive farm use (EFU) and designated as an urban or rural reserve. I've included here OAR Division 27 Portland Metro Urban and Rural Reserves .

A range of transportation-related land uses are permitted through a combination of statutes and rules on lands planned and zoned EFU. Depending on the use, listed uses are permitted either outright or conditionally. Other uses not listed are permitted through the use of an exception to the statewide planning goals. For example, Oregon Revised Statute (ORS) 215.213(1) allows uses outright, including but not limited to, climbing and passing lanes, reconstruction or modification of public roads and highways; and ORS 215.213(2) allows uses conditionally, including but not limited to, the construction of additional passing and travel lanes with additional right of way and the improvement of public road and highway related facilities. A specific use allowed conditionally in ORS 215.213(2)(10) is subject to an exception, among other items, and is described in its entirety as follows:

> *(10) Roads, highways and other transportation facilities and improvements not allowed under subsections (1) and (2) of this section may be established, subject to the approval of the governing body or its designee, in areas zoned for exclusive farm use subject to:*
> *(a) Adoption of an exception to the goal related to agricultural lands and to any other applicable goal with which the facility or improvement does not comply; or (b) ORS 215.296 for those uses identified by rule of the Land Conservation and Development Commission as provided in section 3, chapter 529, Oregon Laws 1993.*

(Please note that in (10)(b) above, "…for those uses identified…" those uses are listed in OAR 660-012-0065(3).)

OAR 660-0027, Urban and Rural Reserves in the Portland Metro Region, and specifically OAR 660-0027-0070, Planning of Urban and Rural Reserves, does not allow an exception in urban or rural reserves to Goal 3, Agricultural lands, to allow the transportation facilities described in subsection (4)(c) below.

> (*4) Notwithstanding the prohibitions in sections (2) and (3) of these rules, counties may adopt or amend comprehensive plan provisions or land use regulations as they apply to lands in urban reserves, rural reserves or both, unless an exception to Goals 3, 4, 11 or 14 is required, in order to allow:*
>
> *(a) Uses that the county inventories as significant Goal 5 resources, including programs to protect inventoried resources as provided under OAR chapter 660, division 23, or inventoried cultural resources as provided under OAR chapter 660, division 16;*
>
> *(b) Public park uses, subject to the adoption or amendment of a park master plan as provided in OAR chapter 660, division 34;*
>
> *(c) Roads, highways and other transportation and public facilities and improvements, as provided in ORS 215.213 and 215.283, OAR 660-012-0065, and 660-033-0130 (agricultural land) or OAR chapter 660, division 6 (forest lands);*
>
> *(d) Other uses and land divisions that a county could have allowed under ORS 215.130(5) – (11) or as an outright permitted use or as a conditional use under ORS 215.213 and 215.283 or Goal 4 if the county had amended its comprehensive plan to conform to the applicable state statute or administrative rule prior to its designation of rural reserves;*

However, OAR 660-0027-0070(7)(a) below further states that, in fact, a county may take an exception to a planning goal in order to allow a transportation facility in **urban reserves,** essentially reversing a portion of the language in OAR 660-0070(4)(c) above.

> *(7) Notwithstanding the prohibition in sections (2) and (4) of this rule, a county may take an exception to a statewide land use planning goal in order to allow:*
>
> *(a) The establishment of a transportation facility in an area designated as urban reserve; or*
>
> *(b) Modifications to an unconstructed transportation facility that was authorized in an exception prior to February 13, 2008. In addition to the requirements of OAR 660-012-0070, county approval of an exception authorized in this subsection shall demonstrate that the modifications have an equal or lesser impact than the unconstructed transportation facility on lands devoted to farm or forest use, considering the impacts of the identified alternatives on: farm and forest practices; farm and forest lands, structures and facilities; the movement of farm and forest vehicles and equipment; and access to parcels created on farm and forest lands.*

In summary, under current administrative rules, certain transportation-related uses that require an exception to Goal 3 are not allowed in the Portland Metro rural reserves. Current land use policy limits rural reserve development in order to promote rural areas that continue to maintain rural industries, such as farming and forestry, free from conflicts. Limiting roads and transportation facilities in rural reserves also helps promote the viability of urban areas and the future urban reserve areas by encouraging development decisions for a longer reserves planning period that supports multi-modal transportation alternatives, walkable communities and the cost efficient provision of public facilities.

I hope this information is helpful. Please feel free to contact me if you have further questions.

Regards,

Anne Debbaut
Portland Metro Regional Representative
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p: 503.725.2182

cc: Theresa Cherniak, Washington County
Chris Deffebach, Washington County
Gordon Howard, DLCD

Transportation

South Cooper Mountain has a rural road network that serves urban transportation needs. The key challenge for the Concept Plan is how to plan for growth and ensure solutions are delivered for multiple inter-related needs: high volumes of regional through-traffic; intersections and road sections with known safety and capacity issues; almost no existing pedestrian and bicycle system; and the vision to provide transportation options serving a sustainable community. The Concept Plan provides solutions through the strategies summarized below.

Disperse and Balance Regional Traffic – It is well documented that north-south traffic is over-reliant on one corridor: the 175th to 170th Avenue corridor. The solution is to reduce that reliance and disburse regional flows through a combination of improvements and new connections that result in a more complete network. Key projects include: (1) improving 175th at high priority locations such as the "kink" and the Kemmer/175th Avenue intersection; (2) connecting 175th Avenue to 185th Avenue via Kemmer Road and a new road east of 190th; (3) upgrading Tile Flat and Grabhorn Roads to arterial status and realigning the three 90-degree corners; (4) improving Scholls Ferry Road to 5 lanes west to Tile Flat Road; and (5) connecting Tile Flat Road to Roy Rogers Road (long term).

Provide a Well-Connected Local Street Network – The Concept Plan's Transportation Framework sets the stage for a connected, walkable local street system that provides transportation choices in incorporates active transportation elements. This will not only help address the transportation needs of the area, but is an integral part of the vision for highly livable community. The plan specifies the "point A to point B" collector streets and neighborhood routes, and provides flexibility for the site-specific alignments.

Provide a Great, But Practical, Pedestrian and Bicycle Network – South Cooper Mountain's pedestrian and bicycle network will be built incrementally over time. The overall strategy is to provide many types of facilities that will achieve the vision and can be feasibly implemented. The specific strategies and recommendations are to: (1) ensure all streets are "complete" and provide for pedestrians and bicycles as well as vehicles; (2) plan for multi-use paths that parallel one side of perimeter arterials that frame the area;(3) build two key multi-use paths in the SCM Annexation Area;(4) plan for a system of nature trails that provide access to and through resource areas and connect to Cooper Mountain Nature Park; (5) complete the Cooper Mountain Regional Trail; and (6) connect to the River Terrace Trail and other adjacent paths and bikeways.

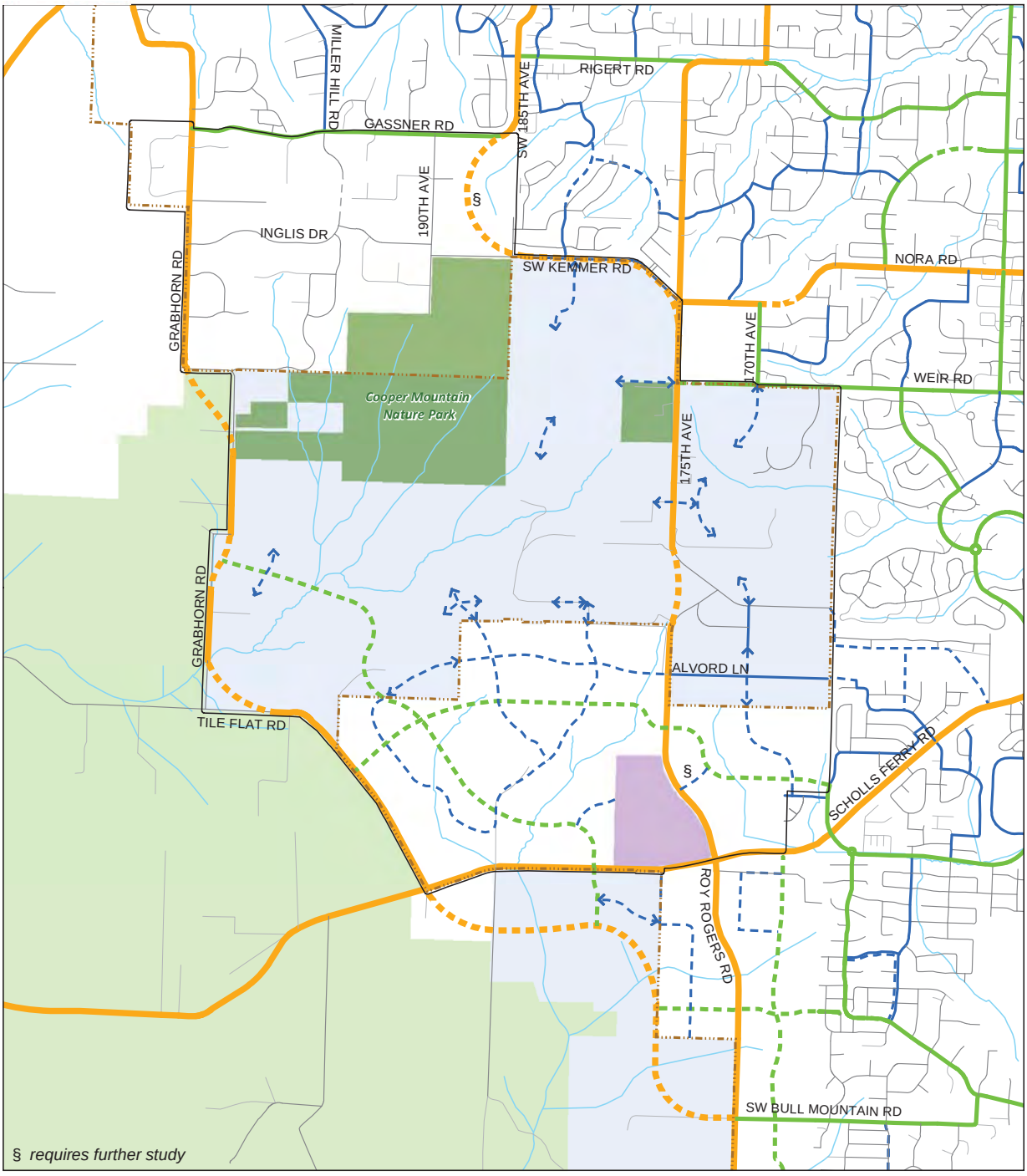
Be Transit-Ready – The Concept Plan focuses its highest density urban neighborhood designations near the high school and Main Street - in the southern part of the planning area - as one strategy to help the area support transit service in the future. The plan also anticipates longer-term, limited-stop commuter-oriented transit service from Sherwood to Hillsboro along Roy Rogers Road and 175th Avenue.

Set Transportation Priorities as Part of the Funding Plan – A pervasive challenge is the limited funds available for transportation needs. Developed through a collaborative process with the City, County, service providers and private sector, the Concept Plan includes an Infrastructure Funding Plan which sets forth three coordinated strategies for bridging the transportation funding gap: (1) increase local revenues through a supplemental system development charge; (2) focus locally generated Transportation Development Tax revenues on local projects; and, (3) identify and coordinate transportation priorities with Washington County and neighboring cities, including MSTIP[3] candidate projects. The funding plan combines these strategies into a high level capital improvement plan for meeting near-term and future transportation needs for the entire 2,300-acre Concept Plan area.

3 MSTIP is Washington County's Major Streets Transportation Improvement Program. More information is available at http://www.co.washington.or.us/LUT/TransportationFunding/what-is-mstip.cfm

Attachment B

Figure ES 4 Transportation Framework Map



Concept Plan Transportation Framework

Proposed Functional Classification*

- Arterial
- Collector
- Neighborhood Route
- Local
- Private

- Rural Reserve**
- Urban Reserve
- Study Area
- Urban Growth Boundary
- Existing Parks
- Planned High School Site
- Streams

** Realignments and new roads are shown in dashed lines. New roads east of study area are based on Washington County's Transportation System Plan; new roads within UGB south of study area are based on current River Terrace Community Plan transportation planning. All new road alignments are conceptual.*

*** As amended by HB 4078A.*

Prepared By: Angelo Planning Group

Date: 8/29/2014

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl

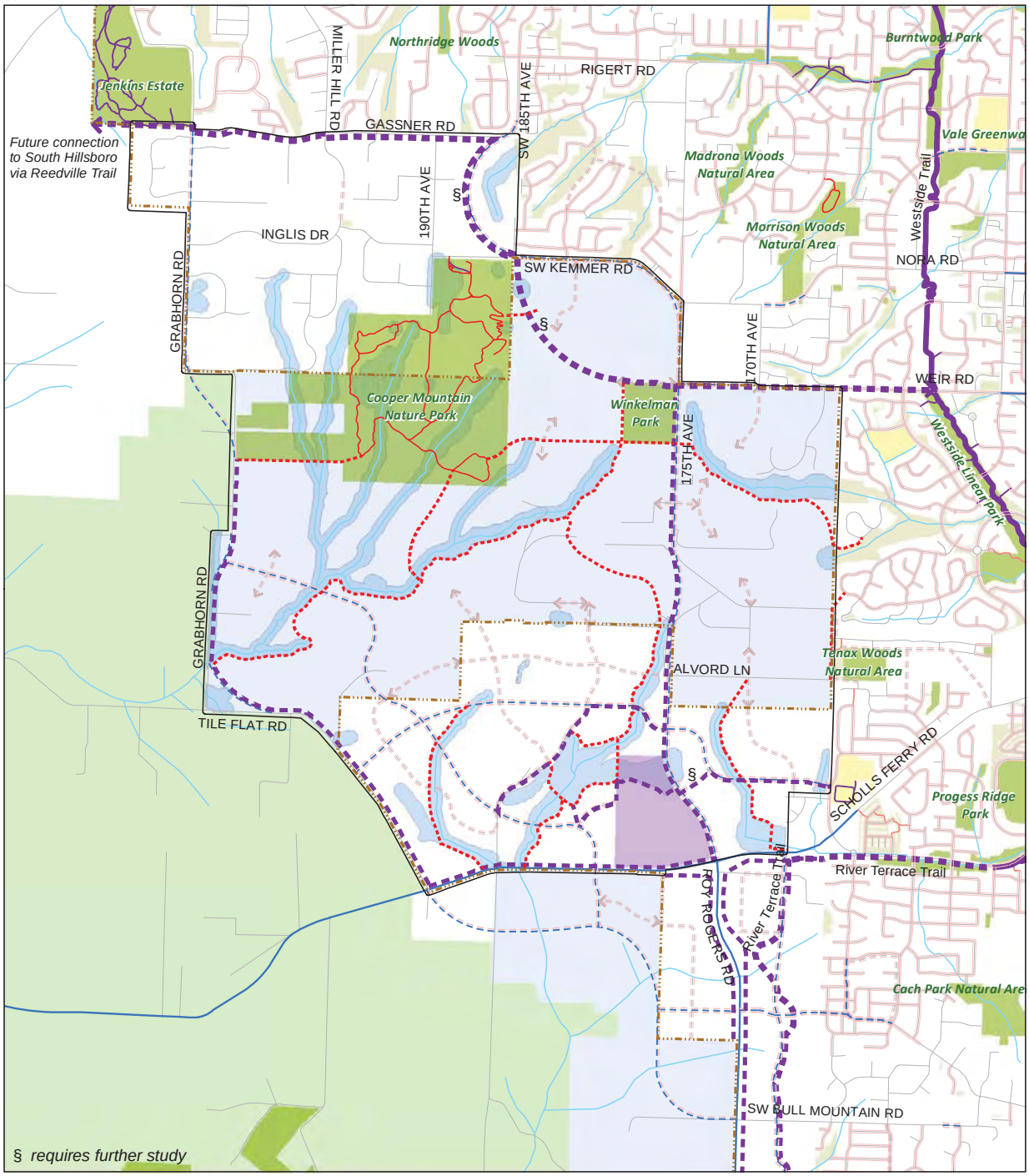
DISCLAIMER
This map is intended for informational purposes only. It is not intended for legal, engineering, or surveying purposes. While this map represents the best data available at the time of publication, the City of Beaverton makes no claims, representations, or warranties as to its accuracy or completeness. Metadata available upon request.

NORTH

0 500 1,000 2,000 Feet

Attachment B

Figure ES Bicycle and Pedestrian Framework Map



Concept Plan Bicycle and Pedestrian Transportation Framework

pe

- Pro osed Regional Multi Use Path
- Pro osed Community Multi Use Path
- Pro osed Nature Trail
- Existing Sidewalk Com lete
- Existing Partial Sidewalks
- Existing Bike lane
- Streets
- Planned Bike Lane
- Planned Sidewalks*
- Regional Multi use Trails
- Community Multi use Trails
- Local Multi use Trails
- Existing Pedestrian Only Nature Trails
- Private Paths
- Study Area
- Urban Growth Boundary
- Streams
- Ri arian Wetland Bu ers
- Planned High School Site
- Existing Parks and Natural Areas
- Preserved by Home Owners Assns
- Existing Schools
- Rural Reserve**
- Urban Reserve

Date: 8/26/2014

** New local streets not shown will have sidewalks.*
*** As amended by HB 4078A.*

Prepared By: Angelo Planning Group
This map is intended for informational purposes only.

NORTH

0 500 1,000 2,000 Feet

Attachment C

WASHINGTON COUNTY
OREGON

February 2, 2015

LONG RANGE PLANNING
ISSUE PAPER NO. 2015-01B

Cooper Mountain Transportation Planning: Issues and Options

Issue

The City of Beaverton recently completed the South Cooper Mountain Concept Plan (Concept Plan), which includes the South Cooper Mountain Annexation Area (SCMAA), Urban Reserve Area 6B (Urban Reserve), and North Cooper Mountain (*Figure 1*). The Concept Plan includes land use, transportation and natural resource recommendations for the above three areas pursuant to Title 11 of Metro's Urban Growth Management Functional Plan. Title 11 guides local planning efforts in the preparation of *concept plans* for urban reserves and the more detailed and comprehensive *community plans* required for areas recently added to the UGB.

During the concept planning process, transportation issues and options were a large part of the discussion. Three key elements of the transportation framework developed through the Concept Plan address identified transportation issues for Washington County. These elements are discussed in this Issue Paper and include: dispersing and balancing regional traffic, providing a well-connected street network, and providing a functional pedestrian and bicycle network.

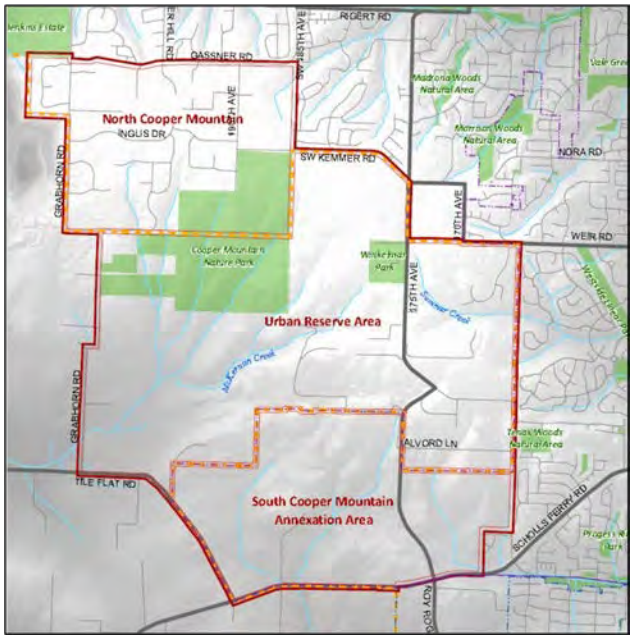


Figure 1

This Issue Paper discusses policy issues and timing questions specific to Cooper Mountain **transportation** planning to allow for potential action by the Board of Commissioners on substantive questions as well as timing relative to this year's Work Program. Issues and options related to land use and natural resources are presented in Issue Paper 2015-1A.

Recommendation

Staff recommends the Board provide direction to include **transportation** elements of the South Cooper Mountain Concept Plan as part of a Transportation System Plan (TSP) update in 2015 as outlined in this Issue Paper.

Department of Land Use & Transportation · Planning and Development Services
Long Range Planning
155 N First Avenue, Ste. 350 MS 14 · Hillsboro, OR 97124-3072
phone: (503) 846-3519 · fax: (503) 846-4412 · www.co.washington.or.us

Background

Title 11 of Metro's Urban Growth Management Functional Plan requires concept plans for urban reserve areas outside the UGB and more detailed community plans for areas newly added to the UGB. Concept plans are non-regulatory documents designed to inform the necessary specifics required in community planning. Concept plans generally provide a relatively broad context in the identification of transportation, housing, and resource preservation needs. Specific uses are mapped generally across particular locations.

Community plans and other elements of the Comprehensive Plan, on the other hand, ensure that areas are urbanized efficiently through more detailed descriptions and mapping and include supporting documents that refine agreements specific to urban service provision, funding options, and implementation strategies. Land use designations and transportation networks are described and mapped, the number and types of housing units is determined, and areas are set aside for the provision of public uses such as parks and schools. Metro typically requires community planning to be completed within two years of addition into the UGB.

Washington County's Transportation System Plan, an element of the Comprehensive Plan, serves as the guiding document establishing the policies, projects and programs necessary to achieve Washington County's transportation goals. The TSP addresses the major roadway system, transit, pedestrian, bicycle and freight transportation issues and focuses on specific system requirements. The TSP designates major transportation system elements and provides classifications indicative of their existing and/or planned function, right-of-way needs, general location and general size.

South Cooper Mountain Concept Plan:

Metro Ordinance No.11-1264B added the SCMAA into the UGB and directed the City of Beaverton, with county support, to lead concept planning for the SCMAA and the Urban Reserve. The inclusion of North Cooper Mountain as part of the concept planning area was formalized in a February, 2013 Intergovernmental Agreement between Beaverton and Washington County. Combining these three areas into one concept planning area recognized the need to holistically plan for transportation, residential development, and natural resource considerations for the entire south slope of Cooper Mountain.

Prior Board discussion

On January 20, 2015, the Board of Commissioners acknowledged the South Cooper Mountain Concept Plan through Resolution and Order 2015-4. At that time, Board members expressed concern regarding certain proposed transportation system improvements in the Concept Plan area. As detailed below, staff recommends some elements of the transportation framework developed in the SCMCP should be incorporated into the county's TSP and that county staff should continue coordination with the City of Beaverton on its Implementation Plan, as appropriate.

Transportation Considerations

Cooper Mountain has primarily rural roads that serve urban transportation needs. The key transportation challenge is how to plan for growth and ensure solutions are delivered for multiple inter-related needs: high volumes of regional through-traffic; intersections and road sections with

known safety and capacity issues; almost no existing pedestrian and bicycle system; and the vision to provide transportation options. Transportation planning for the North Cooper Mountain area is folded into the broader transportation planning for the entire South Cooper Mountain Concept Plan area (Figure 2).

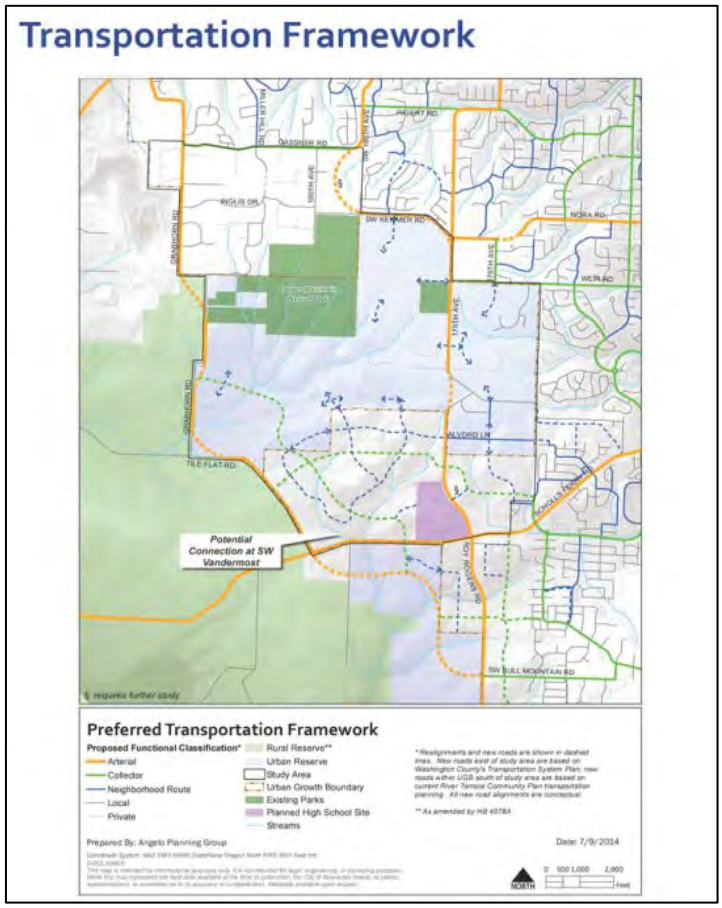


Figure 2

Transportation-related issues generated the most discussion among attendees at Beaverton's open houses and at the county's Oct. 29 open house. The majority of comments addressed congestion and whether existing road capacity and proposed road improvements will accommodate expected new development for the SCMAA and regional growth in general. Some attendees expressed a strong preference for diverting regionally-based traffic around Cooper Mountain using Tile Flat Road and Clark Hill Road. Safety concerns resulting from urban-to-urban traffic traversing unimproved Collector and Arterial roadways were noted in multiple conversations and in submitted written comments. Many of the comments staff has received to date respond to proposed improvements for SW 175th Avenue and a future alignment needed to connect SW 175th Avenue and SW 185th Avenue.

These comments include:

- Requests to not improve the "kink", since it currently acts to calm traffic;
- Divert any future funding to improve SW 175th Avenue to other priorities;
- Improve the existing alignment of SW Gassner, SW 190th Ave and SW Kemmer as an alternative to extending SW 185th; and
- A preference for a straight alignment of the 185th extension.

A citizen group (Save 175th Avenue) organized in opposition to the proposed transportation improvements for the segment of SW 175th Avenue within the Concept Plan area. The group consists primarily of property owners adjacent to or near SW 175th Avenue. The group's primary interest is to direct future regionally-based traffic around Cooper Mountain rather than over the top of the mountain. Current state rules and regulations pertaining to planning outside an urban growth boundary limit our ability to explore certain major north-south route alternatives (i.e. around the mountain). However, this issue will be considered over the next 18 months as

part of the Washington County Transportation Study. Staff will continue to meet with this group when requested to address concerns and explore future options.

Analysis

For transportation issues, many residents voiced a desire for road safety projects such as intersection improvements on county roads that form the perimeter of the North Cooper Mountain planning area, in addition to adding new sidewalks and bicycle lanes.

As noted above, Concept Plan road improvements for 175th Avenue, a frequently used urban-to-urban arterial that currently is two lanes and typically has heavy traffic during commuting hours and at other times of the day, were often referenced as concerns by area residents. Some residents want improvements that could help minimize the existing traffic burden on this street, whereas many residents that live adjacent to the street want traffic either slowed for safety or funneled to another regional connecting route.

The county remains engaged with Beaverton and appropriate service providers in addressing these issues and in coordinating the transportation recommendations contained in the Concept Plan.

Three key elements of the transportation framework developed through the Concept Plan address identified transportation issues for Washington County, as discussed below. These elements are to disperse and balance regional traffic, provide a well-connected street network, and provide a functional pedestrian and bicycle network.

<u>Disperse and Balance Regional Traffic</u>

It is well documented that north-south traffic in the Concept Plan area is over-reliant on one corridor: the Roy Rogers/175th to 170th Avenue corridor. The solution is to reduce that reliance and disperse regional flows through a combination of improvements and new connections that result in a more complete network *(Figure 2).* Key projects to accomplish this include:

Figure 2a

A. Improve 175th at high priority locations such as the "kink" and the Kemmer/175th Avenue intersection (Figure 2a).

Straightening the "kink" is already planned in the Washington County Transportation System Plan (TSP). This proposal was adopted by the Board through A-Engrossed Ordinance No. 588 in 2002. Beaverton's Infrastructure Plan for the Concept Plan Area calls for a combination of funding sources including TDT, a proposed Supplemental System Development Charge (still under development), and MSTIP to pay for both the Kemmer/175th Avenue intersection and "kink" projects. No funding has been allocated. The Implementation Plan calls for continued

coordination on project development for the "kink" improvement with potential construction by 2025.

Staff Recommendation: *No amendment to Washington County's TSP is necessary. However, continued coordination with the City of Beaverton will be required to implement the proposed improvements and achieve the desired functionality of the 175th Avenue corridor.*

B. Connect 175th Avenue to 185th Avenue via Kemmer Road and a new road east of 190th Avenue (Figure 2b).

The Concept Plan shows a future connection of 175th Avenue and 185th Avenue via an extension of 185th Avenue, an arterial designation of Kemmer Road between Mayberry Place and 175th Avenue and an improved Kemmer/175th Avenue intersection. Staff received a number of comments from property owners directly affected by the proposed 185th Avenue extension. There are five options for the Board to consider as part of future ordinance work:

Option 1: Do nothing.

Analysis: A new connection from 175th Avenue to 185th Avenue is necessary to accommodate future traffic volumes. By not taking action, if once urban-level zoning is applied to the North Cooper Mountain Area and property owners seek to redevelop, the county risks not preserving the ability to extend 185th Avenue. Additionally, while limited development is currently allowed in this area, putting the connection on the map would preserve the opportunity to ultimately construct a roadway.

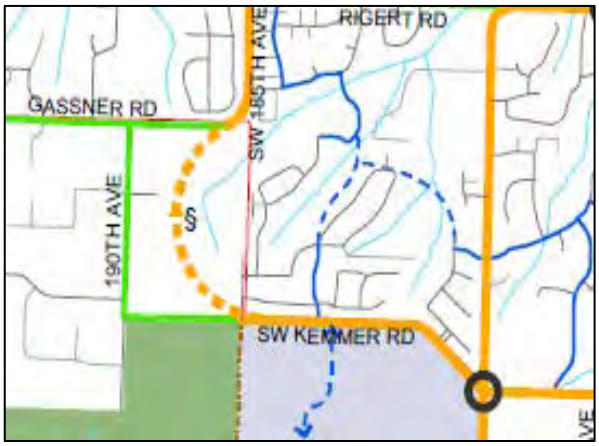


Figure 2b

Option 2: Amend the TSP to redesignate the existing alignment of SW Gassner, SW 190th Ave and SW Kemmer to an arterial as an alternative to extending SW 185th**.**

Analysis: This option may be feasible by realigning the 90-degree curves at Gassner/190th Avenue and 190th Avenue/Kemmer. Further study is required to determine the feasibility of this option. At a minimum this alternative affects a total of six or more properties, including properties that are approximately one-acre lots with single-family residences.

Option 3: Amend the TSP to show the preferred alternative in the Concept Plan (Figure 2b).

Analysis: This alternative was preferred as it minimizes the impact on the headwaters of Johnson Creek and has a lower associated cost. This alternative affects two to three undeveloped properties and one to two properties with single-family residences and out buildings. Engineering for this proposal has not occurred and future project design could change.

Figure 2c

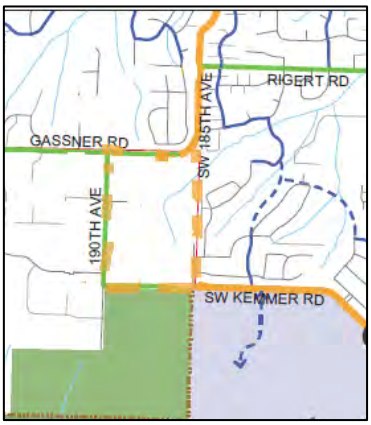


Figure 2d

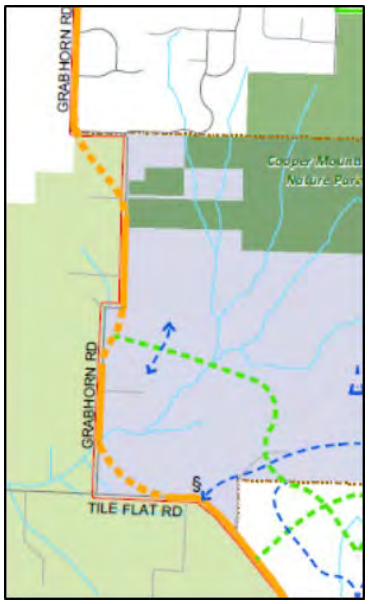


Figure 2e

Option 4: Amend the TSP to show a straight alignment of the 185th extension between Kemmer and Gassner Roads (Figure 2c).

Analysis: Although this alternative minimizes impact to existing properties and residences, a straight alignment requires spanning a ravine over Johnson Creek and significantly increases the cost of the project.

Option 5: Amend the TSP to show the 185th Avenue extension between Gassner Road and Kemmer Road from 190th Avenue to 185th Avenue as a "Refinement Area" (Figure 2d).

Analysis: Refinement Areas are identified locations where further study is needed to determine the mode, function and/or general location of a future transportation improvement. Further study of a Refinement Area may occur through a transportation planning process, capital project development or the land development process. A Refinement Area designation requires a developer to demonstrate how future transportation improvements will not be precluded by a proposed development.

Staff Recommendation: *Staff believes doing nothing is not a viable alternative, but that further analysis is required to determine a preferred alternative. Therefore, staff recommends designating the 185th Avenue extension between Gassner Road and Kemmer Road from 190th Avenue to 185th Avenue as a "Refinement Area" in the Washington County TSP.*

C. Reclassify and realign Tile Flat and Grabhorn Roads to help facilitate their function as arterials (Figure 2e).

Tile Flat Road and Grabhorn Road were reclassified from Collectors to Arterials in the 2014 TSP update. The redesignation results in a consistent functional classification from Scholls Ferry Road to Tualatin Valley Highway. The Concept Plan includes realignments of the three 90-degree corners along Grabhorn Road to improve safety and mobility. There are three options for the Board to consider in addressing the proposed realignments:

Option 1: Do nothing**.**

Analysis: According to the Concept Plan, the projected need for improving Grabhorn Road is in the 10-20 year timeframe. As the 90 degree corners along Grabhorn Road are either located in

an urban or rural reserve, there is minimal risk of precluding a future realignment of Grabhorn Road as shown in the Concept Plan. Furthermore, the realignments may be allowed (pursuant to OAR 660-012-0065) without amending the TSP.

Option 2: Amend the TSP to reflect the alignments shown in the Concept Plan.

Analysis: Realignments are allowed without an exception to Statewide Goal 3 pursuant to OAR 660-012-0065. Further analysis is required to determine how the urban and rural reserve designations affect the county's ability to amend the TSP to show the realignments.

Option 3: Amend the TSP to show a Rural Road Enhancement Corridor along Tile Flat and Grabhorn Roads.

Analysis: The 2014 TSP update identified Rural Road Enhancement Study Corridors where conflicting travel needs of different users must be considered and monitored. Minor enhancements, including realignments, (consistent with OAR 660-012-0065) may be appropriate to consider along these corridors as resources allow.

Staff Recommendation: *Staff believes doing nothing is a viable alternative in the near-term as the timeframe associated with improving Tile Flat/Grabhorn Road is fairly long-term and the realignments may be achieved without amending the TSP. However, development adjacent to the roadways may preclude or constrain opportunities for roadway improvements.*

D. Improve Scholls Ferry Road to 4/5 lanes west of 175th to Tile Flat Road.

The Concept Plan identified the need to widen Scholls Ferry Road to 4/5 lanes as necessary to accommodate future traffic volumes. Accordingly Beaverton's TSP was amended designating this section of Scholls Ferry Road as 4/5 lane arterial. There are two options for the Board to consider:

Option 1: Do nothing.

Analysis: The north side of Scholls Ferry Road is within the UGB and incorporated to the City of Beaverton. The area south of Scholls Ferry Road is currently outside the UGB and designated as urban reserve and/or undesignated. In the near-term any land use and/or right-of-way implications will be along the north side of Scholls Ferry Road, as development occurs.

Option 2: Amend the county's TSP to incorporate the Concept Plan recommendation of Scholls Ferry Road as a 4/5 lane arterial.

Analysis: Scholls Ferry Road is similar to other roads in the county that divide urban and rural areas. West Union Road is another example of a road that is designated as an urban arterial that establishes the UGB boundary. There are challenges with implementing the planned 4/5 lane designation along these facilities due to the land use restrictions outside the UGB. There has been a number of requests to further evaluate how to achieve the planned network while meeting statewide planning goals and preserving the rural characteristics

adjacent to the roadway. The issue of how to achieve and design these urban/rural roadways will need additional attention at a later time.

Staff Recommendation: *Staff recommends the Board direct staff to amend the county's TSP to be consistent with Beaverton's TSP and designate Scholls Ferry Road as 4/5 lanes west of 175th Avenue/Roy Rogers Road to Tile Flat Road. Staff believes there is little risk in amending the county's TSP to incorporate the Concept Plan recommendation. Staff is not aware of any issues raised through the public process related to this proposal.*

E. Connect Tile Flat Road to Roy Rogers Road (long term).

The Concept Plan identified the need to connect Tile Flat Road and Roy Rogers Road to reduce reliance on 175th Avenue, disperse regional flows, and alleviate pressure on the intersection of Scholls Ferry Road and 175th Avenue. There are two options for the Board to consider:

Option 1: Do nothing.

Analysis: The proposed connection would bisect the area south of Scholls Ferry Road, which as previously mentioned is currently outside the UGB and designated as urban reserve and/or undesignated. Current state rules and regulations pertaining to planning outside an urban growth boundary limit our ability to amend the county's TSP to show the proposed extension of Tile Flat Road. The Concept Plan included the Tile Flat extension as a long-term project, beyond the 20-year horizon. Once the areas south of Scholls Ferry Road are brought into the UGB (in 20-50 years) and additional planning occurs, the Concept Plan will inform decision -making and the Tile Flat extension will be evaluated at that time.

Option 2: Take an exception to state rules and amend the county's TSP to incorporate the Concept Plan recommendation to connect Tile Flat Road and Roy Rogers Road.

Analysis: Further analysis would be required to determine the feasibility of seeking an exception

Staff Recommendation: *Do nothing. Staff believes it is unnecessary to take action on this until the area south of Scholls Ferry Road is brought into the UGB or other policy direction warrants making the connection sooner.*

Provide a Well-Connected Street Network

The Concept Plan's Transportation Framework set the stage for a connected, walkable local street system that provides transportation choices. Local street connectivity is required with development.

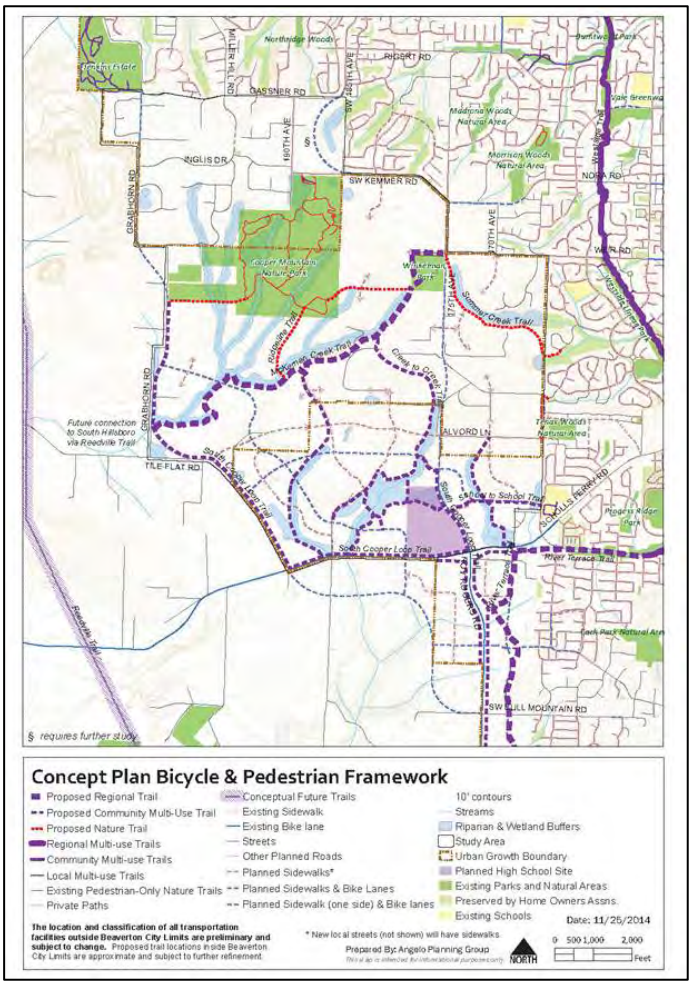


Figure 3

Analysis: The Concept Plan identified a local street network (city collectors and neighborhood routes) within the SCMAA. No new streets were identified in the other subareas, including North Cooper Mountain, except the 185th Avenue extension discussed above. There were a number of issues and concerns raised by county staff regarding inconsistencies with county access management standards and the proposed local street network connecting to county arterials. The county's access management standards limit access to arterials from collectors or other arterials. The Concept Plan and subsequent Beaverton TSP amendments show several neighborhood routes connecting directly to county arterials. Footnotes were included in the TSP and Concept Plan with the county's access management standards as a caveat for future analysis. It is standard practice to amend the county's TSP to be consistent with a city's adopted TSP.

Staff Recommendation: *Staff recommends the Board direct staff to amend the county's TSP to be consistent with Beaverton's TSP to show the local street network in the SCMAA, including some notation that suggests future analysis is required in order to connect a neighborhood route to an arterial.*

Provide a Functional Pedestrian and Bicycle Network

The overall strategy is to provide many types of facilities that will achieve a functional transportation network that can be feasibly implemented. The specific strategies and recommendations are to: (1) ensure all streets are "complete" by providing for pedestrians and bicycles as well as vehicles; (2) plan for multi-use paths that parallel one side of perimeter arterials that frame the area; and (3) complete the Cooper Mountain Regional Trail that provides access to and through resource areas and to Cooper Mountain Nature Park (see Figure 3).

Analysis: Provision of a diverse and connected bicycle and pedestrian network is one of the great opportunities for Cooper Mountain. North Cooper Mountain has one proposed Regional Multi-Use Trail: the Cooper Mountain Regional Trail. This trail will ultimately connect the regional Westside Trail to the planned Reedville Trail (formerly called the BN Powerline Trail) as well as linking to Cooper Mountain Nature Park.

The Concept Plan also proposes multi-use trails adjacent to and/or within county right-of-way, where appropriate. These are assumed to be paved paths that accommodate both pedestrians (including those with disabilities) and bicyclists. They may follow roads, separated from the roadway by a landscaped area, or be located in their own separate right-of-way. Trail width may range from 10 to 14 feet depending on context and surrounding constraints (with 2-foot gravel shoulders wherever feasible). Continued coordination with city and agency partners will be necessary to develop design standards, address land development implications, as well as maintenance and operations of the trails.

Staff Recommendation: *Staff recommends the Board direct staff to amend the county's TSP Bicycle and Pedestrian Modal Plans to be consistent with Concept Plan Bicycle and Pedestrian Framework to show the regional and community multi-use trails.*

South Cooper Mountain Concept Plan Recommended Actions

The completed South Cooper Mountain Concept Plan will function in the future as a guiding document for Beaverton, the county, and area service providers to coordinate and implement future transportation and land use changes for the south slope of Cooper Mountain. The majority of transportation improvements recommended in the Concept Plan are at least 10 years from project development and initiation. Other projects are on a shorter timeline, as noted in Beaverton's Implementation Plan

The Implementation Plan for this study recommends 13 near-term Action Items that the city intends to move forward. Washington County is included as a lead sponsor or shared sponsor (with Beaverton) of the two transportation related Action Items below. The timeframes associated with each Action Item are listed and were current as of November 26, 2014.

- Washington County TSP Amendments: fall 2014-fall 2015.
- 175th Avenue "kink" realignment study – Phase 1: no specified timeframe (see attached).

County TSP amendments for the 2015 long range and transportation planning ordinance season are recommended in this Issue Paper. These proposed amendments are:

  - Designation of the 185th Avenue extension between Gassner Road and Kemmer Road as a "Refinement Area";
  - Designate Scholl's Ferry Road as 4/5 lanes west of 175th Avenue/Roy Rogers Road to Tile Flat Road;
  - Provide consistency with the Beaverton TSP by showing the local street network of the SCMAA; and

- Provide consistency with the Concept Plan Transportation Framework by amending the County TSP Bicycle and Pedestrian Modal Plans.

Depending on Board direction regarding the timeframe for TSP amendments, a modified timeframe may be necessary. Planning and improvements to 175th Avenue do not currently have a timeframe associated with project development.

Summary

This issue paper, along with the associated Issue Paper 2105-1A, addresses South Cooper Mountain Concept Plan recommendations specific to Washington County. The Board is asked to consider the transportation options as discussed in this Issue Paper and to provide direction to staff as part of a Transportation System Plan (TSP) update in 2015. Upon inclusion of any or all proposed recommendations in the TSP update, staff will coordinate with Beaverton and applicable service providers and continue to refine the Concept Plan transportation proposals.

Beaverton South Cooper Mountain The Region's Next Great Community	**# 3** **WASHINGTON COUNTY TRANSPORTATION SYSTEM PLAN UPDATE**

Project Description	**Lead/Sponsor Organization**
This action will create and adopt amendments to the Washington County Transportation System Plan (TSP) to implement the South Cooper Mountain Concept Plan.	Washington County Department of Land Use and Transportation

Rationale
This action is needed to update the County TSP so it is consistent with, and implements, transportation-related recommendations from the SCM Concept Plan. The updates will solidify the extensive City-County coordination which occurred related to transportation facilities and funding. The updated TSP will set the stage for coordinated project planning and delivery in the future.

Implementation steps and schedule	1. Include TSP information in public information posted regarding North Cooper Mountain (NCM) plan and code amendments - ongoing 2. Prepare draft amendments – Winter, 2015 3. Work sessions with County Planning Commission and Board of County Commissioners – Spring, 2015 4. Hearings and adoption – By October 31, 2015 TSP amendments must be completed by the end of the 2015 County "ordinance season", or held over to the next year.
Public outreach	See above. Outreach was extensive during the Concept Plan. This action will continue the practice of providing on-going information for NCM and Urban Reserve Area residents. A primary point of contact at the County should be designated and communicated on the City and County web pages.

Partners and roles
City of Beaverton – The City should keep its SCM web page up to date with information and links to Washington County's web page and contacts.

Estimated Cost	**Funding Sources**
$ NA	Staff time

Beaverton South Cooper Mountain The Region's Next Great Community	**#4**
	175th AVENUE "KINK" – PHASE 1

Project Description	Lead/Sponsor Organization
This action will conduct the preliminary design and coordination work needed for the realignment of 175th Avenue between Outlook Lane and Cooper Mountain Lane (3-lane County arterial, actual cross-section tbd). Phase 1 is a first step of a multi-year process to design the project and work with property owners in the area – leading to project construction by 2025. The land is currently outside the Urban Growth Boundary (UGB) and therefore will initially be improved to County rural arterial standards if it remains outside the UGB at time of construction.	A Partnership of: City of Beaverton Public Works Washington County Department of Land Use and Transportation

Rationale

This project was identified in the SCM Infrastructure Funding Plan as one of the 0-10 year priorities. It is needed to correct steep grades and the sharp turn at the "kink", and bring this section of 175th Avenue into compliance with adopted standards for a 3 lane arterial. Due to the adjacency to the UGB and near-term development in the Community Plan area, it is a high priority project to initiate. It is particularly important that this project be conducted with on-going outreach and communication with affected property owners.

Implementation steps and schedule	The following steps are preliminary. At County request, no dates have been included. 1. Establish partnership agreement and approach to the project, and verify staff resources. 2. Establish staff leadership for the project, including an engineering manager and public outreach planner within the partner agencies. 3. Prepare a project schedule and outreach program. 4. Obtain survey information and base mapping.. 5. Prepare a preliminary design and cost estimate. 6. Prepare updated funding plan. Notes: a. Phase 1 will conclude with a preliminary design. Future phases will include: Phase 2 – Commitment of project funds; Phase 3 - right-of-way acquisition; Phase 3 – Final design and construction.
Public outreach	Effective, open and on-going public outreach is essential to this project. As noted above, a public outreach program should be prepared as part of Phase 1. At a minimum: information should be available on the City's web site; a point of contact (i.e. public outreach planner) for the public should established; and a pro-active approach to public information and communication with property owners should be

	established.
Partners and roles	
Key partners: City of Beaverton Public Works, City of Beaverton Community Development, Washington County Department of Land Use and Transportation.	
Estimated Cost	**Funding Notes**
$ 40-50,000	Costs are for survey and consultant assistance. Potential funding is the SCM transportation SCD and/or dedicated TDT funds for Phase 1.

WASHINGTON COUNTY
OREGON

Dec. 8, 2021

To: Washington County Planning Commission

From: Andy Back, Manager
Planning and Development Services

Subject: **PROPOSED LAND USE ORDINANCE NO. 883 – An Ordinance Amending the Transportation System Plan Element of the Comprehensive Plan Relating to the Future Extension of Cornelius Pass Roadway**

STAFF REPORT

For the Dec. 15, 2021 Planning Commission Hearing
(The public hearing will begin no sooner than 6:30 p.m.)

I. STAFF RECOMMENDATION

Conduct the public hearing; recommend approval of Ordinance No. 883 to the Board of Commissioners.

II. OVERVIEW

Ordinance No. 883 proposes to amend the Transportation System Plan (TSP) to add an extension of Cornelius Pass Road between SW Rosedale Road and SW Farmington Road on rural lands. The extension would require an exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public Facilities and Services) and 14 (Urbanization) to allow the TSP to include a new roadway outside the regional Urban Growth Boundary (UGB). Attachment A to this staff report provides a Goal Exception Analysis that demonstrates the extension meets the requirements for this type of Goal Exception.

Ordinance No. 883 is the result of planning studies conducted by Washington County and the City of Hillsboro. These are discussed in detail in the Background section of this staff report. Each study included community engagement through multiple channels, including individual community members, community groups, stakeholders and city councils. Each of the studies

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identified the need for additional network connectivity in this area to support planned land uses and provide redundancy and resiliency for the existing system. The City of Hillsboro's plan for South Hillsboro shows the need for extending Cornelius Pass Road further south from SW Rosedale Road to SW Farmington Road. Including the extension in the TSP now is important to inform the design and construction of the roadway within South Hillsboro (from TV Highway to SW Rosedale Road), and provides the ability to preserve right-of-way and then construct the roadway extension when it is determined to be of high need or as a part of future development if the area is included in the regional UGB.

III. BACKGROUND

Ordinance No. 883 proposes adding the Cornelius Pass Road extension to the Washington County TSP. Washington County Ordinance No. 883 was authorized by the 2021-22 Long Range Planning (LRP) Work Program, Task S1.3.

Washington County transportation planning staff completed two studies related to long-term transportation needs to serve future development in areas newly added to the regional UGB and in the County's urban reserve areas: the Cooper Mountain Transportation Study and the Urban Reserves Transportation Study.

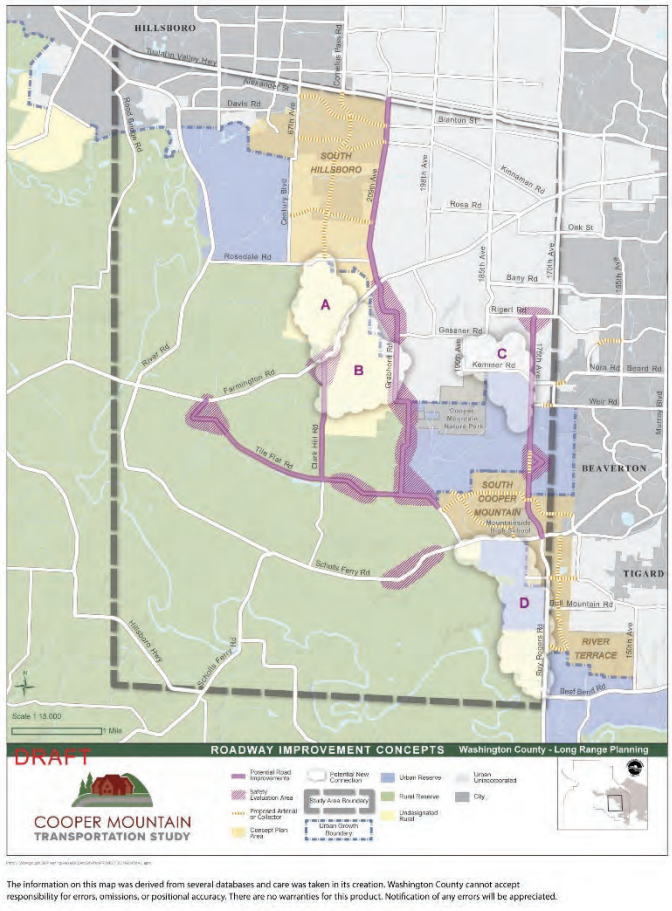
Cooper Mountain Transportation Study

The Cooper Mountain Transportation Study began in fall 2017 with the primary goal of identifying a long-term multimodal transportation network for the Cooper Mountain area, along with the measures necessary for implementation. The Study evaluated several transportation improvement concepts to address traffic resulting from future regional growth and development. The improvement concepts consider how best to improve traffic and connectivity throughout the Cooper Mountain area.

The Cooper Mountain Transportation Study considered the existing urban traffic in the rural area and the impacts of continued urban development on rural area traffic. The study considered the existing transportation network and identified opportunities for improvements in both the urban and rural areas to address existing and anticipated travel. The focus of the study was to provide alternatives to urban traffic use rural roads. The study concluded that the urban roadway network does not provide for the most direct or fastest travel route between existing urban areas. Therefore, some travel between these urban areas would likely continue to use the rural roadway network.

A number of improvement concepts to both urban and rural roads were considered. As a result of the evaluation several urban and rural safety and capacity improvements were identified. The Cooper Mountain Transportation Study considered a wide range of transportation improvement concept packages for the study area shown in the graphic below.

Cooper Mountain Transportation Study Area



The Cooper Mountain Transportation Study graphic above was adopted into the 2018 Regional Transportation Plan by Metro on Dec. 6, 2018 (Metro Ordinance No. 18-1421).[1]

The Cooper Mountain Transportation Study included a public outreach effort to inform area residents, adjacent cities and other stakeholders about the study; give an overview of the study area and potential improvement concepts; and discuss the project schedule and next steps. Project outreach materials included a project website and two handouts that were distributed to the nearby CPOs. Staff met with and presented the project overview to the various groups, cities and stakeholders, including:

- 175th Avenue Neighborhood Association "Core Team" – April 30, 2018
- Beaverton Neighbors Southwest Neighborhood Association Committee (SW NAC) – May 16, 2018
- CPO 10 – May 17, 2018 and May 16, 2019
- CPO 6 – June 7, 2018 and May 2, 2019
- City of Beaverton staff – May 21, 2018
- City of Tigard staff – June 5, 2018
- City of Hillsboro staff – June 11, 2018
- Department of Land Conservation & Development (DLCD) – June 6, 2018

[1] Page 8-7 of the Metro 2018 RTP

- 1000 Friends of Oregon – July 9, 2018
- Oregon Department of Agriculture (ODA) – July 10, 2018
- Urban Road Maintenance District Advisory Committee (URMDAC)/Rural Roads Operations and Maintenance Advisory Committee (RROMAC) joint meeting – Feb. 14, 2019
- Washington County Board of Commissioners – Dec. 11, 2018
- Washington County Planning Commission – Feb. 6, 2019

The Cooper Mountain Transportation Study recommended that the preferred improvement concept package, including the Cornelius Pass Road extension, be studied further and refined through the County's Urban Reserves Transportation Study. In addition, because the Cornelius Pass Road extension and the Tile Flat Road extension required specialized analysis related to goal exception findings required by Oregon Administrative Rule 660, the County contracted with an outside consultant to conduct the necessary alternatives analysis for these two recommended projects.

Urban Reserves Transportation Study

The Urban Reserves Transportation Study was funded by a Planning and Development Grant, awarded to Washington County by Metro Council in 2018. The Urban Reserves Transportation Study built on the results of the Cooper Mountain Transportation Study to look at future development impacts in all of the County's urban reserve areas and the three areas added to the regional UGB in late 2018: Middle Cooper Mountain, Kingston Terrace and Witch Hazel Village South.

The Urban Reserves Transportation Study considered the cumulative transportation impacts of future development in the County's urban reserve areas to help inform future concept and comprehensive planning for these areas. The Urban Reserves Transportation Study included:

- Coordination with Washington County cities to determine future development assumptions.
- Analysis to identify areas with future capacity and improvement needs.
- Engineering feasibility analysis of several identified improvements, including SW 185th Avenue extension from SW Gassner Road to SW Kemmer Road, SW 175th Avenue "kink" realignment – proposed by Ordinance No. 881.
- Creation of an infrastructure funding plan toolkit to provide a best practices framework to local jurisdictions.

The Urban Reserves Transportation Study travel demand modeling showed that the improvements recommended by the Cooper Mountain Transportation Study would be needed to help accommodate traffic from future growth in the County's urban reserve and urban growth boundary areas. The analysis done for the Urban Reserves Transportation Study supported adopting TSP amendments to serve future growth in the County. The Cornelius Pass Road extension TSP amendment reflects the outcomes from the Urban Reserves Transportation Study and will help the County be prepared for future development impacts to its transportation network.

The Urban Reserves Transportation Study included close coordination with city and agency partners, stakeholders and community groups. Project outreach materials included a project website and handout. Staff met with and presented the project overview and recommendations to the following groups:

- CPO 6 – March 5, 2020 and May 6, 2021
- RROMAC – Feb. 13, 2020
- Washington County Planning Commission (PC) – May 20, 2020 and May 19, 2021
- Washington County Board of Commissioners – July 28, 2020 and Feb. 9, 2021
- Beaverton City Council – Oct. 20, 2020
- Tualatin City Council – July 13, 2020
- Tigard City Council – Sept. 15, 2020
- Washington County Coordinating Committee – May 17, 2021
- Individual property owner meetings and phone calls.
- Stakeholder Committee including representatives from DLCD, ODA, 1000 Friends of Oregon and the Homebuilders Association of Metro Portland.

Ordinance Notification

Notice 2021-08 regarding proposed Ordinance No. 883 was mailed Oct. 27, to parties on the General and Individual Notification Lists (community participation organizations, cities, special service districts, and interested parties). A copy of the notice and ordinance was provided to the Planning Commission at that time. A display advertisement regarding the ordinance was published Oct. 29 in *The Oregonian* newspaper.

Supplemental Public Notification

A supplemental notice was mailed Oct. 8, 2021 to property owners potentially affected by the Cornelius Pass Road extension. An online question and answer session regarding Ordinance No. 883 was held on Oct. 25, 2021. Eleven community members and one Hillsboro staff member attended. Discussion focused on the road alignment and which properties may be affected. There were complaints about the Willamette Water Supply Project work in the area and questions about transportation improvements related to the South Hillsboro development.

IV. ANALYSIS

Ordinance No. 883 proposes to amend the Transportation System Plan (TSP) to add an extension of Cornelius Pass Road between SW Rosedale Road and SW Farmington Road on rural lands. The purpose of this TSP amendment is to ensure that ongoing and future planning efforts can consider the roadway. This amendment allows future planning to size other roadways and infrastructure considering the Cornelius Pass Road extension.

The Cornelius Pass Road extension is proposed to be located on land that is outside the UGB and not designated as either urban reserve or rural reserve; the land is considered to be rural undesignated. Since the extension would be located outside the UGB, the extension requires an exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public

Facilities and Services) and 14 (Urbanization) to allow the TSP to include a new roadway outside the UGB. Attachment A to this staff report provides the analysis necessary for Washington County to adopt an exception from these planning goals for the Cornelius Pass Road extension.

Coordination

Discussions with City of Hillsboro staff regarding the South Hillsboro development area has indicated the importance of the connectivity that the Cornelius Pass Road extension will achieve. The South Hillsboro Community Plan identifies the need for the rural extension of Cornelius Pass Road south of SW Rosedale Road. The rural extension serves as an important connection for local circulation within and through the developing South Hillsboro community. In addition to circulation and connectivity benefits, the extension provides a parallel route to other roadways and better distributes traffic throughout the South Hillsboro community.

Washington County staff closely coordinated with the Tualatin Valley Water District (TVWD) and the Willamette Water Supply Project (WWSP) to colocate easements and future infrastructure impacts as much as possible. Staff participated in regular meetings with TVWD and WWSP and attended several conversations with potentially affected property owners through the process. The proposed Cornelius Pass Road alignment aligns with the WWSP alignment through the area as much as possible to minimize impacts on properties in the corridor.

Ordinance Contents

Ordinance No. 883 includes one exhibit with three pages, as follows:

- Page 1 shows the general, planning level, rural Arterial alignment. New roadway alignments shown on the TSP are generalized. Often the roadway alignment will be adjusted during project development, engineering, and construction processes. The key aspect of most generalized roadway alignments shown on the TSP is identifying the specific properties that are (or could be) affected by the roadway.
- Page 2 adds a "Roadway Exception Corridor" to the TSP. This is a new type of graphic that has not been included in the TSP previously. The exception corridor designates the area within which a rural roadway alignment for which an exception has been taken, may be adjusted during project development, engineering, and construction. Identifying this corridor complies with OAR 660-012-0070(3)(a).
- Page 3 adds the appropriate text to the TSP for the a "Roadway Exception Corridor" shown on page 2 of the exhibit.

As discussed in the Background section above, years of technical analysis and community engagement have resulted in a recommendation for the proposed Cornelius Pass Road extension. Attachment A to this staff report, the Cornelius Pass Road Extension Goal Exception Analysis, documents the requirements and provides the factual information necessary to take an exception from Oregon Statewide Planning Goals.

Cornelius Pass Road Extension

Construction of the future roadway is not expected until such time that connectivity becomes necessary to help accommodate traffic through the area and funding is available. The

extension of Cornelius Pass Road is not intended to promote urbanization of the lands it crosses. Rather it provides for a system to accommodate the needs of the growing adjacent and nearby urban communities.

The Cornelius Pass Road extension is proposed as a rural Arterial roadway with a travel lane and shoulder bikeway in each direction. For the purposes of this analysis, the design is assumed to be consistent with the rural road design and construction standards for a rural Arterial roadway. However, adding a road to the TSP does not determine final design; design is determined at the time of funding.

Conceptual Engineering

Attachment B provides a conceptual engineering review that considers alternatives for the reconstruction of the intersection of SW Clark Hill Road and SW Farmington Road. These alternatives were developed to inform the Willamette Water Supply route through the area. This conceptual engineering assessment is intended to demonstrate the general alignment and relative scale of impact of the Cornelius Pass Road extension. The alternatives consider options for the configuration of the intersection to improve safety and provide for an appropriate connection. The engineering is conceptual only and should not be considered as anything more than an improvement concept. Detailed engineering will need to revise the conceptual engineering in future project development.

Cornelius Pass Road Extension Goal Exception Analysis

Attachment A to this staff report presents an analysis of the transportation system, consistent with the regional planning requirements and utilizing the applicable performance measures and standards. The analysis in Attachment A considers the exception corridor shown on Exhibit 1, page 2. The applicable performance standard is the Arterial Spacing Standard described in Section 3.6 of Attachment A. The Arterial Spacing standard utilizes the Regional Transportation Plan (RTP) Arterial spacing standards as applied in the Washington County TSP.

The Cornelius Pass Road extension is an important north-south connection in the County's transportation network because it will serve traffic from the greater Hillsboro community traveling south and traffic from the southern Washington County growth areas traveling north to employment and other amenities. In addition, the proposed extension provides additional emergency access, system redundancy and connectivity to meet the desired one-mile arterial spacing standard, which is otherwise deficient in this area. The growing South Hillsboro community is located immediately north of Rosedale Road. The South Hillsboro community plan includes an urban extension of Cornelius Pass Road to Rosedale Road.

The analysis in Attachment A demonstrates that the proposed Cornelius Pass Road extension addresses a significant transportation system connectivity deficiency. It is necessary to add the Cornelius Pass Road extension to the TSP to mitigate the identified deficiency and comply with the requirements of the Oregon Transportation Planning Rule and Regional Transportation Functional Plan. Attachment A also address the lengthy planning processes and range of alternatives considered. No other solutions have been identified that would provide for an acceptable or cost-effect solution to the identified connectivity deficiency. The

evaluation in Attachment A meets the applicable requirements for demonstrating that an exception to Statewide Planning Goals is allowed.

Attachment A also considers:

- The need, mode, function and general location for the proposed Cornelius Pass Road extension.
- Other thresholds used to evaluate the reasonableness of the alternatives.
- Alternatives analysis for improvements and measures not requiring an exception.
- Detailed analysis of the alternatives requiring an exception.
- The net Economic, Social, Environmental and Energy consequences of the proposed exception.
- Rural lands impact analysis.
- Goal 5 resource analysis.

Summary of Proposed Changes

Ordinance No. 883 proposes to amend the TSP to add an extension of Cornelius Pass Road between SW Rosedale Road and SW Farmington Road on rural lands. The extension would require an exception to Oregon Statewide Planning Goals 3 (Agriculture), 4 (Forest Lands), 11 (Public Facilities and Services) and 14 (Urbanization) to allow the TSP to include a new roadway outside the regional UGB. Attachment A, the Cornelius Pass Road Extension Goal Exception Analysis, documents an evaluation of alternatives and demonstrates that the Cornelius Pass Road extension meets all the applicable criteria and standards for the exception. The Cornelius Pass Road extension will form part of the regional roadway framework necessary for the transportation system to serve the growing and developing communities in area.

List of Attachments
The following attachments identified in this staff report are provided:

Attachment A: Cornelius Pass Road Extension Goal Exception Analysis
Attachment B: Cornelius Pass Road Extension conceptual engineering alternatives
Attachment C: Willamette Water Supply Project FAQ

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Cornelius Pass Road Extension Goal Exception Analysis

This attachment is based the Cornelius Pass Road Extension Goal Exception Analysis conducted by CSA Planning and provided to Washington County on Aug. 5, 2020. Washington County staff has integrated the CSA analysis with regional planning requirements as documented in this attachment. Special thanks to the Cooper Mountain Transportation Study project team and CSA Planning.

Section 1: Introduction

The Cornelius Pass Road goal exception analysis is being coordinated with a parallel but separate goal exception process for the potential extension of Tile Flat Road. Analysis of each of these two road extensions has been conducted both in tandem, and as separate transportation improvement projects.

The analysis presented in this document, together with the supporting documentation, provides a factual basis for an exception from Statewide Planning Goals for the Cornelius Pass Road extension. The goal exception allows for more detailed design work to be undertaken and future construction funding to be considered for these projects and balanced against funding for other projects in the County. Washington County anticipates that actual construction of this project to be many years in the future. The primary purposes of obtaining a goal exception at this point in time is to:

- Coordinate land use and transportation planning for a regional system that is adequate to accommodate future travel needs.
- Enable other planning processes to include the Cornelius Pass Road extension in the assumptions for the future network.
- Enable the preservation of right of way needed for the future road extension.

1.1 Cornelius Pass Road Extension Planning and Background

Transportation planning in and around Cooper Mountain has been discussed by the County and its municipalities for many years. In the 1980s and 1990s, planning efforts included the Western Bypass and the Land Use, Transportation and Air Quality (LUTRAQ) studies. In more recent years, the Cooper Mountain transportation network has been an ongoing topic of discussion as part of the Washington County Transportation Futures Study, the Cooper Mountain Transportation Study, the Urban Reserves Transportation Study, Concept Plans in South Cooper Mountain, River Terrace, Kingston Terrace, South Hillsboro and West Sherwood, and anticipated development of other high growth areas (Urban Reserves) on the western edge of the urban growth boundary (UGB).

Comments received from residents of the 175th Avenue Neighborhood Association area, along with comments to the Washington County Transportation Futures Study and the Washington County Long Range Planning Work Program, have centered around the following main ideas:

- Need for a new all-weather, generally flat and bikeable, alternative route to provide a parallel route to SW 175th Avenue, primarily using the following improvement ideas:
    - Extend Cornelius Pass Road south from SW Rosedale Road to connect with SW Clark Hill Road.
    - Extend SW Tile Flat Road to south and east from SW Scholls Ferry Road, connecting to SW Roy Rogers Road.
- Do not invest resources to straighten the curve on SW 175th Avenue as it currently acts as a traffic calming mechanism.

- Need for a new limited access parkway (or freeway) to connect from Sherwood/Wilsonville to Hillsboro (more broadly, between I-5 and US 26).
- Farmland preservation and recognition that any arterial improvements should include accommodation for agricultural equipment.

A variety of proposed routes, including the "around the mountain" concept proposed by the 175th Avenue Neighborhood Association, have been evaluated to determine the transportation network benefits, costs, opportunities, and constraints. These assessments have informed discussion about the long-term multimodal transportation network necessary to serve the area.

At the end of 2018, Metro added the CMTS project to the latest iteration of the Regional Transportation Plan (RTP) as a local planning effort that could help implement the RTP and/or address specific local or subarea transportation needs in the future. The RTP project description notes that the existing Cooper Mountain transportation network was "not intended to accommodate the current and projected levels of urban travelers using rural roads to go to and from urban destinations."[1] The 2018 RTP acknowledged that the Cooper Mountain Transportation Study would lead to amendments adding projects to future versions of the RTP financially constrained list and relevant RTP system maps. The Cornelius Pass Road Extension exception is the next step in the planning process. To adopt the road exception alignment into the TSP, a goal exception is required.

1.2 Statewide Planning Goals to which an Exception is Taken

Transportation improvements in rural areas are governed by the following state and local rules and regulations:

- OAR 660-027-0070 Urban and Rural Reserves in the Portland Metropolitan Area
- OAR 660-012-0065 Transportation Improvements on Rural Lands
- OAR 660-012-0070 Exceptions for Transportation Improvements on Rural Lands
- OAR 660-012-0035 Evaluation and Selection of Transportation System Alternatives
- OAR 660-033-0130 Minimum Standards Applicable to the Schedule of Permitted and Conditional Uses
- ORS 215.213 Uses Permitted in Exclusive Farm Use Zones in Counties that Adopted Marginal Lands System Prior to 1993
- ORS 215.296 Standards for Approval of Certain Uses in Exclusive Farm Use Zones
- Statewide Planning Goal 3 Agricultural Land
- Statewide Planning Goal 4 Forest Land
- Statewide Planning Goal 11 Public Facilities and Services
- Statewide Planning Goal 14 Urbanization
- Metro's Urban Growth Management Functional Plan
- Metro's Regional Transportation Functional Plan
- Washington County Community Development Code Article VII

This section provides a brief summary of the state and local rules and regulations governing transportation improvements in rural areas. This report acknowledges that a goal exception for a new roadway in a rural area is required by ORS 215.213 and the related administrative rules, and will therefore focus on those rules and regulations specifically related to goal exceptions for new roadways

[1] Page 8-6 of Metro's 2018 Regional Transportation Plan

in a rural area: OAR 660-027-0070 and Statewide Planning Goals 3, 4, 11 and 14. In addition, OAR 660-012-0070(2) specifies that compliance with the -0070 rule for transportation facilities is deemed to fulfill the exceptions requirements under Goal 2 and ORS 197.732(1)(c) for Goals 3, 4, 11 and 14.

OAR 660-027-0070
Counties must maintain urban reserve land as rural until it is brought into the UGB. Minor transportation improvements are allowed, including road realignments, interchanges, turn lanes, and other safety improvement projects. Projects for capacity and demand must be based on adopted growth forecasts, not on future urban reserve growth; capacity increasing projects are typically not allowed in rural areas without a goal exception. The proposed goal exception projects impact either urban reserve or rural undesignated (i.e. not rural reserve or urban reserve) land.

OAR 660-012-0065
Minor transportation improvements are allowed on rural lands, including road realignments, interchanges, turn lanes, and local access improvements, subject to alternative analysis findings to determine the option with the least impact on farm or forest uses. There is some case law on this matter, specifically the 2001 LUBA case, Friends of Yamhill County v. Yamhill County, 39 Or LUBA 478 (2001), which found that existing roads must be considered in the alternatives analysis, with an accounting for how much it would cost to bring the road up to standard, and also found that land costs could not be included in the consideration of feasibility. This rule covers uses permitted by ORS 215.213. Uses not permitted by ORS 215.213, and thus not covered by OAR 660 012 0065, must pursue an exception to be sited on rural lands. The proposed roadway is a new road extension across rural lands which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065.

OAR 660-012-0070
Provides a process for transportation facilities and improvements which do not meet the requirements of OAR 660-012-0065 to pursue an exception. The exception analysis shall determine the need, mode, function and general location for the proposed facility or improvement and must consider alternatives. The proposed roadway is a new road extension across rural lands, which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065. Therefore, OAR 660-012-0070 is the applicable standard for analysis and justification of the proposed roadway extension. This report follows the process laid out by OAR 660-012-0070 to provide the adequate justification for a goal exception.

OAR 660-012-0035
Minor transportation projects in urban fringe (and urban reserve) areas may be included within an adopted TSP, including road realignments, interchanges, turn lanes, and local access improvements. These transportation projects can improve safety but cannot be intended to improve capacity. The rule intends all capacity increasing projects to be accommodated within the urban areas.

OAR 660-033-0130
Allows transportation improvements subject to OAR 660-012-0035 and 660-012-0065, which both limit such improvements to safety needs versus capacity needs and are subject to alternative analysis findings to determine the option with the least impact on farm or forest uses. This rule also sets out the requirement to make findings of no significant impact on surrounding farm or forest practices.

ORS 215.213
Transportation improvements within existing ROW are allowed. Counties may improve existing facilities outside existing ROW that require acquisition of ROW, including passing and travel lanes, where no new land parcels are created. Other improvements, including new roads, would require an exception to Goal 3 or other statewide goals.

ORS 215.296
This statute mirrors the language found in OAR 660-033-0130 where local governments must make findings of no significant change to surrounding farm or forest practices. The no significant change findings are not required for improvements within an urban growth boundary or exception area.

Goal 3 (Agricultural Lands)
Goal 3 requires agricultural lands to be preserved and maintained for farm use. Counties must inventory agricultural land, designate it on the county comprehensive plan, and zone it as Exclusive Farm Use (EFU)[2]. EFU zoning restricts development and uses unrelated to agriculture to prevent conflicts with farming. Approximately 50 acres of land within the facility corridor are located outside the UGB, are zoned EFU and are protected by Goal 3. The proposed Cornelius Pass Road extension will add a new transportation facility across lands protected by Goal 3, which would require an exception pursuant to ORS 215.213(10)(a). This exceptions document accounts for the interconnection between Goals 3 and 4. Washington County has many types of soils and environmental conditions such that the same property may be suitable to both forest uses and agricultural uses and appropriately protected by both Goals. As such, this exceptions document encompasses an exception to Goal 3 for lands that are planned and zoned for forest uses.

Goal 4 (Forest Lands)
Goal 4 protects working forests for commercial activity, while also recognizing the value that Oregon forests provide to wildlife, riparian areas, and recreation. Like agricultural lands, counties are required to identify, designate, and zone forest lands consistent with state rules requiring their protection. Forest land zoning restricts conflicting uses and the division of parcels to ensure lots large enough to be managed effectively. This exceptions document accounts for the interconnection between Goals 3 and 4. Washington County has many types of soils and environmental conditions such that the same property may be suitable to both forest uses and

[2] Washington County has a class of zoning that allows for both farm and forestry uses. The zones, which are titled Agriculture and Forest Districts, allow both agriculture and forest uses on smaller lots that were created from a high degree of historical parcelization and diverse ownerships. The zones are considered to be in compliance Goal 3 and qualify as exclusive farm use under ORS.

agricultural uses and appropriately protected by both Goals. As such, this exceptions document encompasses an exception to Goal 4 for lands that are planned and zoned for agricultural uses.

Goal 11 (Public Facilities and Services)
Goal 11 requires cities and counties to provide a plan to meet current and long-range needs for public facilities and services. Goal 11 is primarily focused on urban levels of facilities and services for communities larger than 2,500 people. With respect to rural lands, Goal 11 prohibits certain types of urban facilities outside urban growth boundaries and urban unincorporated community boundaries. Transportation facilities in rural areas are not addressed in significant detail in Goal 11. Nevertheless, this exception document encompasses an exception to Goal 11 if and to any extent a Goal 11 exception is required.

Goal 14 (Urbanization)
Goal 14 requires that local governments provide for an orderly and efficient transition from rural to urban land uses by establishing urban growth boundaries that provide land for urban development needs and separate urbanizable land from rural land. The boundaries shall be established on an identified need for, among other items, streets and roads. Goal 14 distinctions concerning land development are comparatively easy to distinguish when compared to transportation issues. Land use densities and intensity can be described in some detail and distinctions can and have been made to differentiate between rural development and urban development.

Transportation facilities and uses are more difficult to definitively segregate. By their nature, transportation facilities and uses intermix between rural and urban activities. Urban and rural roads are used to get resource products such as trees, grain, and rock to both urban and rural markets. Rural roads provide urban access directly to rural markets like nurseries, wineries and farm stands. Urban streets are used by many rural users for access to key support industries like financial services, equipment purchases and repairs, construction materials and similar urban uses. The larger the urban area and more intensive the rural resource uses are, the more intermixed the rural and urban uses and activities become on transportation facilities in these areas.

County and ODOT roads west of the Metro UGB in Washington County are in a location where some of the largest population centers and most intensive agricultural uses are in very close proximity to one another. Urban traffic uses rural County and ODOT roads to get to rural activities and uses and between urban areas. Farm, forest and aggregate resource traffic uses rural County and ODOT roads to get products to market and to access urban facilities and amenities. Because of the existing traffic patterns in the area, the Cornelius Pass Road goal exception will not "create" new urban traffic in a rural area where none would otherwise exist, but it is a facility that will have considerable interaction between urban and rural traffic patterns and that is the nature of this Goal 14 exception.

Urban Growth Management Functional Plan
The Urban Growth Management Functional Plan implements regional growth goals and objectives, including the Metro 2040 Growth Concept and Regional Framework Plan. The Urban Growth Management Functional Plan contains requirements that are binding on cities and

counties of the region. The intent of the requirements is to assure that cities and counties have a significant amount of flexibility as to how they meet requirements. Performance standards are included in most titles. If local jurisdictions demonstrate to Metro that they meet the performance standard, they have met that requirement of the title. In addition, the Regional Transportation Functional Plan (RTFP), adopted on June 10, 2010, as Metro Code 3.08, serves as the primary transportation policy implementation of the 2040 Growth Concept. The Metro Urban Growth Management Functional Plan is applicable to plan amendments within or affecting the Metro area.

Regional Transportation Functional Plan
The Regional Transportation Functional Plan establishes an outcomes-based framework that is performance-driven and includes policies, objectives and actions that direct future planning and investment decisions to consider economic, equity and environmental objectives. Through performance evaluation and monitoring the region can be a responsible steward of public funds and be more accountable and transparent about local and regional planning and investment choices. The Regional Transportation Functional Plan (RTFP) implements the Goals and Objectives in the Regional Transportation Plan (RTP). The RTFP covers transportation system design for each mode. The RTFP also includes provisions for the development and update of transportation system plans, including processes transportation needs, solutions and performance.

Washington County Community Development Code – Article VII
The Community Development Code (CDC) Article VII implements OAR 660-033-0130, ORS 215.296, OAR 660 012 0065, and ORS215.213, and establishes levels of review for public transportation projects, including those on rural lands. The review procedures include an alternatives analysis for projects that may have a greater impact. Transportation improvements exempted from the review processes include maintenance, operational, replacement, and reconstruction projects within the existing ROW, bus infrastructure within the ROW, acquisition of ROW consistent with the TSP, and ROW acquisition and construction of bicycle/pedestrian facilities. The CDC is not applicable at this time but mentioned here to note that any new future roadway facilities would be reviewed through an Article VII process.

1.3 Measures & Alternatives for Analysis

OAR 660-012-0070(4), (5) and (6) require an analysis of measures and alternatives that would not require an exception and an analysis between alternatives that do require an exception. To conduct this analysis, the project team identified several alternatives for each category, including:

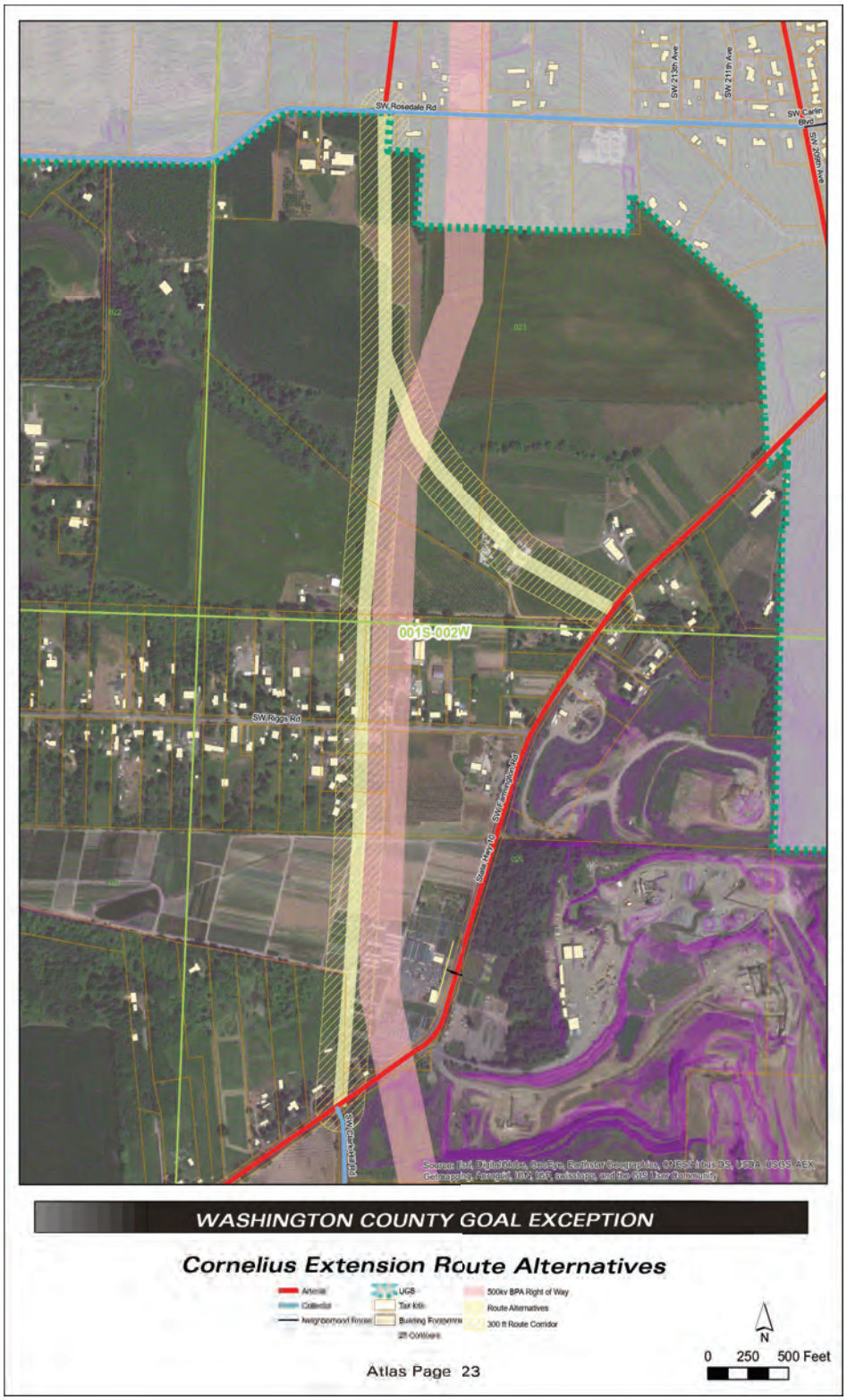
Measures and Alternatives Not Requiring an Exception

- Alternative transportation modes – see Appendix 4.
- Traffic management measures.
- Improvements to existing transportation facilities.
- Baseline Alternative – Transportation improvements in the Financially Constrained RTP (anticipated to be funded within the planning horizon); no goal exceptions required.
- Urban Full Build Alternative – Maximum reasonably achievable build out of the urban street system along with the introduction of transit to the area; no goal exceptions required.

Alternatives Requiring an Exception

These alternatives are displayed below and also in Appendix 1.

- Shortening the Cornelius Pass Road Extension to SW Farmington Road – A shorter extension was considered that would also connect to SW Farmington Road, but not at the intersection of SW Clark Hill Road.
- Shortening the Cornelius Pass Road Extension to SW Farmington Road and widening SW Farmington Road to three lanes to SW Clark Hill Road – A shorter extension was considered that would also connect to Farmington Road, but not at the intersection of SW Clark Hill Road. This alternative included widening SW Farmington Road between the extension of Cornelius Pass Road and SW Clark Hill Road.


SW Rosedale Rd
SW 213th Ave
SW 211th Ave
SW Carlin Blvd
SW 209th Ave
001S-002W
SW Riggs Rd
SW Cornelius Pass Rd
State Hwy 10
SW Cornelius Pass Rd
WASHINGTON COUNTY GOAL EXCEPTION
Cornelius Extension Route Alternatives
Arterial
Collector
Neighborhood Route
UGB
Tax lots
Building Footprints
25 Contours
500kv BPA Right of Way
Route Alternatives
300 ft Route Corridor
N
0 250 500 Feet
Atlas Page 23

1.4 Reasons, in Brief, the Proposed Goal Exception is Justified

OAR 660-012-0070(4) provides that the exception shall provide reasons justifying why the applicable goals should not apply, including cost, operational feasibility, economic dislocation, and other relevant factors. This report details the factors and justifications for the proposed Cornelius Pass Road extension exception. In summary, the proposed exception is justified because:

- The primary purpose of the Cornelius Pass Road extension is to provide north-south connectivity consistent with its Functional Classification as an arterial. The connectivity that the Cornelius Pass Road extension will provide is anticipated to contribute to overall community livability. The connectivity function of the Cornelius Pass Road extension will improve circulation, provide additional accessibility (including emergency vehicle ingress and egress) and distribute traffic to mitigate impacts to existing and planned neighborhoods. The extension will accommodate existing and reasonably foreseeable future development patterns.
- The roadway extension would provide additional connections between south Washington County and north Washington County, reducing out of direction travel that may occur by drivers attempting to avoid congested areas on the network.
- The roadway extension would also help address roadway capacity needs and system performance in the future. The lack of motor vehicle capacity of the network in the area contributes to urban trips using rural roads to avoid delays. As the western urban reserves are amended into the UGB and developed over time this traffic congestion is expected to worsen.
- The Cornelius Pass Road extension plan amendment will allow planning for those communities to proceed with consideration that long-term plans include the roadway.

1.5 Cornelius Pass Road Extension Goal Exception Document Structure

The proposed Cornelius Pass Road extension is a new road across rural lands, which is not permitted by ORS 215.213 nor covered by OAR 660-012-0065. Therefore, OAR 660-012-0070 is the applicable standard for analysis and justification of the proposed roadway extension. This document provides the analysis and substantial evidence required to justify an exception to Statewide Planning Goals 3, 4, 11 and 14 in accordance with the provisions of OAR 660-012-0070. The remainder of the document is structured as follows:

- Section 2 addresses the need, mode, function and general location for the proposed Cornelius Pass Road extension per OAR 660-012-0070(3).
- Section 3 addresses the thresholds chosen to evaluate the reasonableness of the alternatives per OAR 660-012-0070(6).
- Section 4 is an alternatives analysis for measures not requiring an exception per OAR 660-012-0070(4).
- Section 5 is a detailed analysis of the alternatives requiring an exception and addresses several applicable rule subsections, including OAR 660-012-0070(5), (6) and (7).
- Section 6 addresses rural lands impact analysis per OAR 660-012-0070(8).
- Section 7 addresses Goal 5 resources analysis because the proposed roadway extension crosses inventoried Goal 5 riparian areas.

Section 2: Need, Mode, Function and General Location for Proposed Exception Facility

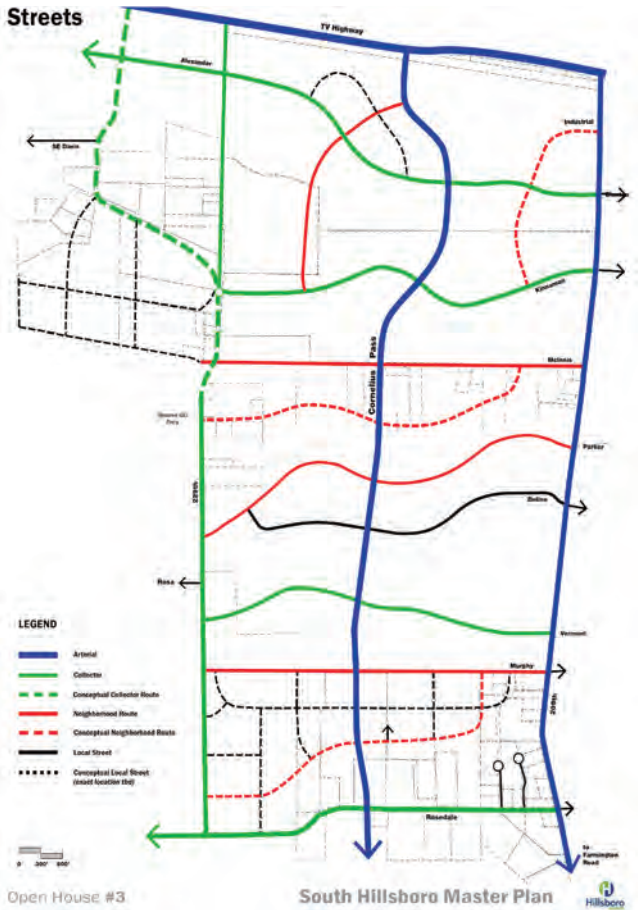
An exception for a transportation improvement on rural lands must decide need, mode, function and general location of the proposed facility pursuant to, as set forth in OAR-660-012-0070(3). It must also provide a process and standards to guide selection of the design and location within the corridor consistent with the general description of the proposed facility. The primary purpose of the analysis in this section is to provide an adequate factual basis for the exception components specified in OAR 660-012-0070(3).

2.1 Cornelius Pass Road Extension Need and Location

The need for the Cornelius Pass Road Extension is based upon providing appropriate system connectivity consistent with the 2018 RTP and Washington County Transportation System Plan Connectivity Goal.

The currently planned extension of Cornelius Pass Road in South Hillsboro provides the framework for an interconnected multimodal transportation system to serve the developing community. The South Hillsboro plan calls for a continuation of Cornelius Pass Road to the south. See Appendix 18 for more information about the South Hillsboro Master Plan. The functional classification map from the adopted South Hillsboro Master Plan is displayed below for reference.

South Hillsboro Master Plan – Functional Classification



As the South Hillsboro community develops it is important to plan for the long-term transportation system necessary to serve the community and provide for an interconnected multimodal transportation network that satisfies the community's travel needs.

The Cornelius Pass Road extension traverses an area with very few connections. Extending Cornelius Pass Road from its currently planned terminus at SW Rosedale Road would add a new route connecting north-south between major job centers. By providing direct connections to Farmington Road the extension will alleviate out of direction travel and more efficiently disperse regional traffic.

The travel demand forecast modeling analysis developed for the 2018 RTP assumed Metro's 2040 land use assumptions as well as the financially constrained project list (the Baseline Alternative). In this scenario, many portions of the road network are forecast to be significantly over capacity by the end of the planning period. Many state highways, local arterials, collectors, and other facilities will exceed adopted level of service (LOS) performance targets. While not all segments will operate within adopted performance standards in 2040, the Cornelius Pass Road Extension is needed to serve expected travel demands in the 2018 RTP as regional population and employment growth continues. A detailed discussion of performance thresholds and how it is measured is discussed in Section 3. The applicable transportation facility performance targets are described in detail in Section 3.

The next closest north-south arterials are SW 209th Avenue to the east and River Road to the west. Both are more than 1 mile away from the intersection of SW Farmington Road and SW Clark Hill Road. There is no direct route to connect between South Hillsboro and SW Clark Hill Road. By planning for a direct connection between Rosedale Road and Farmington Road the extension will alleviate pressure on the rest of the network, reduce out of direction travel, and more efficiently disperse regional traffic.

The proposed Cornelius Pass Road extension is anticipated to be constructed within a right-of-way width of approximately 90 feet that extends from SW Rosedale Road (and the currently planned terminus of Cornelius Pass Road) to the intersection SW Farmington Road and SW Clark Hill Road. The entirety of the extension is situated within lands zoned and designated EFU, AF-20 or AF-5.

Construction of the extension is not planned for the near term. Accordingly, the goal exception analysis is for the extension corridor. The Cornelius Pass Road Extension goal exception corridor is depicted on Exhibit 1, page 2. The corridor for the exception is 375 feet in width. It is expected that future project development would apply the County's Rural A-4 Arterial standard which is a 50-foot paved section in a 90-foot right-of-way. The arterial standard cross section can be found in Appendix 2. Thus, with the planned right-of-way width, there is room to adjust the final centerline of the right-of-way within the exception corridor depicted on Exhibit 1, page 2.

2.2 Cornelius Pass Road Extension Mode(s)

The Cornelius Pass Road extension is planned to accommodate typical surface modes of travel, including automobile, freight, transit, bicycles, and pedestrians. A general discussion of expected use of these facilities by mode is provided below:

Automobile – There are many employers in the Beaverton and Hillsboro area, including large employers like Nike and Intel. There are number of high-amenity residential areas in southern Washington County around and south of Cooper Mountain. The arrangement of land uses causes

demand for north-south automobile traffic through the Cooper Mountain area. According to the Beaverton South Cooper Mountain Concept Plan regional traffic makes up 50% to 80% of north-south arterial trips through the study area.[3] Additional residential development areas are planned to the west which will increase demand from origins west of existing residential areas. The Cornelius Pass Road Extension is needed provide additional connectivity and capacity for north-south automobile traffic in the future.

Freight – Freight makes up a significant portion of daily traffic on many of the roads in the area. Washington County has a Truck Route system that identifies routes intended to efficiently move goods and trucks while limiting impacts to residential neighborhoods. A Truck Route designation helps inform design and maintenance of the roads and encourages planning for truck travel. Any future improvements should consider accommodations for trucks, including broader turning radii, wider lanes, inertia of heavy vehicles, and more. Additionally, some roads are classified as Over-Dimensional Truck Routes and the operation of larger than normal vehicles (such as farm equipment) should be valued. Many of the largest and heaviest used roads are designated as truck routes. Truck Routes include the following roads:

- Scholls Ferry Road west of Roy Rogers Road/175th Avenue
- Farmington Road
- Clark Hill Road
- 185th Avenue between TV Highway and Farmington Road
- 209th Avenue
- River Road
- OR 219

Routes considered Over-Dimensional Truck Routes are the following:

- Scholls Ferry Road east of Roy Rogers Road/175th Avenue
- Roy Rogers Road
- TV Highway

While this exception does not recommend designating the extension of Cornelius Pass Road as a truck route currently. The Cornelius Pass Road extension may be needed to provide an additional route for trucks in this area and additional capacity for the movement of goods in an area experiencing additional development. Cornelius Pass Road further north of TV Highway is designated as a truck route that continues all the way to Highway 30 in Multnomah County. The extension may make a logical route for some truck trips that have origin/destination pairs between southern Washington County and communities along the Columbia River like St. Helens and Scappoose.

The need for the truck route designation was ambiguous given the current development and travel patterns in the area. The proposed Cornelius Pass Road extension may consider the truck route designation in the future.

[3] Page 19 https://www.beavertonoregon.gov/DocumentCenter/View/10120/South-Cooper-Mountain-Concept-Plan---Final-Draft-December-2014?bidId=

Transit – The ODOT 2018 Oregon Household Activity Survey estimates that of all trips (including those non-work related) taken in the Portland metro area that approximately 4% of them were taken via transit.[4] According to the American Community Survey's 2017 5-year estimates, approximately 6.4% of workers in Washington County took transit as their way to get to work.[5] Washington County's TSP Reference Guide cites a 2010 Regional Travel Demand Model that estimated transit mode share as 1.8% of all trips.[6] The same model forecast 2.4% of trips would be made on public transit in 2035.[7]

This area is outside of the UGB and considerably more rural than the urban centers. Given the development pattern, transit share is likely to be lower. Actual delivery of fixed route transit in the area is also hampered by the fact that much of the area is located outside of TriMet's current district boundaries. Only two bus routes intersect the region in a north-south manner. The two routes are bus lines 52 and 88.

Route 52 goes between the Beaverton Transit Center and the Portland Community College Rock Creek Campus north of Highway 26. Starting from PCC Rock Creek route 52 follows SW 185th Avenue to Farmington Road where it turns east and follows Farmington Road to the Beaverton Transit Center. Route 52 has a daily ridership of 4,230 boarding rides.

Route 88 goes between the Willow Creek Transit Center and the Beaverton Transit Center. The route is less direct than Route 52. From Willow Creek Transit Center the route primarily takes SW 198th Avenue before turning east on Farmington Road. It takes SW Farmington Road to SW 170th Avenue before eventually wending its way over to SW Murray Blvd and further on to the Beaverton Transit Center. Route 88 has a daily ridership of 1,630 boarding rides.

After the State of Oregon passed House Bill 2017, TriMet has been planning additional service enhancements to match increased revenue. The planned improvements are laid out in the Tri-County Public Transportation Improvement Plan (PTIP). The PTIP examined the tri county metro area for targeted service improvements and provides a roadmap for possible future enhancements. Only one improvement appears to come near the area.[8] Line 56 is proposed to be extended to Progress Ridge and the South Cooper Mountain neighborhood from its current end point at Washington Square. This proposed extension will still be located to the east of the area and will not run in a north-south manner, limiting its usefulness for north-south travelers in the area.

TriMet also has published long term enhancement plans for areas across the Portland region. The Westside Service Enhance Plan, published in 2013, foresees extending existing two bus lines (the 46 and 47) down the newly constructed Cornelius Pass Road extension south of the TV Highway.[9] The

[4] Page 75 of the ODOT 2018 Household Activity Survey: https://www.oregon.gov/ODOT/Planning/Documents/OHAS-Daily-Travel-In-Oregon-Report.pdf
[5] US Census Bureau American Community Survey table S0801 for Washington County, generated at http://factfinder2.census.gov
[6] Page 7 of the Washington County TSP reference guide: https://s3.amazonaws.com/washcomultimedia/CMSBigFiles/TSP+Flipbbok+4.2.19/mobile/index.html
[7] Page 7, Ibid.
[8] See page 95 of the PTIP: https://trimet.org/meetings/hb2017/pdfs/public-transportation-improvement-plan.pdf
[9] See page 7 of the TriMet Westside Enhancement Plan: https://trimet.org/future/pdf/westside-report.pdf

current extension ends well short of SW Rosedale Road and does serve the areas further south. No other services appear to be planned for expansion or enhancement of transit in the area.

Notwithstanding the lack of current transit service in the area and the limited additional service currently planned, Cornelius Pass Road is a higher order road that, when constructed, will be physically capable of accommodating bus transit service. As the development of urban reserves in the area occurs, Cornelius Pass Road may be needed for future bus routes as this growing area builds out over time. See Appendix 4 for more information regarding potential transit service assumptions.

Bicycle – The Cornelius Pass Road extension would be constructed to physically accommodate bicycles with a rural standard road which has 6-foot shoulders. The expected origin/destination trip pairs made possible by the Cornelius Pass Road Extension are generally at least 5 miles which is somewhat long for regular bicycle trips. The Cornelius Pass Road extension will provide additional connectivity in a scenic area and so it is expected to attract some cyclists, but bicycle trips are not the primary need or expected mode for the facility.

Pedestrian – The Cornelius Pass Road extension would be constructed to physically accommodate pedestrians on 6-foot shoulders. The expected origin/destination trip pairs made possible by the Cornelius Pass Road Extension are generally at least 5 miles which is very long for pedestrian trips. The Cornelius Pass Road extension will provide additional connectivity in a scenic area and so it may attract some recreational trips and it will also provide a route for local rural residents, but pedestrian trips are not the primary need or expected mode for the facility.

2.3 Cornelius Pass Road Extension Function and Capacity

The planned functional classification of the Cornelius Pass Road extension is an Arterial. The extension will connect in the north with the planned terminus of Cornelius Pass Road at SW Rosedale Road. The extension of the existing Cornelius Pass Road to SW Rosedale Road is planned as a complete street with five travel lanes and to function as a multimodal urban arterial. At the south, the Cornelius Pass Road extension will connect at the current intersection of SW Farmington Road and SW Clark Hill Road. SW Farmington Road is classified as an arterial and is former State Highway 10. SW Clark Hill Road is classified as a Collector Road. Both SW Farmington Road and SW Clark Hill Road are classified as truck routes.

Washington County's adopted cross-section for rural arterial roadways includes a 6-foot shoulder in addition to travel lanes. The 6-foot shoulder would provide adequate capacity for bicycle trips, which are expected to be limited. In this case, the presence of a bicycle facility is more important than the type or capacity.

Pedestrian traffic has a more limited distance range than bicycling and thus pedestrian trips would be expected to be lower than bicycle trips in this location. A facility that can meet the needs for bicycling would also be expected to meet the needs for foot traffic. The combined bicycle and pedestrian use of the facility would be expected to be capable of handling over a hundred combined pedestrian and bicycle trips per hour while the expected demands would likely be far less than that theoretical capacity.

2.4 Cornelius Pass Road Extension Road Design Process

Washington County will follow its standard transportation improvement project implementation process, consistent with CDC Article VII. The County will begin by contacting property owners and gaining right-of-entry for geotechnical and topographic data gathering within the corridor. The County will inventory land uses and coordinate with property owners to look for opportunities to reduce right-of-way impacts and acquisition costs. Design alternatives will be developed and shared with property owners in an iterative process that seeks to reach consensus on the road alignment with minimization of impacts.

Section 3: Transportation Facility Thresholds

OAR 660-012-0070(6) provides that local governments can determine thresholds to judge whether an alternative [transportation] method or location cannot reasonably accommodate the identified transportation need or location. The chosen thresholds can be used to explain why potential alternatives do not require detailed evaluation and they may be used to evaluate alternatives in detail and explain how an exception satisfies the requirements of OAR 660-012-0070(4) and (5). The (4) and (5) rules concern the evaluation of alternative transportation facility improvements and services that would not require an exception to address the identified transportation need and the thresholds chosen by the local government provide a factual basis to evaluate the sufficiency of alternatives that would not require an exception. The chosen thresholds must, however, also be justified in the exception. The justifications for Washington County's thresholds applied in this exception document are set forth in this section.

In addition to OAR 660-012-0070(6) the RTFP provides performance thresholds that Transportation System Plans (TSPs) in the Metro region must apply to evaluate transportation system needs and solutions.

3.1 Transportation Facility Performance Thresholds

Local governments in Oregon are required to adopt Transportation System Plans (TSPs) and TSPs are required by OAR 660-012-0020(3)(b) to establish performance standards for existing and planned transportation facilities. The transportation facilities at issue in this exceptions analysis concern surface road performance.

3.1.1 Washington County Performance Standards

Washington County considered the Cornelius Pass Road Extension utilizing the performance thresholds as required by the Transportation Planning Rule and the Regional Transportation Functional Plan. Other studies (River Terrace, South Cooper Mountain, Kingston Terrace, the Cooper Mountain Transportation Study, and the Urban Reserves Transportation Study) may have considered a range of different scenarios and/or standards. These other studies informed the consideration and alignment of the Cornelius Pass Road extension. Only the applicable performance measures and standards as described in this attachment have been utilized for the development of Ordinance No. 883. The applicable performance measures and standards are outlined below.

The Washington County TSP has an established policy concerning transportation facility performance in Objective 5.3 as follows:

Objective 5.3 Utilize the Interim Washington County Motor Vehicle Performance Measures to manage congestion.

- Strategy 5.3.1 Provide a transportation system that accommodates travel demand consistent with applicable performance standards for all modes of travel where feasible.
- Strategy 5.3.2 Provide a roadway system that meets the mobility needs of Washington County residents and businesses, as defined by performance standards identified in Interim Washington County Motor Vehicle Performance Measures of this plan.
- Strategy 5.3.3 Implement Washington County projects necessary to improve performance and reduce system design deficiencies in roadway corridors and segments that are operating or forecasted to operate at less than acceptable standards as identified in the Interim Washington County Motor Vehicle Performance Measures.

The Washington County TSP adopted performance measures in order to manage congestion on County facilities and ensure that travel demands are accommodated. The standards, titled the Interim Washington County Motor Vehicle Performance Standards were adopted by A-Engrossed Ordinance No. 768. The standards were developed to ensure compliance with the Regional Transportation Functional Plan (RFTP). Washington County has not adopted alternative performance targets, as allowed by the RFTP.

Table 3.1: Interim Washington County Motor Vehicle Performance Measures

Maximum Volume to Capacity (V/C) Ratio Standards				
Location[2]	**AM/PM Peak Two-hour Period**			
	Target[1] Performance Measures[3]		**Acceptable[1] Performance Measures[3]**	
	First Hour[4]	Second Hour[4]	First Hour[4]	Second Hour[4]
Regional Centers Town Centers Main Streets Station Communities	.99 (E)	.9 (D)	.99 (E)	.99 (E)
Other Urban Areas	.9 (D)	.9 (D)	.99 (E)	.9 (D)
Rural Areas	.9 (D)	.9 (D)	.9 (D)	.9 (D)

[1] For development review purposes, these performance standards will be used in assessing safety improvements. For plan amendment purposes, if a plan amendment is predicted to exceed the acceptable performance standard, the performance on applicable facilities will not be allowed to deteriorate further, and mitigation may be necessary. For project development purposes, these performance standards will be used to evaluate conditions beyond the transportation plan's planning horizon, as appropriate.

[2] For location reference see 2040 Growth Concept Design Types Map.

[3] Vehicle performance shall be determined by using volume to capacity ratios. Volume to Capacity equivalencies to Level of Service (LOS) are as follows: LOS C = V/C of 0.8 or lower; LOS D = V/C of 0.81 to 0.9; LOS E = V/C of 0.91 to 0.99. Further discussion of vehicle performance is provided in the Technical Appendix.

[4] First Hour is defined as the highest hour of the day. Second hour is defined as the hour following the first hour.

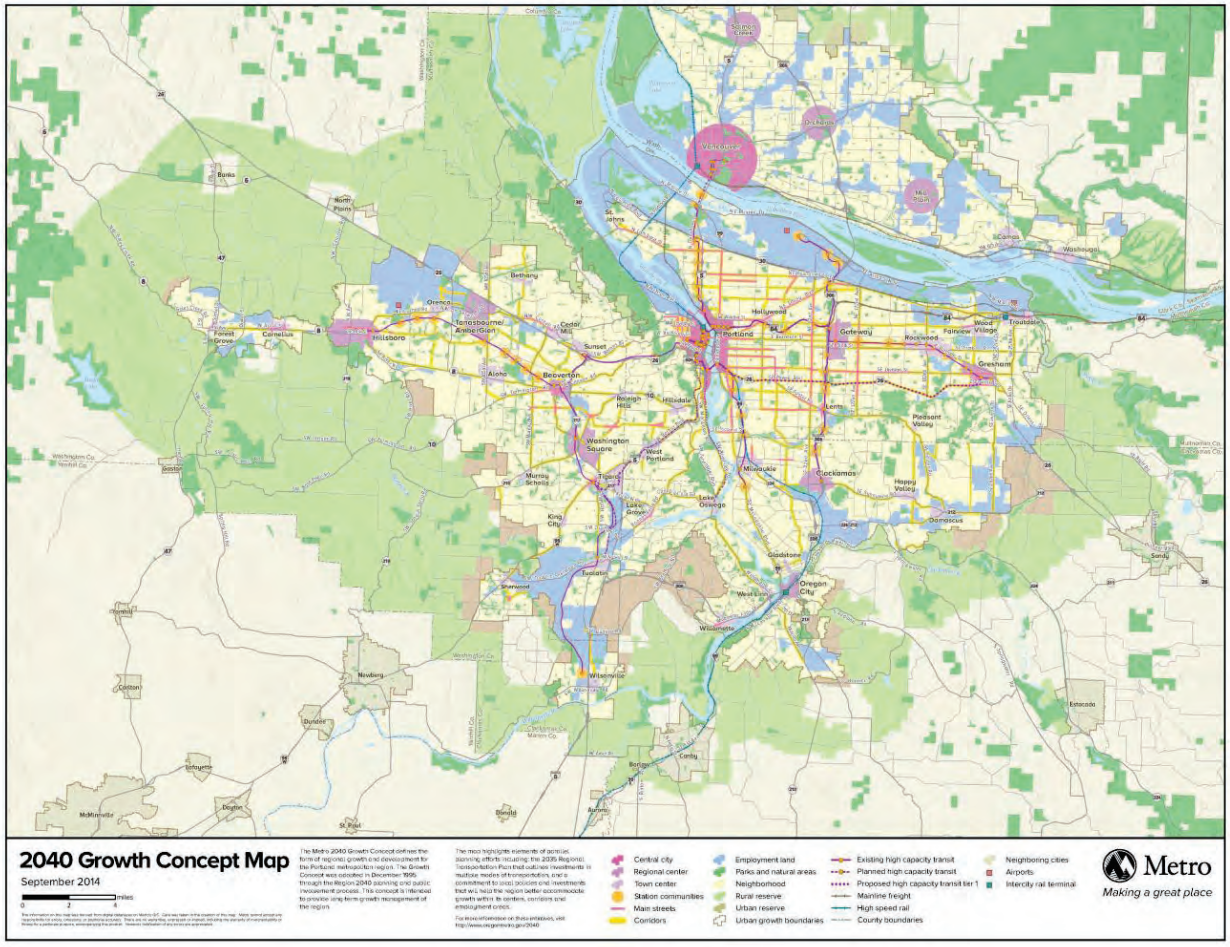
For purposes of this exception analysis, the performance standards are evaluated on a volume to capacity ratio for road segments (or "model link") basis. This road segment approach is adequate for purposes of this analysis because the Cornelius Pass Road extension is regional in nature; the extension

itself is over a mile long. As such, localized congestion at intersections is less of a concern than overall system flow.

3.1.2 Metro Performance Standards

This area is adjacent to and could impact the Metro area, thus local plans must be consistent with Metro area requirements and standards. Metro has adopted mobility standards based on the designations identified on the Regional 2040 Growth Concept. The 2040 Regional Growth Concept was initially adopted in 1995 and has been amended several times since. The 2040 Regional Growth Concept is presented in Figure 3.1 on page 2-6 of the 2018 RTP and displayed below for reference.

Figure 3.1 – 2040 Growth Concept – an integrated land use and transportation vision



The Cornelius Pass Road Extension corridor is outside the UGB and has not been designated as "urban reserve" or "rural reserve" and therefore is categorically left "undesignated" on the Regional 2040 Growth Concept. Areas in the vicinity have been designated as neighborhood on the Regional 2040 Growth Concept. The analysis of the Regional Transportation system applied the performance standards for "neighborhoods" as the applicable regional criteria. Performance standards for other facilities have been based on the appropriate 2040 designation.

2018 RTP Regional Performance Standards

Section 3.5.4 of the 2018 RTP (page 3-70) displays the interim regional mobility performance standards. This table is reproduced below for reference.

Figure 3.2 Interim regional mobility policy

Deficiency thresholds for peak hour operating conditions expressed as volume to capacity ratio targets as adopted in the RTP and Oregon Highway Plan.

Location	Target	Target	
	Mid-day One-Hour Peak [A, B]	PM Two-Hour Peak [A, B]	
		1st hour	2nd hour
Central City Regional Centers Town Centers Main Streets Station Communities	.99	1.1	.99
Corridors Industrial Areas Intermodal Facilities Employment Areas Neighborhoods	.90	.99	.99
I-84 (form I-5 to I-205)	.99	1.1	.99
I-5 North (from Marquam Bridge to Interstate Bridge	.99	1.1	.99
OR 99E (from Lincoln Street to OR 224 interchange)	.99	1.1	.99
US 26 (from I-405 to Sylvan interchange)	.99	1.1	.99
I-405 (from I-5 South to I-5 North)	.99	1.1	.99
Other state-owned routes [D] I-205 I-84 (east of I-205 I-5 (Marquam Bridge to Wilsonville) [C] OR 217 US 26 (west of Sylvan) US 30 OR 8 (Murray Boulevard to Brookwood Avenue) [C, D] OR 47 OR 99W OR 212 [E] OR 224 OR 213 [F]	.90	.99	.99

Table Notes:

A. Unless the Oregon Transportation Commission has adopted an alternative mobility target for the impacted state-owned facility within the urban growth boundary, the mobility targets in this table (and Table 7 of the Oregon Highway Plan) are considered standards for state-owned facilities for purposes of determining compliance with OAR 660-012-0060.

B. The volume-to-capacity ratios in this table (and Table 7 of the Oregon Highway Plan) are for the highest two consecutive hours of weekday traffic volumes. The 2nd hour is defined as the single 60-minute period, either before or after the peak 60-minute period, whichever is highest. See Oregon Highway Plan Action 1.F.1 for additional technical details for state-owned facilities. The mid-day peak hour is the highest 60-minute period between the hours of 9 a.m. and 3 p.m.

C. A corridor refinement plan, which will likely include a tailored mobility policy, is required by the Regional Transportation Plan for this corridor.

D. Two facilities are not designated as principal arterial throughway routes in the RTP, including OR 8 between Murray Boulevard and Brookwood Avenue and portions of 99W, which are proposed to be removed from Table 7 of the Oregon Highway Plan in the next scheduled update.

E. OR 212 is designated as a throughway route in the RTP and is proposed to be amended into Table 7 of the Oregon Highway Plan in the next scheduled update.

F. In October 2018, the OTC approved an alternative mobility target that applies to the intersection of OR 213 and Beavercreek Road such that during the first, second and third hours, a maximum v/c ratio of 1.00 shall be maintained. Calculation of the maximum v/c ratio will be based on an average annual weekday peak hour.

3.1.3 ODOT Performance Standards

ODOT has performance targets documented in Policy 1F: Highway Mobility within the Oregon Highway Plan. ODOT performance standards are also a volume to capacity ratio standard and are often applied on a segment (or "model link") basis. As such, the analysis utilizes ODOT performance standards for comparing alternatives within the study area. Nearly all the state-owned and managed highway facilities in the vicinity are within the Metro boundaries and are thus bound by Table 7 in the Highway Plan. The performance standards from Table 7 are reproduced below:

VOLUME TO CAPACITY RATIO TARGETS INSIDE METRO[A,B]		
Locations	**Target**	
	1st hour	**2nd hour**
Central City Regional Centers Town Centers Main Streets Station Communities	1.1	.99
Corridors Industrial Areas Intermodal Facilities Employment Areas Inner Neighborhoods Outer Neighborhoods	.99	.99
I-84 *(from I-5 to I-205)*	1.1	.99
I-5 North *(from Marquam Bridge to Interstate Bridge)*	1.1	.99
OR 99E *(from Lincoln Street to OR 224 Interchange)*	1.1	.99
US 26 *(from I-405 to Sylvan Interchange)*	1.1	.99
I-405[C] *(from I-5 South to I-5 North)*	1.1	.99
Other Principal Arterial Routes I-205[C] I-84 *(east of I-205)* I-5 *(Marquam Bridge to Wilsonville)*[C] OR 217 US 26 *(west of Sylvan)* US 30 OR 8 *(Murray Blvd to Brookwood Avenue)*[C] OR 224 OR 47 OR 213 242nd/US 26 in Gresham OR 99W	.99	.99

Highway 219, which is under ODOT jurisdiction, is located nearly entirely outside of Metro boundaries and outside of urban growth boundaries. Portions of Highway 99W are also located outside of Metro and local UGBs. The performance standards for facilities outside Metro are governed by Table 6 in the Highway Plan.

The standards from Table 6 are reproduced below:

VOLUME TO CAPACITY RATIO TARGETS OUTSIDE METRO[17A, B, C, D]							
Highway Category	**Inside Urban Growth Boundary**					**Outside Urban Growth Boundary**	
	STA[E]	**MPO**	**Non-MPO Outside of STAs where non-freeway posted speed <= 35 mph, or a Designated UBA**	**Non-MPO outside of STAs where non-freeway speed > 35 mph but < 45 mph**	**Non-MPO where non-freeway speed limit >= 45 mph**	**Unincorporated Communities[F]**	**Rural Lands**
Interstate Highways	N/A	0.85	N/A	N/A	0.80	0.70	0.70
Statewide Expressways	N/A	0.85	0.85	0.80	0.80	0.70	0.70
Freight Route on a Statewide Highway	0.90	0.85	0.85	0.80	0.80	0.70	0.70
Statewide (not a Freight Route)	0.95	0.90	0.90	0.85	0.80	0.75	0.70
Freight Route on a regional or District Highway	0.95	0.90	0.90	0.85	0.85	0.75	0.70
Expressway on a Regional or District Highway	N/A	0.90	N/A	0.85	0.85	0.75	0.70
Regional Highways	1.0	0.95	0.90	0.85	0.85	0.75	0.70
District/Local Interest Roads	1.0	0.95	0.95	0.90	0.90	0.80	0.75

3.1.4 Municipal Performance Standards

The performance thresholds issue is complicated by an array of municipal road jurisdictions within the surrounding area. While TPR and the RTFP require each jurisdiction to adopt performance standards in its TSP, there is no requirement that the adopted performance standards be consistent for all roads and streets. Transportation facilities operated by municipalities in the area include Hillsboro, Beaverton, Tigard, Tualatin and King City.

3.1.5 Performance Standards Threshold Determination

For the regional comparative analysis required by this goal exception analysis, Washington County's acceptable performance standards were applied. The Washington County acceptable performance standards are consistent with the Regional performance standards and ODOT's performance targets inside the Metro area.

3.2 Operational Feasibility

All the roads and projects evaluated are surface roads. Standard intersections, with or without traffic signals, or roundabouts can be implemented to address facility operations at the road connection points in accordance with MUTCD standards. New road segments or widening can be handled with standard striping in a manner that follows AASHTO design guidelines. For these reasons, it was determined that specific operational feasibility thresholds are not necessary or appropriate for the Goal Exception Analysis.

3.3 Cost and Constructability Thresholds

Washington County does not have adopted cost threshold measures or policies. Cost and constructability issues are considered in relation to specific project considerations. Road alignments seek to avoid sensitive environmental areas, especially riparian corridors and wetland areas, where costs are typically twice, or more, of the typical construction costs. Washington County also seeks road alignments that avoid areas of shallow depth to solid bedrock where expensive blasting and excavation is required.

The other issues concern widening versus new connections. There are cost trade-offs between each. If widening can be accomplished with limited or no right-of-way acquisition, then that is a potential cost savings. However, widening often requires significant portions of the existing roadbed to be reconstructed and it adds costs due to traffic flow management during the course of construction.

3.4 Economic Dislocation Thresholds

Economic Dislocation is the term utilized in OAR 660-012-0070 to evaluate and describe impacts to neighborhoods and private property from new transportation facilities, and especially improvements such as road widening or new roads that require the acquisition of right-of-way from private owners.

Any dislocation associated with a public transportation project is required, by local policy as well as state and federal laws, to provide appropriate compensation and/or relocation services.

3.4.1 Washington County

The County does not have economic development policies or specific economic dislocation thresholds. Washington County's role in economic development has traditionally been limited to assisting local municipalities by providing infrastructure and services. The draft County 2020 Strategic Plan identifies a Vision for Washington County. This vision includes many attributes but also notes that Washington County is a community in which "our economy is known for its diversity, future orientation, vitality, and commitment to the local community."

Washington County's TSP has several goals, objectives and strategies associated with economic vitality and related to dislocation from transportation projects, as follows:

Goal 5: Mobility – Promote the efficient and cost-effective movement of people, goods and services by all modes.

Objective 5.1 Provide a county roadway system that is cost-effective, designed to operate efficiently, and serves all travel modes.

Strategy 5.1.3 Address potential impacts of long-distance trips on neighborhoods or communities by:

- Ensuring that collectors and arterials of the transportation system are designed to adequately accommodate these trips.
- Designing and managing local streets to accommodate local trips and to discourage long-distance trips

Strategy 5.1.4 Prior to adding through travel lane capacity to the Lane Numbers Map, or elsewhere in the transportation system plan, consider the following strategies, in the order listed below:

- Transportation System Management strategies, including Travel Demand

Management, safety, operational and access management improvements.
- Bicycle and pedestrian system improvements.
- Appropriate lane-markings, safety improvements, and other operational devices to improve traffic flow.
- Where appropriate and feasible incorporate Land Use strategies to reduce motor vehicle congestion and peak period demand.
- Parallel connections and local street connectivity improvements.

Goal 3: Livability – Preserve and enhance Washington County's quality of life for all residents, workers and visitors.

Objective 3.4 Identify, limit and/or mitigate adverse impacts of transportation on rural, agricultural and resource areas in Washington County.

Strategy 3.4.2 Involve affected property owners early in the project development process to address land use compatibility issues adjacent to roads that form the boundary between urban areas, urban reserves, rural areas and/or rural reserves on a case-by-case basis.

Strategy 3.4.3 During the concept planning of newly-designated urban areas, strive to design the transportation system so that the traffic associated with these areas may travel primarily through the existing urban area.

Goal 2: Economic Vitality – Provide a reliable transportation system that enhances the economic health of Washington County

Objective 2.3 Invest in transportation to encourage economic development.

Strategy 2.3.4 Consider the economic benefits of additional roadway capacity for the region, both in inter-urban and intra-urban areas.

Objective 2.4 Encourage rural economic vitality in Washington County.

Strategy 2.4.1 Facilitate the safe, efficient movement of agricultural and forest products including agricultural machinery.

Strategy 2.4.3 Consider the transportation and land use needs of agricultural and forest industries when designing roadway improvements in the rural area.

Strategy 2.4.4 Facilitate safe travel for rural tourism traffic, including the safe operation of designated scenic driving and bicycling routes.

Objective 5.1 and its associated strategies 5.1.3 and 5.1.4 have system-wide implications that direct the County to plan for a roadway system that is adequate to handle regional traffic demands but seeks to balance through-put on arterials and collectors against road widening that could negatively impact neighborhoods. Objective 5.1 itself, calls for bicycle and pedestrian improvements to avoid the need for additional travel lanes. As areas are urbanized and roadways are improved, some road widening and right-of-way impacts result from the addition of urban complete streets with bicycle and pedestrian facilities. New connectivity is one of the ways that Objective 5.1 can be advanced by adding connections in a manner that avoids road widening in developed areas which is expensive and impactful to property owners and neighborhoods.

Objective 3.4 is in tension with Objective 5.1 where connectivity solutions advance Objective 5.1 to avoid additional road widening by meeting travel demand needs through parallel connections. Goal 2 and associated objectives and strategies recognize the importance of the economic contribution that

roadways provide as well as the long-standing rural economy of Washington County. In summary, the TSP recognizes the important economic benefits and impacts of the transportation system as well as the nature of urban traffic using rural roadways and the TSP strives to manage the inherent tension between these attributes.

3.4.2 Municipal Economic Dislocation Evaluation

In addition to the tension within the Washington County TSP itself on economic dislocation issues, consideration of economic dislocation within the cities in the area is also a factor. For example, Beaverton's TSP Goal 6.2.1 and its associated Policy (a) and action items also direct that City to have proper design of transportation facilities that recognizes potential negative impacts from road widening projects. Hillsboro's TSP Goal 6 and associated policies direct that City to plan street facilities for their intended use but also limit impacts from transportation system development.

3.4.3 Economic Dislocation Threshold Determination

Washington County determines that economic dislocation thresholds are appropriate to apply in the following manner:

- Widening of urban streets or new streets within built-up areas of a city or developed urban areas of the County is not appropriate beyond those projects that are identified within adopted Municipal or County TSPs.
- In urbanizing areas added to the Metro UGB since a city's last major legislative TSP update, and where urban intensity development has not subsequently occurred, the analysis assumes any planned new streets or any planned street widening improvements in any adopted plan for the area will not cause unacceptable levels of economic dislocation. Additional widening or new streets beyond the planned improvements may cause unacceptable levels of economic dislocation and the potential impacts are examined on a case-by-case basis as part of the analysis.

The above thresholds are justified by the County's adopted and acknowledged TSP and the local municipal plans.

3.5 Goal 5 Resource Avoidance

The Washington County TSP and local municipal TSPs include policies and strategies to reduce impacts to Goal 5 resources from transportation facilities and improvements. Appendix 6 depicts Goal 5 resources in the area.

3.5.1 Washington County

The Washington County TSP includes specific language addressing Goal 5 impact issues as follows:

Goal 4: Natural Environment – Create and maintain a transportation system that first avoids, then minimizes, then mitigates impacts to the natural environment.

Objective 4.2 Reduce and/or mitigate negative impacts of the transportation system on the natural environment.

Strategy 4.2.1 Identify, and first avoid, then limit and/or mitigate adverse impacts of transportation projects on mapped Significant Natural Resources.

Strategy 4.2.2 Transportation improvements are to be developed consistent with Oregon statewide planning goals and administrative rules, when establishing general

transportation alignments, unless a special exception is allowed.

3.5.2 Municipal TSP Goal 5 Resource Policies

The Beaverton and Tigard TSPs all have language concerning Goal 5 resource avoidance, as follows:

Beaverton:

6.2.1. Goal: Transportation facilities designed and constructed in a manner to enhance Beaverton's livability and meet federal, state, regional, and local requirements.
Policies:
a) Maintain the livability of Beaverton through proper location and design of transportation facilities.

Actions:

- Design all transportation facilities to respect the characteristics of the surrounding land uses, natural features and natural hazards, and community amenities.
- Design transportation facilities consistent with habitat friendly development practices and low impact development techniques and water quality and quantity design principles, wherever practical and feasible
- Promote landscaping and pervious surfaces wherever practical and feasible.
- Continue to implement "green streets" designs.

HILLSBORO:

Goal 6: Livability. Transportation Facilities shall be Designed and Constructed in a Manner Which Enhances the Livability of Hillsboro.

Policy 4. Avoid potential adverse environmental impacts associated with traffic and transportation system development through facility design and system management.

3.5.3 Goal 5 Resource Threshold Determination

Washington County determines that Goal 5 Resource thresholds are appropriate to apply in the following manner:

1. Widening of urban streets or new streets within built-up areas of a city or developed urban areas of the County that would negatively impact a Goal 5 resource is not appropriate beyond those projects that are identified within adopted municipal or County TSPs.

2. In urbanizing areas added to the Metro UGB since a city's last major legislative TSP update, and where urban intensity development has not subsequently occurred, the analysis assumes any planned new streets or any planned street widening improvements in any adopted plan for the area already comply with applicable Goal 5 resource avoidance policies.

3. For Goal 5 resources not covered by 1 or 2 above, potential for negative Goal 5 resource impacts that are expected to be strongly negative are not considered to comply with the County's policy on avoidance if any other reasonable alternative exists. Examples of a strongly negative Goal 5 impact would be a transportation project that required a new bridge across

the Tualatin River or a new road through the middle of a significant aggregate resource site. For Goal 5 resource impacts that are not expected to be strongly negative and are not covered by 1 or 2 above, then Goal 5 impacts are not considered a categorical threshold and will, instead, be weighed as one of the issues of evaluation when comparing the Cornelius Pass Road extension to other alternatives.

The above thresholds are justified by the County's adopted and acknowledged TSP and the municipal TSPs.

3.6 Connectivity and Functional Classification Thresholds

Local governments in Oregon are required to adopt TSPs, and TSPs are required by OAR 660-012-0020(2)(b) to plan a network of streets and to designate functional classifications of those streets. The functional classifications of County and City TSPs are required by the TPR to be consistent with the classifications of the State TSP and the Metro RTP. Washington County and local municipalities in the area have adopted TSPs with the planned network of streets and functional classifications required. A map of the functional classification of roads in the area is provided in Appendix 3.

In addition, the Washington County TSP includes specific policy language concerning system design and connectivity, as follows:

System Design The system design goals establish a framework for a transportation system that:

- Provides a network of multi-modal transportation facilities and operational systems intended for travel between points A and B.
- Connects and integrates land use and transportation.
- Provides multiple travel routes and connections within and between parts of the community
- Provides for travel by all modes including walking, bicycling and public transit.

Together, the Modal Elements establish the framework of an integrated multi-modal transportation network.

Goal 7: Connectivity – Provide improved and new transportation connections within and between developed and developing areas.

Objective 7.1: Provide an interconnected transportation network that offers multi-modal travel choices and minimizes out-of-direction travel for all modes.

The Washington County TSP responds to Metro's Regional Transportation Functional Plan and Transportation Planning Rule requirements by emphasizing a connected network of multimodal complete streets. Connectivity is described as "creating multiple opportunities for movement within and between neighborhood as well as with areas of employment and other parts of the community." The foundation of a well-connected multimodal system is the arterial network. The connectivity role and function of arterials in the network is the most important aspect of the transportation system plan.

The Washington County TSP does not articulate the one-mile spacing standard, rather it relies on the regional standard to inform the development of the functional classification map and resulting

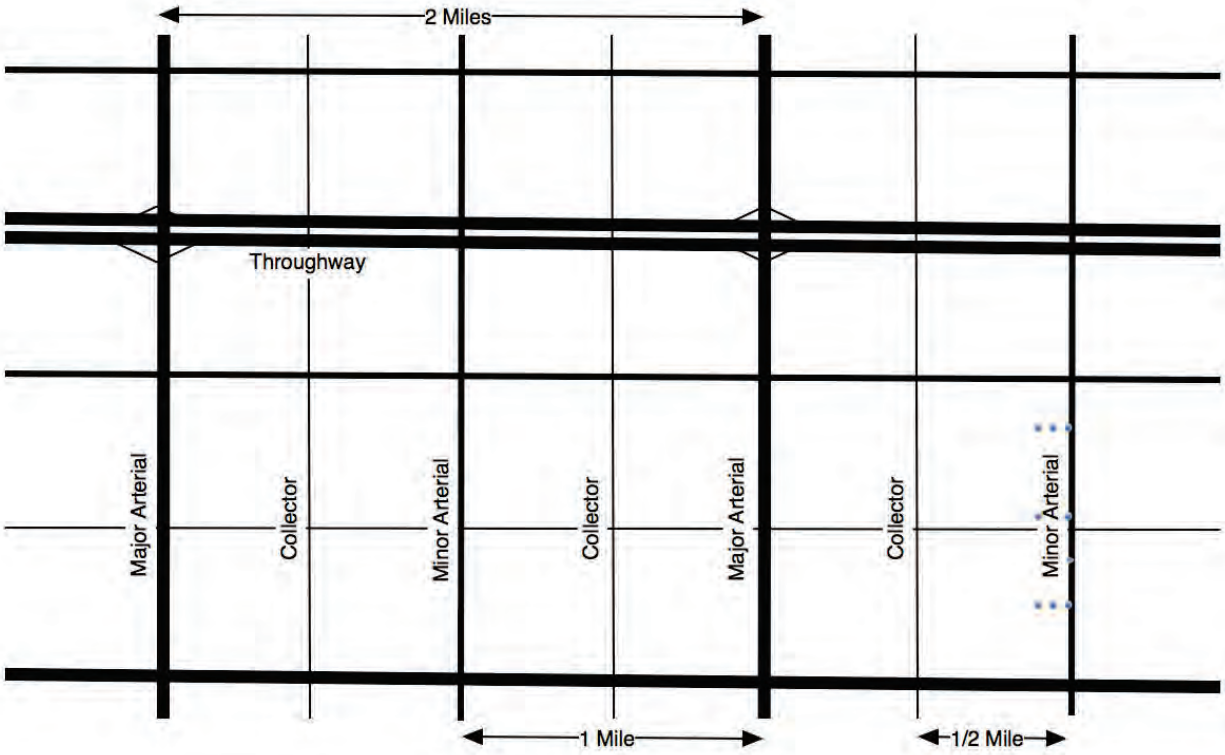
transportation network. The utilization of a spacing standard is implicit thought out the adopted TSP, as stated in the overall goal of the transportation system design to provide for a connected multimodal network of complete streets.

Arterial spacing and system connectivity is referenced throughout the technical appendix to the Transportation System Plan, the most relevant of these references include: "Arterials are intended to provide general mobility for motorized as well as non-motorized travel and connect to important destinations within the Portland metropolitan area as well as to the Principal Arterial system. These arterials are generally spaced at one-mile intervals." The approximately one-mile spacing arterial interval is the standard spacing was applied in the development of Washington County's TSP. This general one-mile arterial spacing standard has long been recognized regionally, statewide and nationally[10] as an appropriate spacing standard for arterial roadways.

3.6.1 Regional Connectivity

The Metro 2018 RTP provides a Regional Mobility concept that identifies the spacing standards for a complete and well-connected network. The Regional motor vehicle network concept illustrates policies for developing a complete and well-connected motor vehicle network that is safe and reliable, provides adequate capacity and supports all modes of travel.

Regional motor vehicle network concept[11]



Note: Conceptual network, illustrating multimodal transportation corridors and showing ideal spacing of arterial streets. Most of the region's travel occurs off the throughway network, on a

[10] Traffic Circulation and Planning for Communities, Harold Marks, Jan. 1, 1974

[11] Figure 3.11 Collector and local street network concept, 2018 RTP, page 3-57.

network of multimodal arterial streets. The RTP policy places an emphasis on ensuring that arterial networks are fully developed as the region grows, providing both local circulation and preserving throughway capacity for regional and statewide travel.

The Regional motor vehicle network policies augment the Regional Motor Vehicle performance standards discussed above. The Regional Motor Vehicle network concept discussion in the 2018 RTP identifies that a well-connected network of complete streets is critical to achieving the 2040 Growth Concept vision. The 2018 RTP notes that:

> "Rather than solely relying on levels of congestion to direct how and where to address bottlenecks and other motor vehicle capacity deficiencies, the regional motor vehicle concept and policies call for implementing a well-connected network design that is tailored to fit local geography, respect existing communities and future development and protect the natural environment. Increase connectivity improves travel reliability through reducing bottlenecks and congestion hotspots and increasing travel options." [12]

The RTP identifies the "Typical spacing and planned capacity for arterial streets" on page 3-61 noting "the regional motor vehicle network concept calls for one-mile spacing of major arterial streets…" The RTP discusses Arterial streets in the Regional mobility concept on page 3-63 as "intended to provide general mobility for travel within the region and provide important connections to the throughway network. Arterial streets connect major commercial, residential, industrial and institutional centers with each other and link these areas to the throughway network. Arterial streets are usually spaced about one mile apart and are designed to accommodate motor vehicle, truck, bicycle, pedestrian and transit travel."

3.6.2 Connectivity & Functional Class Threshold Determination

Based upon the hierarchical requirements in the TPR and the requirement that local TSPs comply with the Metro Regional Transportation Plan (RTP) and the Oregon Transportation Plan (OTP), Washington County determines that functional classification thresholds will be applied in a manner that does not require cities to alter any adopted street functional classification that would be inconsistent with the RTP or the OTP.

With respect to Washington County facilities, functional classification thresholds are applied in a manner that will not require changes to the functional classification of any roads covered by the OTP. Functional classification implications and out-of-direction travel impacts for the SW Cornelius Pass Road extension will be evaluated in relation to other alternatives for roads and roadway spacing in Washington County.

A one-mile interval between arterials is the applicable arterial spacing standard. The Arterial Spacing standard utilizes the Regional Transportation Plan (RTP) Arterial spacing standards as applied in the Washington County TSP connectivity policy. The technical appendix of the TSP discusses how the RTP spacing standard was applied in the evaluation and development of the Washington County motor vehicle function classification system map. The connectivity goal articulates this as critical to "provide an interconnected transportation network that offers multimodal travel choices and minimizes out-of-direction travel for all modes." The utilization of a spacing standard is implicit thought out the adopted

[12] Section 3.5.3 Regional motor vehicle network policies, 2018 RTP, page 3-38.

TSP, as stated in the overall goal of the transportation system design to provide for a connected multimodal network of complete streets.

Section 4: Alternatives Analysis Not Requiring an Exception

Statewide Planning Goal 2, Part II C(1) and C(2) are implemented by OAR 660-012-0070(4) and (5). The rule provides that the thresholds identified in Section 3 above, pursuant to OAR 660-012-0070(6) may be applied to eliminate alternatives that do not meet the identified thresholds. The thresholds identified in Section 3 above may also be applied to evaluate alternatives that do not require an exception. That evaluation must establish an adequate factual basis that an exception is required to meet the identified transportation need and that a location not requiring an exception to satisfy the identified need is not practicable.

4.1 Alternatives Development Process

The alternatives that would not require an exception were developed through collaboration between transportation planning staff within the Washington County Long Range Planning Division and the consultant team for the goal exceptions analysis, CSA Planning Ltd. The general approach was to evaluate *conservative* alternatives. In other words, to develop scenarios that made relatively generous assumptions about the potential for future transportation facility improvements and services that could meet the demand without requiring an exception. The analysis was performed during the Cooper Mountain Transportation Study and that planning process informed the alternatives identification and development.

4.1.1 Geography

The alternatives analysis used the study area identified in the Cooper Mountain Transportation Study as the generalized area to identify and evaluate potential alternatives.

From a pure location standpoint, there is no alternative corridor that could provide the direct connectivity of Cornelius Pass Road extending to the intersection of SW Clark Hill Road and SW Farmington Road that would not require a Statewide Planning Goal exception. The portion of Cornelius Pass Road planned in the City of Hillsboro terminates at SW Rosedale Road which is at the UGB boundary. Lands immediately to the south are zoned Exclusive Farm Use (AF-5). As such, any new road routing to the south that would connect directly from SW Rosedale Road to SW Farmington Road would cross land protected by Statewide Planning Goal 3 and would require an exception.

Because no alternatives exist that would provide the same connectivity without an exception to Statewide Planning Goals, any potential alternatives not requiring an exception are necessarily limited to transportation alternatives that seek to meet future travel demand in other locations.

4.1.2 Alternative Transportation Modes

The alternatives analysis considered alternative transportation modes to meet future travel demand. Alternative transportation modes are all modes other than the personal automobile. For surface transportation solutions, alternative modes consist of biking, walking, and taking transit.

Alternative modes do not provide the connectivity attributes that the Cornelius Pass Road extension provides. For biking and walking trips, the transportation needs cannot reasonably be met due to travel

distances. A trip length of 5 miles one-way is too far to be practical for most bicyclists and pedestrians for regular trips. This represents the shortest trip origin/destination pairs in this area. Many trip pairs are expected to be ten miles or more between the Communities of Aloha and Hillsboro to the North and Sherwood, Tigard, and Tualatin to the South.

Given the scale of the travel needs being served, biking and walking are not viable as stand-alone transportation modes. Thus, the only other alternative mode with the potential to alleviate the need for the proposed Cornelius Pass Road extension is transit. Investigations of future transit service planning by TriMet indicated limited plans for expanded transit service in this area. Many of the current roadways in the study area may not be viable as transit routes. For example, SW Miller Hill Road, while its location would grant connectivity benefits as a transit route, it is narrow, and has steep grades exceeding 10%. Nevertheless, an alternative was developed that adds transit in the area as a *best-case alternative* to avoid the need for the proposed road. This somewhat aspirational transit service is depicted in Appendix 4.

4.1.3 Traffic Management Measures

Traffic management measures involve direct intervention in the transportation system to alter transportation flows. One of the most common examples is traffic signal management. Modern Traffic signal systems can distribute and control traffic flows by using adaptive signal timing profiles. Signal usage can be optimized to coordinate flows and provide protection for vulnerable road users. These types of systems can optimize traffic flow and ensure safer vehicular progression. Another example is ramp meters at freeway interchanges. Traffic signals must provide service to all directions and modes. Traffic signals cannot create capacity but rather can be optimized in how they serve the existing capacity.

The travel models used for this analysis assumed that signals will be optimized to the extent possible given existing technology. Neither the County staff or the Cooper Mountain Transportation Study project team identified appropriate traffic management measures or techniques that represented a viable alternative for this area. Effective transportation management measures at this transportation demand scale typically require either traffic flows that vary significantly by time of day or involve facilities with very limited direct access (like ramp meters on freeways). Traffic management measures do not provide the connectivity attributes that the Cornelius Pass Road extension provides. Traffic management measures were determined to not present viable solutions in surface street areas with many connections and alternative routes.

4.1.4 Improvements to Existing Transportation Facilities

Improvements to existing transportation facilities and the construction of new street connections within the Urban Growth Boundary is another way to add capacity to meet future travel demands in the area. This type of different connection does not result in the connectivity attributes that the Cornelius Pass Road extension provides. Because this is a growing and developing area numerous transportation projects are already identified and planned.

The CMTS planning process as well as the exception alternative analysis has further developed improvement options to provide capacity for future travel demands. Expansion of existing facilities to meet future travel demand needs has limitations in developing urban areas due to economic dislocation factors. Urban transportation facilities for arterials and collectors in Washington County

include bicycle and pedestrian facilities appropriate for urban development. These typically include bike lanes (which may be buffered), curbs, stormwater treatment, planter strips and sidewalks. Expansion of rural roadways to urban width may be appropriate when repurposing County road rights-of-way for development in urban growth boundary expansion areas. Motor vehicle capacity is generally governed by the narrowest sections along a route, so the sections of roadway that cannot be widened to meet future demand due to funding or other constraints may reduce or eliminate the benefits of widening elsewhere in a given corridor.

Consistent with thresholds described in Section 3 above, all planned road widening and new street connections, were incorporated into the alternatives analysis. Additional road widening was considered where widening was feasible for an entire segment that would provide capacity benefits of the additional lanes for the entire segment. Consistent with thresholds described in Section 3 above, new road connections were considered where parallel routes would create new capacity alternatives to the capacity supplied by the Cornelius Pass Road Extension.

4.1.5 Non-Exception Alternatives Not Satisfying Thresholds for Detailed Evaluation

Connections in different locations all fail to provide the connectivity attributes that the Cornelius Pass Road extension provides. Regardless, in considering alternatives and applying the thresholds in Section 3 above, several potential alternatives were eliminated from further evaluation, as follows:

- Extending SW 190th Avenue through Cooper Mountain Nature Park to the East-West Collector planned in the South Cooper Mountain Concept Plan. Notwithstanding that the right-of-way acquisition of the land in Cooper Mountain Nature Park may be problematic, such a connection also has Goal 5 resource avoidance threshold issues that render it nonviable. Cooper Mountain Nature Park itself appears to be inventoried by Metro as a Goal 5 resource and it also contains several riparian areas that form the headwaters of McKernan Creek and any connection in this area would be a strongly negative impact on these Goal 5 resources, see Appendix 6. Such a new connection would also encourage even more regional traffic to use SW Miller Hill Road and other routes through fully urbanized residential neighborhoods. This could create significant impacts in existing developed areas which are not consistent with the adopted planning for these areas.

- Widening SW 175th to 5+ lanes. There are both economic dislocation issues and constructability issues that would make this alternative problematic. To have significant transportation benefits the "kink" in 175th would need to be removed entirely and the widening would need to extent to SW Rigert Road. The segment between SW Kemmer Road and SW Rigert Road is the most problematic. There is not enough space between the existing residential communities for a significant wider facility. In other words, multiple houses would need to be removed for a 5+ lane roadway cross-section in this area, which represents an unacceptable level of economic dislocation. Furthermore, completely removing the "kink" with a 5+ lane roadway would likely involve complete acquisition of multiple properties. A 5+ lane roadway in this location is challenging topographically and would be extremely impactful to the existing community.

- Widening of SW Grabhorn Road to 5+ lanes. To capture meaningful portions of the regional travel demand, the widening would need to connect between SW Tile Flat Road and

SW Farmington Road. The section between SW Stone Creek Drive and Nancy Lane has several homes where the proximity of the residence in relation to the aggregate pit is less than 100 feet. A 5+ lane roadway would require a cut-bank on the aggregate pit to shift the widening east (unless these houses were acquired and demolished). Even more problematic are the Goal 5 resource impacts on the segment between SW Gassner Road and SW Farmington Road. Widening to even three lanes in this location may prove difficult because of impacts to the Jenkins Estate, which is on the National Register of Historic Places. Furthermore, widening to 5+ lanes would likely require the removal of numerous large trees that line SW Grabhorn Road along the Jenkins Estate Goal 5 Historic Resource property which would cause a strong negative impact to this Goal 5 resource. This option exceeds economic dislocation and Goal 5 resource avoidance thresholds.

4.2 Baseline Alternative (financially constrained and expected projects)

One of the two alternatives advanced for detailed evaluation is termed the *Baseline Alternative*. The Baseline Alternative is what is likely or reasonably expected to occur for future transportation improvements in the area. These facilities and improvements are those for which funding is expected during the planning horizon. No Goal Exceptions are required for these improvements to occur. The purpose of the baseline alternative is to determine adequacy of the currently planned and expected facilities and improvements to meet future transportation needs.

4.2.1 Baseline Alternative Description

The Baseline Alternative includes the following list of roadway improvements assumed to be completed in the area:

Committed Funding (includes funding source, estimated completion year):

- Widening of 175th Avenue south of Alvord Lane to 5 lanes (MSTIP High-Growth, 2018).
- Widening of Roy Rogers Road to 5 lanes between Scholls Ferry Road and UGB, just south of Bull Mountain Road (MSTIP High-Growth, 2020).
- Widening of 198th Avenue to 3 lanes between TV Highway and Farmington Road (MSTIP 3d, 2020).
- Widening of 209th Avenue to 5 lanes between TV Highway and Kinnaman Road (MSTIP 3e and MSTIP High-Growth, 2021).
- River Road paving and striping improvements between Scholls Ferry Road and Farmington Road (Road Maintenance Program, 2018-19).

New Urban Areas (Funding Strategies, including MSTIP High-Growth, Supplemental SDC's, and Development):

- South Hillsboro Concept Plan roadways (South Hillsboro supplemental SDC):
    - Cornelius Pass Road extension south to Rosedale Road as 5 lanes.
    - Blanton Road extension west from 209th Avenue to Century Boulevard as 3 lanes.
    - Century Boulevard/229th Avenue improvement to 3 lanes between TV Highway and Rosedale Road.
    - Widening of Kinnaman to 3 lanes between 198th and 209th (MSTIP High-Growth).
    - Kinnaman Road extension west from 209th Avenue to Century Boulevard as 3 lanes.
    - Murphy Lane improvement and 3-lane extension west from 209th Avenue to Century Boulevard.

- South Cooper Mountain Concept Plan roadways (SCM Supplemental SDC):
  - Widening of Scholls Ferry Road to 5 lanes between Roy Rogers/175th and South Cooper Mountain North-South Collector (MSTIP High-Growth).
  - Widening of Scholls Ferry Road to 3 lanes between South Cooper Mountain North-South Collector and Tile Flat Road (MSTIP High-Growth).
  - Widening of Tile Flat Road between Scholls Ferry Road and UGB to 3 lanes (MSTIP High-Growth).
  - North-south collector between Scholls Ferry Road and East-west collector as 3 lanes.
  - East-west collector between Tile Flat Road and 175th Avenue as 3 lanes.
- River Terrace Concept Plan roadways (River Terrace Supplemental SDC):
  - River Terrace Boulevard between Barrows Road and approximately 3,200 feet south of Bull Mountain Road as 3 lanes.
  - Jean-Louise Road between Roshak Road and Roy Rogers Road as 3 lanes.

Projects Included in the Financially Constrained Regional Transportation Plan (based on 2018-2027 RTP Projects) No funding specifically identified:

- Widening of Farmington Road to 5 lanes between 170th and 185th Avenue.
- Tualatin-Valley Highway Corridor Safety and Access to Transit (209th Avenue to 107th Avenue).
- Widening of Roy Rogers Road to 5 lanes between just south of Bull Mountain Road (UGB) and OR 99W.
- Widening of Blanton Road to include sidewalks and turn lanes between 198th and 209th Avenue.

4.2.2 Baseline Alternative in Relation to Thresholds

The baseline alternative (2018 Financially Constrained RTP) indicates the need for additional transportation facilities and services in the area based upon the following:

- **TRANSPORTATION FACILITY PERFORMANCE STANDARDS:** The overall performance of the transportation system is improved with the addition of the Cornelius Pass Road Extension. However, SW 175th Avenue is projected to continue to exceed performance standards by a significant amount. The Cornelius Pass Road extension, even when modeled with the Tile Flat Road Extension, is not projected to resolve all performance standards issues in the area.

- **COST AND CONSTRUCTABILITY THRESHOLDS:** No meaningful difference between the baseline alternative and the Cornelius Pass Extension is expected. Both the Cornelius Pass Road extension and the improvements associated with the baseline alternative are expected to be cost effective and can be constructed through relatively standard implementation.

- **ECONOMIC DISLOCATION THRESHOLDS:** The Cornelius Pass Road extension will cause economic dislocation that is greater than the baseline alternative because the Cornelius Pass Road extension is in addition to all the improvements identified in the baseline alternative.

- **GOAL 5 RESOURCE AVOIDANCE:** The Cornelius Pass Road extension will cause some impacts to Goal 5 resources because several small streams and drainages would be crossed by the project. The alternative will likely have some Goal 5 impacts, but on whole, the impacts appear to be generally modest and likely mitigatable. See Appendix 6.

- **CONNECTIVITY AND ORIGIN/DESTINATION THRESHOLDS:** The Baseline alternative adds important and beneficial local connectivity in the area (much of this is assumed to occur as part of future development). Ultimately, these are relatively localized connections that do not reduce out of direction travel to a great degree. The meandering of the Tualatin River to the west has resulted in the construction of only four river crossings in a 10-mile distance from Highway 219 all the way to SW Roy Rogers Road (Highway 219, Highway 10 / Farmington Road, Highway 210 / Scholls Ferry Road and Roy Rogers Road). Combined with the need to go avoid impacts to the Cooper Mountain Nature Park and other Goal 5 resources, the north-south road connectivity in the area is very limited. By providing additional options, the Cornelius Pass Road Extension will increase connectivity in an area which lacks it.

4.2.3 Need for Project Under Baseline

Because the connectivity benefits of the Cornelius Pass Road extension are evident, the Cornelius Pass Road extension is needed when compared to the Baseline Alternative. Evaluation of system performance on parallel routes indicates that the Cornelius Pass Road extension will result in numerous improvements.

4.3 Urban Full-Build Alternative with Transit Service Expansion

One of the two alternatives advanced for detailed evaluation is termed the *Urban Full-Build Alternative*. The Urban Full-Build Alternative represents the "maximum" reasonably achievable build-out of the urban street system along with the introduction of transit to the area. No Goal Exceptions are required for these improvements to occur. The purpose of the Urban Full-Build alternative is to determine adequacy of all reasonably possible urban street improvements combined with adding transit service that does not currently exist to the area.

4.3.1 Urban Full-Build Alternative Description

The Urban Full-Build Alternative includes all the projects in the Baseline Alternative and includes the list of roadway improvements below. The economic viability and financial likelihood of these projects is more uncertain than the projects in the Baseline Alternative. The analysis herein is intended to demonstrate that, even with all the 2018 RTP financially constrained projects, plus additional other planned projects, there is still unmet travel demand in the area.

Additional Projects: Projects in the area listed on Washington County TSP, but not in the 2018 RTP financially constrained project list, include:

- Realignment of "kink" in 175th Avenue.
- Widening of 175th Avenue between Kemmer Road and Scholls Ferry Road.
- Widening of Grabhorn Road to 3 lanes inside the urban area (including improvements of rural curves).
- Widening of Bull Mountain Road to 3 lanes between Roy Rogers Road and Highway 99W.

In addition to the above road improvement projects, the Urban Full-Build alternative includes new transit routes and service in the area. Appendix 4 contains a memo explaining the methodology for the transit service expansion in the area. Nothing in this analysis should be construed to mean that TriMet is planning transit in this area or that transit is potentially even a viable and cost-effective in this area. Nonetheless, the regulatory requirements for a Goal Exception require consideration of alternative modes to meet identified travel demand. Therefore, the Urban Full-Build alternative includes a generous

assumption about new transit routes in the area and further includes a generous assumption about PM Peak Hour travel demand capture of 6% on roads where the "new" transit service could, theoretically, be provided.

4.3.2 Urban Full-Build Alternative Analysis in Relation to Thresholds

- **TRANSPORTATION FACILITY PERFORMANCE STANDARDS:** The overall performance of the transportation system is improved with the addition of the Cornelius Pass Road Extension. However, 175th Avenue is projected to continue to exceed performance standards by a significant amount. The Cornelius Pass Road extension, even when modeled with the Tile Flat Road Extension, is not projected to resolve all the performance standards issues in the area. It is also noteworthy that, while the volumes on the parallel urban routes do go down congestion is still significant.

- **COST AND CONSTRUCTABILITY THRESHOLDS:** The Cornelius Pass Road extension is expected to have higher costs than the baseline alternative but probably not more than the Urban Full-Build alternative, because the improvements are so extensive and the transit service would likely require a large annual subsidy to operate. The Urban Full-Build alternative is not expected to be cost effective from a rough comparative standpoint to the Cornelius Pass Road extension and some of the implementation is challenging.

- **ECONOMIC DISLOCATION THRESHOLDS:** The Cornelius Pass Road extension will cause economic dislocation that is greater than the Urban Full-Build alternative because the Cornelius Pass Road extension is, ultimately, contemplated to be needed in addition to all the improvements identified in the Urban Full-build alternative.

- **GOAL 5 RESOURCE AVOIDANCE:** The Cornelius Pass Road extension will cause some impacts to Goal 5 resources because several small streams and drainages would be crossed by the project. The Cornelius Pass Road Extension corridor attempts to limit the number of crossings and to accomplish them in as efficient a manner as feasible at this level of analysis. Direct routes (right angles to the streams) are used wherever possible to limit the area of incursion. These impacts are detailed in Section 7 below.

- **CONNECTIVITY AND ORIGIN/DESTINATION THRESHOLDS:** The Urban Full-Build alternative adds important and beneficial improvements for the area. Ultimately, these do not reduce the need for the Cornelius Pass Road extension, and the connectivity it provides. The meandering of the Tualatin River to the west has resulted in the construction of only four river crossings in a 10-mile distance from Highway 219 all the way to SW Roy Rogers Road (Highway 219, Highway 10 / Farmington Road, Highway 210 / Scholls Ferry Road and Roy Rogers Road). Combined with the need to go avoid impacts to the Cooper Mountain Nature Park and other Goal 5 resources, the north-south road connectivity in the area is very limited. By providing additional options, the Cornelius Pass extension will increase connectivity in an area which lacks it.

The transportation modeling also depicts a "balanced" rural/urban connectivity benefit from the Cornelius Pass Road extension when combined with the improvements for the Urban Full-Build of the

area. The modeling predicts approximately 1,800 PM Peak Hour[13] trips would be captured by the Cornelius Pass Road extension. Some of these appear to be a rerouting of trips already on the rural system off Farmington Road and River Road; this is a rural connectivity benefit to the rural system. This indicates the Cornelius Pass Road extension is not a rural road connection that is directed solely at urban connectivity and traffic but also has benefits for the rural area.

4.3.3 Need for Cornelius Pass Road Extension under Urban Full-Build Alternative

The Cornelius Pass Road extension is needed because the connectivity benefits of the Cornelius Pass Road Extension indicate the new facility captures a meaningful number of trips that are a mix of rerouted trips from urban and rural facilities, indicating a connectivity benefit to the County's transportation system in this area. The Cornelius Pass Road extension is also needed because transportation facility adequacy is exceeded on parallel routes in the Urban Full-Build Alternative and the new connection will improve system performance in the area overall.

Section 5: Alternatives Analysis Requiring an Exception

After determining that the identified transportation need cannot be practicably accommodated through alternatives not requiring an exception, as shown in the analysis herein above in section 4, analysis of alternatives requiring an exception is regulated by Statewide Planning Goal 2, Part II C(3) and implemented by OAR 660-012-0070(7). The exception analysis shall compare the long term economic, social, environmental, and energy consequences of proposed alternative locations requiring an exception. It shall describe the alternatives and the typical advantages, disadvantages, and consequences resulting from the transportation improvement with measures designed to reduce adverse impacts. The exception analysis also determines net adverse impacts between the alternatives to judge if any alternative has impacts that are substantially more adverse.

5.1 Alternatives Development Process

The alternatives that would require an exception were developed through collaboration between transportation planning staff within the Washington County Long Range Planning Division and the consultant for the goal exceptions analysis, CSA Planning Ltd. The general approach was to evaluate *conservative* alternatives. In other words, to develop scenarios that made relatively generous assumptions about the potential for future transportation facility improvements and services.

The development process for other alternatives requiring an exception also relied, to a significant extent on the letter from DLDC in Appendix 17. This DLCD letter expresses the opinion that the County is not allowed, under applicable rules, to take a goal exception for any new roadway alignment that would traverse Rural Reserves. This opinion limits the geographies of any potential new road alignments to areas either within an Urban Reserve or within a rural area that is "undesignated"; i.e., land that is not designated as Urban Reserve or Rural Reserve.

5.1.1 Geographic Analysis to Develop Alternatives

The alternatives analysis used the study area of the Cooper Mountain Transportation Study as the generalized area to identify and evaluate potential alternatives.

[13] Peak hour is defined as 4 PM to 6 PM

Because the additional connectivity provided by the project is needed to meet projected future travel demands, even after all reasonable urban street and road improvements are assumed to be in place as analyzed above in Section 4, any remaining alternatives would require a goal exception. Because the potential alternatives are limited to lands designated Urban Reserve or "undesignated", connectivity options further to the west of a Cornelius Pass Road extension are not regulatorily viable, see Appendix 10.

Development of alternatives needed to increase connectivity by connecting Cornelius Pass Road to SW Farmington Road without traffic from north of SW Rosedale Road needing to use 209th/Grabhorn. This analysis evaluated soil productivity as one of the factors, which is shown in Appendix 8. Ownership patterns, farm units, and farm uses were also considered during the analysis. Appendix 12 depicts farm use patterns in the area and ownership patterns and farm units are depicted in Appendix 14.

5.1.2 Alternative Transportation Modes

It was assumed that any of the alternatives requiring an exception would have improvements and facilities that could be utilized by bicyclists and pedestrians and that any facility alternative could be used by transit, even if the development of a new transit route would be unlikely in the rural area.

5.1.3 Traffic Management Measures

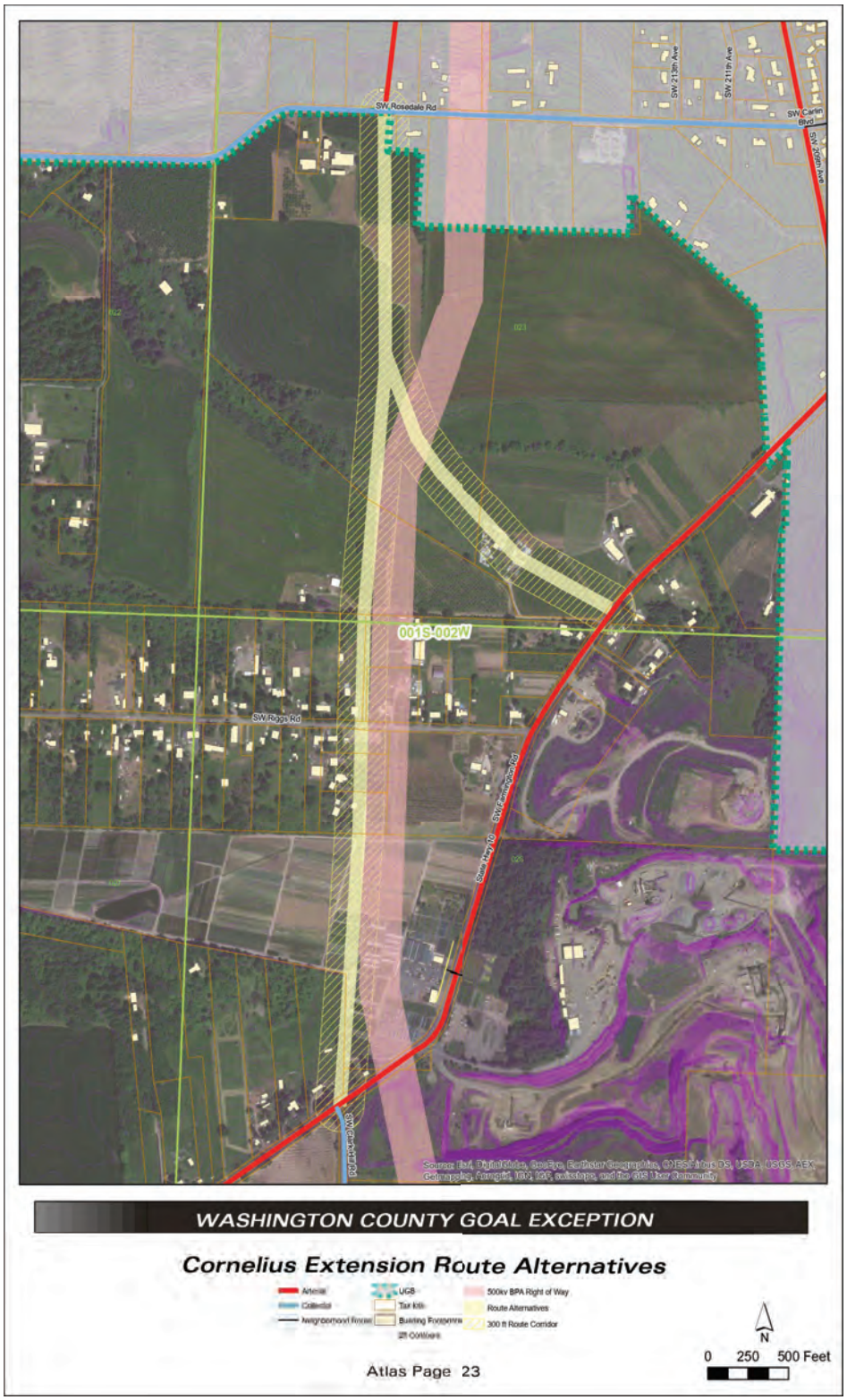
The alternatives development process did not identify any traffic management measures that would have any meaningful effect on potential transportation alternatives requiring an exception.

5.1.4 Improvements to Existing Rural Transportation Facilities

Existing rural roads to the west of Cornelius Pass Road are in Rural Reserves, and thus increasing capacity by adding travel lanes to these roads or construction of new connections to them is precluded (based upon DLCD guidance, see appendix 17). Other than the specific alternatives described below, no other improvements to existing transportation facilities were identified that would address the identified needs for additional connectivity and road capacity.

5.2 Description of Potential Alternatives

In addition to the proposed corridor, two alternatives were developed that would require an exception but would utilize a different alignment. Both alternatives extend Cornelius Pass Road and the alignment through the farm zoned properties is the same for both alternatives. The alternatives have different transportation benefits and different implications for lands protected by Goal 3 when compared to the proposed corridor. The alignment for the two alternatives is depicted in Appendix 1 and reprinted below for reference. The alignment of the northern third of a mile for both alternatives and the proposed corridor is essentially the same. At that point, the alternatives curve to the east and connect to SW Farmington Road approximately ¾ of a mile northeast of SW Clark Hill Road.


SW Rosedale Rd
SW 213th Ave
SW 211th Ave
SW Carlin Rd
SW 209th Ave
001S-002W
SW Riggs Rd
SW Cornelius Pass Rd
State Hwy 10
SW Cornelius Pass Rd
WASHINGTON COUNTY GOAL EXCEPTION
Cornelius Extension Route Alternatives
Arterial
Collector
Neighborhood Route
UGB
Tax lots
Building Footprints
25 Contours
500kv BPA Right of Way
Route Alternatives
300 ft Route Corridor
N
0 250 500 Feet
Atlas Page 23

5.2.1 Shortening Cornelius Pass Road Extension to Farmington Road

This alternative has the least impact on lands protected by Goal 3, but it also has the least transportation benefits. The alternative does not widen Farmington to 3 lanes between Grabhorn Road and Clark Hill Road (see 5.2.2). It results in more out-of-direction travel and more turning movements than the direct connection to the intersection of Farmington Road at Clark Hill Road. This alternative would avoids a medium-sized nursery on Farmington Road but it increases traffic volumes at the aggregate site access points.

5.2.2 Shortening Cornelius Pass Extension to Farmington Road Plus widening Farmington Road to 3 lanes between Cornelius Pass Road and SW Clark Hill Road

This alternative provides the same alignment as the shorter Cornelius Pass Road alignment above and also includes widening Farmington Road between Cornelius Pass Road and Clark Hill Road. The alternative would traverse the same farm zoned properties as described above, but would also impact the properties along Farmington Road. This alternative results in more out-of-direction travel. It avoids the medium-sized nursery but it increases traffic volumes on Farmington Road at the aggregate site access points but would include turn lanes to mitigate access problems to the aggregate site.

5.3 Description of Rural Lands and Farm Uses in Alternatives Area

CSA Planning inventoried and analyzed the rural land uses in and around the area between SW Rosedale Road and SW Farmington Road. The inventory methodology utilized Google Earth images, NRCS soils data and field data collection. The inventory of farm uses was based upon the best available and readily obtainable data.

5.3.1 Soils Productivity and Irrigation

Soils in the area are depicted in Appendix 8. The mapped soil classification and productivity analyses assume soils are irrigated. CSA's analysis indicates that many farm uses in the area do not require irrigation, such as grass seed. Research also indicates that irrigation can generally be obtained from irrigation districts if it is required. Using the classification for irrigated soil productivity for all soils is a conservative approach in areas where acquisition of irrigation, even where it may not currently exist, is possible and economic. Except for the Baker Rock aggregate site, soils in the area are primarily Class I agricultural soils with smaller area of Class II and Class IV agricultural soils.

5.3.2 Farm Uses

Farm uses in the area are small to medium in scale and the farm use inventory is depicted on Appendix 16. A memo fully explaining the methodology for determining farm and forest uses can be found in Appendix 15. The area can be conceptualized with three land use patterns north to south. To the north are a few small to medium sized properties devoted to a combination of grass hay (or grass seed) and orchards. In the middle of the area is a row of small properties along SW Riggs Road; most of these properties are less than 5 acres and contain houses and accessory buildings. While these properties are farm zoned, the scale of any farm use on these properties is necessarily small due to the small parcel size. On the east end of SW Riggs Road, at its intersection with Farmington is a small nursery specializing in pine trees. South of the properties along SW Riggs Road is a medium-sized nursery and south of the nursery is a row of small parcels along Farmington Road. The nursery uses are the most intensive farm uses in the area.

5.3.3 Forest Uses

There are no commercial forest operations in the area. The only forest uses identified in the inventory are depicted in Appendix 16. Forest uses in the area are very small in scale and are limited to a small area of woodlot uses in the northern portions of the northeastern lots along SW Riggs Road across approximately 10 properties.

5.3.4 Aggregate Uses

Farmington Road between SW Clark Hill Road and SW 209th Avenue is within the impact area of the Baker Rock Aggregate site. Based upon information provided in a pre-application for expansion of the Baker Rock Aggregate site, roads are a potential conflict for the operation. New roads are not prohibited but there is potential for conflicts at the aggregate access points on Farmington Road.

5.4 ESEE Consequences of Alternatives Requiring an Exception

The Economic, Social, Environmental and Energy (ESEE) analysis below identifies the potential consequences, positive and negative, associated with the two shortened extension alternatives in relation to the proposed corridor that is a direct connection from SW Rosedale to SW Farmington Road at SW Clark Hill Road.

5.4.1 Economic

Cornelius Pass Road Extension		*Shorter Cornelius Pass Road Extension*	*Shorter Cornelius Pass Road Extension and Widen Farmington Road*	*Cornelius Pass Extension from SW Rosedale Road to SW Clark Hill Road*
Economic Consequences	Farm and Forest Impacts	Positive – Two nurseries, one medium and one small, remain intact and able to operate without impediment.	Neutral – Multiple farms and nurseries would require dedicating right of way, including areas currently fields, parking and structures	Negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Transportation Facility Performance	Negative: Vehicle congestion on Farmington is highest, with sections exceeding performance thresholds. A well-connected regional transportation network operating to standards is important for the economy of Washington County.	Neutral: Facility performance would be improved compared to not widening but would not be significantly better than the extension to Clark Hill Road.	Positive when compared to shorter without widening. Neutral when compared to shorter with widening.
	Cost and Constructability	Neutral: Similar in difficulty and complexity to creating a straight north-south connection	Somewhat Negative: SW Farmington Road may be subject to both seismic flow and lateral spread during a significant seismic event, presenting risk.	Neutral when compared to shorter without widening. Somewhat Positive when compared to shorter with widening.
	Economic Dislocation	Positive: Least acreage disrupted by road project. Would not approach residential lots on SW Riggs, minimizing impact to an additional 5 lots	Neutral: More disruption by additional required ROW acquisition along Farmington Road.	Negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Goal 5 Resource Impacts	Negative: Would increase traffic volumes on Farmington Road conflicting with movements for aggregate trucks.	Slightly negative: Frontage to aggregate operation would see widening and potential changes to access	Positive when compared to shorter without widening. Slightly positive when compared to shorter with widening.
	Connectivity and Functional Classification	Negative: Creates least direct north-south connections and would require out of direction travel, more vehicles on Farmington Road.	Somewhat Negative: Creates least direct north-south connections but does improve section of Farmington Road.	Positive when compared to shorter without widening. Somewhat Positive when compared with widening

5.4.2 Social

Cornelius Pass Road Extension		*Shorter Cornelius Pass Road Extension*	*Shorter Cornelius Pass Road Extension and Widen Farmington Road*	*Cornelius Pass Extension from SW Rosedale Road to SW Clark Hill Road*
Social Consequences	Farm and Forest Impacts	Slightly Positive: Farms and nurseries would be least impacted, reducing negative effects on rural character and aesthetic	Neutral: Additional Right of Way dedication would impact farms, leading to a reduction in green space	Slightly negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Transportation Facility Performance	Negative: Vehicle travel on SW Farmington Road is highest. More people would spend more time in vehicles and the traffic would detract from the rural aesthetic.	Neutral: Facility performance would be improved compared to not widening, but it would not be significantly better than the extension to SW Clark Hill Road.	Positive when compared to shorter without widening. Neutral when compared to shorter with widening.
	Cost and Constructability	Somewhat Positive: The road segment is shorter, and therefore, less expensive and will impact fewer properties.	Neutral: The extension itself is shorter, but the widening will also be expensive, may have geologic issues that make it challenging to construct.	Somewhat negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Economic Dislocation	Positive: Residences on SW Riggs Road would not be adjacent or immediately impacted by a new arterial, reducing the aesthetic, noise, and recreational impacts. Allows for continued use of properties as foreseen by the County Comprehensive plan and zoning.	Slightly positive: Additional right of way would be required, bringing a road closer to existing farms and residences, reducing the aesthetic quality of the area and introducing additional noise.	Negative when compared to shorter without widening. Slightly negative when compared to shorter with widening.
	Goal 5 Resource Impacts	Neutral: Minimal aesthetic or recreation impact to the aggregate operation.	Neutral: Minimal aesthetic or recreation impact to the aggregate operation	Neutral when compared to both shorter alternatives
	Connectivity and Functional Classification	Negative: Travelers would be most delayed and must travel additional distance to reach destinations	Slightly Negative: Travelers must travel additional distance to reach destination	Positive when compared to shorter without widening. Slightly positive when compared to shorter with widening.

5.4.3 Environmental

Cornelius Pass Road Extension		*Shorter Cornelius Pass Road Extension*	*Shorter Cornelius Pass Road Extension and Widen Farmington Road*	*Cornelius Pass Extension from SW Rosedale Road to SW Clark Hill Road*
Environmental Consequences	Farm and Forest Impacts	Positive: Least amount of farmland impacted, fewest trees and landscaping impacted	Slightly Positive: Would add impervious surfaces and potentially require the removal of trees and landscaping adjacent to SW Farmington Road.	Negative when compared to shorter without widening. Slightly Negative when compared to shorter with widening.
	Transportation Facility Performance	Slightly Negative: Congestion and travel distance would be highest and capacity lowest	Neutral: Facility performance would be improved compared to not widening, but it would not be significantly better than the extension to SW Clark Hill Road.	Slightly positive when compared to shorter without widening. Neutral when compared to shorter with widening.
	Cost and Constructability	Slightly Positive: Less impacts and costs than other alternatives.	Neutral: Minimal cost differences due to environmental considerations.	Neutral: Minimal cost differences due to environmental considerations.
	Economic Dislocation	Slightly Positive: Least amount of land impacted, fewest trees and landscaping impacted.	Neutral: Would add more impervious surfaces and potentially impact trees and landscaping	Slightly negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Goal 5 Resource Impacts	Neutral: Minimal additional Goal 5 environmental impacts[14]	Neutral: Minimal additional Goal 5 environmental impacts	Neutral when compared to shorter alternatives.
	Connectivity and Functional Classification	Negative: Increased out of direction travel will increase VMT and thus GHG emissions.	Negative: Increased out of direction travel will increase VMT and thus GHG emissions.	Positive when compared to shorter alternatives.

[14] Baker Rock aggregate operation by its nature is not an *environmental* asset and thus the impacts are minimal for Goal 5 resources.

5.4.4 Energy

Cornelius Pass Road Extension		*Shorter Cornelius Pass Road Extension*	*Shorter Cornelius Pass Road Extension and Widen Farmington Road*	*Cornelius Pass Extension from SW Rosedale Road to SW Clark Hill Road*
Energy Consequences	Farm and Forest Impacts	Slightly Positive: Most intensive farm uses not required to cross new arterial, can farm more efficiently	Neutral: Most intensive farm uses not required to cross new arterial, but farms will lose land and parking requiring redeployment of resources	Slightly Negative when compared to shorter without widening. Neutral when compared to shorter with widening.
	Transportation Facility Performance	Negative: Congestion on road system highest due to less capacity and reduced connectivity.	Neutral: Facility performance would be improved compared to not widening, but it would not be significantly better than the extension to SW Clark Hill Road.	Positive when compared to shorter without widening. Neutral when compared to shorter with widening.
	Cost and Constructability	Somewhat positive: Similar in difficulty and complexity to creating a straight north-south connection, but the shorter distance will require less energy to construct.	Somewhat Negative: SW Farmington Road may be subject to both seismic flow and lateral spread during a significant seismic event, presenting risk.	Somewhat negative when compared to shorter without widening. Somewhat Positive when compared to shorter with widening.
	Economic Dislocation	Positive: Residents of SW Riggs Road would not have an additional road crossing, requiring less delay, and the least amount of roadway would be constructed.	Slightly Positive: Requires that more roadway be constructed, which is a fundamentally energy intensive process.	Negative when compared to shorter without widening. Slightly Negative when compared to shorter with widening.
	Goal 5 Resource Impacts	Negative: Additional traffic directed to SW Farmington Road would cause congestion and would impact access and turning movements to the aggregate operation	Slightly Negative: Additional traffic on SW Farmington Road would affect aggregate operation, but improved infrastructure would mitigate some impact	Positive when compared to shorter without widening. Slightly Positive when compared to shorter with widening.
	Connectivity and Functional Classification	Negative: Out of direction travels adds approximately .2 miles to each trip, increasing VMT and fuel usage.	Slightly Negative: Out of direction travels adds approximately .2 miles to each trip, increasing VMT and fuel usage. Congestion and turn movement improved.	Positive when compared to shorter without widening. Slightly Positive when compared to shorter with widening.

5.5 Determination of Net Adverse ESEE Impacts without Targeted Mitigation

5.5.1 Economic

The largest adverse economic impact comes from shortening the Cornelius Pass Road extension to SW Farmington Road but not widening SW Farmington Road. This option would involve a large capital expenditure but result in less connected network and create additional turning conflicts for vehicles wishing to use SW Clark Hill Road. Additional traffic would remain on SW Farmington Road, causing out of direction travel for some users and introducing traffic that could conflict with trucks accessing the aggerate site. The viability of the regional road network depends on a well-connected regional transportation network operating to standards on complete facilities, and the non-widening option would do the least to plan for and provide such a system. The farm and forest impacts and economic dislocation of this option are likely to be the least, but benefits to a limited quantity of properties is outweighed by regional costs and less regional benefit resulting from the properties that are still impacted. The impacts to aggregate resource extraction in this area are significant negative adverse economic consequences. This aggregate resource is strategically located near growing urban areas and the access to this resource is on this section of SW Farmington Road; congestion in this area will negatively impact utilization of this resource.

Shortening the Cornelius Pass Road extension and widening SW Farmington Road would offset the effect to SW Farmington Road but would do nothing to address connectivity. Vehicle travel (VMT) would increase as out of direction travel would be built into the transportation network. It would also impose costs on the County to acquire additional right of way from properties along SW Farmington Road. The right-of-way acquired would be at the expense of fields, parking, and perhaps structures. The farm and forest impacts would be reduced, but higher than the non-widening option. The center-turn lane would operate better than the non-widening option, but traffic could still negatively impact the Goal 5 aggregate resources.

Extending Cornelius Pass Road to SW Clark Hill Road will provide the greatest net economic benefits to Washington County. This alternative will result in improved level of performance for transportation facilities while providing the greatest connectivity benefits, and least out of direction travel.

5.5.2 Social

Extending Cornelius Pass Road to SW Clark Hill Road will have a greater adverse impact on properties and somewhat more adverse social consequences than either shorter extension. One medium sized commercial nursery will be split into two properties, impacting the owner's farm activities. The longer extension will also cut through existing residential lots, disrupting SW Riggs Road and its rural character. The extension to SW Clark Hill Road alternative would have a positive impact on connectivity and thereby reducing travel times and negative road user experiences associated with out-of-direction travel.

Shortening the Cornelius Pass Road extension and widening Farmington Road would have greater adverse impacts to the character of the area when compared to the shorter non-widening alternative, and a comparable impact in relation to the direct route. Right-of-way would need to be acquired, which in turn would mean the reduction of fields, removal of trees, and impacts to local farms and residences. The ability to use the properties along SW Farmington Road would be impacted by the widening, but

some access locations may be made more functional with the introduction of a center turn-lane. This option will still have additional out of direction travel that will create more time traveling.

Shortening the Cornelius Pass Road extension to SW Farmington Road but not widening SW Farmington Road is likely to have the least adverse social impact among the three options. It would avoid splitting the most intensive farm operation and directly impact fewer lots and result in less impact on the rural residential character. It would also leave SW Farmington Road as a two-lane rural Arterial. This alternative would have the least impact to the rural character and aesthetic of the region. The shorter connection to SW Farmington Road would adversely impact connectivity and travel time and distance, but this is outweighed by the avoided social impacts to the rural character of the area.

5.5.3 Environmental

Extending Cornelius Pass Road to SW Clark Hill Road will have greater environmental consequences when compared to the two shorter alternatives. More trees, landscaping, established homes, and fields would be removed to make way for the roadway. The direct alternative would have the least out of direction travel and thus be expected to have the lower GHG emissions between the three alternatives.

Constructing or increasing roadways generally results in adverse impacts to the environment. Shortening the Cornelius Pass Road extension and widening SW Farmington Road would have greater adverse impacts to the environment of the area when compared to the non-widening alternative. Additional impervious surface would be needed, and more trees and landscapes would be altered or removed. Like the non-widening option, VMT would be higher and thus likely more GHG emissions.

Shortening the Cornelius Pass Road extension to SW Farmington Road but not widening SW Farmington road will have the least adverse environmental impact of the three options. It would create the least amount of new roadway and not widen any existing roads. The fewest properties would be impacted, along with the fewest trees, fields, and landscaping. It would have the greatest VMT and most congestion, and thus, be expected to cause the highest GHG emissions of any of the three alternatives.

5.5.4 Energy

Shortening the Cornelius Pass Road extension to SW Farmington Road but not widening SW Farmington Road will have the most adverse energy impact of the three alternatives. Any efficiency gains to the farms not directly impacted by this alternative would be greatly outweighed by the loss in performance on existing transportation facilities and additional out-of-direction travel required by travelers to reach their destinations.

Shortening the Cornelius Pass Road extension and widening SW Farmington Road would have a lesser but still adverse impacts on energy consumptions. Like the non-widening alternative, out of direction travel would be high in this option.

Extending Cornelius Pass Road to SW Clark Hill Road will have the least adverse energy consequences, like the widening alternative, facility performance would be improved. The connection to SW Clark Hill Road would also have the least out-of-direction travel, and thus, be the most fuel efficient between the three alternatives. The direct connection to SW Clark Hill Road is approximately 0.20 miles shorter than the shortened Cornelius Pass Road extension alternative and would be expected to save considerable fuel annually due to avoided out-of-direction travel.

5.6 Targeted Mitigation Strategies

The net adverse ESEE consequences between the alternatives are mixed without mitigation measures to reduce impacts. The actual amount of additional farmland devoted to the future right-of-way for Alternatives B and C is relatively modest, at a little under 13 acres. As a proportion of the farms it crosses, it is a small fraction of arable land. The differences in negative social and environmental impacts of the direct connection to SW Beef Bend Road results partially from this loss of farmland, but more from the potential bifurcation of existing farm units. The Goal Exception analysis includes the following mitigation measures to reduce and mitigate impacts associated with the SW Cornelius Pass road extension directly to SW Clark Hill Road, as follows:

1) Where feasible, locate the new right-of-way along existing property boundaries. This minimizes or eliminates problems associated with separating or bifurcating farm units.
2) Construct Farm-Access Road. Farm crossings of roads are common throughout Oregon. However, specific design considerations can reduce or minimize impacts. Where the bifurcation of a farm unit occurs, mitigation could include the construction of an access specifically designed to allow movement of farm vehicles across the road and warn traffic of the crossing with appropriate signage and sight distance.
3) Facilitate the exchange of properties. The actual construction of the Cornelius Pass Road extension is anticipated to be many years in the future. This time period provides an opportunity for property exchanges that can align farm ownerships with the future right-of-way where the bifurcation of a farm unit is anticipated. If adjacent landowners wish to exchange properties to reconfigure farm uses in cohesive units, Washington County could identify opportunities for exchanges as a part of the project design and engineering phase to align ownerships with the future right-of-way.

5.7 Determination of Net Adverse ESEE Impacts with Targeted Mitigation

The scale of net consequences from the ESEE analysis is relatively small at this higher level of the analysis. These differences are highlighted in respect to the differences between the alternatives, but overall scale of net consequences is relatively small. With the targeted mitigation measures recommended above, it is expected that the net adverse ESEE consequences for the alternatives that do not extend Cornelius Pass Road directly to SW Clark Hill Road are greater than for the direct connection alternative for the following summary reasons:

- The net adverse economic consequences caused by congestion at site access points for the Goal 5 protected aggregate site are higher for the non-direct connection alternatives as are the costs from increased out of direction travel.
- The net consequences of an indirect route for road system users are neutral with mitigation of the localized social consequences caused by bifurcated farm units.
- The net consequences of environmental impacts from increased out-of-direction travel are neutral with mitigation of the localized environmental consequences caused by bifurcated farm units.
- The net adverse energy consequences caused by congestion and out-of-direction travel are higher for the non-direct connection alternatives.

The ESEE analysis presented in this exceptions document is expected to be refined and supplemented through the Article VII land use review process during project development.

Section 6: Rural Lands Analysis

This section analyzes impacts to rural lands to provide an adequate factual basis to satisfy the requirements of OAR 660-012-0070(8). As the entirety of the extension is to occur on EFU designated lands (zoned AF-5, AF-20 or EFU), the analysis of potential impacts to rural lands requires an examination of potential impacts to farm and forest lands and an examination of such lands requires an inventory of current land-use patterns, current land uses, and farm and forest capability.

6.1.1 Analysis of Impacts to Rural Lands

This section identifies the source, nature and extent of potential impacts to rural lands.

LAND USE PATTERNS: As evidenced by the attached Appendices and inventory table data, within the northerly portion of the Cornelius Pass extension (within Township 1 South, Range 2 West, Section 23) there are three relatively large parcels or tracts under unique ownerships. The north-south middle portion of the extension crosses near several 1- to 5-acre properties dedicated primarily for rural residential purposes with little farm or forest activity occurring. Said lots are situated along both sides of and are adjacent to SW Riggs Road that extends west from SW Farmington Road for a distance of approximately one-quarter mile to where it dead ends. The southerly portion of the extension crosses a couple of medium size properties under different ownerships. Topography throughout the area is primarily gentle yet undulating, with two stream tributaries crossings.

LAND USES AND CAPABILITY: As evidenced by soils data derived from Natural Resource Conservation Service (NRCS), all lands within the area are Class IV or better with the majority of the lands including soils with a Class II or III capability rating, indicating the natural soils are generally suitable for being put to productive agricultural use. Water and irrigation rights were inventoried utilizing Oregon Water Resources Department (OWRD) water rights data. As evidenced in Appendix 9 there are a few properties within the study area that receive irrigation. Generally, according to information published by the Tualatin River Irrigation District, there is ample irrigation water conveyed to and through the area by means of streams and ditches. Arguably, based on land-use designations, proximity and access to water facilities and general availability of water rights in the area, properties that do not currently receive water rights for irrigation could feasibly achieve water rights. However, the same would likely require acquisition and transfer of rights. Given the soils ratings and history of farm practices, all lands throughout the area are considered capable of being put to productive farm or forest use with or without irrigation.

See Appendix 11 and inventory table data that depicts current ownerships, soils, irrigation and farm uses occurring throughout the immediately adjacent and nearby areas. There are no what may be considered, large commercial farm tracts (multiple large contiguous or noncontiguous lots or parcels under the same ownership that are dedicated to commercial farm operations) occurring throughout the study area. There are however, a mix of low-intensive and intensive commercial farm operations occurring throughout. Farm and forest uses identified as occurring throughout the area include the following: Grass Hay; Pasture; Greenhouses; Row Crops; Nurseries; Kennels; Woodlot; Firewood processing; Orchard; and Barns with miscellaneous ancillary storage and uses.

FARM AND FOREST PRACTICES: See Appendix 16 for a complete list of practices associated with each farm use occurring within the area. The focus herein below is geared toward the manner in which the various practices associated with the individual uses may be impacted.

The northerly portion of the extension crosses lands dedicated primarily to grass hay. A short segment of the extension crosses or could cross a small portion of lands dedicated to hazelnut orchard uses. The north-south middle portion of the extension crosses near and adjacent to lands dedicated primarily to rural residences, along with a small nursery, some small row crops, a small pasture and a greenhouse. The southerly portion of the extension crosses through, near and adjacent to two intensively developed nurseries, a couple of rural residences and some open space.

Other farm and forest uses occurring within the general vicinity are as shown in Appendix 16.

6.1.2 Adjacent Use Impact Factors

This analysis does not identify exhaustively all potential factors that contribute to whether a farm use or farm operation can or will remain viable. There are a number of factors that contribute to viability of farming. Soil productivity, terrain, irrigation, climate, market, environmental constraints, access, labor, equipment, laws, costs and management are all examples of factors that influence whether lands can be put to farm use and whether said lands will remain in farm use. This analysis of compatibility attempts to isolate the specific influence of a 90-foot right-of-way near or adjacent to particular lands and uses.

The following are ways in which the proposed road extension could potentially negatively impact the farm and forest uses within the study area.

1) Direct loss of land. Once land is dedicated for public right of way, that land will no longer be available for farm or forest uses. This category includes only the land within the right of way. This category could include additional land beyond the 90-foot wide Arterial right-of-way if additional easements are needed to accommodate cuts and fills associated with physical construction of the roadway.
2) Bifurcate lands. When a road crosses property, the result is a single unit of land becoming multiple units of land with potentially limited access between the multiple portions. Limited ability or inability to cross the road to access both sides of a farm unit could render portions un-useable or significantly more difficult to use. The amount of negative impact is relative to the limitations on the access, the importance of said lands to the overall farm operation and the amount of land either under production or capable of being made productive. Depending on the severity and amount of land being made unavailable, that loss or negative impact could be limited to that now-unusable portion only or could impact the entire farm operation.
3) Direct buffer beyond the right of way. Depending on the type of operations occurring adjacent to the right of way, the direct negative impacts could potentially extend beyond the right of way. For example, some farm uses require perimeter farm-access roads for equipment to maneuver around the property and crops. If a property with uses that requires perimeter farm-access roads is bifurcated, new and additional farm-access roads will likely be necessary for each resulting portion on both sides of the road, thereby reducing or displacing the crop areas within the farm unit by the amount equivalent to the additional farm access roads.

4) Indirect buffer beyond right of way. Arguably, there is some potential for farm uses to be negatively impacted for a certain distance beyond the right-of-way due to a variety of factors related to the physical construction of the right-of-way and the ultimate automotive uses on the roads. Such factors may include noise, emissions, vibration, drainage, trespass, and garbage.

The aforementioned categories of impact related to those that are potentially negative. There are also potentially positive impacts that could and may result from the addition of right-of-way through the study area.

1) Exposure: The basic commercial function of farms is to produce a farm product that is ultimately sold.[15] As with many commercial functions, the ability to reach a target market is essential. Additional access that places increased number of potential customers within view of farm operations provides additional exposure to target market, thereby increasing the number of potential sales for farm products. Some farm uses are more reliant of direct exposure to the public than others. For example, nurseries with an on-site direct retail component has a greater potential to bring-in potential customers versus a farm operation that grows wheat or barley that is shipped and stored in a co-op facility, openly marketed, and sold on the open market.
2) Access: New roads may result in additional or new points of access to property. New or additional points of access may result in enhanced ability to get product to market, enhanced access for customers, and additional access for labor and equipment to name a few benefits.

6.1.3 Adjacent Use Compatibility Analysis

Given the land use pattern of the area, it is not feasible to construct the entire road extension along the perimeter of property boundaries. The resulting extension will bifurcate a number of properties and related farm operations.

Within the northerly portion of the study area, the future road will cross lot 2900. Lot 2900 is currently used for and, according to historic aerial photographs, has in recent years been used for grass hay production. In order to achieve a logical alignment and connections with portions of the future roadway to the south and north, the roadway will cross the easterly portion of lot 2900 separating the easterly one-third from the westerly two-thirds, thereby isolating the two portions of the farm unit. The easterly one third appears to be managed in conjunction with adjacent lot 2700 to the east as the same hay crop extends across 2700 and 2900. A logical road location would be at the westerly boundary of said hay field.

The future roadway can be routed to avoid the crossing of lot 2700. The northerly portion of lot 2700 is under grass hay production while the southerly portion includes hazelnut orchards. In recent years the areas dedicated to orchard production appears to be growing.

It is feasible that the future roadway will cross lot 2800. Said lot includes a mixture of grass hay and orchard along with a residence and a barn. The southeasterly portion of the property includes hazelnut orchards while the bulk of the remainder includes grass hay. A potential routing of the roadway could extend along the boundary between the orchard lands and the grass hay lands. Direct local access to both areas would continue.

[15] ORS 215.203(2)(a) "…farm use means the current employment of land for the primary purpose of obtaining a profit in money…"

As the future route extends southward, it would cross lots 1401 and 1500. While both lots are improved neither appears to be dedicated to farm or forest practices. SW Riggs Road lies south of aforementioned lot 1401. To provide access to the number of residences along SW Riggs Road, the future road would require an intersection at SW Riggs Road.

Immediately south of SW Riggs Road lies three smaller 1-2-acre properties utilized primarily for residential purposes (including lots 3002, 3003, and 3001). To the east of said lots is lot 3100. Lot 3100 is intensively developed as a nursery with direct customer sales. It is feasible to locate the future right of way at the back/ westerly property boundary of lot 3100 and the easterly boundaries of lots 3002, 3003 and 3001.

As the future roadway route extends south toward SW Farmington Road, it crosses lot 3200. Lot 3200 is a 38-acre property intensively developed for nursery purposes with direct sales. Nursery stock are planted throughout the entire property. The easterly portion of the property nearest SW Farmington Road includes the bulk of the structures, parking, sales and processing facilities within an area of approximately 8 acres. The westerly portion includes nursery stock, a pond and outdoor staging areas. A 500kv power line crosses the property north-south near the easterly one-third with a powerline tower structure situated approximately 450 feet west and north of SW Farmington Road. There is no foreseeable way to extend the future road to SW Clark Hill Road through the area in a manner that would avoid separating the westerly portion of the nursery from the easterly portion of the nursery. Once south of lot 3200, a portion of the road will cross lot 3300. The road can be situated near the easterly boundary of lot 3200 between the houses on lots 200 and 3300. Lots 200 and 3300 are dedicated primarily for residential purposes and do not appear to be utilized for farm uses at this time.

6.1.4 Impact Mitigation Measures

There may be a number of potential ways in which to mitigate negative impacts resulting from the ultimate construction and use of a new 90-foot wide Arterial roadway extension through the area. The following are potential measures result in significant reductions in potential negative impacts.

1) Locate right-of-way along property boundaries. This minimizes or eliminates problems associated with separating or bifurcating farm units.
2) Construct Farm-Access Road. Where the bifurcation of a farm unit occurs, mitigation could include detailed design and construction of an access that allows appropriate movement of farm vehicles across the road and warns traffic of the crossing with appropriate signage.
3) Facilitate the exchange of properties. Where the bifurcation of a farm unit occurs, adjacent landowners may wish to exchange properties in order to better manage cohesive units. There are regulatory barriers and expenses associated with land exchanges. PLAs are often utilized as the legal mechanism to facilitate the exchange of lands. PLA's require applications and often surveys. Mitigation could include the payment of professional services, processing fees, and costs associated with qualifying land exchanges.
4) Engineer storm detention and retention facilities to minimize runoff from the roadway to adjacent lands.

Section 7: Goal 5 Resources Analysis for SW Cornelius Pass Extension

This section examines any Goal 5 resources likely to be impacted by the SW Cornelius Pass Road extension project and provides recommendations on treatment of the Goal 5 issue in the

Comprehensive Plan Amendment context.

7.1.1. Aggregate Resources

This is the Goal 5 Resource most implicated by the Comprehensive Plan amendment and associated Goal Exception. Roads in an aggregate resource area are not, in themselves, conflicting uses to an aggregate operation. However, OAR 660-023-180 includes criteria that requires the designation of significant aggregate sites to evaluate impacts to the public transportation system. In this way, improvements of the public transportation system within the impact area and on roads that must be analyzed under the applicable administrative rule are an indirect benefit to the resource protection program.

Along these lines, the resource is most impacted by not adopting the Goal Exception and not doing the project. The Cornelius Pass Road extension reduces traffic volumes on SW Farmington Road where the aggregate sites take access when compared to any alternative that does not take a Goal Exception (and where transportation needs are unmet) and when compared to other alternatives not requiring a Goal Exception. From the perspective of access convenience for the aggregate resource site, the Economic, Social, Environmental and Energy consequences are all positive by reducing future traffic volumes at the access points.

7.1.2 Wetlands and Riparian Areas

Based upon the available data, the area of potential wetland and riparian impacts appears to be small and the extension will generally involve crossing wetlands and riparian areas at or near right angles. Such crossings are generally permitted by applicable land use regulations for wetlands and riparian areas. No changes to the adopted protection programs for Wetlands or Riparian areas appeared necessary to implement the Cornelius Pass Road extension project.

APPENDIX

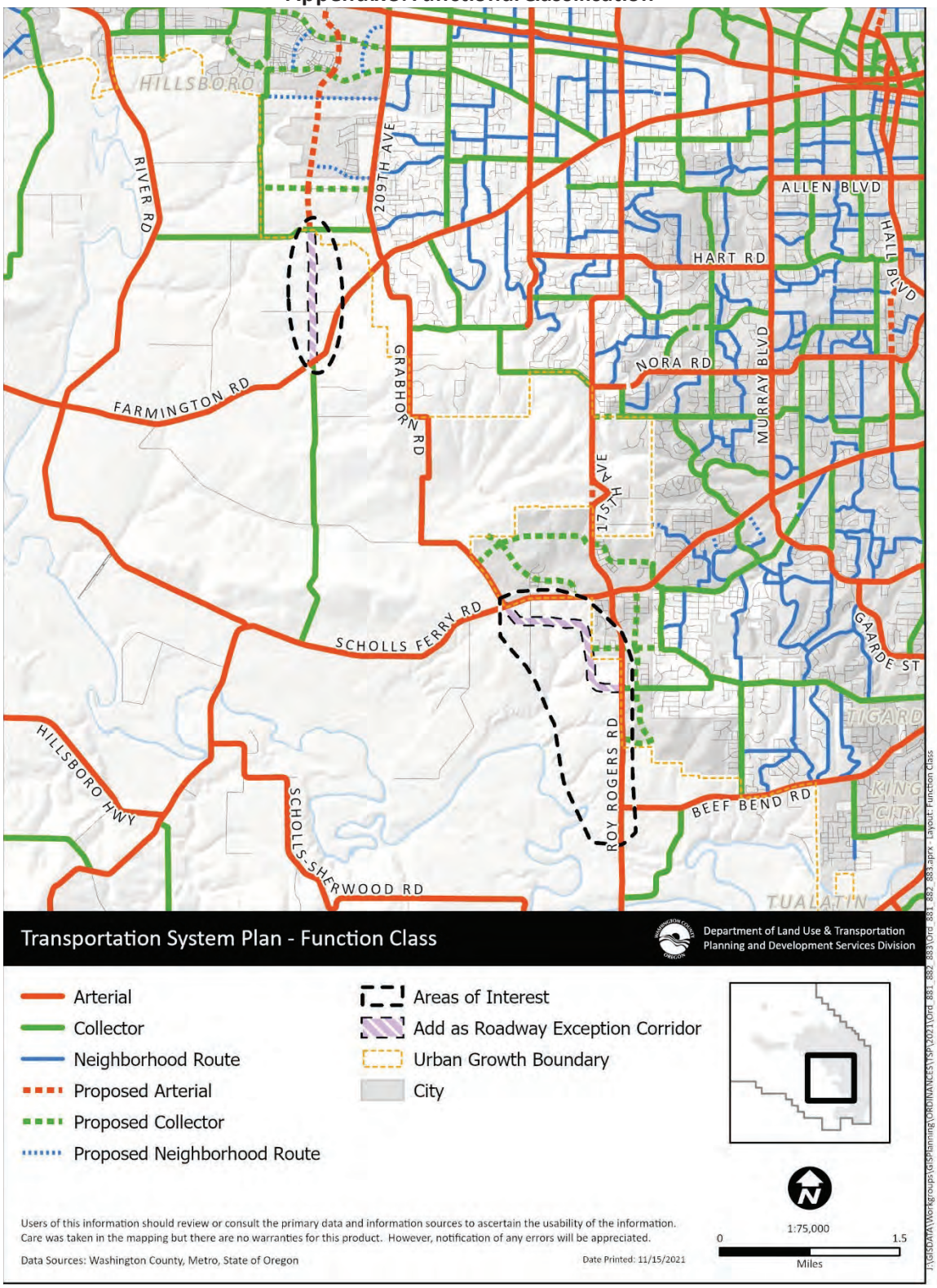
Appendix Directory

Appendix 1 – Cornelius Pass Road Extension Alternatives

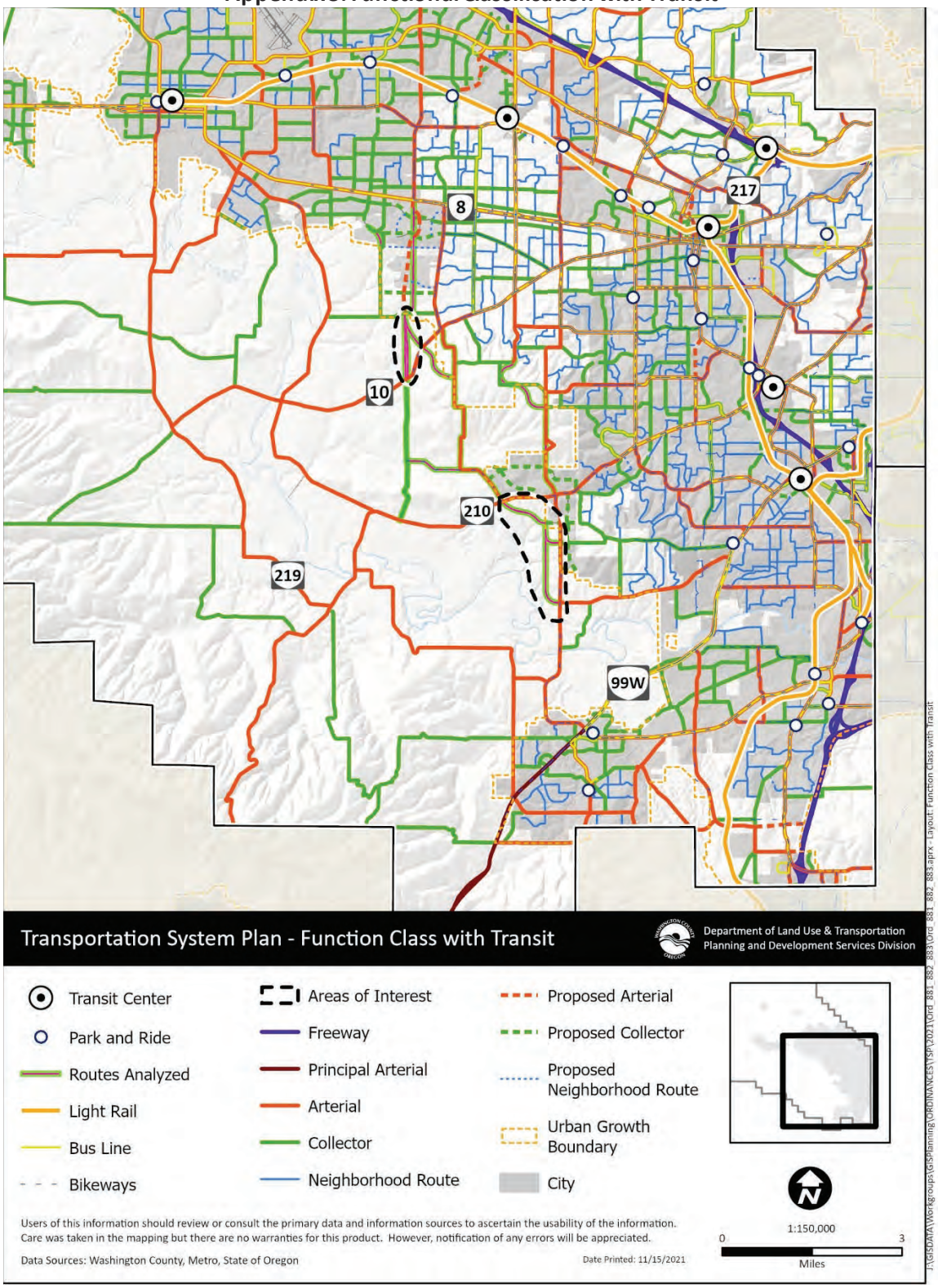
Appendix 2: Washington County – Arterial Road Section graphic

<insert arterial graphic here>

Appendix 3: Functional Classification



Appendix 3: Functional Classification with Transit

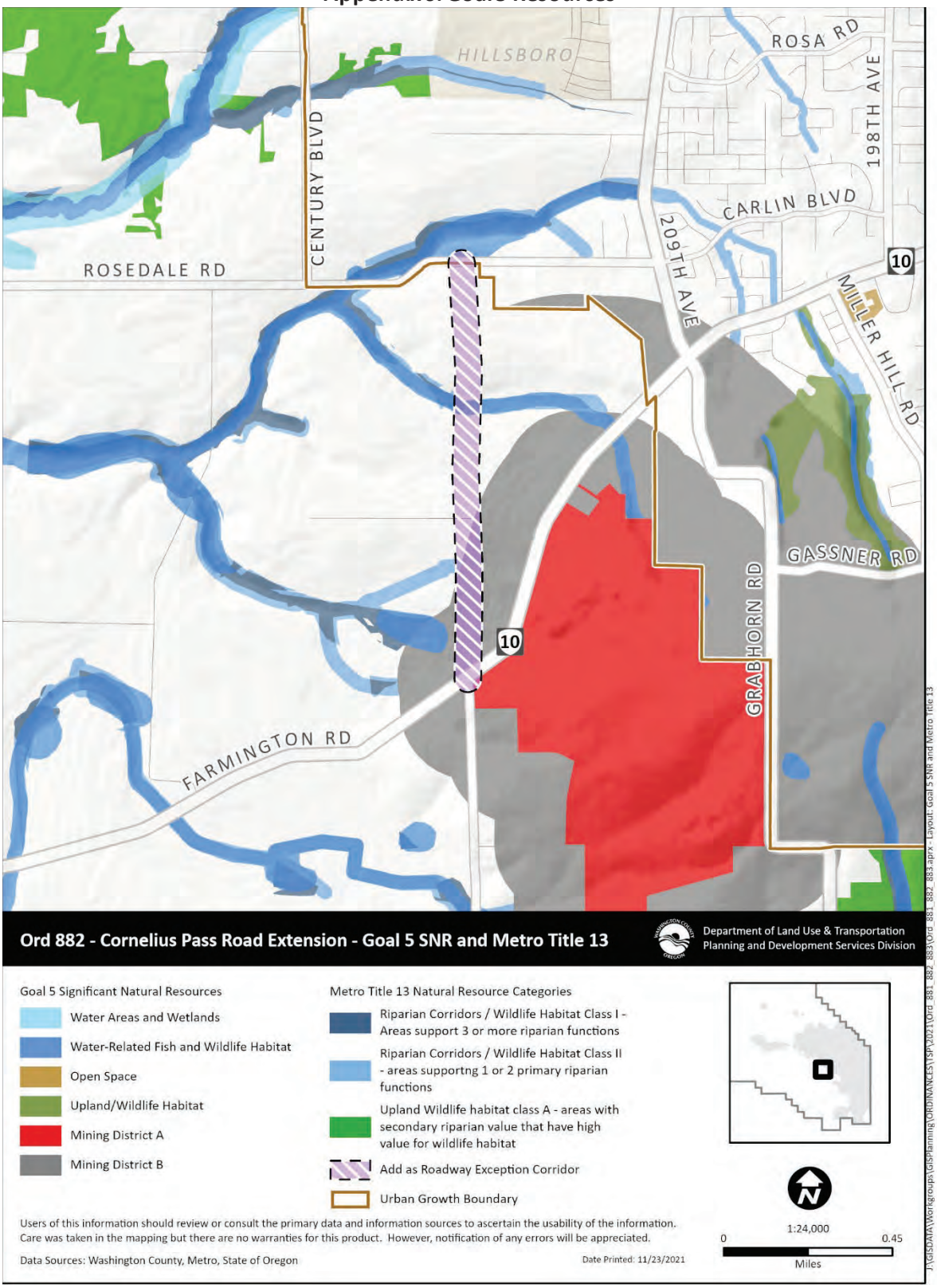


Appendix 4: Potential Cooper Mountain Transit Ridership

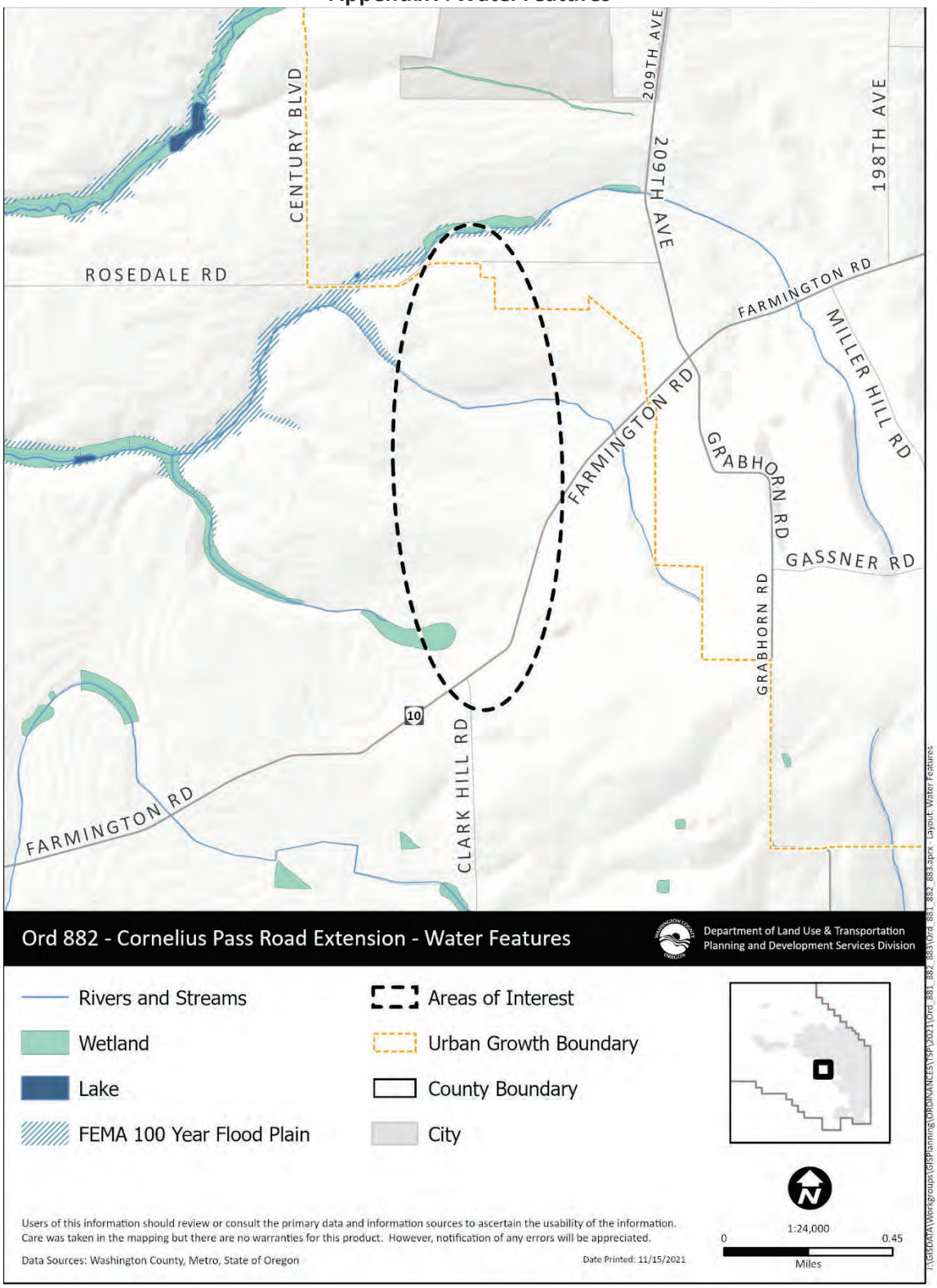
Replace this page with the Transit Ridership Share Memo [5 pages]

Appendix 5: >intentionally blank<

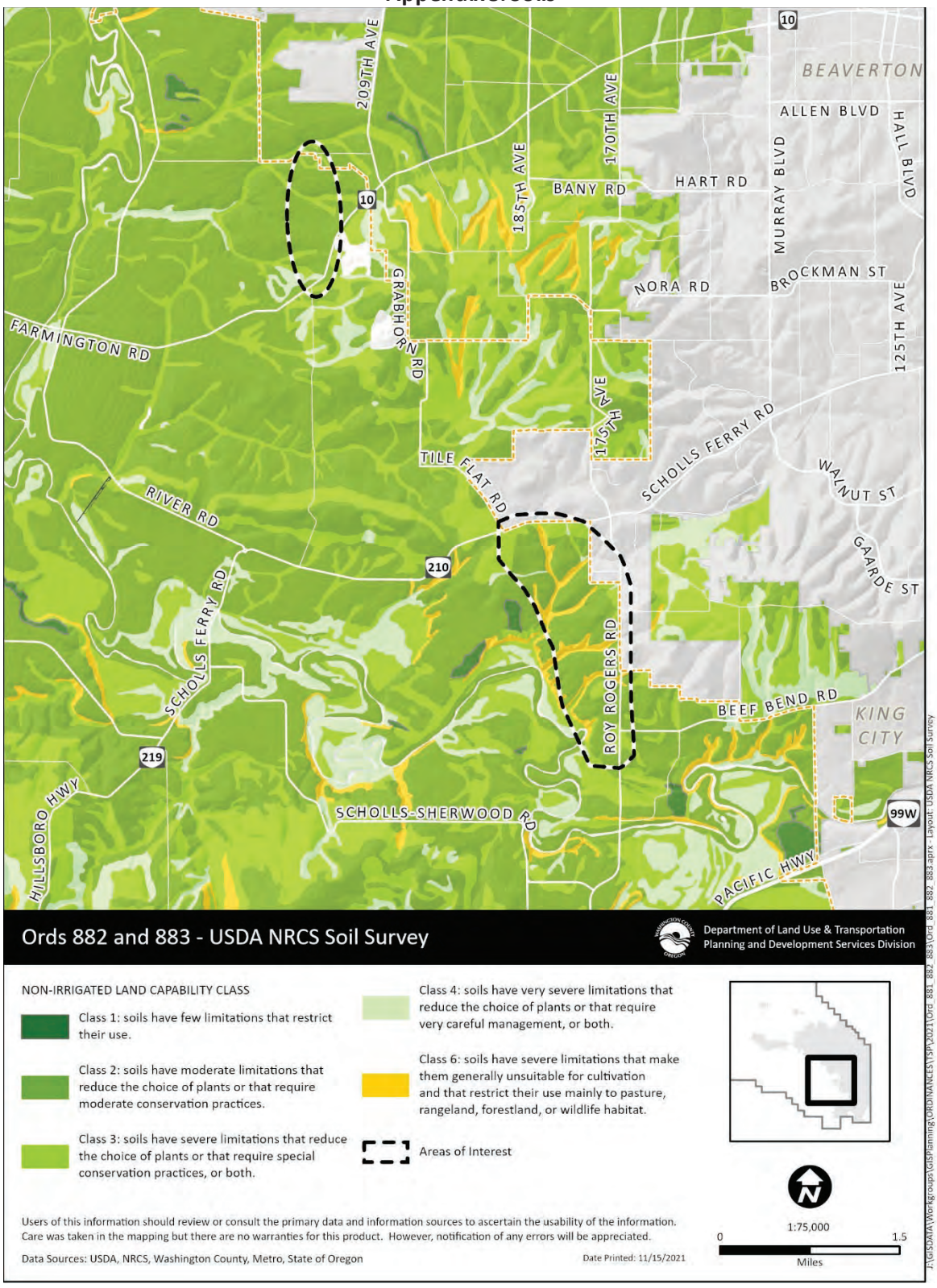
Appendix 6: Goal 5 Resources



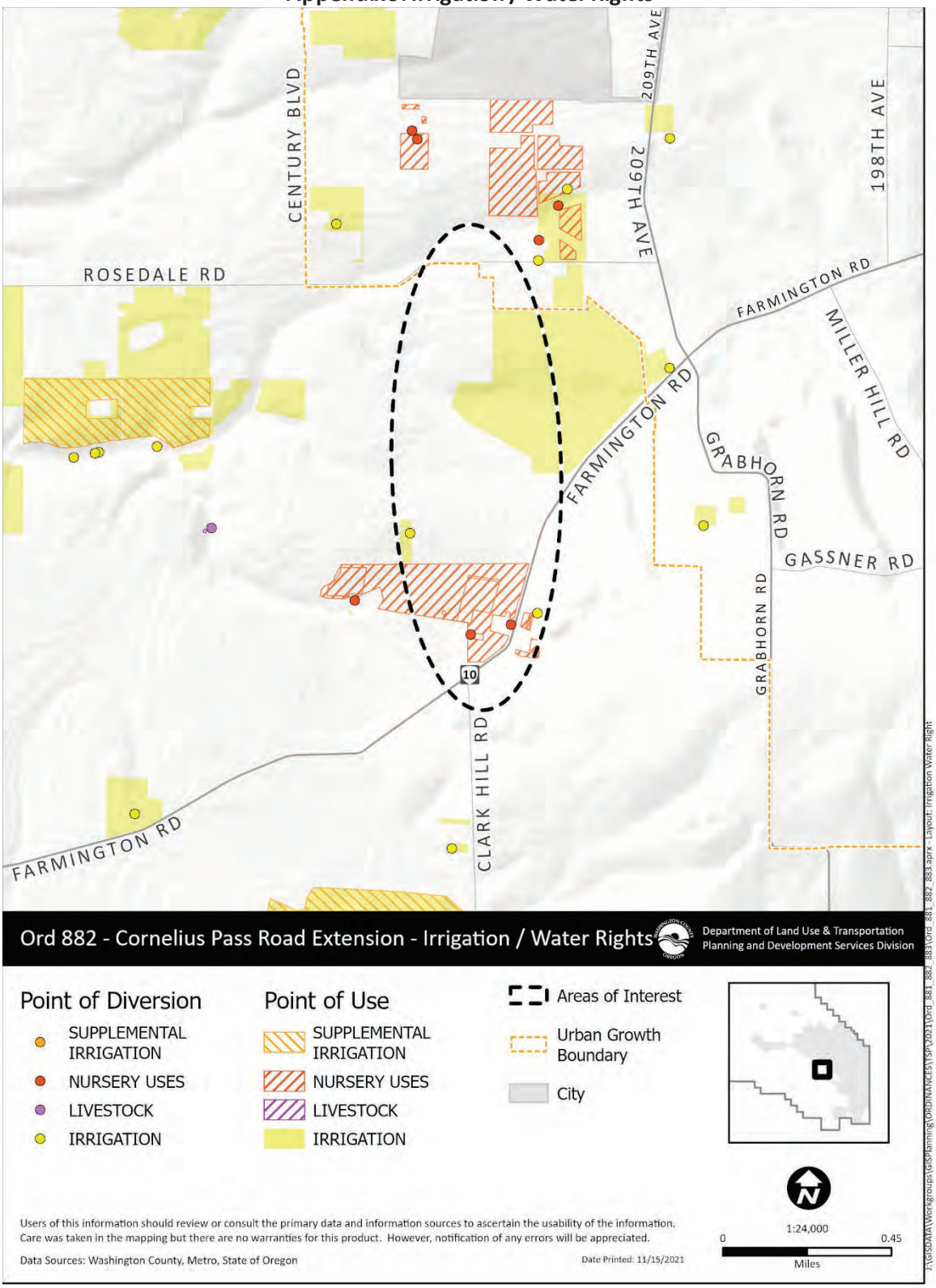
Appendix 7: Water Features



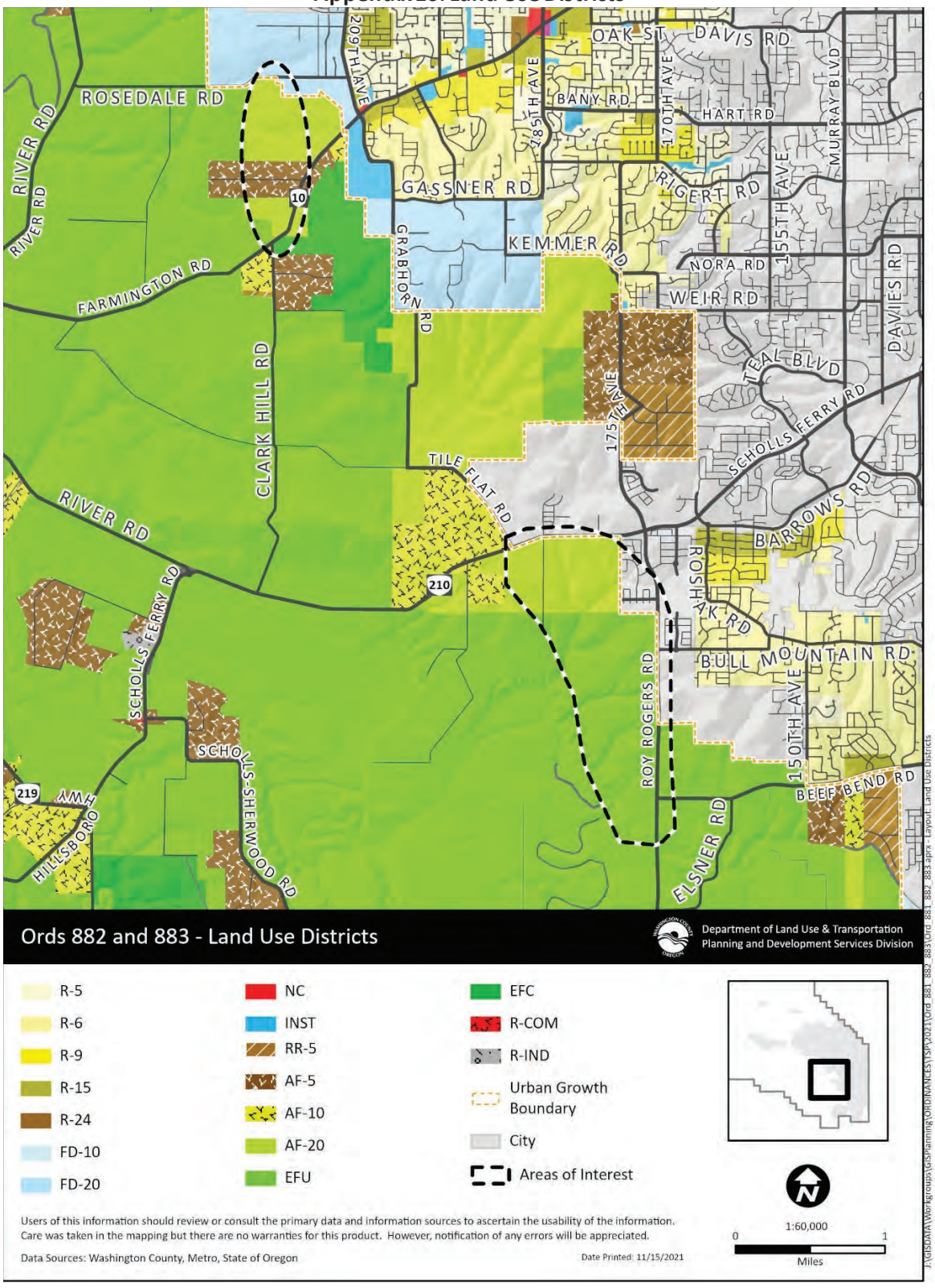
Appendix 8: Soils



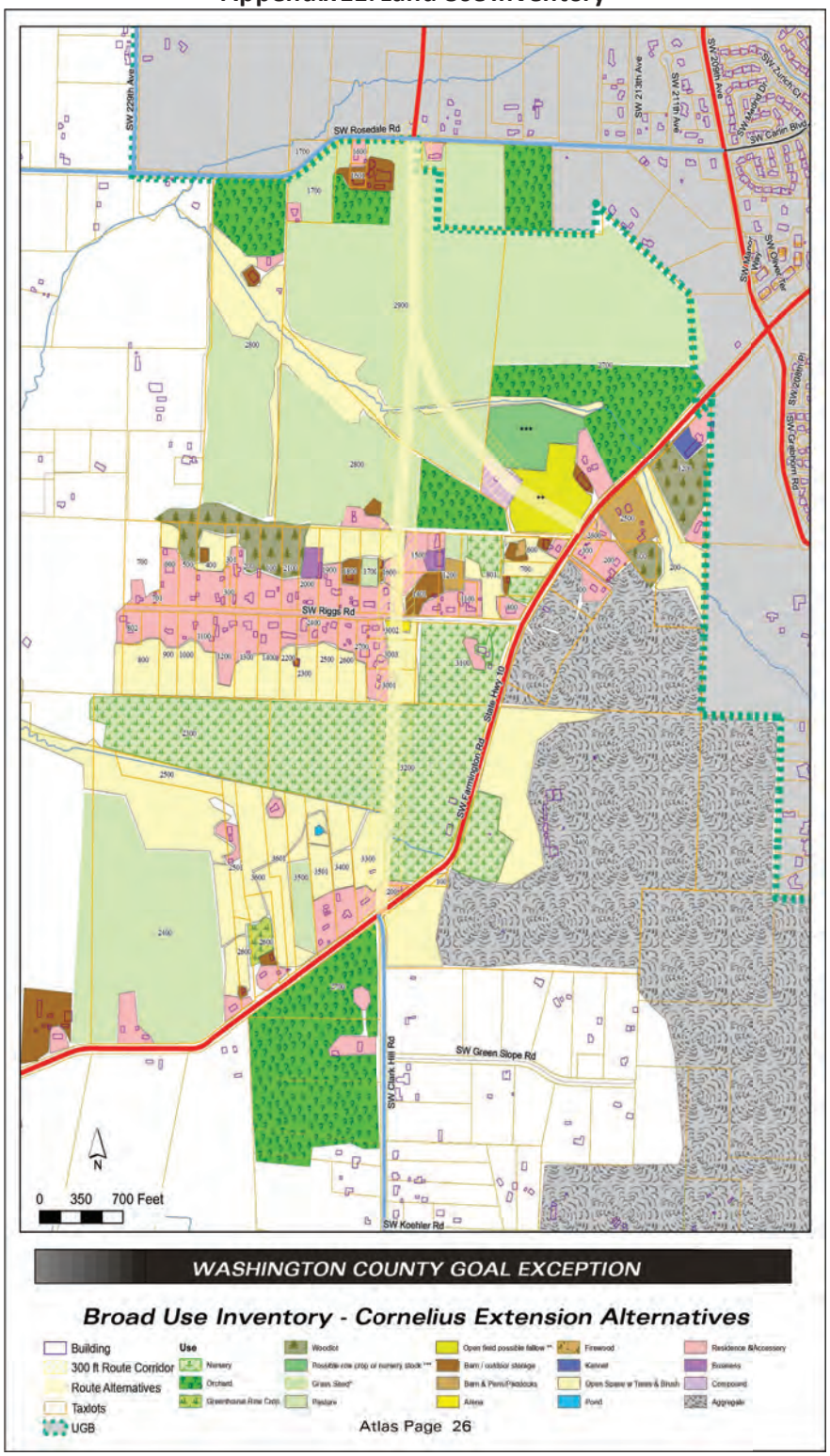
Appendix 9: Irrigation / Water Rights



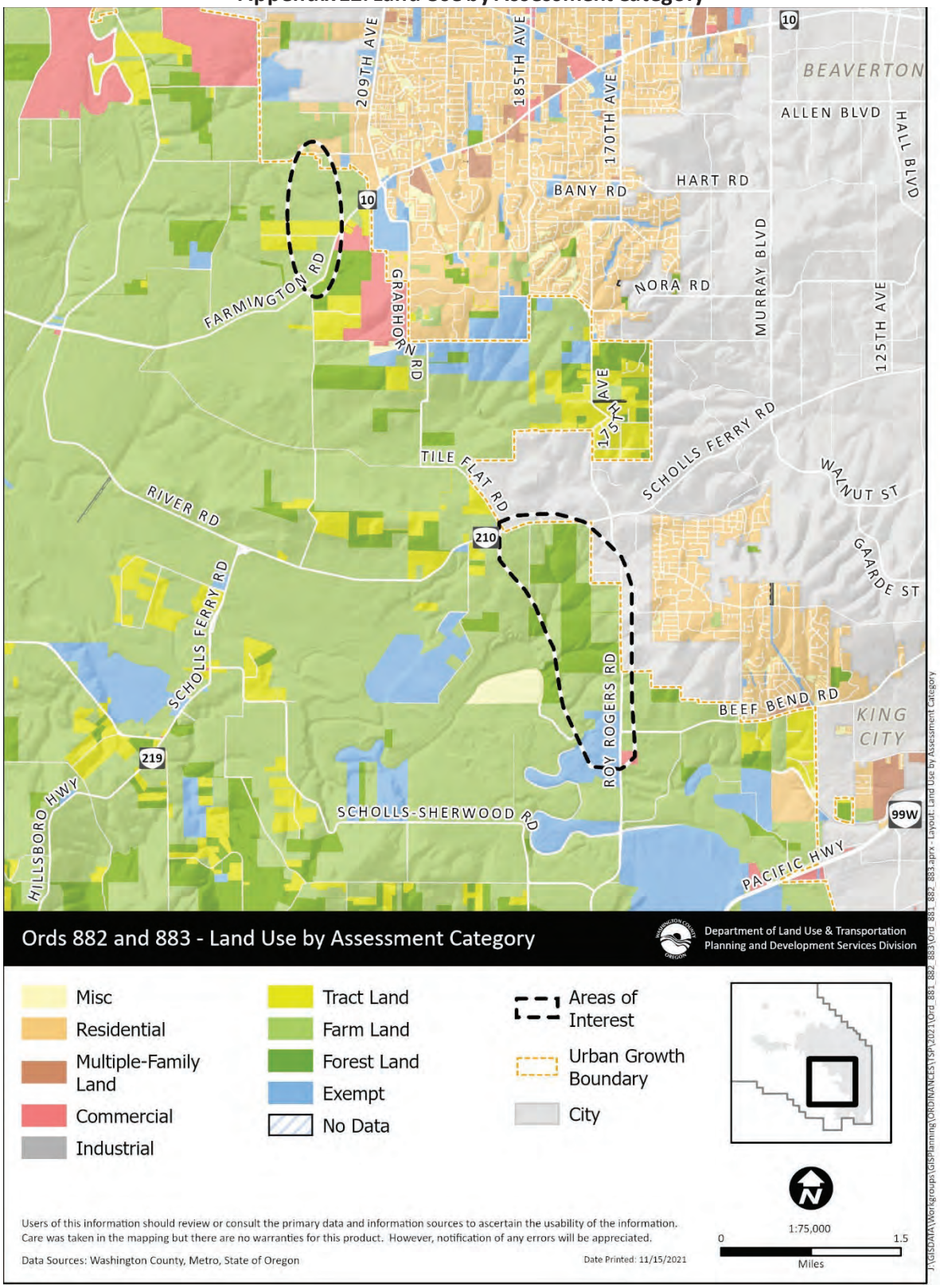
Appendix 10: Land Use Districts



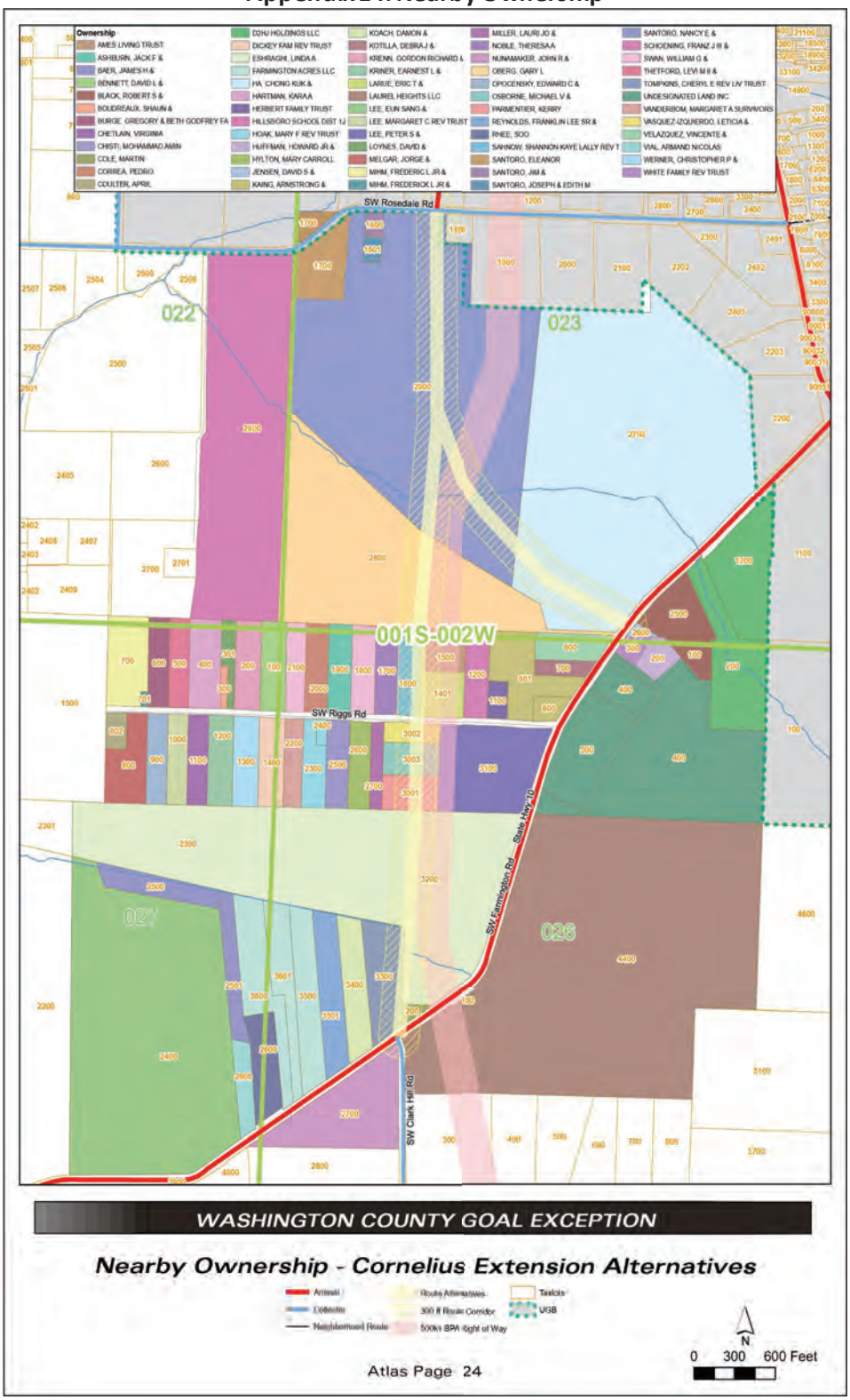
Appendix 11: Land Use Inventory



Appendix 12: Land Use by Assessment Category



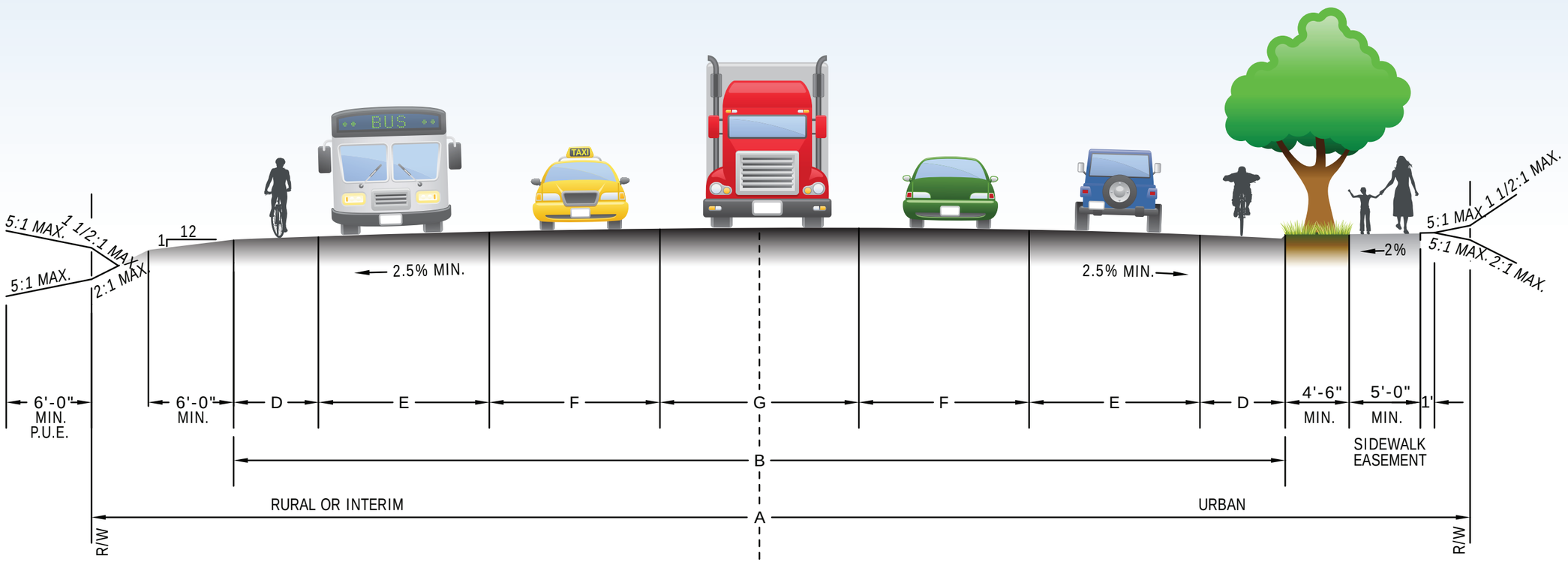
Appendix 14: Nearby Ownership



Appendix 15 Farm Use Determination Methodology Memo (4 pages)
Appendix 16 Farm and Forest Practices Memo (7 pages)
Appendix 17 DLCD letter
Appendix 18 South Hillsboro Master Plan Overview

Attachment A

Arterial Road Section



NOT DRAWN TO SCALE

DESIGN SPEED 45 MILES PER HOUR

Road Classification	Washington County Designation	Right of Way (Feet)	Paved Width (Feet)	Number of Lanes	Bike Lane / Paved Shoulder	Curb Travel Lane	Travel Lane(s)	Center Turn Lane	Parking Allowed
		A	B		D	E	F	G	
Arterials	A-1	122	98	7	6	12 + 12	12	14	NONE
	A-2	98	74	5	6	12	12	14	NONE
	A-3	90	60 *‡	4	6	12	12	0	NONE
	A-4	90	50 *	3	6	0	12	14	NONE

*GRAVEL SHOULDERS AND DITCHES ALLOWED FOR THESE WIDTH ONLY. STANDARD INTERIM SECTION
‡ P.U.E.'S REQUIRED OUTSIDE OF R/W IF SHOULDERS AND DITCHES ARE USED.

The applied "Washington County Designation" is determined by the county's transportation plan and the land use decision.
See Appendices A and B for maps of County arterial roads.

Arterial Road Section

Washington County Exhibit #: 1

Effective Date:

Washington County
Department of Land Use
& Transporation
Engineering Section

Attachment A

Technical Memorandum

CSA Planning, Ltd
4497 Brownridge, Suite 101
Medford, OR 97504
Telephone 541.779.0569
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Nathan@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: August 9, 2019

Subject: Potential Cooper Mountain Transit Ridership

Purpose

As part of the Goal Exception process, alternatives that do not require an exception to statewide planning goals must be examined. One such option is an increased investment in alternative transportation modes, including public transit. This memo develops a hypothetical transit mode share that could be created along a new bus route in the Cooper Mountain Transportation Study area (CMTS). In order to do so, transit routes that intersect the CMTS area were compared against traffic count data from Washington County.

Methodology

To estimate daily transit trips on a potential new route, CSA used existing transit ridership data from TriMet to estimate a daily ridership number for any given segment on local transit lines. This value was compared against daily traffic counts taken on CMTS area road segments by Washington County to estimate the proportion of trips using transit.

Simply taking the total daily ridership of a line and comparing against the traffic counts would overstate the quantity of transit trips. Unlike Washington County traffic counts, which are tied to specific sites, the ridership data is for an entire transit line. Unless the average trip length for a transit ride is identical to the route length, the level of ridership for any given location would be overstated.

For an example of how the average trip ridership calculation was made, take a hypothetical bus route that is 10 miles long and has a daily ridership of 5,000 riders. The average trip length is 5 miles. The average trip is thus 50% of the total route length. Thus, one could reasonably expect that the ridership volume on any route segment is half the total ridership. The calculation would thus look like this:

Daily Ridership x (Average Trip Length / Route Length) = Average Trip Ridership

Transit Ridership

Ridership was ultimately examined for two bus lines. The CMTS area, being partially outside of an urban growth boundary and partially outside of the TriMet service boundary, is by its nature limited in the availability of transit service. There are two bus lines that travel north-south through the CMTS area, Routes 52 and 88. There are no MAX lines and the WES runs substantially further to the east than the study area. One other bus line, the 57, runs along TV Hwy at the northernmost boundary of the CMTS area. The 57 is an east-west route on a highway that has traffic volumes greater than 40,000 vehicles per day in the study area[1]. It was thus decided to exclude it as a potential transit comparative.

Spring of 2017 ridership data was retrieved from TriMet's website[2]. Newer data is available, but because the most recent Washington County traffic counts are from the Spring of 2017 it was decided to use Spring 2017 data for the best comparison.

Route 52 is about 11.25 miles long and goes between the Beaverton Transit Center on US Route 26 and the Portland Community College Rock Creek Campus north of Highway 26. From Rock Creek it follows NW and SW 185th Ave before turning east on Farmington

[1] https://www.oregon.gov/ODOT/Data/Documents/TVT_Complete_2017.pdf
[2] https://TriMet.org/about/pdf/route/2018spring/route_ridership_report_(sorted_by_route)_weekday.pdf

toward the Beaverton Transit Center. Route 52 has a daily ridership of 4,130 boarding rides. The average ride was 3 miles in length.

Given these values, and the described methodology above, the calculation would be:

4,130 x (3.0 / 11.25) = 1,102

The average daily transit ridership on an average trip length segment on Route 52 would be expected to be about 1,102.

Route 88 is about 11.43 miles long and travels between the Willow Creek Transit Center and the Beaverton Transit Center. Its route is less direct. From Willow Creek it primarily takes SW 198th Ave before turning east on Farmington. It takes Farmington to SW 170th Ave before eventually wending its way over to SW Murray Blvd and further on to the Beaverton Transit Center. Route 88 has a daily ridership of 1,730 boarding rides. The average ride was 3.6 miles in length.

Given these values, and the described methodology above, the calculation would be:

1,730 x (3.6 / 11.43) = 545

The average daily transit ridership on an average trip length segment on Route 88 would be expected to be about 545.

Daily Traffic Counts

Washington County maintains a network of traffic counting stations for which data is collected annually. The most recent data is from 2017. The stations that overlap with the two transit routes and are in the CMTS area are listed in the tables below along with their traffic counts:

Washington County Traffic Count Data along Route 52						
COUNT STATION REFERENCE #	ROAD NAME	DISTANCE (MILES) FROM CROSS ROAD)	DIRECTION FROM CROSS ROAD	CROSS ROAD NAME	COUNT DATE	2017 TOTAL (COMBINED DIRECTIONS)
333	185th Ave	0.1	S	Kinnaman Rd	4/11/2017	13,658
332	185th Ave	0.1	S	Farmington Rd	4/4/2017	11,986
381	Farmington Rd	0.2	W	185th Ave	4/4/2017	19,613
382	Farmington Rd	0.1	E	185th Ave	4/4/2017	17,413
384	Farmington Rd	0.1	E	Kinnaman Rd	4/11/2017	28,921
385	Farmington Rd	0.08	E	170th Ave	4/11/2017	24,920
386	Farmington Rd	0.08	W	160th Ave	4/13/2017	25,234
387	Farmington Rd	0.08	E	160th Ave	4/11/2017	21,839
388	Farmington Rd	0.1	W	149th Ave	4/13/2017	23,740

Washington County Traffic Count Data along Route 88						
COUNT STATION REFERENCE #	ROAD NAME	DISTANCE (MILES) FROM CROSS ROAD)	DIRECTION FROM CROSS ROAD	CROSS ROAD NAME	COUNT DATE	2017 TOTAL (COMBINED DIRECTIONS)
335	198th Ave	0.1	S	TV Highway	4/4/2017	17,541
337	198th Ave	0.1	N	Farmington Rd	3/16/2017	6,187
380	Farmington Rd	0.1	E	198th Ave	4/4/2017	16,434
381	Farmington Rd	0.2	W	185th Ave	4/4/2017	19,613
382	Farmington Rd	0.1	E	185th Ave	4/4/2017	17,413
385	Farmington Rd	0.08	E	170th Ave	4/11/2017	24,920
323	170th Ave	0.15	N	Oak St	2/28/2017	18,811
324	170th Ave	0.1	S	Oak St	4/27/2017	17,642
325	Bany Rd	0.1	E	170th Ave	2/28/2017	11,230

On Route 52, there is approximately 2.5 miles between count station #333 and #388. This is a bit shorter than the average trip length on route 52 of 3 miles, but it is close. The average daily traffic count across the identified stations is 20,814.

On Route 88, there is approximately 3.6 miles between count station #335 on 198th Ave and #323 on170th Ave. This is approximately the same length as the average trip length on Route 88. The average daily traffic count across these identified count stations is 17,274.

Ridership Share

Using the derived average daily trips and the traffic counts for segments of approximately similar length, it is possible to estimate transit trips as a share of daily trips. To do so, the average daily ridership calculated above was divided into the average daily trips for the identified road segments. Doing so results in a transit share of 5.3% for Route 52 and 3.2% for Route 88.

Other Data

A review of other available data indicates that these figures are reasonable and in line with expectations.

The 2018 Oregon Household Activity Survey prepared for ODOT estimates that of all trips (including those not work related) taken in the Portland metro area that approximately 4% of them were taken via transit. This is consistent with the estimates developed for this analysis.

The American Community Survey 2017 1-year estimate for Washington County shows that approximately 5.7% of workers in Washington County took transit as their way to get to work. Typically, commutes to work have a higher share of transit than all trips. This again is in line with the derived transit shares.

Washington County's Transportation System Reference Guide includes transit mode share estimates. The numbers come from the Regional Travel Demand Model created by Metro and Washington County. The mode share for Washington County for all trips was estimated to be 1.8% in 2010. The same model was used to forecast the transit share in 2035. That estimate was 2.4%.

Currently Planned Transit Improvements in the CMTS Area

TriMet has been planning additional service enhancements thanks to increased funding from House Bill 2017. The planned improvements are in the Tri-County Public Transportation Improvement Plan (PTIP). Two improvements appear to be in the vicinity of the CMTS area. Line 56 is proposed to be extended to Progress Ridge/South Cooper Mountain from its current terminus at Washington Square. This proposed extension will terminate just inside of the CMTS area.

The PTIP also set aside funding for areas that are not cost effective for the transit agency to serve as a fixed route but that could be facilitated by a 3rd party or shuttles. $25,000 was awarded for a planning study of a shuttle in the CMTS area. The proposed service would run two shuttles in South Cooper Mountain, Aloha, and Progress Ridge. The service's goal is to enhance access to employment opportunities, local destinations, and regional transit services. According to the project application, the service might include 14 operation hours on weekdays by 2021.

No other planned improvements in publicly available documents were found.

Proposed Ridership Share

Much of the CMTS area is outside of TriMet's boundaries. It is also more rural, and by its nature, lower in population density than most of the metro area. This is likely reflected by the relative lack of planned transit investment in the CMTS area. Justifying a higher ridership share than what can be derived from the available data and absent significant changes to the economy or regulatory environment does not seem appropriate. It is also contrary to recent history.

Ridership as a share of all trips has been declining in the Metro area since 2012. According to TriMet figures taken from September of 2018, ridership peaked in fiscal year 2012 at a total of 103,300,944 boarding rides. In the most recent year available, 2018, the number of boarding rides was 97,067,672, representing an approximate six percent decrease from the peak. The decline in ridership has come during a growing economy, significant population growth, and relatively low fuel prices.

Given these facts, it is proposed that rounding up from the higher of the two calculated transit ridership shares of 5.3% and using 6% as the transit mode share for any proposed routes across the CMTS. This is still double Washington County's expected transit ridership share in 2035 but acts as a reasonable conservative estimate in accordance with available data on local transit.

Potential Route Description

To construct a route, CSA first assumed that any new service would be located within TriMet's service boundaries. From there, CSA tried to find a route that could connect two important destinations as close to the western edge of the CMTS as possible and serve residential neighborhoods not projected to have transit nearby.

The hypothetical transit route, see Atlas page 11, has an alignment between the Willow Creek Transit Center and Christ the King Park and Ride in Tigard. From Willow Creek, the route moves west on Baseline Rd before taking Cornelius Pass Road south to SW Rosedale Rd. From there, it takes SW Farmington Rd east and connects to SW Miller Hill Rd. The route continues moving south and east to reach SW 175th Ave via SW Kemmer Rd. It then

turns south and continues as the road transitions to SW Roy Rogers Rd, before turning east at SW Bull Mountain and following that road to the Park and Ride.

Conclusion
This potential transit route is not meant to replace actual planning for a real route. Nor is it meant to necessarily represent a route that could be built tomorrow and provide the above estimate ridership. Rather, as this memo describes, this route represents a high-level service in the CMTS area that could reduce the need for single occupancy travel. In the context of the Cornelius Pass road extension exception, this represents a conservative estimate in order to study route alternatives that do not require a goal exception.

As shown in the exception analysis, a high level of ridership on this proposed route does not obviate the need and reasoning for an extended Cornelius Pass Road.

CSA Planning, Ltd.

Nathan Emerson
Associate

cc. File

Attachment A

Technical Memorandum

CSA Planning, Ltd
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Telephone 541.779.0569
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Mike@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: February 20, 2020,

Subject: Cornelius Pass Road Extension Farm Use Determination Methodology

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CSA Planning, Ltd. (CSA) is a professional land use planning firm with 40 years of experience in Oregon land use planning. Part of its portfolio of services includes conducting farm impact assessments. These assessments require the determination of the use of a given farm unit so that impacts can be accurately assessed from proposed improvements.

Farm Use Determination Methodology
CSA obtained GIS base data from public agencies such as the Natural Resources Conservation Service ("NRCS") and Washington County. Aerial photos from Environmental Systems Research Institute ("ESRI") and Google Earth were geo-referenced and incorporated into the GIS layers for the project.

Current site-specific inventory data was collected through fieldwork conducted by CSA. Photographic information was collected using a Nikon Coolpix W300, which has an integrated GPS data logger. Photos and field data were collected from the public right-of-way. Additional data utilized in the farm use identification and classification includes historical aerial photos available through Google Earth and United Stated Department of Agriculture (USDA) historic aerial inventories.

The identification and classification of farm uses was conducted for each tax lot within the analysis area to develop the farm use inventory. This identification and classification process requires a certain degree of subjective judgment during the initial assessment and categorization process. The classification work was conducted by Michael Savage (see Mr. Savage's resume in at the end of this memo). While all identified uses are documented, the classification process is based upon the use that appears to be the primary farm use on each tax lot. In general, the farm use classification assumed the more intensive cultivation when choosing between two or more use classifications that appear to be present on the same site.

These classification judgments were based in significant part on CSA's understanding of major crops produced in Washington County, using the data in Tables 1 and 2 below:

Table 1.
Washington County Summary Highlights (2017)[1]

Commodity	Sales (in dollars)	Percent
Total Agricultural Products	**$201,603,000**	**100%**
Grains, Oilseeds, Dry Beans and Peas	$3,796,000	1.9%
Vegetables, Melons, Potatoes, Sweet Potatoes	$5,984,000	3.0%
Fruits and Tree Nuts	$19,781,000	9.8%
Berries	$27,116,000	13.5%
Horticulture	$111,501,000	55.3%
Christmas Trees and Short Rotation Woody Crops	$3,123,000	1.5%
Other Crops and Hay	$22,613,000	11.2%
Poultry and Eggs	$268,000	0.1%
Cattle and Calves	$1,536,000	0.8%
Milk from Cows	$4,192,000	2.1%
Hogs and Pigs	$271,000	0.1%
Sheep, Goats, Mohair, Milk	(D)*	N/A
Aquaculture	(D)*	N/A
Horses, Ponies, Mules, Burros, and Donkeys	$646,000	0.3%
Other animals and animal products	$410,000	0.2%
Number of Farms by Size		
1-9 Acres	464	37%
10-49 Acres	492	40%
50-179 Acres	172	14%
180-499 Acres	68	5%
500-999 Acres	25	2%
1000+ Acres	17	1%
Revenue/Farmed Acre	**$3,179**	

*Withheld to avoid disclosing data for individual operations

[1] Data from the 2017 USDA Census of Agriculture

Table 2.
Washington County Harvested Crop Acreage (2017)[2]
(selected major crop categories)

Commodity	Acres	Percent
Corn for Silage and Greenchop	1,026	1.62%
Wheat	5,726	9.03%
Oats	1,213	1.91%
Barley	609	0.96%
Hay and Forage	7,380	11.64%
Vegetables	2,511	3.96%
Orchards	8,674	13.68%
Nursery	3,205	5.05%
Grasses and Legumes for seed	26,487	41.77%
Total Acres	**63,418**	

The classification of farm uses was based upon the most recent United States Department of Agriculture (USDA) Census of Agriculture data from 2017. The countywide data indicates a relatively diverse agricultural activity mix, with the exception that there is a significant concentration in crop value in Horticulture and grass seed occupies more acreage than any other crop by a significant amount.

Appendix L lists the acreage for the surrounding farm uses that are identified in the farm use inventory. The study area has a mix of farm uses and activities that appears typical for Washington County based upon the data from the USDA Census of Agriculture.

CSA Planning, Ltd.

Mike Savage
Consulting Planner

[2] Data from the 2017 USDA Census of Agriculture

Resume

Michael Savage

Principal

In addition to the work and other relevant experience provided as Appendix B with the original application submittal, CSA Planning, Ltd. offers this addendum as a supplement of work and related experience for Michael Savage relevant to the proposed Application and related Farm Impacts Analysis.

2008 – Current:

Consultation and project management for development projects requiring a thorough inventory and analysis of potential impacts on nearby and surrounding farm and forest lands. A sample of specific types of projects is as follows:

- Utility Corridor Farm and Forest Impacts Analysis;
- Plan Amendments, Zone Changes and Site Plans for Expansion of Regional Landfills;
- Plan Amendment, Zone Change and Planned Unit Development (PUD) Subdivision designating some 400+ acres of Nonresource land;
- Urban Growth Boundary Amendments into Agricultural Land requiring Alternative Lands Analysis and Farm Impacts Assessment;
- Nonfarm Partitions and Nonfarm Dwellings requiring Cumulative Impacts Analysis;
- Farm and Forest Dwellings requiring farm and forest impacts assessment;
- Greater Bear Creek Valley Regional Plan inventory, analysis and plan development requiring farm and forest lands impacts analysis on a large scale;

1998 - 2008:

Land-Use Planner, GIS Programmer Analyst and Permit System Administrator for Jackson County Oregon. A sample of specific duties and work performed is as follows:

- Review project proposals for development on farm and forest lands requiring a review of potential impacts on adjacent and nearby farm and forest lands and practices.
- Farm and Forest Code updates
- Coordination with a variety of local farmers and foresters and agencies including but not limited to Oregon Department of Forestry, Oregon State Department of Agriculture; Natural Resource Conservation Service; Department of Land Conservation and Development; and Irrigation Districts.
- Develop mapping and data inventory procedures for dwellings on farm and forest lands.
- Implement farm capability dwelling option – one of the few counties in the state to do so.

Other Training and Experience:

- Bachelor's Degree in Geography from Southern Oregon University with an emphasis in resource management.
- Raised on small farm in northeast Oregon. Currently own and manage an 80-acre woodlot.
- Years (est. 1980 – 1997) of working on small family-owned (less than 10 acres) and large (several thousands of acres) corporate farms in an assortment of duties including but not limited to harvesting and planting wheat, peas, beans, corn, apples, cherries, alfalfa seed, and grass hay; irrigating; logging, equipment repair, pest control; raising horses; feeding and looking over livestock and poultry including pigs, sheep, chickens and cattle.

Attachment A

Technical Memorandum

CSA Planning, Ltd
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Medford, OR 97504
Telephone 541.779.0569
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Mike@CSAplanning.net

To: Washington County Planning & Development Services

Attn: Jessica Pelz

Date: June 25, 2019

Subject: Cornelius Pass Road Extension Farm and Forest Practices

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Rural Land Impacts
Existing land use, land use patterns, and farm and forest capabilities must be inventoried in order to properly evaluate impacts to rural lands.

This inventory of practices was created by a combination of in person site visits of and nearby the proposed Cornelius Pass Road extension and analyzing geographic data provided by public resources and Washington County. Maps and photographs of the area evidencing farm and forest use can be found in the Atlas on pages 24 through 37.

Farm Practice Characterization
Farm units and crop disbursement varies throughout the study area. Some properties within the study area are uniform in crop or farm use type whereas others include multiple farm uses spread over multiple parcels or tracts. Ownership information derived from County Assessment records was examined, in part, to help determine farm units. Given that farm leases are common and customary – it is likely that farm units are managed beyond ownership boundaries throughout the study area.

Farm uses identified as occurring throughout the study area and nearby are summarized herein below along with commonly accepted and identified practices associated with each. The inventoried farm uses were identified separate from property boundaries.

CMTS Area Farm Practices

Farm Use	Acres
Arena	0.36
Orchard*	70
Barns, Paddocks, Misc Farm Storage*	15.3
Compound	1.8
Grass Seed & Grass Hay	190.4
Greenhouse	1.25
Kennel*	0.74
Plant Nursery	70.7
Pasture	10.6
Open Space (idle; no apparent farm use)*	115.1
Woodlot*	14.1
Home Business	1.35
Firewood sales	0.2
Row crop (possible young nursery stock)	7
Residence, Residential Accessory and landscaping*	61.2
Aggregate*	270

* Acreages listed reflect uses inventoried within and near the study as illustrated on Atlas Page 26 – Broad Use Inventory.

- **Orchard:** There are a few properties dedicated for orchard production dispersed throughout the area. The predominant orchard crop is hazelnuts. There are three 3-7 acre

mature orchards situated at the northerly end of the study area immediately south of SW Rosedale Road. One 17+ acre orchard with trees of varying ages is situated in the northeasterly portion of the study area, adjacent to SW Farmington Road. South of SW Farmington and west of SW Clark Hill Road lies a newly planted 32- acre orchard.

Orchard establishment is a specific type of farm use that often occurs several years before the year-to-year operating orchard practices begin. This is a highly technical process wherein the specific cultivar is selected for a site, irrigation systems are designed and installed, and tree starts are planted according to the site orchard design. Certain sites were identified to include recently planted orchards.

List of common practices associated with orchard production include the following in summary format:

- Pruning for production and maintenance;
- Intercropping and cover crop;
- Maintenance of lands between and around trees
  - Mow grass & remove brush;
- Fertilize with urea; potash; lime etc.;
- Herbicide & insecticide spray;
- Pollination;
- Integrated Pest Management (IPM) scouting;
- Rodent control;
- Irrigation;
- Nutrient analysis;
- Leveling, raking, flailing and tillage;
- Nut fall
- Harvesting nuts
  - Windrowing; collection / pickup; transport
- Washing and drying nuts;
- Sorting, storage, containers and shipping;
- Overall grounds maintenance

- **Grass Seed:** There are a number of properties dedicated for grass seed within and near the study area. With approximately 190 acres of lands under grass seed and grass hay production, said use is the predominant crop type occurring within and near the study area. The bulk of lands situated interior to the northerly portion of the study area is under grass seed production occurring over multiple properties and ownership in a relatively continuous pattern within a 146-acre area. There is also a property located to the southwest of the study area that includes approximately 42 acres of land dedicated for grass seed and/or grass hay production. Due to the apparent similarities between grass seed and grass hay production it is difficult to discern which areas are devoted to grass seed and which might be devoted to hay or cereal grain production. From a practices standpoint, however, the uses are similar.

  The Oregon Agriculture in the Classroom Foundation website provides a good summary of grass seed production in western Oregon[1], and is recited herein below:

  *"**How Grass Seed is Grown***

  When a perennial grass field is being planted for the first time, and will be in production for many years, farmers take great care to make sure the field is properly prepared and weed free. Weed control is important to the health and profitability of a grass field because farmers are able to get more money for a crop with no weed seeds and the field will have higher yields.

[1] http://aitc.oregonstate.edu/grown/comm_grass.htm#how

Soil tests are taken to measure the field's pH levels. Lime may be added to raise the pH levels. The heavy rain in western Oregon soils can cause the soil pH level to drop and become too acidic for grass plants.

The next step is to prepare the field by tilling it and using herbicides to make the best seed bed possible. After the soil is tilled up and loosened, it is checked for pH and other nutrient levels. Once this is done the planting can begin. Planting occurs in both fall and spring depending on the variety. Varieties that are planted in the fall can start growing in the winter when the [sic] rains.

Carbon Banding

A planting drill is used to put the seed and fertilized [sic] into the soil. To help control weeds, farmers use carbon band seeding. Carbon banding is where a slurry of activated charcoal is sprayed over the rows where the seeds have been drilled. Next, an herbicide is sprayed over the entire field to control weeds prior to the weeds or grass seed germinating. The charcoal over the drill row adsorbs the herbicide and allows the grass crop to emerge unharmed.

Once the grass is established, additional herbicides may be used to control both volunteer grass seedlings and broad leaf weeds. Grass fields are typically fertilized with nitrogen, phosphorus, and potassium in March and April.

Rusts and other diseases are serious problems in some grass seed species and fungicides are used to help control them. These diseases that can plague grass seed crops can have their biggest impact on seed yield.

Grass seed farmers grow different varieties of grass to protect themselves from a poor crop. Rain, or hot and freezing temperatures that hurt one type of seed may actually help a different variety produce more seed. Farmers may lose money on one variety at times, but hope to make money on another.

Sheep

Sheep are sometimes used to graze the forage grass seed fields. Grazing is like pruning a tree. Wherever a blade has been cut off, the plant puts up more shoots. The more shoots, the more seed a plant will produce. The animals graze on the fields during the winter months through March.

Pests

Two other creatures that feed on grass fields are geese and slugs. They can destroy crops in a matter of days. They eat the grass and roots, leaving nothing, but a poor stand (crop) and mud.

Swamp Buggies

Since very few places grow grass seed the equipment they use must either be modified or manufactured by the dealer or farmer. Swamp buggies, for example, were created to apply fertilizers and chemicals on wet fields. A swamp buggy has huge, balloon-like tires that can move across the wet fields without leaving ruts. Since grass seed is grown mostly on wet soils, swamp buggies can go on fields during the winter and spring months when normal tractors would sink in the mud.

Harvesting

Harvest time for grass seed crops begins in late June or early July. A machine called a windrower or swather cuts the grass and lays it in rows. This is done while the grass seed is still somewhat green to prevent it from shattering. Seed shattering is a natural way seeds are dispersed.

The grass then dries in the sun and wind for about 5-10 days before being harvested. A combine separates the seed from the straw and spreads the straw back on the field. The seed is then transferred from the combine to trucks and transported to the seed cleaning warehouse." "A seed cleaner is used to remove the soil, weeds and small pieces of straw from the tons of harvested grass seed. The cleaner has several screens which move back and forth inside the cleaner and the good seed falls through the screens. The bigger pieces of weed and straw are

left on the top screen. The bottom screen is finer and only the dirt and tiny weed seeds fall through. The good seed is left on top of the last screen.

Seed Certification

After cleaning, the seed is bagged and sampled for germination and purity. The price a farmer gets for the crop depends on how well the new seeds grow and if it contains any weed seeds. The definition of a weed is, "any plant where it is not supposed to be." So, if the crop is supposed to be ryegrass and the test shows Orchardgrass, then it has a lower value.

Many growers use the Seed Certification Service at Oregon State University or other private lab to test their seed. The certification program helps assure buyers the seed they buy is of a high quality. To meet certification standards, a grower's field must pass a seedling inspection, a crop inspection prior to harvest, and cleaned seed must meet germination and purity requirements.

A seed certification service inspects fields to evaluate if seed is genetically pure. The grass must be planted in rows so inspectors can easily check for weeds. These inspections are timed so off-type seeds, other crops and weed contamination can be easily detected. The inspector looks for evidence of volunteer plants, weeds or other problems that could cause problems in the genetic purity of the seed. Before each harvest, the crop is again inspected, usually when the plants are in the final stages of seed formation.

Certain harvesting practices must be followed to meet certification standards. If there are strips along the edges of a field that could be contaminated genetically by nearby fields, these must be harvested separately and seed lot records must be maintained for each lot. These isolation strips can only be sold as less profitable uncertified seed. Field equipment must also be cleaned when fields of different cultivars are harvested.

Finally, a sample from each harvested seed lot is tested for germination and mechanical purity by visual inspection.

Post-harvest residue management

In the mid-1940s open-field burning was a way growers controlled disease problems (ergot, blind seed, and seed gall nematode) and pest like rodents and slugs. Field burning was also used to dispose of straw following seed harvest. However, during the 1970s and 1980s this practice became increasingly controversial and as of 2010 is no longer an option.

By Products

As farmers adjusted to reduced field burning, a new export market developed for the straw. Over one billion pounds (600,000 tons) of grass and grain straw is now exported annually to Japan, Korea and Taiwan for dairy and beef cattle feed. These exports sales have an estimated value of $50-$60 million.

Forage grass is used for pastures for cattle and other livestock to graze on, roadside plantings, and is often used to help stop soil erosion. Turf grass seed is used for soccer and other types of sport fields, and is used on the fields of premier sporting events including the Super Bowl, World Cup Soccer, the Olympics and major golfing events. The straw from both types of grass is baled and sold for livestock feed.

Grass Species

There are many different kinds of grass seed and each type is used for a specific location and purpose.

Annual Rye - *Lolium multiflorum - (forage grass) It is a fast growing forage grass planted along roadsides and other areas requiring quick, economical ground cover. Annual Ryegrass is often used on hillsides to curb wind and water erosion problems.*

Perennial Rye - *Lolium perenne - (turf and forage grass) This is the most widely used grass in the world. It is used in the northern states for permanent turf and forage pastures and for overseeding of dormant grasses in the southern U.S.. It has been s[sic] cultivation as a forage grass since the 17th century.*

Tall fescue - *Festuca arundinacea - (turf and forage grass) This is a popular grass in the transition zone between northern cool-season grass species and warm-season southern species.*

Bentgrass - *Agrostis capillaries - (turf grass) Oregon produces nearly all the Bentgrass seed grown in the United States. Predominantly a Willamette Valley crop, Bentgrass seed is exported in large quantities to Europe and the central and northern states for use in turf mixtures. This grass is widely used on golf courses throughout the world.*

Fine Fescue - *Festuca rubra spp. rubra - (turf grass) This group of grasses is used for golf courses. It grows well in shaded areas and is very drought tolerant.*

Orchardgrass - *Dactylis glomerata (forage grass) This grass is used in the northern states for pastures and grass hay. Oregon is the nation's leading producer of orchard grass seed and it is most commonly used for cattle feed."*

- **Pasture / Livestock:** The inventory identified relatively few pasture sites associated with livestock. There were a few open grass fields with fencing that might be seasonally or sporadically used for livestock rearing. Practices generally associated with livestock / pasture use often involve field fencing construction and maintenance, livestock medical treatments, animal feeding during times of low food sources, pasture rotations, livestock watering, and related activities. The pasture itself might be irrigated. Rodent control practice is typically employed. Occasional chemical treatments including weed control and nutrient supplies are common.

- **Field Crops & Vegetables**: A few small areas appeared to be utilized for field crops that may include any or all of the following, which involve similar farming practices: alfalfa, barley, wheat, grain, grass and hay. There were also personal use vegetable gardens. Individual vegetable gardens that are not operated for a profit are not farm uses pursuant to the definition of "farm use" in ORS 215.203. Based upon the experience of applicant's agent, CSA Planning, Ltd., the following are the expected activities associated with the production of field crops. First, the farming practices consist of plowing, seeding and fertilizing (with the use of a tractor), spraying the crops with insecticides (as needed) and harvesting with a tractor or combine. Some crops are fertilized at the time of planting. Harvested crops are often transported by the operator to a barn or other covered structure where they are stored before being sold. At harvest, some crops are baled. Wheat is thrashed with a combine. Aircraft are sometimes used to manage crops. Harvested crops are transported by truck after they are sold.

  Generally, field crops and vegetables are somewhat limited in their level of mechanization except as part of very large commercial operations for singular crop types which were not observed in the inventory data collection for surrounding lands. Smaller operations require more manual labor and overall higher labor inputs when compared to other farm uses that can achieve greater levels of mechanization. Most smaller-scale field and vegetable crop operations utilize a standard tractor with attachments appropriate to their crops such as discs, sprayers, trailers, and more specialized harvesters if appropriate.

- **Nurseries:** There are three properties within the study area dedicated to nursery use. All are within the central part of the study area adjacent to SW Farmington Road. Farmington Gardens is a relatively large nursery situated on both sides of SW Farmington. The bulk

of said nursery is situated westerly of SW Farmington on lands owned by Eshraghi and comprising approximately 69 acres. Farmington Gardens appears to also utilize approximately 5 acres across SW Farmington on land owned by Laurel Heights, LLC. One smaller 10-acre property located immediately north of Farmington Gardens is owned by Lee and is predominantly dedicated to nursery use.

Individual nurseries may vary greatly in scale and function. The size and practices are heavily dependent on the amount and extent of direct commercial retail. Customary practices associated with nurseries are as follows. Primary function of nurseries is the raising of plants for landscaping purposes or raising of vegetables for human consumption. The nurseries within the study area appear to be primarily dedicated to rearing plants to ultimately be sold and used for landscaping purposes. Plants may be propagated from seed or, more typically, are purchased from an offsite supplier and delivered to the nursery as a small seedling. Upon delivery, the seedlings are either transplanted to larger pots or are planted in the ground within relatively loose soil – to make it easier to remove the plants at time of sale.

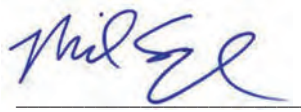
Value is added by raising a smaller plant and selling it as a larger plant. As plants grow, they are transplanted to larger pots or are provided more space between plants in the ground to allow more room for root growth. Operators manage the growth of plants by watering either by hand or through irrigation systems. Soils from the site are often utilized, but additional soil and soil supplements are often brought in to replace soil lost to plants that are sold. Operators typically amend the soil with compost, fertilizers and other nutrients. Plants are often trimmed or pruned and if necessary affixed with support sticks. Plants are also inspected and treated for disease and insects. Treatment is applied directly to plants through mechanical and/or by hand. Management also includes protecting plants from frost during cold periods. Once ready for sale, plants are loaded on trucks with a tractor or by hand. Trucks haul the plants from the nursery to their offsite destination. Nurseries with a direct retail component may allow customers to circulate throughout the nursery to select the plants, where a tenant will transport the plant from the inventory to customer's vehicle by tractor or hand. Direct retail of plants may also include movement of nursery stock from the inventory where customer's do not have access to a retail store or center which does allow customer access. From there, the plants are transported to the customer's vehicle by tractor or hand.

Sale of nursery stock is typically a combination of wholesale to retail centers and direct on-site sales. Onsite retail can vary significantly between nurseries. Some may include a full retail store or stores with accessory appurtenances whereas some may simply be a small parking area with customer access to the products. As is common with commercial retail business, the scale of direct retail associated with a nursery is often dictated by proximity to market and visibility from higher volume roads.

- **Woodlot**: Based upon the experience of applicant's agents, the following are the expected activities commonly associated with Woodlot use. Trees may be native and may have planted naturally, or trees have been planted post prior removal. Irrigation is not typically involved in raising trees for woodlot purposes. Within the Willamette Valley, seasonal precipitation and climate are generally sufficient for the growing of trees. Similarly, nutrients and fertilizers are not generally used due to relatively deep rich soils. As trees grow, they are often thinned to achieve optimal growth and overall health. Trees removed during thinning processes are often too small to be profitable or merchantable for lumber and as such are often cut into rounds, split and sold as firewood. Firewood may be transported from the site by the property owner to the home of the purchaser or the purchaser may come to the site for pick up. Trees raised to merchantable size are fell, bucked, loaded and either milled on-site or delivered to a mill. Felling of trees is done either by hand with a chainsaw or with machinery using feller-buncher. Limbing and bucking trees is done either by hand with a chainsaw or by machinery using feller-buncher. Logs are loaded onto log trucks with either separate loaders or with a truck that has a self loader. Limbs and material cut from the logs are often chipped and spread onsite or are piled and burned during wetter months. Sometimes the woody debris is utilized for compost. Sometimes chips are hauled away to be used as fuel.

The few properties in the study area with woodlots appear to be small-scale and primarily used as landscaping or for personal firewood use. There is one small portion of a property located on SW Riggs Road that appears to be dedicated to firewood production.

CSA Planning, Ltd.



Mike Savage
Consulting Planner

Attachment A

Oregon
Kate Brown, Governor

Department of Land Conservation and Development
Community Services Division
635 Capitol Street NE, Suite 150
Salem, Oregon 97301-2540
Phone: 503-373-0050
Fax: 503-378-5518
www.oregon.gov/LCD

March 13, 2019

Email

Erin Wardell, AICP, Principal Planner
Jessica Pelz, AICP, Senior Planner
Washington County Land Use & Transportation
155 N First Avenue, Suite 350 MS16
Hillsboro, OR 97124

Ms. Wardell and Ms. Pelz:

I am responding to your request to provide our department's interpretation of Oregon Administrative Rule (OAR) 660-0027-0070, Urban and Rural Reserves in the Portland Metro region, as it pertains to transportation-related land uses. In particular those land uses permitted on lands planned and zone for exclusive farm use (EFU) and designated as an urban or rural reserve. I've included here OAR Division 27 Portland Metro Urban and Rural Reserves .

A range of transportation-related land uses are permitted through a combination of statutes and rules on lands planned and zoned EFU. Depending on the use, listed uses are permitted either outright or conditionally. Other uses not listed are permitted through the use of an exception to the statewide planning goals. For example, Oregon Revised Statute (ORS) 215.213(1) allows uses outright, including but not limited to, climbing and passing lanes, reconstruction or modification of public roads and highways; and ORS 215.213(2) allows uses conditionally, including but not limited to, the construction of additional passing and travel lanes with additional right of way and the improvement of public road and highway related facilities. A specific use allowed conditionally in ORS 215.213(2)(10) is subject to an exception, among other items, and is described in its entirety as follows:

> *(10) Roads, highways and other transportation facilities and improvements not allowed under subsections (1) and (2) of this section may be established, subject to the approval of the governing body or its designee, in areas zoned for exclusive farm use subject to:*
> *(a) Adoption of an exception to the goal related to agricultural lands and to any other applicable goal with which the facility or improvement does not comply; or (b) ORS 215.296 for those uses identified by rule of the Land Conservation and Development Commission as provided in section 3, chapter 529, Oregon Laws 1993.*

(Please note that in (10)(b) above, "…for those uses identified…" those uses are listed in OAR 660-012-0065(3).)

OAR 660-0027, Urban and Rural Reserves in the Portland Metro Region, and specifically OAR 660-0027-0070, Planning of Urban and Rural Reserves, does not allow an exception in urban or rural reserves to Goal 3, Agricultural lands, to allow the transportation facilities described in subsection (4)(c) below.

> (*4) Notwithstanding the prohibitions in sections (2) and (3) of these rules, counties may adopt or amend comprehensive plan provisions or land use regulations as they apply to lands in urban reserves, rural reserves or both, unless an exception to Goals 3, 4, 11 or 14 is required, in order to allow:*
>
> *(a) Uses that the county inventories as significant Goal 5 resources, including programs to protect inventoried resources as provided under OAR chapter 660, division 23, or inventoried cultural resources as provided under OAR chapter 660, division 16;*
>
> *(b) Public park uses, subject to the adoption or amendment of a park master plan as provided in OAR chapter 660, division 34;*
>
> *(c) Roads, highways and other transportation and public facilities and improvements, as provided in ORS 215.213 and 215.283, OAR 660-012-0065, and 660-033-0130 (agricultural land) or OAR chapter 660, division 6 (forest lands);*
>
> *(d) Other uses and land divisions that a county could have allowed under ORS 215.130(5) – (11) or as an outright permitted use or as a conditional use under ORS 215.213 and 215.283 or Goal 4 if the county had amended its comprehensive plan to conform to the applicable state statute or administrative rule prior to its designation of rural reserves;*

However, OAR 660-0027-0070(7)(a) below further states that, in fact, a county may take an exception to a planning goal in order to allow a transportation facility in **urban reserves,** essentially reversing a portion of the language in OAR 660-0070(4)(c) above.

> *(7) Notwithstanding the prohibition in sections (2) and (4) of this rule, a county may take an exception to a statewide land use planning goal in order to allow:*
>
> *(a) The establishment of a transportation facility in an area designated as urban reserve; or*
>
> *(b) Modifications to an unconstructed transportation facility that was authorized in an exception prior to February 13, 2008. In addition to the requirements of OAR 660-012-0070, county approval of an exception authorized in this subsection shall demonstrate that the modifications have an equal or lesser impact than the unconstructed transportation facility on lands devoted to farm or forest use, considering the impacts of the identified alternatives on: farm and forest practices; farm and forest lands, structures and facilities; the movement of farm and forest vehicles and equipment; and access to parcels created on farm and forest lands.*

In summary, under current administrative rules, certain transportation-related uses that require an exception to Goal 3 are not allowed in the Portland Metro rural reserves. Current land use policy limits rural reserve development in order to promote rural areas that continue to maintain rural industries, such as farming and forestry, free from conflicts. Limiting roads and transportation facilities in rural reserves also helps promote the viability of urban areas and the future urban reserve areas by encouraging development decisions for a longer reserves planning period that supports multi-modal transportation alternatives, walkable communities and the cost efficient provision of public facilities.

I hope this information is helpful. Please feel free to contact me if you have further questions.

Regards,

Anne Debbaut
Portland Metro Regional Representative
e: anne.debbaut@state.or.us
p: 503.725.2182

cc: Theresa Cherniak, Washington County
Chris Deffebach, Washington County
Gordon Howard, DLCD

Attachment A

Draft Composite Plan

Tualatin Valley Highway
Railroad
SE Alexander
234th
SE Davis
TOWN CENTER
REED'S CROSSING
Industrial
Blanton
Rosedale ES
Neighborhood Park (6ac)
Proposed ES (7-10ac)
229th
Kinnaman
BPA CORRIDOR
6 ac Neighborhood Park (Location TBD)
Proposed ES (7-10ac)
Reed's Crossing Boundary
Neighborhood Park (6ac)
Proposed ES/MS (20-25ac)
McInnis
Cornelius Pass
Reserve GC
Butternut Creek (floodplain)
Butternut Creek Boundary
Regional Trail
Parker
Deline
BUTTERNUT CREEK
Life Christian School
VILLAGE CENTER
Proposed ES (10ac)
Alternative Site for Community Park (incl Community Rec Ctr)
Neighborhood Park (6ac)
Civic Use (tbd)
Alternative Site for Community Park (incl Community Rec Ctr)
Rosa
Murphy
6 ac Neighborhood Park (Location TBD)
6 ac Neighborhood Park (Location TBD)
209th
Rosedale
to Farmington Road

LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- SENIOR HOUSING
- COMMERCIAL/MIXED USE
- SCHOOL SITE/EXISTING SCHOOL
- POTENTIAL PARKS
- POTENTIAL NATURAL OPEN SPACE
- FLOOD PLAIN
- BPA EASEMENT
- SITE BOUNDARY
- ARTERIAL/COLLECTOR STREETS
- NEIGHBORHOOD STREETS
- CONCEPTUAL NEIGHBORHOOD STREETS
- CONCEPTUAL LOCAL STREETS
- CONCEPTUAL TRAILS
- G GATEWAY
- TRAILHEAD

N

0 100 200 400 600 800ft

June 2014

Open House #3

South Hillsboro Master Plan

Hillsboro OREGON

Attachment A

Essence of South Hillsboro


Farmland


BPA Corridor


Tree Farm


TV Hwy and Rail line


Remnants of Rural Character

Existing School


Butternut Creek Natural Area

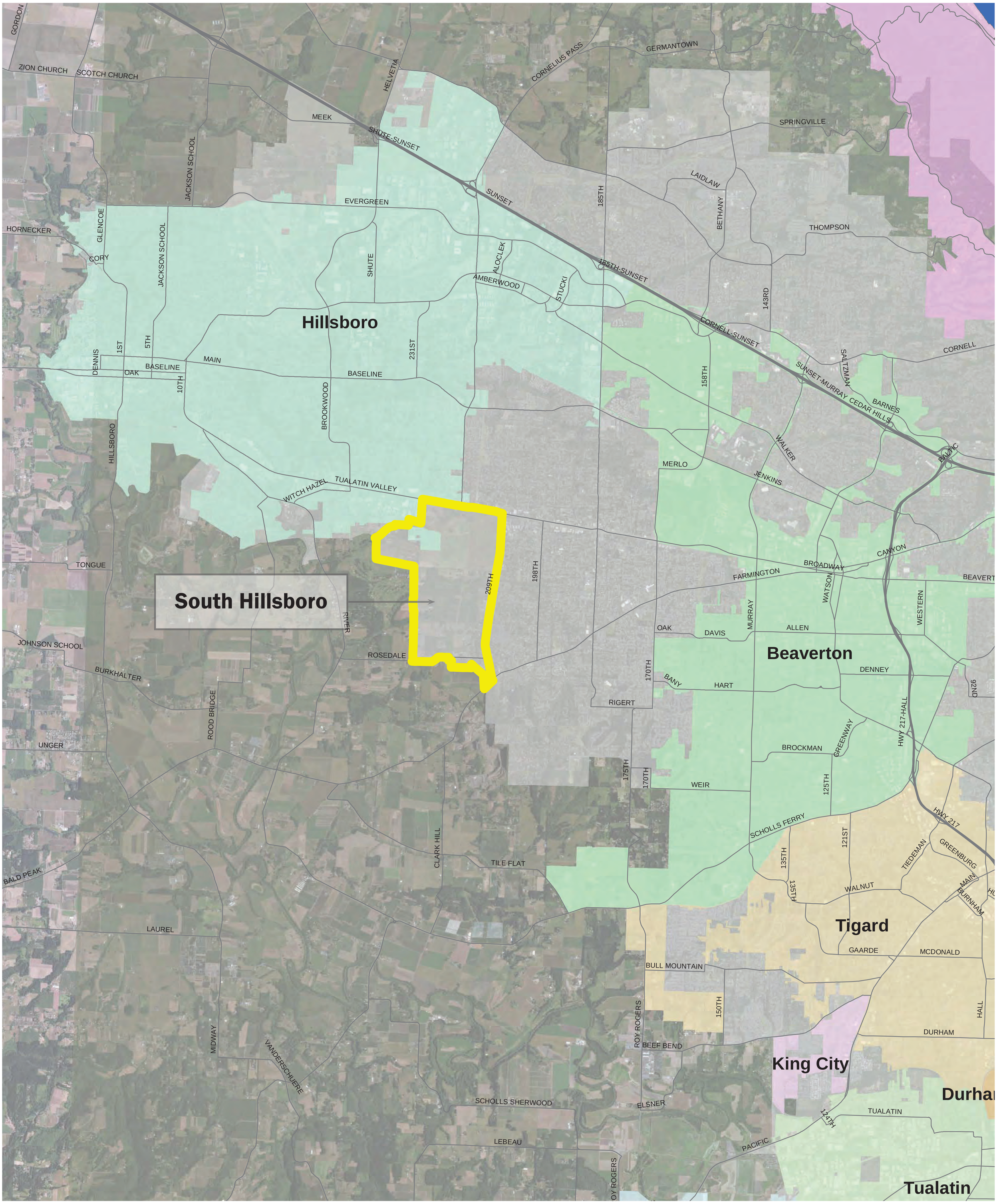
Open House #3

South Hillsboro Master Plan

Hillsboro OREGON

Attachment A

South Hillsboro Vicinity



Open House #3

South Hillsboro Master Plan

Hillsboro OREGON

Attachment A

Design Standards

Within South Hillsboro, new development will be subject to design and development standards and guidelines to ensure that the design principles of the Master Plan are carried out.

Example of Design Standards for Residential Developments

Encourage variations in architectural features to avoid creating neighborhoods where all the houses look the same.

Examples of Design Guidelines

Public assembly and civic buildings such as theaters, hotels, cultural centers, schools, churches, and government buildings should include appropriately-scaled landmark features, such as towers, cupolas or pediments.

Exterior building materials and colors should be timeless, harmonious and compatible with materials and colors in adjacent developments.

Building design should be site specific, fit into the context of the area, preserve important views where possible, complement the natural setting and other nearby buildings, and relate to adjacent public and private streets.

Examples of Design Standards for Non-Residential or Mixed-Use Developments

Encourage sidewalk dining and outdoor displays, but regulate them to ensure they do not detract from streetscape appearance or adversely impact adjacent properties.

Require a selection of architectural elements, such as cornices, bays, arcades, and recessed or detailed entries, on building facades to avoid a “flat” appearance and create a sense of continuity.

The “first 30 feet” of a development should be carefully designed to create an attractive street frontage.

Building design should be site specific, fit into the context of the area, preserve important views where possible, complement the natural setting and other nearby buildings, and relate to adjacent public and private streets.

Create great, pedestrian-friendly streets by requiring that buildings and their entrances be oriented to the street.

“Window shopping” increases both street activity and pedestrian security, so require that certain types of buildings provide a minimum amount of windows.

Attachment A

Conceptual Block Patterns

(drawings provided by Newland Communities)

Low-Density Residential

Medium/High-Density Residential

Attachment A

Density Illustrated

Low-Density Residential (<6du/acre)

Low-Density Residential

Medium-Density Residential
(<12du/acre)

High-Density Residential
(16-30du/acre)

Mixed-Use

Town Center

Attachment A

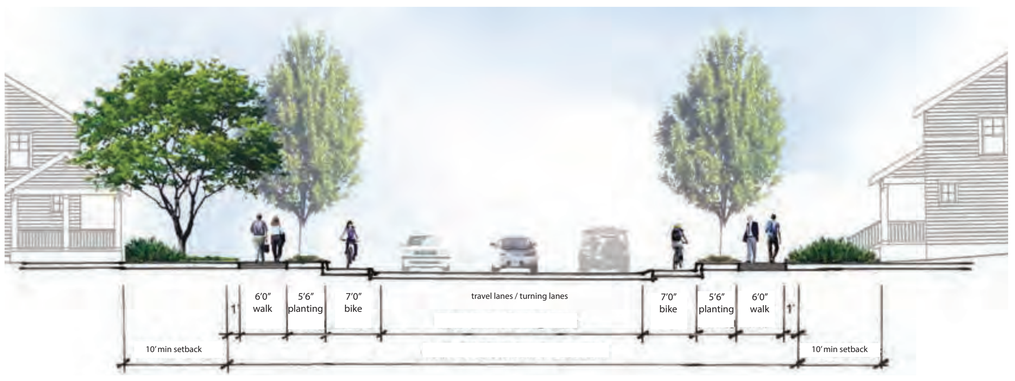
Transportation Networks: Best Practices

Comfortable, safe, and integrated pedestrian and cyclist pathways. Streets should be more than just facilities for moving cars.

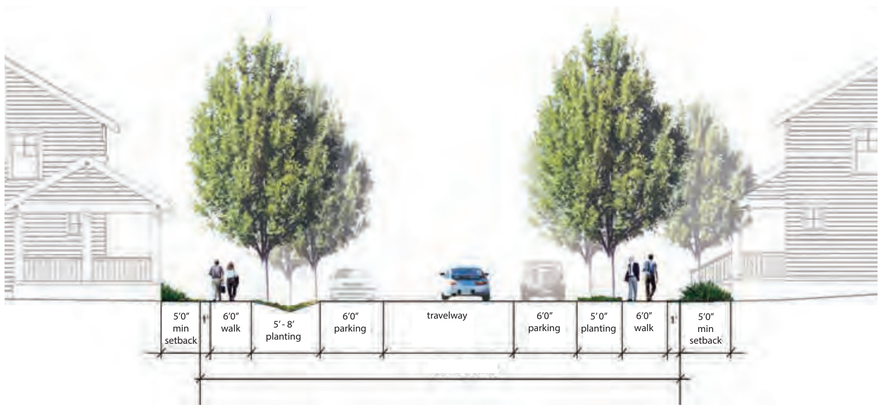
Grid system of streets with bike lanes and on-street parking – a “complete street’, integrated with building edges and activities.

A connected grid of streets should include a hierarchy of streets. The narrowest of these streets is often a shared alley accessway (which also serves as a location for utilities).

Collector Street



Neighborhood/Local Street



(drawings provided by Newland Communities)

Residential green streets with a generous planting strip for street trees provides color, foliage, and visual interest with the change of seasons.

Wide pathways connect residential development to other areas.

Attachment A

Streets

TV Highway

Alexander

SE Davis

Industrial

Blanton

Kinnaman

Pass

McInnis

Cornelius

Reserve GC Entry

Parker

229th

Deline

Rosa

Vermont

Murphy

209th

Rosedale

to Farmington Road

LEGEND

- Arterial
- Collector
- Conceptual Collector Route
- Neighborhood Route
- Conceptual Neighborhood Route
- Local Street
- Conceptual Local Street *(exact location tbd)*

0 300’ 600’

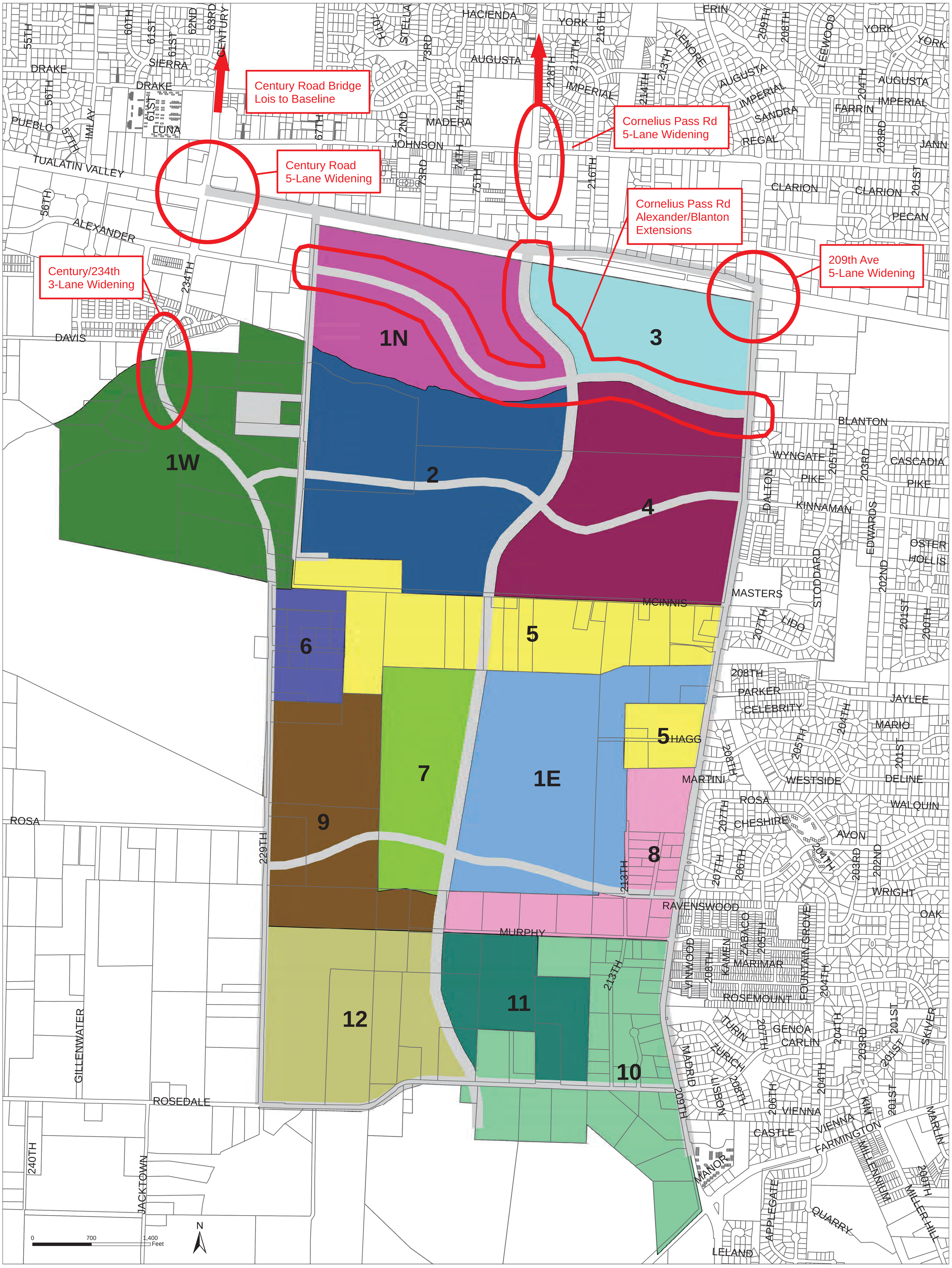
Open House #3

South Hillsboro Master Plan

Hillsboro OREGON

Attachment A

Transportation Gating Improvements



Open House #3

South Hillsboro Master Plan

Hillsboro Planning

Attachment A

Schools, Trails, Parks and Open Spaces

Tualatin Valley Highway
Railroad
SE Alexander
SE Davis
234th
229th
209th
Industrial
Blanton
Kinnaman
McInnis
Parker
Deline
Rosa
Murphy
Rosedale
BPA CORRIDOR
Cornelius Pass
Butternut Creek (floodplain)
Reserve GC
Regional Trail

Rosedale ES
Neighborhood Park (6ac)
Proposed ES (7-10ac)
6ac Neighborhood Park (Location TBD)
Proposed ES (7-10ac)
Neighborhood Park (6ac)
Proposed ES/MS (20-25ac)
Alternative Site for Community Park (incl Community Rec Ctr)
Neighborhood Park (2ac)
Proposed ES (10ac)
Life Christian School
Neighborhood Park (6ac)
Civic Use (TBD)
Alternative Site for Community Park (incl Community Rec Ctr)
6ac Neighborhood Park (Location TBD)
6ac Neighborhood Park (Location TBD)

LEGEND

- Potential Park/Open Space
- Potential Natural Area
- School Site/Existing School
- Proposed Trails
- Proposed Roads with Pedestrian and Bicycle Improvements

0 300’ 600’

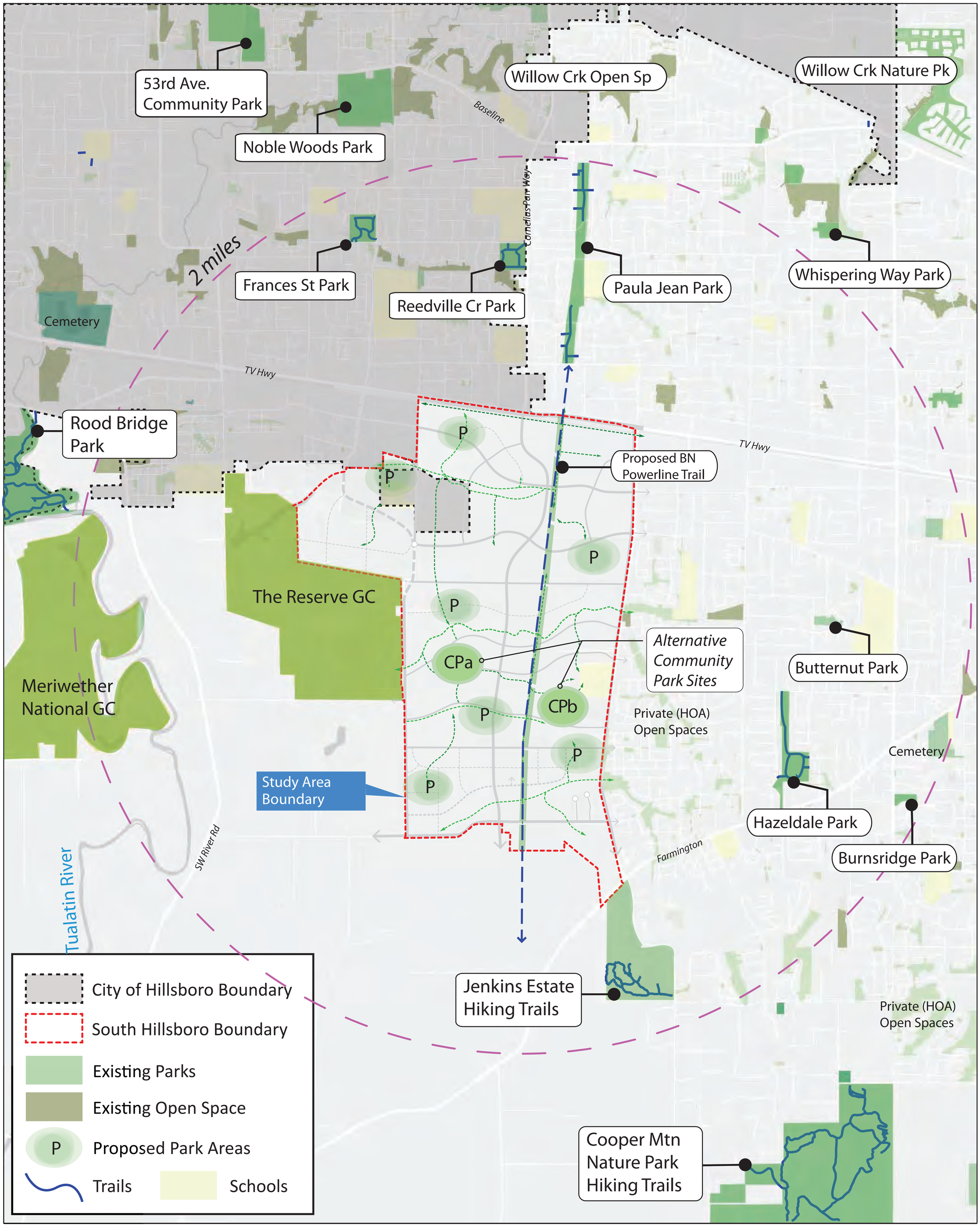
Open House #3

South Hillsboro Master Plan

Hillsboro OREGON

Attachment A

Parks Context



Prepared By: Walker Macy
Date: 2/17/2014

North

0 2,000 4,000 Feet

Disclaimer: This map is intended for informational purposes only. It is not intended for legal, engineering, or surveying purposes. While this map represents the best data available at the time of publication, the City of Hillsboro makes no claims, representations, or warranties as to its accuracy or completeness. Metadata available upon request.

Attachment A

Schools, Trails, Parks and Open Spaces: Best Practices

Habitat area adjacent to greenway

Natural area with public access

Flexible open space for a variety of activities

Co-locating parks and schools holds potential efficiencies in site planning and operations

“Pocket plaza” serving neighborhood commercial area

Attachment A

Next Steps

PRE-DEVELOPMENT

- Complete and Adopt Regulatory Package
  - Comprehensive Plan Amendments (Sections 31 and 32)
  - Community Development Code Amendments
- Draft Annexation Agreements
- Complete Finance Plan and Trip Cap Work
- Supplemental System Development Charge Adoption
  - Area-specific Transportation
  - Parks
  - Stormwater
- Cornelius Pass Road extension permitting
- Annexation and annexation agreements

DEVELOPMENT BEGINS

ONGOING

- Development application review
- Trip cap real-time status monitoring
- Periodic financing review

Schedule milestones listed here are projections, and are subject to change.

Stay Informed

For the latest updates on South Hillsboro, visit our website:

www.hillsboro-oregon.gov/SouthHillsboro

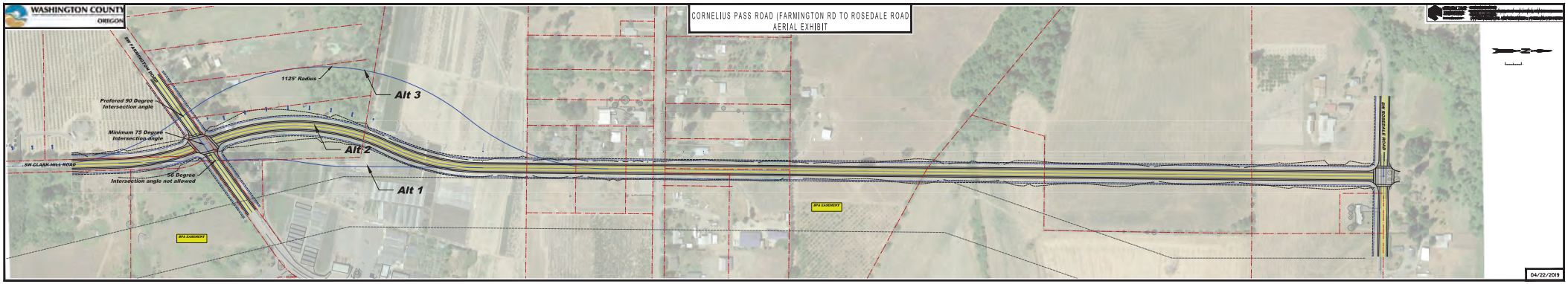
We'll post the boards and handouts from tonight's meeting to the website in the next few days.

For more information, contact our staff:

Jeannine Rustad, Project Manager
503-681-5321
jeannine.rustad@hillsboro-oregon.gov

Aaron Ray, Urban Planner
503-681-6476
aaron.ray@hillsboro-oregon.gov

Attachment B



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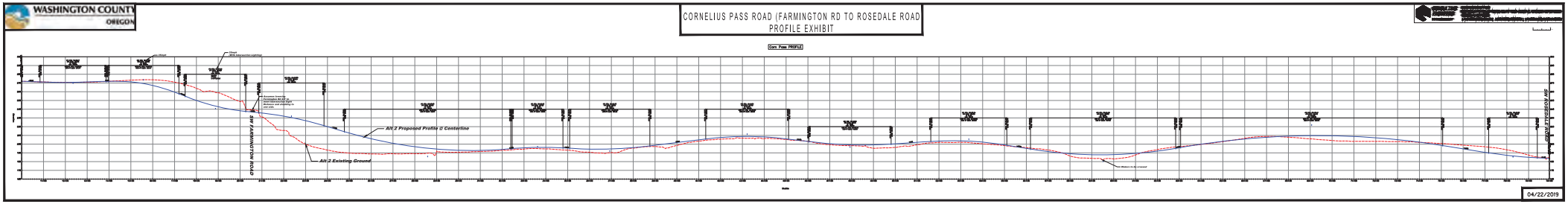


WASHINGTON COUNTY
OREGON

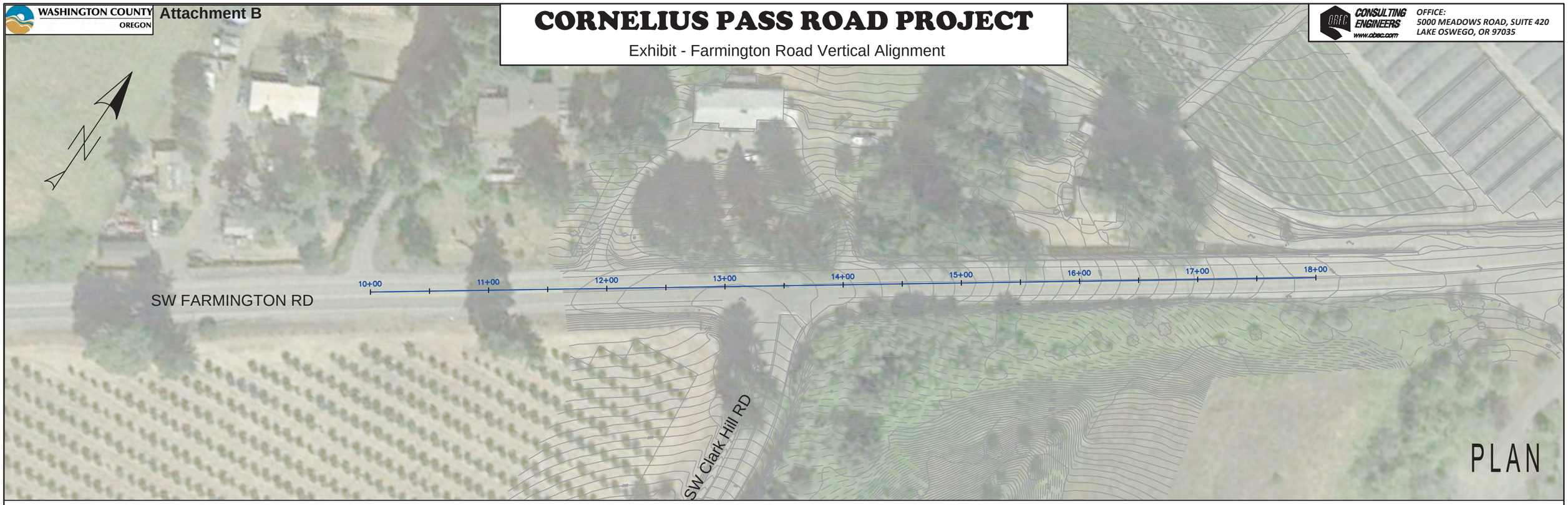
Attachment B

CORNELIUS PASS ROAD PROJECT

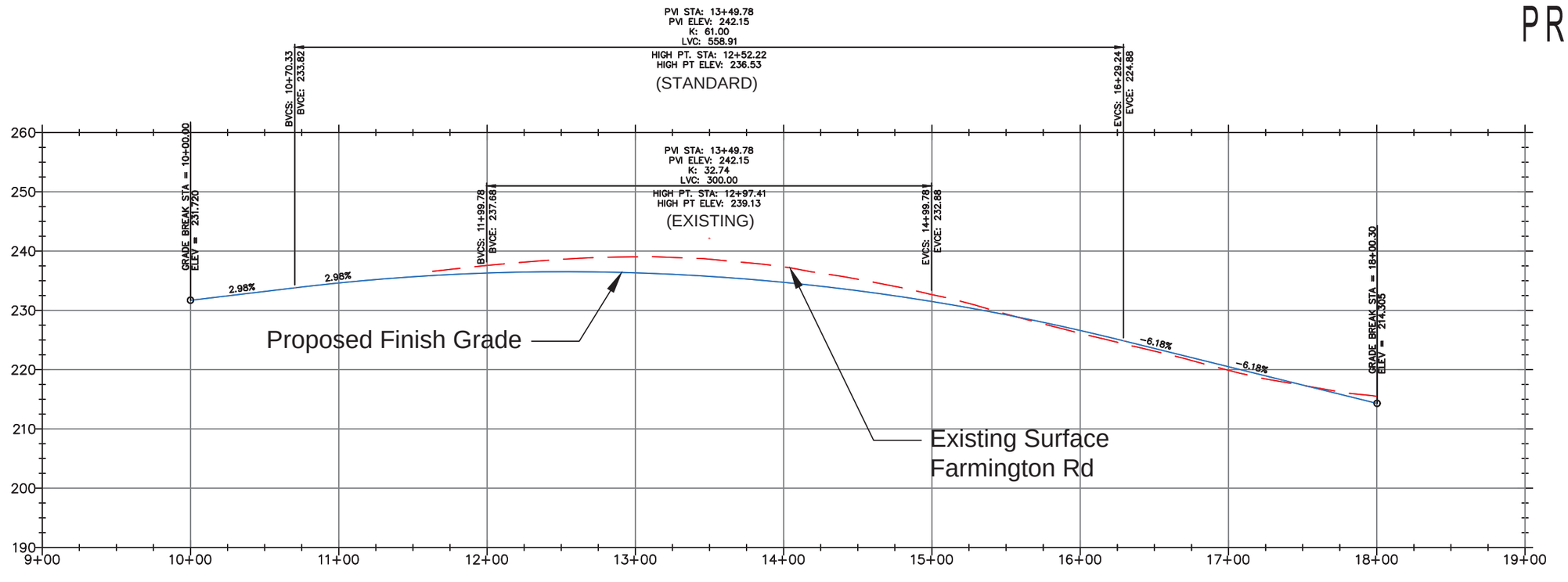
Exhibit - Farmington Road Vertical Alignment

CONSULTING ENGINEERS
www.obec.com
OFFICE:
5000 MEADOWS ROAD, SUITE 420
LAKE OSWEGO, OR 97035

PLAN



PROFILE



04/16/2019

Attachment C

CORNELIUS PASS RD PIPELINE PROJECT
PLW_2.0 (PIPELINE WEST)
FRANCES ST TO HIGHWAY 26
3.3 MILES

- PLW_2.1 **CORNELIUS PASS RD PLW_2.1**
  CONSTRUCTION: ANTICIPATED TO BEGIN IN 2022
- PLW_2.2 **CORNELIUS PASS RD PLW_2.2**
  CONSTRUCTION: ANTICIPATED TO BEGIN IN 2029

SOUTH HILLSBORO AREA PIPELINE PROJECT
PLW_1.0 (PIPELINE WEST)
FARMINGTON RD TO FRANCES ST
4.0 MILES

- PLW_1.1 **KINNAMAN RD TO TV HWY**
  (SOUTH HILLSBORO DEVELOPMENT)
  CONSTRUCTION COMPLETED: 2019
- PLW_1.2 **TV HWY TO FRANCES ST**
  (WASHINGTON COUNTY)
  CONSTRUCTION: 2022 - 2024
- PLW_1.3 **FARMINGTON RD TO KINNAMAN RD**
  CONSTRUCTION: 2020 - 2022

SCHOLLS FERRY RD AREA PIPELINE PROJECT
PLM_5.0 (PIPELINE MAIN)
NORTH OF BEEF BEND RD TO ROSEDALE RD
7.0 MILES

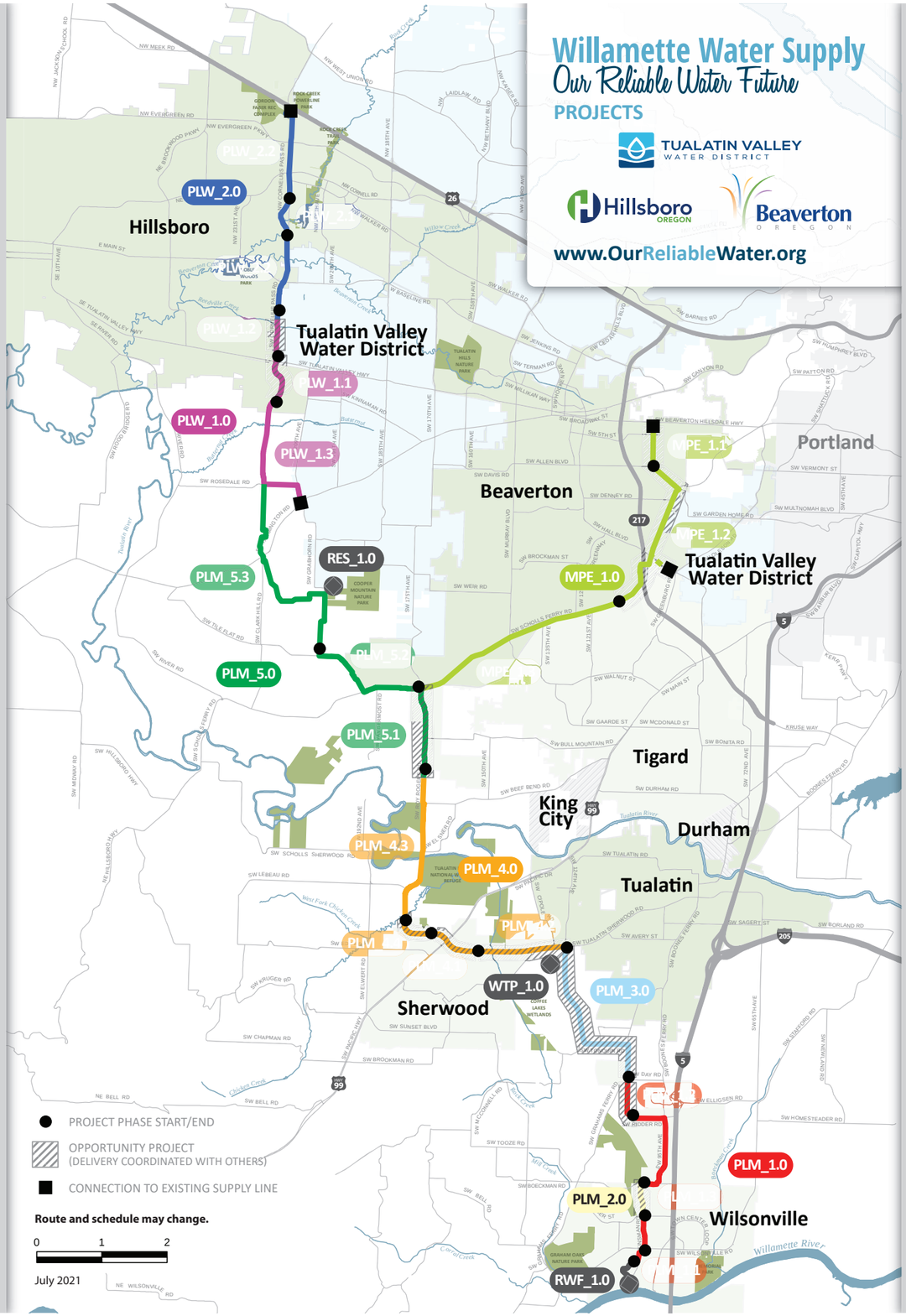
- PLM_5.1 **NORTH OF BEEF BEND RD TO SCHOLLS FERRY RD**
  (WASHINGTON COUNTY)
  CONSTRUCTION: 2018 - 2021
- PLM_5.2 **SCHOLLS FERRY RD TO GRABHORN RD**
  CONSTRUCTION COMPLETED: 2021
- PLM_5.3 **GRABHORN RD RO ROSEDALE RD**
  CONSTRUCTION: 2022 - 2025

TUALATIN-SHERWOOD AREA PIPELINE PROJECT
PLM_4.0 (PIPELINE MAIN)
SW 124TH AVE TO NORTH OF BEEF BEND RD
5.2 MILES

- PLM_4.1 **HIGHWAY 99 CROSSING**
  (WASHINGTON COUNTY)
  CONSTRUCTION: 2021 - 2023
- PLM_4.2 **TUALATIN-SHERWOOD RD**
  (WASHINGTON COUNTY)
  CONSTRUCTION: 2022 - 2024
- PLM_4.3 **ROY ROGERS RD**
  CONSTRUCTION: 2022 - 2023
- PLM_4.4 **CHICKEN CREEK TO BORCHERS DR**
  CONSTRUCTION: 2022 - 2023

WATER TREATMENT PLANT
WTP_1.0
WATER TREATMENT PLANT (WTP)

CONSTRUCTION: 2022 - 2025
INCLUDES FINISHED WATER PUMP STATION PROJECT (FPS_1.0)
INCLUDES DISTRIBUTED CONTROL SYSTEM PROJECT (DCS_1.0)



METZGER PIPELINE EAST PROJECT
MPE_1.0 (METZGER PIPELINE EAST)
ROY ROGERS RD TO BEAVERTON HILLSDALE HWY
7.3 MILES

- MPE_1.1 **WESTERN AVE - ALLEN BLVD TO BEAVERTON HILLSDALE HWY**
  (CITY OF BEAVERTON)
  CONSTRUCTION: 2021 - 2023
- MPE_1.2 **SCHOLLS FERRY - GREENWAY PARK TO WESTERN AVE, HALL BLVD & CASCADE AVE**
  CONSTRUCTION: 2021 - 2023
- MPE_1.3 **SCHOLLS FERRY - ROY ROGERS RD TO GREENWAY PARK**
  CONSTRUCTION: 2022 - 2024

SOUTH BEAVERTON AREA WATER STORAGE TANKS
RES_1.0
STORAGE TANKS

TANK 1
CONSTRUCTION: 2022 - 2024
TANK 2
CONSTRUCTION: DEFERRED TO 2035

124TH AVENUE PARTNERSHIP PROJECT
PLM_3.0 (PIPELINE MAIN)
SW 124TH AVE EXTENSION
2.7 MILES

CONSTRUCTION COMPLETED: 2019
(WASHINGTON COUNTY)

WILSONVILLE AREA PIPELINE PROJECT
PLM_1.0 (PIPELINE MAIN)
WILLAMETTE RIVER WTP TO DAY RD
3.3 MILES

- PLM_1.1 **WILSONVILLE RD**
  CONSTRUCTION COMPLETED: 2021
- PLM_1.2 **GARDEN ACRES RD TO 124TH AVE**
  (GARDEN ACRES ROAD IMPROVEMENTS)
  CONSTRUCTION COMPLETED: 2021
- PLM_1.3 **WILSONVILLE RD TO GARDEN ACRES RD**
  CONSTRUCTION: 2022 - 2024

KINSMAN ROAD PARTNERSHIP PROJECT
PLM_2.0 (PIPELINE MAIN)
KINSMAN RD EXTENSION
0.6 MILES

CONSTRUCTION COMPLETED: 2018
(CITY OF WILSONVILLE / ODOT)

RAW WATER FACILITIES
RWF_1.0
RAW WATER FACILITIES (RWF)
0.5 MILES

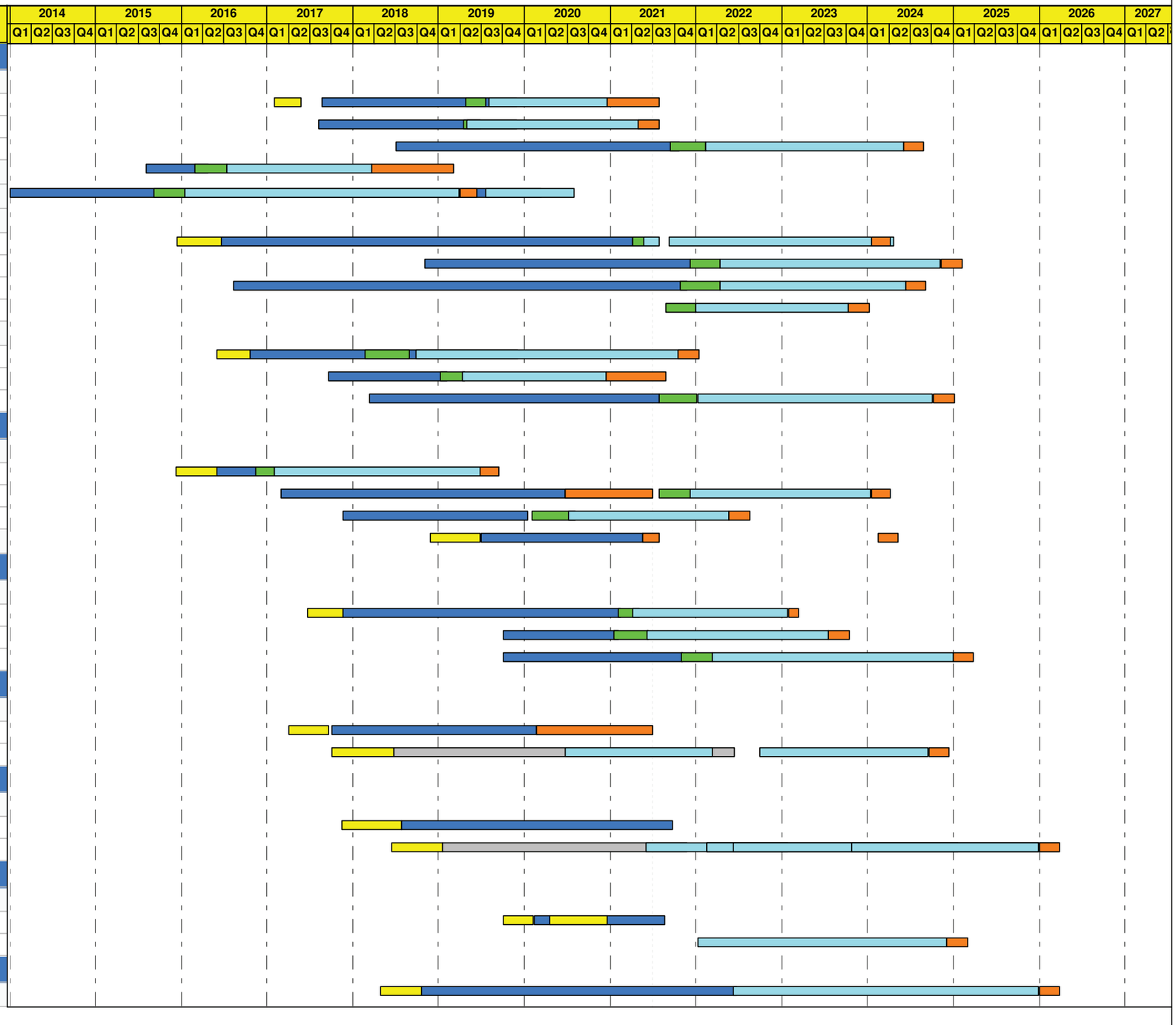
CONSTRUCTION: 2020 - 2024

Attachment C

Willamette Water Supply
Our Reliable Water

Program Schedule

Name
Main Stem Extension Pipelines
PLM_1.0: Wilsonville Area Pipeline Project
--Wilsonville Road (PLM_1.1)
--Garden Acres to 124th (PLM_1.2) *
--Wilsonville Road to Garden Acres (PLM_1.3)
PLM_2.0: Kinsman Road Partnership Project *
PLM_3.0: 124th Avenue Partnership Project *
PLM_4.0: Tualatin-Sherwood Area Pipeline Project
--Highway 99 Crossing (PLM_4.1) *
--Tualatin-Sherwood Road (PLM_4.2) *
--Roy Rogers Road (PLM_4.3)
--Chicken Creek to Borchers (PLM_4.4) *
PLM_5.0: Scholls Area Pipeline Project
--North of Beef Bend to Scholls (PLM_5.1) *
--Scholls to Grabhorn (PLM_5.2)
--Grabhorn to Farmington (PLM_5.3) (part of RES_1.0)
Western Extension Pipelines
PLW_1.0: South Hillsboro Area Pipeline Project
--Blanton to TV Highway (PLW_1.1) *
--TV Highway to Frances (PLW_1.2) *
--Farmington to Blanton (PLW_1.3)
PLW_2.0: Cornelius Pass Pipeline Project
Eastern Extension Pipelines
MPE_1.0: Metzger Pipeline Project
Western Ave - Allen to Beaverton Hillsdale (MPE_1.1)
Scholls Ferry - Greenway Park to Western Ave (MPE_1.2)
Scholls Ferry - Roy Rogers to Greenway Park (MPE_1.3)
Raw Water Facilities
RWF_1.0: Raw Water Facilities
Design
Construction Management / General Contractor (CM/GC)
Water Treatment Plant
WTP_1.0: Water Treatment Plant
Design
Construction Management / General Contractor (CM/GC)
South Beaverton Area Water Storage
RES_1.0: South Beaverton Area Water Storage
Design
Construction Management / General Contractor (CM/GC)
Distributed Control System
DCS_1.0: Distributed Control System



PROCURE | DESIGN | BID | PRE-CONSTRUCTION SERVICES | CONSTRUCTION | CLOSEOUT | * Delivery coordinated with others | Note: Dates are subject to change | 30-Jun-2021