600 NE Grand Ave.
Portland, OR 97232-2736

Metro | *Agenda*

Meeting:	SW Corridor Plan Steering Committee
Date:	June 9, 2014
Time:	9:00 to 11:00 a.m.
Place:	Metro Regional Center, Council Chambers
Purpose:	Review and discuss recommendation for High Capacity Transit (HCT) options, multimodal projects and station areas for further study; update on Southwest Service Enhancement Plan and next steps.

9:00 a.m. Welcome and introductions — Co-chair Stacey

9:05 a.m. Project partner updates — All

ACTION ITEM

9:10 a.m. Consideration of the Steering Committee meeting summary from May 12, 2014 ACTION REQUESTED — Co-chair Stacey

DISCUSSION ITEM

9:20 a.m. Suggested changes to discussion draft — Matt Bihn, Metro
Overview of Project Team Leaders (PTL) suggested changes to the discussion draft recommendation based on public input, further technical analysis and partner discussions.

PUBLIC COMMENT

9:35 a.m. Public Comment — Co-Chair Stacey
Opportunity for citizens to provide short testimony and/or submit written comments to inform the Steering Committee recommendation on HCT options, multimodal projects and potential station locations for further study.

ACTION ITEM

10:05 a.m. Recommendation for further study — Co-Chair Dirksen, Metro
ACTION REQUESTED *Steering committee discussion and action on the HCT options, multimodal projects and potential station areas defined for further study, based on the discussion draft recommendation and the PTL proposed*

changes and defined questions to be answered either prior to or during an initial DEIS scoping phase.

DISCUSSION ITEMS

10:25 a.m. Update on Southwest Service Enhancement — Tom Mills, TriMet
Update on TriMet progress developing a strategy to improve and enhance local transit service in the Southwest Corridor.

10:50 a.m. Calendar and next steps — Malu Wilkinson, Metro
Overview of calendar and next steps for moving a Steering Committee recommendation forward and initiating further study of the HCT design options, multimodal projects and potential station locations.

11:00 a.m. Adjourn

Materials for 05/12/2014 meeting:

- 5/12/2014 meeting summary
- Memo describing suggested changes to discussion draft recommendation
- Draft Steering Committee recommendation executive summary
- Draft Steering Committee recommendation and appendices

Next meeting:

- September 8, 2014

600 NE Grand Ave.
Portland, OR 97232-2736
503-797-1700
503-797-1804 TDD
503-797-1797 fax
www.oregonmetro.gov

Metro | *Meeting Summary*

Southwest Corridor Plan Steering Committee
Monday, May 12, 2014
9:00 a.m. to 11:00 a.m.
Multnomah Arts Center

Committee Members Present	
Craig Dirksen, Co-chair	Metro Council
Bob Stacey, Co-chair	Metro Council
John Cook	City of Tigard
Steve Novick	City of Portland
Lou Ogden	City of Tualatin
Denny Doyle	City of Beaverton
Gery Schirado	City of Durham
Bill Middleton	City of Sherwood
Al Reu	City of King City
Roy Rogers	Washington County
Neil McFarlane	TriMet
Jason Tell	ODOT

Metro Staff
Malu Wilkinson, Juan Carlos Ocaña-Chíu, Matt Bihn, Michaela Skiles, Francesca Patricolo, Alan Gunn, Brian Harper, Anthony Buczek, Tim Collins, Camille Tisler

1.0 Welcome and introductions

Co-chair Dirksen, Metro Councilor, welcomed the committee members and audience to the meeting and invited the committee members to introduce themselves. He explained that today the committee will be discussing which options and alternatives may be studied further.

2.0 Project partner updates

Co-chair Dirksen asked that committee members give brief updates from their jurisdictions as needed.

Mayor Cook, City of Tigard, noted Tigard's efforts to engage the public including public forums Tigard has hosted and councilor interactions with residents.

Mr. Tell, ODOT, noted several early implementation projects in the corridor including several flashing beacons at intersections, Barbur transit center stairs, and sidewalk infill.

Mr. McFarlane, TriMet, explained that at TriMet's end of May meeting they will consider raising the total bus service levels to or above pre-great recession levels. This will include raising frequent service in the evening and on Saturdays as well as providing better service to PCC Sylvania students. Additionally, the average age of buses in the TriMet fleet is being reduced from 12 years to 8 years by 2016.

3.0 Consideration of the Steering Committee meeting summary from April 7, 2014

Co-chair Dirksen asked the committee to consider the meeting summary from the April 7, 2014 Southwest Corridor Steering Committee meeting. Ms. Camille Tisler noted an amendment to Mr. Gordon Hovies public comment. Mayor Ogden moved to accept the summary so amended, and Mayor Middleton seconded the motion. The meeting summary was accepted unanimously.

4.0 Consideration of the appointment of one additional member of ID Southwest

Mayor Ogden moved to add Mr. Chad Hastings as a member of the ID Southwest committee. Mr. McFarlane seconded the motion which passed unanimously.

5.0 Review SWCP anticipated timeline

Mr. Alan Lehto informed the committee of the anticipated timeline for the project through the draft environmental impact statement (DEIS) and after. Referring to a graphic (available in the record), he outlined the National Environmental Policy Act (NEPA) process, the local processes, and the FTA process. Additionally, he noted the level of design the project would be in during each phase of the processes.

Mr. Lehto reviewed what each process involves and what the outcomes would be, as well as the importance of the scoping process. He explained that studying more design options and alternatives will disallow staff from focusing resources and attention on the more promising alternatives, which necessitates as much narrowing as possible early in the project.

Per committee member request, he then clarified a potential timeline, dependent on local decisions and funding.

- DEIS process – 2 years, based on local desires to be prudent with public resources
- Final EIS process and project development to the record of decision – 2 years
- Engineering and finance plan refinement – approximately 3 years (from date of record of decision)

Committee members discussed the timeline and asked for clarification on which parts of the timeline were mandated and which were self-imposed. Mr. Lehto explained that the DEIS timeline is self-imposed and the final EIS/project development timeline is imposed by the FTA. Additionally, he noted that following the record of decision, the project must move forward substantially within three years or the decision must be renewed.

Per Commissioner Rogers's inquiry, Mr. Lehto informed the committee that there are no other new starts/small starts projects in the pipeline for the next four to five years. He did, however, note that the Powell-Division Transit and Development Project may or may not try to acquire this type of funding, but he explained that having two projects in the pipeline is not unfeasible.

Committee members discussed funding needs for the project as it moves forward. Commissioner Rogers inquired about how much funding is needed for each of the upcoming phases and how that funding will be acquired. Co-chair Stacey noted that there is a two year budget in place for the DEIS process, and Ms. Malu Wilkinson explained that funding following the DEIS needs to be discussed collaboratively by all the partners.

Mr. McFarlane, referring to future costs, impressed upon the committee the importance of the narrowing process. He explained that the number of alternatives studied in the DEIS will directly affect the cost of the process. Mr. Tell also expressed concern about gathering the funds to match the new starts capital funds.

6.0 Public engagement update

Mr. Juan Carlos Ocaña-Chíu offered a summary of the activities in which staff has engaged and opportunities for public comment they have pursued. He outlined the information gathered during April's public engagement process and noted that most of the information is feedback regarding multimodal projects and station areas. He explained that staff is developing an enhanced engagement strategy in order to reach a larger audience.

From the April report, Mr. Ocaña-Chíu highlighted the April 10th Community Planning Forum, an online questionnaire (also made available in hardcopy), and the top eight station locations and top five multimodal projects pulled from the 372 public comments received.

He informed the committee of upcoming engagement opportunities including: a questionnaire asking for feedback on the draft recommendation, a Community Planning Forum taking place on May 13, and a business summit.

Mr. Tell mentioned that while attending a forum last week in the SW neighborhoods, questions were asked that the committee members and project staff did not have the

information to answer. He asked that traffic impact analysis be available to answer those questions in the future.

Committee members discussed the disparity in the number of responses that will be received from different jurisdictions. Commissioner Rogers inquired about potentially weighing responses based on geography. Mayor Ogden noted that it is each committee member's responsibility to advocate for their jurisdiction's interests.

7.0 Review and discuss the staff proposal for DEIS

Mr. Matt Bihn outlined the organization of the recommendation packet and highlighted the recommended options. He noted that in some sections there are different options for both bus rapid transit (BRT) and light rail, but in others the options are the same. He explained that the bullet point list included with each option is not a comprehensive list of information on that segment, but the appendices, with further information for each section, will be released later this month.

Mr. Bihn overviewed each alignment option for both BRT and light rail along each segment of the route, with its constraints and possibilities. He informed the committee that as high capacity transit (HCT) alignments are removed, so are multimodal projects that directly relate to specific alignment options.

Per Mayor Ogden's inquiry, Mr. Bihn explained that one tunnel option would be slower than the corresponding surface options. Additionally, following Co-chair Dirksen's comment, he noted TriMet is exploring another Highway 217 crossing option, but it hasn't been fully analyzed.

Mr. McFarlane expressed interest in exploring a branch service in which transit would split in the Tigard Triangle or south of downtown Tigard, sending some service to downtown Tigard and some directly to Tualatin. He noted that TriMet staff could begin to explore that option. Per this comment, Mayor Cook gave a brief overview of the zoning make up in the Tigard Triangle.

Commissioner Rogers inquired about how these options will leave open the opportunity for taking commuter rail to Sherwood eventually. Mr. Bihn explained that service could be extended from Tigard down 99W or the whole line could simply be extended to Sherwood. Co-chair Stacey pointed out that the region has an entire agenda of logical extensions for HCT.

Ms. Malu Wilkinson noted that more discussion must take place prior to the June 9th decision. Mr. Bihn explained that it is possible to bring back an option if necessary.

8.0 Public Comment

Ms. Marianne Fitzgerald, of SWNI, expressed concern about Metro's public comment process and its focus on individual comments. She also noted the need for further attention to improvements on Capitol Hwy.

Mr. Roger Averback, of SWNI, expressed concern that the multimodal project list in the Portland segment is inadequate. He suggested that the list remain flexible and projects be added to increase ridership. He also expressed concern about the lack of emphasis on the Southwest Service Enhancement Plan in the recommendation.

Mr. George Brown expressed concern regarding the environmental impact statements and the projected timelines associated with the statements. He believes that safety and the environmental impact statements should be at the forefront of the project. Additionally, he asked for further explanation of the high tunneling costs. Mr. Bihn explained that the project team is recommending that one tunnel option move forward for light rail, but that no tunnels be considered for bus rapid transit. He also noted that a consultant was hired by TriMet to do the cost estimates. Mr. McFarlane added that the cost estimates will be released soon.

Mr. Mark Morgan noted the critical need for adequate notification of residents in impacted neighborhoods, so the project will have adequate input and residents will be aware. He also noted that he believed each of the options is subject to the NEPA formulae, and requested a chart of each option's advantages and disadvantages be made available to the public. Ms. Wilkinson responded that the project team is working to enhance the public involvement process, and appendices will be made available soon that contain some of the information requested, though some will not be available until the project is in the NEPA process.

Mr. Floyd Smith, of AORTA, requested that the deep tunnel for light rail be kept as an option until information can be made available which shows it to be unviable.

Mr. Jim Howell, of AORTA, expressed his support for the long tunnel providing alternate service to I-5 south. He noted the increased capacity the tunnel would provide, and he asserted that it is more important to have buses feed the HCT stations than to focus on pedestrian access.

Mr. Doug Allen, of AORTA, compared the decision the committee will make in June to several transit decisions made in the region previously. He asserted that in order to obtain quality light rail transit, more technical analysis must be done on the tunnels.

Mr. Scott McClain, of SWNI, requested that tunnel cost discrepancies be discussed further, then that the information regarding costs be made available to the public.

Mr. John Gibbon expressed his agreement with Mr. McFarlane's comment about further study of splitting the line in Tigard.

At this point, Mayor Ogden noted the need for determining funding sources and sharing that information with the public.

9.0 Adjourn

Co-chair Stacey adjourned the meeting at 11:07 a.m.

Meeting summary respectfully submitted by:

<SIGN HERE FOR FINAL VERSION>

_____

Camille Tisler

Attachments to the Record:

Item	Type	Document Date	Description	Document Number
1	Agenda	05/12/14	May meeting agenda	051214swcpsc-01
2	Summary	04/07/14	4/7/14 meeting summary	051214swcpsc-02
3	Memo	05/05/14	Draft recommendation for SW Corridor HCT	051214swcpsc-03
4	Document	05/06/14	Draft recommendation for further study	051214swcpsc-04
5	Document	05/05/14	Station area planning executive summary	051214swcpsc-05
6	Document	05/2014	Draft public involvement report: April 2014	051214swcpsc-06
7	Document	11/2013	Project process/schedule	051214swcpsc-07
8	Document	05/05/14	Proposed new ID Southwest member	051214swcpsc-08
9	PPT	05/12/14	Mr. Jim Howell's presentation	051214swcpsc-09

600 NE Grand Ave.
Portland, OR 97232-2736
www.oregonmetro.gov

Metro | *Memo*

Date: June 2, 2014
To: Southwest Corridor Steering Committee
From: Malu Wilkinson, Metro Southwest Corridor Project Manager
Matt Bihn, Metro Principal Transportation Planner
Subject: Summary of input and potential changes to the draft recommendation for Southwest Corridor HCT alignment options to study further

This memo provides an overview of input received, meetings held, and project partner discussion on the draft recommendation that was released on May 6, 2014 to define high capacity transit (HCT) design options, complementary multimodal projects, and potential station areas to study further in a draft environmental impact statement (DEIS) under the National Environmental Policy Act (NEPA). The Project Team Leaders (PTL) have identified some proposed changes for your consideration, described a few questions to be answered, and defined a schedule to approach the next phase with an aim towards efficiently managing our shared resources for further study of the important investments in the Southwest Corridor to support the land use vision.

Background

The Southwest Corridor Plan is a comprehensive effort focused on supporting community-based development and placemaking that targets, coordinates and leverages public investments to make efficient use of public and private resources. In July 2013, the Southwest Corridor Plan Steering Committee narrowed the options for a potential high capacity transit investment to serve the corridor land use vision by recommending: 1) continued study of Bus Rapid Transit (BRT) and light rail transit (LRT); 2) at least 50 percent of bus rapid transit in a dedicated transitway; and 3) a route from Portland to Tualatin via Tigard.

During the past year project partner staff has focused on developing: 1) potential transit alignment options consistent with the Steering Committee direction, 2) potential station areas along these options, and 3) complementary walking, biking and roadway improvement projects, also known as "multimodal projects," related to the transit options and station areas.

Project partner staff, TriMet, consultant technical staff and members of the public defined close to 60 HCT alignment options that are consistent with the July 2013 recommendation. The refinement phase has been designed to identify the most promising options for further study in a DEIS to make the most efficient use of limited public funds. Staff from the cities of Portland, Tigard, Tualatin, Durham, Washington County, Metro and the Oregon Department of Transportation (ODOT) worked with the TriMet technical team to develop the HCT alignment options.

HCT alignment options removed in April

In April 2014 the Steering Committee unanimously removed 14 HCT alignment options based on initial technical work and public comment. While the technical work serves as the foundation for additional analysis such as modeling and impacts analysis, the initial process itself identified some options to be clearly less viable than competing alternative options. These alignment options are described in the April 7, 2014 Steering Committee meeting record and materials.

Draft staff recommendation for HCT alignment options and multimodal projects

Project partner staff developed a recommendation for discussion that included 15 alignment options for BRT and 13 options for LRT (across nine geographic segments) for further study in a DEIS with complementary multimodal projects and station areas. Six BRT and six LRT alignment options were highlighted where there wasn't a consensus recommendation among project partners as to whether or not they merit further study. Each of the HCT alignment options was assessed according to the positive and negative impacts in the following areas:

- **capital cost magnitudes** – relative cost of construction including design elements such as tunnels, structure, length, and built environment;
- **impacts to the natural environment –** impacts to natural resources including trees, parks, watersheds, including considerations of potential opportunities for improvements;
- **development/redevelopment potential –** potential to support the Southwest corridor land use vision;
- **property impacts** - effects on buildings and private property;
- **traffic performance** – effects on roadway operations;
- **transit performance travel time** - assessment of ridership potential and operating costs based on characteristics such as distance and speed;
- **transit performance – accessibility** – assessment of ridership potential based on household and employment access.

Major elements informing a Steering Committee decision

Over the last month project staff have received public input on the discussion draft recommendation and have also explored technical concerns through additional work and analysis that can inform a Steering Committee decision in June. Partner discussions have addressed some concerns and helped to define further questions to focus attention on moving forward.

Public input informing the draft recommendation

The information on public input collected in March and April is available on the Plan's website. The public input collected in May to inform a Steering Committee recommendation on HCT alignment options, complementary multimodal projects and potential station areas to study in a DEIS is summarized in Appendix A. Public meetings in May included: project-sponsored meetings (a Community Planning Forum and a Business Summit, both held in Tigard); project partner-sponsored meetings (e.g., Portland Working Group, Tigard Transportation Advisory Committee and City Center Advisory Commission, Tualatin Planning Commission, etc.); and two citizen-sponsored meetings:

- ***Southwest Neighborhoods Inc. Forum:*** This forum included a panel of four Steering Committee members plus Portland's Mayor Hales and a moderated question and answer format. Approximately 80 people attended and were able to get questions answered and share their thoughts on HCT, multimodal projects and station areas in Southwest Portland.
- ***Tualatin Citizen Involvement Organization meeting:*** Two of Tualatin's CIOs partnered to host a meeting to inform their members about the Southwest Corridor Plan and to give them an opportunity to hear from other perspectives. Metro, TriMet, SMART and John Charles of the Cascade Policy Institute were invited to present with the CIO organizers moderating questions.

Metro and project partners provided the public with an opportunity to give input on the draft recommendation with an online questionnaire. More than 350 people responded and 22% of the comments entered indicated that they supported the draft recommendation in full, while 57% of the comments indicated that they supported the draft recommendation with changes. The percentage of comments indicating that they did not support the draft recommendation at all or did not know was 12% and 9%, accordingly. The comments entered in the online questionnaire on the

draft recommendation, and the comments provided by the public at the May 13 Community Planning Forum and the May 29 Business Summit, are presented and discussed in Appendix A and inform the suggested changes presented in this memo.

PTL recommended changes to discussion draft recommendation

Based on public input and partner discussions, the PTL recommends the Steering Committee consider the following changes to the 5/6/2014 draft recommendation:

1. ***Multimodal project 5009:*** Include the full length of bicycle and pedestrian improvements from Barbur Boulevard to Multnomah Village along Capitol Highway for further study. The City of Portland has completed much of the design work for this project and has identified potential funding sources, which minimizes the environmental work necessary for this project in the DEIS. The project is of high importance to the community, provides a critical connection to Multnomah Village (one of the highest ranked stations based on citizen preference), and is difficult to complete in a phased approach due to the existing conditions of many local streets. Inclusion for further study does not mean the project will necessarily be included as part of a New Starts package but allows for future discussion.
2. ***Multimodal project 9023:*** Include the segment of trail west of Boones Ferry Road to connect to the existing trail near the Tualatin Senior Center.
3. ***Highway 217 overcrossings to Tigard:*** Ensure that a transit crossing over Highway 217 in Tigard (HCT options 5A and 5C) allows for pedestrian, bicycle and motor vehicle accessibility to support Tigard's land use vision of increased connectivity between downtown and future development in the Tigard Triangle. Remove Option 5B: Beveland North due to wetland and traffic concerns identified through project partner discussions, as well as the ability of the alternatives to address the same needs.
4. ***BRT in mixed traffic:*** A chief benefit of BRT as a transit mode is that it can operate in mixed traffic where appropriate. The project should work to minimize placing buses in mixed traffic where congestion is anticipated. One example is bus rapid transit serving Hillsdale in mixed traffic through the town center which would result in reliability concerns and delay during peak traffic times with increased congestion in the future. Therefore BRT through Hillsdale should be studied only with the cut and cover tunnel similar to the tunnel being considered for LRT.

PTL recommended further technical analysis prior to initiating DEIS

The PTL suggests the Steering Committee direct further technical analysis and partner discussions to refine the number of alternatives prior to starting the environmental impact statement on the following options to determine the merits of further study:

5. ***Traffic analysis to assess tie-in options:*** Additional traffic analysis and partner discussion to determine the best approach to tie in to downtown Portland and the existing transit system. For example, with the Naito BRT options (1D & 1E), answer questions such as bus routing on SW Lincoln St, an alignment through the Jackson St. terminus, an alignment on SW 1st Ave connecting to SW Jefferson St. or SW Columbia St. For Barbur BRT and LRT options (1A) & 1B), confirm traffic operations into the transit mall can work successfully with the transit improvements.
6. ***HCT branch service to Tigard and Tualatin:*** Explore opportunities to implement branched service to downtown Tigard and south to Tualatin to achieve operational efficiencies.

PTL recommended questions to address during Scoping

The PTL suggests the Steering Committee direct the following questions be addressed during the initial Scoping phase under NEPA, with the aim to further narrow the HCT design options that receive full environmental analysis to those most reasonable and feasible options:

7. ***OHSU Marquam Hill access:*** Explore options for pedestrian/bicycle access (project 2999) to Marquam Hill from a surface alignment on Barbur (1A) or Naito (1F), including outreach

to neighborhoods, interest groups, OHSU, Portland Parks and Recreation and the Veterans Hospital.

8. ***Medium tunnel that serves Marquam Hill and Hillsdale:*** Explore replacing the short tunnel (2A) that serves Marquam Hill with the medium tunnel that serves Hillsdale (2B). Outreach to communities and stakeholders regarding refined tunnel costs, construction impacts, travel time, ridership and equity issues.
9. ***Hillsdale:*** Explore the benefits as compared to the costs and travel time of directly serving the town center (HCT option 2E) that currently has 8 bus lines, and look at enhanced pedestrian/bicycle connections from Barbur Boulevard.
10. ***Adjacent to I-5:*** Further explore and discuss the tradeoffs of providing HCT adjacent to I-5 (2F) rather than on Barbur Boulevard (2D). The construction cost is higher, property impacts are slightly less, travel time may be improved (with two fewer stations), and opportunities to support the community vision as described the Barbur Concept Plan are minimized. Citizen concerns about an HCT investment on Barbur resulting in further barriers to the community need to be addressed.
11. ***Direct service to Portland Community College – Sylvania:*** Assess the potential of a more robust pedestrian connection from Barbur Boulevard to PCC along SW 53rd Ave while working with PCC and the neighborhood to understand the benefits of direct service for future campus plans. BRT direct service (3A) increases travel time but does not cost significantly more than along Barbur. LRT direct service (3C) requires a cut and cover tunnel at a much higher cost than remaining on Barbur.

Next Steps

The Steering Committee recommendation will be forwarded to the Metro Council for consideration on June 26, 2014. Upon Metro Council action and the completion of intergovernmental agreements for the funding of the DEIS, the project partners will move forward with further study of these HCT alignment options by initiating a Scoping Phase under NEPA. The Steering Committee will be asked to finalize the HCT options that receive full environmental review at the close of project Scoping. Our proposed calendar is outlined below. Project partners are aiming towards a streamlined process that will result in consideration of a Locally Preferred Alternative in 2016.

When	What	Steering Committee Actions
Summer 2014	Initiate project scoping, publish in Federal Register	June 9: Recommendations for further study
Early fall 2014	Close project scoping, scoping report may narrow HCT options for environmental review based on public input and additional technical information	Early fall 2014: Action on final HCT options for environmental review
November/December 2014	Detailed definition of HCT alternatives with plan and profile drawings	Early 2015: Steering Committee review of HCT options
Throughout 2015	Review elements of DEIS	Steering Committee guidance on elements of the DEIS
Early 2016	Publish DEIS	Early 2016: Steering Committee review
Mid 2016	Locally Preferred Alternative (build or no build)	Mid 2016: Steering Committee action on LPA

GREAT PLACES

SW Corridor Plan

Recommendations on Southwest Corridor high capacity transit design options, complementary multimodal projects and potential station locations for further study

DRAFT JUNE 2, 2014

STEERING COMMITTEE PROJECT PARTNERS

Cities of Beaverton, Durham, King City, Portland, Sherwood, Tigard and Tualatin, Washington County, Oregon Department of Transportation, TriMet and Metro

Overview

As people and employers seek to locate in the Southwest corridor, worsening traffic congestion will impact economic development and livability in the area. In light of this as well as local redevelopment and revitalization goals, the Southwest corridor was selected by regional leaders as the next priority area to study for a potential set of investments, including high capacity transit, to address accessibility and enhance the great places envisioned by communities in the corridor. The Southwest Corridor Plan was launched in September 2011.

Purpose and need for the Southwest Corridor Plan

The purpose of the Southwest Corridor Plan is to connect Tualatin, Tigard, Southwest Portland, and the region's central city through a high capacity transit (HCT) project with strong conncections to other neighboring cities like Sherwood, Durham, King City, Lake Oswego and Beaverton, paired with appropriate community investments to improve mobility in a congested corridor and create the conditions that will allow communities to achieve their land use vision. An HCT project in the Southwest Corridor is needed to address issues including: limited transit service to places where people need or want to go; limited street connectivity and gaps in pedestrian and bicycle networks that create barriers and unsafe conditions for transit access and active transportation; slow and unreliable travel on congested roadways; and unmet demand for transit service in the corridor. The complete statement of purpose and need is available in Appendix B.

Steering Committee

The Southwest Corridor Plan is guided by a Steering Committee that includes representatives from Southwest corridor cities, Washington County and agencies:

Metro Councilor Craig Dirksen, co-chair
Metro Councilor Bob Stacey, co-chair
Tigard Mayor John Cook
Beaverton Mayor Denny Doyle
TriMet general manager Neil McFarlane
Sherwood Mayor Bill Middleton
Portland Commissioner Steve Novick
Tualatin Mayor Lou Ogden
King City Commissioner Al Reu
Washington County Commissioner Roy Rogers
Durham Mayor Gery Schirado
ODOT Region 1 manager Jason Tell

Shared Investment Strategy

In July 2013 the Steering Committee directed staff to: start a local transit service enhancement plan and study both bus rapid transit (with at least fifty percent of the route in a dedicated transitway) and light rail from downtown Portland to Tualatin, via Tigard in more detail. This was part of the Steering Committee's Shared Investment Strategy for the Southwest corridor. The strategy calls for investments in both local service and high capacity transit and related multimodal (biking, walking and roadway improvements) and green (parks, trails and nature) projects, consideration of new regulations and incentives to promote private investment consistent with community visions, and development of a collaborative funding strategy for the Southwest Corridor Plan.

Land use vision and context

The foundation of the Southwest Corridor Plan is the local land use vision that reflects each community's unique characteristics and aspirations, and identifies areas to focus new development. Land use plans include Portland's Barbur Concept Plan, Tigard's High Capacity Transit Land Use Plan, the Linking Tualatin plan and Sherwood's Town Center Plan. Building on these plans, partners selected potential HCT alternatives that could catalyze the corridor land use vision, and refined a list of multimodal projects that would support HCT and make it work better for the corridor.

The corridor land use vision emphasizes maintaining and enhancing the many stable single-family neighborhoods, while allowing for growth in the cities' downtowns, main streets, corridors and employment areas to create more services for existing residents as well as more housing, employment and transportation choices in the future.

Creating and enhancing great places

Great places are defined by a mix of elements that come together in one location to meet a range of community needs. Public investment can play a key role in creating and enhancing great places in the Southwest corridor. Public actions can influence development in three main ways: by regulations and policies, by investments in the public realm, and by development incentives that catalyze private investment. The Southwest Corridor Plan and Shared Investment Strategy address all three of these areas.

Public investments in HCT can improve traffic congestion and enhance the attractiveness and market appeal of the corridor. Through public-private partnerships, catalytic projects can bring more people to identified locations in the corridor, which in turn attracts more amenities and private investment to the area. Locating more jobs and housing choices near transit – and attracting additional retail and services – not only spurs economic activity, but it also increases the overall market value in the corridor and preserves the character of existing single-family neighborhoods. Collaboration between Plan partners and the private and non-profit sectors will ensure that the local land use vision is supported by the implementation of prioritized projects that serve a diverse range of people in a sustainable and equitable way.

Implementation & Development in the Southwest Corridor

Collaborative efforts between public entities and the private sector are one crucial way to create and enhance great places and realize the local land use vision. The Southwest Corridor Plan identified the need to provide an opportunity for these collaborations. With this goal in mind, the Steering Committee convened a group of community leaders with a passion for the Southwest corridor who know how to get things done. This group is known as "Implementation & Development in the Southwest Corridor," or ID Southwest. Members include representatives from major employers, small businesses, environmental concerns, non-profit organizations, higher education institutions and state legislators. ID Southwest's goal is to make the most of public-private partnerships and help implement early opportunity projects in the corridor. You can find the list of ID Southwest members in Appendix H.

Refinement process

In August 2013 staff began a refinement phase that included analysis of potential transit design options consistent with the direction given by the Steering Committee, potential station areas along these options, and multimodal projects supportive of transit options and station areas. Based on the technical analysis and public input, the Steering Committee recommends a set of high capacity transit design options for further study in a draft environmental impact statement (DEIS) under the National Environmental Policy Act (NEPA). The recommendation includes the most promising transit design options that emerged during the refinement phase, and their associated potential station areas and transit-supportive multimodal projects.

Creating better options for local connections

People get to transit by car, bike, or their own feet and when they arrive at their station they will either walk or bicycle to their final destination. Multimodal (car, bike, or pedestrian) improvements that are complementary to the HCT design options will maximize access to transit by people who live, work, study, shop, play and visit the Southwest Corridor. Staff identified projects from the Shared Investment Strategy that include improvements to help people walk, bike or drive to each transit station or along the alignment, which are known as "station-supportive multimodal projects" or "transit-supportive multimodal projects," accordingly.

During the Southwest Corridor Plan refinement phase, project partners studied 67 potential multimodal projects that were originally identified in the local land use plans. Each transit design option studied had associated multimodal projects that help people reach the potential station areas. Other multimodal projects are improvements to help people walk, bike or drive next to HCT in a safe and convenient way.

In addition to the technical analysis of the multimodal projects, the public had the opportunity to review the analysis results and give feedback in April 2014. Based on public input and the analysis results, 49 station-supportive and transit-supportive multimodal projects are recommended to advance into the DEIS for further study. Some of the multimodal projects are recommended to be partially included in the DEIS if a smaller component of the project shows more capacity to connect people to transit than the entire project. The complete list of multimodal projects recommended for further study in the DEIS can be found on pages 8 and 9.

How we got here

The Southwest Corridor Plan Steering Committee assessed nearly 60 HCT design options in nine different geographic segments throughout the corridor for consideration for further study. Through preliminary design, options were analyzed based on the following categories:

- **relative (capital) cost of construction** including design elements such as tunnels, structure, length and built environment
- i**mpacts to natural resources** including trees, parks, watersheds, and considerations of potential opportunities for improvements
- **potential to support the Southwest corridor land use vision** through new development or redevelopment
- **effects on buildings and private property**
- **effects on roadway operations, bikeways and sidewalks**
- **assessment of ridership potential and operating costs** based on design characteristics such as distance and speed, and household and employment access

The Steering Committee considered the technical assessment, public input, and discussions with partners. The resulting recommendation proposes to study 18 design options for bus rapid transit (BRT) and 19 options for light rail (LRT) across the nine geographic segments. The table on page 5 lists the HCT design options recommended for further study.

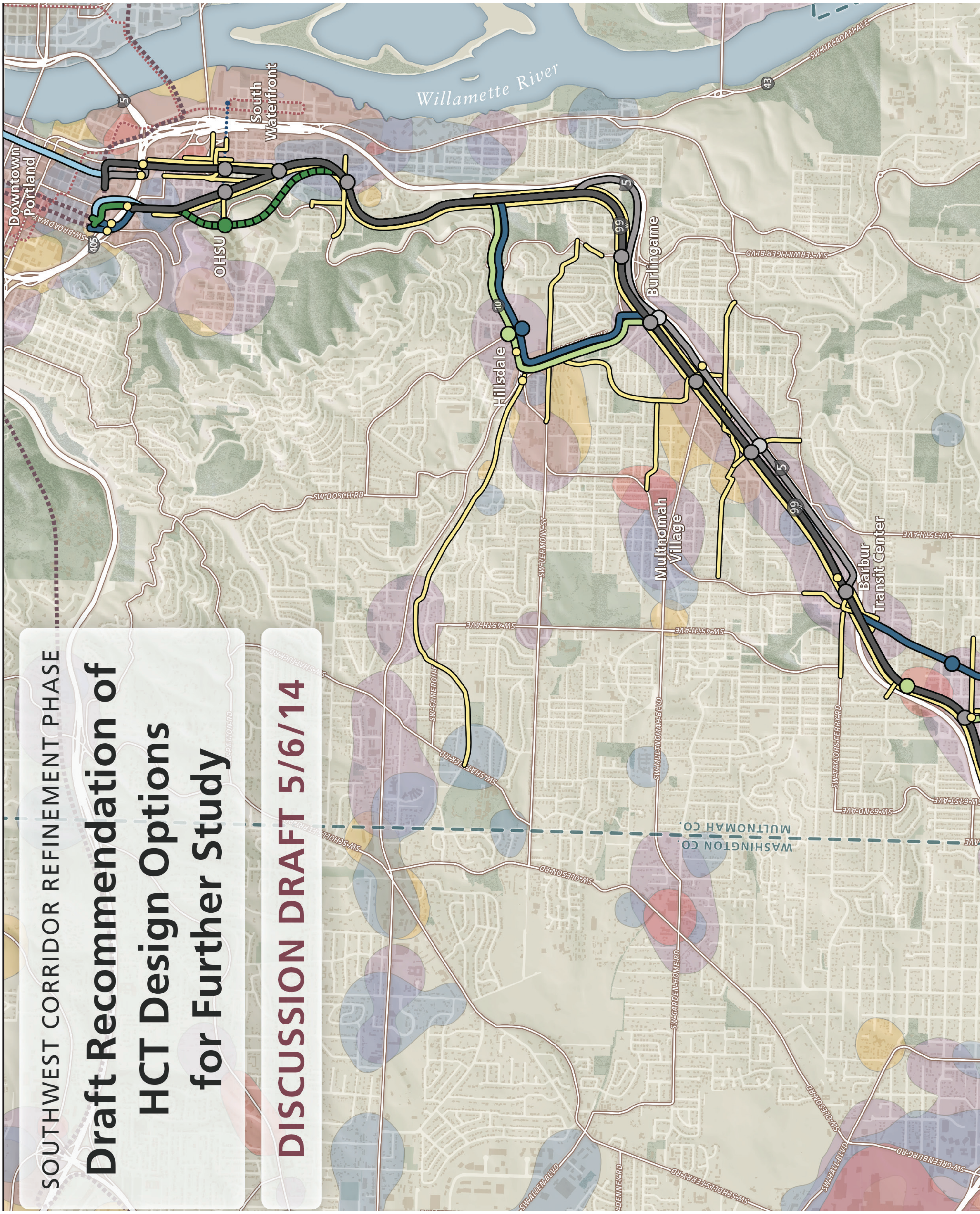
Multimodal projects included in the recommendation were selected based on how well they support the recommended HCT options. For some projects, only portions are recommended for further study.

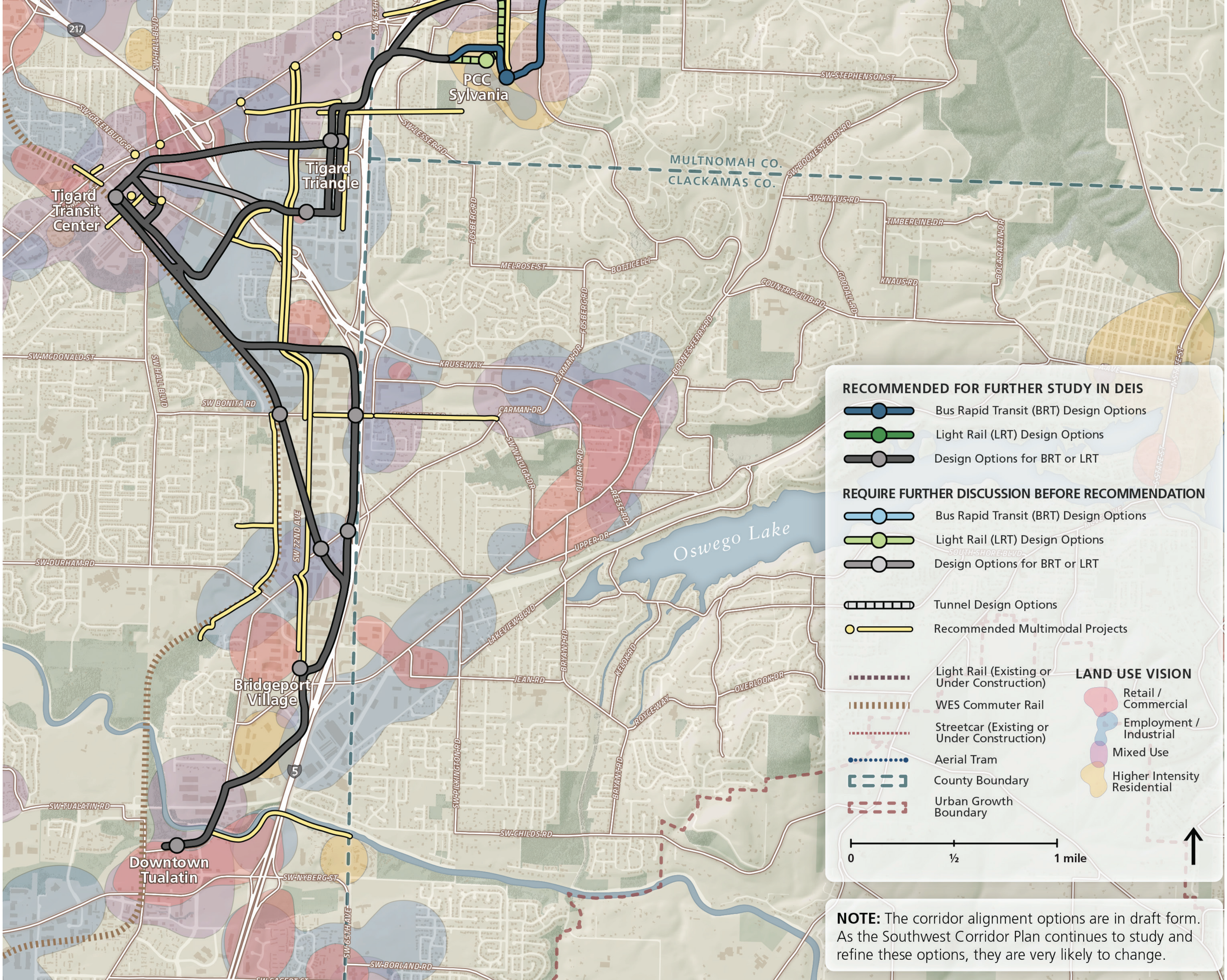
Potential stations identified during the refinement phase design process were analyzed to establish which locations could best serve and activate the key places along the corridor. The analysis also helped to recommend policies and investments for local consideration to activate the desired local land uses in potential station areas.

The HCT options, multimodal projects, and stations recommended for further study are shown on the map on pages 6 and 7.

HCT options recommended for further study

Options	BRT - Recommended	LRT - Recommended
1. Tie-in to Existing Transit		
Barbur via Fifth/Sixth Ave couplet (with OHSU elevator)	✔	
Barbur via Fourth Ave (with OHSU elevator)		✔
Naito to Transit Mall (with OHSU elevator)	✔	✔
Naito to Transit Mall via First Ave (with OHSU elevator)	✔	✔
Naito to First Ave – extended downtown (with OHSU elevator)	✔	
2. South Portland to Barbur Transit Center		
Barbur Boulevard	✔	✔
Barbur-Hillsdale Loop using Capitol Hwy & Bertha	✔	✔
Short tunnel – exit at Hamilton		✔
Adjacent to I-5	✔	✔
3. PCC Area		
PCC campus via Capitol Hwy (uses either I-5 crossing)	✔	
Barbur – Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)		✔
Short tunnel via Barbur (uses new bridge I-5 crossing)		✔
New bridge (option for campus BRT routes)	✔	✔
4. Tigard Triangle		
68th/69th Couplet	✔	✔
5. OR-217 Crossing		
Clinton to Tigard Transit Center	✔	✔
Beveland South	✔	✔
6. Downtown Tigard		
Commercial Street to Tigard Transit Center (no loop)	✔	✔
Commercial Street with downtown loop via Hall	✔	✔
7. South Tigard		
WES alignment to parallel I-5 via Tech Center Drive	✔	✔
WES alignment to parallel I-5 via PWNR Freight Rail ROW	✔	✔
8. Bridgeport Village		
Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)	✔	✔
9. Tualatin		
Parallel to Boones Ferry (north side of downtown)	✔	✔


SOUTHWEST CORRIDOR REFINEMENT PHASE
Draft Recommendation of HCT Design Options for Further Study
DISCUSSION DRAFT 5/6/14
Downtown Portland
South Waterfront
OHSU
Willamette River
Burlingame
Hillsdale
Multnomah Village
Barbur Transit Center
MULTNOMAH CO.
WASHINGTON CO.
SW MACADAM AVE
SW TERWILLIGER BLVD
SW DOSCH RD
SW VERMONT ST
SW 45TH AVE
SW 35TH AVE
SW MULTNOMAH BLVD
SW TAYLORS FERRY RD
SW 62ND AVE
SW OLESON RD
SW GARDEN HOME RD
SW SCHOLLS FERRY RD
SW HALL BLVD
SW GREENBURG RD
SW ALLEN BLVD
SW BROADWAY



RECOMMENDED FOR FURTHER STUDY IN DEIS
Bus Rapid Transit (BRT) Design Options
Light Rail (LRT) Design Options
Design Options for BRT or LRT
REQUIRE FURTHER DISCUSSION BEFORE RECOMMENDATION
Bus Rapid Transit (BRT) Design Options
Light Rail (LRT) Design Options
Design Options for BRT or LRT
Tunnel Design Options
Recommended Multimodal Projects
Light Rail (Existing or Under Construction)
WES Commuter Rail
Streetcar (Existing or Under Construction)
Aerial Tram
County Boundary
Urban Growth Boundary
LAND USE VISION
Retail / Commercial
Employment / Industrial
Mixed Use
Higher Intensity Residential
0
½
1 mile
PCC Sylvania
Tigard Triangle
Tigard Transit Center
Bridgeport Village
Downtown Tualatin
MULTNOMAH CO.
CLACKAMAS CO.
Oswego Lake
SW STEPHENSON ST
SW BOONES FERRY RD
SW KNAUS RD
TIMBERLINE DR
BOCA RATAN DR
KNAUS RD
GOODALL RD
COUNTRY CLUB RD
BOTTICELLI
MELROSE ST
FOSBERG RD
SW LESSER RD
BOONES FERRY RD
KRUSE WAY
CARMAN DR
SW WALUGA DR
QUARRY RD
REESE RD
UPPER DR
LAKEVIEW BLVD
BRYANT RD
JEAN RD
KELOK RD
ROYCE WAY
OVERLOOK DR
SW PILKINGTON RD
SW CHILDS RD
SW 72ND AVE
SW BONITA RD
SW HALL BLVD
SW MCDONALD ST
SW DURHAM RD
SW GREENBURG RD
SW TUALATIN RD
SW NYBERG ST
SW 65TH AVE
SW BORLAND RD
SW SAGERT ST
217
5
NOTE: The corridor alignment options are in draft form. As the Southwest Corridor Plan continues to study and refine these options, they are very likely to change.

Multimodal projects complementary to HCT design options included for further study

NUMBER	PROJECT TITLE	COST	RECOMMENDATION FOR FURTHER STUDY
	1. Tie-in to existing transit		
1044	South Portland Circulation and Connectivity (Ross Island Bridge ramp connections)	$$$$	Naito design option
2999	Pedestrian connection from Barbur to Terwilliger at Gibbs	$	Barbur/Naito station near Gibbs
3038	Lower SW 1st bikeway – from SW Barbur Blvd to SW Arthur St.	¢	Barbur/Naito station near Gibbs
4002	Barbur Blvd, SW (3rd - Terwilliger): Multimodal Improvements. (Also included in segment 2. South Portland to Barbur Transit Center)	$$	Barbur design option
5013	Naito/South Portland Improvements (left turn pockets with bike/ped and remove tunnel, ramps and viaduct)	$$$$	Barbur station: signalized pedestrian crossing(s) of Naito Naito design option
6022	I-405 Bike/Ped Crossing Improvements	$	All options: opportunity to address with HCT crossing of I-405
	2. South Portland to Barbur Transit Center		
1020	Beaverton Hillsdale/Bertha/Capitol Hwy. Intersection Improvements	$	Hillsdale/Capitol surface options
1048	Traffic Calming (in the Burlingame and Hillsdale retail districts)	¢	Hillsdale station: access and safety treatments in Hillsdale Transit Center
2004	26th Ave, SW (Spring Garden – Taylors Ferry): Pedestrian Improvements	¢	Barbur/26th Ave. station
2011	Connections to Transit/Transit Improvements: Barbur & Taylors Ferry	¢	All options
2041	SW 19th Ave sidewalks: Barbur – Spring Garden	¢	Barbur/Multnomah station
3017A	Capitol Hill Rd bikeway – from SW Barbur Blvd to SW Bertha Blvd	¢	Barbur/Multnomah station
3017B	Capitol Hill Rd sidewalks– -from SW Barbur Blvd to SW Bertha Blvd.	$	Barbur/Multnomah station: Barbur to existing sidewalk at Custer Park
3028	Inner Hamilton bikeway – from SW Terwilliger Blvd to SW Corbett	¢	Barbur/Multnomah station
3033A	Inner Troy bikeway – from SW Capitol Hwy to SW Capitol Hill Rd.	¢	Barbur/Multnomah station
3044	Middle Barbur bikeway – from SW 23rd Ave to SW Capitol Hwy-Barbur Blvd Ramp.	$	I-5 option or Barbur stations within ½ mile of stations Include with Barbur option
3069A	Spring Garden, SW (Taylors Ferry – Capitol Hwy): Bikeway	$	Include low-cost elements with Barbur/26th Ave. or Barbur/Multnomah station
3069B	Spring Garden/Dolph Ct, SW (Capitol Hwy - Barbur): Sidewalks	$	Barbur/26th Ave. or Barbur/Multnomah station: 27th Ave. to intersection with 26th Way/Dolph Ct.
3093A	Terwilliger bikeway gaps	¢	Terwilliger station: lower section (near Barbur)
3101	Vermont-Chestnut bikeway – from SW Capitol Hwy to SW Terwilliger	¢	Terwilliger station
5005	Barbur Blvd, SW (Terwilliger - City Limits): Multi-modal Improvements Also included in segment 3. PCC area	$$$$	Include within ½ mile of Barbur stations (including tunnel and I-5 options) Include with Barbur option
5009	Capitol Hwy Improvements (replace roadway and add sidewalks)	$$$	All options: one side, Taylors Ferry Rd. to Alice St.
5010	Capitol Hwy, SW (Terwilliger – Sunset): Multi-modal Improvements	$	Surface Hillsdale/Capitol alignment
5059	SW Portland/ Crossroads Multimodal Project (roadway realignments and modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp)	$$$$	All options: multimodal investment at the Barbur/Capitol/Huber/Taylors Ferry intersections
6003	Multnomah viaduct bicycle and pedestrian facilities	$	Barbur option
6034	Taylors Ferry, SW (Capitol Hwy – City Limits): Bicycle & Pedestrian Improvements	$	All options: Capitol to 49th Ave.
9005	Red Electric Trail: Fanno Creek Trail to Willamette Park	$$$	Hillsdale station: Hillsdale to Shattuck
	3. PCC area		
2027	Pedestrian Overpass of I-5 near Markham School	$$	Include adjacent to station area, with Barbur/53rd Ave. station, if station is on Barbur

NUMBER	PROJECT TITLE	COST	RECOMMENDATION FOR FURTHER STUDY
5057	SW 53rd and Pomona (improves safety of ped/bike users)	¢	Include with Barbur/53rd Ave. station, if station is on Barbur
6013	Barbur/PCC ped/bike connection	¢	Barbur/53rd Ave. station, if station is on Barbur
6026	Pomona St: Bicycle and Ped improvements (35th to Barbur)	$	Barbur/53rd Ave. station: 53rd to 45th
9053	Ped/Bike Connection between Tigard Triangle and PCC-Sylvania	$	All options: opportunity to add ped/bike facilities to HCT connection
	4. Tigard Triangle		
1078	Atlanta Street Extension (new roadway)	$$	North Triangle station
2045	72nd Avenue sidewalks: 99W to Bonita. (Also included in segment 7. South Tigard)	$	Triangle North station: one side 99W to Dartmouth Triangle South station: one side Dartmouth to Hunziker 72nd/Tech Ctr. Dr. station: west side Tech Ctr. Dr. to Landmark Ln. WES/Bonita station: east side Bonita to Landmark Ln.
3117	72nd Avenue bikeway: 99W to city limits. (Also included in segments 7, South Tigard and 8, Bridgeport Village)	$	All options: if re-striping (conversion from 3- to 2-lane with bike lanes)
5024	68th Avenue (widen to 3 lanes)	$$$	Triangle North station: sidewalk on one side Atlanta to south of Baylor 68th Ave. option
	5. OR–217 crossing		
1107	Hwy. 217 Over-crossing – Beveland/Hampton Connection	$$$$	Beveland or Hampton options
2054	Commercial Street sidewalks: Main to Lincoln	¢	All options: one side of street
2058	Hunziker Street Sidewalks: 72nd to Hall	$	Hunziker/Beveland station: one side Beveland overcrossing to 72nd
	6. Downtown Tigard		
1077	Ash Avenue railroad crossing (new roadway)	$	All options (requires closure of another crossing by city)
2077	Tigard Transit Center crossing improvements.	$	All options: crosswalk visibility and timing elements at Greenburg, Hall Dartmouth, 72nd and 68th
2079	Tigard Transit Center pedestrian path	¢	All options
2080	Tigard Transit Center sidewalk infill	¢	All options
3129	Tigard Transit Center Bicycle Hub	¢	All options: bike-n-ride
	7. South Tigard		
3121	Bonita Road bike lanes: 72nd to Bangy	¢	WES/Bonita station: re-striping only
6001	Bonita Rd. sidewalks and bike lanes – Carman Dr. to Bangy Rd.	¢	WES/Bonita station: bike lanes only, minor widening
9014	Fanno Creek Trail – Tualatin River to Tigard St.	$	WES/Bonita station: Bonita to Ashford Durham/79th station: Bonita to Durham Park Bridgeport West station: Bonita to Ashford
	8. Bridgeport Village		
2046	72nd Avenue sidewalks: Upper Boones Ferry to Durham	$	Bridgeport Village front-door station 72nd Ave. option
	9. Tualatin		
9023	Tualatin River Pathway	$$	Tualatin TC or UBF/LBF stations: Boones Ferry Rd. east to existing trail

¢ = up to $500,000

$ = up to $5 million

$$ = up to 10 million

$$$ = up to $20 million

$$$$ = more than $20 million

Parks, trails and nature projects

People consistently point to the parks, trails, natural areas and urban tree canopy as essential elements of what draws them to live, work and play in the Southwest corridor. Gathering information from local plans, project partners compiled an inventory of "green" projects including parks, trails and natural areas as well as water quality improvements and natural resource enhancements like improved wildlife habitat corridors and replacing or retrofitting culverts for fish passage.

The Shared Investment Strategy approved in July 2013 identified more than 400 "green" projects in the Southwest corridor. If there is a decision to invest in HCT in the corridor, a number of these green projects will be prioritized for implementation based on their proximity to transit, station areas and multimodal projects, and also on environmental impact mitigation criteria.

Leveraging investment in potential station areas

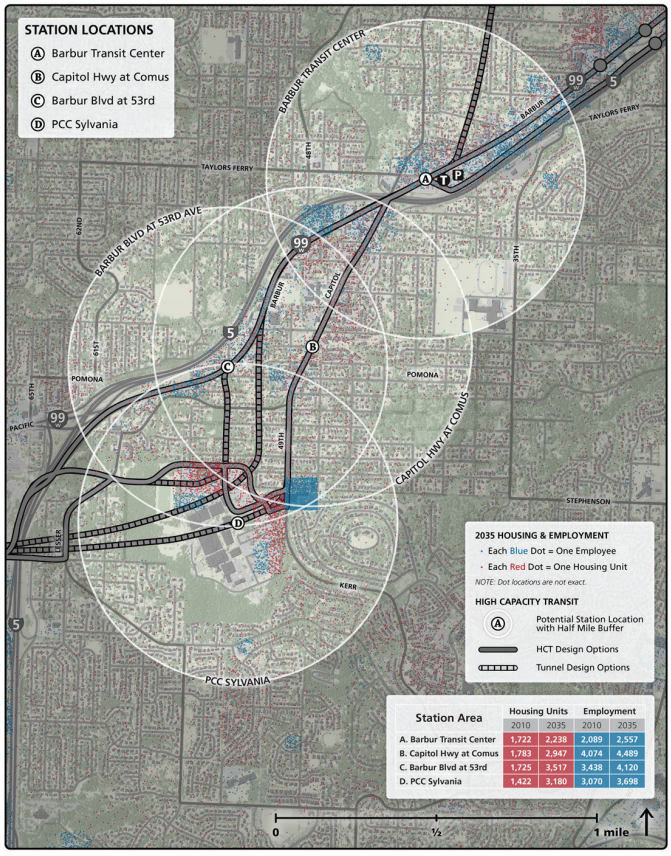
The foundation of the Southwest Corridor Plan is the land use vision as defined by each community for their downtowns, main streets and employment areas. The HCT design options were delineated in a way that best supports that land use vision while meeting transportation goals. Partner staff identified the most promising potential station locations, close to 30 due to the large number of HCT design options. As the number of transit design options is narrowed, the number of potential station locations will also be reduced.

Metro completed a preliminary potential station area analysis that provides an assessment of the opportunities and constraints of each location. The analysis included some of the most promising tools, policies and incentives to consider putting in place to leverage a major transit investment and support achieving the local land use vision. Many of the tools and policies included in the potential station area analysis would help support development consistent with the local vision regardless of a transit investment, and could be considered by each city for implementation. The potential station area analysis can be found in Appendix D.

In addition to the technical analysis of the potential station area locations, the public had the opportunity to review the analysis results and give feedback in April 2014. The public input gathered was read, analyzed and provided to the Steering Committee members to help inform their consideration of the recommendation.

In the DEIS, the potential station areas will be studied in further detail, and may result in changes to the location of the station areas or changes in multimodal projects in order to increase their potential to serve more households and employment. Metro, TriMet, and local staff will continue to work collaboratively with the public to determine the best location for station areas.

③ **Crossroads to PCC:** 2035 Housing & Employment



SOUTHWEST CORRIDOR PLAN
DRAFT 4/10/14

NOTE: The corridor alignment options maps and associated opportunities and constraints are in draft form. As the Southwest Corridor Plan continues to study and refine these options, they are very likely to change.

Public involvement in the refinement period

Successful plans and projects share one common element: they respond to the needs and priorities of the public. Residents of the cities in the Southwest corridor were involved in the creation of the local land use plans that form the foundation of the Southwest Corridor Plan. Broad and effective public involvement has been one of the pillars and aspirations of the Southwest Corridor Plan since its inception. Staff has utilized a variety of both tried-and-true and innovative engagement techniques to reach out to the residents and other stakeholders in the corridor and encourage them to provide input and make their voices heard. Tools utilized include Shape SW (an interactive online planning game), a Southwest corridor blog, Twitter feed and Facebook page, tabling at events where specific audiences congregate, community planning forums, corridor design workshops, and paper and online questionnaires. Public input is analyzed, summarized and presented to the Steering Committee to help them make informed decisions. The voices of the community are powerful: public input has contributed greatly to maintaining tunnel options for further study in the DEIS, as well as contributed to the removal from further study of unfeasible options in Durham, Tigard and elsewhere in the corridor.

During the refinement phase Metro and the Southwest Corridor Plan partners implemented public involvement activities designed to inform the public about the elements of the Plan, interact with the public in large events to answer questions and concerns, and solicit their input in person or through online questionnaires. In October and November 2013, the public was asked to comment on the Plan's statement of purpose and need. In March 2014, staff conducted three corridor design workshops to gather feedback on the HCT design options, especially on the options proposed to be removed from further study. During the same period staff conducted outreach to Spanish- and Vietnamese-speaking members of the public in Tigard. The Plan also obtained public input on the potential station area locations and related multimodal projects in April 2014. Finally, in May 2014 staff solicited public input on the draft recommendation of transit design options and multimodal projects to carry into a DEIS phase. Input collected from the public was read, analyzed, summarized and presented to the Steering Committee to inform their decisions. Public involvement reports have been published online. Appendix A contains the report on the draft recommendation input received in May 2014. A complete public involvement report for the refinement phase will be published online in June 2014.

Improving local bus service in the Southwest corridor

One of the recommendations in the Shared Investment Strategy was to improve local bus service to help people better connect with jobs, educational opportunities and other important destinations in the region. To implement this recommendation, TriMet is conducting the Southwest Service Enhancement Plan (SWSEP), which will be a shared, long-term vision for local bus service throughout the Southwest region, including locations outside the Southwest corridor. TriMet has been coordinating with Metro and the Southwest Corridor Plan partners to ensure any bus improvements connect and work in coordination with the proposed HCT investment.

TriMet has heard directly from the public in the Southwest region through neighborhood meetings, an online survey, and meetings with community groups, employers, youth, seniors, and people with limited English proficiency. The public identified connections to job centers and community resources as their most important goals for the SWSEP. The next steps for TriMet are to create a draft plan, hold a second round of public engagement in the fall of 2014, and finalize the vision for improved service in early 2015. New service improvements will be implemented as TriMet's budget allows.

Next steps

The Southwest Corridor project partners are still in the early stages of implementing the Shared Investment Strategy. Project partners will complete further study of the high capacity transit options, potential station locations and supportive multimodal projects in the DEIS as well as moving forward to enhance local service and collaborate to fund early implementation projects in the corridor:

- The Southwest Corridor Plan will begin environmental review, in accordance with NEPA, following Federal Transit Administration (FTA) regulations and policies:

  Summer 2014: Scoping will include the notification of intent to publish an environmental impact statement, purpose and need statement, range of alternatives, and scope of and methods for the environmental review and analysis

  Fall 2014: Detailed definition of HCT design option alternatives and complementary multimodal projects, including plan and profile drawings

  Winter 2014 – early 2016: Prepare, review and finalize the DEIS documenting the environmental analysis and including a finance plan for funding a potential project

  Spring 2016: Anticipated publication of the DEIS

- Metro and FTA will provide a 45 to 60-day public and agency comment period for the DEIS. The comment period will include one or more public hearings
- Following the close of the DEIS comment period, Metro and project partners will select a locally preferred alternative (LPA), considering the DEIS, public and agency comments and recommendations from the project's local and regional partners
- After the LPA is selected, if the LPA is a build alternative, Metro and FTA will prepare and publish the project's final environmental impact statement (FEIS), which will be based on the project's LPA and the no-build alternative

Robust public engagement will continue to be a priority for the project partners throughout all phases, as well as an expectation and requirement under NEPA.

Steering committee decisions: high capacity transit

October 2012	July 2013	mid-2014	mid 2014- mid 2016
Narrowed from 10 HCT alternatives concepts to five	• Direction on Southwest (Transit) Service Enhancement Plan • Which HCT modes to carry forward for further study • Policy direction on "level" of bus rapid transit for further study • Destination	Refinement • Transit design options – For BRT & LRT • Potential station locations • Multimodal projects – Bicycle, pedestrian and roadway improvements	Draft Environmental Impact Statement • Mode • Station locations • Transit system connections • Funding strategies

Refinement decisions and public input opportunities

November/December	January/February/March	March/April	May/June
Feedback on the purpose and need • community planning forum • questionnaire Project purpose and need statement for refinement phase approval	Guidance on narrowing of design options Which seem most promising? Which can be set aside? • corridor design workshops • questionnaire	Feedback on station area planning approach and multimodal projects • community planning forum • questionnaire	Draft recommendation on design options and related elements for further study Feedback on draft recommendation • community planning forum • business summit • questionnaire Final recommendation

GREAT PLACES
SW Corridor Plan

PROJECT PARTNERS
Cities of Beaverton, Durham, King City, Lake Oswego, Portland, Sherwood, Tigard and Tualatin, Multnomah and Washington counties, Oregon Department of Transportation, TriMet and Metro

Discussion Draft Recommendations on HCT Options, Multimodal Projects, and Potential Station Areas for Further Study

DRAFT 6/2/14

NOTE: The tables and maps on the following pages represent the initial draft staff recommendation presented at the May 12th Steering Committee meeting. These materials will be updated to reflect the June 9th Steering Committee decision.

Southwest Corridor Draft Recommendation

Background

The Southwest Corridor Plan is a comprehensive effort focused on supporting community-based development and placemaking that targets, coordinates and leverages public investments to make efficient use of public and private resources.

In July 2013, the Southwest Corridor Plan Steering Committee narrowed the options for a potential high capacity transit investment to serve the corridor land use vision by recommending: 1) continued study of both Bus Rapid Transit (BRT) and light rail transit (LRT); 2) at least 50 percent of bus rapid transit in a dedicated transitway; and 3) the route from Portland to Tualatin via Tigard.

The Steering Committee also approved a Shared Investment Strategy for the Southwest corridor. The strategy calls for 1) investments in both local service and high capacity transit, 2) investments in roadways and active transportation that connect people to high capacity transit and support local land use visions, 3) investments in parks, trails and nature, 4) consideration of new regulations, policies and incentives to promote private investment consistent with community visions, and 5) development of a collaborative funding strategy for the Southwest Corridor Plan. This Shared Investment Strategy was endorsed by each of the twelve project partners in fall 2013.

During the past year project partner staff has focused on developing: 1) potential transit design options consistent with the direction given by the Steering Committee, 2) potential station areas along these options, and 3) complementary walking, biking and roadway improvement projects, also known as "multimodal projects," related to the transit options and station areas.

Project partner staff, TriMet technical staff and consultants and members of the public defined close to 60 HCT design options that are consistent with the July 2013 Steering Committee recommendation. The refinement phase has been designed to identify the most promising options for further study in a draft environmental impact statement (DEIS). Staff from the cities of Portland, Tigard, Tualatin, Durham, Washington County, Metro and the Oregon Department of Transportation (ODOT) met with the TriMet technical team to develop the HCT design options.

HCT options removed in April

In April 2014 the Steering Committee unanimously removed 14 HCT options based on initial technical work and public comment. While the technical work serves as the foundation for additional analysis such as modeling and impacts analysis, the process itself identified some options to be clearly less viable than competing alternative options. These options are described in the April 7, 2014 Steering Committee meeting record and materials.

Draft recommendation for HCT options & multimodal projects

Project partners developed a recommendation that includes 15 options for BRT and 13 options for LRT (across nine geographic segments) for further study in a DEIS with complementary multimodal projects and station areas. Six BRT and six LRT options are highlighted where there isn't a consensus recommendation among project partners as to whether or not they merit further study. Each of the HCT options has been assessed as to the positive and negative impacts in the following areas:

- **capital cost magnitudes** – relative cost of construction including design elements such as tunnels, structure, length, and built environment;
- **impacts to the natural environment** – impacts to natural resources including trees, parks, watersheds, including considerations of potential opportunities for improvements;
- **development/redevelopment potential** – potential to support the Southwest corridor land use vision;
- **property impacts** – effects on buildings and private property;
- **traffic** – effects on roadway operations, bikeways, and sidewalks;
- **transit performance - travel time** – assessment of ridership potential and operating costs based on characteristics such as distance and speed;
- **transit performance - accessibility** – assessment of ridership potential based on household and employment access.

This information is presented for Steering Committee and public discussion in the form of summary maps on the following pages and in more detail in technical Appendix C.

Leveraging investment in potential station areas

The foundation of the Southwest Corridor Plan is the land use vision as defined by each community for their downtowns, main streets and employment areas. The HCT design options were delineated in a way that best supports that land use vision while meeting transportation goals. Project partner staff worked with the TriMet design team to identify the most promising potential station areas – 30 locations due to the large number of HCT options.

Metro completed a preliminary station area analysis that provides project partners with an assessment of the opportunities and constraints of each location. This includes some of the most promising tools, policies and incentives to consider putting in place to make the most out of a major transit investment and therefore support achieving the local land use vision. Since this analysis had to be completed prior to a recommendation on HCT options it includes each of the 30 odd potential locations. Many of the tools and policies would help support development consistent with the local vision regardless of a transit investment, and could be considered by each city for implementation.

This information is presented in technical Appendix E.

Public input informing the draft recommendation

In March and April 2014 the Southwest Corridor Plan partner staff offered several opportunities for the public to provide input on the HCT design options, station locations and multimodal projects. Opportunities included: one (1) Transit Fair, three (3) corridor design workshops on HCT options, one (1) community planning forum and one (1) online questionnaire on station locations and multimodal projects. A memorandum summarizing public input on the removal of proposed HCT design options was submitted to the Steering Committee on March 31, 2014. A more complete report of the public input on HCT design options obtained in March will be submitted to the Steering Committee on May 12, 2014.

Public input obtained this spring regarding the station locations and multimodal projects is summarized in a public involvement report (Appendix A). The report includes information on the most popular station locations and multimodal projects identified by the public, a summary of the public comments on those topics, and the reasons why the public preferred those station locations and projects. The information on public input collected in March and April is for Steering Committee consideration to inform a final recommendation on HCT design options, complementary multimodal projects and potential station areas to study in a DEIS.

Next steps

The Steering Committee recommendation will be forwarded to the Metro Council for consideration on June 26, 2014. Upon Metro Council action and the completion of intergovernmental agreements for the funding of the DEIS, the project partners will move forward with further study of these HCT alignment options by initiating a Scoping Phase under NEPA. The Steering Committee will be asked to finalize the HCT options that receive full environmental review at the close of project Scoping. Our proposed calendar is outlined below. Project partners are aiming towards a streamlined process that will result in consideration of a Locally Preferred Alternative in 2016.

When	What	Steering Committee Actions
Summer 2014	Initiate project scoping, publish in Federal Register	June 9: Recommendations for further study
Early fall 2014	Close project scoping, scoping report may narrow HCT options for environmental review based on public input and additional technical information	Early fall 2014: Action on final HCT options for environmental review
November/December 2014	Detailed definition of HCT alternatives with plan and profile drawings	Early 2015: Steering Committee review of HCT options
Throughout 2015	Review elements of DEIS	Steering Committee guidance on elements of the DEIS
Early 2016	Publish DEIS	Early 2016: Steering Committee review
Mid 2016	Locally Preferred Alternative (build or no build)	Mid 2016: Steering Committee action on LPA

Appendices

A. Public Involvement Report (draft as of June 2, 2014)

B. Purpose and Need

C. HCT Options Analysis

D. Multimodal Projects

E. Station Area Analysis

F. Green Project Opportunity List

G. ID Southwest Members (as of June 2014)

How to navigate this document

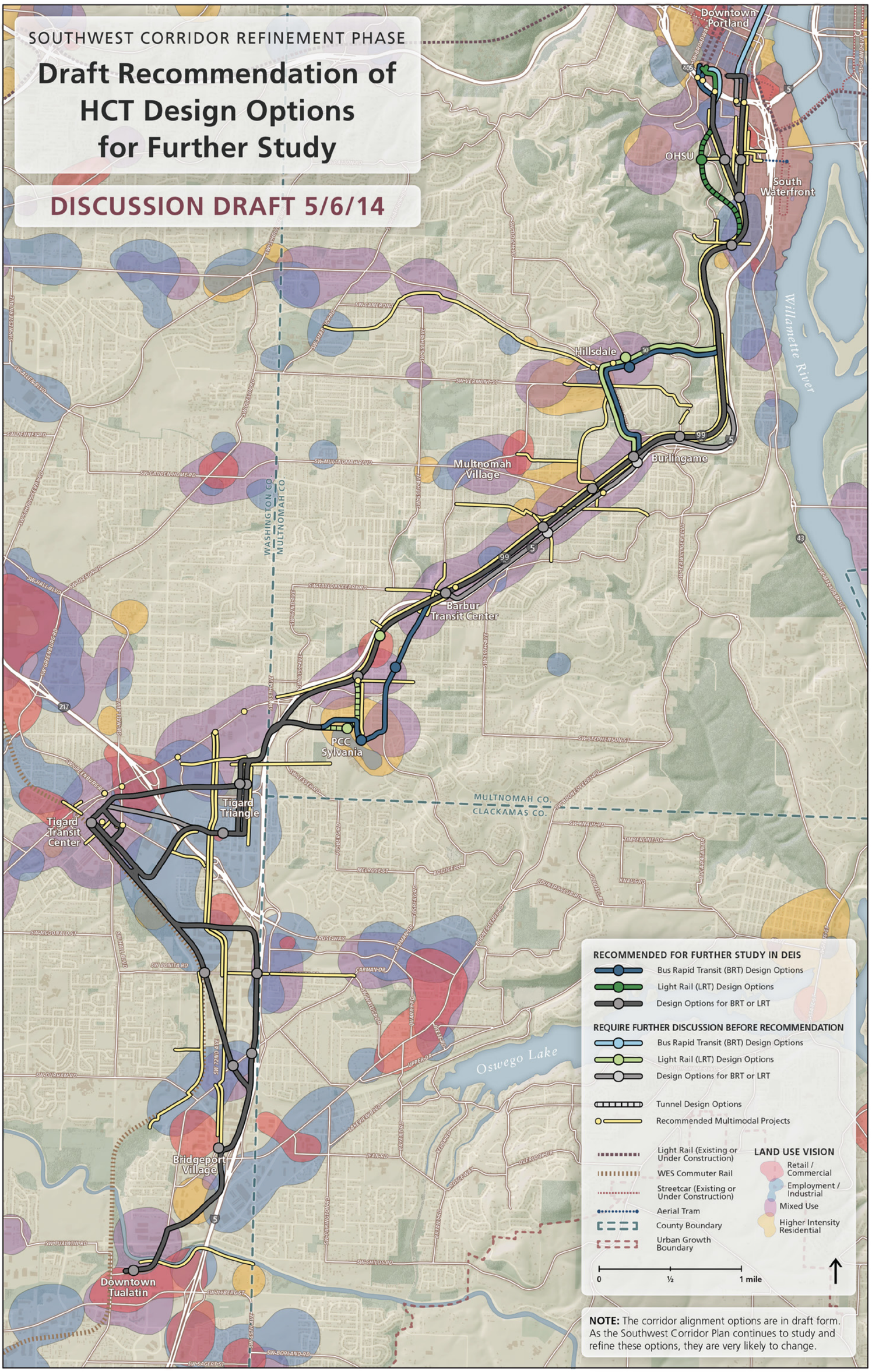
The following recommendation summary is separated by sections representing nine geographic segments:

1. Tie-in to existing transit;
2. South Portland to Barbur Transit Center;
3. PCC Area;
4. Tigard Triangle;
5. OR-217 Crossing;
6. Downtown Tigard;
7. South Tigard;
8. Bridgeport Village;
9. Tualatin.

Each section includes the following:

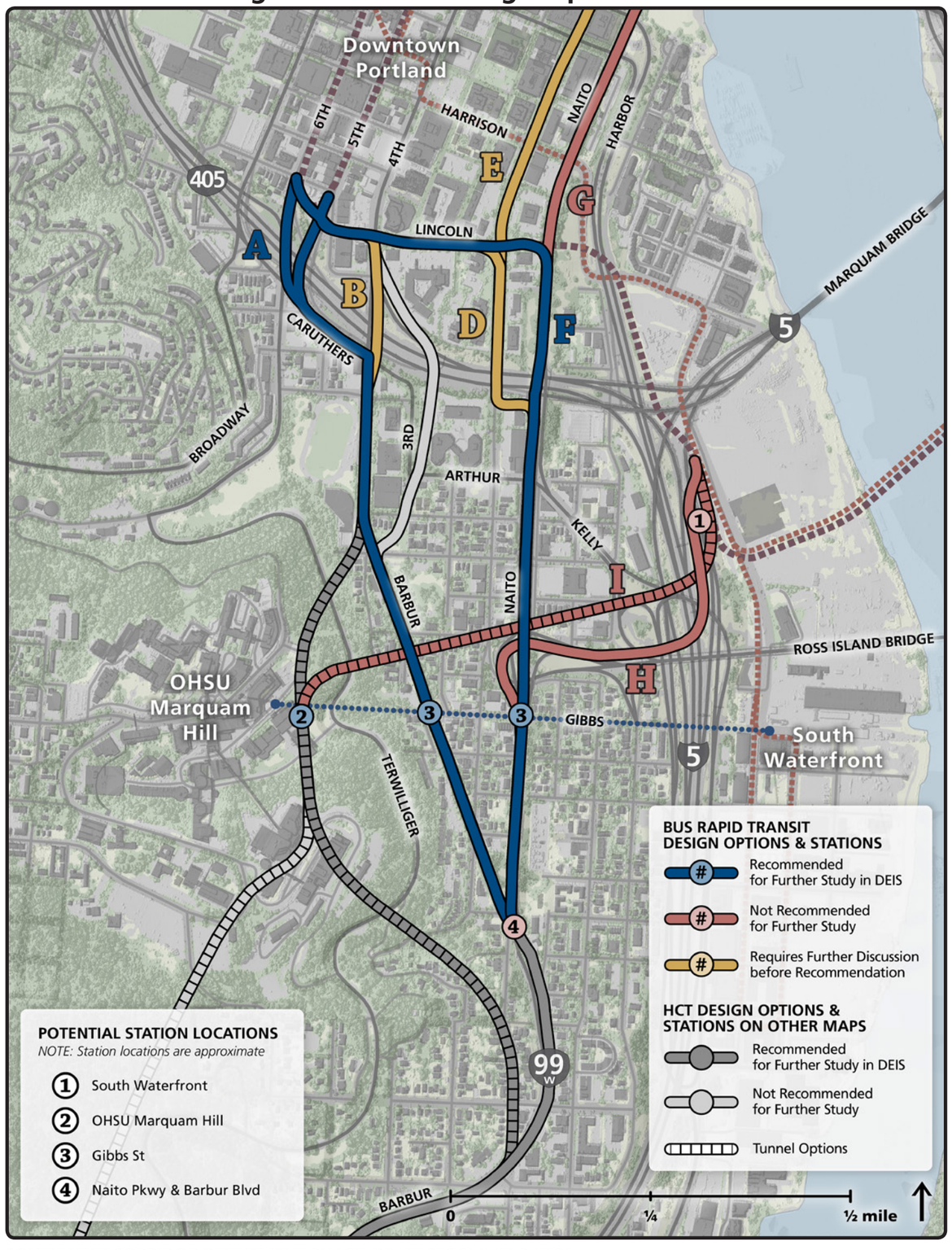
- **HCT design option map(s):** These maps identify all of HCT design options under consideration along with recommended station locations. HCT design options are classified by recommendation status: recommended for advancement into the Draft Environmental Impact Statement (DEIS), not recommended, or requires more discussion. Sections 1, 2, 3, and 6 include separate maps for BRT and LRT options; the remaining sections, where BRT and LRT options are identical, include a single map representing options for both modes.
- **A brief narrative** characterizing the HCT options in the segment.
- **A list of options by category:** Each option is identified by category: recommended, not recommended, or flagged for further discussion, and includes bullet points indicating the primary reasons why the option is categorized that way. These points are highlights only; the Recommendation Summary Appendix C includes descriptions of each option along with a longer list of tradeoffs and considerations.
- **A tradeoffs table:** The table shows the relative ratings of each option in the geographic segment, summarizing the analysis considering six categories: capital cost magnitudes, travel time, accessibility, impacts to the natural environment, development/redevelopment potential, property impacts, and traffic performance. The ratings for each option reflect performance relative to the other options in the same geographic segment; ratings cannot be compared between options in different segments.
- **A map of multimodal projects** recommended to advance into the DEIS.
- **A brief overview of multimodal projects** in the segment.
- **A multimodal project list:** The list identifies projects recommended to be included in the DEIS, partially included in the DEIS, or not included, with descriptions and relative costs.

HCT Options Recommended for DEIS or Requiring Further Discussion	BRT - Recommended	BRT - Further discussion required	LRT - Recommended	LRT - Further discussion required
Option				
1. Tie-In to Existing Transit				
Barbur via Fifth/Sixth Ave Couplet (with OHSU elevator)	✓			
Barbur via Fourth Ave (with OHSU elevator)		✓	✓	
Naito to Transit Mall (with OHSU elevator)	✓		✓	
Naito to Transit Mall via First Ave (with OHSU elevator)		✓		✓
Naito to First Ave - extended downtown (with OHSU elevator)		✓		
2. South Portland to Barbur Transit Center				
Barbur Boulevard	✓		✓	
Barbur - Hillsdale Loop using Capitol Hwy & Bertha	✓			✓
Short Tunnel - exit at Hamilton			✓	
Adjacent to I-5		✓		✓
3. PCC Area				
PCC Campus via Capitol Hwy (uses either I-5 crossing)	✓			
Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)	✓		✓	
Short Tunnel via Barbur (uses new bridge I-5 crossing)				✓
New Bridge (option for campus BRT routes)	✓		✓	
4. Tigard Triangle				
68th/69th Couplet	✓		✓	
5. OR-217 Crossing				
Clinton to Tigard Transit Center	✓		✓	
Beveland South	✓		✓	
Beveland North		✓		✓
6. Downtown Tigard				
Commercial Street to Tigard Transit Center (no loop)	✓		✓	
Commercial Street with Downtown Loop via Hall		✓		✓
7. South Tigard				
WES Alignment to Parallel I-5 via Tech Center Drive	✓		✓	
WES Alignment to Parallel I-5 vi PWNR Freight Rail ROW	✓		✓	
8. Bridgeport Village				
Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)	✓		✓	
9. Tualatin				
Parallel to Boones Ferry (north side of downtown)	✓		✓	


SOUTHWEST CORRIDOR REFINEMENT PHASE
Draft Recommendation of HCT Design Options for Further Study
DISCUSSION DRAFT 5/6/14
Downtown Portland
OHSU
South Waterfront
Willamette River
Hillsdale
Multnomah Village
Burlingame
Barbur Transit Center
PCC Sylvania
Tigard Triangle
Tigard Transit Center
Bridgeport Village
Downtown Tualatin
Oswego Lake
WASHINGTON CO.
MULTNOMAH CO.
CLACKAMAS CO.
RECOMMENDED FOR FURTHER STUDY IN DEIS
Bus Rapid Transit (BRT) Design Options
Light Rail (LRT) Design Options
Design Options for BRT or LRT
REQUIRE FURTHER DISCUSSION BEFORE RECOMMENDATION
Bus Rapid Transit (BRT) Design Options
Light Rail (LRT) Design Options
Design Options for BRT or LRT
Tunnel Design Options
Recommended Multimodal Projects
Light Rail (Existing or Under Construction)
WES Commuter Rail
Streetcar (Existing or Under Construction)
Aerial Tram
County Boundary
Urban Growth Boundary
LAND USE VISION
Retail / Commercial
Employment / Industrial
Mixed Use
Higher Intensity Residential
0
½
1 mile
NOTE: The corridor alignment options are in draft form. As the Southwest Corridor Plan continues to study and refine these options, they are very likely to change.

1. Tie-In to Existing Transit

1. Tie-In to Existing Transit: BRT Design Options



DRAFT 6/2/14

Design Options

The design options recommended for further study would have two distinctly different goals: Barbur via a 5th/6th Avenue couplet would provide the fastest connection to the transit mall, while the Naito option would support redevelopment of the South Portland neighborhood. All Barbur and Naito options would include an elevator serving Marquam Hill/OHSU from the vicinity of SW Barbur and SW Gibbs Street. Naito options would be incompatible with OHSU tunnel options.

Recommended for further study because:

A. Barbur via 5th/6th Avenue Couplet would:

- Provide the fastest connection to CBD and transit mall;
- Provide the least expensive BRT connection, costing $35M (2014$) less than Naito option.

F. Naito to Transit Mall would:

- Have potential to include a redesign of the Ross Island Bridgehead, including a redesign of Naito to change its character from a 1940's-era expressway to neighborhood-scale boulevard.

Further discussion required because:

B. Barbur via 4th Avenue would:

- Be similar to 5th/6th couplet option, but with less direct connection to transit mall.

D. Naito to Transit Mall via SW 1st Avenue would:

- Include a redesign of Naito;
- Have potential to include a redesign of the Ross Island Bridgehead;
- Avoid some traffic by leaving Naito (but not with Ross Island Bridgehead project).

E. Naito to SW 1st Ave - extended downtown would:

- Avoid SW Lincoln Street and portions of the transit mall;
- Support the City of Portland's Central City Plan;
- Affect traffic operations on SW 1st Avenue, which is currently one-way southbound;
- Likely require BRT to operate in mixed traffic, resulting in slower travel times and less reliable service.

G. Naito Parkway - extended downtown would:

- Likely require BRT to operate in mixed traffic, resulting in slower travel times and less reliable service;
- Provide fewer and less convenient transfer opportunities compared to options on the transit mall.

H. South Waterfront - bridge/tunnel to Naito and
I. South Waterfront - tunnel to OHSU would:

- Provide an indirect connection between the transit mall and the corridor;
- Require significant structure (bridges and/or tunnels) at high costs relative to other options;
- Cause significant construction impacts near OHSU's Collaborative Life Sciences Building, streetcar, and Portland-Milwaukie LRT.

Not recommended because:

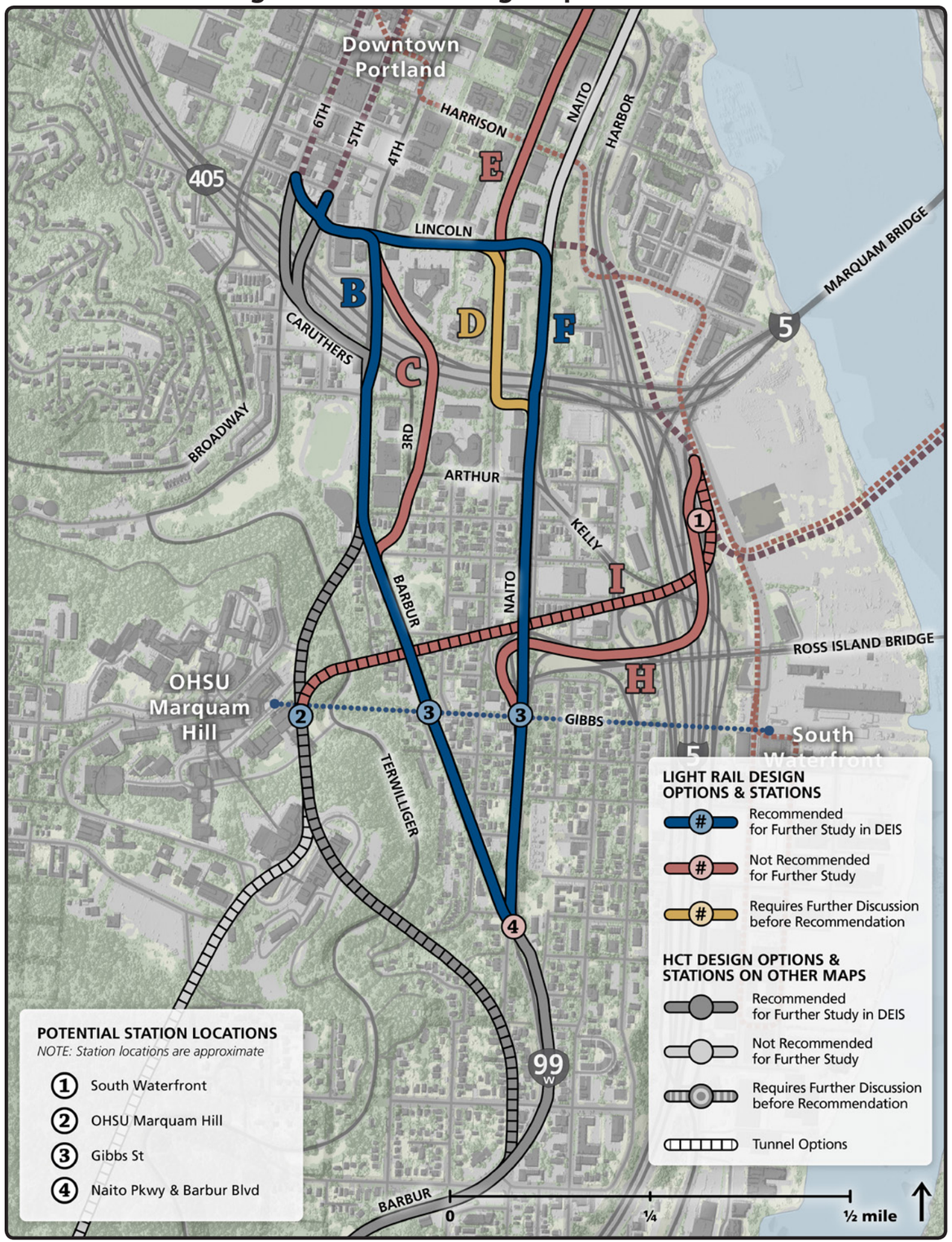
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
1. Tie-In to Existing Transit								
A	Barbur via Fifth/Sixth Ave Couplet (with OHSU elevator)	●	●	◑	◕	◑	◕	◑
B	Barbur via Fourth Ave (with OHSU elevator)	◕	◕	◑	◕	◑	◕	◑
D	Naito to Transit Mall via First Ave (with OHSU elevator)	◑	◔	◕	●	◕	◕	◕
F	Naito to Transit Mall (with OHSU elevator)	◑	◑	◕	●	◕	◑	●
E	Naito to First Ave - extended downtown (with OHSU elevator)	◔	◕	○	●	◑	●	◕
G	Naito Parkway - extended downtown (with OHSU elevator)	◔	◑	◔	●	◑	◔	◕
H	South Waterfront - bridge/tunnel to Naito	○	○	◔	●	◕	●	◔
I	South Waterfront - tunnel to OHSU	○	○	◕	●	◕	●	◕

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

1. Tie-In to Existing Transit: LRT Design Options



Design Options

The design options recommended for further study would have two distinctly different goals: Barbur via SW 4th Avenue would provide the fastest connection to the transit mall, while the Naito option would support redevelopment of the South Portland neighborhood. All Barbur and Naito options would include an elevator serving Marquam Hill/OHSU from the vicinity of SW Barbur and SW Gibbs Street. Naito options would be incompatible with OHSU tunnel options.

Recommended for further study because:

B. Barbur via 4th Avenue would:

- Provide the fastest connection to the CBD and transit mall at the peak load point of the line (the highest ridership location);
- Provide the least expensive LRT connection;
- Avoid Ross Island Bridgehead traffic.

F. Naito to Transit Mall would:

- Include a redesign of Naito to change its character to neighborhood-scale boulevard including streetscape improvements, pedestrian/bike facilities, and additional intersections/crossing opportunities;
- Have potential to include a redesign of the Ross Island Bridgehead to change traffic patterns and convert land for redevelopment.

Further discussion required because:

D. Naito to Transit mall via SW 1st Avenue would:

- Include a redesign of Naito;
- Have potential to include a redesign of the Ross Island Bridgehead;
- Avoid traffic on Naito north of Sheridan (but not with Ross Island Bridgehead project, which would increase traffic on SW 1st Avenue).

Not recommended because:

C. Barbur via 4th Ave/Second Ave would:

- Require significant structure and tunneling at a high cost without advantages over other options.

E. Naito to SW 1st Avenue - extended downtown would:

- Affect traffic operations on SW 1st Avenue, which is currently one-way southbound;
- Cause conflicts with auto traffic in the CBD, especially at the Hawthorne Bridgehead where either LRT or outbound traffic would lose signal priority.

H. South Waterfront - bridge/tunnel to Naito and
I. South Waterfront - tunnel to OHSU would:

- Provide an indirect connection between the transit mall and the corridor;
- Require significant structure (bridges and/or tunnels) that would be very expensive;
- Cause significant construction impacts near OHSU's Collaborative Life Sciences Building and planned Schnitzer campus, streetcar, and Portland-Milwaukie LRT.

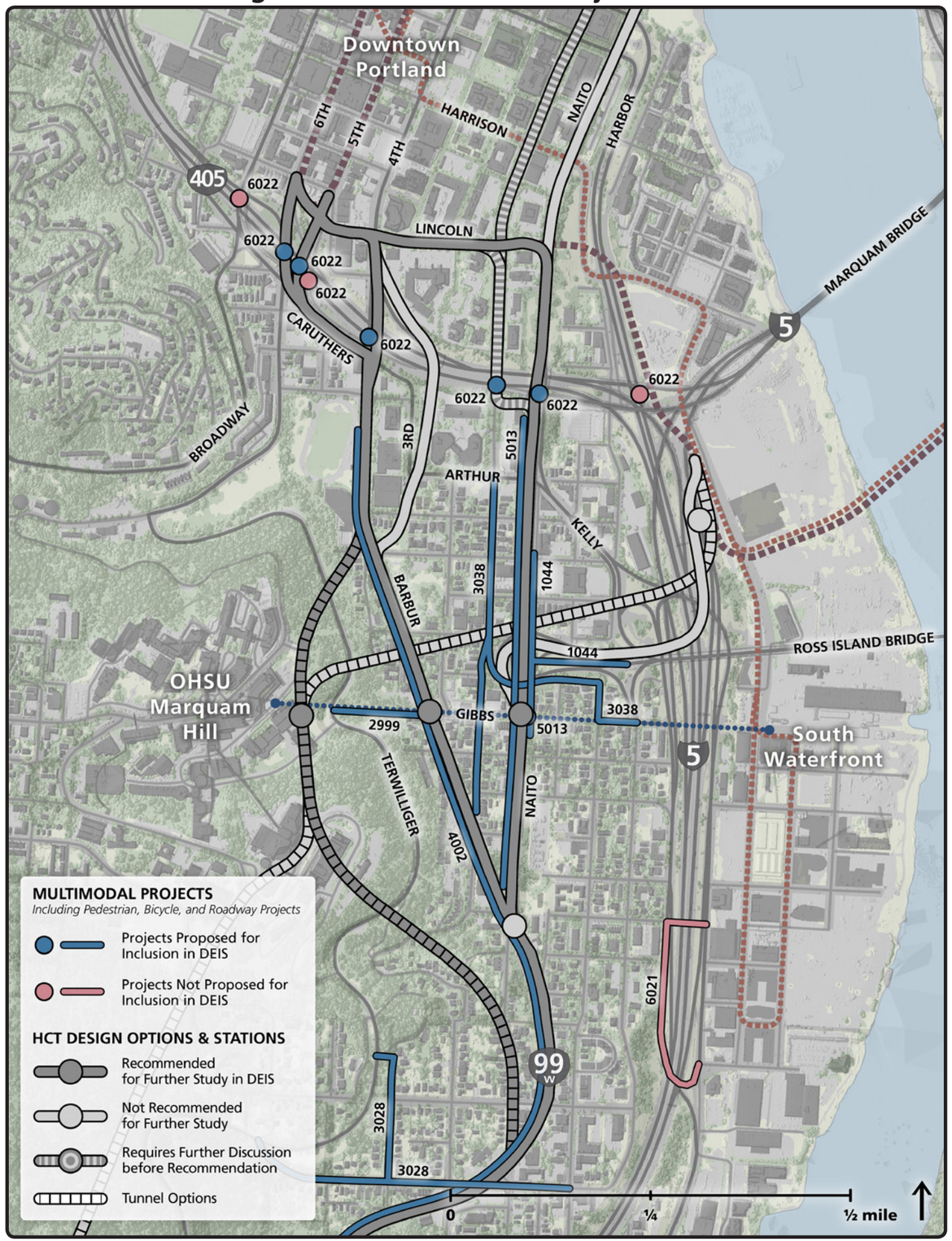
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
1. Tie-In to Existing Transit								
B	Barbur via Fourth Ave (with OHSU elevator)	●	●	◑	◕	◑	◕	◑
C	Barbur via Fourth Ave/Second Ave (with OHSU elevator)	◑	◑	○	◕	◔	◔	◕
D	Naito via First Ave (with OHSU elevator)	◑	◔	◕	●	◕	◕	◕
E	Naito via First Ave - extended downtown (with OHSU elevator, no connection to transit mall)	◔	◑	◔	●	◑	◔	◕
F	Naito to Transit Mall (with OHSU elevator)	◕	◑	◕	●	◕	◕	●
H	South Waterfront - bridge/tunnel to Naito	○	○	◔	●	●	●	◔
I	South Waterfront - tunnel to OHSU	○	○	◕	●	◕	●	◕

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

1. Tie-In to Existing Transit: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas south of downtown. They also include modifications to the Ross Island Bridgehead if Naito is the selected alignment in order to provide people the ability to safely access stations and walk and bike along the corridor without having to contend with high-speed vehicle traffic and expressway ramps. If Naito is not the selected alignment, the recommendation includes one or more pedestrian crossings of Naito to reduce the barrier effect within the neighborhood. One project was outside the immediate walkshed of any potential station area and was not recommended.

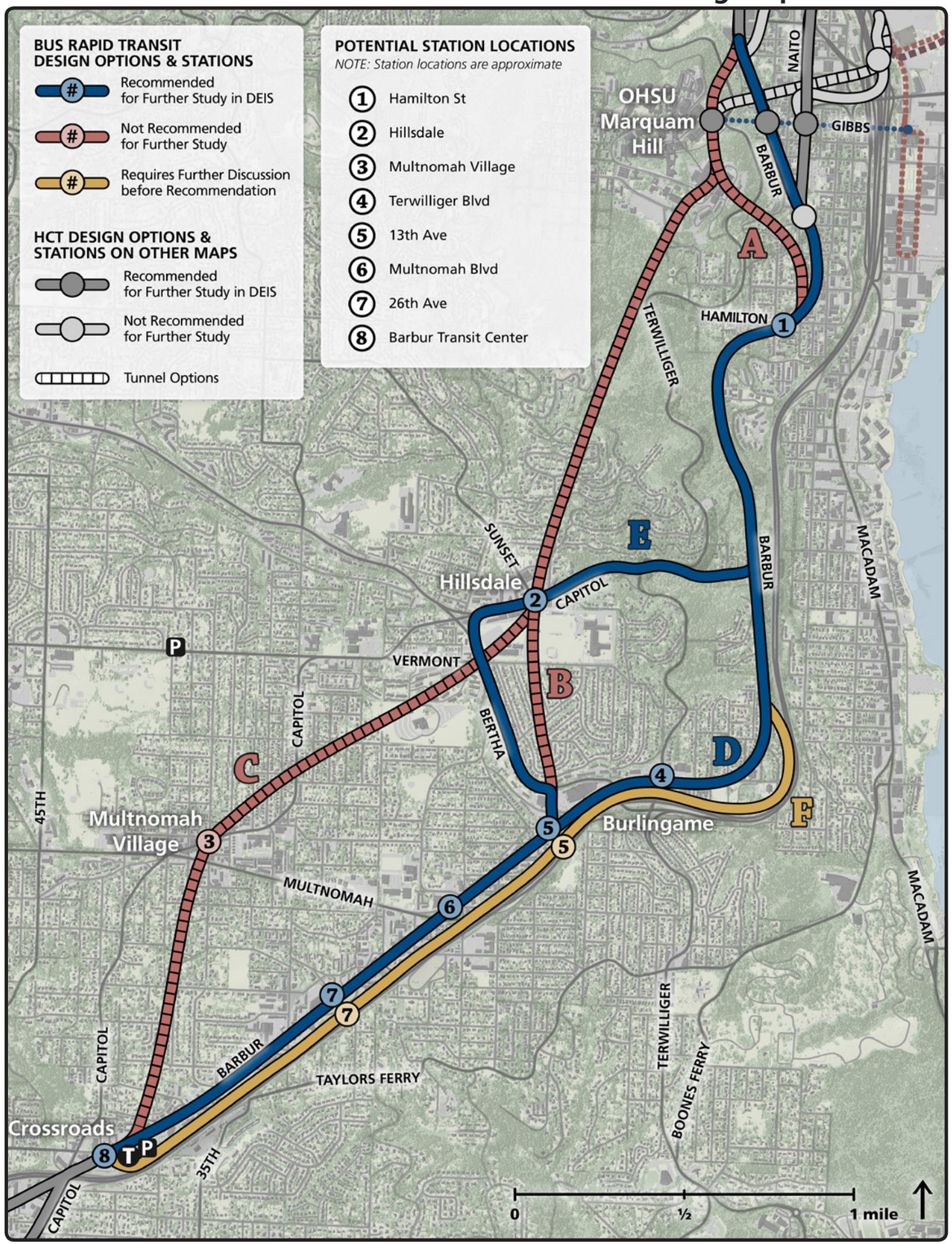
#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1044 Portland ODOT	**South Portland Circulation and Connectivity (Ross Island Bridge ramp connections)** Adds a new ramp connection between I-405 and the Ross Island Bridge from Kelly Avenue. Restore at-grade intersections along Naito Parkway, with new signalized intersections at Ross Island Bridge access and at Hooker Street. Removes several existing roadways and ramp connections.	$$$$ Auto/ Freight	With Naito alignment: Include
2999 Portland	**Pedestrian connection from Barbur to Terwilliger at Gibbs** Construct a new pedestrian walkway under the tram within the Gibbs right-of-way through the Terwilliger Parkway. The steep grade and forested area will require lighting and stairs.	$ Pedestrian	With Barbur/Naito station near Gibbs: Include
3028 Portland	**Inner Hamilton bikeway -from SW Terwilliger Blvd to SW Corbett Ave** Enhanced shared roadway. Includes connection to Terwilliger on SW Hamilton Terrace	¢ Bicycle	With Barbur/Hamilton station: Include
3038 Portland	**Lower SW 1st bikeway -from SW Barbur Blvd to SW Arthur St** Multiple bicycle facility types: separated in-roadway (Corbett: Gibbs - Grover); bicycle boulevard (all other segments). Includes connection to SW Kelly Ave on SW Grover St and SW Corbett Ave	¢ Bicycle	With Barbur/Naito station near Gibbs: Include
4002 Portland ODOT	**Barbur Blvd, SW (3rd - Terwilliger): Multimodal Improvements** Construct Improvements for transit, bikes and pedestrians. Transit improvements include preferential signals, pullouts, shelters, left turn lanes, sidewalks, and crossing improvements.	$$ Multimodal	With Barbur alignment: Include
5013 Portland ODOT	**Naito/South Portland Improvements (left turn pockets with bike/ped and remove tunnel, ramps and viaduct)** Reconstruct Naito Pkwy as two-lane road w/bike lanes, sidewalks, left turn pockets, & on-street parking. Remove grade separation along Naito at Barbur Blvd. (tunnel), the Ross Island Bridge, Arthur/Kelly (viaduct), and the Grover pedestrian bridge.	$$$$ Multimodal	With Barbur station: Include signalized pedestrian crossing(s) of Naito near station (1%) With Naito alignment: Include
6022 Portland ODOT	**I-405 Bike/Ped Crossing Improvements** Improve opportunities for bicycles and pedestrians to cross over/under I-405 on Harbor Drive, Naito Parkway, 1st, 4th, 5th, 6th and Broadway	$ Bike/Ped	All options: Consider opportunity to address with HCT crossing of I-405

Include in DEIS | **Include Partially** | **Do Not Include**

Cost: ¢ = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

2. South Portland to Barbur Transit Center

2. South Portland to Barbur Transit Center: BRT Design Options



Design Options

Options in this section prioritize either development potential and accessibility (Barbur, Hillsdale Loop options) or physical separation of HCT from traffic (Adjacent to I-5 option, tunnel options).

Recommended for further study because:

D. Barbur Boulevard would:

- Support the City of Portland's Barbur Concept Plan, which identifies HCT as a necessary component of the vision for Barbur Boulevard;
- Include the addition or improvement of sidewalks, bike facilities, storm water features, and other streetscaping;
- Include new bike and pedestrian facilities adjacent to existing Newbury and Vermont viaducts;
- Cost significantly less than the tunnel options and an estimated $45M (2014$) less than the Hillsdale loop option.

E. Barbur – Hillsdale loop using Capitol Hwy & Bertha would:

- Provide HCT service to Hillsdale without a tunnel and without bypassing significant numbers of households or employment where the alignment would deviate from SW Barbur Boulevard;
- Potentially include addition of new pedestrian/bicycle structure parallel to the Newbury and Vermont viaducts (not a complete replacement) despite the alignment bypassing them.

Further discussion required because:

F. Adjacent to I-5 would:

- Avoid key intersections and business accesses along SW Barbur Boulevard;
- Require significant structure on steep slopes to avoid Barbur Boulevard and ramps;
- Cost significantly more than the Barbur option;
- Provide more limited support for the Barbur Concept Plan;
- Result in more difficult pedestrian connections to stations;
- Not include pedestrian and bike improvements to Barbur Boulevard or along the BRT alignment.

Not recommended because:

A. Short Tunnel – exit at Hamilton would:

- Be very expensive and compromise the lower cost advantage of the BRT mode over LRT;
- Result in severe construction impacts.

B. Medium Tunnel – exit at Bertha would:

- Be very expensive;
- Result in severe construction impacts.

C. Long Tunnel – exit at Barbur Transit Center would:

- Be very expensive;
- Result in severe construction impacts;
- Not support the Barbur Concept Plan as HCT would bypass the historic section of the boulevard.

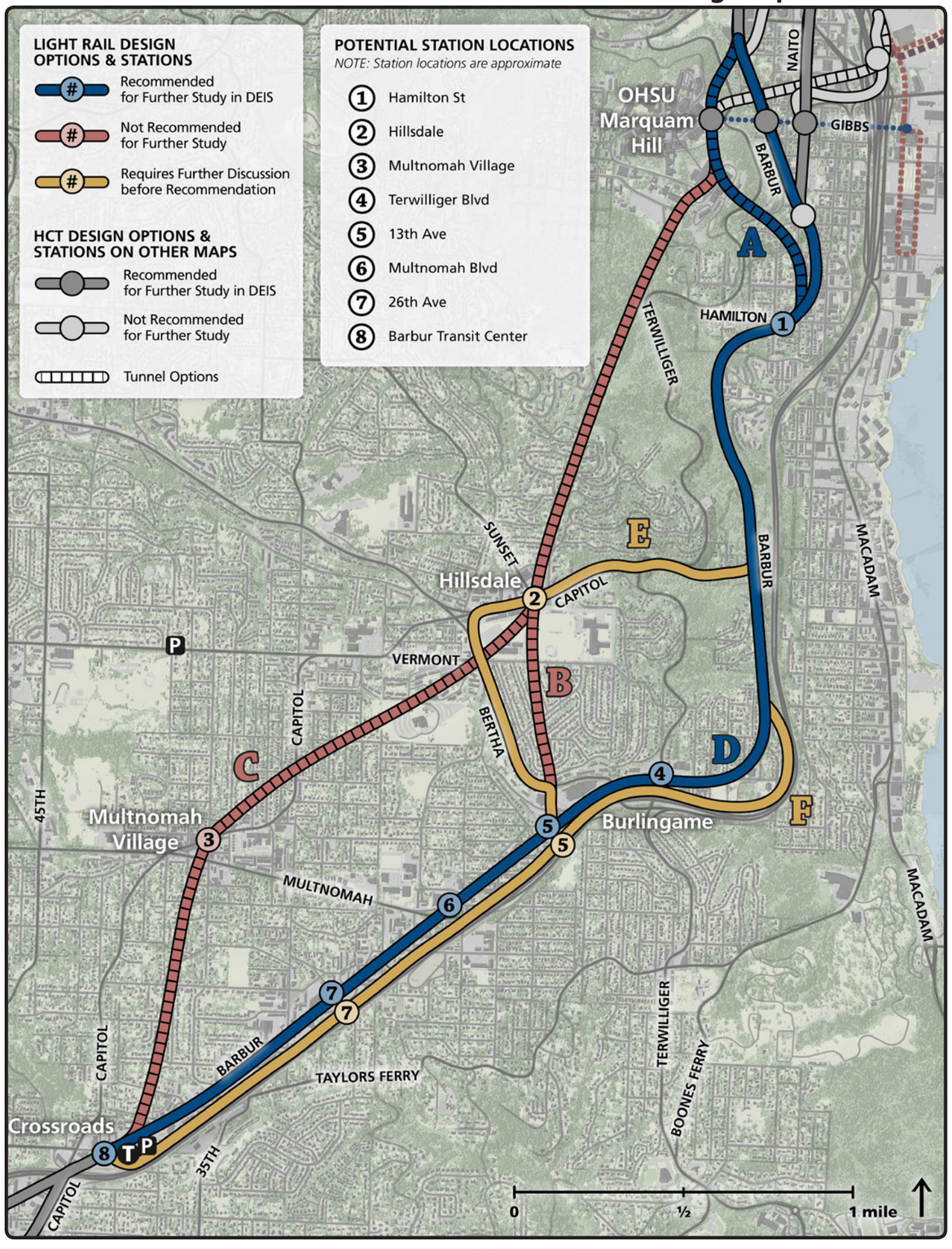
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
2. South Portland to Barbur Transit Center								
A	Short Tunnel - exit at Hamilton	○	◑	◑	◑	◑	◑	◕
B	Medium Tunnel - exit at Bertha	○	●	○	◕	◑	◑	◕
C	Long Tunnel - exit at Barbur Transit Center	○	●	○	◕	○	◔	◕
D	Barbur - South Portland to Crossroads	●	◑	◕	◑	◕	◑	◔
E	Barbur - Hillsdale loop using Capitol Hwy & Bertha	◕	○	●	◔	●	◕	◔
F	Adjacent to I-5	◑	◑	◑	◑	◑	◑	◕

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

2. South Portland to Barbur Transit Center: LRT Design Options



Design Options

Options in this section prioritize either development potential and accessibility (Barbur, Hillsdale Loop options) or physical separation of HCT from traffic (Adjacent to I-5 option, tunnel options).

Recommended for further study because:

D. Barbur Boulevard would:

- Support the City of Portland's Barbur Concept Plan, which identifies HCT as a necessary component of the vision for Barbur Boulevard;
- Include the addition or improvement of sidewalks, bike facilities, storm water features, and other streetscaping;
- Include replacement of the Newbury and Vermont viaducts, complete with sidewalks and bike lanes.
- Cost an estimated $481M (2014$) less than the short tunnel option;
- Result in fewer construction impacts to the neighborhood, compared to tunnel options that would include significant impacts at both portals—near Duniway Park to the north and near Hamilton Street to the south.

A. Short Tunnel – exit at Hamilton would:

- Serve Marquam Hill/OHSU with a deep station similar to the MAX station at the Oregon Zoo;
- Avoid traffic congestion in the northern section of SW Barbur Boulevard, although it would also not serve the Lair Hill neighborhood, in contrast to surface options that would include an elevator between Marquam Hill/OHSU and SW Barbur Boulevard in the vicinity of Gibbs Street;
- Result in reliable travel times.

Further discussion required because:

E. Barbur – Hillsdale loop using Capitol Hwy & Bertha would:

- Provide HCT service to Hillsdale without bypassing significant numbers of households or employment where the alignment would deviate from SW Barbur Boulevard;
- Potentially include the addition of a new pedestrian/bicycle structure parallel to the Newbury and Vermont viaducts despite the alignment bypassing them;
- Require a cut-and cover tunnel to avoid the commercial section of Hillsdale, resulting in higher costs.

F. Adjacent to I-5 would:

- Avoid key intersections and business accesses along SW Barbur Boulevard;
- Require significant structure on steep slopes to avoid Barbur Boulevard and ramps;
- Cost an estimated $96M (2014$) more than Barbur option – this would be less with a shorter segment adjacent to I-5;
- Provide more limited support for the Barbur Concept Plan;
- Result in more difficult pedestrian connections to stations;
- Not include pedestrian and bike improvements to Barbur Boulevard or along the LRT alignment.

Not recommended because:

B. Medium Tunnel – exit at Bertha would:

- Be very expensive;
- Result in severe construction impacts.

C. Long Tunnel – exit at Barbur Transit Center would:

- Be very expensive;
- Result in severe construction impacts;
- Not support the Barbur Concept Plan as HCT would bypass the historic section of the boulevard.

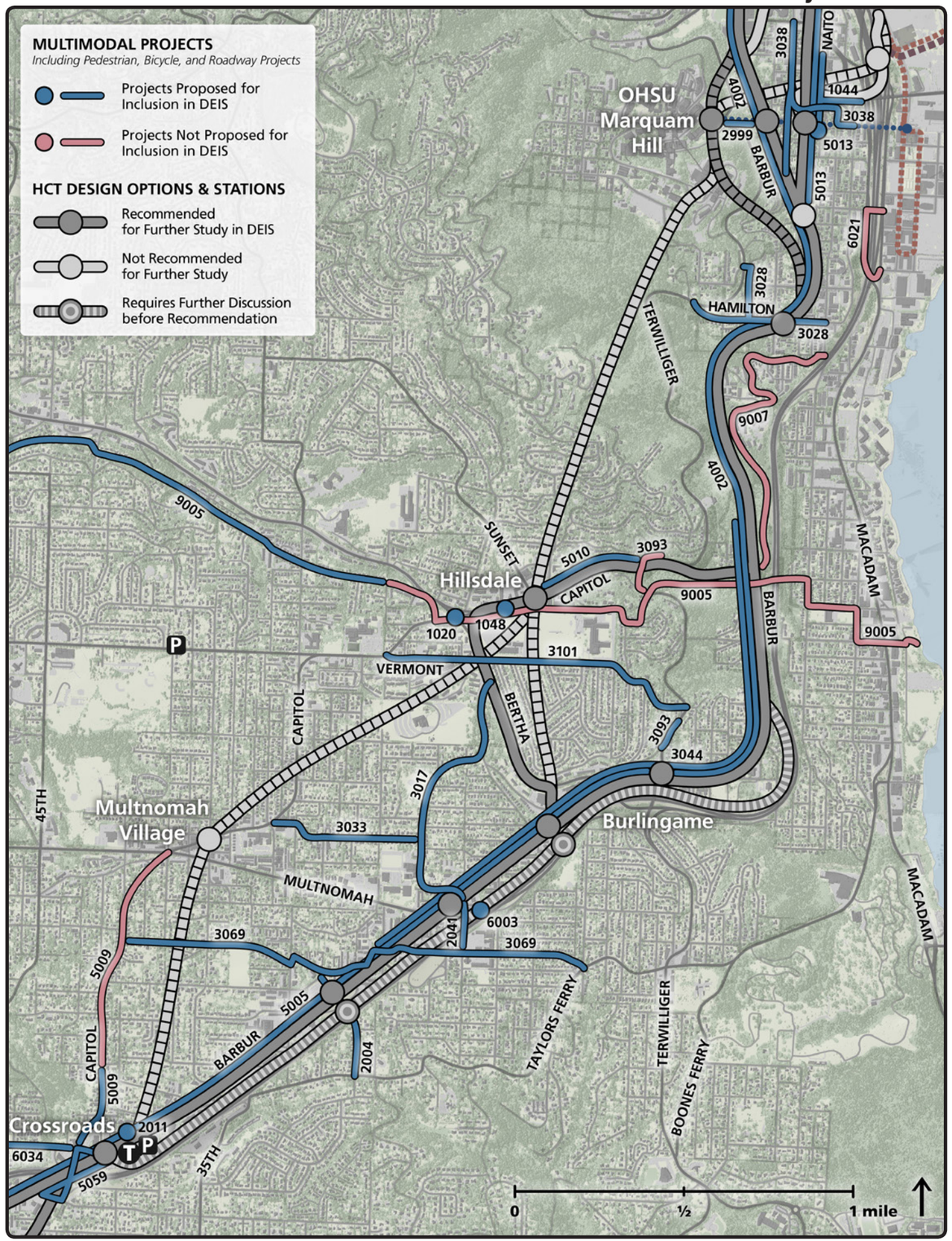
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
2. South Portland to Barbur Transit Center								
A	Short Tunnel - exit at Hamilton	○	◑	◑	◑	◑	◑	◕
B	Medium Tunnel - exit at Bertha	○	●	○	◕	◑	◑	◕
C	Long Tunnel - exit at Barbur Transit Center	○	●	○	◕	○	◔	◕
D	Barbur - South Portland to Crossroads	●	◑	◕	◑	◕	◑	◔
E	Barbur - Hillsdale loop using Capitol Hwy & Bertha (tunnel)	◔	◔	●	◔	●	◔	◔
F	Adjacent to I-5	◑	◑	◑	◑	◑	◑	◕

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

2. South Portland to Barbur Transit Center: Multimodal Projects



Multimodal Projects

DRAFT 6/2/14

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas along the alignment options. This section of the corridor is especially lacking in pedestrian and bicycle facilities and requires extra attention to get people to stations without driving. Several projects were outside the immediate walkshed of any potential station area and were not recommended.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1020 Portland	**Beaverton Hillsdale / Bertha / Capitol Hwy. Intersection Improvements** Redesign intersection to improve safety.	$ Auto/ Freight	With surface Hillsdale/Capitol alignment: Include
1044 Portland ODOT	**South Portland Circulation and Connectivity (Ross Island Bridge ramp connections)** Adds a new ramp connection between I-405 and the Ross Island Bridge from Kelly Avenue. Restore at-grade intersections along Naito Parkway, with new signalized intersections at Ross Island Bridge access and at Hooker Street. Removes several existing roadways and ramp connections.	$$$$ Auto/ Freight	With Naito alignment: Include
1048 Portland	**Traffic Calming** Calm traffic in the Burlingame and Hillsdale retail districts	¢ Auto/ Freight	With Hillsdale station: Include station access and safety treatments in Hillsdale TC (50%)
2004 Portland	**26th Ave, SW (Spring Garden - Taylors Ferry): Pedestrian Improvements** Construct a walkway for pedestrian travel and access to transit and install street lighting	¢ Pedestrian	With Barbur/26th station: Include
2011 Portland ODOT	**Connections to Transit/Transit Improvements: Barbur & Taylors Ferry** New steps/ramp connecting SW Taylors Ferry frontage road to Barbur across from transit center at existing signalized crossing	¢ Pedestrian	All options: Include. Note: may be funded through ODOT.
2041 Portland	**SW 19th Ave sidewalks: Barbur - Spring Garden** Construct new sidewalks where none exist (DA)	¢ Pedestrian	With Barbur/Multnomah station: Include
3017A Portland	**Capitol Hill Rd bikeway -from SW Barbur Blvd to SW Bertha Blvd** Multiple bicycle facility types: bicycle boulevard or enhanced shared roadway (Barbur - Troy; 21st - Custer); bicycle boulevard or advisory bike lane (Troy - 21st); enhanced shared roadway (Custer - Bertha)	¢ Bicycle	With Barbur/Multnomah station: Include
3017B Portland	**Capitol Hill Rd sidewalks -from SW Barbur Blvd to SW Bertha Blvd** Install sidewalk on Capitol Hill Road from Barbur to Bertha	$ Pedestrian	With Barbur/Multnomah station: Include from Barbur to existing sidewalk at Custer Park (35%)
3028 Portland	**Inner Hamilton bikeway -from SW Terwilliger Blvd to SW Corbett Ave** Enhanced shared roadway. Includes connection to Terwilliger on SW Hamilton Terrace	¢ Bicycle	With Barbur/Hamilton station: Include
3033A Portland	**Inner Troy bikeway -from SW Capitol Hwy to SW Capitol Hill Rd** Bike boulevard from SW Capitol Hwy to SW Capitol Hill Rd	¢ Bicycle	With Barbur/Multnomah station: Include

Multimodal Projects Continued on Next Page

Include in DEIS **Include Partially** **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

2. South Portland to Barbur Transit Center: Multimodal Projects

DRAFT 6/2/14

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
3033B Portland	**Inner Troy sidewalks - from SW Capitol Hwy to SW Capitol Hill Rd** Install sidewalk from SW Capitol Hwy to SW Capitol Hill Rd	$ Pedestrian	Do not include
3093B Portland	**Terwilliger sidewalk (Capitol to Terwilliger Pl)** Provide sidewalk from SW Capitol Hwy south to SW Terwilliger Place	¢ Pedestrian	Do not include
3069B Portland	**Spring Garden/Dolph Ct, SW (Capitol Hwy - Barbur): Sidewalks** Install sidewalk along Dolph Ct from Capitol Hwy to 26th Way and along Spring Garden from 26th Way to Barbur	$ Pedestrian	With Barbur/26th or Barbur/ Multnomah station: Include from 27th Ave to intersection of 26th Way/Dolph Ct. (15%)
3093A Portland	**Terwilliger bikeway gaps** Separated bicycle route in-roadway. Eliminate key gaps in the Terwilliger Blvd bikeway.	¢ Bicycle	With Terwilliger station: Include lower section (near Barbur) (50%)
3101 Portland	**Vermont-Chestnut bikeway -from SW Capitol Hwy to SW Terwilliger Blvd** Bicycle boulevard	¢ Bicycle	With Terwilliger station: Include
4002 Portland ODOT	**Barbur Blvd, SW (3rd - Terwilliger): Multimodal Improvements** Construct Improvements for transit, bikes and pedestrians. Transit improvements include preferential signals, pullouts, shelters, left turn lanes, sidewalks, and crossing improvements.	$$ Multimodal	With Barbur alignment: Include
5005 Portland ODOT	**Barbur Blvd, SW (Terwilliger - City Limits): Multimodal Improvements** Complete boulevard design improvements including sidewalks and street trees, safe pedestrian crossings, enhance transit access and stop locations, and bike lanes (Terwilliger - SW 64th or Portland City Limits).	$$$$ Multimodal	Barbur stations including Tunnel and I-5 options: Include within 1/2 mile of stations (20%)
			With Barbur alignment: Include
5009 Portland	**Capitol Hwy Improvements (replace roadway and add sidewalks)** Improve SW Capitol Highway from SW Multnomah Boulevard to SW Taylors Ferry Road per the Capitol Highway Plan. Replace Existing Roadway and add sidewalks, bike lanes and green stormwater features.	$$$ Multimodal	All options: Include one side from Taylors Ferry to Alice Street (15%)
5010 Portland	**Capitol Hwy, SW (Terwilliger - Sunset): Multimodal Improvements** Construct sidewalks, crossing improvements for access to transit and bike improvements, and install left turn lane at the Capitol/Burlingame intersection	$ Multimodal	With surface Hillsdale/Capitol alignment: Include
5013 Portland ODOT	**Naito/South Portland Improvements (left turn pockets with bike/ ped and remove tunnel, ramps and viaduct)** Reconstruct Naito Pkwy as two-lane road w/bike lanes, sidewalks, left turn pockets, & on-street parking. Remove grade separation along Naito at Barbur Blvd. (tunnel), the Ross Island Bridge, Arthur/Kelly (viaduct), and the Grover pedestrian bridge.	$$$$ Multimodal	With Barbur station: Include signalized pedestrian crossing(s) of Naito near station (1%)
			With Naito alignment: Include
5059 Portland ODOT	**SW Portland/ Crossroads Multimodal Project (roadway realignments and modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp)** Implement Barbur Concept Plan walk audit recommendations in the SW Portland TC, including modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp to support safer and more efficient operation for all modes. Project specifics include intersection types and roadway realignments to be refined.	$$$$ Multimodal	All options: Include multimodal investment at the Barbur/Capitol/Huber/Taylors Ferry intersections at this location. Includes improved pedestrian crossings. (5%)
6003 Portland	**Multnomah viaduct bicycle and pedestrian facilities** Construct new bicycle and pedestrian facilities on Barbur at/parallel to Multnomah Blvd. viaduct	$ Bike/Ped	With Barbur alignment: Include
6021 Portland	**Hood Avenue Pedestrian Improvements (Lane to Macadam)** Install sidewalk with barrier along east side and pedestrian crossing at Lane Street	$ Bike/Ped	Do not include
6034 Portland	**Taylors Ferry, SW (Capitol Hwy - City Limits): Bicycle & Pedestrian Improvements** SW Taylors Ferry Rd: Provide bicycle lanes, including shoulder widening and drainage, and construct sidewalks for access to transit	$ Bike/Ped	All options: Include Capitol to 49th (40%)
9005 Portland	**Red Electric Trail: Fanno Creek Trail to Willamette Park** Provide east-west route for pedestrians and cyclists in SW Portland that connects and extends the existing Fanno Creek Greenway Trail to Willamette Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$$$ Multi-Use Trail	With Hillsdale station: Include Hillsdale to Shattuck (10%)
9007 Portland	**Slavin Road to Red Electric Trail: Barbur to Corbett** Build Multi use trail on Slavin Road from Barbur to Corbett. The Red Electric Trail is listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$ Multi-Use Trail	Do not include

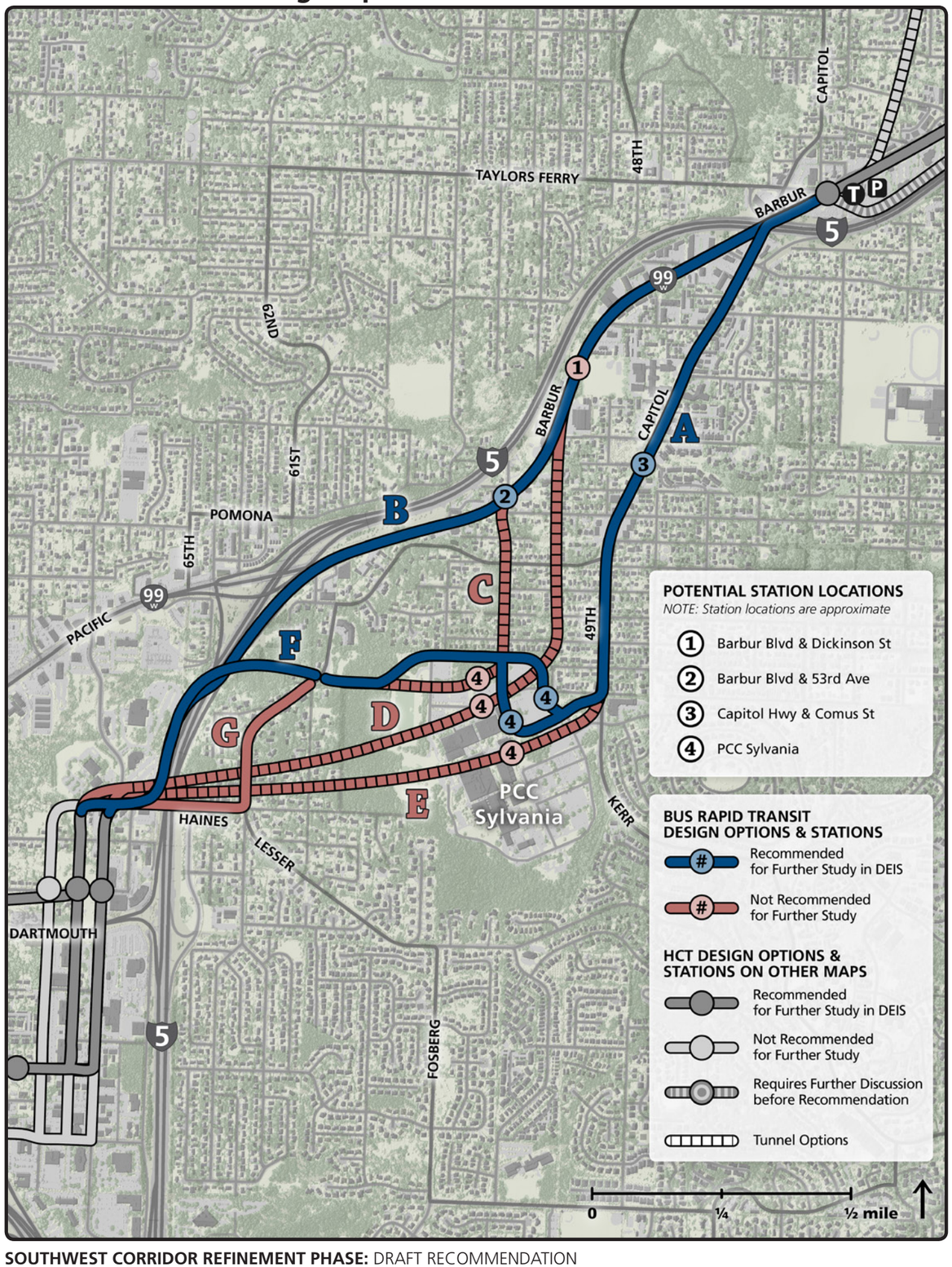
Include in DEIS **Include Partially** **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

Page intentionally left blank

3. PCC Area

3. PCC Area: BRT Design Options



Design Options

Options in this section are differentiated by how they serve the PCC-Sylvania campus. BRT could serve the campus directly by a surface option via Capitol Highway or by tunnel; the surface option via Barbur would require a longer walk to campus, but would result in a much faster alignment compared to Capitol Highway options, and a much less expensive alignment compared to tunnel options.

Recommended for further study because:

B. Barbur – Crossroads to Tigard (with improved PCC walk via SW 53rd Avenue) would:

- Prioritize travel time, saving approximately four minutes over BRT routes to the PCC campus;
- Feature an improved walk connection to the PCC campus from SW 53rd Avenue, with a raised station, and paving and sidewalks on SW 53rd Avenue. The walk would be slightly less than 1/3 mile uphill to the edge of the PCC property, and nearly ½ mile to PCC buildings;
- Support a new park and ride lot on vacant property north of SW Barbur Boulevard at SW 55th Avenue.

A. PCC Campus (Front Door or Circumferential around north end) would:

- Prioritize accessibility and development potential, serving the PCC-Sylvania campus directly;
- Include an additional station on SW Capitol Highway.

F. New bridge over I-5 (crossing option for campus routes) would:

- Provide the fastest travel time;
- Minimize disruptions to residential neighborhoods near PCC.

Not recommended because:

C. Short Tunnel via Barbur,

D. Tunnel via Barbur, and

E. Tunnel via Capitol Hwy would:

- Be expensive and compromise the lower cost advantage of the BRT mode over LRT;
- Result in severe construction impacts.

G. Lower Haines Road (crossing option for campus routes) would:

- Impact properties by widening at least one side of Lesser Road to provide adequate space for BRT, bike lanes and sidewalks;
- Require sharp turning movements and operation on steep grades that would slow the BRT.

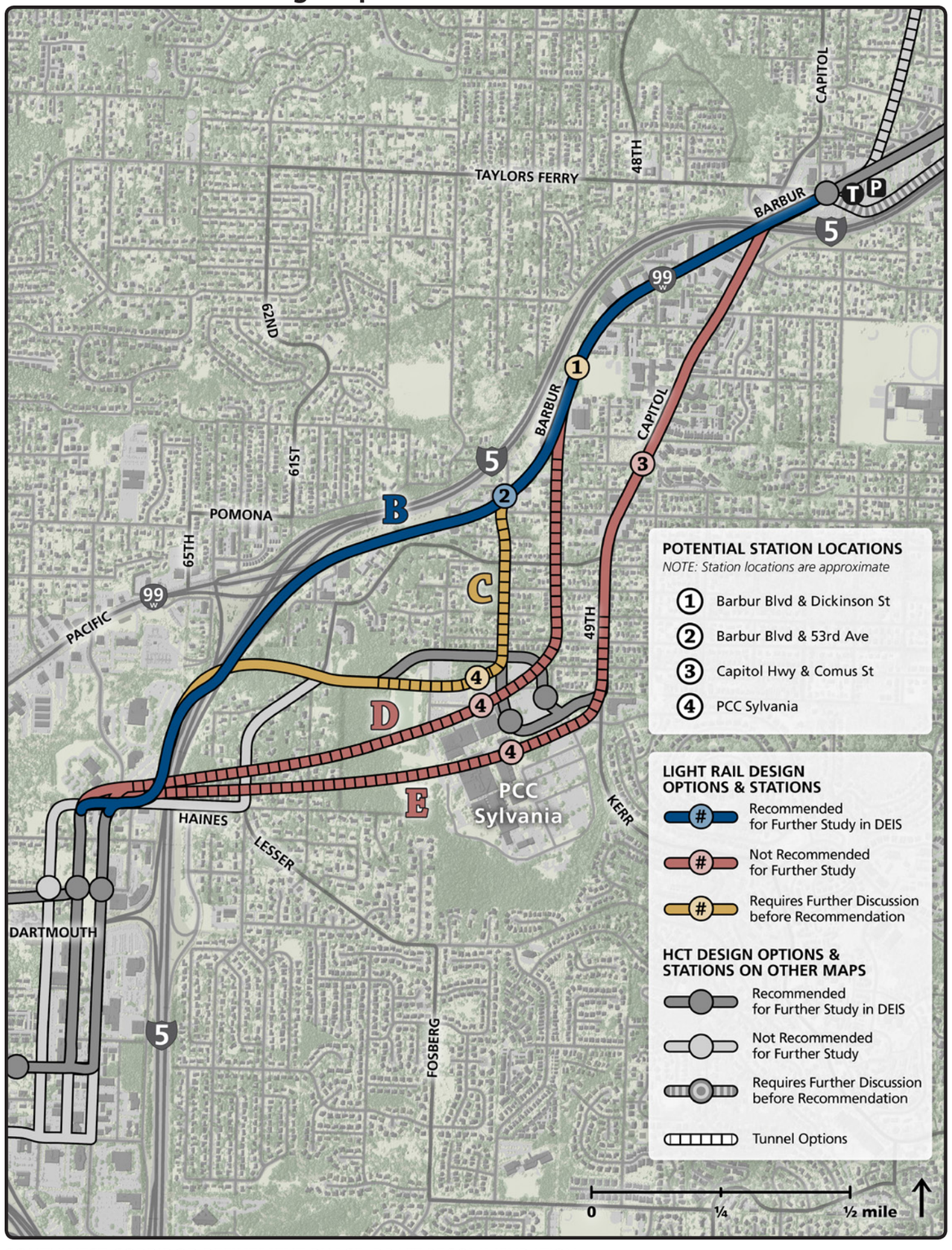
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
3a. PCC Area								
A	PCC Campus via Capitol Hwy (uses either I-5 crossing)	◕	○	◕	◕	◕	◔	◑
B	Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)	●	●	◑	●	◑	●	◑
C	Short Tunnel via Barbur (uses new bridge I-5 crossing)	◔	◕	◑	○	◕	◔	◑
D	Tunnel via Barbur (tunnels under I-5)	○	◕	◑	◕	◑	◔	◑
E	Tunnel via Capitol Hwy (tunnels under I-5)	○	◕	◕	◕	◑	◑	◑
3b. PCC Area - I-5 Crossing Options for Campus Routes								
F	New Bridge over I-5	◔	◑	◕	◔	◕	◕	◕
G	Lower Haines Road	●	○	◕	◑	◕	◑	◑

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

3. PCC Area: LRT Design Options



Design Options

Options in this section are differentiated by how they serve the PCC-Sylvania campus. Because of the steep topography, LRT could only provide direct service to the campus by tunnel. The surface option via Barbur would require a longer walk to campus, but would be much less expensive and disruptive to the neighborhood to construct and would provide a more direct route for riders not accessing PCC.

Recommended for further study because:

B. Barbur – Crossroads to Tigard (with improved PCC walk via SW 53rd Avenue) would:

- Be the least expensive option;
- Feature an improved walk connection to the PCC campus from SW 53rd Avenue, potentially with a raised station, and paving and sidewalks on SW 53rd Avenue. The walk would be slightly less than 1/3 mile uphill to the edge of the PCC property, and nearly ½ mile to PCC buildings;
- Support a new park and ride lot on vacant property north of SW Barbur Boulevard at SW 55th Avenue;
- Include a new transit crossing over I-5 to the Tigard Triangle.

Further discussion required because:

C. Short Tunnel via Barbur would:

- Serve PCC-Sylvania campus directly;
- Result in significant construction impacts to the neighborhood;
- Cost an estimated $243M (2014$) more than the Barbur option;
- Likely be contingent on plans for future redevelopment of the campus area.

Not recommended because:

D. Tunnel via Barbur and

E. Tunnel via Capitol Hwy would:

- Be very expensive compared to the shorter tunnel option without providing significantly more benefit.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
3. PCC Area								
B	Barbur - Crossroads to Tigard (with improved PCC walk via SW 53rd, uses new bridge I-5 crossing)	●	◕	◕	●	◕	●	◑
C	Short Tunnel via Barbur (uses new bridge I-5 crossing)	◔	◔	◕	◑	●	◔	◑
D	Tunnel via Barbur (tunnels under I-5)	○	◔	◕	◕	◑	◔	◑
E	Tunnel via Capitol Hwy (tunnels under I-5)	○	◔	●	◕	◕	◑	◑

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

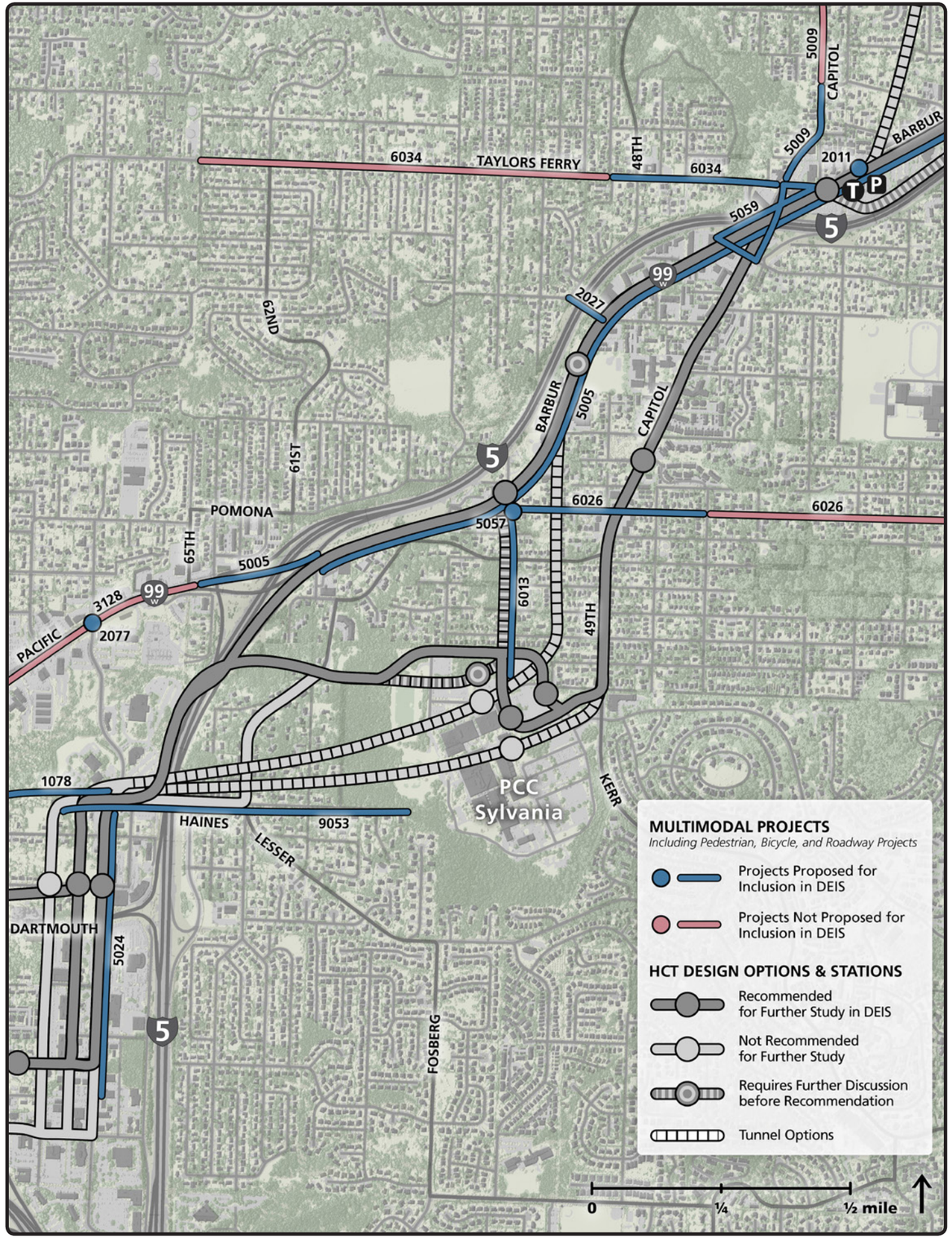
Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

Requires Further Discussion before Recommendation

3. PCC Area: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas near PCC. If the alignment follows Barbur near I-5, a pedestrian connection over I-5 is recommended to improve station access for neighborhoods north of I-5.

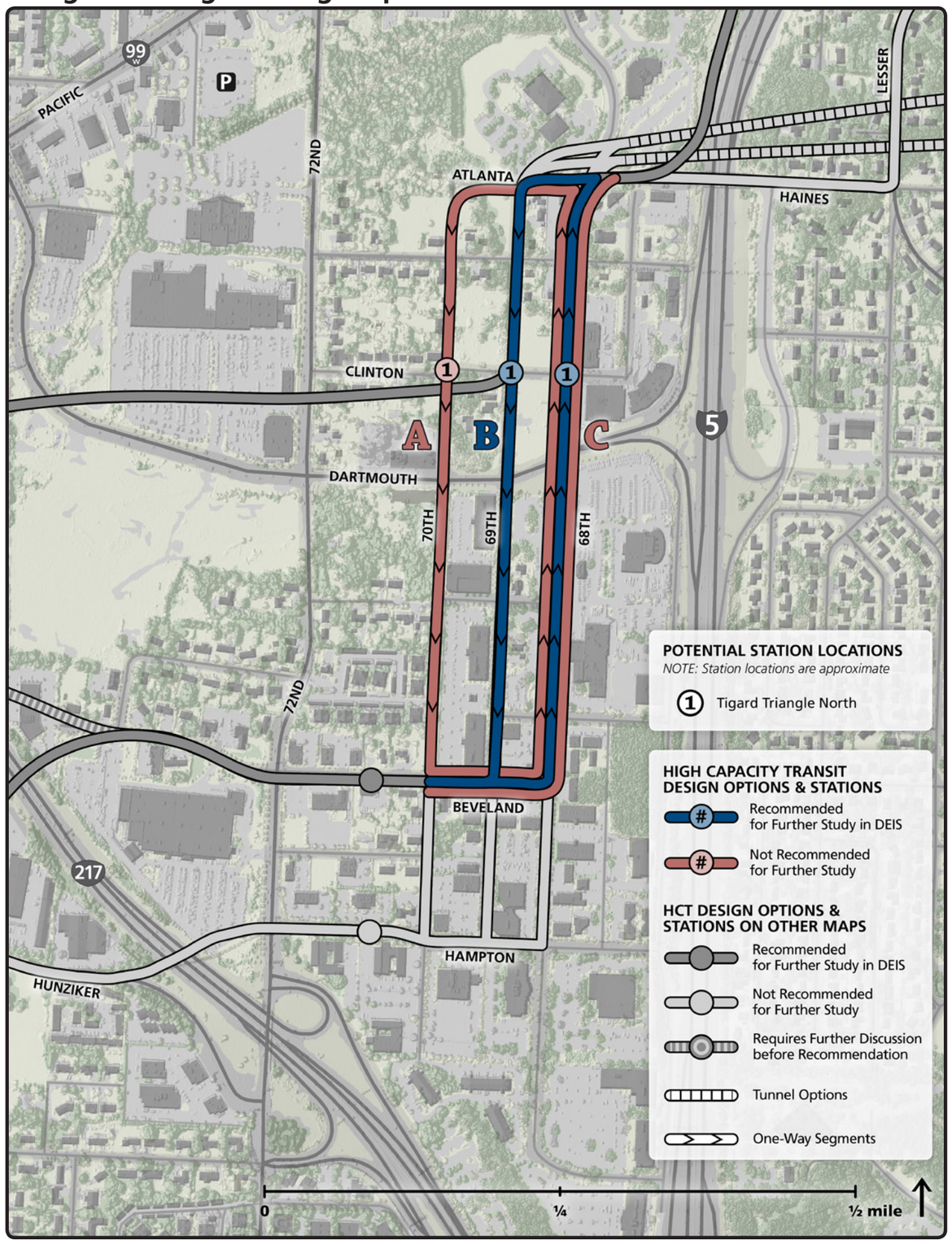
#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1078 Tigard	**Atlanta Street Extension (new roadway)** Extend Atlanta Street west to Dartmouth Street	$$ Auto/ Freight	With North Triangle station: Include.
2011 Portland ODOT	**Connections to Transit/Transit Improvements: Barbur & Taylors Ferry** New steps/ramp connecting SW Taylors Ferry frontage road to Barbur across from transit center at existing signalized crossing	¢ Pedestrian	All options: Include. Note: may be funded through ODOT.
2027 Portland ODOT	**Pedestrian Overpass near Markham School** Construct pedestrian path and bridge over Barbur Blvd. and I-5 to connect SW Alfred and SW 52nd to the rear of Markham School.	$$ Pedestrian	With Barbur/53rd station: Include adjacent to station-area if station is on Barbur
2077 Tigard ODOT	**Tigard Transit Center crossing improvements.** Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
3128 Tigard ODOT	**Pacific Hwy-99W Bike Lanes in Tigard** Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	$ Bicycle	Do not include
5005 Portland ODOT	**Barbur Blvd, SW (Terwilliger - City Limits): Multimodal Improvements** Complete boulevard design improvements including sidewalks and street trees, safe pedestrian crossings, enhance transit access and stop locations, and bike lanes (Terwilliger - SW 64th or Portland City Limits).	$$$$ Multimodal	Barbur stations including Tunnel and I-5 options: Include within 1/2 mile of stations (20%) With Barbur alignment: Include
5009 Portland	**Capitol Hwy Improvements (replace roadway and add sidewalks)** Improve SW Capitol Highway from SW Multnomah Boulevard to SW Taylors Ferry Road per the Capitol Highway Plan. Replace Existing Roadway and add sidewalks, bike lanes and green stormwater features.	$$$ Multimodal	All options: Include one side from Taylors Ferry to Alice Street (15%)
5024 Tigard	**68th Avenue (widen to 3 lanes)** Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	$$$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
5057 Portland	**SW 53rd and Pomona (improves safety of ped/bike users)** Reconfigure and improve intersection to manage traffic turning speeds, and improve safety of ped/bike users between Barbur and Pomona.	¢ Multimodal	With Barbur/53rd station: Include if station is on Barbur
5059 Portland ODOT	**SW Portland/ Crossroads Multimodal Project (roadway realignments and modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp)** Implement Barbur Concept Plan walk audit recommendations in the SW Portland TC, including modifications to Barbur Blvd., Capitol Hwy., and the I-5 southbound on-ramp to support safer and more efficient operation for all modes. Project specifics include intersection types and roadway realignments to be refined.	$$$$ Multimodal	All options: Include multimodal investment at the Barbur/Capitol/ Huber/Taylors Ferry intersections at this location. Includes improved pedestrian crossings. (5%)
6013 Portland	**Barbur/PCC ped/bike Connection** Neighborhood greenway connection between Barbur and PCC via SW 53rd	¢ Bike/Ped	With Barbur/53rd station: Include if station is on Barbur
6026 Portland	**Pomona St: Bicycle and Ped improvements (35th to Barbur)** Provide bike lanes and sidewalks	$ Bike/Ped	With Barbur/53rd station: Include from 53rd to 45th (50%)
6034 Portland	**Taylors Ferry, SW (Capitol Hwy - City Limits): Bicycle & Pedestrian Improvements** SW Taylors Ferry Rd: Provide bicycle lanes, including shoulder widening and drainage, and construct sidewalks for access to transit	$ Bike/Ped	All options: Include Capitol to 49th (40%)
9053 Portland Tigard	**Ped/Bike Connection between Tigard Triangle and PCC-Sylvania** Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

Include in DEIS | **Include Partially** | **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

4. Tigard Triangle

4. Tigard Triangle: Design Options for BRT and LRT



Design Options

The options in this section would perform fairly similarly and are differentiated mainly by their locations and footprints within the Tigard Triangle, including couplet options and choices of using SW 68th, SW 69th, and SW 70th Avenues to connect the northern and southern areas of the Triangle. These options do not apply to the Clinton to Tigard Transit Center option in the following section (OR-217 Crossing), an option which would operate only in the northern section of the Triangle.

Recommended for further study because:

B. 68th/69th Couplet would:

- Result in more efficient transit and auto travel compared to the two-way option;
- Require less right-of-way, resulting in fewer property impacts compared to other options;
- Best support Tigard's High Capacity Transit Land Use Plan.

Not recommended because:

C. 68th Two-Way would:

- Require more right-of-way compared to couplet options.

A. 68th/70th Couplet would:

- Require significantly more structure and property acquisition compared to the 68th/69th couplet due to the narrow width and steep slopes on SW 70th Avenue.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
4. Tigard Triangle								
A	68th/70th Couplet	◑	◑	◕	◑	◑	◔	◑
B	68th/69th couplet	●	◑	◕	◕	◑	◕	◑
C	68th Two-Way	◕	◑	◑	●	◑	◔	◔

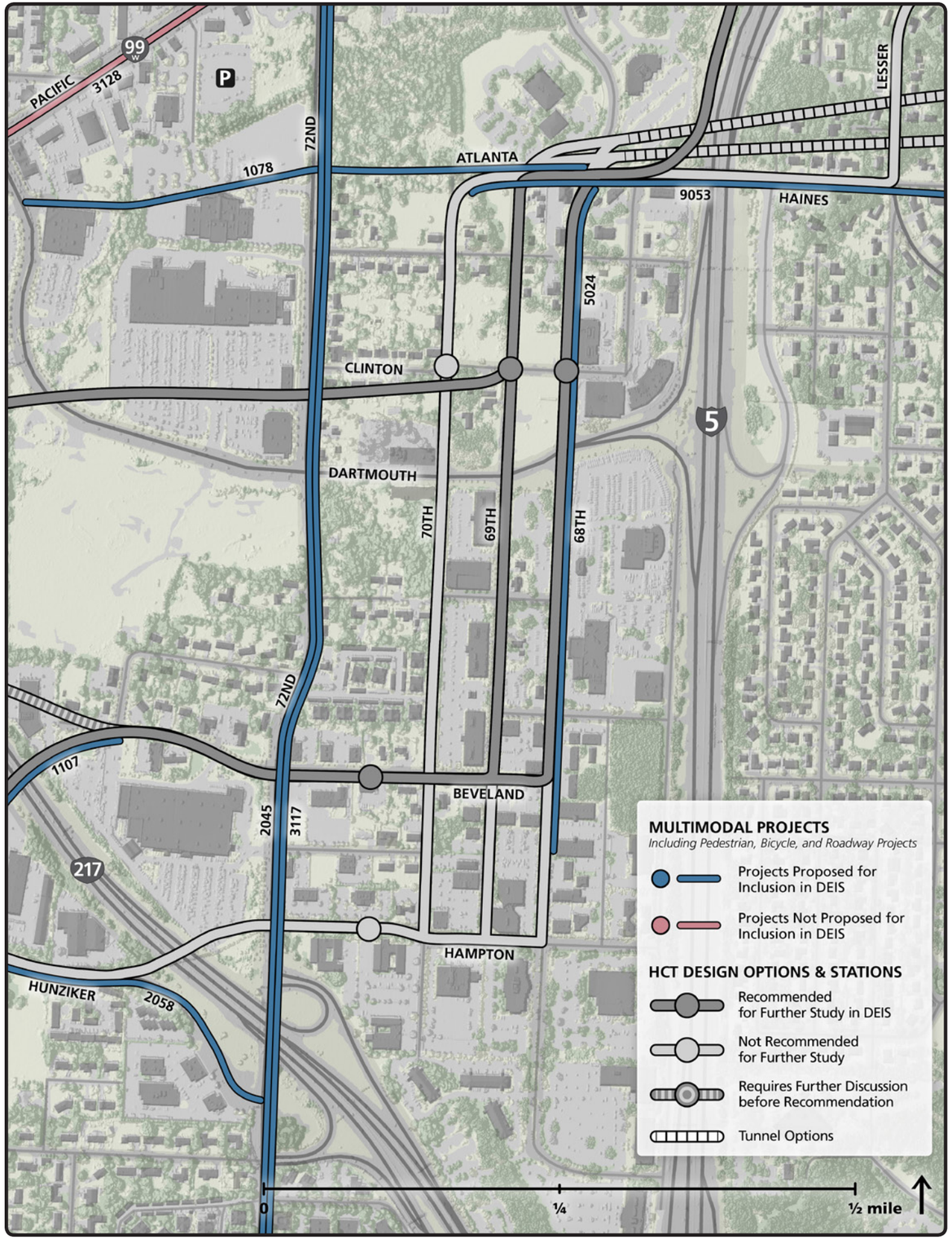
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

4. Tigard Triangle: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance in the Tigard Triangle include a new street connection, pedestrian and bicycle projects to improve access to potential station areas, and improving existing streets for transit. Filling gaps in the Pacific Highway bike lanes (the downtown viaduct in particular) were outside the immediate station area and were not recommended.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1078 Tigard	**Atlanta Street Extension (new roadway)** Extend Atlanta Street west to Dartmouth Street	$$ Auto/ Freight	With North Triangle station: Include.
1107 Tigard Washington Co.	**Hwy. 217 Over-crossing - Beveland/Hampton Connection** Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	$$$$ Auto/ Freight	With Beveland or Hampton alignment: Include
2045 Tigard	**72nd Avenue sidewalks: 99W to Bonita** Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%)
			With Triangle South station: Include one side Dartmouth-Hunziker (25%)
			With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%)
			With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2058 Tigard	**Hunziker Street Sidewalks: 72nd to Hall** Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
3117 Tigard Tualatin	**72nd Avenue bikeway: 99W to city limits** Install bike facilities on both sides of the street from Highway 99W to South City Limits	$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
3128 Tigard ODOT	**Pacific Hwy-99W Bike Lanes in Tigard** Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	$ Bicycle	Do not include
5024 Tigard	**68th Avenue (widen to 3 lanes)** Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	$$$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%)
			With 68th alignment: Include
9053 Portland Tigard	**Ped/Bike Connection between Tigard Triangle and PCC-Sylvania** Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

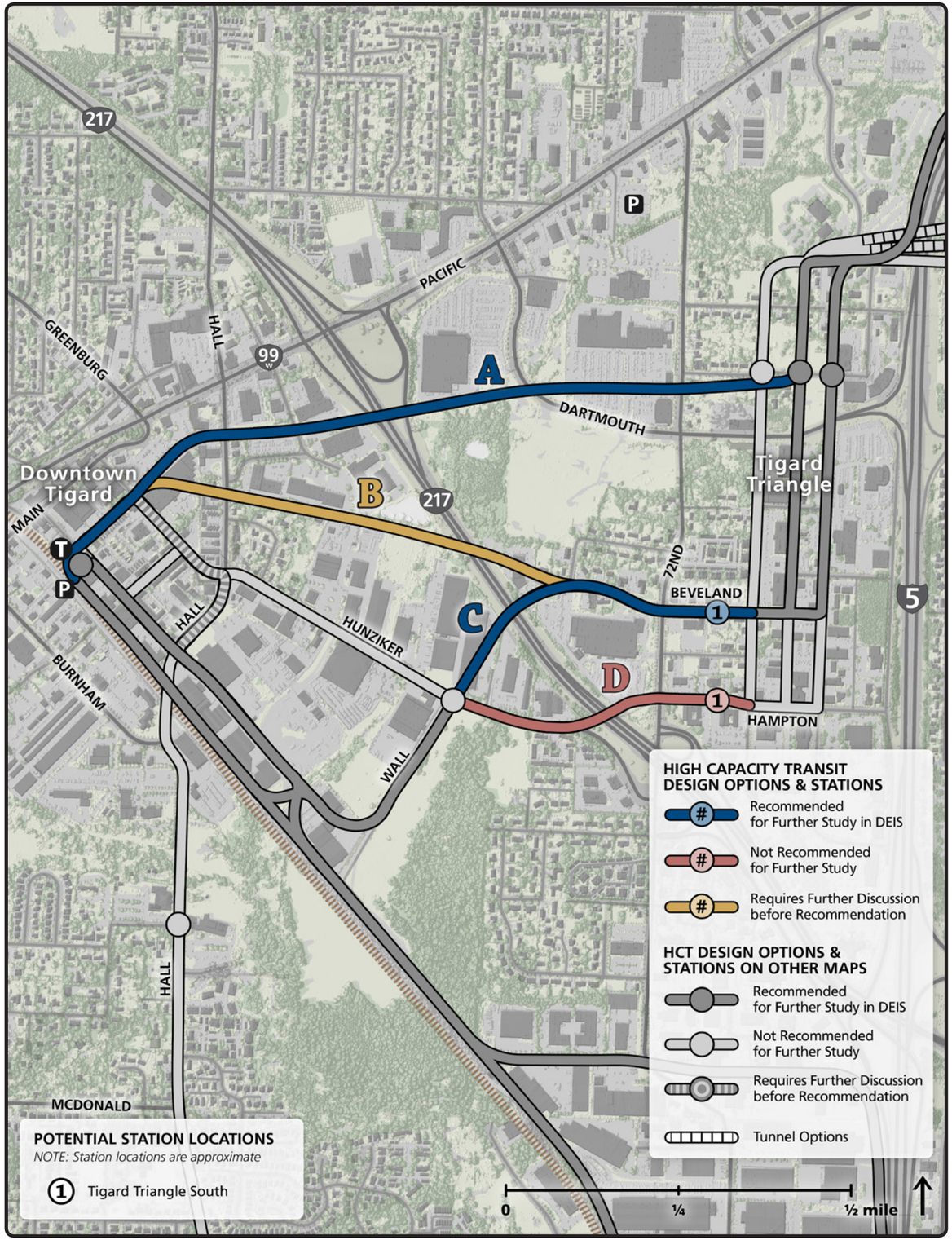
Include in DEIS **Include Partially** **Do Not Include**

Cost: ¢ = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

Page intentionally left blank

5. OR-217 Crossing

5. OR-217 Crossing: Design Options for BRT and LRT



Design Options

The proposed connections between the Tigard Triangle and downtown Tigard provide a choice between speed and development opportunities. Clinton to Tigard Transit Center would be significantly faster than the other options and would result in a smaller footprint in downtown Tigard, but would serve only the northern portion of the Tigard Triangle and require a comparatively long structure. Other options would continue through the southern Triangle, an area with, commuter students, and redevelopment opportunities. Each crossing option could include a multimodal (auto/ped/bike) bridge at a higher cost; a new auto connection would be preferred in the southern portion of the Triangle to the northern portion. Wetlands impacts could be a concern for the Clinton to Tigard Transit Center and for the Beveland North options.

Recommended for further study because:

A. Clinton to Tigard Transit Center would:

- Prioritize travel time, with a shorter alignment and higher speeds compared to other options;
- Avoid congested intersections at the southern end of the Triangle;
- Avoid impacts to existing industrial properties that would be affected by other options;
- Include a multimodal facility providing a new auto connection between downtown Tigard and the Tigard Triangle.

C. Beveland South would:

- Prioritize development with a second station in the Tigard Triangle, supporting the Tigard High Capacity Transit Land Use Plan and providing greater accessibility throughout the Triangle;
- Include a potential station, park & ride lot, and redevelopment opportunities near SW Hunziker;
- Include a multimodal facility that would provide an alternative to the existing Hunziker Street bridge and could alleviate some auto congestion around the SW 72nd Avenue interchange.

Further discussion required because:

B. Beveland North would:

- Provide a second station in the Tigard Triangle;
- Provide a more direct connection to the Tigard Transit Center compared to the Beveland South option.

Not recommended because:

D. Hampton would:

- Impact traffic at the OR-217 interchanges at SW Hunziker road and SW 72nd Avenue;
- Be the least direct, slowest option without providing access to additional riders.

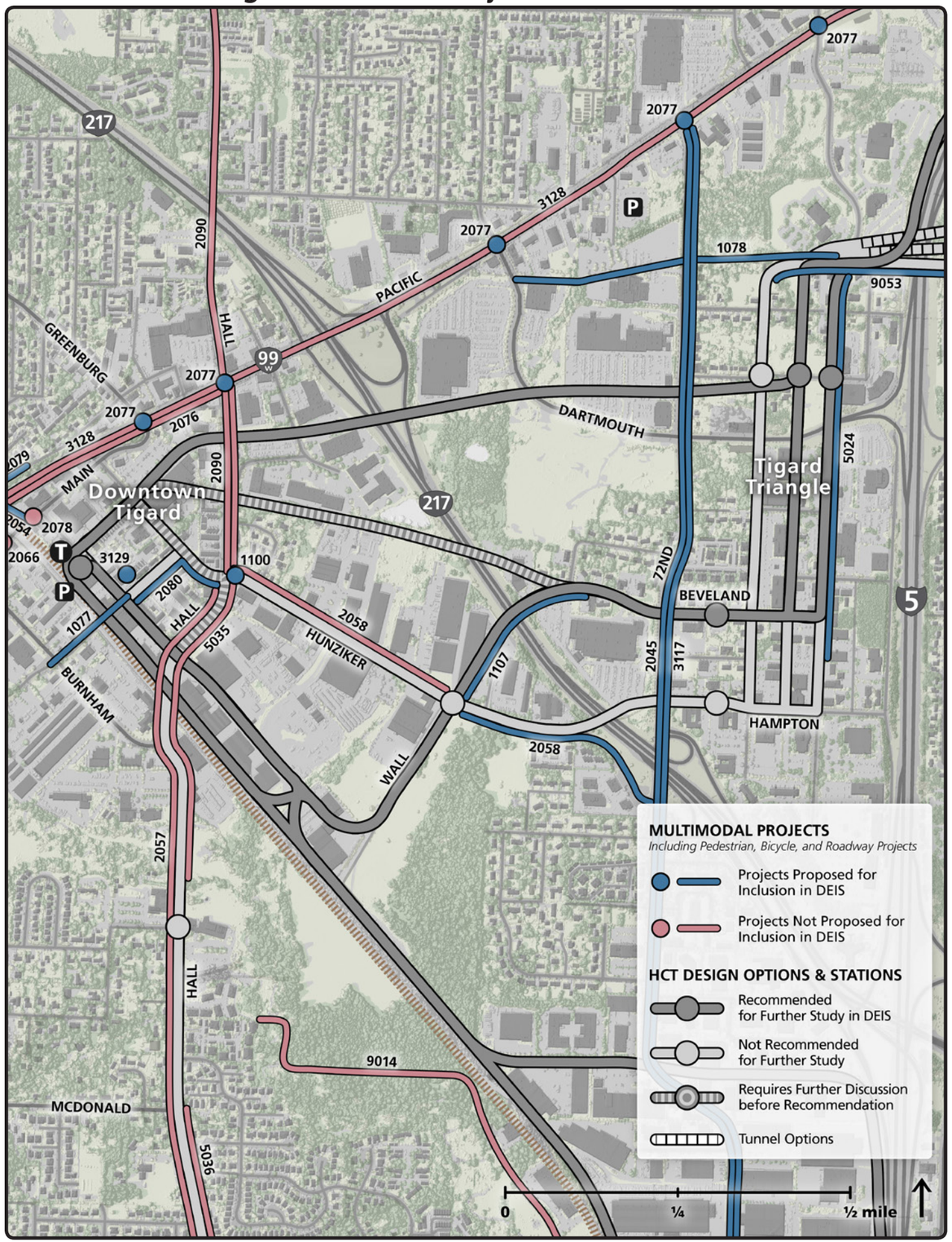
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
5. OR-217 Crossing								
A	Clinton to Tigard Transit Center	◑	●	○	◔	◔	◕	◑
B	Beveland North	●	◑	◔	○	◑	◑	◕
C	Beveland South	◑	◔	●	◑	◕	◑	●
D	Hampton	◔	○	◕	○	●	◑	◔

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

5. OR-217 Crossing: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include a new multimodal street connection over OR 217 and sidewalk projects to improve access to potential station areas.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1107 Tigard Wash. Co.	**Hwy. 217 Over-crossing - Beveland/Hampton Connection** Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	$$$$ Auto/ Freight	With Beveland or Hampton alignment: Include
2045 Tigard	**72nd Avenue sidewalks: 99W to Bonita** Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%)
			With Triangle South station: Include one side Dartmouth-Hunziker (25%)
			With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%)
			With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2054 Tigard	**Commercial Street sidewalks: Main to Lincoln** Install sidewalks on both sides of the street from Main Street to Lincoln Street	¢ Pedestrian	All options: Include on one side of street. Note: may be funded through STIP
2057 Tigard	**Hall Boulevard sidewalks: Hunziker to city limits** Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	$ Pedestrian	Do not include
2058 Tigard	**Hunziker Street Sidewalks: 72nd to Hall** Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
2066 Tigard ODOT	**Tigard Town Center (Downtown) Pedestrian Improvements** Improve sidewalks, lighting, crossings, bus shelters and benches throughout the downtown including: Highway 99W, Hall Blvd, Main Street, Hunziker, Walnut and neighborhood streets.	$ Pedestrian	Do not include. Vaguely defined; specific transit priorities addressed in other projects.
2077 Tigard ODOT	**Tigard Transit Center crossing improvements.** Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
2079 Tigard	**Tigard Transit Center pedestrian path** Formalize the informal path running from Center Street to SW Commercial St. to SW Hall Blvd., by paving it, making it ADA accessible, providing lighting, and wayfinding signage.	¢ Pedestrian	All options: Include. Note: may be funded through STIP
2080 Tigard	**Tigard Transit Center sidewalk infill** Build sidewalks, where there are none, along SW Scoffins St. & SW Ash St. These streets are near the Tigard Transit Center and provide access to it. Ensure there is a landscaped buffer between pedestrians and motor vehicles.	¢ Pedestrian	All options: Include

Multimodal Projects Continued on Next Page

Include in DEIS **Include Partially** **Do Not Include**

Cost: ¢ = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

5. OR-217 Crossing: Multimodal Projects

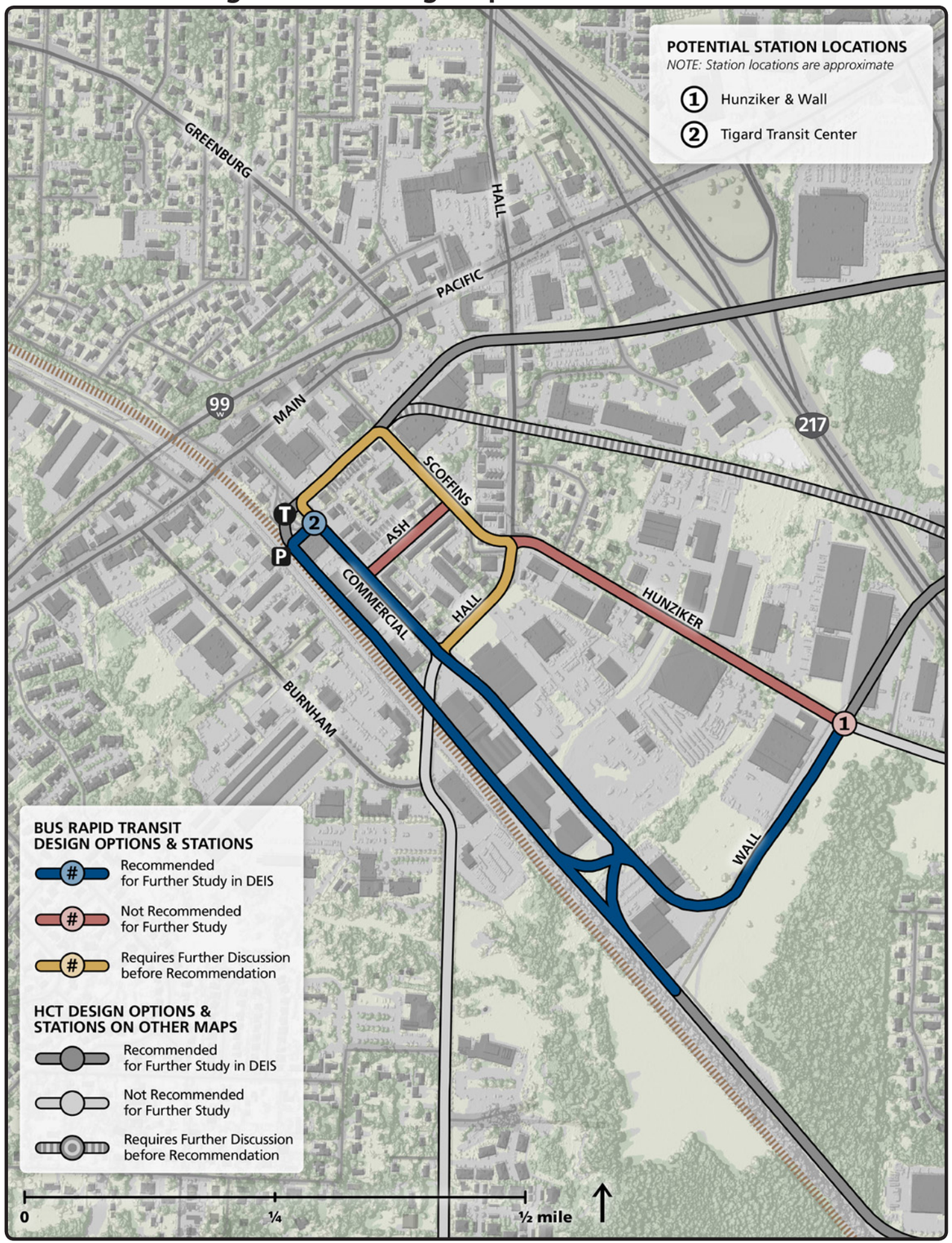
2090 Tigard	**Hall Blvd sidewalks: Locust to Hunziker** Locust St to Hunziker St - pedestrian infill	$ Pedestrian	Do not include
3117 Tigard Tualatin	**72nd Avenue bikeway: 99W to city limits** Install bike facilities on both sides of the street from Highway 99W to South City Limits	$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
3128 Tigard ODOT	**Pacific Hwy-99W Bike Lanes in Tigard** Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan (5/9/13).	$ Bicycle	Do not include
3129 Tigard	**Tigard Transit Center Bicycle Hub** Provide bicycle hub at Tigard Transit Center	¢ Bicycle	All options: Include as bike 'n ride
5024 Tigard	**68th Avenue (widen to 3 lanes)** Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	$$$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%) With 68th alignment: Include
5035 Tigard Wash. Co. ODOT	**Hall Boulevard Widening, Highway 99W to Fanno Creek** Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	$ Multimodal	Do not include
5036 Tigard Wash. Co.	**Hall Boulevard Widening, McDonald Street to Fanno Creek including creek bridge** Widen to 3 lanes or for transit; preserve ROW for 5 lanes; build sidewalks and bike lanes; safety improvements	$$$ Multimodal	Do not include
9014 Tigard	**Fanno Creek Trail - Tualatin River to Tigard St** Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$ Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%) With Durham/79th station: Include Bonita to Durham Park (40%) With Bridgeport West station: Include Bonita to Ashford (20%)
9053 Portland Tigard	**Ped/Bike Connection between Tigard Triangle and PCC-Sylvania** Provide pedestrian/bicycle connection between the Tigard Triangle area and PCC-Sylvania	$ Multi-Use Trail	All options: Consider opportunity to add ped/bike facilities to HCT connection

Include in DEIS **Include Partially** **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

6. Downtown Tigard

6. Downtown Tigard: BRT Design Options



Design Options

The following options in downtown Tigard correspond with the Beveland South or Hampton OR-217 Crossing options. The northern crossing options, Beveland North and Clinton to Tigard Transit Center, would connect to the WES alignment or to Hall Boulevard via a new street between Main Street and Ash Avenue. The main difference between the downtown Tigard options connecting to southern crossings is the footprint required to access the Tigard Transit Center in downtown Tigard.

Recommended for further study because:

C. Commercial Street to Tigard TC (no downtown loop) would:

- Result in the fastest travel time among the three options;
- Have the smallest footprint in downtown Tigard.

Further discussion required because:

B. Commercial Street with Downtown Loop via Hall would:

- Avoid the sharp curve included with the non-loop option that could be challenging for BRT;
- Result in a longer, slower alignment.

Not recommended because:

D. Downtown Loop via Ash Street instead of Loop via Hall would:

- Result in more property impacts to downtown Tigard compared to alternative loop.

A. Hunziker would:

- Require BRT operation in mixed traffic in order to avoid eliminating access to industrial business by left-turning trucks resulting in slower, less reliable service.

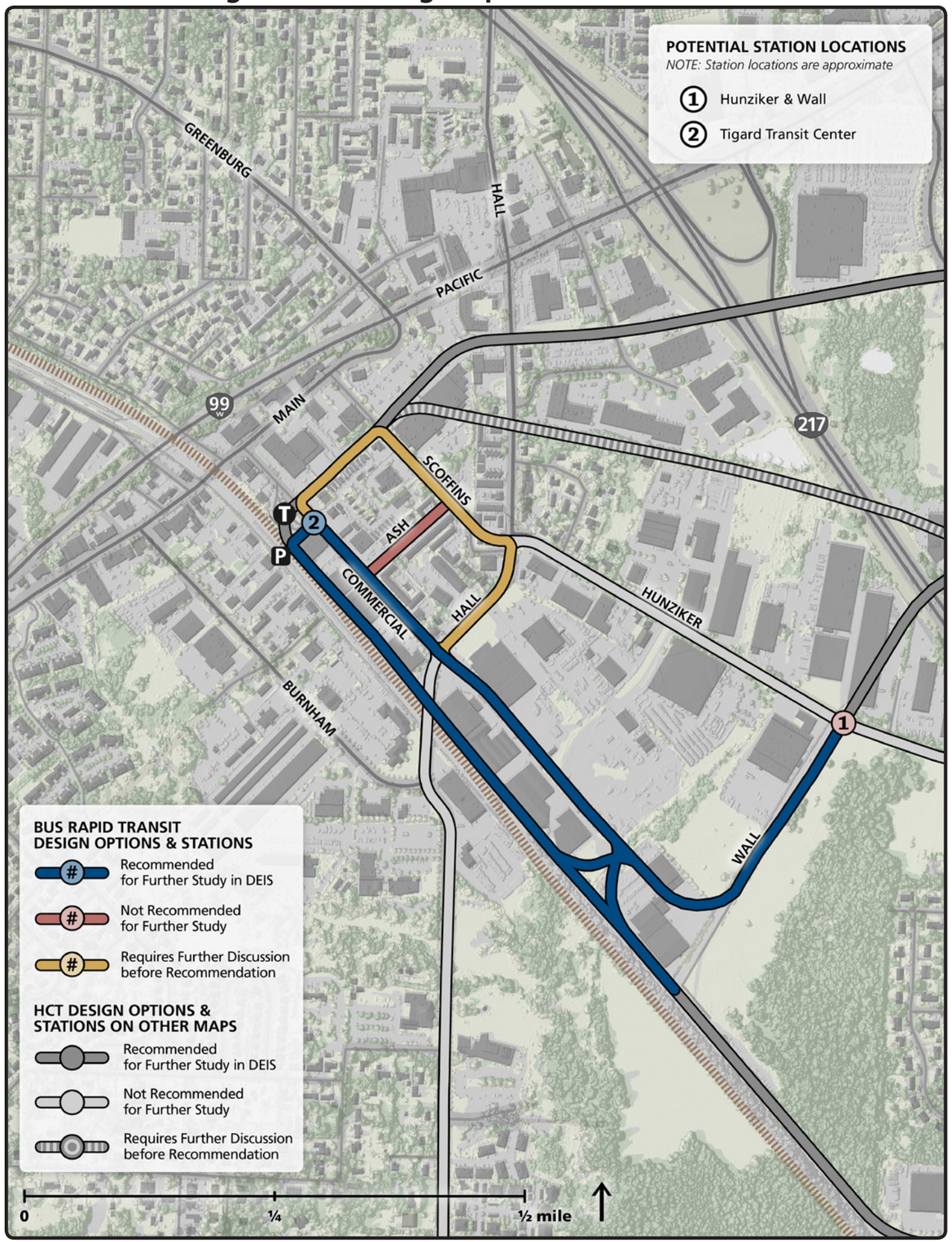
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
6. Downtown Tigard								
A	Hunziker (with downtown loop)	●	○	◑	◕	◑	◑	◑
B	Commercial St with Downtown Loop via Hall	◔	◔	◑	◔	◑	◔	●
C	Commercial St to Tigard TC (no downtown loop)	◑	◕	◑	◔	◑	◑	●
D	Downtown Loop via Ash St instead of Loop via Hall	◔	◔	◑	◕	◑	◔	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS | Not Proposed for Further Study in DEIS | Requires Further Discussion before Recommendation

6. Downtown Tigard: LRT Design Options



Design Options

The following options in downtown Tigard correspond with the Beveland South or Hampton OR-217 Crossing options. The northern crossing options, Beveland North and Clinton to Tigard Transit Center, would connect to the WES alignment or to Hall Boulevard via a new street between Main Street and Ash Avenue. The main difference between the downtown Tigard options connecting to southern crossings is the footprint required to access the Tigard Transit Center in downtown Tigard.

Recommended for further study because:

C. Commercial Street to Tigard TC (no downtown loop) would:

- Result in the fastest travel time among the three options;
- Have the smallest footprint in downtown Tigard.

Further discussion required because:

B. Commercial Street with Downtown Loop via Hall would:

- Avoid the sharp curve included with the non-loop option that could be challenging for LRT and could create noise impacts;
- Result in a longer, slower alignment.

Not recommended because:

D. Downtown Loop via Ash Street instead of Loop via Hall would:

- Result in more property impacts to downtown Tigard compared to alternative loop.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
6. Downtown Tigard								
B	Commercial St with Downtown Loop via Hall	◕	◑	◑	◑	◑	◔	●
C	Commercial St to Tigard TC (no downtown loop)	●	◕	◑	◔	◑	◑	●
D	Downtown Loop via Ash St instead of Loop via Hall	◕	◑	◑	◑	◑	◔	●

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

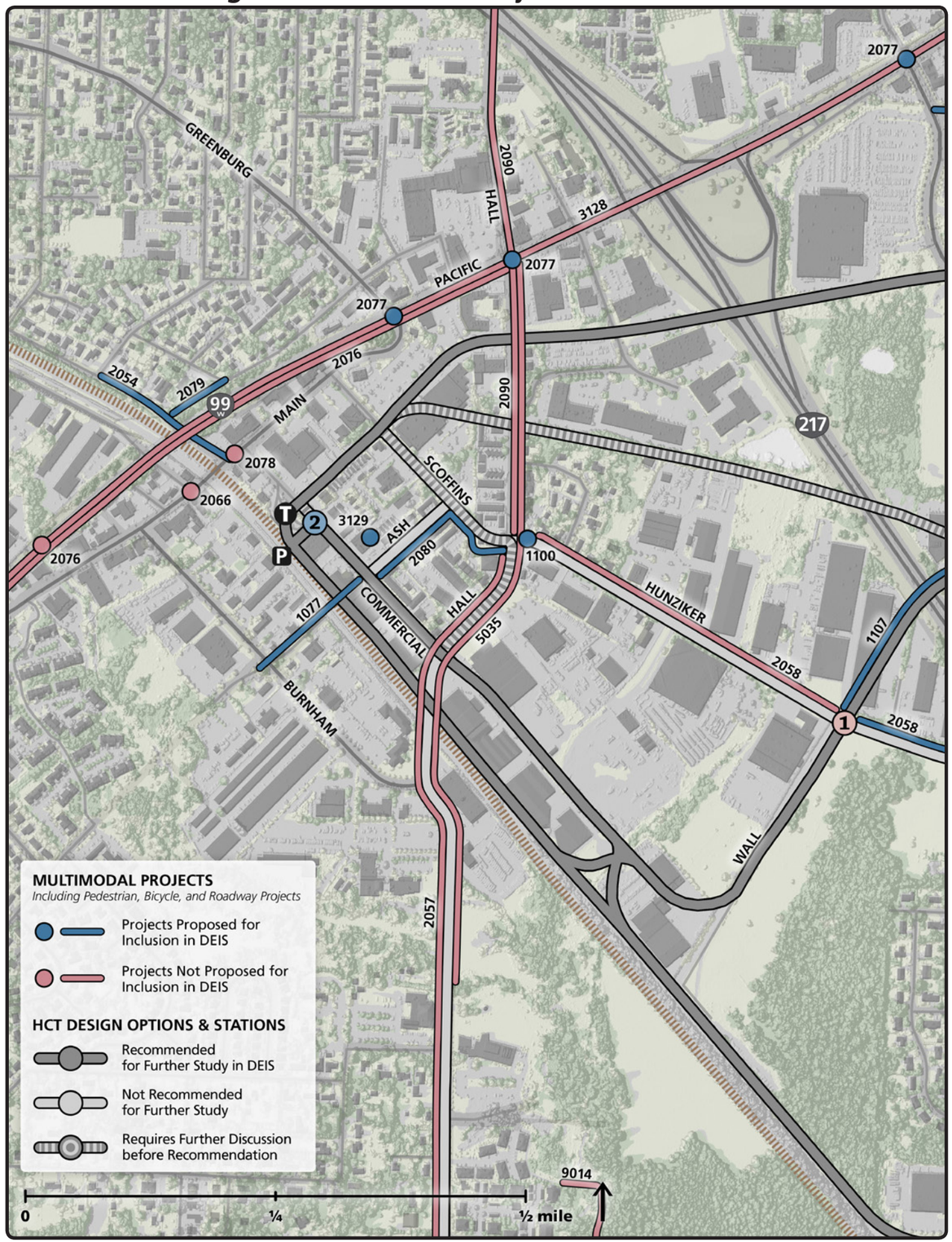
Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

Requires Further Discussion before Recommendation

6. Downtown Tigard: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include a new street connection and pedestrian and bicycle projects intended to improve access to potential station areas in downtown Tigard. Several projects were already covered by other projects, or were not along to the recommended transit alignment options, and were not recommended.

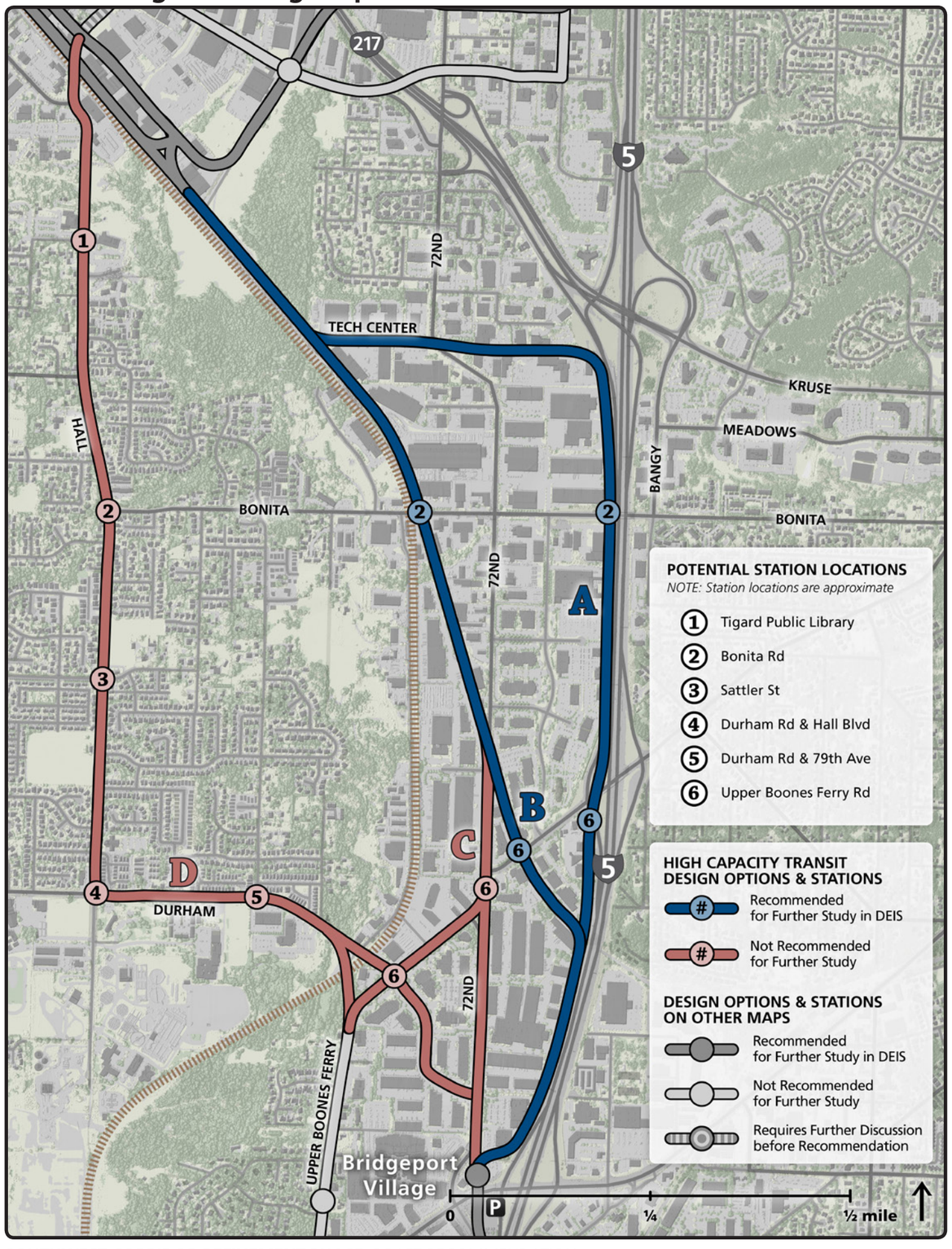
#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1077 Tigard	**Ash Avenue railroad crossing (new roadway)** Extend Ash Avenue across the railroad tracks from Burnham to Commercial Street	$ Auto/ Freight	All options: Include. Requires closure of another crossing by city.
1100 Tigard Wash. Co.	**Hall/Hunziker/Scoffins Intersection Realignment** Realign offset intersection to cross intersection to alleviate congestion and safety issues	$ Auto/ Freight	Do not include
1107 Tigard Wash. Co.	**Hwy. 217 Over-crossing - Beveland/Hampton Connection** Build new connection between Hunziker Road and 72nd Avenue at Hampton or Beveland, requires over-crossing over Hwy 217, revises existing intersection.	$$$$ Auto/ Freight	With Beveland or Hampton alignment: Include
2054 Tigard	**Commercial Street sidewalks: Main to Lincoln** Install sidewalks on both sides of the street from Main Street to Lincoln Street	¢ Pedestrian	All options: Include on one side of street. Note: may be funded through STIP
2057 Tigard	**Hall Boulevard sidewalks: Hunziker to city limits** Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	$ Pedestrian	Do not include
2058 Tigard	**Hunziker Street Sidewalks: 72nd to Hall** Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
2066 Tigard ODOT	**Tigard Town Center (Downtown) Pedestrian Improvements** Improve sidewalks, lighting, crossings, bus shelters and benches throughout the downtown including: Highway 99W, Hall Blvd, Main Street, Hunziker, Walnut and neighborhood streets.	$ Pedestrian	Do not include. Vaguely defined; specific transit priorities addressed in other projects.
2076 Tigard ODOT	**Tigard Transit Center 99W sidewalk infill.** Build sidewalks that are at least 10 ft. wide along SW Pacific Hwy (99W), where there are none, and widen existing sidewalk corridors all along 99W, so there is landscaped buffer between pedestrians and the motor vehicles.	$ Pedestrian	Do not include
2077 Tigard ODOT	**Tigard Transit Center crossing improvements.** Shorten crossing distances, make crosswalks more visible, and provide more time for pedestrians to cross at the intersections of 99W and SW Greenburg Rd., 99W & SW Hall Blvd., and 99W & SW Dartmouth St.	$ Pedestrian	All options: Include crosswalk visibility and timing elements at Greenburg, Hall, Dartmouth, 72nd, and 68th.
2078 Tigard	**Tigard Transit Center Park & Ride pedestrian path.** Provide a designated pedestrian path through the transit center park and ride lot, connecting to SW Main St	¢ Pedestrian	Do not include. Feasibility unclear due to existing parking.
2079 Tigard	**Tigard Transit Center pedestrian path** Formalize the informal path running from Center Street to SW Commercial St. to SW Hall Blvd., by paving it, making it ADA accessible, providing lighting, and wayfinding signage.	¢ Pedestrian	All options: Include. Note: may be funded through STIP
2080 Tigard	**Tigard Transit Center sidewalk infill** Build sidewalks, where there are none, along SW Scoffins St. & SW Ash St. These streets are near the Tigard Transit Center and provide access to it. Ensure there is a landscaped buffer between pedestrians and motor vehicles.	¢ Pedestrian	All options: Include
2090 Tigard	**Hall Blvd sidewalks: Locust to Hunziker** Locust St to Hunziker St - pedestrian infill	$ Pedestrian	Do not include
3128 Tigard ODOT	**Pacific Hwy-99W Bike Lanes in Tigard** Fill in gaps in bike lanes along Pacific Hwy-99W within the Tigard city limits. Listed as a Regional Bicycle Parkway in the Regional Active Transportation Plan.	$ Bicycle	Do not include
3129 Tigard	**Tigard Transit Center Bicycle Hub** Provide bicycle hub at Tigard Transit Center	¢ Bicycle	All options: Include as bike 'n ride
5035 Tigard, ODOT, Wash. Co.	**Hall Boulevard Widening, Highway 99W to Fanno Creek** Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	$ Multimodal	Do not include

Include in DEIS **Include Partially** **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

7. South Tigard

7. South Tigard: Design Options for BRT and LRT



Design Options

Three of the options in this segment would operate parallel to a portion of the WES alignment between Tigard and Tualatin before reaching Bridgeport Village by differing routes. These options would serve more employment compared to the remaining option, which would connect to Bridgeport Village via Hall Boulevard and serve mainly households. WES alignment options are differentiated by right-of-way ownership and by varying impacts to industrial businesses.

Recommended for further study because:

B. WES Alignment to Parallel I-5 via PNWR Freight Rail ROW would:

- Avoid impacts to industrial business accesses on SW 72nd Avenue;
- Avoid congested intersections along SW 72nd Avenue;
- Require fewer property acquisitions compared to WES option utilizing Tech Center Drive, resulting in lower costs.

A. WES Alignment to Parallel I-5 via Tech Center Drive would:

- Avoid impacts to industrial business accesses on SW 72nd Avenue;
- Avoid congested intersections along SW 72nd Avenue;
- Avoid PNWR freight rail right of way, the use of which would require negotiations with rail owners;
- Provide connectivity to areas east of I-5 at the SW Bonita Road and SW Carman Drive/SW Upper Boones Ferry Road crossings.

Not recommended because:

C. WES Alignment and SW 72nd Ave would:

- Impact industrial business accesses on SW 72nd Avenue;
- Potentially impact traffic on SW 72nd Avenue.

D. Hall Blvd to Durham Rd would:

- Travel through predominantly single family residential areas with limited ridership and development potential;
- Result in slower travel times compared to WES alignment options.

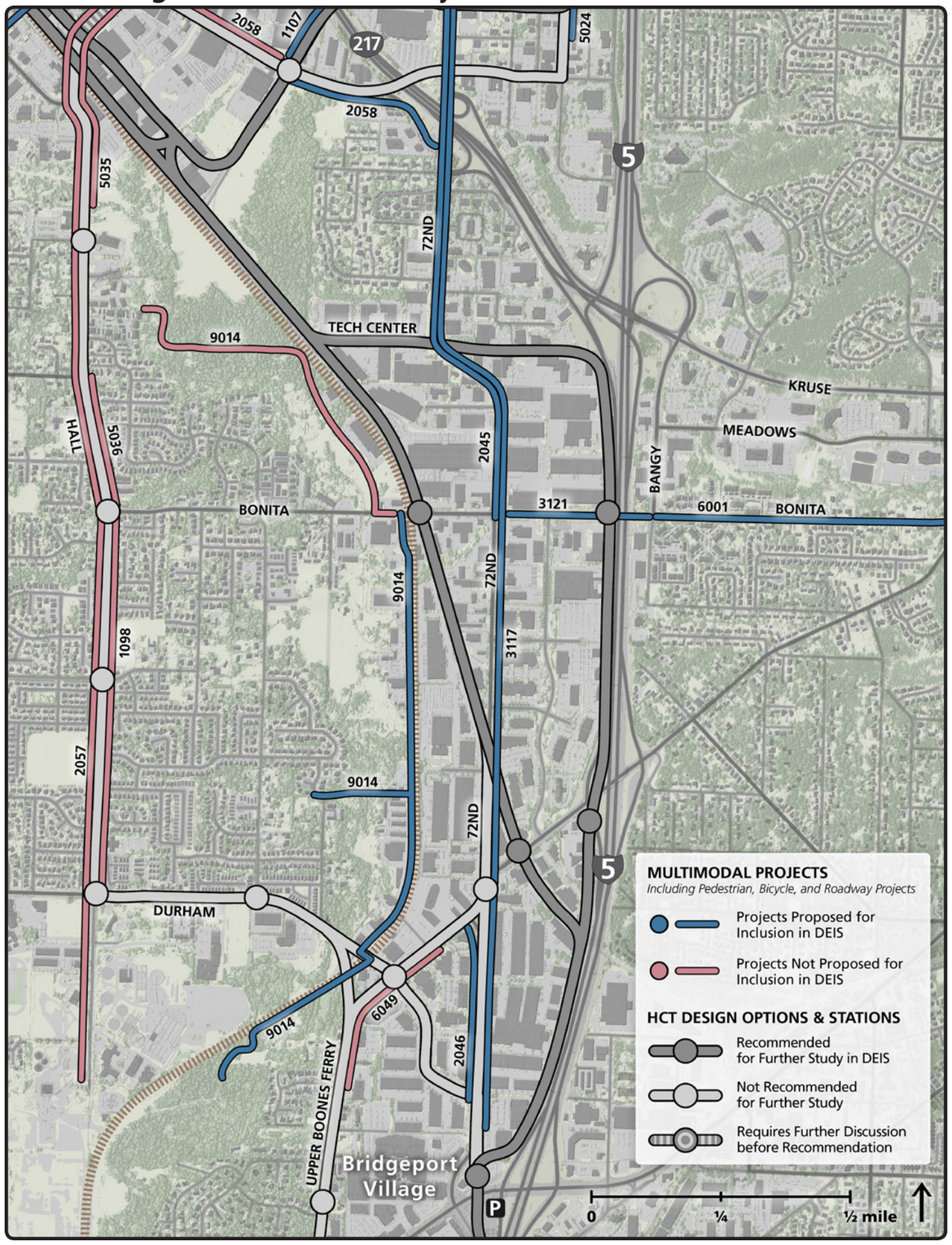
ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
7. Tigard to Durham								
A	WES Alignment to Parallel I-5 via Tech Center Drive	◔	◔	◑	◔	●	◑	◔
B	WES Alignment to Parallel I-5 via PNWR Freight Rail ROW	●	◑	◕	◑	◕	◕	◕
C	WES Alignment and 72nd Ave	◕	◑	●	◑	◕	◕	◑
D	Hall Blvd to Durham Rd	●	◔	○	◔	◔	◔	◔

CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS Not Proposed for Further Study in DEIS

7. South Tigard: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects intended to improve access to potential station areas. Several projects were not along the recommended transit alignment options, and were not recommended.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1098 Tigard Wash. Co.	**Hall Boulevard Widening, Bonita Road to Durham** Widen to 3 lanes or for transit; build sidewalks and bike lanes; safety improvements (construct 3 lanes with development, preserve ROW for 5 lanes)	$ Auto/ Freight	Do not include
2045 Tigard	**72nd Avenue sidewalks: 99W to Bonita** Complete gaps in sidewalk on both sides of street from Highway 99W to Bonita Road	$ Pedestrian	With Triangle North station: Include one side from 99W-Dartmouth (25%)
			With Triangle South station: Include one side Dartmouth-Hunziker (25%)
			With 72nd/Tech Center Drive station: Include west side Tech Center Dr-south of Landmark Ln (20%)
			With WES/Bonita station: Include east side Bonita-Landmark Ln (10%)
2057 Tigard	**Hall Boulevard sidewalks: Hunziker to city limits** Complete gaps in sidewalk on alternating sides of street from Hunziker Street to the South City Limits	$ Pedestrian	Do not include
2058 Tigard	**Hunziker Street Sidewalks: 72nd to Hall** Install sidewalk on both sides of the street from 72nd Avenue to Hall Boulevard	$ Pedestrian	With Hunziker/Beveland station: Include one side from Beveland overcrossing to 72nd (50%)
3117 Tigard Tualatin	**72nd Avenue bikeway: 99W to city limits** Install bike facilities on both sides of the street from Highway 99W to South City Limits	$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
3121 Tigard Lake Oswego	**Bonita Road bike lanes: 72nd to Bangy** Install bike lanes from 72nd Avenue to Bangy Road	¢ Bicycle	With WES/Bonita station: Include as re-striping only
5024 Tigard	**68th Avenue (widen to 3 lanes)** Widen to 3 lanes, or for transit, including sidewalks and bike lanes between Atlanta Street and south end	$$$ Multimodal	With Triangle North station: Include sidewalk on one side from Atlanta to south of Baylor (2%)
			With 68th alignment: Include
5035 Tigard Wash.Co. ODOT	**Hall Boulevard Widening, Highway 99W to Fanno Creek** Widen to 3 lanes, or for transit, plus on-street parking (or potential 5 lanes); build sidewalks and bike lanes; safety improvements	$ Multimodal	Do not include
5036 Tigard Wash. Co.	**Hall Boulevard Widening, McDonald Street to Fanno Creek including creek bridge** Widen to 3 lanes or for transit; preserve ROW for 5 lanes; build sidewalks and bike lanes; safety improvements	$$$ Multimodal	Do not include
6001 Lake Oswego	**Bonita Rd. sidewalks and bike lanes - Carman Dr. to Bangy Rd.** Sidewalks and bike lanes; supplement to Tigard project #3121 which continues to 72nd	¢ Bike/Ped	With WES/Bonita station: Include bike lanes only as minor widening
6049 Durham	**Boones Ferry Sidewalks** Improve sidewalks and bicycle lane on Boones Ferry Road from north of Durham Road to Afton Lane	¢ Bike/Ped	Do not include
9014 Tigard	**Fanno Creek Trail - Tualatin River to Tigard St** Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$ Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%)
			With Durham/79th station: Include Bonita to Durham Park (40%)
			With Bridgeport West station: Include Bonita to Ashford (20%)

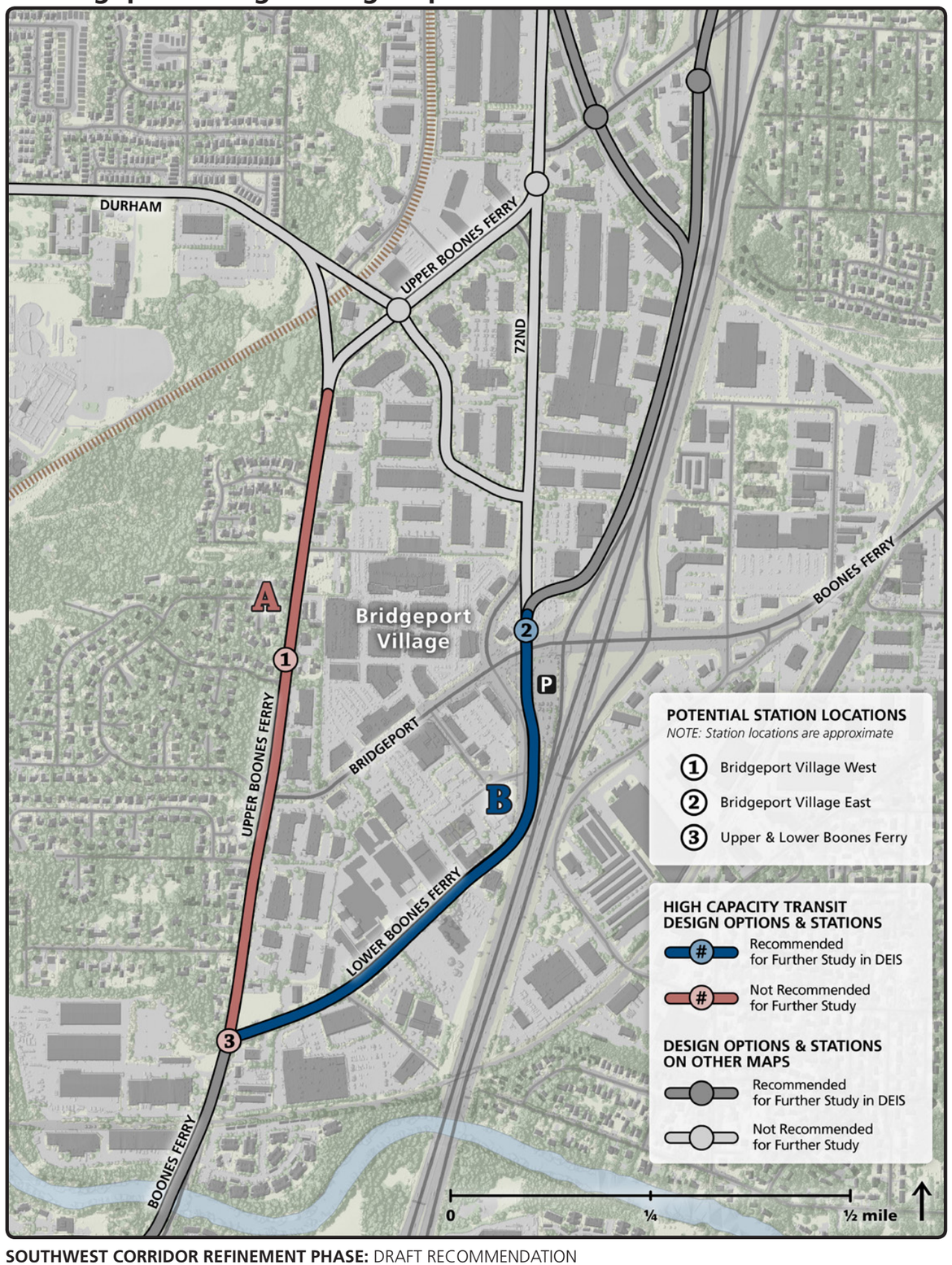
Include in DEIS **Include Partially** **Do Not Include**

Cost: **¢** = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

Page intentionally left blank

8. Bridgeport Village

8. Bridgeport Village: Design Options for BRT and LRT



Design Options

There are two options under consideration for this segment. Upper Boones Ferry Road, to the west of Bridgeport Village, could connect to the Hall Boulevard or SW 72nd Avenue options to the north. Lower Boones Ferry Road, to the east of Bridgeport Village, could connect to SW 72nd options or options parallel to I-5 to the north.

Recommended for further study because:

B. Lower Boones Ferry Road would:

- Serve the main entrance of Bridgeport Village;
- Provide direct access to Tualatin Park & Ride lot;
- Include a bridge crossing over the SW Lower Boones Ferry/SW Bridgeport Road intersection;
- Be accessible to new housing developments south of Bridgeport Village.

Not recommended because:

A. Upper Boones Ferry Road would:

- Not serve the main entrance of Bridgeport Village;
- Require a long walk to the Tualatin Park & Ride lot;
- Remove recent streetscaping installed by the City of Durham;
- Impact tree groves purchased by Durham through a bond measure;
- Be incompatible with the recommended parallel to I-5 options to the north.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
8. Bridgeport Village								
A	Upper Boones Ferry (from Durham Rd or 72nd)	●	◕	◔	◕	◑	◔	◑
B	Lower Boones Ferry (from Durham Rd, 72nd or parallel to I-5)	◑	◑	◕	●	◑	◑	◑

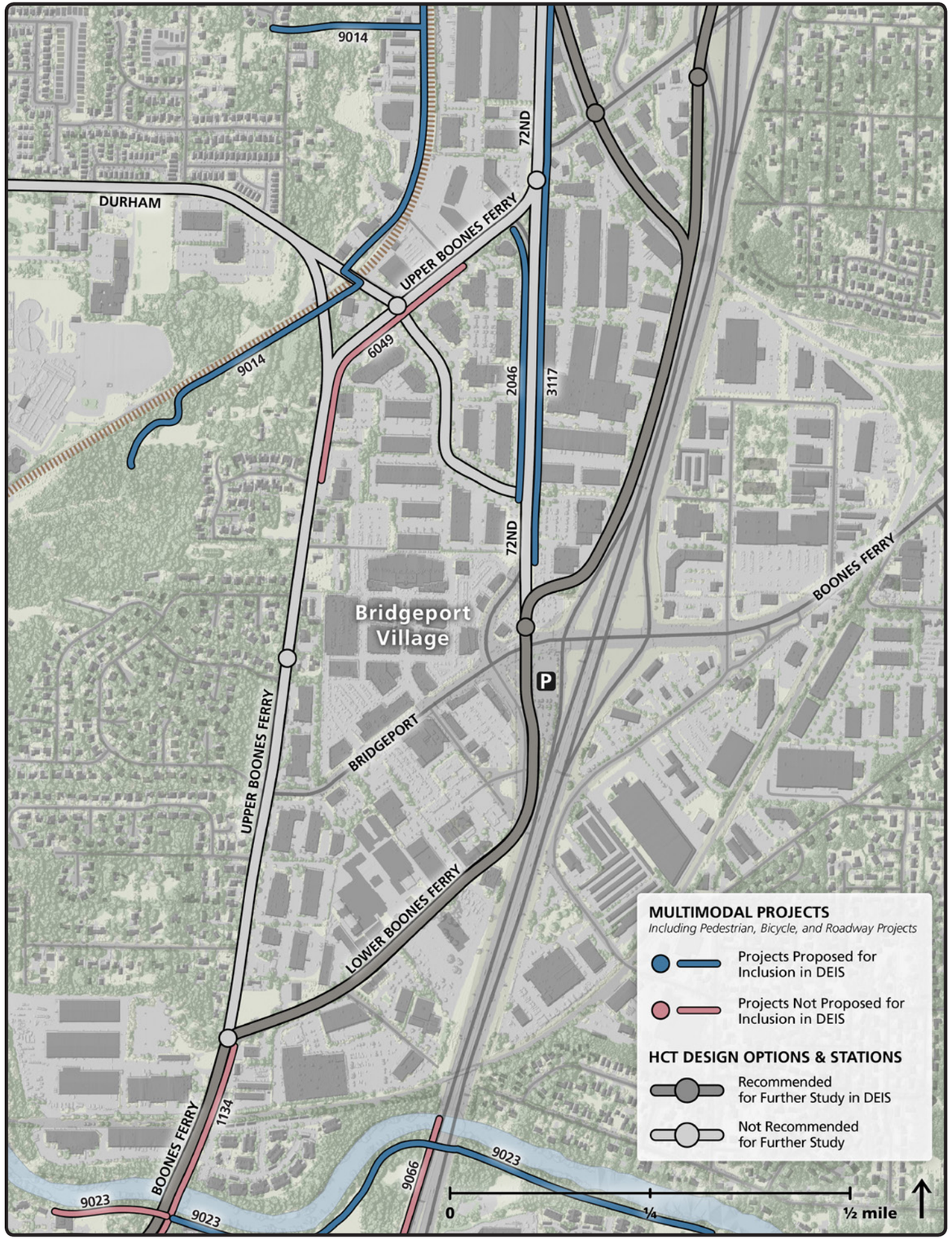
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

8. Bridgeport Village: Multimodal Projects



Multimodal Projects

Multimodal projects recommended to advance include pedestrian and bicycle projects along 72nd Avenue intended to improve access to potential station areas. One project was not along the recommended transit alignment options, and was not recommended.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1134 Tualatin Washington Co.	**Boones Ferry Road (reconstruct/widen from Martinazzi to Lower Boones Ferry)** Reconstruction/widen to 5 lanes or for transit from Martinazzi to Lower Boones Ferry Road, including bridge.	$$$ Auto/ Freight	Do not include
2046 Tigard	**72nd Avenue sidewalks: Upper Boones Ferry to Durham** Install sidewalk on both sides of street from Upper Boones Ferry Road to Durham Road	$ Pedestrian	With Bridgeport Village front-door station: Include With 72nd alignment: Include
3117 Tigard Tualatin	**72nd Avenue bikeway: 99W to city limits** Install bike facilities on both sides of the street from Highway 99W to South City Limits	$ Bicycle	All options: Include if done through re-striping (conversion from 3-lane to 2-lane with bike lanes)
6049 Durham	**Boones Ferry Sidewalks** Improve sidewalks and bicycle lane on Boones Ferry Road from north of Durham Road to Afton Lane	¢ Bike/Ped	Do not include
9014 Tigard	**Fanno Creek Trail - Tualatin River to Tigard St** Complete gaps along the Fanno Creek multiuse path from the Tualatin River to Tigard Library and from Pacific Hwy-99W to Tigard Street. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$ Multi-Use Trail	With WES/Bonita station: Include from Bonita to Ashford (20%) With Durham/79th station: Include Bonita to Durham Park (40%) With Bridgeport West station: Include Bonita to Ashford (20%)
9023 Tigard Tualatin	**Tualatin River Pathway** Develop a continuous multi-use pathway along the Tualatin River from Boones Ferry Road under I-5 to the Tualatin River Greenway and Browns Ferry Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$$ Multi-Use Trail	With Tualatin TC Station or UBF/LBF Station: Include from Boones Ferry Road east to existing trail (80%)
9066 Tualatin ODOT	**North/South I-5 Parallel Path in Tualatin** Ped/bike pathway	$$ Multi-Use Trail	Do not include

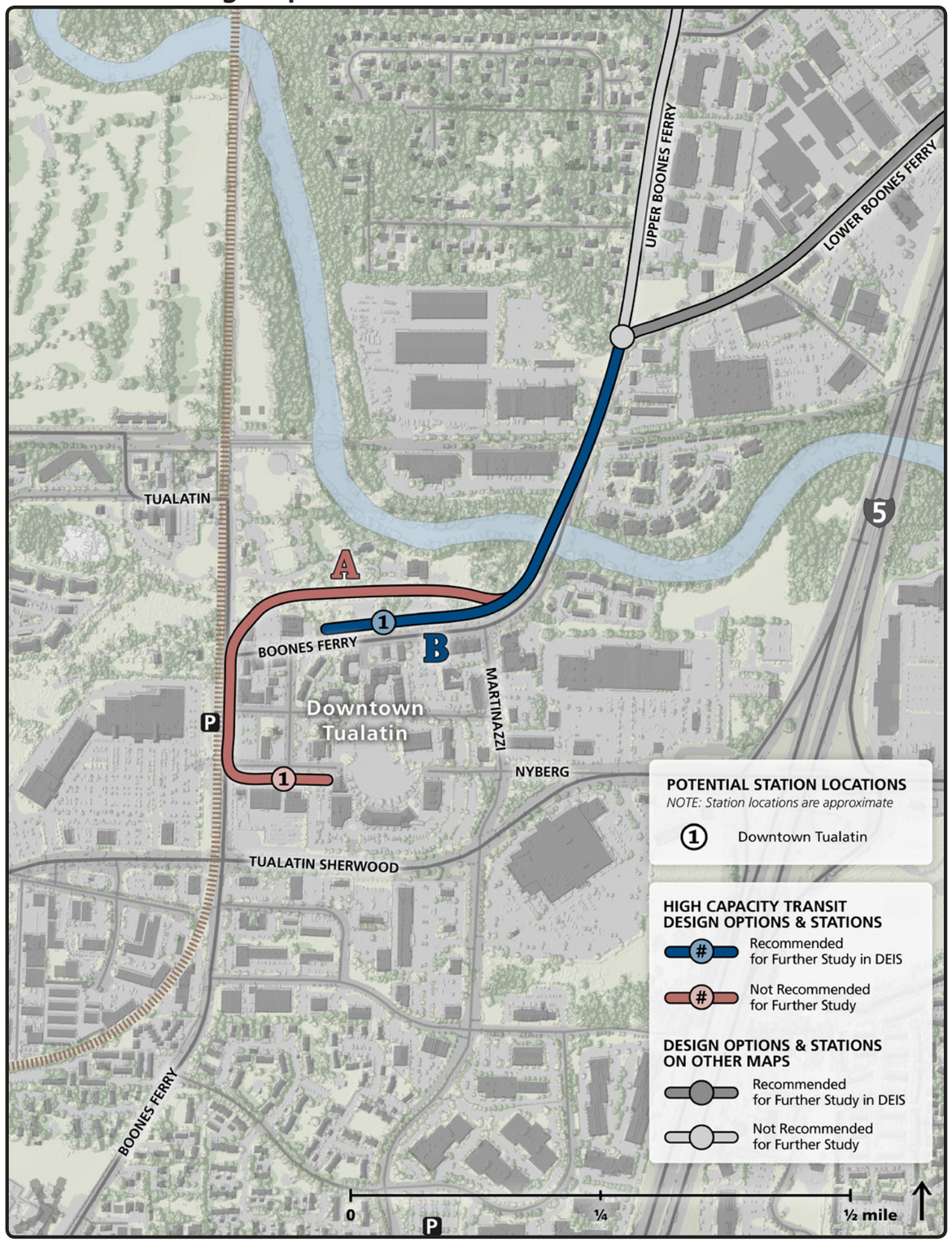
Include in DEIS **Include Partially** **Do Not Include**

Cost: ¢ = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

Page intentionally left blank

9. Tualatin

9. Tualatin: Design Options for BRT and LRT



Design Options

There are two options under consideration in this segment. Both would include a new crossing parallel to the Boones Ferry Road bridge over freight rail tracks and the Tualatin River, and both would travel north of Boones Ferry Road in downtown Tualatin. The second option would continue south into downtown to better connect with the WES station; however, a station directly adjacent to the WES platform would not be possible without widening Boones Ferry Road and impacting properties.

Recommended for further study because:

B. Parallel to Boones Ferry Road (north of downtown) would:

- Provide walk access to downtown Tualatin and to the WES station;
- Result in fewer property impacts and traffic impacts compared to the alternative option.

Not recommended because:

A. WES Connection via Boones Ferry Road near Nyberg Road would:

- Result in more impacts to commercial properties in downtown;
- Likely require elimination of left turn pockets or other lanes on SW Boones Ferry Road at SW Nyberg Road.

ID	Option	CAP	TRA	ACC	ENV	DEV	PRP	TRF
9. Tualatin								
A	WES Connection via Boones Ferry near Nyberg Rd	◔	◔	◕	○	◑	◔	○
B	Parallel to Boones Ferry Rd (north side of downtown)	◕	●	◑	◑	◑	◑	◕

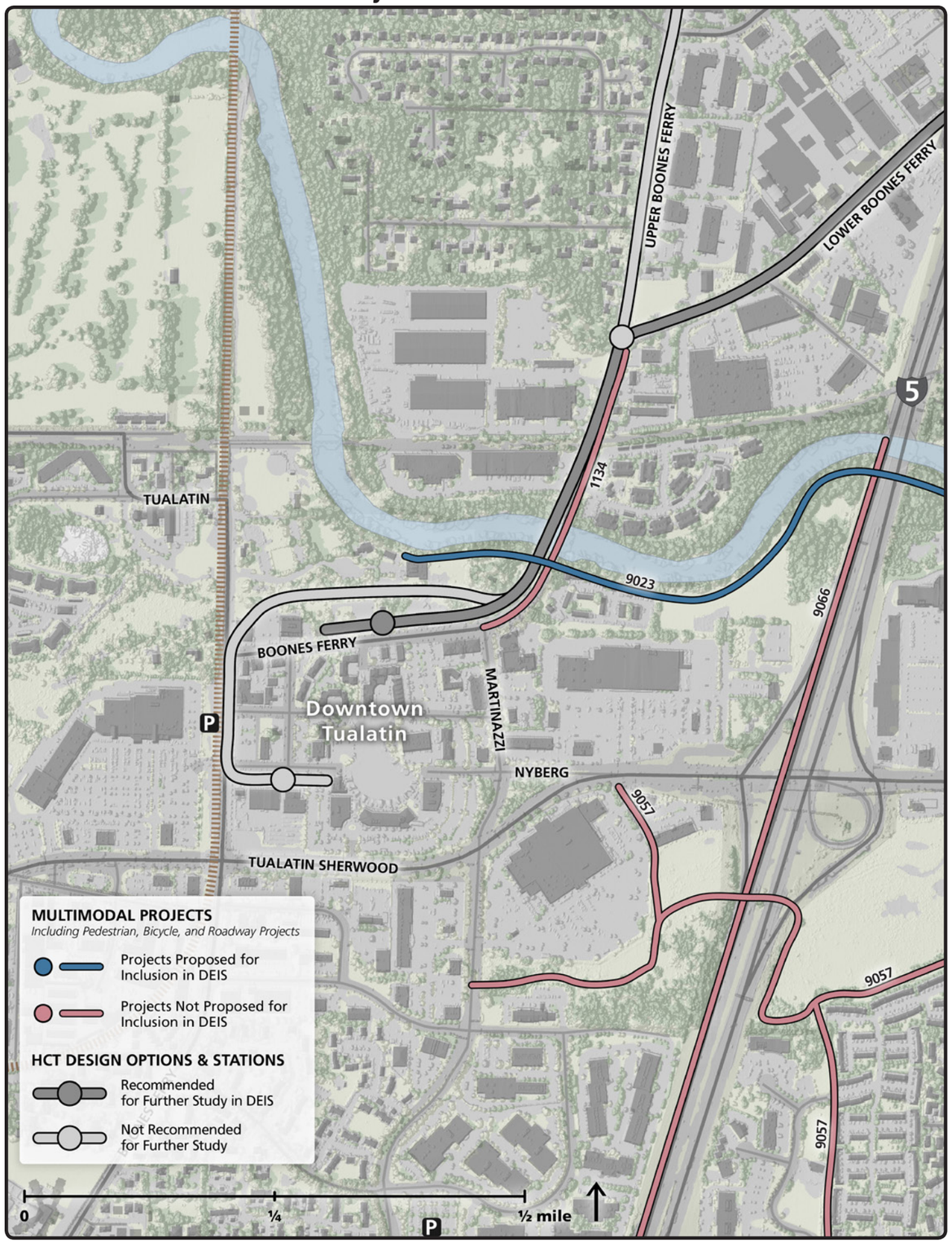
CAP = Capital Costs / TRA = Travel Time / ACC = Accessibility to Transit / ENV = Environmental Impacts
DEV = Development/Redevelopment Potential / PRP = Property Impacts / TRF = Traffic Impacts

Best ● ◕ ◑ ◔ ○ Worst

Proposed for Further Study in DEIS

Not Proposed for Further Study in DEIS

9. Tualatin: Multimodal Projects



Multimodal Projects

One multimodal project was recommended to advance – a trail connection between the potential station area and employment and residential areas to the east. Several projects did not provide direct access to the potential station areas, and were not recommended.

#### City/Ownership	**Project Title** Project Description	Cost Primary Mode	Draft DEIS Recommendation
1134 Tualatin Washington Co.	**Boones Ferry Road (reconstruct/widen from Martinazzi to Lower Boones Ferry)** Reconstruction/widen to 5 lanes or for transit from Martinazzi to Lower Boones Ferry Road, including bridge.	$$$ Auto/ Freight	Do not include
9023 Tigard Tualatin	**Tualatin River Pathway** Develop a continuous multi-use pathway along the Tualatin River from Boones Ferry Road under I-5 to the Tualatin River Greenway and Browns Ferry Park. Listed as a Regional Bicycle Parkway and Regional Pedestrian Parkway in the Regional Active Transportation Plan (5/9/13).	$$ Multi-Use Trail	With Tualatin TC Station or UBF/LBF Station: Include from Boones Ferry Road east to existing trail
9057 Tualatin	**Nyberg Creek Greenway** Connecting east and west of I-5 then north and south to Hwy 99 to I-5 bikeway (south) and Tualatin River Greenway (north)	$ Multi-Use Trail	Do not include
9066 Tualatin ODOT	**North/South I-5 Parallel Path in Tualatin** Ped/bike pathway	$$ Multi-Use Trail	Do not include

Include in DEIS **Include Partially** **Do Not Include**

Cost: ¢ = up to $500,000 **$** = up to $5M **$$** = up to $10M **$$$** = up to $20 M **$$$$** = more than $20M

Materials following this page were distributed at the meeting.

Additional Public Comment Received on Friday, June 6, 2014

-----Original Message-----
From: Dave Cassinelli [mailto:dave.cassinelli@gmail.com]
Sent: Friday, June 06, 2014 2:49 PM
To: Trans System Accounts
Subject: SW Corridor Plan Public Feedback

My feedback is that I would like to see the light rail constructed, but not if it has to replace a traffic lane on Barbur.

I think both can be done somehow. I think the space on the hill above
I5 (where the new ravine overpasses are being finished) and below Barbur should be studied.
Thanks, Dave

SW Corridor Steering Group.

Notes on some unresolved HCT Design Issues

A successful HCT needs to focus on serving major trip generators **directly.** A 3,000 foot walk to PCC doesn't do it. OHSU is the biggest trip generator in the region. It deserves at least as good a station as the zoo !

Preserving traffic capacity on Barbur and elsewhere is important to many, particularly those who are not particularly excited about HCT. Throughout the corridor, there are opportunities to mitigate traffic bottlenecks as incidentals to the HCT project, such as the I-5 climbing lane, and bypassing the Burlingame and CrossRoad Intersections. At 217, a bypass for local traffic and bikes could be included in the HCT alignment.

Where LRT is in a street alignment, grass track should be used. Some 80% of new track in Europe is now built in grass, because the community expects it. It can be an attitude changer.

Some specific issues include the need to **find a better connection to LRT on 5th and 6th.** I suspect the operational complexity of the present proposals have not been appreciated. The trains must cross from left to right. And the two corridors must join, in the midst of traffic intersections with insufficient length for a stopped train. This is not good. It will eventually become an LRT bottleneck. The geometry is difficult, and I suspect staff discarded it so as not to have to solve this problem !. I suggest the project needs to develop this option to see if the benefits outweigh the costs and impacts.

Between Hamilton and Terwilliger, the cost and impacts could be reduced, and operations improved if the **HCT was located on the east side of Barbur,** rather than in the median. It could be at a lower grade. This alignment would lead seamlessly to an I-5 alignment bypassing the congested Terwilliger Intersections. This segment could also be coordinated with ODOTs future plan to add a **climbing lane to I-5.** Impacts might be less if this was added on the east side of I-5 at the Terwilliger Curve.

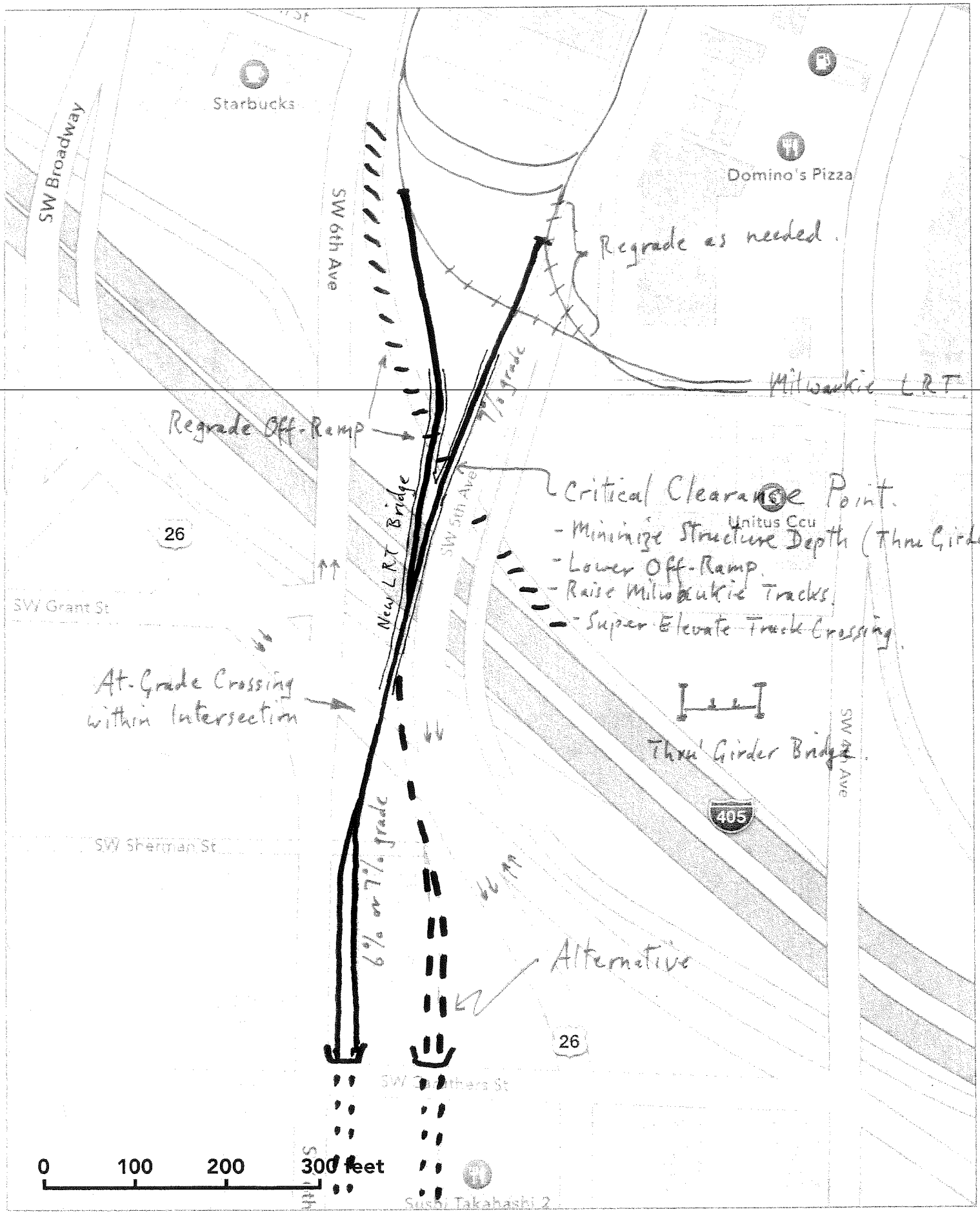
Serving PCC is important. One option might be to use some segments of streetcar type ROW along Capital Highway, which is seldom congested. PCC has not only the campus, but also r**edevelopment potential** if parking needs can be reduced. It is also the station that would serve **Mountain Park and beyond.**

As mentioned, the HCT project offers the opportunity for a local traffic to **bypass the 217 Interchange,** connecting the Tigard Triangle to downtown Tigard.

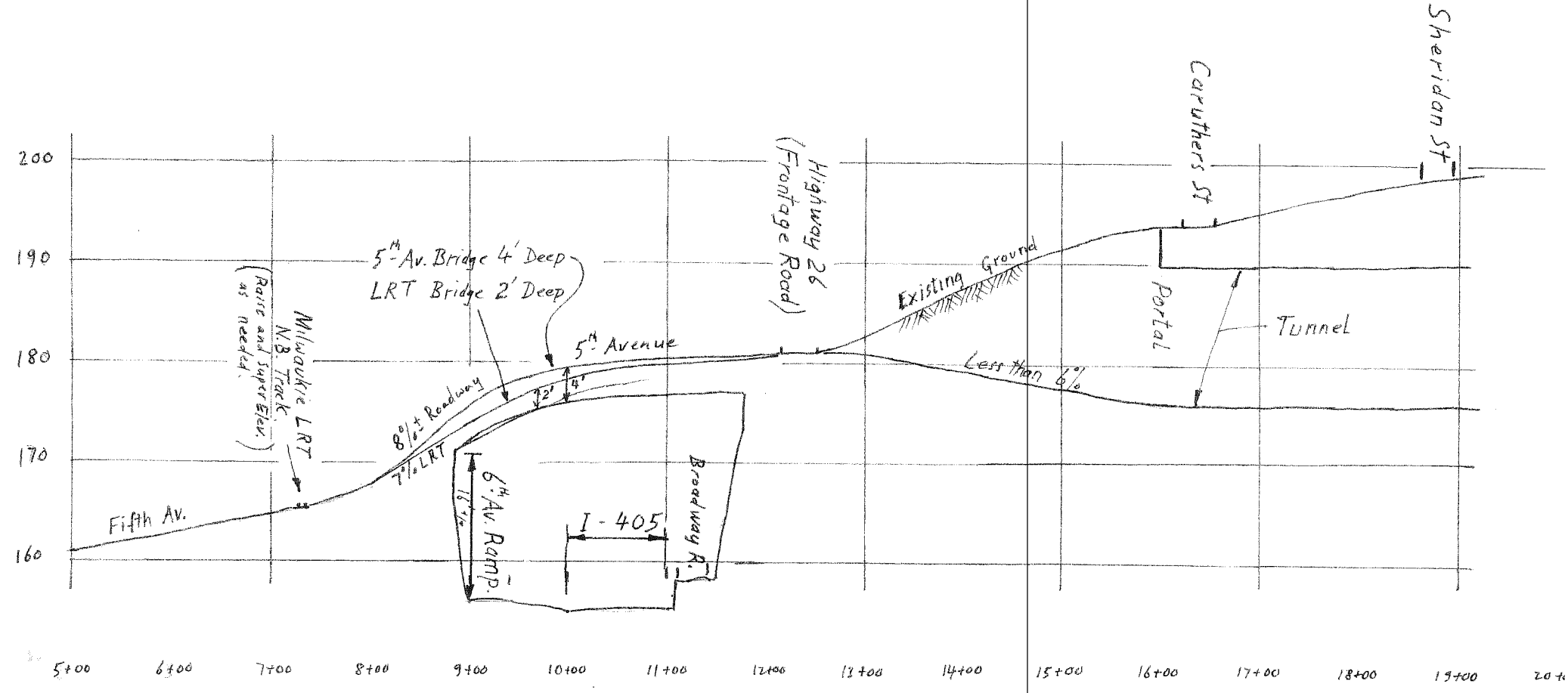
Finally, there doesn't seem to be a good entry alignment into central Tualatin. I don't think the south entry option, following I-5 to the Sherwood Highway Interchange was adequately considered, and further study seems to have been prematurely discarded.

I attach some sketches of some of these locations.

Gerald Fox June 9 2014

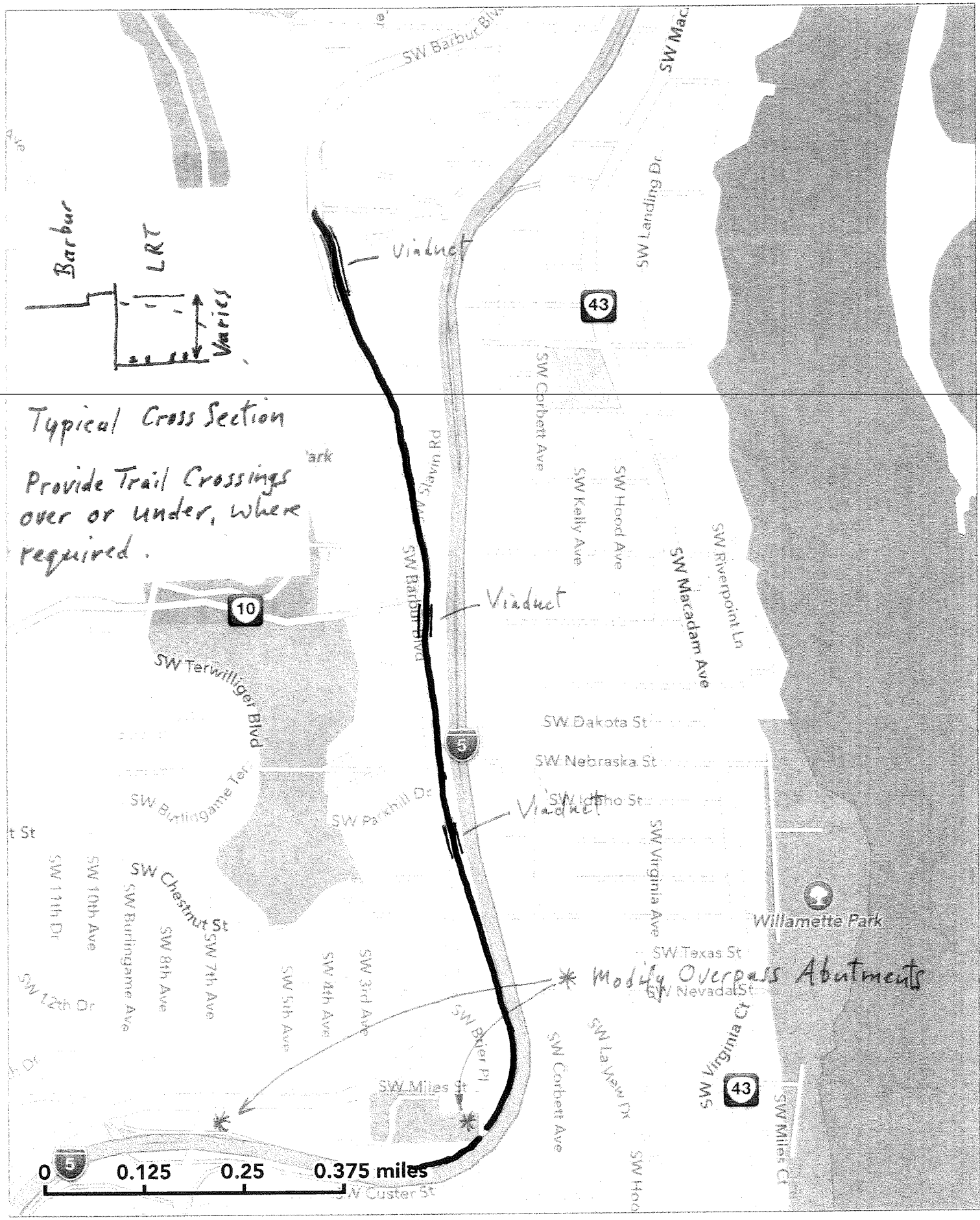

Starbucks
SW Broadway
SW 6th Ave
Domino's Pizza
Regrade as needed.
Milwaukie L.R.T.
Regrade Off-Ramp
7% grade
New LRT Bridge
SW 5th Ave
Critical Clearance Point.
- Minimize Structure Depth (Thru Girde
- Lower Off-Ramp
- Raise Milwaukie Tracks
- Super Elevate Track Crossing
Unitus Ccu
26
SW Grant St
At-Grade Crossing within Intersection
Thru Girder Bridge
SW 4th Ave
405
SW Sherman St
6% or 7% grade
Alternative
26
0 100 200 300 feet
Sushi Takahashi 2

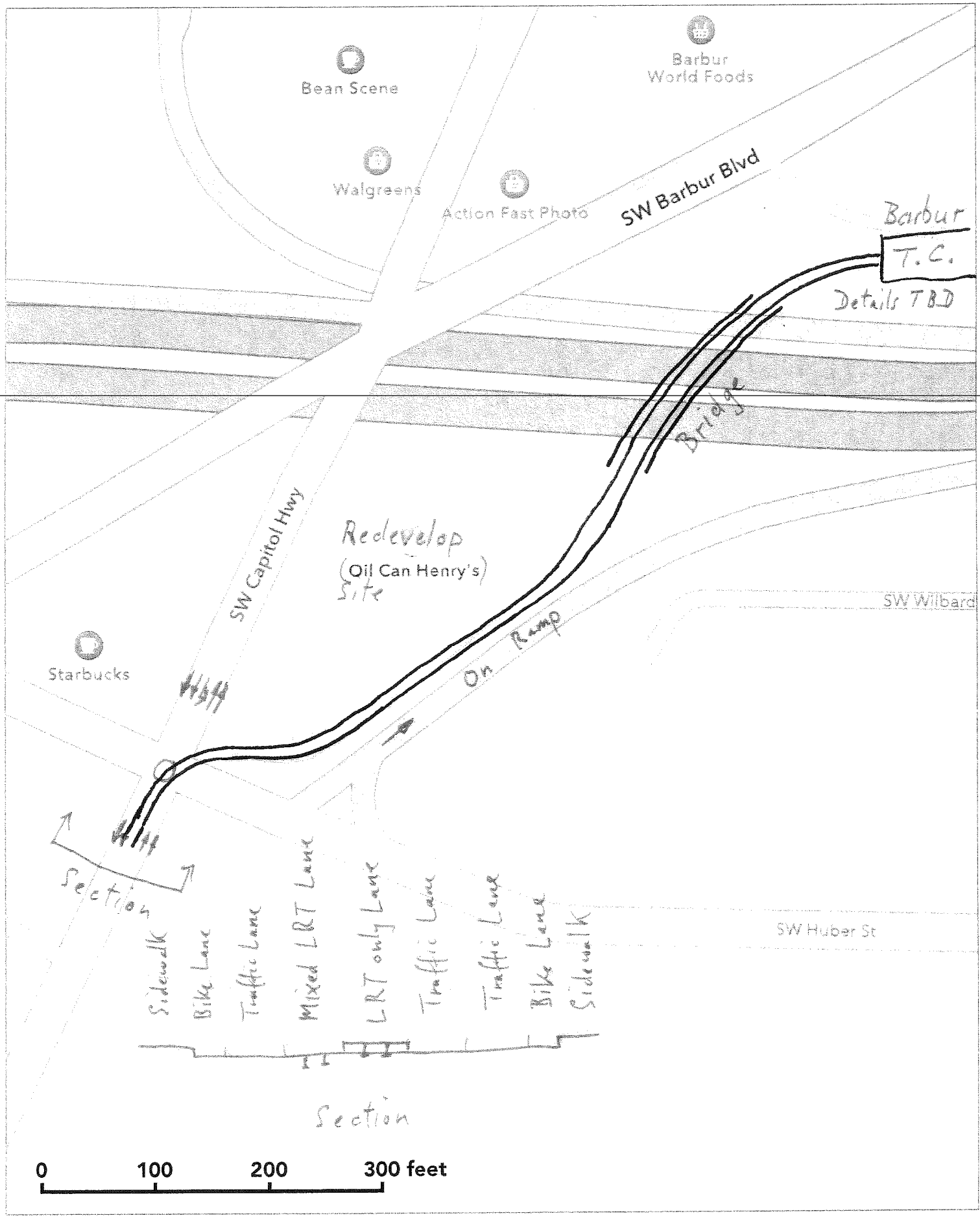
Sketch 2

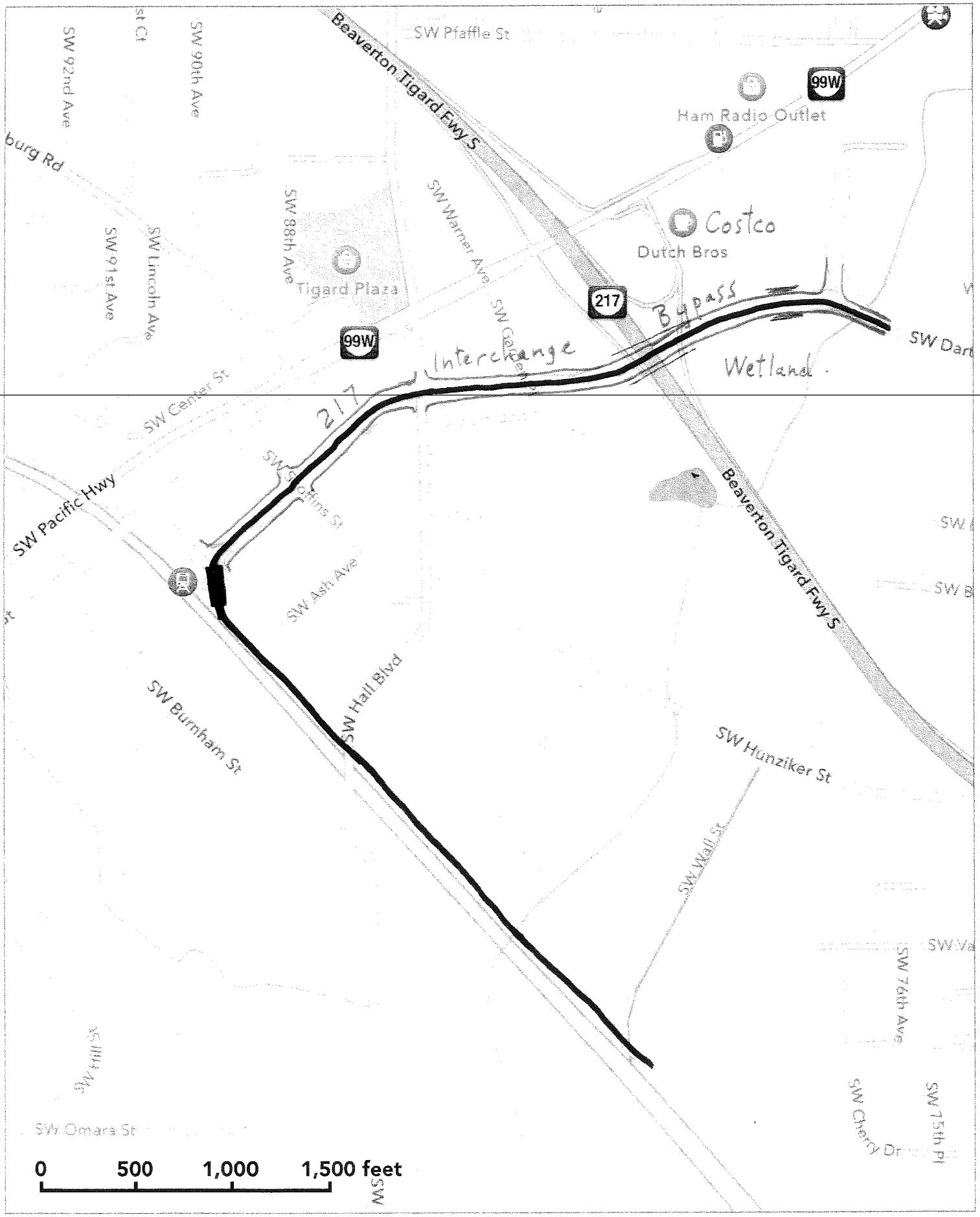


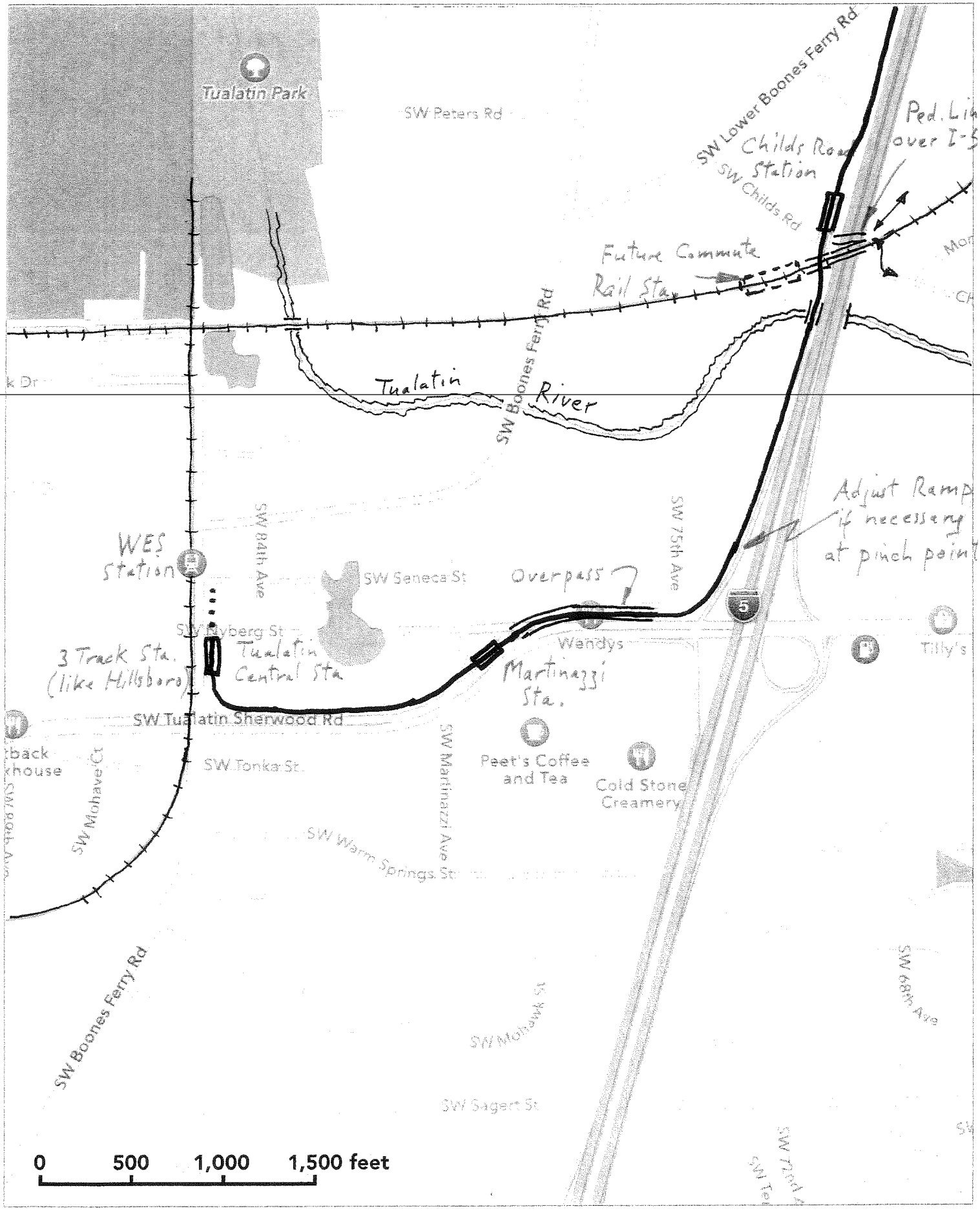
Fifth Avenue Alignment - I-405 Crossing Profile Concept

Sketch 3


Barbur
LRT
Varies
Typical Cross Section
Provide Trail Crossings over or under, where required.
Viaduct
Viaduct
Viaduct
* Modify Overpass Abutments
SW Barbur Blvd
SW Landing Dr
SW Macadam Ave
SW Riverpoint Ln
SW Corbett Ave
SW Kelly Ave
SW Hood Ave
SW Slavin Rd
SW Terwilliger Blvd
SW Dakota St
SW Nebraska St
SW Idaho St
SW Parkhill Dr
SW Burlingame Ter
SW Chestnut St
SW 7th Ave
SW 8th Ave
SW Burlingame Ave
SW 10th Ave
SW 11th Dr
SW 12th Dr
SW 4th Ave
SW 3rd Ave
SW 5th Ave
SW Virginia Ave
SW Texas St
SW Nevada St
Willamette Park
SW Virginia Ct
SW Bier Pl
SW Miles St
SW Corbett Ave
SW La View Ter
SW Custer St
10
5
43
0
0.125
0.25
0.375 miles


Bean Scene
Barbur World Foods
Walgreens
Action Fast Photo
SW Barbur Blvd
Barbur T.C.
Details TBD
Bridge
SW Capitol Hwy
Redevelop (Oil Can Henry's) Site
SW Wilbard
Starbucks
On Ramp
Section
Sidewalk
Bike Lane
Traffic Lane
Mixed LRT Lane
LRT only Lane
Traffic Lane
Traffic Lane
Bike Lane
Sidewalk
SW Huber St
Section
0
100
200
300 feet


SW Pfaffle St
Beaverton Tigard Fwy S
99W
Ham Radio Outlet
SW 92nd Ave
SW 90th Ave
SW 88th Ave
SW 91st Ave
SW Lincoln Ave
SW Warner Ave
Costco
Dutch Bros
Tigard Plaza
217
Bypass
Interchange
Wetland
SW Center St
SW Pacific Hwy
SW Ash Ave
SW Hall Blvd
SW Burnham St
SW Hunziker St
SW Wall St
SW 76th Ave
SW Cherry Dr
SW 75th Pl
SW Omara St
0
500
1,000
1,500 feet


Tualatin Park
SW Peters Rd
SW Lower Boones Ferry Rd
Childs Road Station
SW Childs Rd
Ped. Link over I-5
Future Commuter Rail Sta.
SW Boones Ferry Rd
Tualatin River
Adjust Ramp if necessary at pinch point
WES Station
SW 84th Ave
SW Seneca St
Overpass
SW 75th Ave
SW Tualatin Sherwood Rd
3 Track Sta. (like Hillsboro)
Tualatin Central Sta
Martinazzi Sta.
Wendys
Tilly's
SW Tonka St
SW Mohave Ct
SW Martinazzi Ave
Peet's Coffee and Tea
Cold Stone Creamery
SW Warm Springs St
SW Boones Ferry Rd
SW Mohawk St
SW 68th Ave
SW Sagert St
0
500
1,000
1,500 feet

Remarks to the SWCP Steering Committee

June 9, 2013

Dropping the medium tunnel option would be a mistake.

It ignores civic institutions that are vital to Hillsdale and the surrounding neighborhoods. Those Hillsdale institutions include three public schools, the second or third most used library branch in the system, the Jewish Community Center and Jewish Academy, an acclaimed and thriving farmers market, a hospice and several medical/dental facilities).

High on your list of considerations should be vital, quality transit service for those in need. In recent years we have welcomed hundreds who now live at Stephens Creek Crossing, the Turning Point Transitional Housing project, and the Watershed affordable housing complex. Many more underprivileged live in nearby apartments.

Please do not ignore your own previous planning and its logic: Nearly 20 years ago regional leaders approved the Metro 2040 plan. To stop suburban sprawl, the plan created Town Centers like Hillsdale to encourage urban density in places with quality transit service — service exactly like that you are planning for.

Note that under the 2040 Plan, we were NOT designated a backwater "Village" as one of your recent corridor planning documents states. We were designated a Town Center so we would grow and not be bypassed.

Also note: Hillsdale's participation in the recent Barbur Concept Plan was never intended as our endorsement for HCT along the Portland stretch of Barbur that would bypass our Town Center. The entire Barbur concept effort was carried out with only partial reference to the SW Corridor Plan. It never addressed the question of the best HCT alignment in the region.

In conclusion the question before you is this: Will High Capacity Transit serve the unpopulated "Woods" along Barbur or will it serve people? Will it serve our civic institutions, our families, our children and our grandchildren? Will it provide a direct link to OHSU and its employment opportunities? Will it serve the poor and those struggling to make a go of life...those needing public transit to get to jobs and to prosper? Will it be consistent with your very own 2040 Plan?

For the sake of Hillsdale and surrounding communities, preserve the medium tunnel option as you move forward.

Rick Seifert
2115 SW Tyrol St.
Portland, Or 97239
wfseifert@gmail.com

The Medium Tunnel Option: The Right Approach to Southwest Corridor Transportation and Growth

Robert E. Hamilton

June 9, 2014

Consider the following potential consequences of including the Medium Tunnel option in the Draft Environmental Impact Study relating to a light-rail line which would link downtown Portland to Tigard and Tualatin via a station for Oregon Health and Sciences University and two stations in Hillsdale: one in the Town Center and one near Barbur Boulevard and 13th Avenue.

Angela Gonzalez Johnson is a fictional resident of Metropolitan Portland. She and her husband and two children live in Tualatin but Angela is a lab technician at OHSU, while her husband is a software engineer working in Tualatin. Angela was born in 1990 in Hillsdale and attended Mary Rieke, Robert Gray, and Woodrow Wilson High School, graduating in 2008.

After graduation, Angela took the Tri-Met #44 bus daily for two years to Portland Community College and then took either the #1, 54, or 56 bus to Portland State University, where she completed her Bachelor of Science degree in 2012 and was hired at OHSU as a lab technician as well as a medical textbook illustrator.

Hillsdale had 8,000 residents when Angela was growing up, but the Greater Hillsdale Trade Area, including Markham Hill, was almost

20,000 people. Like many OHSU employees in the Southwest, Angela used Park-and-Ride and a #65 Express bus to get to OHSU until the Medium Tunnel option resulted in the new "Brown Line" from Tualatin along Barbur and through Hillsdale to her OHSU stop.

This reduced Angela's morning travel commute and the family was able to sell one of their two automobiles and rely more on public transportation. Angela frequently uses the Brown Line stops to shop on her way home at Food Front in Hillsdale or at Fred Meyer at 13th and Barbur. Her two children attend school in Tualatin but they take the Brown Line to ballet lessons at The Portland Ballet in Hillsdale on Saturday with their mother and father and then walk to meet their grandparents, who have downsized and now live in one of the new condominiums near the Hillsdale Town Center. All have lunch at Verde Cocina, the Hillsdale Pub, Salvador Mollys or one of the carts at The Food Court.

In the two decades since the Brown Line was begun, the Hillsdale community has increased to 15,000 residents, the result of infill population growth along the transportation routes supported by Metro policies and Tri-Met bus and MAX service. The Hillsdale Town Center has added greater variety among its 100 businesses, including a new medical and dental building in The Hillsdale Triangle across Sunset from an expanded De Witt Park and Hillsdale Branch Library; a Living Room Theater in a former restaurant; and a popular evening site which features jazz.

Other supporting pedestrian and bicycle infrastructure accompanied the building of the Brown Line: a new sidewalk on Capitol Hill Road now enables children a safe route to Mary Rieke

Elementary School and links to the Raz-Baack Crossing of Stephens Creek. Angela's parents can now walk daily from their condominium to Mass at St. Clare Church and stop on the way home at either Safeway or Fred Meyer which has a long-needed sidewalk connecting the store at 13th Avenue and Capitol Hill Road. This was another Brown Line pedestrian improvement.

Hillsdale, never a "village" like a adjacent neighboring community, has grown as planned as a transportation hub linking it to the Portland city center businesses but also to the Tigard and Tualatin communities, whose residents—like Angela and her family—can enjoy a modern urban lifestyle without relying upon their automobile to take them to Hillsdale and throughout the greater Portland area.

The Medium Tunnel option led to not only a more efficient hub-and-spoke route between Portland's city center and the multiple communities and cities surrounding it, but an enhanced quality of life for its future three-million residents.