CHAPTER 1
Project Introduction
1. PROJECT INTRODUCTION

See Appendix H for full reference information for plans mentioned and reports cited.

This chapter explains the proposed project, its Purpose and Need, and next steps.

1.1 Southwest Corridor Light Rail Project

Metro (the designated Metropolitan Planning Organization for the Portland, Oregon, region) and the Tri-County Metropolitan Transportation District of Oregon (TriMet) are proposing a new 12-mile Metropolitan Area Express (MAX) light rail line from downtown Portland to Tigard and Bridgeport Village in Tualatin. Figure 1.1-1 shows the location of the proposed project in the existing regional high capacity transit system.

The project includes various elements to support the new MAX light rail line, including transportation investments such as pedestrian, bicycle, roadway and intersection improvements as well park and ride facilities and an operations and maintenance facility. This Draft Environmental Impact Statement (EIS) analyzes alternatives for these project elements. Metro, TriMet and the Federal Transit Administration (FTA) have prepared this EIS in compliance with the National Environmental Policy Act (NEPA). FTA is the lead federal agency for the NEPA EIS process, because Metro and TriMet anticipate applying for funding from FTA for the project.

The Southwest Corridor Light Rail Project will provide needed mobility options within and through the Southwest Corridor, which increasingly faces congested and unreliable freeways in an area receiving substantial residential and employment growth under the region’s adopted 2040 Growth Concept. It is also needed to improve regional access to existing major employers and medical and educational facilities already located in the Southwest Corridor, and to meet state, regional and local goals for land use and reducing greenhouse gas emissions.

Where is the project located?

The project is located within the cities of Portland in Multnomah County and Tigard and Tualatin in Washington County, as shown in Figure 1.1-2, but it serves a broader north/south travel corridor generally along Interstate 5 (I-5) and Pacific Highway (99W)/SW Barbur Boulevard from downtown Portland to Sherwood, as well as communities to the east and west. The job centers, retail, manufacturing uses, educational institutions and trails in the corridor attract people and generate travel from both within the area and across the Portland metropolitan area.
Figure 1.1-1
Regional High Capacity Transit Network

Existing High Capacity Transit
- MAX Blue Line
- MAX Red Line
- MAX Yellow Line
- MAX Green Line
- MAX Orange Line
- WES Commuter Rail
- Light rail operations and maintenance (O&M) facilities

High Capacity Transit Projects
- Southwest Corridor Light Rail Project (interlined with MAX Green Line)
- Division Transit Project
- Urban Growth Boundary
Figure 1.1-2
Southwest Corridor Overview

Light Rail Project
- Alignments and stations
- Corridor boundary

Existing Transit
- MAX Light Rail
- WES Commuter Rail
- Portland Streetcar
- Portland Aerial Tram

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What is included in the project?

The complete Southwest Corridor Light Rail Project would include a MAX light rail extension of the existing Green Line, continuing south from its current terminus at SW 5th Avenue and SW Jackson Street near Portland State University (PSU), and as many as 13 new stations, up to seven new park and rides, various station access improvements, an operations and maintenance (O&M) facility, a dedicated Portland Community College (PCC) Sylvania campus shuttle, and a connection to Oregon Health & Science University (OHSU) from SW Barbur Boulevard. The complete project could include improvements to circulation at the west end of the Ross Island Bridge, depending on the alternative. Details on all of these components are provided in Chapter 2.

- **MAX Light Rail Line.** For analysis, the light rail extension is considered in three geographic segments. The segments are of roughly equal length and end in locations where only one rail alignment alternative exists. Each segment includes three to six potential alignment alternatives. The alternatives within each segment are analyzed and compared to each other and to a future “No-Build” scenario. The complete project will include an alternative from each segment.

- **Marquam Hill Connection.** The connection between the medical complex on Marquam Hill and SW Barbur Boulevard is critical for the project. Approximately 10,000 daily MAX line transit riders are expected with this improved access to the main campus of OHSU and the Veterans Affairs (VA) Portland Health Care System and Shriners hospitals. This connection will be an element of a complete project.

- **PCC-Sylvania Shuttle.** The connection from PCC-Sylvania to the new MAX light rail line is important to increasing transit mode share to the largest campus of the region’s largest community college system. The shuttle will provide a fast connection between the MAX line and campus, and will help address grades of up to 13 percent. The shuttle will be an element of a complete project.

- **Station Access Improvements.** Station access improvements include sidewalk and bicycle facilities to make it safer and more convenient for riders to reach MAX stations. Improvements selected for further study in the Final EIS will be refined to work with the Preferred Alternative.

- **Park and Ride Facilities.** Park and ride facilities will help increase MAX line ridership by helping people who are traveling from further distances or from locations with little or no transit service to access the light rail system. Facilities selected for further study in the Final EIS will be refined to work with the Preferred Alternative; this may include size adjustments to account for adverse effects and projected demand.

- **O&M Facility.** This project requires a new O&M facility in Tigard to service the new light rail vehicles that will travel on the line. TriMet’s existing O&M facilities do not have adequate capacity for the number of new vehicles, and the distance of those facilities to the line terminus at Bridgeport Village is greater than desired for timely overnight train maintenance. An O&M facility will be an element of a complete project.
• **Ross Island Bridgehead Reconfiguration.** Roadway adjustments to improve access to and from the western end of the Ross Island Bridge (U.S. 26) are included in the light rail alternatives on SW Naito Parkway due to the integrated nature of SW Naito Parkway and the bridgehead. A separate bridgehead project could occur in coordination with the light rail alternative on SW Barbur Boulevard.

**Why are there design refinements?**

Design refinements are concepts for improving the light rail designs studied in the Draft EIS, which were “frozen” in early 2017 to allow for environmental analysis. These refinements are a result of the design team exploring ways to optimize the project and avoid and minimize impacts found during the analysis. Refinements recommended for further study as part of the Preferred Alternative would be analyzed in the Final EIS.

**What is the initial route proposal?**

The Southwest Corridor Steering Committee directed staff from the project partners to identify an initial route for public consideration and comment. The initial route proposal fulfills FTA’s need for the Draft EIS to identify a draft preferred alternative and balances it against the Portland region's long history of public process to adopt a preferred alternative. The initial route proposal provides stakeholders an opportunity to comment on a full-length light rail alternative. It includes an alternative from each segment with associated park and ride facilities and stations, a Marquam Hill connection, a PCC-Sylvania shuttle and an O&M facility, as well as some design refinements that reduce construction impacts, long-term impacts and capital cost. The light rail project will also include a set of station access improvements that will be selected prior to the Final EIS.

**1.2 Purpose of the Project**

The purpose of the Southwest Corridor Light Rail Project is to directly connect Tualatin, downtown Tigard, southwest Portland, and the region’s central city with light rail, high quality transit and appropriate community investments in a congested corridor to improve mobility and create the conditions that will allow communities in the corridor to achieve their land use vision. Specifically, the project aims to, within the Southwest Corridor:

- provide light rail transit service that is cost-effective to build and operate with limited local resources
- serve existing transit demand and significant projected growth in ridership resulting from increases in population and employment in the corridor
- improve transit service reliability, frequency, and travel times, and provide connections to existing and future transit networks including Westside Express Service (WES) Commuter Rail
- support adopted regional and local plans including the 2040 Growth Concept, the Barbur Concept Plan, the Tigard Triangle Strategic Plan and the Tigard Downtown Vision to accommodate projected significant growth in population and employment

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1 The Steering Committee is made up of elected officials from seven cities (Portland, Tigard, Tualatin, Sherwood, Beaverton, King City and Durham), Washington County, and Metro, and top leaders from TriMet and the Oregon Department of Transportation. The entities also have staff working with Metro and TriMet; they are referred to as “project partners.”
• complete and enhance multimodal transportation networks to provide safe, convenient and secure access to transit and adjacent land uses
• advance transportation projects that increase active transportation and encourage physical activity
• provide travel options that reduce overall transportation costs
• improve multimodal access to existing jobs, housing and educational opportunities, and foster opportunities for commercial development and a range of housing types adjacent to transit
• ensure benefits and impacts that promote community equity
• advance transportation projects that are sensitive to the environment, improve water and air quality, and help achieve the sustainability goals and measures in applicable state, regional and local plans.

1.3 Need for the Project

A light rail transit project in the Southwest Corridor is needed to address the following issues:

_Transit service to important destinations in the corridor is limited, and demand for transit is increasing due to growth._

The economic and educational opportunities and services in the Southwest Corridor need to be connected by improved transit service. The corridor has 11 percent of the region’s population and 26 percent of the region’s employment. The five colleges and universities in the corridor (OHSU, PSU, National University of Natural Medicine, PCC-Sylvania campus and George Fox University) serve more than 45,000 students. The region’s largest shopping destinations (including Bridgeport Village) are located in the corridor. However, transit service in the corridor varies in availability and frequency, and struggles to serve areas due to an incomplete and congested road network. As a result, many of the more heavily traveled areas (such as I-5), major employment centers (such as Kruse Way) and industrial areas (such as the areas south of downtown Tigard) in the corridor do not have frequent transit service. Taking transit between some of the major destinations in the corridor can take four to six times as long as driving, and the corridor generally lacks sidewalk and bicycle connectivity, as discussed below. As a result, driving is the most functional travel option for many people, adding to the traffic congestion in the corridor and leaving many other people with limited options if they cannot drive or choose not to.

The demand for transit service in the corridor is increasing. In 2010, there were 85,100 households in the corridor; Metro’s projections show this number growing to 126,000 households in 2035. In Metro’s _High Capacity Transit System Plan_, the corridor between Portland city center and Sherwood had the highest projected light rail ridership of any future corridor. The number of transit trips in the corridor is anticipated to increase by 81 percent in the next 25 years. In 2010, there were 121,000 average weekday transit trips in the corridor. The 2035 forecast shows an increase to 219,000 average weekday transit trips. Today 8 bus lines serve the corridor, with up to 26 buses per hour in each direction in peak periods, and buses arriving approximately every 2 minutes on average in some locations. This high frequency currently causes bus bunching and reliability issues. In 2035, with service adjusted to accommodate projected demand, the number of buses would increase to more than 35 per hour. That increase in frequency of buses would exacerbate reliability issues and could strain the capacity of the Downtown Portland Transit Mall. It would also result in less signal priority for buses.
because of the high number of requests from buses, further increasing travel times and reducing on-time performance.

Limited street connectivity and gaps in pedestrian and bicycle facilities create barriers and unsafe conditions for transit access and active transportation.

The lack of complete sidewalk networks and crosswalks in the corridor impedes walking to transit and other destinations. The bicycle network also has gaps that hinder connectivity. Roads in much of the corridor are winding and discontinuous, and travel options are also constrained by the geography and development patterns. The area lacks a well-connected street network that would facilitate transit access, make it easier and safer to make short trips on foot or by bicycle, and provide travelers alternative routes. A safe and complete pedestrian network is needed in order to maximize transit use. This project proposes to construct continuous sidewalks along much of the light rail alignment and to station locations.

Travel is slow and unreliable on congested roadways.

A lack of continuous north/south arterials results in regional as well as local traffic funneling onto Pacific Highway/SW Barbur Boulevard and I-5. All vehicles, including transit operating in mixed traffic, are slowed by congestion, especially at key bottlenecks. From PSU in downtown Portland to Tigard Transit Center and to Bridgeport Village, average auto speeds during the weekday PM peak period in the current year are between 24 and 25 miles per hour via I-5, and 19 miles per hour to the Tigard Transit Center via SW Barbur Boulevard. The related travel times are expected to increase by three to four minutes by 2035, with average speeds slowing to 19 to 20 miles per hour on I-5, and 16 to 18 miles per hour on SW Barbur Boulevard. TriMet line 12 bus trips operating in mixed traffic during the PM peak period between PSU and the Tigard Transit Center take about 45 minutes today, and, as with other roadway traffic, these bus trip durations would increase by three to four minutes by 2035. Sections of Pacific Highway, which is one of the two major north/south transportation facilities in the corridor and the major route for transit, are often slowed by congestion and experiences some of the most unreliable travel times in the corridor. For a 1.7-mile segment in Portland (north of SW Multnomah Boulevard) and a 2.8-mile segment in Tigard, travelers need to budget more than double the average travel time in the PM peak hour to ensure they arrive at destinations on time. Transit travel times are subject to the same lack of reliability and can be expected to vary significantly from the forecast “average condition” because of unreliable roadways. Corridor residents and employees complain of frustrating travel conditions in the area. Focus groups convened in the corridor identified congestion and gridlock as their top concern and a threat to the area’s livability, characterizing the roadway network as “congested and dysfunctional.” Travel times are likely to vary more in the future than today because of increases in congestion and incidents and greater variation in traffic levels.

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3 Ibid.
4 iPeMS Real Time and Historical Traffic Data for Oregon (iPeMS, 2017).
5 Metro Research Center travel demand model, 2017. See the Southwest Corridor Project Transit Impacts and Travel Demand Forecasting Results Report attached to this Draft EIS for further information on transit travel times.
There are both a limited supply and a limited range of housing options in the Southwest Corridor that have good access to multimodal transportation networks. In addition, jobs and services are not located near residences.

The Southwest Corridor is projected to add around 41,000 households from 2010 to 2035, an increase of 48 percent. Currently, the majority of housing in the project area consists of low density, single-family housing. Locally and regionally, the supply of affordable housing is limited. As the region grows, providing a variety of housing options and a larger housing supply in the corridor will be necessary to accommodate the additional residents.

Development around light rail stations can readily serve a broader range of housing options by permitting greater density and increasing the supply of multiple types of housing. In anticipation of future high capacity transit, jurisdictions in the Southwest Corridor have permitted higher density housing types such as apartments, condos and townhouses, which can be clustered around stations to meet the needs of households that are smaller, have a modest household income or both. These density-enabling land use regulations will allow more homes to be built for the region's growing population, thus expanding the housing supply and meeting the demand for housing that, if not addressed, can cause exceptional appreciation in housing prices.

High capacity transit services also mean that new residential and employment uses can lower the amount of necessary onsite parking—due to easy access to jobs and services via transit, biking or walking—which reduces the cost of new development. Such multimodal access is possible as a result of the region's existing high capacity transit network, into which the new line would connect. Households located near network stations can thereby reduce the costs of owning one or more automobiles, or eliminate those costs entirely. This also makes transit station areas appealing locations for legally binding affordability-restricted housing. Such compact development is not currently possible in portions of Tigard, however, because of State of Oregon Transportation Planning Rules related to capacity on state road facilities.

In addition, the Portland city center, OHSU and many of the other major employment areas reached via the corridor have developed far from the area's housing, requiring many workers to commute over long distances. Driving on congested roadways is often the only choice for people to access their jobs. In addition, the incomplete sidewalk and bicycle networks in the corridor require riders to access transit by car and, as a result, park and ride lots in downtown Tigard and near Bridgeport Village are often full. The limited access of those who reside outside the corridor to its jobs, health services and educational opportunities is also an equity concern for the regional community.

As the region grows, implementation of light rail will be critical to improving transit connections between jobs and residences. Light rail stations that can be accessed by a variety of travel options, including biking, walking or taking local transit, will allow the growing number of people in the corridor and region to have better mobility while limiting impacts to the environment and to quality of life.

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7 Metro Resolution 13-4428, Metro adopted population and employment growth forecast distribution (Metro, 2013).
8 Opportunities and Strategies for Equitable Housing (Metro, 2016).
Although providing opportunities for additional housing and jobs near transit is important, that outcome needs to be balanced against impacts on the existing community in the corridor. The region’s population growth and economic improvement have elicited concerns about increasing housing costs and displacement of residents and businesses, especially resulting from major public investments. Therefore, the project needs to strive for equitable distribution of benefits and impacts.

*Regional and local plans call for high capacity transit in the corridor to meet local and regional land use goals.*

To help meet expected levels of growth, Metro’s 2040 Growth Concept for land use in the region calls for “town center” development in downtown Tigard, the Tigard Triangle and west Portland. A town center is intended to provide services to tens of thousands of people within a 2- to 3-mile radius with one- to three-story buildings for employment and housing, and to be well served by transit. This regional land use strategy is supported by Tigard’s adopted High Capacity Transit Land Use Plan, which identifies preferred station community concepts. The Tigard Triangle, however, is surrounded by congested regional highways and has only basic transit service. Providing light rail transit to this area, which has half the acreage of downtown Portland, would allow for multistory mixed-use development to accommodate a substantial portion of the growth in population and jobs in locations that can be efficiently serviced. This regional strategy is also supported by the City of Portland’s Barbur Concept Plan. Light rail transit is critical to the fulfillment of that plan, including higher intensity infill development and a continuous and safe bicycle/pedestrian corridor along SW Barbur Boulevard. High capacity transit (also referred to as HCT) service will also support access to jobs in Tualatin, Sherwood and other employment areas in the corridor that are planned for significant job growth.

The 2035 Regional Transportation Plan identifies the investments in multiple modes of transportation that will help accommodate the location and types of development designated by the 2040 Growth Concept, noting that “HCT investments help the region concentrate development and growth in its centers and corridors.” The Regional Transportation Plan designates a high capacity transit system interconnecting the central Tigard and west Portland town centers and Portland’s city center as a near-term regional priority.

*State, regional and local environmental and sustainability goals require transportation investments to reduce greenhouse gas emissions.*

State and regional policies support actions to increase energy efficiency and reduce harmful greenhouse gas emissions, especially from transportation sources. The state has mandated that the Portland metropolitan area develop and implement a strategy to reduce per capita greenhouse gas emissions from cars and small trucks by 2035. In 2014, Metro adopted the Climate Smart Strategy to meet that requirement by achieving a 29 percent reduction in per capita greenhouse emissions. A high capacity transit project in the Southwest Corridor, such as the proposed project, would advance Climate Smart by making transit convenient, frequent, accessible and affordable; making biking and walking safe and convenient; and making streets and highways safe, reliable and connected. The high capacity transit project would also need to ensure safe and comfortable access to transit for pedestrians, bicyclists and drivers, and address major gaps in biking and walking routes in the corridor.

The City of Portland’s Climate Action Plan also addresses greenhouse gas emissions and has objectives such as reducing daily per capita vehicle miles traveled by 30 percent from 2008 levels, improving the

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10 High capacity transit includes light rail, commuter rail, bus rapid transit and rapid streetcar.
efficiency of freight movement within and through the Portland metropolitan area, and ensuring that 80 percent of residents can easily walk or bicycle to meet all basic daily, nonwork needs and have safe pedestrian or bicycle access to transit.

### 1.4 Applying the Purpose and Need to the Project

The Purpose and Need has been used to identify the EIS alternatives described in Chapter 2 – Alternatives Considered. Chapter 5 – Evaluation of Alternatives describes how Metro, TriMet and FTA have measured the ability of the EIS alternatives to serve the Purpose and Need, along with comparisons of other factors such as environmental impacts, costs and constructability.

### 1.5 Next Steps

The Draft EIS will be available for a public comment period of 45 calendar days, commencing with the release of a Notice of Availability in the Federal Register. The comment period will include at least one public hearing, at which oral testimony will be recorded. Other opportunities for the public and agencies to comment will include open houses, online engagement and other outreach strategies.

The Southwest Corridor Steering Committee will then consider public, tribal and agency comments received; a recommendation from the Southwest Corridor Light Rail Community Advisory Committee (CAC); and information from the Draft EIS in order to recommend a preferred alternative to the Metro Council.

Before acting on the Preferred Alternative, the Metro Council will take into account the Steering Committee’s recommendation as well as input from local agencies and the Joint Policy Advisory Committee on Transportation. Local agencies are expected to include Portland City Council, Tigard City Council, Tualatin City Council, Washington County Board of Commissioners, Oregon Department of Transportation (Region 1) and the TriMet Board.

The Metro Council will then adopt the Preferred Alternative by resolution. The Preferred Alternative is expected to be included in the 2018 update of the Regional Transportation Plan, which includes all of the transportation projects that are eligible for federal transportation funds (anticipated to be considered by the Metro Council in December 2018).

The design for the Marquam Hill connection and the PCC-Sylvania shuttle route will be selected prior to developing the Final EIS through a public process that will involve the institutions, neighborhoods and appropriate resource agencies. Selection of which station access improvements to include in the Final EIS will depend on the Preferred Alternative and further local discussion.

In order to complete the environmental review process, a Final EIS will be prepared by FTA, Metro and TriMet. The Final EIS will respond to the substantive comments received on this Draft EIS, and state the Preferred Alternative, environmental findings and mitigation requirements. There will be a waiting period of at least 30 days following publication of the Final EIS, after which FTA will issue a Record of

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11 The Community Advisory Committee is a group of community stakeholders that provide feedback and recommendations to staff and the Southwest Corridor Steering Committee during production of the Draft EIS (https://www.oregonmetro.gov/public-projects/southwest-corridor-plan/project-committees).

12 Composed of transportation representatives from across the region, JPACT recommends priorities and develops plans for the region to Metro Council.
Decision (ROD) stating its determination of the project's compliance with NEPA requirements and the basis for that decision.

Once the federal environmental review concludes, the Portland region will need to identify and commit local funds to the project and will request federal matching funds. Construction activities could begin by 2022, after federal matching funds are secured, and the major construction phase will take approximately four years.

Figure 1.5-1 illustrates the general schedule for the Southwest Corridor Light Rail Project from the EIS through construction.