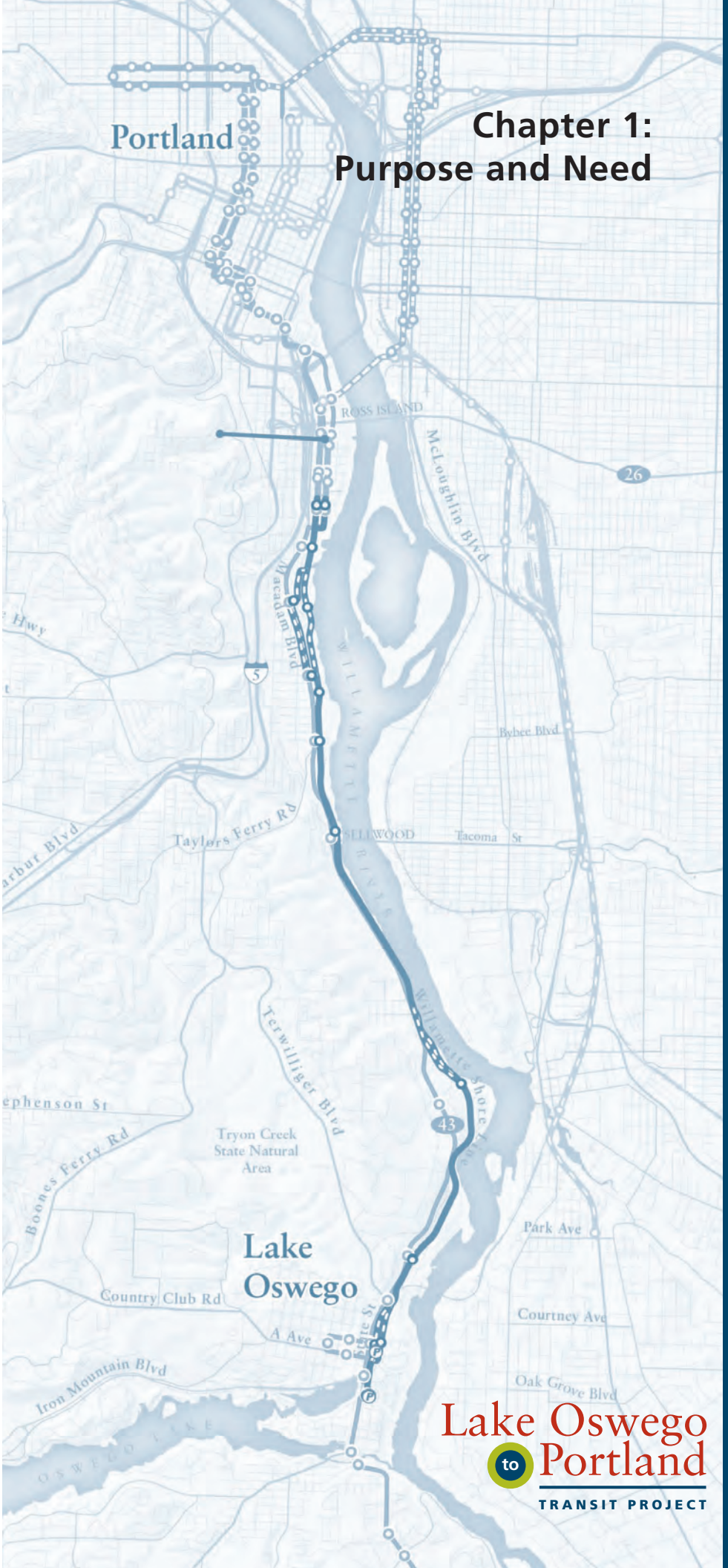
Chapter 1: Purpose and Need

CHAPTER 1



Lake Oswego to Portland TRANSIT PROJECT

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1. PURPOSE AND NEED

This chapter describes the Lake Oswego to Portland Transit Project's purpose and need. It includes a statement of the project's goal and objectives, which form the structure of the evaluation of alternatives, as summarized in Chapter 6 of this Draft Environmental Impact Statement (DEIS), and which will help guide the selection of the Locally Preferred Alternative (LPA).It also describes the project's study area and summarizes the transportation, land use and development challenges and opportunities within the study area.

1.1 Purpose and Need and Goal and Objectives

The **Purpose** of the project is to optimize the regional transit system by improving transit within the Lake Oswego to Portland transit corridor, while being fiscally responsive and by supporting regional and local land use goals. The project should maximize, to the extent possible, regional resources, economic development and garner broad public support. The project should build on previous corridor transit studies, analyses and conclusions and should be environmentally sensitive.

The **Need** for the project results from:

- Historic and projected increases in traffic congestion in the Lake Oswego to Portland Corridor due to increases in regional and corridor population and employment;
- Lengthy and increasing transit travel times and deteriorating public transportation reliability in the corridor due to growing traffic congestion;
- Increasing operating expenses, combined with increasingly scarce operating resources, while demanding more efficient public transportation operations;
- Local and regional land use and development plans, goals and objectives that target the corridor for residential, commercial, retail and mixed-use development to help accommodate forecast regional population and employment growth and previous corridor transit studies, analyses and conclusions;
- The region's growing reliance on public transportation to meet future growth in travel demand in the corridor;
- The topographic, geographic and built environment constraints within the corridor that limit the ability of the region to expand the highway and arterial infrastructure in the corridor; and
- Limited options for transportation improvements in the corridor caused by the identification and protection of important natural, built and socioeconomic environmental resources in the corridor.

The project's Purpose and Need Statement was developed over the course of the project's various phases, which are described in Section 2.1 of this DEIS. In summary, a Purpose and Need Statement was developed as part of the project's alternatives analysis phase and was then revised in the Scoping process and Corridor Refinement Phase. The current Purpose and Need Statement reflects review and comment opportunities provided during the National Environmental Policy Act Scoping process, in compliance the project's *Section 6002 Coordination Plan* (Metro, September 2009).

The Goal of the Lake Oswego to Portland Transit Project is similar to its purpose:

The **Goal** of the project is to optimize the regional transit system by improving transit within the Lake Oswego to Portland transit corridor, while being fiscally responsive and by supporting regional and local land use goals. The project should maximize, to the extent possible, regional resources, economic development and garner broad public support. The project should build on previous corridor transit studies, analyses and conclusions and should be environmentally sensitive.

The **Objectives** of the Lake Oswego to Portland Transit Project are to:

- Maximize the ability of the transit system to accommodate future growth in travel demand in the corridor;
- Minimize the adverse effect of increased roadway congestion on transit operations, ridership and operating costs;
- Increase the quality, efficiency and effectiveness of transit;
- Provide for a fiscally stable and financially efficient transit system;
- Comply with and support existing regional and local land use and transportation policies, plans, goals and objectives; and
- Optimize the environmental sensitivity and engineering design of the project.

The Goal and Objectives help form the evaluation framework for the Lake Oswego to Portland Transit Project, which is outlined in Chapter 6 – Evaluation of the Alternatives. The introductory paragraphs to Chapter 6 provide a description of the linkage between the project's evaluation framework (i.e., criteria and measures) and the project's Purpose and Need Statement and Goal and Objectives. Section 6.1.1 provides a more detailed description of the listed measures and the methods used to calculate the measures.

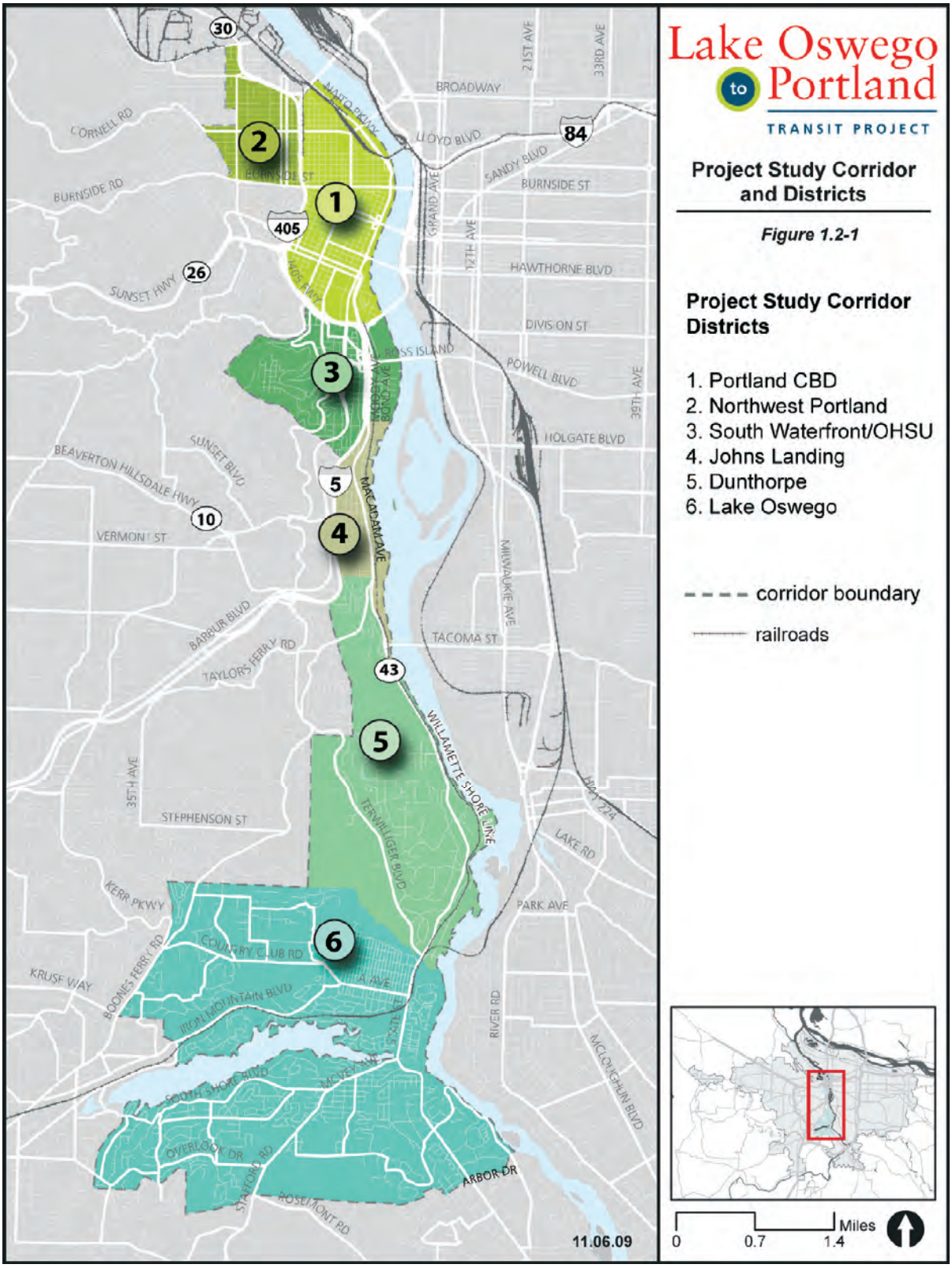
The following sections describe the project study area and provide a more detailed overview of the challenges and opportunities present in the study area.

1.2 Study Area: Lake Oswego to Portland Transit Corridor

The project study area for this DEIS is the Lake Oswego to Portland transit corridor, as illustrated in Figure 1.2-1. The corridor extends between the downtowns of Lake Oswego and Portland, Oregon.

The corridor is constrained to the east by the Willamette River and to the west by the relatively steep eastern slopes of the Portland West Hills. State Highway 43, which is located west of, and generally parallel to, the Willamette River, connects the two downtowns. The primary transit route serving the corridor is Line 35, which generally operates on Highway 43 between the two downtowns.

Downtown Portland is the region's premier mixed-use center, serving as a cultural, employment, retail and high-density housing center upon which the region's transit and highway system is focused. Downtown Lake Oswego is one of the region's most fully developed Town Centers. It is located on


Lake Oswego to Portland
TRANSIT PROJECT
Project Study Corridor and Districts
Figure 1.2-1
Project Study Corridor Districts
1. Portland CBD
2. Northwest Portland
3. South Waterfront/OHSU
4. Johns Landing
5. Dunthorpe
6. Lake Oswego
corridor boundary
railroads
0
0.7
1.4
Miles
11.06.09
BROADWAY
LLOYD BLVD
SANDY BLVD
BURNSIDE ST
HAWTHORNE BLVD
DIVISION ST
POWELL BLVD
HOLGATE BLVD
TACOMA ST
MACADAM AVE
WILLAMETTE SHORE LINE
TERWILLIGER BLVD
STEPHENSON ST
KERR PKWY
COUNTRY CLUB RD
IRON MOUNTAIN BLVD
SOUTH SHORE BLVD
OVERLOOK DR
ROSEMONT RD
ARBOR DR
PARK AVE
LAKE RD
RIVER RD
MCLOUGHLIN BLVD
BEAVERTON HILLSDALE HWY
VERMONT ST
BARBUR BLVD
TAYLORS FERRY RD
SUNSET HWY
SUNSET BLVD
BURNSIDE RD
CORNELL RD
BOONES FERRY RD
KRUSE WAY
MILWAUKIE AVE
GRAND AVE
12TH AVE
21ST AVE
33RD AVE
39TH AVE
35TH AVE
MOODY AVE
BOND AVE
STATE ST
MCVEY AVE
STAFFORD RD
30
84
405
26
5
10
43
1
2
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6

the west side of the Willamette River, approximately seven miles south of downtown Portland. Downtown Lake Oswego has traditional grid-based street network within the downtown core, connected to the region via various radiating highways. The Lake Oswego Transit Center, located at A Avenue and 4th Street, provides connections between Line 35 and other corridor routes.

In addition to the two downtowns, there are two primary activity centers in the Lake Oswego to Portland transit corridor: the South Waterfront District and Johns Landing, which are located immediately south of downtown Portland and west of the Willamette River and include a mix of medium to high-density residential, commercial, retail and institutional uses. The South Waterfront District includes the existing Portland Streetcar line, connecting Portland State University, downtown Portland and the Pearl and Northwest districts, and the Portland Aerial Tram, connecting the Oregon Health Sciences University (OHSU) campuses in the South Waterfront District and the Portland West Hills. Based on current timelines, the South Waterfront District is also expected to include a station on the Portland to Milwaukie Light Rail line with service beginning in 2015.

1.3 Population and Employment Growth

The Lake Oswego to Portland transit corridor includes six districts, illustrated in Figure 1.2-1: Portland central business district (CBD), Northwest Portland, South Waterfront/OHSU, Johns Landing, Dunthorpe and Lake Oswego. Tables 1.3-1 and 1.3-2 summarize historic, current and forecast (1990, 2005 and 2035, respectively) household and employment within the corridor districts, the Lake Oswego to Portland transit corridor and the Portland/Vancouver metropolitan area. In summary, the corridor currently includes approximately 15 percent of the region's employment and 4 percent of the region's households.

Table 1.3-1 Households and Employment in the Region and Lake Oswego to Portland Transit Corridor (1990 and 2005)

	1990		2005			
Area[1]	**Households**	**Employment**	**Households**	**Employment**	**Household % Change**	**Employment % Change**
Lake Oswego to Portland Transit Corridor						
Portland CBD	5,970	84,380	13,010	101,200	118%	20%
Northwest Portland	5,650	14,730	6,060	15,200	7%	3%
South Waterfront/OHSU	1,950	15,280	2,250	25,730	15%	68%
Johns Landing	1,050	6,350	1,150	8,080	10%	27%
Dunthorpe	1,040	1,150	1,140	1,560	10%	36%
Lake Oswego	7,120	4,340	7,580	5,420	6%	25%
Corridor Total	**22,780**	**126,220**	**31,190**	**157,190**	**37%**	**25%**
Region Total	**548,740**	**697,260**	**767,020**	**1,032,320**	**40%**	**48%**

Source: Metro, 2009.
Note: CBD = Central Business District.
[1] The Lake Oswego to Portland transit corridor and the districts that make it up are illustrated in Figure 1.2-1. The region is made up of Multnomah, Clackamas, Washington and Clark counties.

From 1990 to 2005, household growth in the corridor (37 percent) has been similar to household growth throughout the metropolitan region (40 percent), with the greatest household growth in the corridor occurring within the Portland CBD (118 percent). The corridor's employment growth rate during the same period has been about one-half of the region's, with the greatest employment growth occurring within the South Waterfront/OHSU and Dunthorpe areas (68 and 36 percent, respectively).

Table 1.3-2 Households and Employment in the Region and Lake Oswego to Portland Transit Corridor (2005 and 2035)

Area[1]	2005 Households	2005 Employment	2035 Forecast Households	2035 Forecast Employment	Household % Change	Employment % Change
Lake Oswego to Portland Transit Corridor						
Portland CBD	13,010	101,200	34,640	147,830	166%	46%
Northwest Portland	6,060	15,200	7,850	19,860	30%	31%
South Waterfront/OHSU	2,250	25,730	7,320	42,270	225%	64%
Johns Landing	1,150	8,080	3,690	12,940	221%	60%
Dunthorpe	1,140	1,560	1,520	2,380	33%	52%
Lake Oswego	7,580	5,420	11,480	10,240	51%	89%
Corridor Total	**31,190**	**157,190**	**66,500**	**235,510**	**113%**	**50%**
Region Total	**767,020**	**1,032,320**	**1,208,650**	**1,799,210**	**58%**	**74%**

Source: Metro, 2009.
Note: CBD = Central Business District.
[1] The Lake Oswego to Portland transit corridor and the districts that make it up are illustrated in Figure 1.2-1. The region is made up of Multnomah, Clackamas, Washington and Clark counties.

The future growth rate of households in the Lake Oswego to Portland transit corridor from 2005 to 2035 is projected to be double that of the region (113 percent compared to 58 percent, respectively), while the future employment growth rate in the corridor will be about two-thirds of the regional average. The districts within the corridor that are forecast to have household growth rates approximately equal to or greater than the regional average are the Portland CBD, the South Waterfront/OHSU, Johns Landing and Lake Oswego. The districts with the highest employment growth rates over the next 30 years are forecast to be Lake Oswego, South Waterfront/OHSU, Johns Landing and Dunthorpe (89, 64, 60 and 52 percent, respectively).

1.4 Growth in Traffic and Traffic Congestion

This section summarizes current and projected growth in traffic congestion in the Lake Oswego to Portland transit corridor, resulting from the corridor's and region's forecast growth in households and employment (see Section 1.3 for more detail on household and employment growth).

Highway 43 serves as the primary north/south highway for motor vehicles, transit and freight movement in the Lake Oswego to Portland transit corridor, serving the growing activity centers of downtown Portland, the South Waterfront, Johns Landing and Lake Oswego. Metro's *Regional Transportation Plan* designates Highway 43 as a Multi-Modal Major Arterial for the segment connecting the Lake Oswego town center with the Portland central city. Highway 43 also serves a local function of providing access to collector and local streets and abutting residential properties between and within the centers. Between Southwest Bancroft Street and Radcliffe Road (south of the Sellwood Bridge) in the northern portion of the corridor, Highway 43 is generally two lanes in each direction. Between Radcliffe and Greenwood roads, Highway 43 narrows to two southbound lanes and one northbound lane – the roadway shifts to two northbound lanes and one southbound lane between Greenwood Road and north of downtown Lake Oswego. Within downtown Lake Oswego, Highway 43 is known as State Street, which generally has two through lanes in each direction with an intermittent center turn lane.

Highway 43 between downtown Portland and downtown Lake Oswego is constrained through much of its alignment, either with existing development and/or with significant topographical features, such as steep hillsides, its proximity to the Willamette River and frequent creek and stream crossings. With roadway widenings for Highway 43 ruled out through prior regional studies (Metro and ODOT,

1999), there are no planned roadway projects in the corridor that would address the roadway's forecast congestion. Instead, regional policy is to address existing and future congestion in the corridor through transportation system management, transportation demand management, bicycle and pedestrian improvements and transit improvements, including the proposed Lake Oswego to Portland Transit Project.

By 2035, peak period traffic volumes on Highway 43 are forecast to increase by approximately 29 to 99 percent at nine select locations between Lake Oswego and downtown Portland, as presented in Table 1.4-1. The greatest increases in peak traffic volumes on Highway 43 would occur at: south of Southwest Terwilliger Boulevard (99 percent); north of McVey Avenue (94 percent); south of the Sellwood Bridge (85 percent); and south of the McVey Avenue (85 percent). For the nine select locations, Table 1.4-1 also notes where Highway 43 was congested in 2005 and would be congested in 2035 (i.e., where demand exceeds capacity). Of the nine locations in the table, four of the segments of Highway 43 had adequate roadway capacity to meet vehicular demand in 2005, while none of the segments would have adequate capacity to meet demand in 2035.

Table 1.4-1 Average Weekday Peak Period[1] Peak Direction Traffic Volumes and Congestion on Highway 43 at Select Locations (2005 and 2035)

	2005			2035			
Location on Highway 43	**Demand**	**Capacity**	**Congested[2]**	**Demand**	**Capacity**	**Congested[2]**	**% Change in Demand**
North of SW Boundary Street	3,320	3,600	No	4,280	3,600	Yes	29%
North of SW Taylors Ferry Road	3,550	3,600	No	4,690	3,600	Yes	35%
North of Sellwood Bridge	5,610	4,200	Yes	7,000	4,200	Yes	37%
South of Sellwood Bridge	2,830	3,600	No	5,280	3,600	Yes	85%
North of SW Terwilliger Boulevard	2,730	2,400	Yes	4,890	2,400	Yes	80%
South of SW Terwilliger Boulevard	3,190	2,800	Yes	6,210	2,800	Yes	99%
North of McVey Avenue	3,830	3,600	Yes	7,060	3,600	Yes	94%
South of McVey Avenue	2,430	2,400	Yes	4,390	2,400	Yes	85%
South of S Arbor Drive	2,440	2,200	Yes	4,070	2,400	Yes	70%

Source: Metro November 2009.
Note: SB = southbound; NB = northbound.
[1] The peak period is defined as the two peak p.m. hours.
[2] Yes = the demand exceeds the available capacity; No = there is capacity to meet demand.
[3] Percent change in forecast demand from 2005 to 2035.

In summary, Highway 43 in the Lake Oswego to Portland transit corridor will experience increases in traffic volumes due to increases in the corridor's and region's population and employment. Congestion in the corridor will also increase due to the increased traffic and the general inability of Highway 43 to be modified to increase roadway capacity. The following section addresses how this increased congestion has adversely affected transit operations in the corridor and how it will adversely affect future transit operations in 2035.

1.5 Effects of Congestion on Transit Operations, Ridership and Finance

As noted in Section 1.4, traffic counts and congestion on Highway 43, the only north/south major roadway in the Lake Oswego to Portland Transit Corridor, are forecast to increase between 2005 and 2035. TriMet Line 35, which primarily operates on Highway 43 in mixed traffic, is the primary trunk bus line in the corridor and between Lake Oswego and Portland. Line 35 transit travel times have, and are forecast to, increase over time as a result of increasing traffic congestion.

Table 1.5-1 includes peak-direction, in-vehicle transit and automobile travel times from downtown Portland and downtown Lake Oswego during the peak two-hour period for 2005 and 2035. In short,

automobile travel time would increase by eight minutes by 2035, an approximately 36 percent increase from 2005, and transit travel times would increase by nine minutes, or 24 percent.

Table 1.5-1 Average Weekday PM Peak1 Period In-Vehicle Automobile and Transit Travel Times Between Downtown Portland (Pioneer Square) and Downtown Lake Oswego (2005 and 2035)

Mode	2005	2035	Percent Change
Automobile	22 minutes	30 minutes	36%
Transit	38 minutes	47 minutes	24%

Source: Metro 2009.
[1] The PM peak period is defined as the average weekday peak two hours.

As transit travel times increase over time, the cost of operating that service increases. Transit operating costs are generally dependent on three variables: vehicle miles traveled, vehicle hours traveled and peak vehicle requirements. Increased congestion generally increases the number of vehicle hours traveled and leads to increases in the number of required peak vehicles to operate the route.

Even with a deterioration of transit travel times, transit demand in the Lake Oswego to Portland transit corridor is forecast to increase at a rate similar to the regional average. As shown in Table 1.5-2, total average weekday transit ridership in the corridor and system are forecast to increase by approximately 124 percent between 2005 and 2035.

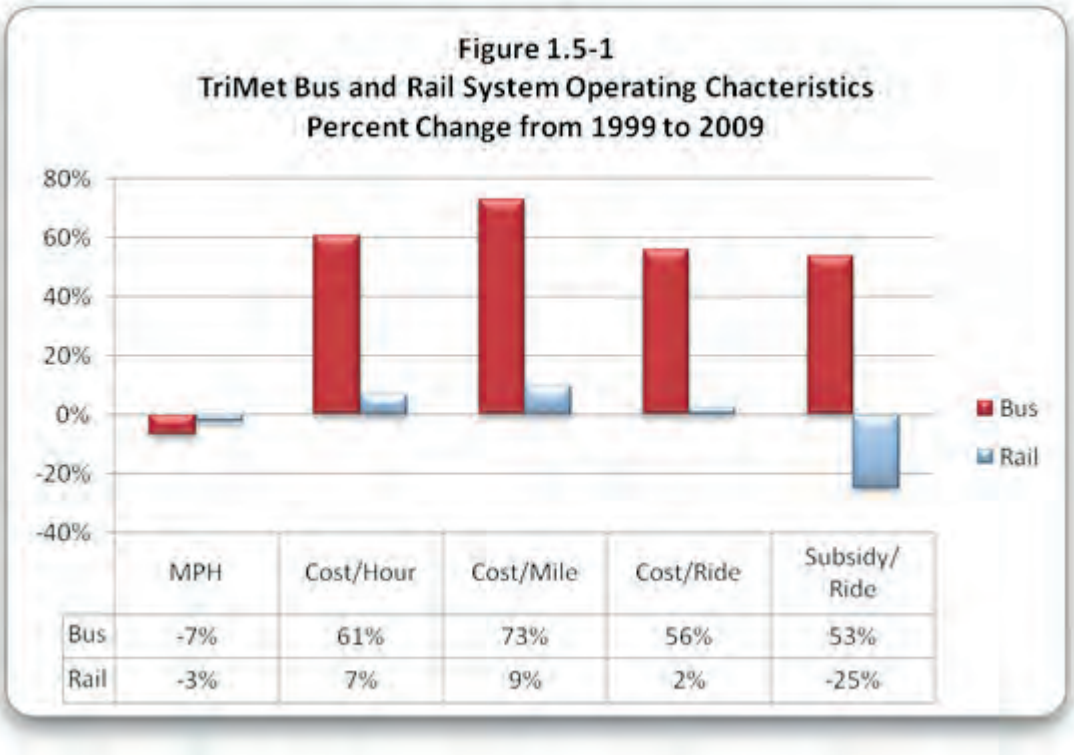
Table 1.5-2 Average Weekday Corridor and Systemwide Transit Ridership[1] (2005 and 2035)

	2005	2035	Percent Change
TriMet Systemwide	267,300	583,800	118%
Lake Oswego to Portland Corridor	103,600	231,900	124%

Source: Metro 2009.
[1] Ridership is measured in person trips (i.e. linked/originating trips) that originate from and/or are destined to the corridor, excluding intra-Portland CBD and NW Portland trips and trips between the Portland CB and Northwest Portland (districts 1 and 2; see Figure 1.2-1). Ridership in 2035 is based on the No-Build Alternative, described in Section 2.2.1).

Figure 1.5-1 illustrates the percent change from 1999 to 2009 for five operating efficiency measures for the TriMet bus and rail systems (source: TriMet's annual Section 15 reports). Each of the five measures demonstrates that the operating efficiency of the overall bus system declined in relationship to the rail system. In particular, the overall speed of the bus system declined by approximately 7 percent, compared to a 3 percent decline with the rail system. Further, the cost per revenue hour and the cost per revenue mile of service increased by 61 and 73 percent for the bus system, respectively, compared to 7 and 9 percent for the rail system – with the cost per mile change reflecting the relative decline in bus speeds compared to rail speeds. Similarly, the operating cost per boarding ride on the bus system increased by 56 percent over the past decade, compare to a 2 percent increase on the rail system. Finally, the subsidy per ride[1] has increased by 53 percent for the bus system, compared to a 25 percent decline for the rail system. By that measure, the rail system, which generally operates in reserved right of way, is becoming more efficient over time, while the bus system, which generally operates in mixed traffic, is becoming less efficient. The existing downtown Portland streetcar service, which generally operates in mixed traffic, is not accounted for in TriMet's Section 15 reports.

[1]The operating costs minus the operating revenue, divided by the number of boarding rides.



In conclusion, the region's strategic investment over the past decade in an expanding rail system has resulted in increased transit operating efficiencies, a trend that is likely to continue into the future. In general, by investing further in reserved right of way and rail lines within existing bus corridors with high ridership potential, the efficiencies of rail transit with reserved right of way would allow TriMet to provide more and faster transit service with its limited pool of operating funds.

Further illustrating the relative efficiency of rail transit service compared to bus service in the TriMet system, Table 1.5-3 summarizes the TriMet 2008 operating cost per boarding ride for regular bus, frequent service bus[2], streetcar and light rail. Streetcar and light rail have the lowest costs per boarding ride at $1.75, compared to frequent service bus and regular bus service, which cost $2.75 and $3.50 per boarding ride, respectively.

Table 1.5-3 TriMet Operating Cost per Boarding Ride by Transit Mode[1] (2008)

Transit Mode	Cost/Boarding Ride
Bus	$3.50
Frequent Service Bus	$2.75
Streetcar	$1.75
Light Rail	$1.75

Source: TriMet; 2008.
[1] Boarding ride is defined as each time a person boards a transit vehicle, independent of their mode of access.

[2]Frequent service bus is defined as bus routes with service frequency of 15 minutes or better throughout the day, every day of the week.

1.6 Corridor Transit Markets

This section addresses the primary transit markets within the Lake Oswego to Portland transit corridor, which were identified by reviewing the total person trip and transit's share of total person trips for travel between the various districts that make up the corridor. The market analysis focuses on links between districts, such as travel between primarily residential areas and areas that include employment centers.

As shown in Table 1.3-2, the corridor districts with the greatest number of employees in 2035 will be the Portland CBD, South Waterfront/OHSU, Northwest Portland, Johns Landing and Lake Oswego. Figure 1.2-1 illustrates the corridor's districts. Table 1.6-1 shows the number of average weekday commute trips (i.e., work and college) between the entire Lake Oswego to Portland transit corridor and those high-employment districts for 2005 and 2035 (based on the No-Build Alternative). The growth from 2005 to 2035 for all weekday commute trips from the corridor to the high-employment districts would range from 122 to 217 percent. Transit trips are expected to grow much more than other trips. The greatest growth rate in transit commute trips would occur from the corridor to Johns Landing, a 912 percent increase, followed by transit commute trips to the South Waterfront/OHSU and Portland CBD districts (456 and 419 percent increases, respectively). The greatest absolute gain in weekday transit trips would be from the corridor to the Portland CBD/Northwest Portland, with an increase of 10,350 trips.

Table 1.6-1 Lake Oswego to Portland Transit Corridor Commute[1] and Non-Commute[1] Market Analysis[2], No-Build Alternative (average weekday, 2005 and 2035)

	2005		2035 No-Build			
From the Corridor to:	**Commute**	**Non-Commute**	**Commute**	**Percent Change[3]**	**Non-Commute**	**Percent Change[3]**
Portland CBD/NW Portland						
Person Trips	5,420	38,840	13,780	191%	68,960	131%
Transit Trips	990	2,130	5,860	522%	9,500	439%
Transit Mode Share	18%	5%	43%	114%	14%	133%
South Waterfront/OHSU						
Person Trips	3,900	42,780	14,220	238%	107,420	127%
Transit Trips	680	2,090	5,140	663%	11,250	433%
Transit Mode Share	17%	5%	36%	1256	10%	134%
Johns Landing						
Person Trips	1,530	10,760	5,760	229%	36,840	204%
Transit Trips	150	230	1,820	1122%	3,210	1447%
Transit Mode Share	10%	2%	32%	271%	9%	409%
Lake Oswego						
Person Trips	3,850	17,800	11,700	149%	52,330	152%
Transit Trips	280	220	1,460	315%	840	295%
Transit Mode Share	7%	1%	12%	67%	2%	57%

Source: Metro, March 2010.
Note: OHSU = Oregon Health and Science University.
1 Commute trips are work and college person trips; non-work trips are all other person trips.
2 See Figure 1.2-1 for an illustration of the Lake Oswego to Portland transit corridor and the corridor districts.
3 Percent change in mode split percent from 2005 to 2035.

Transit's mode share in these high-employment areas was greater for commute trips than for non-commute trips in 2005 and they will remain greater in 2035. For example, the transit mode split for corridor commute trips from the corridor to the Lake Oswego district in 2035 would be approximately six times greater than for non-commute trips (12 percent compared to 2 percent,

respectively) and almost four times greater for commute trips from the corridor to the Johns Landing district than non-commute trips (32 percent, compared to 9 percent, respectively). In summary, transit competes best in the corridor for commute trips from and to the corridor's high-employment districts – both currently and in the future.

1.7 Planning and Policy Framework

This section provides an overview of the planning and policy framework at the state, regional and local levels that calls for consideration of a transit capital investment in the Lake Oswego to Portland transit corridor to address future growth and transportation problems in the corridor, while being environmentally sensitive.

1.7.1 State, Regional and Local Land Use and Transportation Plans

Oregon state law requires that the urban areas of the state define urban growth boundaries and that adequate urban plans and infrastructure be provided within those boundaries. Appropriate plans, zoning and infrastructure within urban growth boundaries promote the efficient use of urban land, thereby helping to preserve the state's non-urban land. The Portland metro region has had a defined strategy for managing growth and providing effective transportation within the adopted urban growth boundary since 1979. Metro's regional urban growth goals and objectives define the *2040 Growth Concept*, which is directly linked to the *Regional Transportation Plan* (Metro, 2009 – see Section 3.1 for additional detail). The RTP identifies the projects and transportation measures needed to meet the demand for future growth and it includes the Lake Oswego to Portland Transit Project.

This linked land use and transportation policy approach is critical to managing the urban growth boundary and achieving the focused development patterns that are needed to achieve the regional goals and objectives. The RTP is designed to accommodate the transportation needs of 720,000 additional residents into the Oregon portion of the metropolitan area, while limiting the expansion of the urban growth boundary.

The 2040 Growth Concept was established by Metro, in cooperation with its local government partners. The concept seeks to accommodate growth in a compact urban form, which reduces conversion of natural and resource lands. The concept includes strategies to protect and support existing residential neighborhoods, make more efficient use of existing urban lands, reduce dependence on the automobile and encourage mixed-use development in centers and corridors. Centers and corridors are areas within the urban growth boundary where much of the growth is planned and forecast to occur.

The Portland central city, which includes downtown Portland, is the region's high-capacity transit hub, providing current and future connections to regional centers and town centers. The role of the Portland central city as the region's financial, cultural, tourism, retail and commercial center is reinforced by the 2040 Growth Concept. Additionally, 2040 Growth Concept designates several regional centers and town centers, defining them as mixed-use areas consisting of moderate to high densities served by high capacity transit services and facilities. Within the project's corridor, Lake Oswego is defined as a town center.

In addition to the state requirements for managing growth within an urban growth boundary, there is an established framework of state, regional and local plans and policies that emphasize the link between land use and transportation decisions. In 1991, to strengthen the connections between land

use policies and transportation policies, the state developed the Transportation Planning Rule to help implement the Statewide Planning Goal 12, requiring cities and counties to:

- Consider changes to land use densities and designs as a way to meet transportation needs;
- Adopt changes to their subdivision and development ordinances to encourage more transit- and pedestrian-friendly development street patterns; and
- Amend their comprehensive plans to allow transit-oriented development along transit routes. (*Note that applicable regional, city and county plans currently comply with this requirement*.)

Regionally and within the project corridor, there has been extensive public and private investment in support of these policies. For example:

- The 2040 Growth Concept calls for accommodating urban growth in centers and corridors and for connecting centers with high capacity transit; and
- The Lake Oswego to Portland transit corridor has land use development patterns that support transit use and town centers.

Further, all applicable local and regional land use plans and policies in the Oregon portion of the metropolitan area have been based on, among other things, providing high capacity transit in regional corridors such as the Lake Oswego to Portland transit corridor. Land use designations, zoning patterns and water, sewer and other infrastructure plans and investments in all local jurisdictions have been located and sized based on development forecasts in high-capacity transit corridors.

1.7.2 Willamette Shore Line Consortium Right of Way and RTP Refinement Plan

The Willamette Shore Line Consortium is made up of the Oregon Department of Transportation (ODOT), Metro, TriMet, the cities of Portland and Lake Oswego, and Clackamas and Multnomah counties. In 1988, the consortium formed and purchased the 6.3-mile Willamette Shore Line right of way from the Southern Pacific Railroad. Knowing that the Highway 43 corridor is very constrained, the purchase was made with the intent of preserving the right of way for future rail transit use. The value of the right of way could be counted as local match for federal funds to construct the project. Since 1990, the City of Lake Oswego has leased the Willamette Shore Line right of way from the consortium for the purpose of operating excursion trolley service between the South Waterfront and Lake Oswego.

The 2004 Regional Transportation Plan (RTP) identified the need for a Refinement plan for a high capacity transit option for the corridor, which included an analysis of several modal alternatives. Metro initiated the corridor Refinement in July 2005 and issued the *Lake Oswego to Portland Transit and Trail Alternatives Analysis Evaluation Summary Public Review Draft* in June 2007. On December 13, 2007, after reviewing and considering the alternatives analysis report, public comment and recommendations from the project's citizen advisory committee, project management group, steering committee and partner jurisdictions and agencies, the Metro Council approved Resolution No. 07-3887A, which adopted the *Lake Oswego to Portland Transit and Trail Alternatives Analysis – Alternatives to be Advanced into a Draft Environmental Impact Statement and Work Program Considerations*. (See Section 2.1 for additional detail on the process used to identify and narrow alternatives.)

1.7.3 Related Environmental Resources, Plans, Goals and Objectives

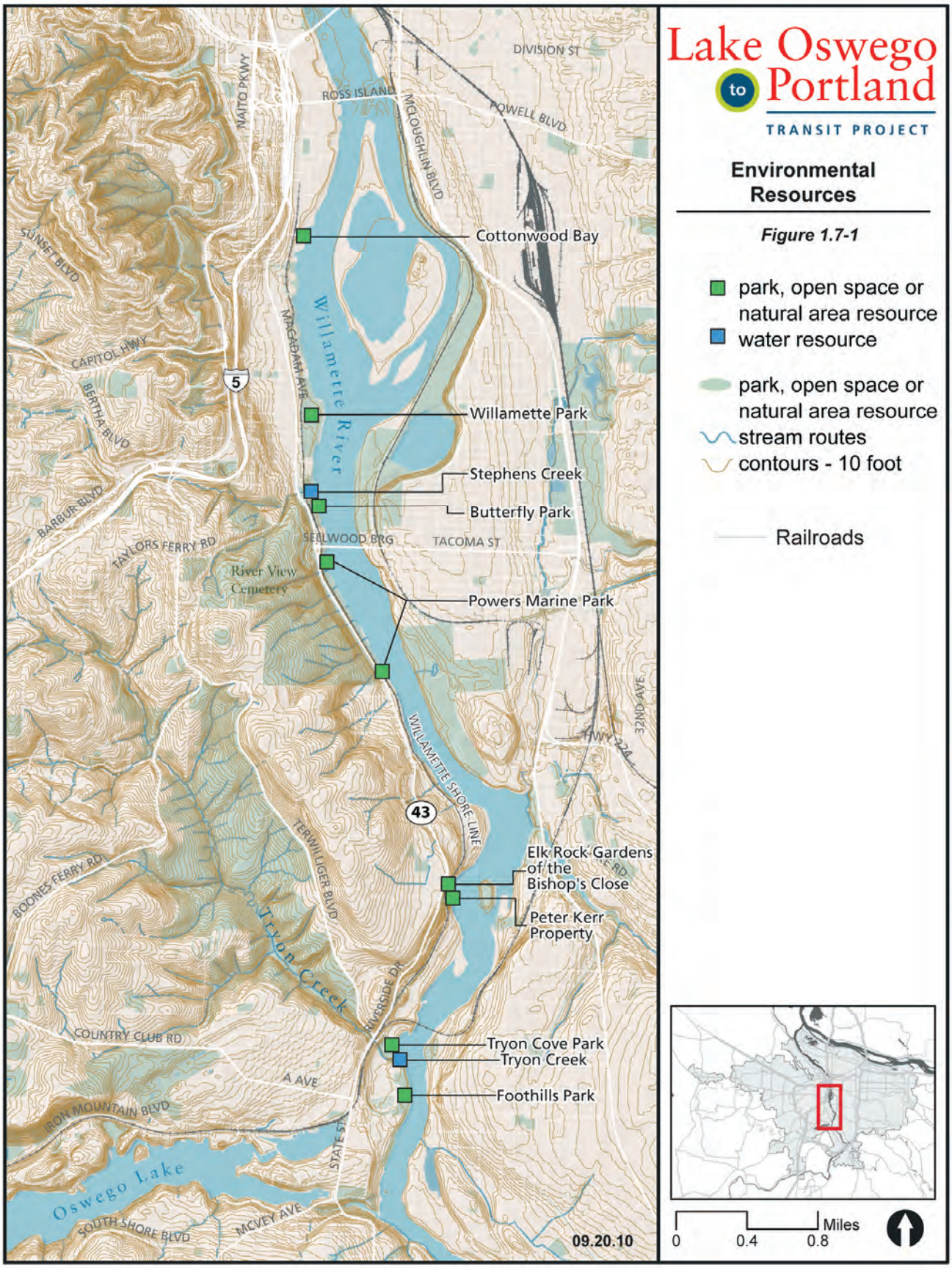
The Lake Oswego to Portland transit corridor contains a diverse variety of natural, open space, park and recreation resources, intermixed with the built urban and suburban environment. These resources create a set of constraints on the project, as well as important assets to the corridor that enhance its attractiveness in the region as a residential, commercial and employment area. Figure 1.7-1 illustrates the following waterways, natural areas, open spaces and parks (from north to south) in the corridor:

- **Willamette River.** Oregon's largest internal waterway, the Willamette River is approximately 187 miles long and it forms the eastern boundary of the Lake Oswego to Portland transit corridor. It floods periodically and is habitat for several federally-listed threatened and endangered species, including: Lower Columbia River coho salmon; Lower Columbia River steelhead; Upper Willamette River steelhead; Lower Columbia River chinook salmon; Upper Willamette River chinook salmon; bull trout; and green sturgeon. The river is the focus of the Willamette Greenway Plan.

- **Tryon, Stephens and Other Minor Creeks.** Tryon Creek is approximately seven miles long, with a watershed of approximately 4,200 acres, of which about 20 percent is protected as park, greenspace and natural area. Tryon Creek enters the Willamette River near the intersection of Highway 43 and Southwest Terwilliger Boulevard. Tryon Creek is the largest tributary watershed within the study area. The Oregon Department of Transportation (ODOT) completed the initial phase of a habitat enhancement project, which included modification the Highway 43 culvert to improve fish passage and enhancement work upstream and downstream of the culvert. The City of Portland is conducting a second phase that will enhance habitat from the confluence with the Willamette River to the work completed by ODOT in the initial phase. Stephens Creek enters the Willamette River near the intersection of Highway 43 and Southwest Taylors Ferry Road within the northern portion of Butterfly Park. Restoration of Stephens Creek is part of the City of Portland's off-channel habitat restoration efforts for coho and chinook salmon and lamprey. Both Tryon Creek and Stephens Creek are habitat for federally-listed threatened and endangered species, including: Lower Columbia River coho salmon; Lower Columbia River steelhead; and Lower Columbia River chinook salmon. Other creeks in the project corridor include Terwilliger Creek and 11 unnamed tributaries to the Willamette River (see Figure 3.8-1 in Chapter 3).

- **Cottonwood Bay Park.** Cottonwood Bay Park is approximately two-thirds of an acre and is located adjacent to the Willamette River and the Willamette River Greenway Trail at approximately Southwest Hamilton Street, which provides access to the park.

- **Willamette Park.** Willamette Park is a somewhat linear, multi-use facility of approximately 27 acres, located between the existing Shore Line right of way and the Willamette River. Entrances are via Southwest Nebraska and Nevada streets, Miles Place and Beaver Avenue. The park includes a boat ramp, sports fields, tennis courts, the Willamette Greenway Trail, picnic shelter, restrooms, natural areas, heritage oak trees and open space for passive recreation.


Lake Oswego to Portland
TRANSIT PROJECT
Environmental Resources
Figure 1.7-1
park, open space or natural area resource
water resource
park, open space or natural area resource
stream routes
contours - 10 foot
Railroads
Cottonwood Bay
Willamette Park
Stephens Creek
Butterfly Park
Powers Marine Park
Elk Rock Gardens of the Bishop's Close
Peter Kerr Property
Tryon Cove Park
Tryon Creek
Foothills Park
Willamette River
Tryon Creek
Oswego Lake
River View Cemetery
DIVISION ST
ROSS ISLAND
POWELL BLVD
MCLOUGHLIN BLVD
NAITO PKWY
SUNSET BLVD
CAPITOL HWY
BERTHA BLVD
BARBUR BLVD
TAYLORS FERRY RD
MACADAM AVE
SELLWOOD BRG
TACOMA ST
WILLAMETTE SHORE LINE
HWY 224
32ND AVE
TERWILLIGER BLVD
BOONES FERRY RD
RIVERSIDE DR
COUNTRY CLUB RD
A AVE
IRON MOUNTAIN BLVD
STATE ST
SOUTH SHORE BLVD
MCVEY AVE
5
43
09.20.10
Miles
0
0.4
0.8

- **Butterfly Park.** Butterfly Park is a 1.07-acre linear park located between the existing Willamette Shore Line right of way and the Willamette River and between the Sellwood Bridge and Willamette Park. As its name indicates, it is habitat to butterflies and other riparian plants and animals. Access is via Willamette Park or off Highway 43.

- **Powers Marine Park.** Powers Marine Park is almost a mile long but at times less than 100 feet wide, covering approximately 13 acres between the existing Willamette Shore Line right of way and the Willamette River, immediately south of the Sellwood Bridge. The park is generally undeveloped and is accessed via Highway 43 across the Willamette Shore Line right of way. The park is the site of several salmon and steelhead restoration projects by the City of Portland.

- **Peter Kerr Property.** Peter Kerr property is approximately 3.3 acres, located between Highway 43 and the Willamette River in Dunthorpe. It is generally undeveloped and inaccessible to the public. The property is bisected by the Willamette Shore Line right of way, including a 1,400 foot long tunnel built through Elk Rock. The nearby Elk Rock Gardens of the Bishop's Close, owned by the Oregon Episcopal Diocese, is open to the public and was once a part of the original land owned by Peter Kerr before the property was donated to the City of Portland (1955) and the gardens donated to the diocese (1957).

- **Tryon Cove Park.** The 7.5-acre Tryon Cove Park, purchased by the City of Lake Oswego in 2002, is located at the mouth of Tryon Creek on the west bank of the Willamette River. The park provides an important connection between the Tryon Creek State Natural Area and Lake Oswego's Foothills Park.

- **Foothills Park.** The 9-acre Foothills Park, located immediately south of Tryon Cove Park, was purchased by the City of Lake Oswego in 2002 and opened to the public with a wide range of amenities (e.g., event space, pathways, river viewpoints, grass amphitheater, water play area and restrooms) in 2006.

There are numerous plans, goals and objectives in place within the state, region and corridor to ensure that governmental actions and projects are planned and implemented in a way that avoids or minimizes and mitigates impact of those actions and projects on the natural environment. These state, regional and local plans, goals and objectives provide a framework for the ongoing planning, design and evaluation of high capacity transit alternatives with in the corridor.

Following is a summary of the key related plans (see Section 3.1 for additional detail):

- **Willamette Greenway Plan.** The Willamette Greenway Plan was developed to protect, conserve, maintain and enhance scenic, natural, historic, economic and recreational qualities of lands along the Willamette River and meet Statewide Planning Goal 15. The plan also calls for a Greenway Trail along the Willamette River and the plan applies only within the City of Portland. It is divided into four specific concepts: a concept map, public access, setbacks and acquisition areas. In particular, the plan includes a 25-foot setback from the top of bank for all improvements, unless they are river dependent or river related.

- **Trail Plans.** There are several plans that address trails within the Lake Oswego to Portland corridor: Lake Oswego Trails and Pathways Master Plan, City of Portland Recreational Trails Strategy, Bicycle Facilities Strategy to reach Platinum Status in Southwest Portland; and

Southwest Urban Trails Plan. Several of these plans reference or include the Willamette Shore Line and Willamette Greenway trails.

- **Other Plans.** Other plans and regulations that include the need to address environmental resources in the corridor include the following: Metro Functional Plan – Title 3; City of Portland Environmental Zones; City of Lake Oswego Resource Protection and Resource Conservation Overlay Districts; City of Lake Oswego Comprehensive Plan Goals 5, 6 and 15; and City of Lake Oswego Tryon Creek at OR 43 Culvert Alternates Analysis.

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