

# Lake Oswego to Portland Transit and Trail Initiation of Alternatives Analysis Planning Study

## Introduction

### *Introduction and Purpose*

The purpose of this report is to initiate the Lake Oswego to Portland Transit and Trail Alternatives Analysis for the Federal Transit Administration (FTA) as part of the metropolitan transportation planning process, as specified by 23 CFR Part 450 *FTA/Federal Highway Administration (FHWA) Joint Final Rule on Metropolitan and Statewide Planning*.

This report provides local and regional decision makers and FTA with the purpose and goals of the project, the problem to be addressed, measures that will be used to evaluate the alternatives and the conceptual transit and trail alternatives. Figure 1 presents the project location within the State of Oregon and within the Region. Figure 2 shows the project location in more detail.

This federal alternatives analysis has its roots in several prior government actions and planning efforts that reached some conclusion about future transportation solutions of the corridor. *The Lake Oswego to Portland Transit and Trail Alternatives Analysis Background Report* (Metro, 2005) summarizes the previous and ongoing studies and policies pertaining to the corridor. Based on previous studies and recent funding allocations, substantial roadway expansion and tolling have been ruled out. Previous studies in the corridor identify transit as the priority to move people through the corridor. Given the public ownership of a railroad right-of-way within the corridor, transit alternatives are being studied to assess how current and future transportation needs might be met in the Lake Oswego to Portland corridor.



## **Purpose**

The Lake Oswego to Portland Transit and Trail Alternatives Analysis is comprised of two different components: transit and trail. The trail portion of this study is a requirement of on part of the study's Metropolitan Transportation Improvement Program (MTIP) funding, which expressly required that a trail connection be studied in addition to transit. The two alternatives operate in different ways but compliment each other therefore they have different goals. Below describes the purpose and goals for a transit alternative and for a trail alternative.

### ***Transit Alternatives***

The purpose of the Portland to Lake Oswego Transit Project is to develop a transit project that meets future travel demand and supports local and regional land use plans, which garners public acceptance and community support and will:

- Increase the mobility and accessibility within the geographically constrained Highway 43 Corridor, connecting from the Portland Central City through the Lake Oswego Town Center.
- Minimize traffic-related and parking impacts to neighborhoods.
- Support and enhance existing neighborhood character in an environmentally sensitive manner.
- Leverage investment in the transit system to cost-effectively increase Corridor and systemwide transit ridership.
- Support transit-oriented economic development in Portland and Lake Oswego.
- Support community transportation, land use and development goals.
- Provide improved transportation access to and connectivity among significant destinations and activity centers including Downtown Portland, South Waterfront, Oregon Health & Sciences University, Tom McCall Waterfront Park, Willamette Park, Foothills and Downtown Lake Oswego.
- Provide additional transportation choices in the corridor
- Be part of an integrated multi-modal transportation system
- Anticipates future needs and impacts and does not preclude future expansion opportunities

### ***Trail Alternatives***

The purpose of the pedestrian and bicycle trail is to provide a connection between the Willamette River Greenway trail at the north end of the corridor and the Lake Oswego Town Center at the south which will:

- Significantly improve the access, safety and quality of experience for cyclists and pedestrians in the corridor
- Create a connected, high-quality facility that is compatible with the transit alternatives and which makes bicycling and walking viable transportation and recreation choices.
- Enhance the value of the existing transportation system by successfully integrating the bicycle/pedestrian trail into the system
- Be compatible with and serve the needs of surrounding neighborhoods
- Connect and improve access to important pedestrian and bicycle destinations in the corridor such as the Willamette River, South Waterfront, Willamette Park,

Sellwood Bridge, Lake Oswego Town Center, Urban Trails, Riverview Cemetery and the OHSU Tram.

**Table 1. LOAA Background Report Lessons Learned by Mode**

Mode	Lessons Learned
<b>Automobile</b>	<ul style="list-style-type: none"> <li>▪ Increased demand and congestion is anticipated on Highway 43</li> <li>▪ Capacity constraints are recognized throughout the corridor</li> <li>▪ ODOT concluded that widening of Highway 43 is not recommended because of physical and environmental constraints</li> <li>▪ Metro concluded that tolling of Highway 43 is not consistent with regional policy. Regional policy states that tolling should be evaluated for new capacity or new roadways projects only.</li> </ul>
<b>Transit</b>	<ul style="list-style-type: none"> <li>▪ River Transit was not carried forward in the South Corridor Transportation Alternatives Analysis due to low ridership, high out-of-vehicle travel time, and high capital cost</li> <li>▪ John's Landing Master Plan identified a light rail alignment</li> <li>▪ Need for rail transit backed by South Waterfront development and North Macadam plans, John's Landing, Lake Oswego, and adopted regional and local plans</li> <li>▪ Acquisition of the Willamette Shore Line right way anticipated rail use</li> <li>▪ Park and ride and transit center in Lake Oswego have been studied</li> </ul>
<b>Bicycle and Pedestrian</b>	<ul style="list-style-type: none"> <li>▪ Need for a established network of trails and greenways was identified in regional and local plans</li> <li>▪ Adopted plans and policies recognize the need for an interconnected trail system for commuting and recreational opportunities</li> </ul>

Figure 1: Project Locator

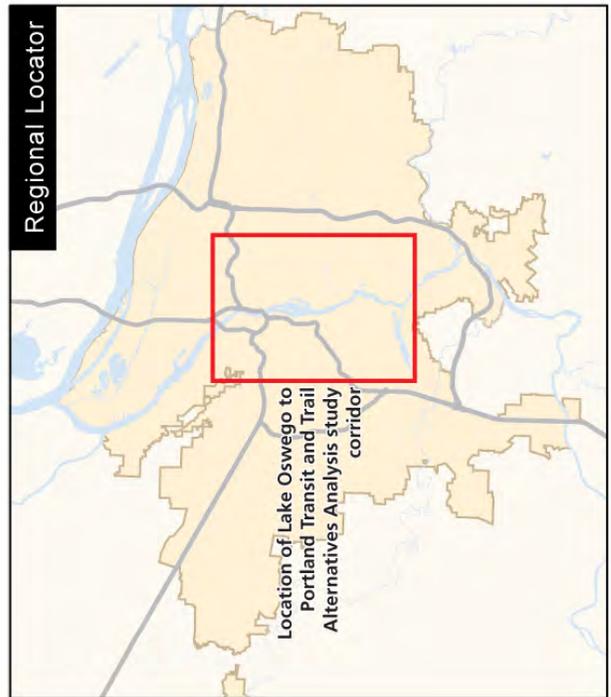
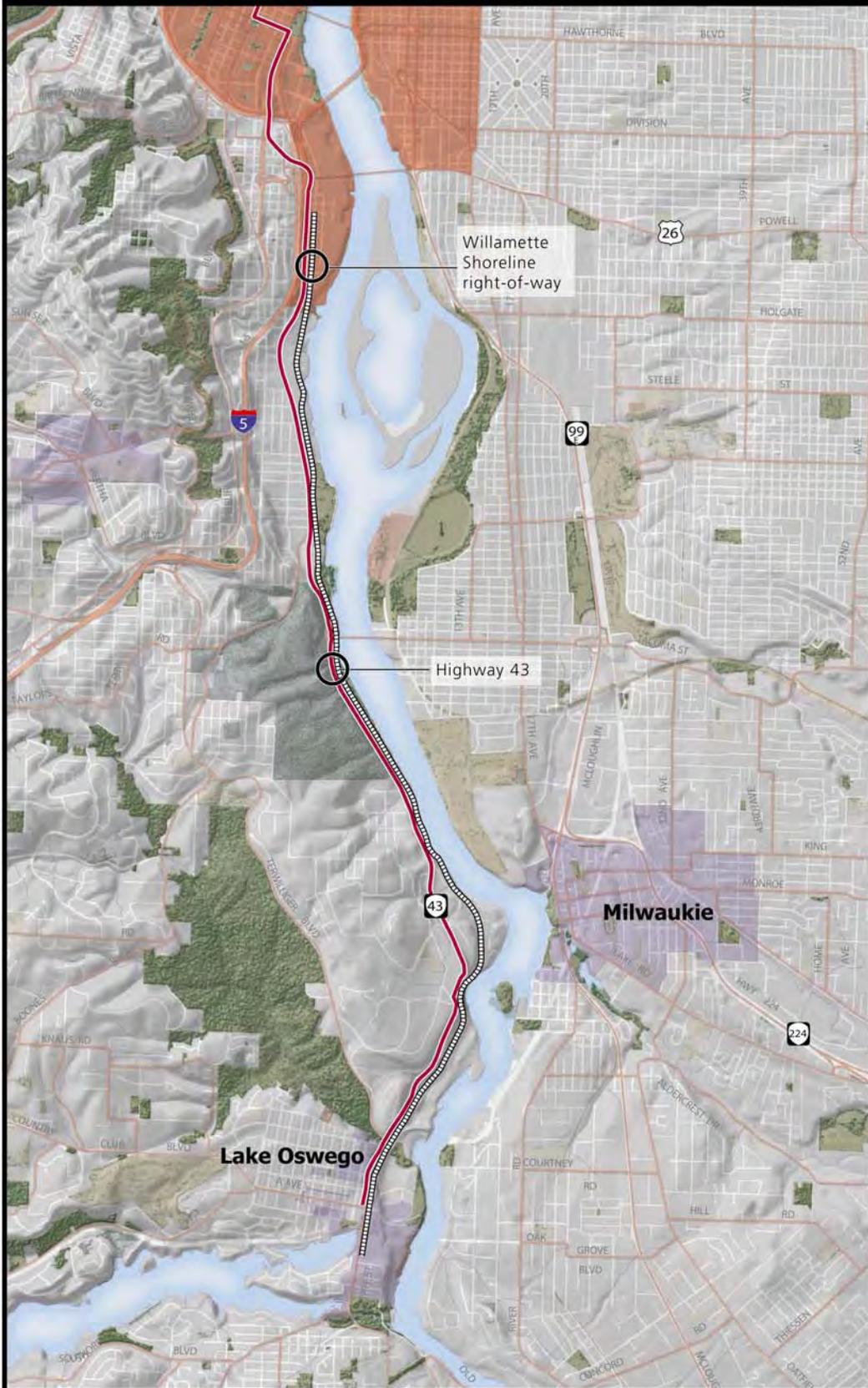


Figure 2: LOAA Project Corridor





# Description of Study Area, Transportation Problems, and Needs

## Description of the Project Study Area

Within the Lake Oswego to Portland Corridor, Highway 43 provides the major north south travel for autos and transit; the Willamette Shore Line Vintage Trolley operates seasonal and recreational service on the Willamette Shore Line right-of-way; and walk and bike routes can be accessed for a portion of the trip between Portland and Powers Marine Park on the Willamette Greenway.

## Auto and Transit Network



Highway 43

Highway 43 is the primary north-south route connecting Lake Oswego and Portland. The existing traffic volumes on Highway 43 within the corridor create substantial congestion in the peak hours of travel for both autos and transit using the roadway. Additionally, forecasts of future volumes in the corridor suggest greater congestion on Highway 43.

### Highway 43

The highway character changes dramatically through the corridor. Within the Lake Oswego City limits and the John's Landing neighborhood in the City of Portland, the highway two travel lanes in each direction with left turn pockets at intersections and a landscaped median. Sidewalks are provided on both sides of the roadway.

Between Lake Oswego and the City of Portland, the highway character changes and has more of a rural character as compared to the urban environment in Lake Oswego and the City of Portland. Highway 43 transitions between two lane or three lane cross-sections along the stretch of roadway between Lake Oswego and the City of Portland. There are no sidewalks and only limited shoulders. The roadway is parallel to the Willamette River and is constrained by the steep terrain on each side of the roadway.

### Transit

TriMet Bus Line 35 – Macadam operates on Highway 43 and serves the corridor with 15-minute peak period and 30-minute off-peak headways between Portland and Oregon City. TriMet 35 – Macadam provides connections between the Oregon city Transit Center, Lake Oswego Transit Center with stops along Highway 43 and the Portland Transit Mall.



TriMet Bus Line 36 – South Shore connects Tualatin and downtown Portland with a connection at the Lake Oswego Transit Center. TriMet 36 – South Shore operates on Highway 43 between Lake Oswego and the Portland Transit Mall with 30 minute peak and one hour off-peak headways.

### **Willamette Shore Line Right-of-Way**

The Willamette Shoreline Consortium purchased the Willamette Shoreline Right-of-Way from the Southern Pacific Railroad in 1988. The Consortium, comprised of the Oregon Department of Transportation, Metro, the cities of Portland and Lake Oswego, Clackamas and Multnomah counties and TriMet, manages the seven-mile right-of-way between RiverPlace and Lake Oswego. The Oregon Electric Railroad Society operates an excursion trolley service on the rail line. The Willamette Shoreline Consortium maintains and manages the right-of-way. The right-of-way was purchased to prevent the abandonment of the line and to preserve it for future passenger rail service.



*Existing Willamette Shore Line Trolley*

Since 1990, the City of Lake Oswego has leased from Portland the right-of-way for the purpose operating a trolley service on the line. Lake Oswego has contracted with a private operator to run the trolley service. Continuing the trolley operation is a viable means of preserving the corridor, especially the portions owned through easements.

The future presents a variety of long-term options for the use of the rail line. Some options that have been informally identified include light rail, commuter rail and streetcar operations, as well as bicycle and pedestrian trail.

### **Willamette Greenway Trail**



*Existing Willamette Greenway*

Metro, Lake Oswego and the City of Portland have all identified the need for an established network of trails and greenways. Both regional and local plans identify the need for a complete system of trails and greenways that will provide for and enhance commuting and recreational opportunities. The trail and greenway system should connect communities and community activity centers.

The existing Greenway Trail through the John's Landing neighborhood is narrow and winds around buildings and trees along the Willamette River. Conflict often arises between walkers and bikers along the narrow portions of the Greenway with poor sight distance.

## **Transportation Problem**

The region is experiencing unprecedented growth and growth trends indicate that 1.1 million more people will be living here 25 years from now. As population increases, the demand on the transportation network increases and the need for new transportation investments to serve the existing and future needs of residents and businesses become more and more important.

The adoption of the *2040 Growth Concept* provided a vision for planning in the Portland Metropolitan region by linking land use and transportation (See Figure 3). The intent of the 2040 Growth Concept is to preserve the region's livability while planning for future growth by providing efficient use of land and a cost-effective transportation system. The 2040 Growth Concept calls for residential and employment



*Lake Oswego Town Center*

growth to be concentrated in centers, with connectivity provided between centers. Highway 43/Willamette Shore Line right of way is identified as a potential high capacity transit facility to connect the Central City and the Lake Oswego Town Center.

Significant roadway capacity improvements on Highway 43 are not anticipated or feasible due to the high capital and social costs associated with the construction of new highways or arterials given the topographic and environmental constraints along the corridor. Over years, state, regional and local agencies have concluded that capacity and mobility would be addressed by increasing transit capacity and providing bicycle and pedestrian improvements through the corridor. Future transportation improvements are included in the No-Build alternative and would be constrained by current available revenue sources, consistent with the financially constrained transit network in Metro's 2004 Regional Transportation Plan.

## **Projected Household and Employment Growth**

The LOAA Corridor is comprised of eleven districts, as shown in Figure 4, including Portland Central Business District (CBD), South Waterfront, Macadam, Boones Ferry/Terwilliger, Lake Oswego, Marylhurst/West Linn, Tualatin/Stafford, Wilsonville, Oregon City, and Sellwood. Within the LOAA Corridor, households are anticipated to increase by 58% between 2005 and 2025 (26,538 new households). Additionally, employment is anticipated to increase by 30% between 2005 and 2025 (41,965 new jobs).



Figure 4: LOAA Corridors and Districts

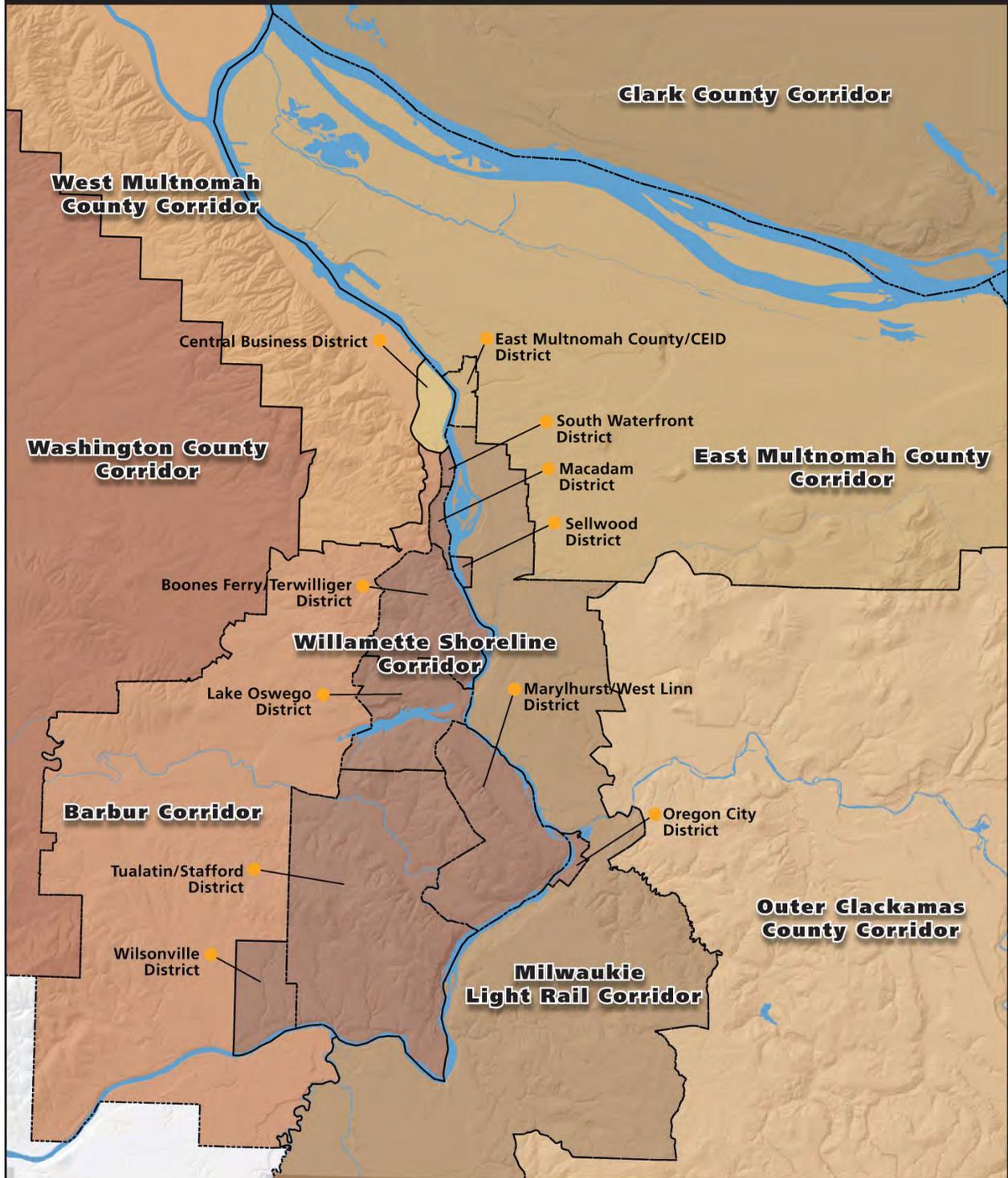


Table 2 presents the 2005 existing and 2025 projected household and employment growth region-wide and within the corridor. Figures 5 and 6 present the project household and employment growth within the corridor.

**Table 2**  
**Lake Oswego Alternatives Analysis**  
**2005 and 2025 Household and Employment Growth**

Measure	2005 Base Year	2025 No-Build	% Change
<b>Region-wide</b>			
Household	765,260	1,042,550	36%
Employment	1,051,860	1,494,420	42%
<b>LOAA Corridor</b>			
Household	45,460	72,000	58%
Employment	138,580	180,550	30%

*Source: Metro, 2006*

Figure 5 shows the 2005 and 2025 households in the corridor as well as the household growth and percent change over the next 20 years. Figure 6, similarly, shows the 2005 and 2025 employment in the corridor as well as the employment growth and percent change over the next 20 years. Growth in the corridor is expected to occur in the more densely populated portions of the corridor such as Lake Oswego, South Waterfront and Macadam are expected have growth, while the majority of the growth in household and employment is expected to occur in the Central City.

The following section describes in more detail the existing and future transportation problem and the projected growth in the corridor.

### **Historic Traffic Volume Growth in the Corridor**

Highway 43 serves as the primary north/south route for motor vehicles, transit and freight and serves the growing centers of Lake Oswego and Portland. Historic and existing traffic volumes within the corridor create substantial congestion in the peak hours of travel and future forecasts of traffic volumes in the corridor suggest greater congestion on Highway 43.

The existing traffic volumes on Highway 43 within the corridor create substantial congestion in the peak hours of travel. Highway 43 serves the growing centers of Lake Oswego and Portland. Forecasts of future volumes in the corridor suggest greater congestion on Highway 43. Substantial roadway improvements and tolling for Highway 43 have been ruled out in earlier studies completed in 1996 and 1999. However, multiple studies have recommended consideration of transit along the existing Willamette Shoreline right-of-way. Given the public ownership the railroad right-of-way within the corridor, transit alternatives, including, but not limited to streetcar service, are being studied to assess how current and future transportation needs might be met in the Lake

Figure 5: 2005 and 2025 Household Growth in the Corridor

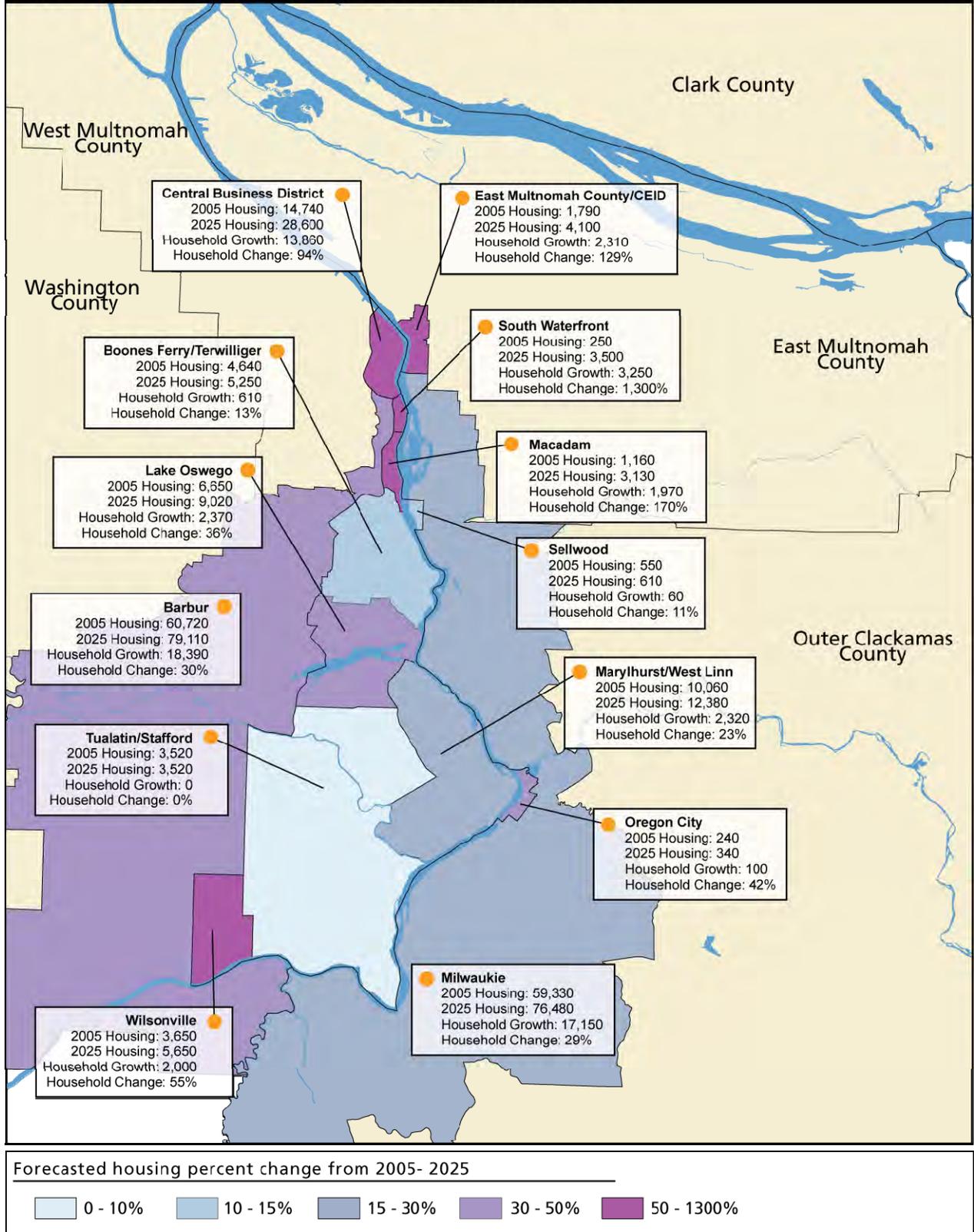
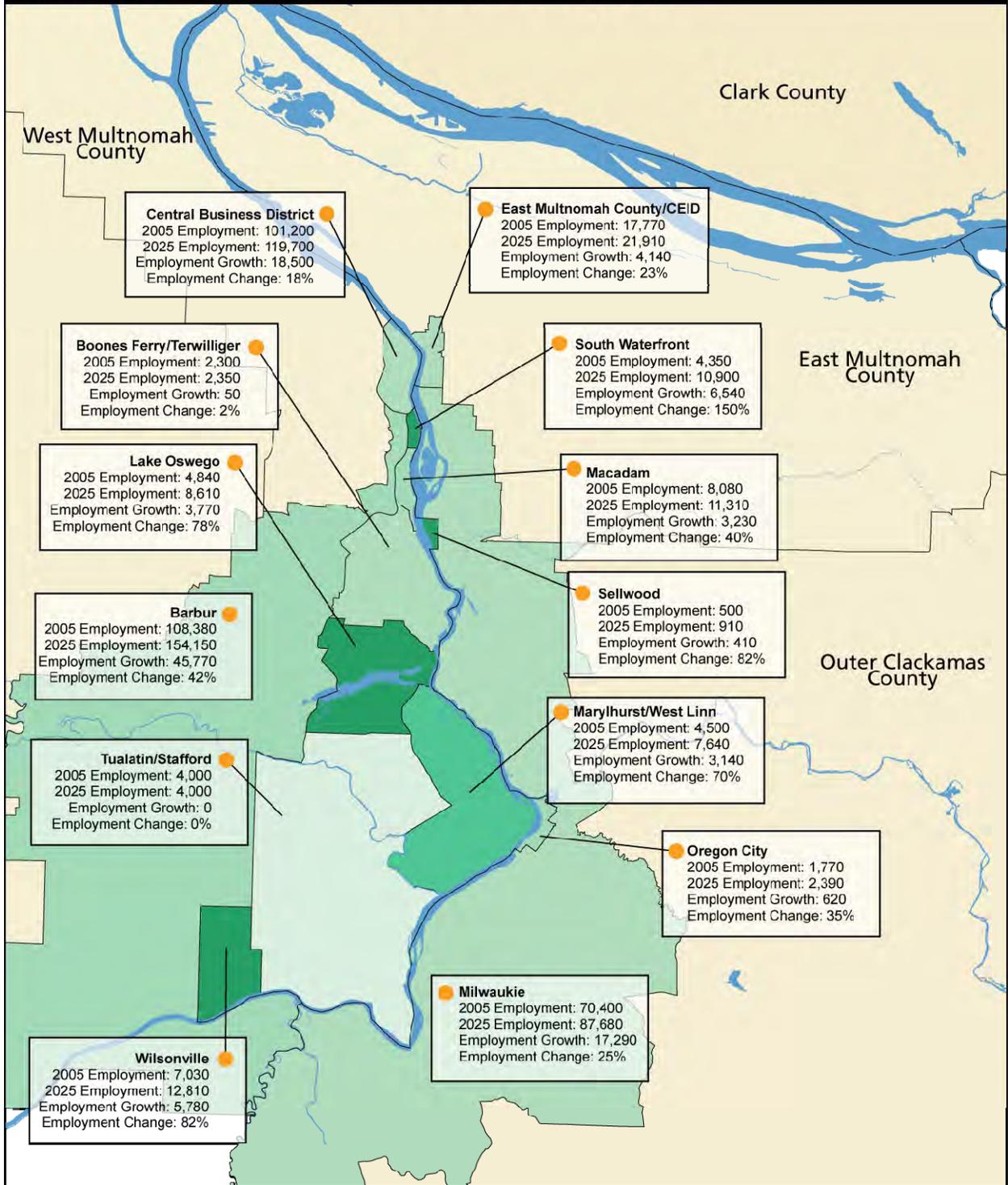
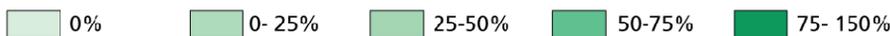


Figure 6: 2005 and 2025 Employment Growth in the Corridor



Forecasted employment percent change from 2005- 2025



Oswego to Portland corridor. Both current and previous studies have concluded that transportation system management, transportation demand management, transit, and bicycle and pedestrian improvements are more suitable for this corridor as a means of addressing the existing and future travel needs.

Table 3 and Figure 7 presents the historic growth in Annual Average Daily Traffic (AADT) Volumes during the ten-year period between 1994 and 2004. As shown in the table, daily traffic volumes increased by up to 25% over the ten-year period. The highest growth in traffic occurred near the North Shore Road and Highway 43 intersection.

**Table 3**  
**Historic Growth in the Corridor (1994-2004)**  
**Annual Average Daily Traffic (AADT) Volumes**

<b>Highway 43</b>	<b>1994 AADT</b>	<b>2004 AADT</b>	<b>Difference 1994-2004</b>	<b>% Change 1994-2004</b>	<b>Annual Growth</b>
Sellwood Bridge	37,100	38,900	1,800	4.9%	0.5%
SW Riverwood Rd	21,100	25,500	4,400	20.9%	1.9%
South of A Ave	33,600	36,700	3,100	9.2%	0.9%
North Shore Rd	28,900	36,200	7,300	25.3%	2.3%
McVey Ave	29,900	34,500	4,600	15.4%	1.4%
Lake Oswego south city limits	18,000	20,700	2,700	15.0%	1.4%
I-205	22,000	26,300	4,300	19.5%	1.8%

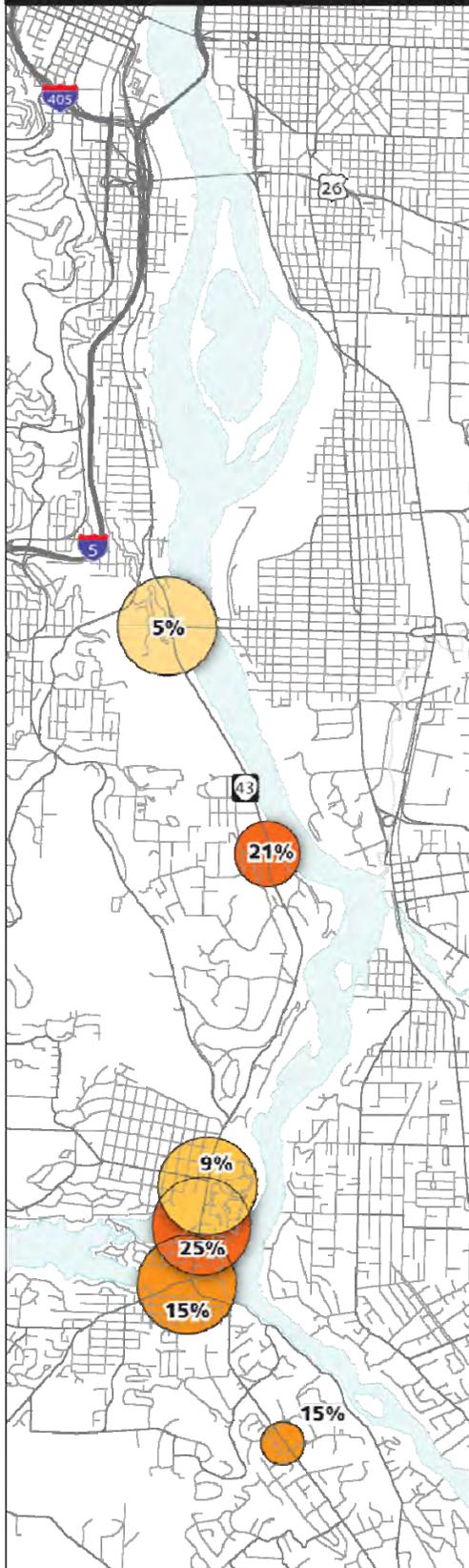
*Source: Oregon Department of Transportation (ODOT) Traffic Volume Tables*

The Regional Transportation Plan designates Highway 43 as a Multi-Modal Major Arterial connecting the Lake Oswego Town Center and the Portland Central City. Highway 43 also provides a local function of providing access to collector and local streets as well as driveway access to abutting residential properties between the centers.

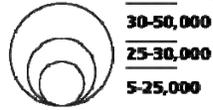
The northern segment of Highway 43 (SW Macadam Avenue) between SW Bancroft and SW Taylor’s Ferry Road, the highway provides a four-lane cross-section. The land abutting the highway is relatively flat with commercial, residential and light industrial land uses adjacent to the highway. Between Taylor’s Ferry Road and the Sellwood Bridge, the West Hills and the Riverview Cemetery are immediately adjacent to the highway to the west and a small strip of land separates Highway 43 from the Willamette River. South of the Sellwood Bridge, the highway is bounded by the West Hills to the west and Power’s Marine Park to the east.

South of the Sellwood Bridge and Power’s Marine Park, the highway provides three travel lanes and traverses through a hilly forest extending from the Willamette River into the West Hills, as well as through the Riverside Canyon. Portions of the highway are constructed on structure due to steep topography changes on either side of the highway.

Figure 7: Annual Average Daily Traffic (AADT) Volumes



**2004 Annual Average Daily Traffic Volumes**



**Percent Change In Annual Average Daily Traffic Volumes 1994-2004**



## 2005 and 2025 PM 2-Hour Traffic Volume Growth

Traffic volumes on Highway 43 are expected to increase by up to 45% between 2005 and 2025. Table 4 presents the 2005 and 2025 two-hour PM peak traffic volume for 2005 and 2025. Highway 43 north of the Sellwood Bridge carries the highest amount of traffic volumes in both years. This segment of roadway also has the most capacity along the corridor. Just south of the Sellwood Bridge traffic volumes drop as traffic disperses to the southeast across the bridge.

**Table 4**  
**2005 and 2025 PM 2-Hour Traffic Growth in the Corridor**  
**Annual Average Daily Traffic (AADT) Volumes**

	2005 PM2-Hour			2025 PM 2-Hour			Total % Change
	SB	NB	Total	SB	NB	Total	
Moody under Ross Island Br	2,000	400	2,400	2,000	780	2,780	16%
Hwy 43 N of Boundary	3,160	2,130	5,290	3,610	2,700	6,310	19%
Hwy 43 N of Taylors Ferry	2,830	1,890	4,720	3,480	2,630	6,110	29%
Hwy 43 N of Sellwood Br	5,020	3,680	8,700	5,900	4,450	10,350	19%
Hwy 43 S of Sellwood Br	2,570	2,380	4,950	3,840	2,860	6,700	35%
Hwy 43 N of Terwilliger	2,440	2,200	4,640	3,530	2,660	6,190	33%
Hwy 43 S of Terwilliger	2,780	2,450	5,230	4,420	3,080	7,500	44%
Hwy 43 N of McVey	3,480	2,450	5,930	5,550	3,060	8,610	45%
Hwy 43 S of McVey	2,690	1,840	4,530	3,960	2,160	6,120	35%
Hwy 43 S of Marylhurst	2,170	1,650	3,820	2,810	1,960	4,770	25%

Source: Metro, 2007

Notes: SB – Southbound, NB - Northbound

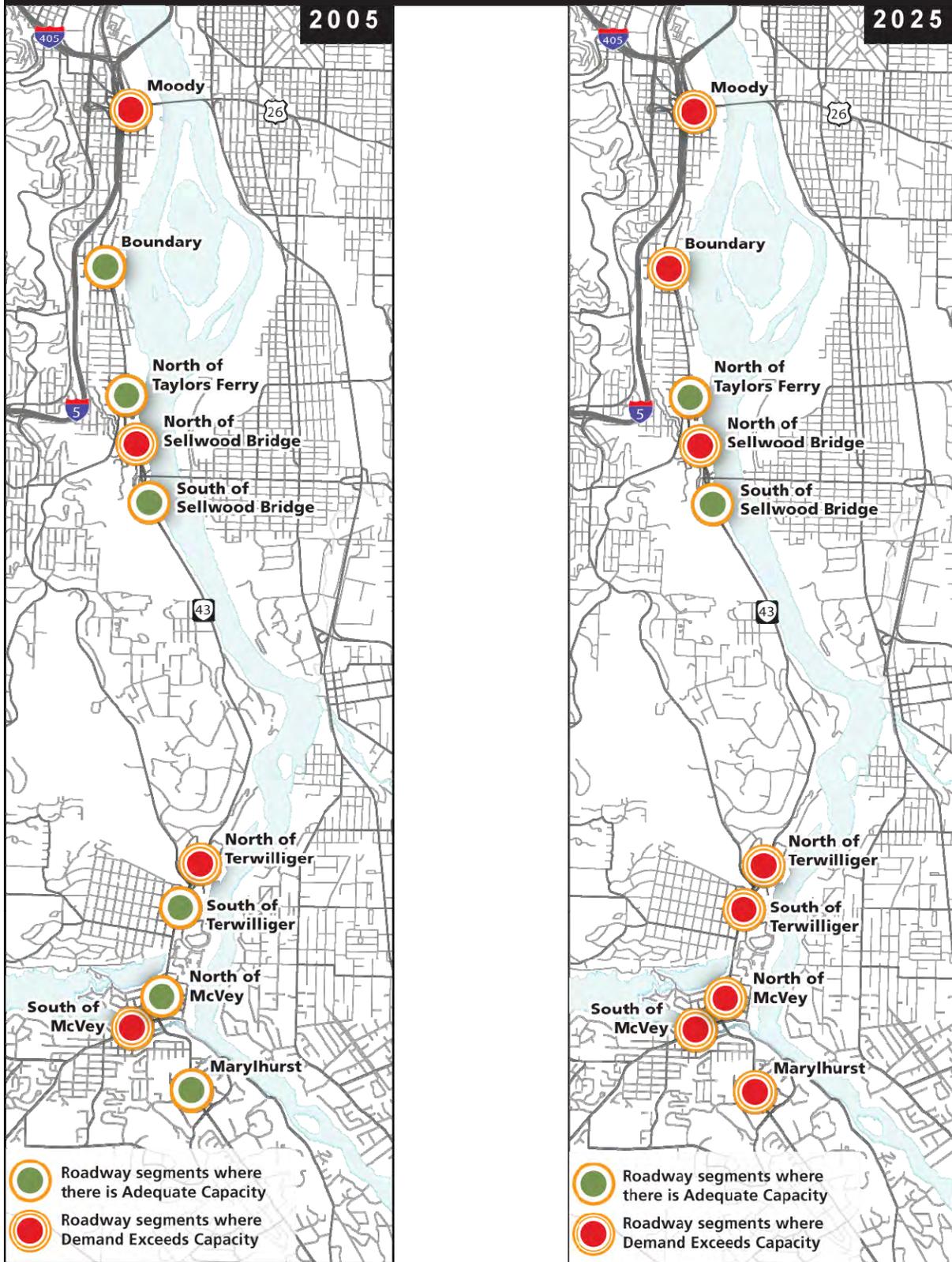
Additionally, as traffic volumes increase, remaining capacity on the roadway decreases. Figure 8 shows the 2005 and 2025 two-hour PM peak traffic volumes as well as the corresponding demand to capacity ratios. The demand to capacity ratio measures the demand (how many vehicles would likely travel this roadway) in relationship to the capacity (how many vehicles can this roadway carry).

In 2005, four out of the 10 roadway segments are operating above capacity: 1) Moody under Ross Island Bridge, 2) Highway 43 north of Sellwood Br, 3) Highway 43 north of Terwilliger, and 4) Hwy 43 south of McVey. In 2025, only two of these roadway segments are not expected to operate above capacity: 1) Highway 43 north of Taylors Ferry Road and 2) Highway 43 south of the Sellwood Bridge.

## Travel Times

As congestion increases in the corridor and the roadway capacity is diminished, travel times for vehicles and transit increase. Table 4 presents the PM peak period travel times for transit and autos for 2005 and 2025.

Figure 8: Demand to Capacity along the Highway 43 Corridor



**Table 4**  
**Lake Oswego Alternatives Analysis**  
**PM 2-Hour Peak Auto and Transit Travel Times**  
**from Portland Central City to Lake Oswego**

Measure	2005 Base Year	2025 No-Build	% Change
PM 2-Hour Auto Travel Times	25 min	30 min	20%
PM 2-Hour Transit Travel Times*	38 min	54 min	42%

Source: Metro, 2006

\*Travel Times for TriMet #35 on SW Macadam Avenue

Table 4 shows that the auto travel times are anticipated to increase by 20% over the next 20 years. Transit travel times are anticipated to increase by 42% over the next 20 years. Transit travel times are expected to increase from 38 to 54 minutes. In 2025, a transit trip from Portland to Lake Oswego is expected to 16 minutes longer during the PM peak period.

### Travel Market

Highway 43 provides a direct link between the Lake Oswego Town Center and the Portland CBD. In addition to providing the direct connection between the two centers, Highway 43 provides a different function at various locations along the corridor. Between the Portland CBD and Sellwood Bridge, Highway 43 serves as a major arterial with access to the commercial and businesses along the highway as well as the residential areas east and west of the highway. The Sellwood Bridge connects southeast and southwest Portland and is used by people from all over the region. From the Sellwood Bridge to Lake Oswego, the highway serves two functions: access to local streets and residential areas and through traffic traveling between the Portland Central City and the Lake Oswego Town Center, or even further south to Oregon City, and beyond. The highway provides the major north/south through street within the downtown Lake Oswego core.

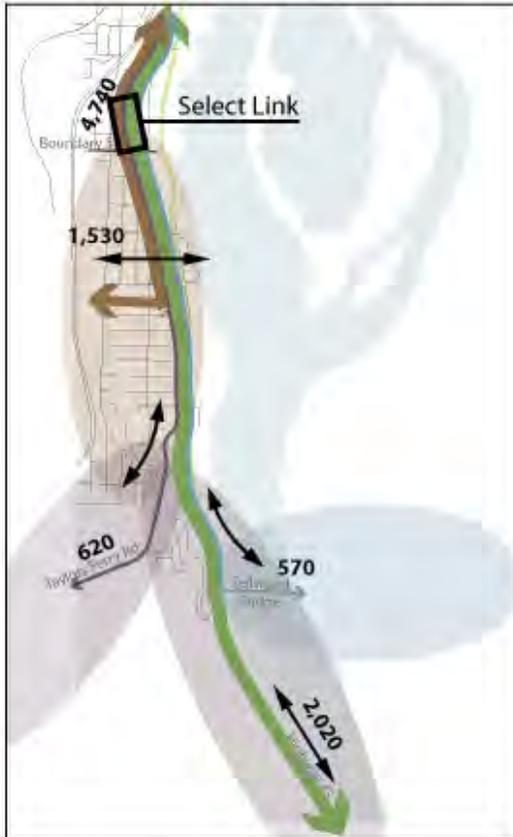
Highway 43 within the John's Landing neighborhood is referred to as SW Macadam Avenue. Figure 9 illustrates the following origins and destinations of trips using SW Macadam Avenue during the 2025 2-hour PM peak:

- 46% of trips coming from/going to south of the Sellwood Bridge
- 10% of trips coming from/going to the Sellwood Bridge
- 15% of trips coming from/going to Taylors Ferry Rd
- 29% of trips coming from/going to John's Landing neighborhood

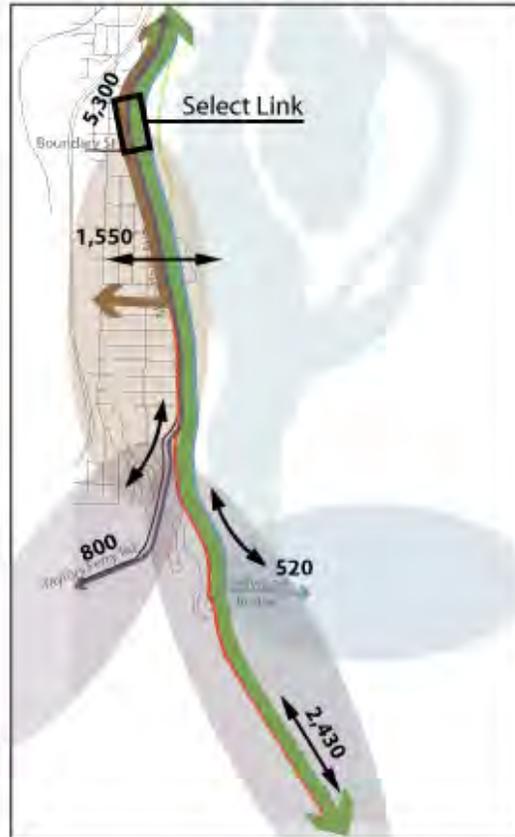
The percentages stay relatively the same Between 2005 and 2025, the percentages stay relatively constant showing that the area is not expected to experience major shifts in traffic, rather the peak period is spreading.

Figure 9: Trip Distribution on SE Macadam Avenue

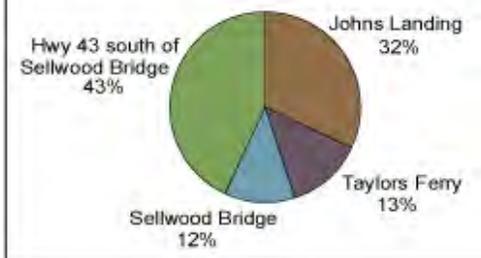
2005 Travel Markets  
PM 2-Peak Hour Traffic Volumes  
on State Street (Highway 43)



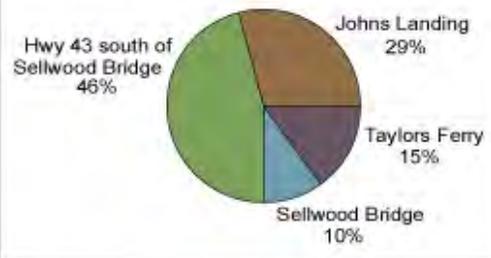
2025 Travel Markets  
PM 2-Peak Hour Traffic Volumes  
on State Street (Highway 43)



2005 PM 2-Hour Select Link  
Volumes on SW Macadam Ave



2025 PM 2-Hour Select Link  
Volumes on SW Macadam Ave



Highway 43 in the Lake Oswego Town Center is referred to as State Street. Figure 10 illustrates the following origin and destination trips using State Street during the 2025 2-hour PM:

- 34% trips coming from/going to West Linn or South of Lake Oswego
- 21% trips coming from/going to McVey/Stafford Basin
- 45% trips coming from/going to Lake Oswego

Again, between 2005 and 2025, the percentages stay relatively the same showing that the area is not expected to experience major shifts in traffic, but the peak period is spreading.

## Transit Trips

Transit Service growth under the No-Build alternative would be constrained by current available revenue sources, consistent with the financially constrained transit network in Metro’s 2004 RTP. Normal growth in the transit service would occur over the next 20 years at a rate of 1.5% annually. Table 5 presents the 2005 and 2025 transit trips in the region and within the LOAA corridor based on the financially constrained RTP and the 1.5% annual increase in transit service.

**Table 5**  
**Lake Oswego Alternatives Analysis**  
**Total System-wide and Lake Oswego Corridor Transit Trips**  
**For the years 2005 and 2025**

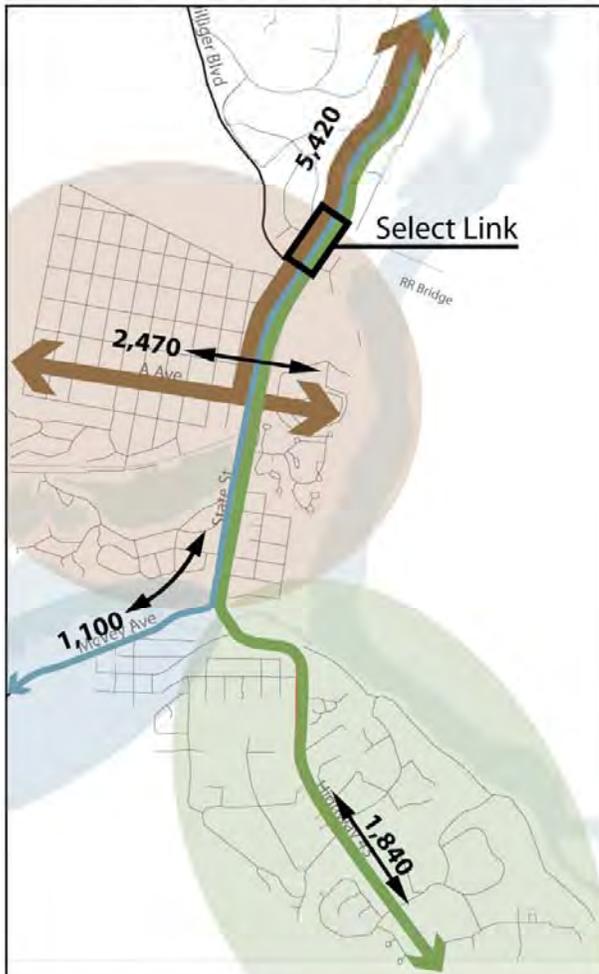
Measure	2005 Base Year	2025 No- Build	% Change
<b>Region-wide</b>			
Total System-wide Transit Trips	274,400	528,500	48%
<b>LOAA Corridor</b>			
Total Corridor Transit Trips (originating rides)*	112,200	192,000	71%

*Source: Metro, 2006*

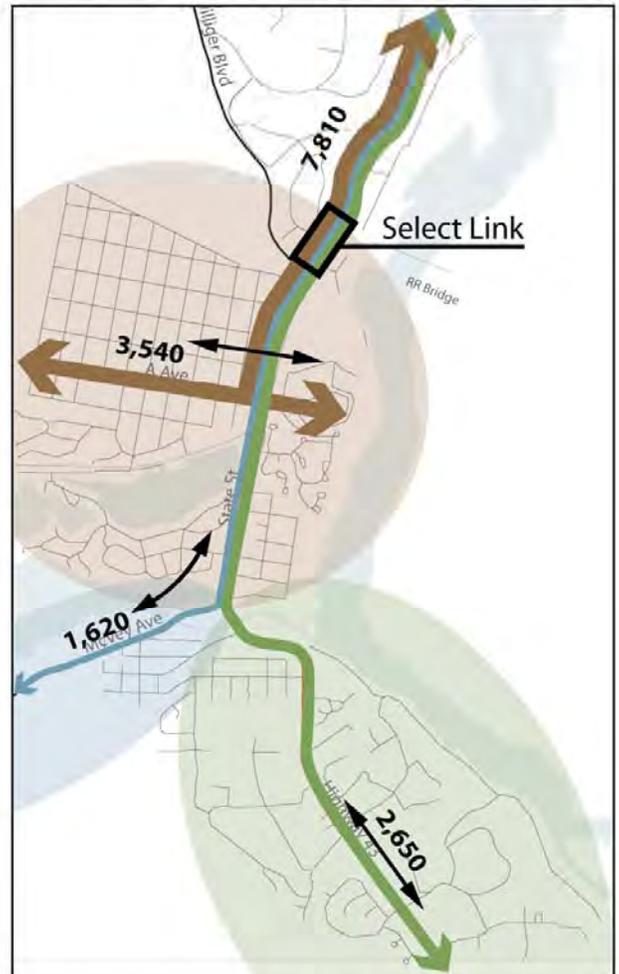
Table 5 presents the 2005 and 2025 transit trips in the corridor. Region-wide transit trips are expected to increase by 48% between 2005 and 2025. Within the corridor, transit trips are expected to increase by 71%. Table 5 shows that the expected growth in the corridor transit trips is much higher than region-wide growth.

Figure 10: Trip Distribution on State Street

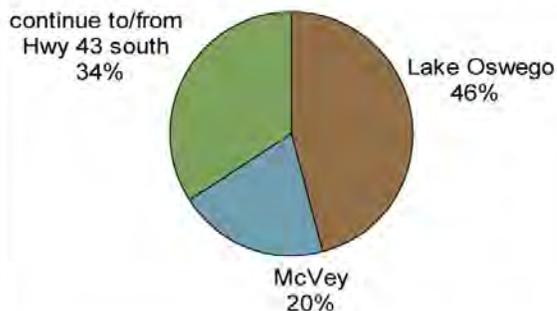
**2005 Travel Markets  
PM 2-Peak Hour Traffic Volumes  
on State Street (Highway 43)**



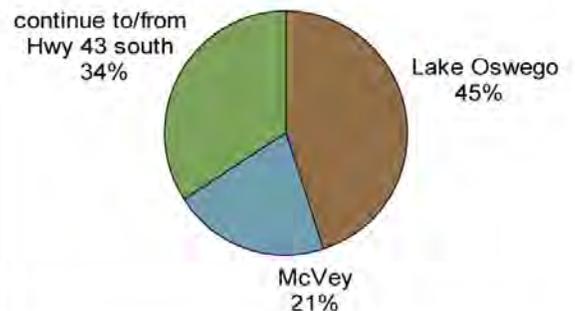
**2025 Travel Markets  
PM 2-Peak Hour Traffic Volumes  
on State Street (Highway 43)**



**2005 PM 2-Hour  
Select Link Volumes on State St**



**2025 PM 2-Hour  
Select Link Volumes on State St**



## **Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT)**

Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) are regional congestion measures used to assess regional traffic conditions. Table 3 and Table 4 summarize the growth in the VMT and VHT for both the corridor and the region.

Table 6 shows the growth in VMT for the average weekday and the PM 2-hour peak period for both the region and the corridor. The average weekday VMT is anticipated to increase by 30% between 2005 and 2025 within the corridor. Similarly, the average weekday VMT in the region is anticipated to increase by 33% between 2005 and 2025. During the PM 2-hour peak period, the corridor VMT is anticipated to increase by 10% and the PM 2-Hour regional VMT is expected to increase by 35% by 2025.

Between the corridor and the region, the average weekday VMT is expected to increase at a similar rate. While the PM 2-hour peak period VMT in the region is expected to increase faster than in the corridor.

**Table 6**  
**Lake Oswego Alternatives Analysis**  
**PM 2-Hour Peak and Average Weekday Vehicle Miles Traveled (VMT)**

Measure	2005 Base Year	2025 No-Build	% Change
<b>Average Weekday VMT</b>			
Region-wide	38,083,900	50,678,600	33%
Corridor	2,218,600	2,877,800	30%
<b>PM 2-Hour Peak VMT</b>			
Region-wide	6,142,600	8,275,300	35%
Corridor	426,600	470,900	10%

Source: Metro, 2006

Table 7 shows the growth in VHT for the average weekday and the PM 2-hour peak period for both the region and the corridor. The average weekday VHT is anticipated to increase by 73% between 2005 and 2025 within the corridor. Similarly, the average weekday VMT in the region is anticipated to increase by 50% between 2005 and 2025. During the PM 2-hour peak period, the corridor VHT is anticipated to increase by 41% and the PM 2-Hour regional VMT is expected to increase by 55% by 2025.

**Table 7**  
**Lake Oswego Alternatives Analysis**  
**PM 2-Hour Peak and Average Weekday Vehicle Hours Traveled (VHT)**

Measure	2005 Base Year	2025 No-Build	% Change
<b>Average Weekday VHT</b>			
Region-wide	1,247,300	1,867,800	50%
Corridor	75,500	130,400	73%
<b>PM 2-Hour Peak VHT</b>			
Region-wide	206,900	320,200	55%
Corridor	15,500	21,800	41%

Source: Metro, 2006

In comparing the PM 2-hour VMT and the VHT in the Lake Oswego corridor, the VMT is expected to increase by 10% and the VHT is expected to increase by 41% by 2025, indicating that there is much more of an increase the amount of time people spend in their cars compared to the increase in distance or number of trips. The region-wide PM 2-hour VMT is expected to increase by 35% and the PM 2-hour VHT is expected to increase by 55%.

A similar relationship exists between the average weekday VMT and VHT in the corridor. Within the Lake Oswego corridor, the VMT is expected to increase by 30% and the VHT is expected to increase by 73% by 2025. Within the region, the average

weekday VMT is expected increase by 33% and the average weekday VHT is expected to increase by 50% by 2025.



## Evaluation Measures

Evaluations Measures were developed for both the transit and trail components of the alternatives. The Evaluation Measures were adopted by the TAC/PMG and LOPAC in December 2005. These measures may be revised or reduced depending on their ability to differentiate between alternatives.

### ***Transit Evaluation Measures***

The purpose of the Lake Oswego to Portland Transit Project is to develop a transit project that meets future travel demand and supports local and regional land use plans, which garners public acceptance and community support and will:

**Goal A1. Increase the mobility and accessibility** within the geographically constrained Highway 43 Corridor, connecting the Portland Central City with and through the Lake Oswego Town Center.

**Goal A1 Measures :** To measure the performance of an alternative for purpose statement A1, and to compare alternatives, the following measures will be used:

- a. Auto and transit travel times between major origins and destinations system wide and in the corridor in the year 2025 in the corridor for each proposed transportation alternative.
- b. PM Peak 2 hour cut line data for auto and transit for each proposed transportation alternative. (For example, the number of vehicles traveling Highway 43 in the PM peak hour in the year 2025 for each proposed transportation alternative)

Transit Coverage as Illustrated by:

- c. Population and employment within ½ mile of transit for each proposed transportation alternative in the year 2025.
- d. Park and ride facility demand and capacity for each proposed transportation alternative.
- e. Number of person trips to/from and within the corridor.
- f. Traffic volumes associated with the Sellwood Bridge and Taylors Ferry Road (assuming two lanes on the Sellwood Bridge).

**Goal A2. Minimize traffic-related impacts to neighborhoods.**

**Goal A2 Measures :** To measure the performance of an alternative for purpose statement A2, and to compare alternatives, the following measures will be used:

- a. Year 2025 traffic volumes on neighborhood streets serving residential neighborhoods within the corridor.
- b. Relative noise levels at the transportation improvement right-of-way adjacent to residential, schools, hospitals and other noise sensitive land uses in the year 2025 for each proposed transportation alternative. (Measured by the residential and businesses proximity to the transit alternative.)
- c. Park and ride vehicle "spillover" into neighborhoods (measured by park and ride lot capacity and demand).

**Goal A3. Support and enhance existing neighborhood character** in an environmentally sensitive manner.

**Goal A3 Measures:** To measure the performance of an alternative for purpose statement A3, and to compare alternatives, the following measures will be used:

**Quantitative Measures:**

- a. Impact to wetlands, tree canopy and other significant natural features due to transportation improvements for each proposed transportation alternative.
- b. Proximity of proposed alternative to existing residential development.
- c. Number and speed of transit vehicles at peak and off-peak times passing through residential development.

**Qualitative Measures:**

- d. Does the alternative support the neighborhood character by a design that is consistent with the existing scale of the neighborhoods adjacent to any proposed facilities.
- e. Does the alternative have the potential to change the neighborhood character and increase the pressure to rezone adjacent properties to higher densities or intensities of use.

**Goal A4. Leverage investment in the transit system** to cost-effectively increase Corridor and systemwide transit ridership

**Goal A4 Measures:** To measure the performance of an alternative for purpose statement A4, and to compare alternatives, the following measures will be used:

- a. Number of system-wide transit trips in the year 2025 for each proposed transportation alternative to show total ridership benefits of the alternative.
- b. Number of transit trips within the corridor for each proposed transportation alternative in the forecast year (2025) and year of opening (2009).

- c. Transit mode share within the corridor for each proposed transportation alternatives.
- d. Incremental cost per incremental transit rider in the year 2025 for each proposed transportation alternative. (Comparison is for operating cost between build and no-build alternatives.)
- e. Change in transit ridership outside of the corridor to show the effect of corridor improvements on the existing system.

**Goal A5. Support transit-oriented economic development in Portland and Lake Oswego**

**Goal A5 Measures:** To measure the performance of an alternative for purpose statement A5, and to compare alternatives, the following measures will be used:

- a. Potential percent of maximum floor area ratio that could be developed in Lake Oswego and Portland within the corridor in the year 2025 as a result of the transit alternatives. (Measure is of development directly and indirectly due to each transportation improvement.) )
- b. Amount of walkable catchment ("pedshed") for each proposed transportation improvement alternative in the year 2025, to illustrate the accessibility of the existing development and hence its suitability for transit oriented development and/or redevelopment.

(See also A4c.)

**Goal A6. Support community transportation, land use and development goals**

**Goal A6 Measures:** To measure the performance of an alternative for purpose statement A6, and to compare alternatives, the following measures will be used:

- a. Consistency of an alternative with adopted comprehensive plans in the corridor as detailed in the Background Report.

(See measures listed under Goals A1-A5)

**Goal A7. Provide improved transportation access to and connectivity** among significant destinations and activity centers including Downtown Portland, Oregon Health & Sciences University, Tom McCall Waterfront Park, Willamette Park, Foothills and Downtown Lake Oswego.

**Goal A7 Measures:** To measure the performance of an alternative for purpose statement A7, and to compare alternatives, the following measures will be used:

- a. Transit and auto travel times between concentrations of housing and employment in the corridor and the destinations listed in Goal A7.
- b. Apply a connectivity index to the above destinations that illustrates the degree of access provide by the transit alternatives.
- c. Connectivity with bike/ped facilities as illustrated by the number of direct, convenient connections to pedestrian and bicycle paths for each proposed transportation improvement in 2025.

(see also goal B5 of Bicycle and Pedestrian Goals)

#### **Goal A8. Provide additional transportation choices in the corridor.**

**Goal A8 Measures:** To measure the performance of an alternative for purpose statement A8, and to compare alternatives, the following measures will be used:

- a. Miles of additional pedestrian-ways and bikeways that are accessible within the Corridor in the year 2025 by proposed transportation alternative.
- b. Transit hours of service and place miles provided in the corridor for the year 2025 by each proposed transportation alternative.
- c. Transit coverage for households and employment with the corridor based on the number of housing units and jobs within 1/4 mile of transit stops in the year 2025 for each of the proposed transportation alternatives.

#### **Goal A9. Be part of an integrated multi-modal transportation system**

**Goal A9 Measures:** To measure the performance of an alternative for purpose statement A9, and to compare alternatives, the following measures will be used:

- a. Number of transit riders going to/from or within the corridor for each proposed transportation alternative.
- b. Number of links from transit to other modes including pedestrian paths, bicycle paths, LRT within the corridor for each proposed transportation alternative.
- c. Ability of transit alternative to interface with the existing transit system, through the following means:
  - single seat ride (no transfer required)
  - cross-platform transfer
  - transfer to other modes within one or two blocks
  - transfer for greater than two blocks

## Bicycle and Pedestrian Trail Evaluation Measures

The purpose of the pedestrian and bicycle trail is to provide a connection between the Willamette River Greenway trail at the north end of the corridor and the Lake Oswego Town Center at the south.

The following evaluation criteria are separated into to different types of measures: quantitative and qualitative measures.

**Goal B1: Significantly improve the access, safety and quality** of experience for cyclists and pedestrians in the corridor.

**Goal B1 Measures:** To measure the performance of an alternative for purpose statement B1, and to compare alternatives, the following measures will be used:

### Quantitative Measures:

- a. A connectivity index measured by the number of new connections providing the alternative to existing trails or bikeways, schools, parks, commercial or employment areas, and existing residents.
- b. Additional miles of pedestrian ways and bikeways in the corridor (compared to the no-build). By right-of-way classification, i.e., shoulder lanes, separated right-of-way, exclusive right-of-way.
- c. The number and type of potential conflict points are created between users (car/bike, bike or pedestrian/transit, bike/pedestrian, commuter/recreation users).

### Qualitative Measures:

- d. Does the alternative provide a positive user experience that complements the natural environment and the context of the alternative.
- e. Does the alternative accommodate the expected volume of potential path users:
  - commuters
  - recreational users

**Goal B2:** Create a connected, high-quality facility that is compatible with the transit alternatives and which makes bicycling and walking viable transportation and recreation choices.

**Goal B2 Measures:** To measure the performance of an alternative for purpose statement B2, and to compare alternatives, the following measures will be used:

### Quantitative Measures:

- a. The number of trail to transit connections accessible by the proposed transit alternative.

- b. The number of new connections to nearby residential and commercial destinations.
- c. The number of jobs to which the alternative connects.
- d. The number of miles of trail by type of right-of-way, exclusive, separated or shared use.

**Qualitative Measures:**

- e. Does the alternative accommodate a wide range of potential users such as bicyclists, walkers, joggers, people in motorized and non-motorized wheelchairs, maintenance vehicles, and security vehicles.
- f. Does the alternative provide a convenient, safe, attractive and useful commuter transportation alternative in the corridor.

**Goal B3:** Enhance the value of the existing transportation system by successfully integrating the bicycle/pedestrian trail into the system

**Goal B3 Measures:** To measure the performance of an alternative for purpose statement B3, and to compare alternatives, the following measures will be used:

**Quantitative Measures:**

- a. A connectivity index that quantifies the number of new access connections to other existing trails, bikeways, and walkways and the number of access connections to existing transit stations.

**Qualitative Measures:**

- b. Does the alternative connect to the existing transportation system.
- c. Does the alternative provide safe crossings on major and local roadways.
- d. Is the alternative accessible, visible, and easy to find for access to corridor destinations.
- e. Does the alternative facilitate good wayfinding or public signage.

**Goal B4:** Be compatible with and serve the needs of surrounding neighborhoods.

**Goal B4 Measures:** To measure the performance of an alternative for purpose statement B4, and to compare alternatives, the following measures will be used:

**Quantitative Measures:**

Trail coverage as illustrated by

- a. Potential households and employees the proposed alternatives could serve and the number of properties directly impacted by the proposed alternative.

**Qualitative Measures:**

- d. Is the alternative compatible with the visual characteristics and context of the surrounding neighborhoods.

**Goal B5:** Connect and improve access to important pedestrian and bicycle destinations in the corridor such as the Willamette River, South Waterfront, Willamette Park, Sellwood Bridge, Lake Oswego Town Center, Urban Trails, Riverview Cemetery and the OHSU Tram.

**Goal B5 Measures:** To measure the performance of an alternative for purpose statement B5, and to compare alternatives, the following measures will be used:

**Quantitative Measures:**

- a. Connectivity index that shows the number of direct and convenient access points to the Willamette River, South Waterfront, Willamette Park, Sellwood Bridge, Lake Oswego Town Center, Urban Trails, Riverview Cemetery and the OHSU Tram.



## Description of Conceptual Transit and Trail Alternatives

Preliminary transit and trail alternatives were developed and evaluated through the following steps:

- The TAC and PMG identified a range of potential corridor alignments for transit and trail modes that would fit within the corridor and serve the purpose and need of the project, including the Willamette Shoreline Railway, and Highway 43.
- The LOPAC identified modes and alignments at their April meeting, through a design workshop and refined them in May.
- An Open House/Design Workshop on May 30<sup>th</sup> was held where over 150 community members attended to identify modes, alignments and issues.
- Between September and October 2006, Metro hosted 12 small group meetings to share information about the study and to gather input about the refinement of bus, streetcar and trail alternatives.
- October through November 2006, Metro presented project information to five neighborhood associations in West Linn regarding the alternatives analysis. Participants asked questions and provided input about bus, streetcar and trail alternatives under consideration.

### ***LOPAC Design Workshop***

Metro conducted a Design Workshop with LOPAC on April 11, 2006. At this workshop, the group was asked to develop alternatives for rail, river, bus and trail. LOPAC was divided into three small groups. Each group identified alternatives for rail and bus. Two of the groups developed river transit alternatives and only one group identified a trail alternative. One group did, however, identify potential pedestrian or trail connections instead of a full-length alternative.

Concepts common to all transit alternatives include:

- Providing economic incentives/disincentives such as tolls and tax incentives for businesses that encourage alternative work times or flex times

Concepts common to all bus and rail alternatives include:

- Multiple stops in downtown Lake Oswego
- Park and ride facilities in Lake Oswego
- The need to solve the traffic bottleneck issues at the Sellwood Bridge
- Consideration of widening Macadam between Taylors Ferry Road and the Sellwood Bridge to relieve congestion
- Reconstruction of Taylors Ferry/Macadam intersection to relieve eastbound back up
- Identification of a pedestrian bridge over I-5 near the tram being built from South Waterfront to Oregon Health Sciences University.

## **Community Design Workshop/Open House**

Metro hosted a community design workshop/open house on May 30, 2006 at Riverdale Grade School. Over 150 people attended the workshop. The goals for the workshop were to:

- Explore the viability of each mode under consideration (BRT, rail and river transit)
- Identify options for alignments and station locations
- Identify options for a trail in conjunction with each option
- Identify the issues related to each option
- Identify local issues and advocacy group concerns that should be addressed through small group meetings

**We need your ideas and input.**

What transit options should be considered on Highway 43 and the Willamette Shoreline right-of-way? Where can a pedestrian and bike trail be built between Lake Oswego and Portland?

**Lake Oswego to Portland**  
**TRANSIT AND TRAIL STUDY**

**Come to a community design workshop.**

**5:30 to 8:30 p.m., May 30**  
Riverdale Grade School  
11733 SW Breyman Ave., Portland

Visit [www.metro-region.org/transportation](http://www.metro-region.org/transportation) and select transportation projects or call (503) 797-1756 for more information.

**METRO**

The workshop began with an opportunity for participants to review project information and talk to staff informally. Staff presented information about the project process, purpose and a short description of the characteristics of each mode. Participants were then asked to work to in small groups led by a table facilitator to develop alignment options for each transit mode and a companion trail alignment for each mode, and to identify issues that need additional consideration. Participants were also asked to complete a comment form.

Most participants thought that all three transit modes (bus, rail and river transit) were viable in the corridor and met the project's purpose statement. There were general concerns about transit ridership in the corridor, location of park-and-rides, and neighborhood impacts related to all of the options. There was support for trail options along with any transit option though many participants said that rail transit with a trail would present challenges in places where the Willamette Shoreline rightofway was constrained.

More than two-thirds of participants live in the corridor and about one third travel through the corridor. Most people who traveled through the corridor reported traveling between some part of Portland (central city and inner eastside) and Lake Oswego. Most participants reported either driving alone or not commuting. Most heard about the meeting though a Metro postcard or newsletter.

### **Small Group Meetings**

Between September 23 and October 24, 2006, Metro hosted 12 small group meetings to share information about the study and to gather input about the refinement of bus, streetcar and trail alternatives. Eleven of the meetings were targeted at residents and property owners in specific geographic areas located near the Willamette Shore Line right of way or Highway 43/SW Macadam Avenue. One meeting was targeted towards people interesting in the design of a trail alternative. In total, 122 people attended these small group meetings. Participants in the small group meeting expressed concerns regarding:

- Safety for children and pets in the area
- Safety and security issues related to a trail on the right-of-way and increased crime or presence of “strangers” in the area
- Noise and vibration impacts, visual impact of catenaries and any walls or fences that would be built as mitigation, and decreased property values
- Lack of ridership and that few people would ride streetcar in the unincorporated neighborhoods
- Increased parking in neighborhoods
- Relocating the existing Transit Center and constructing a park and ride in the Foothills district

Some participants showed support for the bus, streetcar and trail alternatives. Their comments focused on the following attributes:

- Improve connectivity between the isolated neighborhoods in Riverdale and Lake Oswego and Portland.
- Streetcar on Macadam would be good for the neighborhood and would support area businesses. Participants were split on whether streetcar would improve the streetscape in the Macadam Avenue corridor
- People generally said that bus service operated well today, but could be improved by increasing service and extending service later on weekend evenings
- A trail could be an asset in the area providing better connectivity to Lake Oswego and Portland.
- A flat, safe and quick bike route between Portland and Lake Oswego would enable many more people to bike commute than do today
- A transit center should be located near the center of downtown Lake Oswego – maybe near State Street and Avenue A
- Suggested extending streetcar service south to Oregon City and West Linn or across the railroad bridge to Milwaukie.
- Park-and-ride should be located south of Lake Oswego at Marylhurst or George Rogers Park.
- A park-and-ride was located in Lake Oswego, it should be integrated into development at the Albertsons site, in the Foothills area or near Lakeview Village

## **West Linn Neighborhood Association Presentations**

Between October 10 and November 20, Metro presented project information to five neighborhood associations in West Linn about the Lake Oswego to Portland Transit and Trail Study. Participants asked questions and provided input about the bus, streetcar and trail options under consideration. Key discussion points at the neighborhood meetings included:

- Reported that bus service on line 35 was good today and they do not want to see riders forced to transfer from line 35 in Lake Oswego. They want express service in the peak and more park-and-ride in Lake Oswego
- Service improvements between Lake Oswego and Portland would be welcome as long as rider can still have a one-seat ride to Portland
- Acknowledged that river transit had been analyzed in earlier studies and that it did not seem to be a very practical alternative and should be dropped from further consideration
- Supported trail development in the corridor in anticipation of plans to connect West Linn to Lake Oswego with trails
- Perceived the greatest congestion on Highway 43 in Lake Oswego
- Inquired about improve travel capacity south of Lake Oswego
- Mentioned that a bus up Terwilliger could provide a connection to Lewis and Clark college
- Should coordinating with West Linn traffic management planning efforts
- Asked about future public participation opportunities and how to get on project mailing list
- Concerned that West Linn neighborhoods were not given a formal position on the project advisory committee like those in the area where the project will be built
- Concerned about impact of streetcar alternative on bus service from West Linn
- Supported a bike/pedestrian trail connection between Lake Oswego and Portland

## April 11<sup>th</sup> LOPAC Design Workshop



## May 30<sup>th</sup> Community Design Workshop/Open House



### LOAA Evaluation Timeline:

- ✓ Metro solicited alignment options at a LOPAC design workshop conducted on April 11, 2006 and a community design workshop/open house held on May 30, 2006.
- ✓ Potential alignments developed by the LOPAC and community members were condensed to representative alignments to be studied.
- ✓ Potential alignments were presented to the TAC and LOPAC.
- ✓ Recommendations from the TAC and LOPAC were presented to the Steering Committee.
- ✓ The Steering Committee made recommendations on which alignments/modes to study further based on the TAC and LOPAC recommendations.
- ✓ The Project Team (staff and consultants) will evaluate further the alignments recommended by the Steering Committee and identify potential design options, station locations, and terminus locations based, in part, on earlier LOPAC and community input. In addition to the conceptual design, the Project Team will evaluate traffic related impacts and potential ridership estimates for each transit alternative.
- ✓ Additional screening of alternatives continues to occur based on technical work completed and public input through the Small Group and neighborhood discussions.
- ✓ Small Group meetings occurred in the corridor between September and October of 2006 to discuss potential issues and concerns related to specific alignment ideas.
- ✓ Analysis of the alternatives will occur in the Spring 2007.
- ✓ A community meeting will occur in the Spring/Summer of 2007 to present the technical analysis and refined alignments resulting from conceptual design.

### ***Initial Screening – Purpose and Need***

Potential alignments and alternatives were developed through an extensive public process. Alignments were condensed to reflect the primary alignments by mode. Remaining alignments, considered design options, will be evaluated further, during the next phase of design.

The Purpose and Need was used as the first step in screening potential alternatives. To meet the Purpose and Need threshold, the alignment must be wholly within the corridor, must connect to the destinations identified in the Purpose and Need, and serve the travel demand of the corridor. If the alternative did meet the Purpose and Need, a preliminary evaluation of how well the alternative met the goals of the project was conducted. If the alignment did not meet the Purpose and Need, the alignment did not move forward and was not evaluated against the Project Goals. Several alternatives that did not meet the Purpose and Need and some alternative that did meet the purpose and need but did not support the project goals were dropped from further consideration.

Figure 11 presents the TAC/PMG and LOPAC recommendations. The alignments developed through this process are presented in Figure 12 through 15.

This section describes the initial screening recommendations.

## **TAC/PMG and LOPAC Recommendations**

### **River Transit**

There were three River Transit alternatives developed through design workshops:

- River 1: *Portland to Lake Oswego via the Willamette River*
- River 2: *Sellwood to Lake Oswego via the Willamette River*
- River 3: *Portland to Oregon City via the Willamette River*

All of the River Transit Alternatives would operate on the Willamette River and connect to the Portland Central City. The differences between the various alternatives were the terminus locations.



River transit was studied as a potential transit options as part of the *2000 Metro South Corridor Transit Alternatives Analysis Study*. River

Transit was not recommended as a transit alternative to move forward by the TAC/PMG because of high operational costs, environmental impacts, land use issues along the river and out of vehicle travel times. The City of Portland just recently completed a Willamette River Feasibility Study to determine if implementing a river transit for ferry system on the Willamette River would be viable. This study did not recommend implementing a



Figure 12: Preliminary River Transit Alternatives



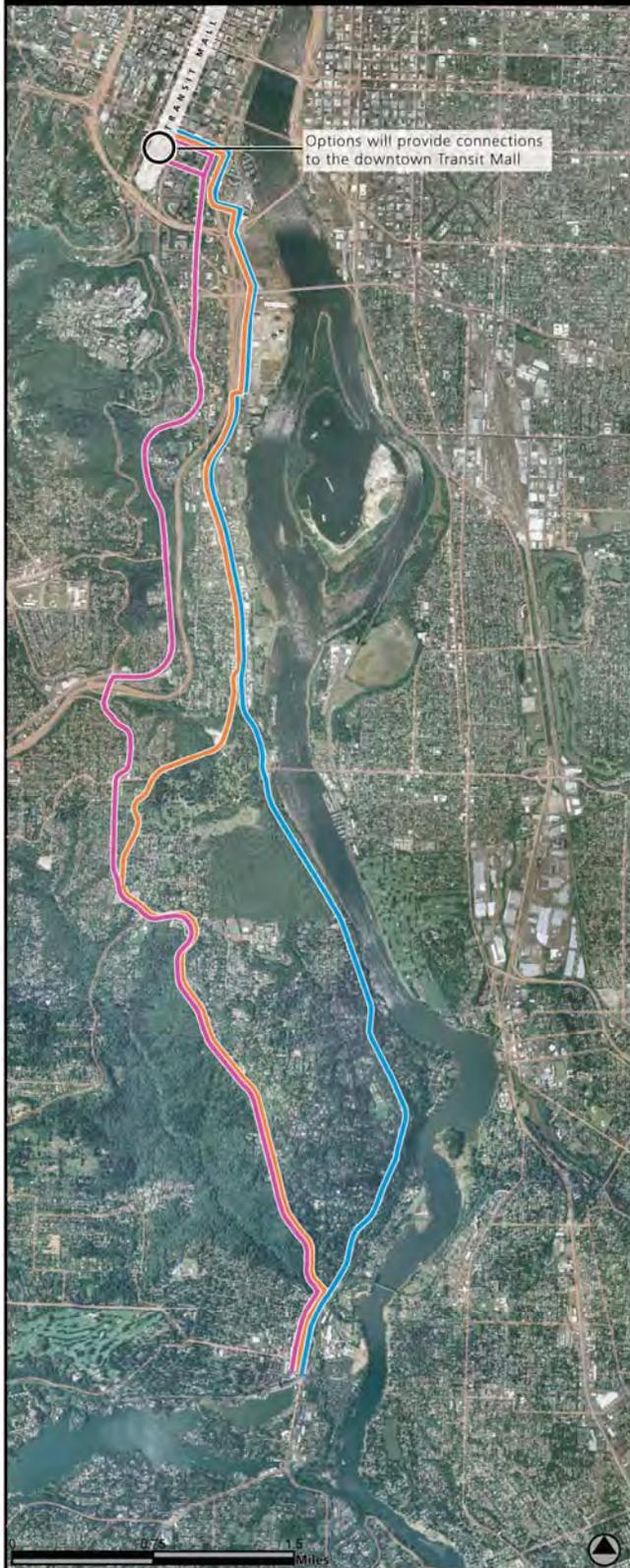
## RIVER TRANSIT

Option 1: Portland to Lake Oswego

Option 2: Sellwood to Lake Oswego

Option 3: Portland to Oregon City

Figure 13: Preliminary Bus Rapid Transit (BRT) Alternatives



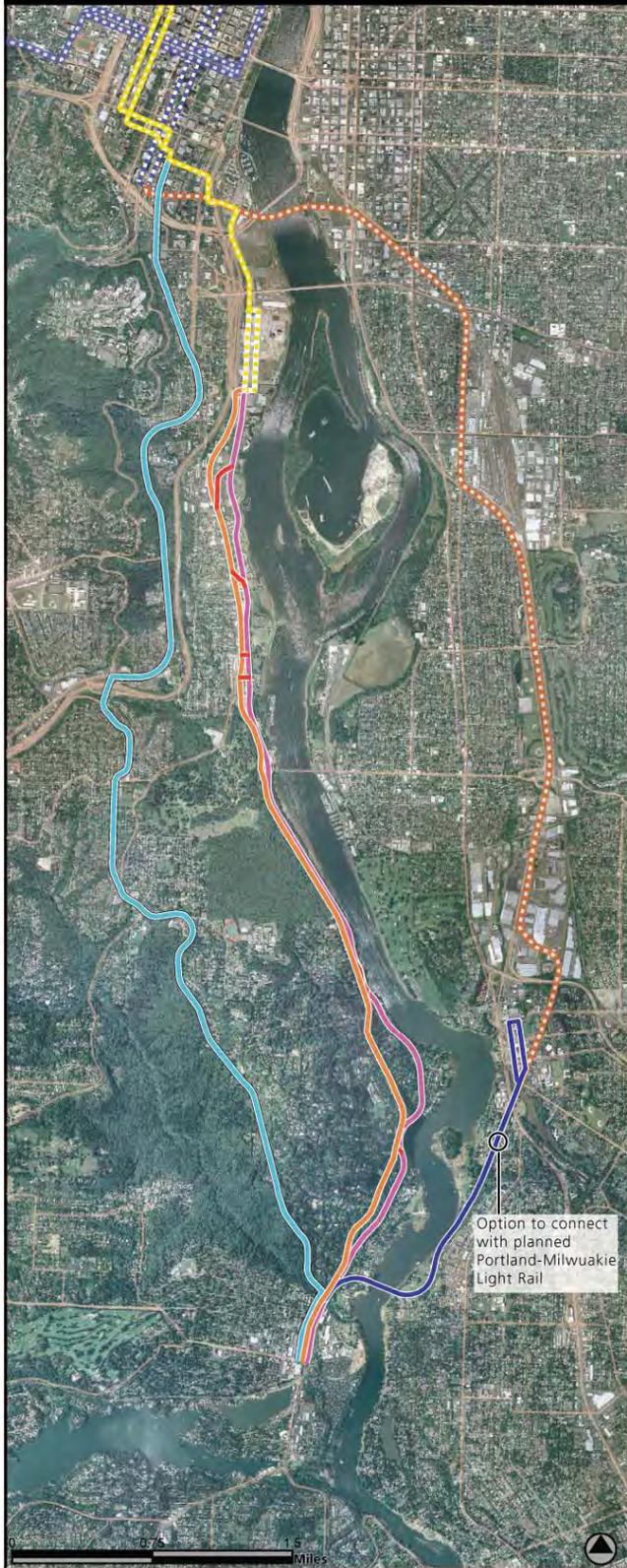
## BUS RAPID TRANSIT

Option 1: Portland to Lake Oswego via Highway 43

Option 2: Portland to Lake Oswego via Terwilliger and Barbur Boulevards

Option 3: Portland to Lake Oswego via Terwilliger/Boones Ferry/Taylor's Ferry Roads

Figure 14: Preliminary Rail Transit Alternatives



## RAIL TRANSIT

Option 1: Portland to Lake Oswego via the Willamette Shoreline right of way

Option 2: Portland to Lake Oswego via Highway 43

Option 3: Portland to Lake Oswego via the Willamette Shoreline right of way/ Highway 43

Option 4: Portland to Lake Oswego via Terwilleger and Barbur Boulevards

Option 5: Portland to Lake Oswego via the Portland & Western (P&W) Railroad Bridge to Milwaukie

### Existing and Planned Rail Transit

Existing Streetcar

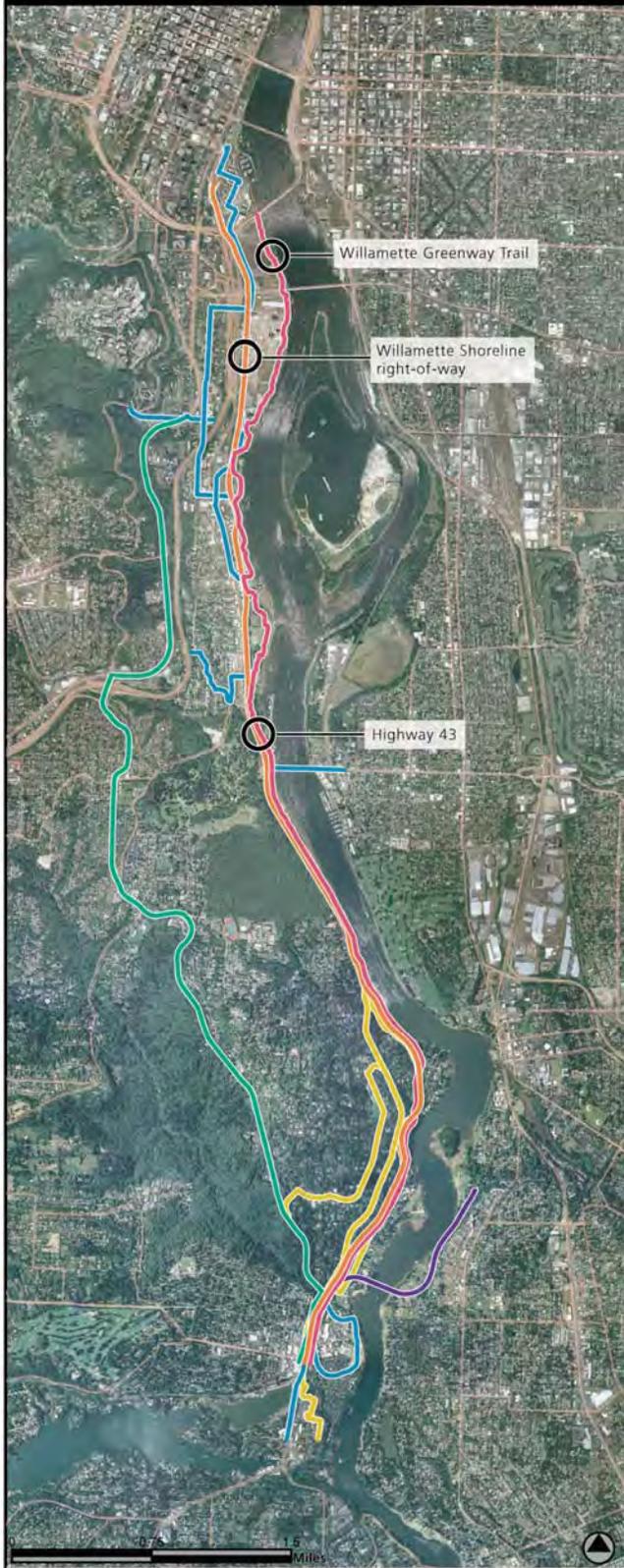
Streetcar under construction

Existing Light Rail

Light Rail under construction

Portland-Milwaukie Light Rail Project

Figure 15: Preliminary Trail Alternatives



## TRAIL

- Option 1: Willamette Shoreline right of way  

- Option 2: Extend Greenway Trail with Willamette Shoreline right of way  

- Option 3: Extend Greenway Trail with arterial roadway connections  

- Option 4: Terwilliger/ Tryon Creek Trail  

- Option 5: P&W Railroad Bridge  

- Option 6: Terwilliger/Barbur Boulevards  


river transit for commute purposes based on some of the same reasons determined through the South Corridor Transit Alternatives Analysis Study. All of the river alignments included multiple stops

LOPAC made their own recommendations after reviewing recommendations from the TAC/PMG. The LOPAC recommended moving River 3: *Portland to Oregon City via the Willamette River* forward for further study. LOPAC suggested that this alignment should be studied in more detail and include multiple stops/stations between Portland and Oregon City.

### **Bus Rapid Transit**

There were two bus alternatives developed through design workshops and one additional option developed by LOPAC:

Bus 1: *Portland to Lake Oswego via Highway 43*

Bus 2: *Portland to Lake Oswego via Terwilliger and Barbur Boulevards*

Bus 3: *Portland to Lake Oswego via Terwilliger/Boones Ferry/Taylor's Ferry Road*

All of the Bus Rapid Transit (BRT) Alternatives would provide faster and more reliable bus operations between Lake Oswego and Portland. The BRT Alternatives would include transit priority treatments along the corridor and provide high-level transit amenities such as enhanced stations.



The TAC/PMG recommended a bus alternative on Highway 43. LOPAC agreed with the TAC/PMG recommendations that the Bus 1: *Portland to Lake Oswego via Highway 43* should move forward and added Bus 3: *Portland to Lake Oswego via Terwilliger/Boones Ferry/Taylor's Ferry Road* to move forward.

### **Rail Transit**

There were five Rail Transit Alternatives developed through this process:

Rail 1: *Portland to Lake Oswego via the Willamette Shoreline right of way*

Rail 2: *Portland to Lake Oswego via Highway 43*

Rail 3: *Portland to Lake Oswego via the Willamette Shoreline right of way/Highway 43*

Rail 4: *Portland to Lake Oswego via Terwilliger and Barbur boulevards*

Rail 5: *Portland to Lake Oswego via the Portland & Western (P&W) Railroad Bridge to Milwaukie*

Streetcar was preferred for all of the rail alignments, except Rail 5: *Portland to Lake Oswego via the Portland & Western (P&W) Railroad Bridge to Milwaukie* which was identified as a commuter rail alignment to connect to the Washington County Commuter



Rail project or a light rail extension from the South Corridor Phase II/Milwaukie Light Rail project.

Three of the rail alternatives were recommended to move forward for further study by both the TAC/PMG and LOPAC. These include: Rail 1: *Portland to Lake Oswego via the Willamette Shoreline right of way*, Rail 2: *Portland to Lake Oswego via Highway 43*, and Rail 3: *Portland to Lake Oswego via the Willamette Shoreline right of way/Highway 43*.

## Trail Alternatives

There were six trail alternatives evaluated by the TAC/PMG and LOPAC.

Trail 1: *Willamette Shoreline right of way*

Trail 2: *Extend Greenway Trail with Willamette Shoreline right of way*

Trail 3: *Extend Greenway Trail with local and arterial roadway connections*

Trail 4: *Terwilliger/Tryon Creek trail*

Trail 5: *P&W Railroad Bridge*

Trail 6: *Terwilliger/Barbur Boulevards*

Both groups recommended that three of the trail alternatives move forward for further study. The three trail alternatives include: Trail 1: *Willamette Shoreline right of way*, Trail 2: *Extend Greenway Trail with Willamette Shoreline right of way*, and Trail 3: *Extend Greenway Trail with local and arterial roadway connections*. LOPAC suggested Trail 3: *Extend Greenway Trail with local and arterial roadway connections* as a poor solution, so the alignment should minimize use of local roadway connections as much as possible. Trail alternatives will be developed along with a preferred transit option.

After recommendations by the TAC/PMG and LOPAC, the Steering Committee made their recommendations on alternatives to be studied in more detail at their July 25, 2006 meeting.

## Steering Committee Recommendations

The Steering Committee is made up of elected officials from each jurisdiction, agency heads, representatives from Portland Streetcar Inc. and the chairs of the Eastside Project Advisory Committee and LOPAC. The Steering Committee reviews the recommendations from LOPAC and the Project Management Group (PMG). The

Steering Committee will determine the alternatives to be evaluated and will provide recommendations on the alternatives to be carried forward into the NEPA process to local jurisdictions and Metro Council for final adoption.

The Steering Committee was presented with the LOPAC and TAC/PMG recommendations at their July 25, 2006 meeting. At this meeting, the Steering Committee removed River Transit from further study. There was considerable concern expressed by the Committee that the River Transit Alternative was advanced considering River Transit had *been studied previously as part of the South Corridor Transportation Alternatives Study*, the earlier South/North project, and the City of Portland *Willamette River Ferry Feasibility Study* and was found not to be feasible.

The Steering Committee also discussed two other items. First, the proposed bus alignment up Terwilliger to Boone's Ferry and down Taylor's Ferry. The Steering Committee initially made a motion to remove the Terwilliger/Boone's Ferry/Taylor's Ferry bus option from further study due to concern that the bus in this alignment travels through low-density but potentially congested areas. The Committee concluded that it warranted some discussion regarding travel time and potential ridership, but did not perceive this as a viable alternative.

Second, the Steering Committee discussed the Portland and Western Railroad bridge connection to Milwaukie. Some members stated that they would like more information about using the Portland and Western Railroad Bridge to be able to determine basic feasibility. They don't want to make any choices now that would eliminate future opportunities to consider this bridge. The Committee recommended that this be looked at independently and would not be considered a transit alternative in this project.

The final Steering Committee motion stated that three alternatives (bus rapid transit up Terwilliger to Boones Ferry and Taylors Ferry, River Transit and the Portland and Western Railroad bridge) would be handled differently than the others.



## **Initial Alternatives**

The following section describes the alternatives that have passed through the initial screening process. The Purpose and Need and project goals were used to screen the wide range of alternatives to a select few that best represent a potential transit and trail solution in the corridor. Further evaluation and screening will be completed to condense the range of alternatives to focus the engineering efforts on the most promising alternatives.

### ***Transportation Alternatives***

Through the screening process, five alternatives are recommended for further evaluation. These include the no-build, one bus, three rail and three trail alternatives. The initial transit and trail alternatives are presented in Figure 16 – 19.

### **No-Build**

The No-Build alternative provides a basis for comparison of the build alternatives. The No-Build alternative only includes highway, pedestrian, bicycle, and transit improvements in the corridor that would be built as identified in the Regional Transportation Plan (RTP) Financially Constrained network. Additionally, the No-Build represents what the transportation network would look like if no significant transportation improvements were developed in the corridor, beyond those already planned and for which funding has been identified.

### **Bus (BRT)**

The BRT alternative is considered the “Best Bus” alternative. Typically this alternative is less capital intensive and includes queue jumps, bus pullouts, bus lanes and signal priority at specific signalized locations. The BRT alternative typically establishes an image and identity separate from the existing bus system to maximize the potential for new riders that do not currently use the existing system. The BRT would have it’s own identity including unique vehicles, stations, signs, fare collection, and Intelligent Transportation System (ITS) components.

#### **Highway 43**

This bus alternative would operate on Highway 43, generally in mixed-use traffic, with transit amenities at strategic locations. Transit improvements would be implemented where feasible. Signal priority could be implemented at signalized intersections to minimize delay on the highway. Stations would have a distinct look and provide shelters and pedestrian and bicycle circulation to and from the station.

### **Rail**

The rail alternative would extend the existing Portland Streetcar from the terminus at SW Lowell Street (currently under construction) to downtown Lake Oswego. The terminus at SW Lowell Street is located just one block north of the existing Willamette Shore Line Trolley northern terminus.

### **Highway 43**

Operating the streetcar on Highway 43 would require additional engineering and traffic analysis to determine feasibility. Streetcar typically makes frequent stops and speeds depend on the environment and the traffic speeds on the roadway.

### **Willamette Shore Line**

The Willamette Shore Line right of way ranges from 17 feet to 60 feet in width. Therefore, most of the alignment would be single-track design, however, there may be locations where a double-track option is feasible and could improve rail operations.

### **Combination of Highway 43 and the Willamette Shore Line**

In addition to the Willamette Shoreline right of way, a potential streetcar alignment could be constructed on Highway 43 or adjacent to Highway 43.

## **Trail Alternatives**

Trail alternatives would be developed in conjunction with the transit alternatives between Portland and Lake Oswego.

### **Willamette Shore Line**

The Willamette Shore Line right of way ranges from 17 feet to 60 feet in width. Therefore, a trail alignment and a transit alternative may not be appropriate on the Willamette Shoreline. Where possible, either a trail or a transit or a combination of both would be evaluated.

### **Extension of the Willamette Greenway/Willamette Shore Line**

The Willamette Greenway trail currently exists between the South Waterfront and the Sellwood Bridge. An option for this study is to extend the Greenway to the Willamette Shore Line right of way south of the Sellwood Bridge.

### **Willamette Shore Line with local roadway connections**

There are locations where the Willamette Shore Line right of way is narrow or other barriers may not make a trail cost effective; therefore, using local roadways to connect portions of the trail will be evaluated. This option is the least desirable, by the Project Team as well as the public.

Figure 16: No-Build Alternative

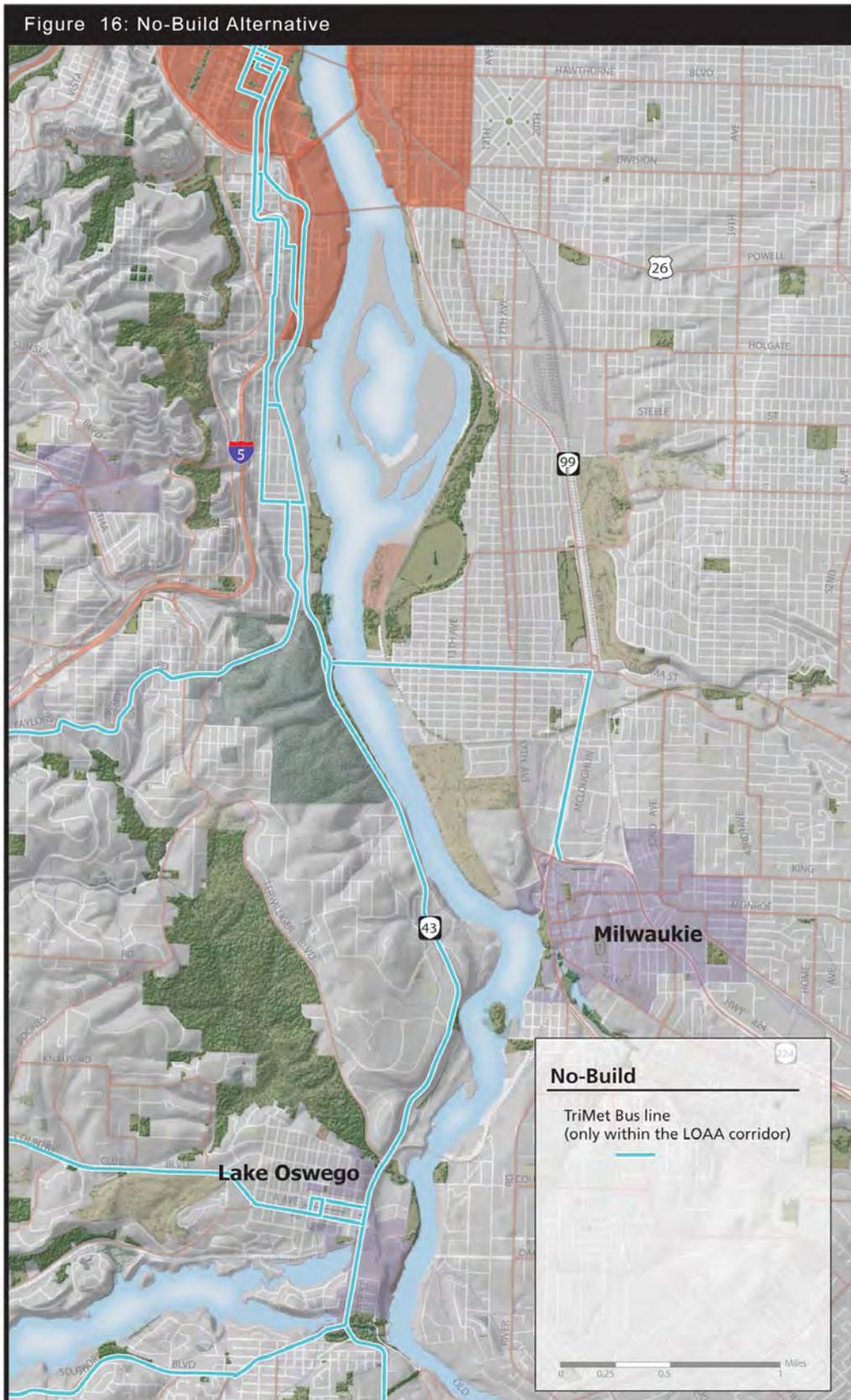


Figure 17: Bus Rapid Transit (BRT) Alternatives

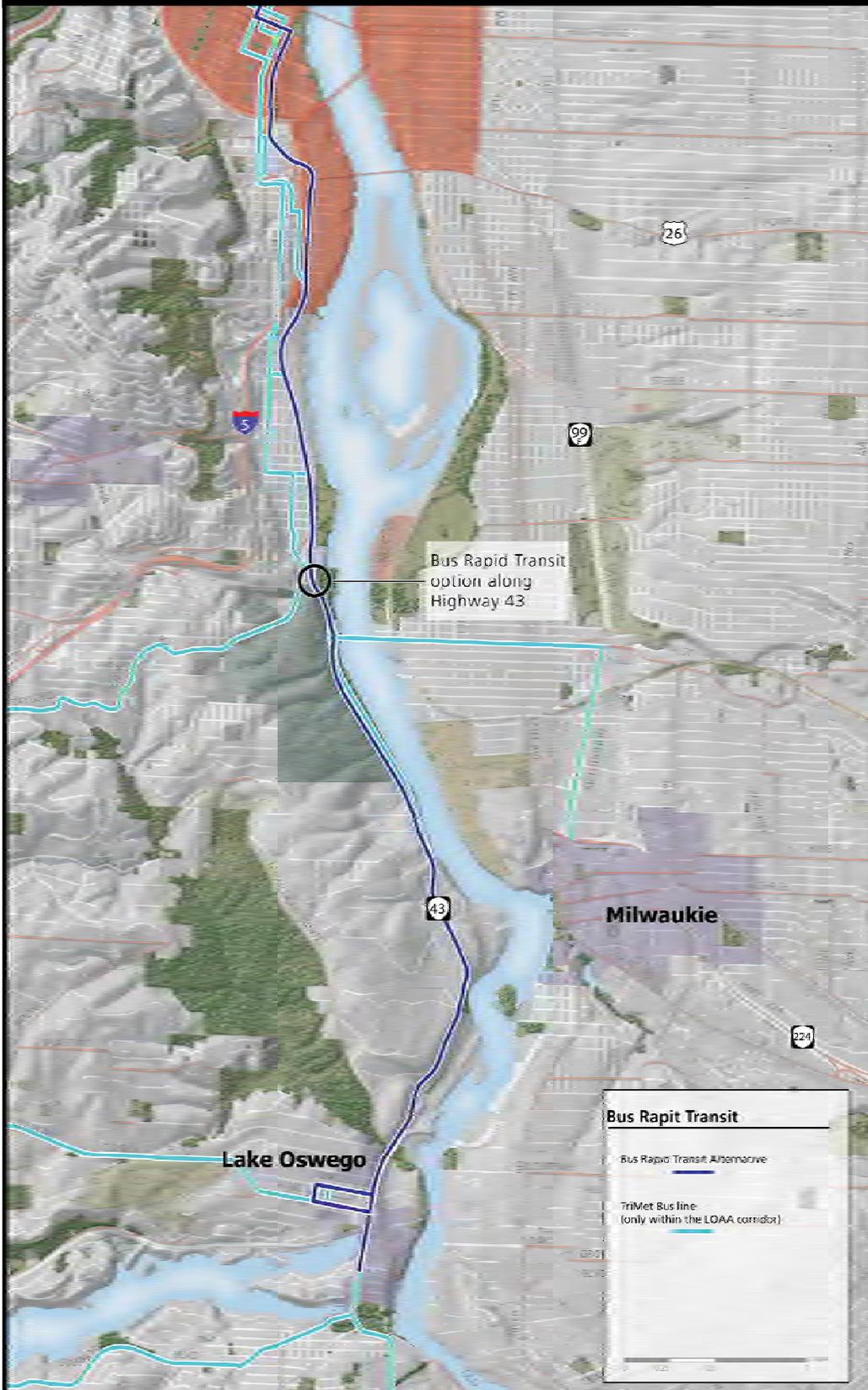


Figure 18: Streetcar Alternatives

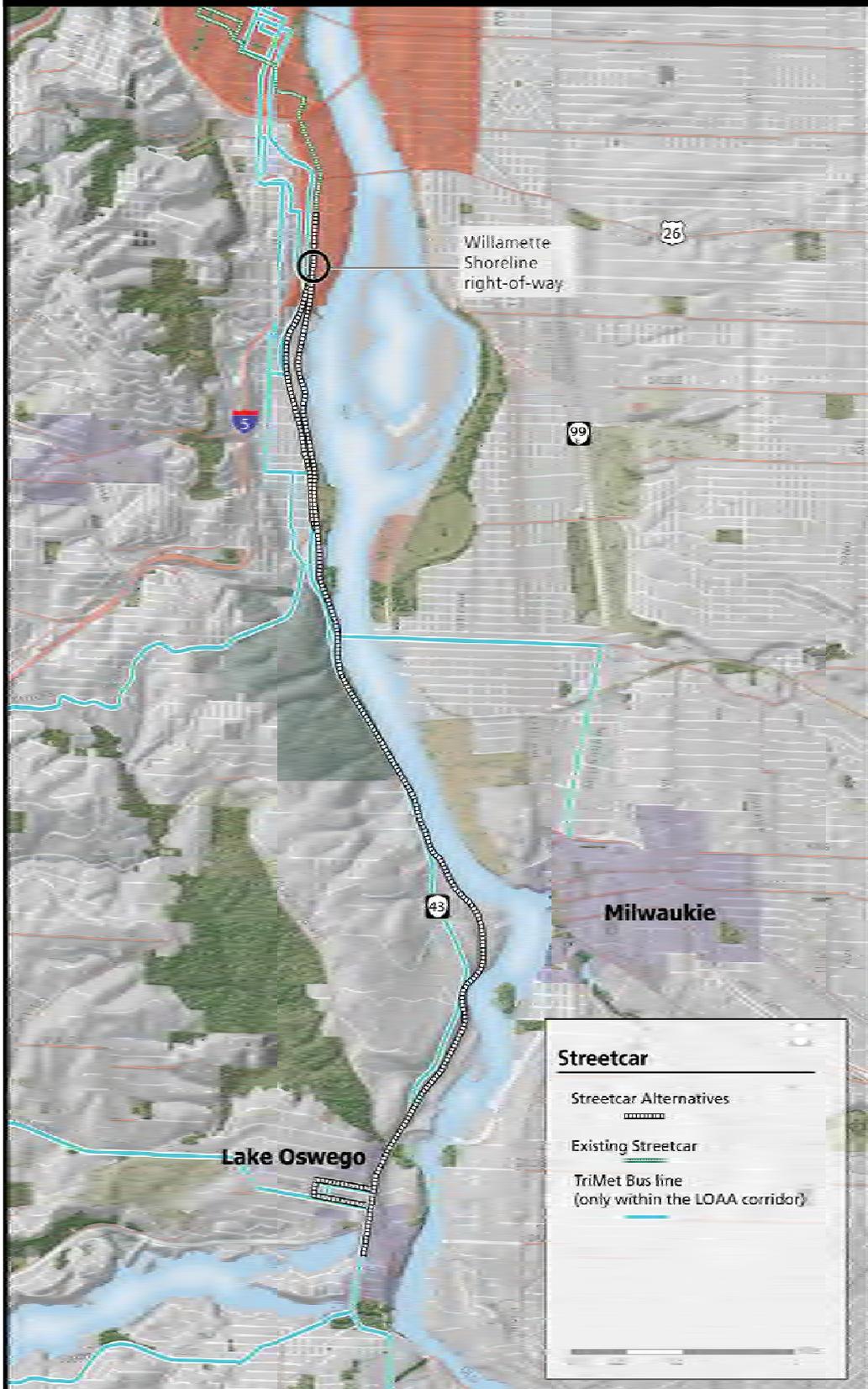


Figure 19: Trail Alternatives

