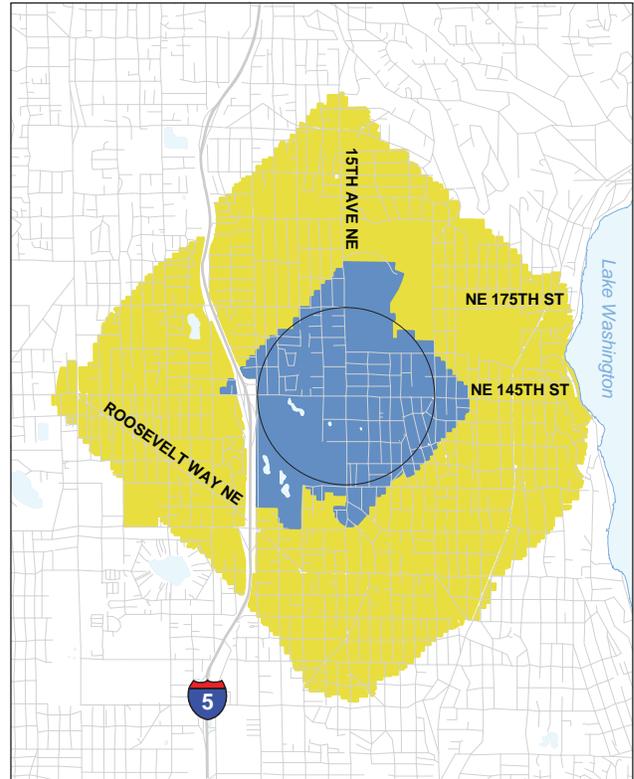
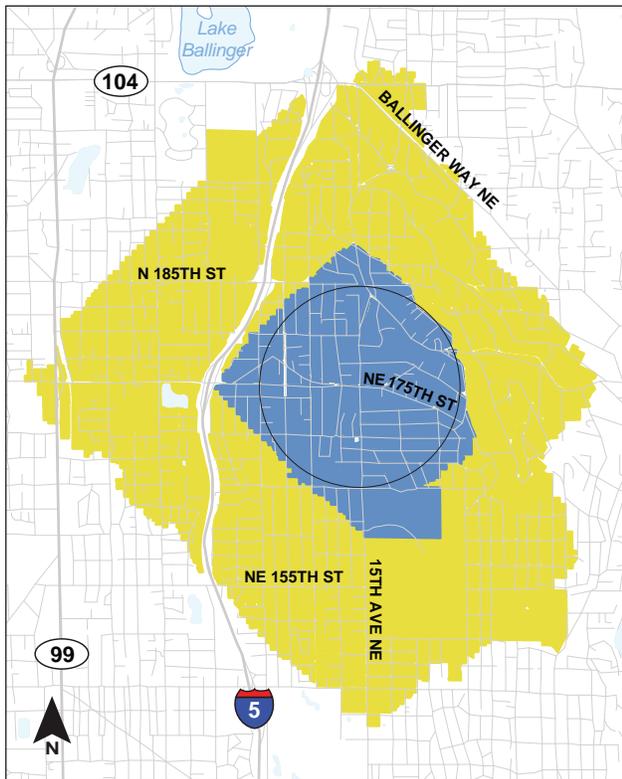


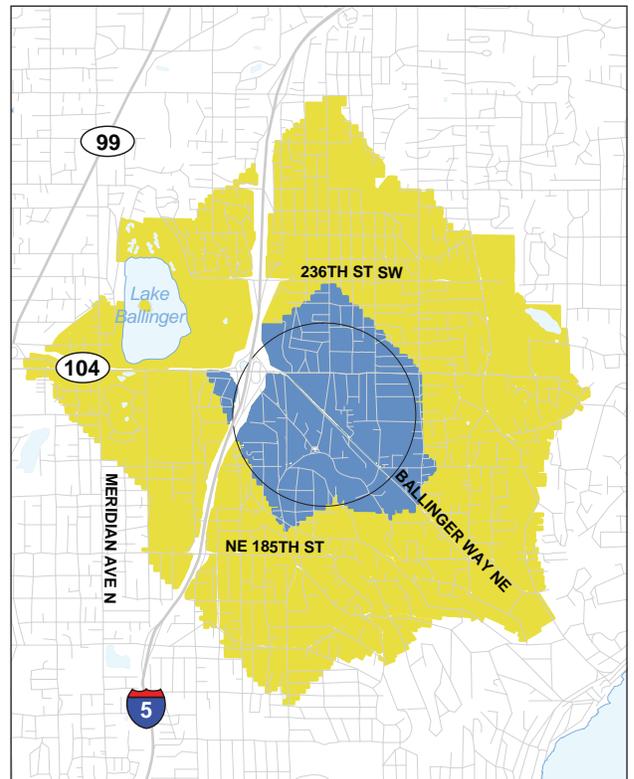
**NE 125TH STREET/15TH AVE NE**



**NE 145TH STREET/15TH AVE NE**



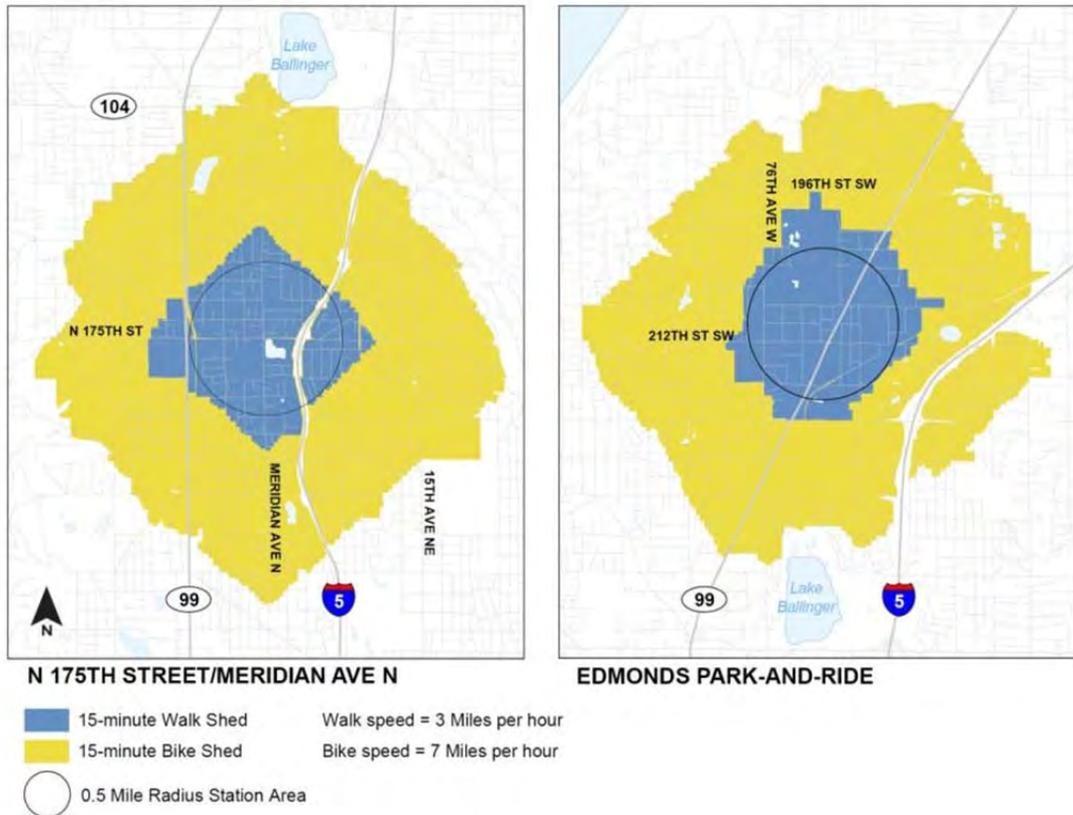
**NE 175TH STREET/15TH AVE NE**



**BALLINGER WAY/19TH AVE NE**

|   |                               |  |
|---|-------------------------------|--|
|  15-minute Walk Shed | Walk speed = 3 Miles per hour |  0.5 Mile Radius Station Area |
|  15-minute Bike Shed | Bike speed = 7 Miles per hour |  |

**Figure 5-16.** 15-Minute Pedestrian and Bicycle Travel Sheds at NE 125th Street/15th Avenue NE, NE 145th Street/15th Avenue NE, NE 175th Street/15th Avenue NE and Ballinger Way/19th Avenue NE Stations



**Figure 5-17. 15-Minute Pedestrian and Bicycle Travel Sheds at North 175th Street/Meridian Avenue North and Edmonds Park-and-Ride Stations**

For the L2: SR 99 Mixed Profile Light Rail Alternative, the stations at North 160th Street and North 130th Street have average to slightly above average accessibility due to the absence of barriers for pedestrians. However, most station areas lack sidewalks on arterials leading to the stations. Along at-grade sections, pedestrian crossings of SR 99 to access light rail stations can only occur at signalized intersections. Stations located in the median of SR 99, while providing equal distance from either side of road, could require riders to cross as many as five traffic lanes. The Roosevelt Way Variation would result in a slightly lower accessibility rating than the primary alternative because it has one less station (the North 130th Street/SR 99 Station). The SR 99 North Variation includes a station at SR 99/220th Street SW rather than at the Mountlake Terrace Transit Center. The 220th Street SW station area has a slightly lower accessibility rating than the Mountlake Terrace station and would result in a slightly lower accessibility rating for the SR 99 North Variation than for the primary L2: SR 99 Mixed Profile Light Rail Alternative.

There are 45 existing bus routes at or near the five station areas of the L2: SR 99 Mixed Profile Light Rail Alternative, approximately the same as for the L1: I-5 Light Rail Alternative. This results in a moderate rating for bus connectivity. The L2: SR 99 Mixed Profile Light Rail Alternative includes 3,890 planned park-and-ride spaces, slightly more than the L1: I-5 Light Rail Alternative. The Roosevelt Way Variation and the SR 99 North Variation have slightly fewer connecting bus routes. Also, because the Mountlake Terrace Transit Center would not be

served under the latter variation and there are no planned park-and-ride spaces at SR 99/220th Street SW, there would be 890 fewer planned park-and-ride spaces along the SR 99 North Variation compared to the primary alternative. (Some users may choose to park at the Edmonds Park-and-Ride facility and then ride light rail; however, that facility is approximately one-third of a mile away from the 220th Street Station and is therefore not included in the park-and-ride capacity along the SR 99 North Variation.)

For the L3: Elevated Light Rail Alternative, the accessibility evaluation results in the same (moderate) rating as the L2: Mixed Profile Alternative. However, pedestrian crossing distances would change relative to the at-grade median stations of the L2: SR 99 Mixed Profile Light Rail Alternative. An elevated station located on the west side of SR 99 would require pedestrians accessing from the east side to cross the entire width of SR 99.

There are 45 existing bus routes at or near the five station areas of the L3: Elevated Light Rail Alternative, the same as for the L2: SR 99 Mixed Profile Light Rail Alternative. This results in a moderate rating for bus connectivity. The L3: Elevated Light Rail Alternative includes 3,890 planned park-and-ride spaces, which is the same as the L2: SR 99 Mixed Profile Light Rail Alternative.

For the B2: Multi-Corridor BRT Alternative, the pedestrian and bicycle accessibility rating (high) is approximately the same as for the TSM/Baseline Alternative. There are 72 existing bus routes at or near the 11 station areas that could provide connectivity to the B2: Multi Corridor BRT Alternative. This is approximately the same as the TSM/Baseline Alternative, and would result in a high rating for bus connectivity. The B2: Multi-Corridor BRT Alternative includes 4,190 park-and-ride spaces, 450 fewer than the TSM/Baseline Alternative and 300 to 400 more than the light rail alternatives.

## 5.2 LAND USE AND ECONOMIC DEVELOPMENT POTENTIAL

The land use and economic development evaluation builds on the Level 1 evaluation, and incorporates additional analyses that have been done to determine the extent to which current and planned land use along the candidate corridors and within station areas will support the proposed transit investments.

For the Level 2 evaluation, the following two categories were used to assess the land use and economic development potential of each alternative:

- **Land use and economic development compatibility** - a review of each alternative's consistency with VISION 2040 (PSRC 2009) and Regional Economic Strategy (PSRC 2005); and the types of existing land uses surrounding each station and alternative.
- **Transit-supportive land use** - a review of each alternative's ability to serve existing and future population, employment, and housing; proximity to a balanced mix of uses; station area character; level of connectivity to major trip generators; and existing development strategies near alternatives and stations.

The TSM/Baseline Alternative was not analyzed for development potential because it is not considered a build alternative and is used solely as a basis for comparison in the New Starts process. Station areas along the TSM/Baseline Alternative were included to present other associated analysis.

### 5.2.1 Key Findings

Key findings related to land use and economic development potential for the alternatives are described in the following section.

#### LAND USE AND ECONOMIC DEVELOPMENT COMPATIBILITY

##### Consistency with PSRC VISION 2040 and Regional Economic Strategy

The L1: I-5 Light Rail Alternative is the most consistent with regional planning strategies because it would serve the most riders and deliver the greatest travel time savings at both the regional and major activity center levels, consistent with the region's land use and economic vision that focuses growth into major regional centers such as Northgate and Lynnwood. The L3: SR 99 Elevated Light Rail Alternative also would serve many riders, but fewer than the L1: I-5 Light Rail Alternative; it also would have a longer travel time.

##### Existing Land Use Assessment

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives have the most transit-compatible existing land uses within their station areas, due to the zoning and development patterns along SR 99.

#### TRANSIT SUPPORTIVE LAND USE

##### Population, Employment, and Housing

The bus alternatives, having a much higher number of bus stops and stations, have the highest totals, but their user benefits (i.e., travel time savings times number of riders) are minimal compared to the alternatives with shorter travel times, particularly the L1: I-5 Light Rail Alternative and L3: SR 99 Elevated Light Rail Alternative. This indicates that even though there is more potential transit access to population and employment with the bus alternatives, less people use them due to the lower quality of service.

##### Balanced Mix of Uses

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives would have the most balanced mix of uses surrounding their five stations. All five stations would be located in areas with commercial, mixed-use, and multi-family zoning destinations. The L1: I-5 Light Rail Alternative includes four stations, sharing two of the station locations with the other alternatives. The remaining two stations would be located along I-5 and adjacent to single-family neighborhoods. The B2: Multi Corridor BRT Alternative would be less balanced, primarily because it would serve many stations surrounded by a high proportion of single-family housing.

### Existing Station Area Assessment

All alternatives were ranked medium or low on this measure. Traditional residential neighborhoods with local businesses rated the highest. Candidate station areas generally lack existing transit-oriented types of development.

### Connectivity to Major Trip Generators

None of the alternatives performed well on this measure because of the primarily automobile-oriented commercial development in the project area. Even when walk distances are short, pedestrian access can be challenging due to the poor quality of and/or lack of sidewalks, continuous curb cuts, and other barriers.

### Transit-Supportive Plans and Policies

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives outperform the other alternatives. The B2: Multi-Corridor BRT Alternative performs well with “high” and “medium” station areas, but because it would have many more stations overall, it also has the highest number of “low” performing stations.

## 5.2.2 Land Use and Economic Development Compatibility

### CONSISTENCY WITH PSRC VISION 2040 AND REGIONAL ECONOMIC STRATEGY

Each alternative’s support for VISION 2040 was measured by three factors: consistency with existing corridor land uses; the number of projected daily riders; and the travel time between the corridor’s two regional growth centers—Lynnwood and Northgate. All alternatives support VISION 2040 to varying degrees, but the L1: I-5 Light Rail Alternative is the most supportive. Table 5-12 summarizes the results.

**Table 5-12.** Summary of Consistency with PSRC VISION 2040 and Regional Economic Strategy

| Alternative                        | Project Daily Riders | 2030 Travel Time (minutes) between Lynnwood and Northgate* | Consistency with Existing Land Use     | Consistency with PSRC VISION 2040 and Regional Economic Strategy |
|------------------------------------|----------------------|--|--|--|
| TSM/Baseline                       | 21,000               | 30   | Moderate, but low along 15th Avenue NE | Low  |
| L1: I-5 Light Rail                 | 52,000               | 14   | Low                                    | High   |
| L2: SR 99 Mixed Profile Light Rail | 41,000               | 21   | High                                   | Moderate   |
| L3: SR 99 Elevated Light Rail      | 48,000               | 18   | High                                   | Moderate-High  |
| B2: Multi-Corridor BRT             | 24,000               | 24   | Moderate, but low along 15th Avenue NE | Low  |

\*Travel time is in minutes in the 2030 Peak-Period Peak Direction of Flow

The TSM/Baseline Alternative is used as the baseline for the FTA New Starts process and the build alternatives, below, are compared to it.

The L1: I-5 Light Rail Alternative would provide the most support for VISION 2040 and the Regional Economic Strategy. It would connect two PSRC-designated Regional Growth Centers with the shortest travel time over the other alternatives, serve the most riders, and have significant capacity to absorb ridership growth.

The L2: SR 99 Mixed Profile Light Rail Alternative would provide moderate support for VISION 2040 and the Regional Economic Strategy. It would connect two PSRC-designated Regional Growth Centers, with a travel time 7 minutes longer than the L1: I-5 Light Rail Alternative, and serve more people than the TSM/Baseline Alternative or B2: Multi-Corridor Alternative, but far less than the L1: I-5 Light Rail Alternative. It also would have very limited capacity to absorb future travel growth.

The L3: SR 99 Elevated Light Rail Alternative would provide moderate to high support for VISION 2040 and the Regional Economic Strategy. It would connect two PSRC-designated Regional Growth Centers with a travel time 4 minutes longer than the L1: I-5 Light Rail Alternative, and serve more people than the TSM/Baseline Alternative or B2: Multi-Corridor Alternative, but slightly less than the L1: I-5 Light Rail Alternative.

The B2: Multi-Corridor BRT Alternative would provide the second lowest support for VISION 2040 and the Regional Economic Strategy. It would connect two PSRC-designated Regional Growth Centers but with fewer system riders and longer travel times than the light rail alternatives. It also would have virtually no capacity to absorb future travel growth.

## EXISTING LAND USE ASSESSMENT

The analysis of existing land use was based on current zoning both along the corridor and within 0.50-mile radius around station and/or bus stop areas. GIS data were collected along the alignments and the local jurisdictions' land use designations were grouped into six general categories: single-family residential, multi-family residential, commercial (retail and business uses), institutional/public, mixed use, and parks and open space.

Table 5-13 summarizes the results of this analysis. The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives have the most transit-compatible existing land uses both along the alignment and within station areas. The more intense uses along SR 99 are concentrated close to the potential stations, transitioning to lower density residential uses toward the periphery, and therefore would provide the greatest compatibility close to the proposed stations. The two bus alternatives also would provide service along SR 99 and include station and bus stop improvements.

As shown by the existing zoning patterns illustrated in Figure 5-18, the greatest concentrations of commercial and mixed uses between Northgate and Lynnwood are located along SR 99.

**Table 5-13. Summary of Land Use Compatibility by Alternative**

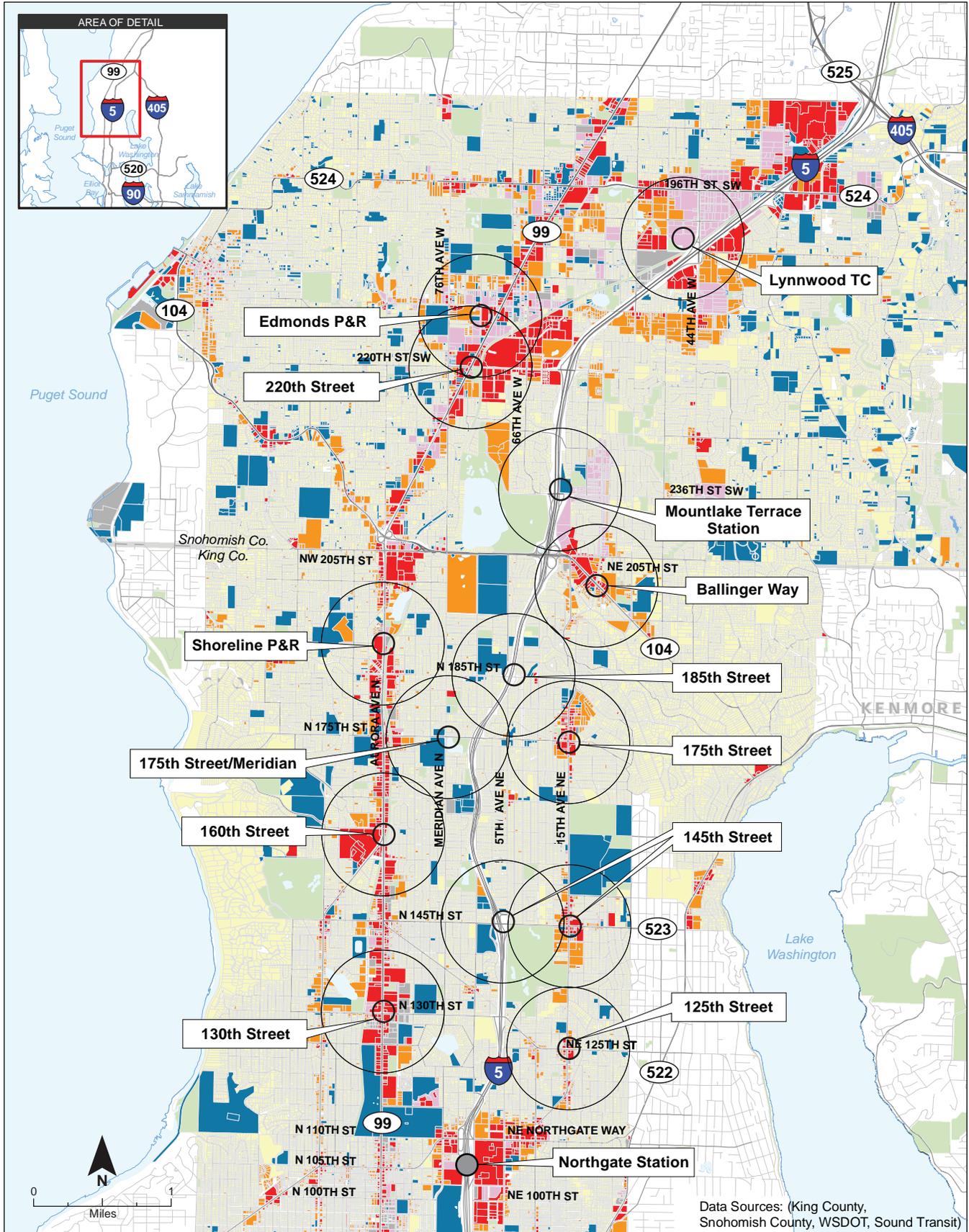
| Alternative                        | Consistency with Existing Land Use   |
|------------------------------------|--|
| TSM/Baseline                       | Moderate, but low along 15th Avenue NE   |
| L1: I-5 Light Rail                 | Low, except near Lynnwood Transit Center   |
| L2: SR 99 Mixed Profile Light Rail | High, except low to moderate along the connecting east/west links to Northgate on the south and Lynnwood on the north. |
| L3: SR 99 Elevated Light Rail      | High, except low to moderate along the connecting east/west links to Northgate on the south and Lynnwood on the north. |
| B2: Multi-Corridor BRT             | Moderate, but low along 15th Avenue NE   |

All alternatives would serve the Lynnwood Transit Center and Northgate, which are the regional growth centers anticipated to receive the highest percentage of future growth in the project area. In addition, all of the primary alternatives would serve the Mountlake Terrace Transit Center. Only the SR 99 North Variation of the L2: SR 99 Mixed Profile Light Rail Alternative would not serve this station.

Table 5-14 summarizes the differences in existing land uses along alternatives and around station areas for each alternative, not including the stations at Northgate, Mountlake Terrace and Lynnwood, which are common to all alternatives. The *Station Area Development Potential Technical Memorandum* (Sound Transit 2011g) provides more detail about land use for each station area.

**Table 5-14. General Existing Land Use by Alternative**

| Alternative                        | General Existing Station Area Land Use (between Northgate and Mountlake Terrace only)  |
|------------------------------------|--|
| TSM/Baseline                       | SR 99: automobile-oriented, low-density strip commercial development with pockets of higher density residential and commercial uses and single-family residential in areas away from SR 99<br>I-5: predominantly single-family residential, with some institutional uses<br>15th Avenue NE: mix of single-family residential with hubs of greater intensity commercial and multi-family uses around arterial intersections |
| L1: I-5 Light Rail                 | Predominantly single-family residential, with some institutional uses  |
| L2: SR 99 Mixed Profile Light Rail | Automobile-oriented, low-density strip of commercial development with pockets of higher density residential and commercial uses and single-family residential areas away from SR 99  |
| L3: SR 99 Elevated Light Rail      | Automobile-oriented, low-density strip of commercial development with pockets of higher density residential and commercial uses and single-family residential areas away from SR 99  |
| B2: Multi-Corridor BRT             | Three corridors generally the same as the TSM/Baseline Alternative   |



- Station Buffer (0.5 mile radius)
  - Commercial
  - Mixed Use (Designated mix of housing and commercial)
  - Single-Family Residential
  - Industrial/Warehouse
  - Park/Open Space
  - Multi-Family Residential
  - Institution/Public
- Note: For clarity, alternatives are not indicated.

**Figure 5-18. General Existing Land Uses**

The L1: I-5 Light Rail Alternative primarily would run along I-5, a major interstate freeway that has the highest level of existing bus services in the study area. In this sense, it is highly compatible with the existing freeway land use; however, most of development adjacent to I-5 is single-family residential. Land uses around the I-5 station areas are predominantly single family with some institutional uses (public and private schools) at both the NE 145th and NE 185th Street station locations, and a golf course near NE 145th Street.

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives run along SR 99, an expanded major regional arterial street which has the second highest level of existing bus service in the study area. Land uses in the SR 99 station areas are generally automobile-oriented, low density strip commercial development with pockets of higher density residential and commercial uses and single family residential in areas away from SR 99.

To the north, the primary L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives connect back to Lynnwood via SR 104, a major east-west arterial and state highway that passes through a mix of commercial uses at each end, but is predominantly mixed-density residential through most of this segment. The SR 99 North Variation continues along SR 99 into Snohomish County, with an additional station at 220th Street SW, and then continues east along 208th Street SW. Land uses in this segment are predominantly automobile-oriented commercial and retail, similar to the stretch of SR 99 to the south. The section along 208th Street SW runs along a residential arterial with a mix of multi-family and single-family residences.

To the south, the primary L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives connect back to Northgate along North 110th Street. Land uses along North 110th Street include a mix of commercial and residential uses as well as a cemetery. The Roosevelt Way Variation connects back to Northgate along Roosevelt Way, a narrow, minor residential collector street that passes through a predominantly single-family neighborhood. No stations would be located along these segments, and the Roosevelt Way Variation would bypass the North 130th Street Station contained in the primary SR 99 light rail alternatives.

The B2: Multi-Corridor BRT Alternative would operate along arterial and limited access roadways that have varying levels of existing bus services and serve bus stops and stations within existing road rights-of-way. One of the three BRT routes would use the I-5 HOV lanes and make no stops between Mountlake Terrace and Northgate. The second BRT route, SR 99, includes more intense activity nodes near the commercial and multi-family land uses at the Shoreline Town Center, between North 175th and North 185th Streets, and near North 160th and North 130th Streets. North of North 185th Street, land uses consist of typical commercial development of one or two stories, with ample surface parking. 15th Avenue NE is the third major route served, along which stop areas are surrounded by single family residential uses, with occasional hubs of commercial and multi-family areas around arterial intersections such as at Ballinger Way, NE 175th, NE 145th, and 125th Streets.

Land uses along the B2: Multi-Corridor BRT Alternative are similar to those described for the TSM/Baseline Alternative, with the addition of commercial and multi-family land uses near North 160th and 130th Streets on SR 99 and NE 145th and 125th Streets on 15th Avenue NE.

### 5.2.3 Transit-Supportive Land Use

Transit-supportive land use is characterized by a mixture of housing and employment within convenient walking distance of transit, and urban design features that support and encourage walking. This type of land use around transit stations is known to increase ridership and to help create and sustain vitality and livability in the surrounding areas.

FTA's Section 5309 New Starts criteria provide the most recent guidance for evaluating land use and economic development potential and are consistent with the discussion that follows.

### POPULATION, EMPLOYMENT, AND HOUSING

Population, employment, and housing statistics are commonly used to evaluate land uses that support transit. The alternatives include station areas with the potential to serve both existing and future population and employment. Table 5-15 summarizes the existing and forecasted population, employment, and number of housing units within the defined station areas by alternative.

**Table 5-15. Existing and Forecasted Station Area Population, Employment, and Housing**

| Alternative                         | No. of Station Areas | Population |        | Employment |        | Housing Units |        |
|-------------------------------------|----------------------|------------|--------|------------|--------|---------------|--------|
|                                     |                      | Existing   | 2030   | Existing   | 2030   | Existing      | 2030   |
| TSM/Baseline                        | 9                    | 34,000     | 38,500 | 18,600     | 23,400 | 14,500        | 16,400 |
| L1: I-5 Light Rail                  | 4                    | 13,400     | 15,600 | 4,900      | 6,800  | 5,100         | 5,900  |
| L2: SR 99 Mixed Profile Light Rail* | 5                    | 20,700     | 23,800 | 11,700     | 15,000 | 9,500         | 10,800 |
| L3: SR 99 Elevated Light Rail       | 5                    | 20,700     | 23,800 | 11,700     | 15,000 | 9,500         | 10,800 |
| B2: Multi-Corridor BRT              | 10                   | 43,900     | 50,900 | 23,200     | 29,700 | 20,000        | 23,200 |

\*The SR 99 North Variation includes a station at 220th Street in Edmonds in place of the Mountlake Terrace Station. Population numbers are lower for this option and employment and housing numbers are higher. The Roosevelt Way Variation eliminates the North 130th Street Station. Population, employment, and housing units each drop by over 25 percent.

Population, employment, and housing figures need to be considered together with user benefit—measured in this study in terms of hours of travel time savings. If people will not derive benefits (i.e., travel time savings) from using the transit system, they will not be attracted to it, and the ridership potential will not be realized. Details regarding transit user benefits by alternative are presented in Section 5.1 in terms of ridership, capacity, reliability, travel times, and overall travel time savings. Based on this information, the rail alternatives, particularly the

L1: I-5 Light Rail and L3: SR 99 Elevated Light Rail Alternatives, perform far better than the bus alternatives.

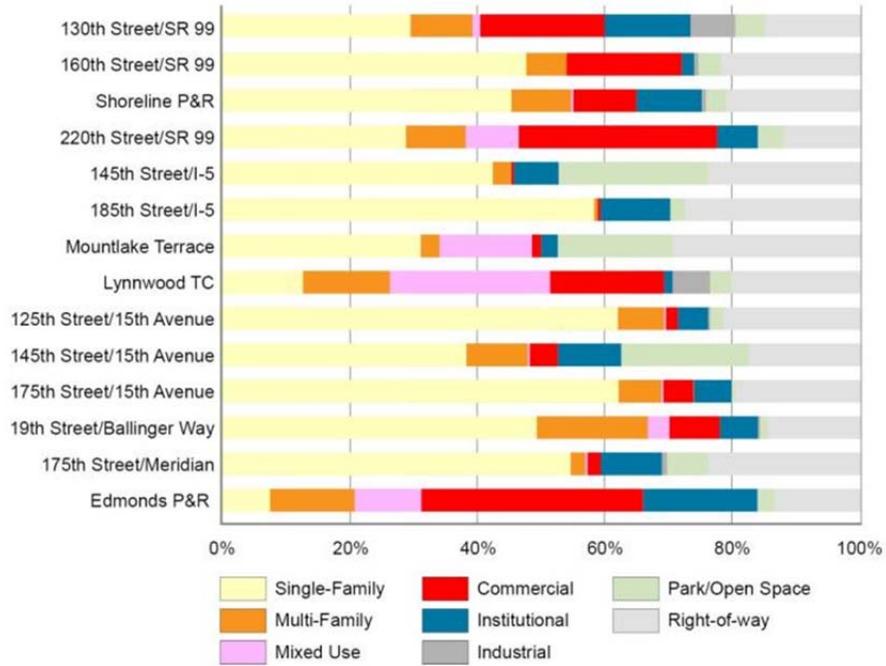
The B2: Multi-Corridor BRT Alternative would have 10 bus stations, which is twice as many as the light rail alternatives. This alternative also would have the highest total population, employment, and number of housing units. The I-5 and SR 99 light rail alternatives, serving four and five stations respectively, have lower numbers but would provide significantly increased user benefits in the form of greater travel time savings to a higher number of riders.

### **BALANCED MIX OF USES**

A balanced mix of land uses near stations is supportive of transit use. A measure of the composition of land use patterns as a percentage of each designation under current zoning was used to assess this balance within a 0.50-mile radius of each station. Roadway and freeway right-of-way are included, while water features, primarily minor lakes, are excluded. Station areas with over 50 percent of one use were rated lower than those with a more balanced mix of uses. Positive attributes of a station area that resulted in a higher rating include specific mixed-use designations and commercial uses over 15 percent. Alternatives with a high percentage of rights of way were rated lower. The mix of uses measure is based on existing zoning designations and may not reflect what is built and on the ground today.

Figure 5-19 summarizes the results of this analysis by station and Table 5-16 summarizes the results of this analysis by alternative. The Lynnwood Transit Center Station (a PSRC designated Regional Growth Center included in all alternatives) and the North 130th Street Station have the strongest balance of zoned uses. Current land uses at Lynnwood Transit Center Station, however, do not reflect the balance allowed by zoning. The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives include two or three stations with the strongest balance of uses and no low-performing stations, as illustrated in Table 5-16.

Figure 5-19 illustrates the high percentage of single-family zoning for many of the station areas, as well as the high percentage of rights-of-way for most alternatives. Parks/open space and rights-of-way typically are not redeveloped, decreasing the likelihood for transit supportive uses within those station areas. Almost 50 percent of the Mountlake Terrace Freeway Station area is either parks/open space or rights-of-way; however, the housing and mixed-use zones contribute to a balance of uses.



**Figure 5-19. Zoned Mix of Uses by Station Area**

**Table 5-16. Summary of Balanced Mix of Uses by Alternative**

| Alternative                         | Station Area Ratings              | Highly Rated Stations/<br>Total Stations |
|-------------------------------------|-----------------------------------|--|
| TSM/Baseline                        | High (2)<br>Medium (2)<br>Low (5) | 2/9                                      |
| L1: I-5 Light Rail                  | High (1)<br>Medium (1)<br>Low (2) | 1/4                                      |
| L2: SR 99 Mixed Profile Light Rail* | High (2)<br>Medium (3)            | 2/5                                      |
| L3: SR 99 Elevated Light Rail       | High (2)<br>Medium (3)            | 2/5                                      |
| B2: Multi-Corridor BRT              | High (3)<br>Medium (4)<br>Low (3) | 3/10                                     |

\* The SR 99 North Variation would replace one medium ranked station with a high ranked station. The Roosevelt Way Variation would result in four stations, one high rating, and three medium ratings, similar to L1.

The L1: I-5 Light Rail Alternative performs moderately well, with one highly-rated station at the Lynnwood Transit Center. Three of the station areas include I-5 where the percentage of rights-of-way is higher than with other alternatives.

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives perform well, with all station areas having either a medium or high balanced mix of uses (as zoned). The SR 99 North Variation includes the 220th Street Station in place of the Mountlake Terrace Freeway Station, with a stronger mix of zoned uses. The Roosevelt Way Variation would not include the highly rated North 130th Street Station.

The B2: Multi-Corridor BRT Alternative performs moderately well overall. Station areas along SR 99 and the Mountlake Terrace Freeway Station have better mixes of zoned uses than do station areas along 15th Avenue NE, where single-family zones predominate.

### EXISTING STATION AREA CHARACTER

The following attributes were considered to determine the existing character of a station area: well-proportioned facades; minimal building setbacks; street furniture, trees and other pedestrian amenities; barrier-free station access; and narrow roads that can be crossed easily with low-to-moderate traffic speeds. Results from station area assessments along each alternative are combined and compared across all alternatives.

None of the station areas was rated high for existing character. Although some stations would have an excellent block (street grid) size, they are rated medium or low due to other factors such as sidewalks, barriers, or type of roadway. Table 5-17 provides a summary of average ratings by alternative and Table 5-18 shows the character ratings by station area.

| <b>Table 5-17. Summary of Existing Station Area Character for Alternatives</b> |                                 |  |
|--|---------------------------------|--|
| <b>Alternative</b>   | <b>Average Character Rating</b> | <b>Number of Stations in Alternative</b> |
| TSM/Baseline   | Medium - Low                    | 9 stations                               |
| L1: I-5 Light Rail   | Low                             | 4 stations                               |
| L2: SR 99 Mixed Profile Light Rail*  | Medium - Low                    | 5 stations                               |
| L3: SR 99 Elevated Light Rail  | Medium - Low                    | 5 stations                               |
| B2: Multi-Corridor BRT   | Medium - Low                    | 10 stations                              |

\*The SR 99 North Variation and Roosevelt Way Variation would see no significant change in character rating.

In general, stations along the I-5 corridor rate the lowest, stations along the SR 99 corridor have moderate ratings, and stations along 15th Avenue NE perform best. Smaller block sizes and fewer automobile-oriented businesses on 15th Avenue NE create a better character. However, in the residential areas, there is less of the retail and service activity that can enhance the livability of an area. Station areas along SR 99 have the zoning in place to support businesses, but the quality of the existing character is poor, with “big box” retail and expansive parking lots fronting streets.

**Table 5-18. Existing Station Area Character Rating**

| Station Areas                     | TSM/ Baseline Alternative | L1: I-5 Light Rail | L2: SR 99 Mixed Profile Light Rail* | L3: SR 99 Elevated Light Rail | B2: Multi-Corridor BRT |
|-----------------------------------|---------------------------|--------------------|-------------------------------------|-------------------------------|------------------------|
| 130th Street                      |                           |                    | Medium                              | Medium                        | Medium                 |
| 160th Street                      |                           |                    | Low                                 | Low                           | Low                    |
| Shoreline Park-and-Ride           | Medium                    |                    | Medium                              | Medium                        | Medium                 |
| 220th Street                      | Low                       |                    |                                     |                               | Low                    |
| 145th Street                      | Low                       | Low                |                                     |                               |                        |
| 185th Street                      |                           | Low                |                                     |                               |                        |
| Mountlake Terrace Freeway Station | Medium                    | Medium             | Medium                              | Medium                        | Medium                 |
| Lynnwood Transit Center           | Low                       | Low                | Low                                 | Low                           | Low                    |
| 125th Street                      |                           |                    |                                     |                               | Medium                 |
| 145th Street/15th Avenue NE       |                           |                    |                                     |                               | Medium                 |
| 175th Street                      | Medium                    |                    |                                     |                               | Medium                 |
| Ballinger Way                     | Low                       |                    |                                     |                               | Low                    |
| 175th Street/Meridian             | Medium                    |                    |                                     |                               |                        |
| Edmonds Park-and-Ride             | Low                       |                    |                                     |                               |                        |

\*The SR 99 North Variation includes the 220th Street (rated low) in place of the Mountlake Terrace Freeway Station (rated medium). Roosevelt Way Variation eliminates the North 130th Street Station (rated high).

### CONNECTIVITY TO MAJOR TRIP GENERATORS (ACTIVITY CENTERS)

A qualitative analysis was completed to determine the level of connectivity between each activity center and its nearest station based on distance, availability of sidewalks, adjacent land uses, and general quality of the walk. Activity centers designated using published data on activity centers within the project area were collected, compared with FTA and PSRC guidance, and confirmed in consultation with local jurisdictions. In calculating walk distances, if an activity center is a district or larger shopping area, the distance was measured to the center of the district. Transit service accessibility, evaluated in Section 5.1.7, was reviewed and, where appropriate, included in this assessment. Results from station area assessments along each alternative were combined and compared across all alternatives.

Twenty-five activity centers were identified, 15 of which are located within a 0.50-mile radius of station locations. The walk path between each activity center and the nearest station was

determined, and in some cases it was significantly longer than 0.50 mile due to street grid, topography, and other barriers. Table 5-19 summarizes the rating for connectivity by alternatives. Figure 5-20 illustrates the locations of defined activity centers and Table 5-20 includes rating by activity center.

Most of the designated activity centers are located along the SR 99 corridor and range from larger “districts” of multiple blocks to a single site. The B2: Multi Corridor BRT Alternative serves the highest number of activity centers. Because this alternative includes transit service in three different corridors, the high number of centers served provides broad coverage of the large size of the service area.

Connections to the smaller business districts at North City and Mountlake Terrace received the highest rating, in part due to the proximity of the activity center to the station but also due to the existence of sidewalks, minimal large driveways to cross, and general community character.

The connection to the proposed Lynnwood City Center received a low rating. The heart of the proposed city center is approximately 0.5 mile from the Lynnwood Transit Center Station, but the existing walk path is next to parking lots with multiple driveways.

**Table 5-19.** Summary of Connectivity to Activity Centers within Station Areas for Alternatives

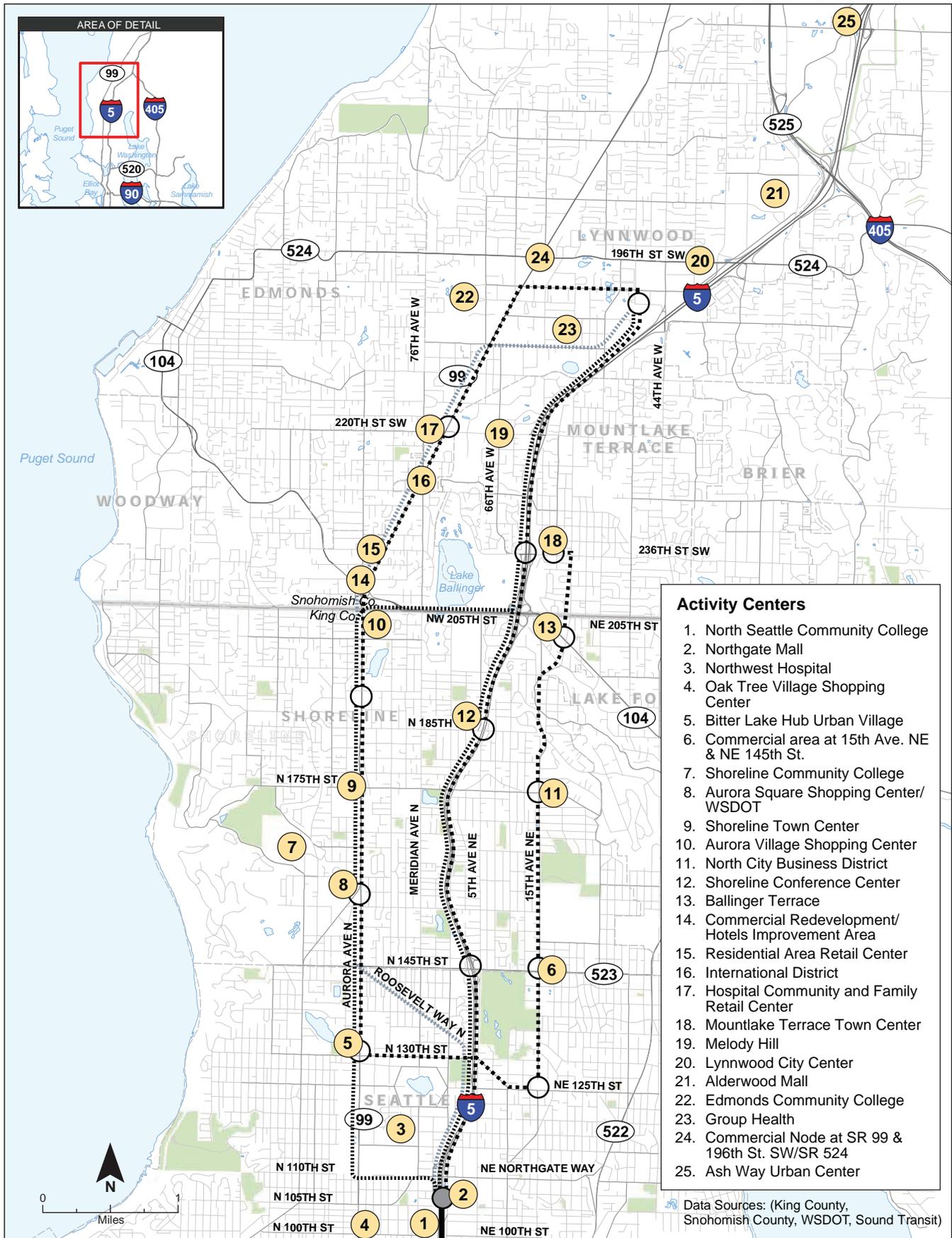
| Alternative                         | Activity Centers | Average Walk Rating | Number of Stations in Alternative |
|-------------------------------------|------------------|---------------------|-----------------------------------|
| TSM/Baseline                        | 14               | Medium              | 9 stations                        |
| L1: I-5 Light Rail                  | 7                | Medium - Low        | 4 stations                        |
| L2: SR 99 Mixed Profile Light Rail* | 8                | Medium              | 5 stations                        |
| L3: SR 99 Elevated Light Rail       | 8                | Medium              | 5 stations                        |
| B2: Multi-Corridor BRT              | 14               | Medium              | 10 stations                       |

\*The SR 99 North Variation has nine activity centers and the average walk rating would be medium. The Roosevelt Way Variation has seven activity centers, four stations, and the average walk rating would not change.

**Table 5-20. Walk Rating by Activity Center**

| Map Number | Activity Center                             | Station                        | Walk Rating |
|------------|---|--------------------------------|-------------|
| 5          | Bitter Lake Hub Urban Village               | 130th Street (SR 99)           | Medium      |
| 6          | Commercial area at 15th and 145th           | 145th Street (15th Avenue NE)  | High        |
| 6          | Commercial area at 15th and 145th           | 145th Street (I-5)             | Low         |
| 7          | Shoreline Community College                 | 160th Street (SR 99)           | Medium      |
| 8          | Aurora Square Shopping Center               | 160th Street (SR 99)           | Medium      |
| 9          | Shoreline Town Center                       | 175th Street (Meridian)        | Medium      |
| 10         | Aurora Village Shopping Center              | Shoreline Park-and-Ride        | Low         |
| 11         | North City Business District                | 175th Street (15th Avenue NE)  | High        |
| 11         | North City Business District                | 185th Street (I-5)             | Low         |
| 12         | Shoreline Conference Center                 | 185th Street (I-5)             | Medium      |
| 13         | Ballinger Terrace                           | Ballinger Way (19th Avenue NE) | Medium      |
| 13         | Ballinger Terrace                           | Mountlake Terrace              | Low         |
| 16         | International District                      | 220th Street (SR 99)           | Medium      |
| 17         | Hospital Community and Family Retail Center | 220th Street (SR 99)           | Medium      |
| 17         | Hospital Community and Family Retail Center | Edmonds Park-and-Ride          | Low         |
| 18         | Mountlake Terrace Town Center               | Mountlake Terrace              | High        |
| 19         | Melody Hill Premera                         | 220th Street (SR 99)           | Medium      |
| 19         | Melody Hill Premera                         | Edmonds Park-and-Ride          | Low         |
| 20         | Lynnwood City Center                        | Lynnwood Transit Center        | Low         |
| 23         | Group Health                                | Lynnwood Transit Center        | Medium      |

The SR 99 North Variation has three activity centers not listed above, all rated medium. Two activity centers would not be included in this variation, one rated low and one rated medium.



**Figure 5-20. Activity Centers** North Corridor Transit Project | Alternatives Analysis Report

## TRANSIT-SUPPORTIVE PLANS AND POLICIES

This measure includes a qualitative discussion of existing development strategies for station areas including transit-supportive plans, policies that support and promote transit-oriented growth in station areas, and existing programs and incentives that facilitate growth around transit stations. Results for each station area are combined by alternative. The TSM/Baseline Alternative was not analyzed for development potential, because it is not considered a build alternative and is used solely as the FTA New Starts baseline.

Adopted plans and policies were reviewed to evaluate how each station and alternative could support transit-oriented development and associated future land-use densities. The reviewed plans and policies included comprehensive plans, land use and zoning documents, sub-area plans, and other transit-related plans and policies. A complete listing of reviewed documents is included in the Station Area Development Potential Technical Memorandum (Sound Transit 2011g).

Information for station areas was combined for each alternative and results were compared across all alternatives. Some station areas would be served by light rail or BRT, depending on the selected alternative, and the analysis was consistent for either mode. Table 5-21 provides a summary by alternative and Table 5-22 illustrates development potential by station.

| <b>Table 5-21. Transit-Supportive Plans and Policies by Alternative</b> |  |   |
|---|--|---|
| <b>Alternative</b>  | <b>Ratings (per each station area)</b> | <b>Percent of Medium or Highly Rated Stations</b> |
| L1: I-5 Light Rail  | High (1)<br>Medium (1)<br>Low (2)      | 50%   |
| L2: SR 99 Mixed Profile Light Rail*                                     | High (2)<br>Medium (3)                 | 100%  |
| L3: SR 99 Elevated Light Rail   | High (2)<br>Medium (3)                 | 100%  |
| B2: Multi-Corridor BRT  | High (2)<br>Medium (4)<br>Low (4)      | 60%   |

\*The SR 99 North Variation includes a station at 220th Street (medium rating) that would replace the Mountlake Terrace Freeway Station (medium rating). The Roosevelt Way Variation eliminates one highly rated station.

**Table 5-22. Transit-Supportive Plans and Policies by Stations**

| Station Areas                     | L1: I-5 Light Rail | L2: SR 99 Mixed Profile Light Rail | L3: SR 99 Elevated Light Rail | B2: Multi-Corridor BRT |
|-----------------------------------|--------------------|------------------------------------|-------------------------------|------------------------|
| 130th Street                      |                    | High                               | High                          | High                   |
| 160th Street                      |                    | Medium                             | Medium                        | Medium                 |
| Shoreline Park-and-Ride           |                    | Medium                             | Medium                        | Medium                 |
| 220th Street                      |                    |                                    |                               | Medium                 |
| 145th Street                      | Low                |                                    |                               |                        |
| 185th Street                      | Low                |                                    |                               |                        |
| Mountlake Terrace Freeway Station | Medium             | Medium                             | Medium                        | Medium                 |
| Lynnwood Transit Center           | High               | High                               | High                          | High                   |
| 125th Street                      |                    |                                    |                               | Low                    |
| 145th Street/ 15th Avenue NE      |                    |                                    |                               | Low                    |
| 175th Street                      |                    |                                    |                               | Low                    |
| Ballinger Way                     |                    |                                    |                               | Low                    |
| 175th Street/ Meridian            |                    |                                    |                               |                        |
| Edmonds Park-and-Ride             |                    |                                    |                               |                        |

The L1: I-5 Light Rail Alternative has an overall medium level of support for transit-oriented development around stations, as summarized below by jurisdiction.

- Lynnwood:** The City of Lynnwood developed and adopted a City Center sub-area Plan focused on a mixed-use, pedestrian-friendly and transit supportive center near the Lynnwood Transit Center. The sub-area Plan outlines policies to accommodate city center growth including mixed-use development in buildings ranging in height from 140 to 350 feet. Lynnwood has also developed City Center Design Guidelines, a Street Master Plan with a smaller street grid in the City Center, and a Parks Master Plan.

Other activities include a Market Analysis and Absorption Study; an 8- to 12-year multi family property tax exemption to exempt apartment and condominium developments within the City Center; planned creation of a Business Improvement District; phased consolidation of City facilities; and development of property acquisition strategies.
- Mountlake Terrace:** The City’s Comprehensive Plan provides for the development of a revitalized town center within a 5-minute walk of the Mountlake Terrace Freeway

Station. The City designated a Community Business Downtown zone with transit- and pedestrian oriented policies. A Transit Oriented Development Study focuses on the town center area, with recommendations incorporated into the Comprehensive Plan and related town center planning efforts.

A Transit Service Strategy focuses on the town center and the North Melody Hill area, and supports transit-oriented development at the Mountlake Terrace Freeway Station area to provide better transit access to the North Melody Hill area.

An updated Freeway/Tourist zoning designation would allow 20-story buildings just south of the Mountlake Terrace Freeway Station.

- **Shoreline and Seattle:** There are no existing transit-supportive plans and policies for station areas along I-5 at 185th Street or 145th in the cities of Shoreline and Seattle.

The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives have an overall high level of support for transit-oriented development around stations, as summarized below by jurisdiction.

- **Lynnwood:** Similar to the L1: I-5 Light Rail Alternative.
- **Mountlake Terrace:** Similar to the L1: I-5 Light Rail Alternative. The SR 99 North Variation does not include a Mountlake Terrace Freeway Station, but includes a station along SR 99 at 220th Street, which would serve Stevens Hospital, part of an envisioned Hospital Community and Family Retail Center. This station would be located 0.50 mile from a major employer, Premera, in the North Melody Hill area of Mountlake Terrace. The Mountlake Terrace Transit Strategy includes North Melody Hill as a critical service area without addressing efforts to affect land use change.
- **Shoreline:** Shoreline would have two stations under this alternative. The City of Shoreline does not have specific adopted transit-oriented plans or policies around either station area, but King County has identified the Shoreline Park-and-Ride site as an excellent candidate for transit-oriented development and plans to develop the site in the future. Supporting this, the City of Shoreline's economic development plans include this site as a priority for redevelopment.

Shoreline's Comprehensive Plan includes a vision for SR 99 as "Shoreline's Grand Boulevard." Most of the improvements along this corridor have been completed, including BAT lanes that have transformed SR 99 into a street more conducive to transit activities. The plan also envisions high-density mixed-use housing along transit lines.

- **Seattle:** One station along this alternative would be located in Seattle at North 130th Street in the heart of a designated hub urban village. Bitter Lake Hub Urban Village's vision includes development of a residential-serving business zone in addition to continued commercial development along SR 99. The existing zoning supports transit-oriented development and mixed uses. The Bicycle Master Plan recommends bike

lanes on 130th Street and SR 99 north of 130th Street, encouraging non-motorized access to the area.

The Roosevelt Way Variation would eliminate the 130th Street Station, resulting in no stations in Seattle.

The B2: Multi-Corridor BRT Alternative has an overall moderate level of support for transit-oriented development around stations, as summarized below by jurisdiction.

- **Lynnwood:** Similar to the L1: I-5 Light Rail Alternative.
- **Mountlake Terrace:** Similar to the L1: I-5 Light Rail Alternative and the SR 99 North Variation.
- **Edmonds:** Similar to the SR 99 North Variation.
- **Shoreline:** Similar to the L1: I-5 Light Rail Alternative and L2: SR 99 Mixed Profile Light Rail Alternative with the addition of three stations in the 15th Avenue NE corridor from Ballinger Way to the southern city boundary. There is a tax exemption for multi-family developments in the North City business district area with the goal of adding more people to support the existing business district.
- **Seattle:** Similar to the L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives with the following addition: the City of Seattle does not have transit-supportive plans and policies for the station area at 15th Avenue NE and 125th NE Street.

## 5.3 ENVIRONMENTAL PERFORMANCE

### 5.3.1 Key Findings

Key findings related to environmental performance for the alternatives are described in the following section.

#### ECOSYSTEMS

All of the light rail alternatives have the potential for a high level of impacts on the natural environment because they cross sensitive wetland-stream complexes, including a wetland and stream area (Scriber Creek Wetland Complex) just south of the Lynnwood Station. If any of the light rail alternatives are selected, the project would explore design or alignment alternatives to avoid or minimize impacts to this wetland complex, which could affect the Lynnwood Station layout and orientation. The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives have longer routes but would encounter fewer natural areas than the L1: I-5 Light Rail Alternative and could affect sensitive areas to a lesser degree. The B2: Multi-Corridor BRT Alternative would have limited effects on the natural environment, as would the TSM/Baseline Alternative.

## WATER RESOURCES

The L1: I-5 Light Rail Alternative would have a larger increase in impervious surfaces because its alignment is generally in vegetated areas along I-5. The L2 and L3 SR 99 light rail alternatives would have more sections in areas that are already developed. The B2: Multi Corridor BRT Alternative would have a lower level of effects, and only minor effects are expected with the TSM/Baseline Alternative.

## SECTION 4(F) AND SECTION 6(F) RESOURCES

While all of the light rail alternatives have the potential for low to moderate impacts on Section 4(f) and Section 6(f) resources, the L1: I-5 Light Rail Alternative has the most potential for direct effects on historic resources or parks and recreation facilities that may qualify to be Section 4(f) resources, followed closely by the L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives. The TSM/Baseline and B2: Multi-Corridor BRT Alternatives have little to no potential for direct effects on Section 4(f) properties. No parks or recreation facilities that may qualify as Section 6(f) resources would likely be directly affected by any of the build alternatives.

## HISTORIC RESOURCES

No properties listed in the National Register of Historic Places (NRHP) or designated as landmarks by affected jurisdictions have been identified in the area within one block of the project alternatives. However, all alternatives are in areas where historic era properties (50 years or older) are located. The L2: SR 99 Mixed Profile Light Rail and L3: SR 99 Elevated Light Rail Alternatives could affect one property in the city of Shoreline that may be eligible for listing in the NRHP. These alternatives are also located along the SR 99 corridor, which has a large number of historic-era properties, although many have been altered and may not be NRHP eligible. Determination of the potential impacts for all alternatives would depend on more detailed design information, including right-of-way needs. Any of the project alternatives could affect potentially eligible properties. Further study during an EIS would be needed to identify other properties along the corridor that may be eligible for listing in the NRHP.

## ARCHAEOLOGICAL RESOURCES

No known archaeological sites would be affected by the project alternatives, but further evaluation and consultation with the Washington State Department of Archaeology and Historic Preservation (DAHP), tribes, and others would be conducted in the EIS.

## AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Most of the project alternatives have the potential to reduce air pollutant and greenhouse gas emissions, based on how well they help reduce automobile use compared to No Build conditions. The L1: I-5 Light Rail Alternative and the L3: SR 99 Elevated Light Rail Alternative would result in the greatest reduction in air pollutants and greenhouse gas emissions.

## AESTHETICS

The L1: I-5 Light Rail, L2: SR 99 Mixed Profile Light Rail, and L3: SR 99 Elevated Light Rail Alternatives include more elements that would result in changes to visual character in the corridor. This includes the removal of existing visual features and the construction of elevated guideways and multi-story park-and-rides. Much of this construction would be along established transportation corridors. The TSM/Baseline and B2: Multi-Corridor BRT Alternatives generally would limit changes to station development areas or direct access ramps.

## NOISE

All of the light rail alternatives have alignments near noise-sensitive land uses, including single-family residences, hotels, motels, and apartment buildings. The B2: Multi-Corridor BRT and TSM/Baseline Alternatives would result in lower noise effects than the light rail alternatives, as they would require fewer changes to the existing noise environment.

## PROPERTY ACQUISITIONS AND DISPLACEMENTS

All of the alternatives would require new right-of-way, which would affect properties owned by others. The L2: SR 99 Mixed Profile Light Rail Alternative and its two route variations would require the most right-of-way, requiring about 44 acres of new right-of-way and impacting 320 to 370 parcels. This would be nearly double the effects compared to the L1: I-5 Light Rail Alternative, which would need about 22 acres for new transportation right-of-way, affecting 140 to 270 parcels. The L3: SR 99 Elevated Light Rail Alternative would require a similar but slightly lower amount of new right-of-way than the L2: SR 99 Mixed Profile Light Rail Alternative. The B2: Multi-Corridor BRT and TSM/Baseline Alternatives would have few right-of-way impacts.

## TRANSPORTATION

### General Purpose Traffic Operations

The highest level of impact on general purpose traffic operations (arterial and local traffic) would occur with the L2: SR 99 Mixed Profile Light Rail Alternative. Effects on intersection operation could be mitigated with widening at intersections to provide replacement left-turn lanes. Median alignment of light rail, whether at-grade or elevated, would require reconstruction of the arterial with additional widening for left-turn storage to maintain intersection LOS, with longer delays to left-turn movements from SR 99 and to side street traffic. Median alignment would also result in access control for driveways and side streets between signals. Left turns previously made mid-block, as well as left-turn movements from the side streets, would be consolidated at signalized intersections and accommodated by U turns.

### Transit Operations

The primary effect on transit operations would occur when bus routes are truncated to serve light rail alternatives, particularly the L1: I-5 Light Rail Alternative and the L3: SR 99 Elevated Light Rail Alternative, which each would experience a greater amount of bus route truncation than the L2: SR 99 Mixed Profile Light Rail Alternative. These alternatives are also projected to result in an increase in bus ridership for routes serving light rail, which would be accommodated

by changes in service. While light rail on either the I-5 or SR 99 corridor would affect ridership on King County Metro's RapidRide BRT and Community Transit's *Swift* BRT lines operating along SR 99, the SR 99 light rail alternatives would more directly connect to and compete with those services. Metro's RapidRide E line could experience lower ridership as some riders choose instead to use light rail along SR 99, while Community Transit's *Swift* line could see increased ridership prompted by a direct connection to light rail in Shoreline not provided by light rail running along I-5.

### **Transportation Safety**

The L2: SR 99 Mixed Profile Light Rail Alternative would increase the potential for vehicle conflicts with regional transit; however, because the median alignment would provide more controlled traffic access—particularly at mid-block locations—some types of vehicle collisions may be reduced, e.g., those involving mid-block left-turning vehicles.

### **Construction**

The L2: SR 99 Mixed Profile Light Rail Alternative is expected to have the highest level of traffic disruption over the longest duration (6 years) of all the alternatives because major reconstruction of SR 99 would need to occur in order to place light rail transit in the median. However, the L3: SR 99 Elevated Light Rail Alternative would also require major construction along SR 99, which has already been subject to major reconstruction in several of the sections that would be affected. All the light rail alternatives would also require structures over I-5, which would require freeway closures, but the SR 99 alternatives would involve more crossings with closures than the L1: I-5 Light Rail Alternative.

## **5.3.2 Ecosystems**

For the purpose of this study, the ecosystems measures assess resources such as wetlands and jurisdictional ditches, fish, wildlife, and sensitive species. Wetlands and streams are subject to regulations by local jurisdictions, which include establishing buffers for wetlands and streams. Wetlands, streams, and sensitive species are also subject to federal and state regulations. At the federal level, wetlands and streams are regulated by the Clean Water Act (CWA) Section 404, which regulates placement of fill in waters of the United States. Activities that affect wetlands and streams may also require a water quality certification (Section 401 of the CWA).

"Jurisdictional ditches" are waters that are not subject to federal regulation but are frequently considered as part of a wetlands impact assessment.

Fish and wildlife species are regulated at both state and federal levels. The U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) regulate listed species under the Endangered Species Act (ESA); Washington Department of Fish and Wildlife (WDFW) regulates state-listed species.

Because the No Build Alternative and TSM/Baseline Alternative involve few new facilities, they would be unlikely to affect or would have minimal effects on ecosystems in the project area.

The L1: I-5 Light Rail Alternative has the potential for affecting the natural environment, primarily due to the presence of moderate- to high-quality wetland-stream complexes along the corridor. However, potential effects on listed species are minimal. The L1: I-5 Light Rail Alternative would affect Thornton Creek and its associated wetlands, McAleer Creek and its associated wetlands, and Scriber Creek and its associated wetlands (see Figure 5-21). Just south of the Lynnwood Station area, the alternative has two approaches for crossing Scriber Creek and its wetlands. The option that stays along I-5 before crossing to a north/south oriented station in Lynnwood avoids more of the creek and wetland area, compared to an alignment that curves through a larger area of the creek and wetland to reach an east-west oriented station.

The L2: SR 99 Mixed Profile Light Rail Alternative also has the potential for natural environmental effects, but potential effects on listed species are minimal. It shares the same alignment as the L1: I-5 Light Rail Alternative in the areas near moderate- to high-quality wetland-stream complexes along the corridor, although it avoids Thornton Creek. It also crosses near McAleer Creek and its associated wetlands, near the Mountlake Terrace Station, but it has a different alignment than the L1: I-5 Light Rail Alternative in that area. From Mountlake Terrace Station to the north, it would have the same effects as the L1: I-5 Light Rail Alternative, including the potential for effects on Scriber Creek near the Lynnwood Station. Although the L2: SR 99 Mixed Profile Light Rail Alternative has more construction because it has a longer route, the additional area of construction would be mostly within previously developed areas with fewer natural areas.

The SR 99 North Variation could avoid effects on McAleer Creek and its associated wetlands, but it would have the same effects on the Scriber Creek wetland complex as the L2: SR 99 Mixed Profile Light Rail Alternative. The Roosevelt Way Variation would have the same impacts as the L2: SR 99 Mixed Profile Light Rail Alternative.

The L3: SR 99 Elevated Light Rail Alternative would have similar potential effects to those of the L2: SR 99 Mixed Profile Light Rail Alternative.

The B2: Multi-Corridor BRT Alternative may affect wetlands around I-5 near the Northgate Transit Center for the construction of direct access ramps to I-5.

The most sensitive areas along the alignment appear to be McAleer Creek and Scriber Creek and their moderate- or high-quality wetlands. The L1: I-5 Light Rail, the L2: SR 99 Mixed Profile Light Rail, and the L3: SR 99 Elevated Light Rail Alternatives cross the Scriber Creek wetland complex. If the L1: I-5 Light Rail, the L2: SR 99 Mixed Profile Light Rail, or L3: SR 99 Elevated Light Rail Alternatives are selected, the project would explore design or alignment alternatives to avoid or minimize impacts to this wetland complex, which could affect the Lynnwood Station layout and orientation. If impacts cannot be avoided, the project would provide mitigation measures, which would include the creation or restoration of wetlands to replace the lost function of the affected wetlands.

### 5.3.3 Water Resources

The project area lies entirely within Water Resource Inventory Area (WRIA) 8, and surface water runoff drains to Thornton Creek, Hall Creek/Ballinger Lake/McAleer Creek, and Scriber Creek (see

Figure 5-21). The project area receiving waters are highly urbanized, although fish bearing, and most have 100-year Federal Emergency Management Agency (FEMA) floodplains in the project vicinity. Lake Ballinger is the only project area waterbody included on the Washington State Department of Ecology (Ecology) 303(d) list of impaired waterbodies. Most major roads with stream crossings in the project area present fish-passage barriers. No major stormwater management facilities such as regional detention facilities are near the potential alignments. Surface water in the project area is generally conveyed in piped systems, with some roadside ditches. For areas that may discharge to combined sewer systems, capacity issues may exist. Most of the project area is developed and has a moderate-to-high amount of impervious surface.

There would likely be minimal to no effects for the No Build Alternative and TSM/Baseline Alternative because they would change very little of the existing land cover.

The L1: I-5 Light Rail Alternative would convert some vegetated areas with light rail and station area developments, potentially affecting nearby floodplains with receiving waters in the project area. This alternative would also result in the largest increase in impervious surface of all the proposed alternatives, and detention would potentially be required to reduce the risk of flooding from overloading the capacity of the local conveyance system. The L1: I-5 Light Rail Alternative would cross Thornton Creek and McAleer Creek, both of which currently have fish barrier culvert crossings at I-5. In areas where the alternative could alter WSDOT facilities or increase paved areas, improvements to WSDOT or local stormwater systems may also be needed.

The L2: SR 99 Mixed Profile Light Rail Alternative would have a lower risk of directly affecting receiving waters because there are fewer receiving waters within the proposed project area. This alternative would potentially affect a City of Seattle flood area in the south part of the alignment, Lake Ballinger in the north, and various stormwater ponds in between. North of Mountlake Terrace, the alternative would be similar to the L1: Light Rail Alternative, where much of the area to be developed would be within WSDOT right of way. The southern portion of area for the L2: SR 99 Mixed Profile Light Rail Alternative is already the most highly developed; therefore, this alternative would result in relatively minor increases to impervious surface. Construction to today's stormwater standards has the potential to reduce pollution-generating impervious surface. However, this alternative would likely require the most replacement and retrofit of existing storm drainage facilities.

The SR 99 North Variation would have similar effects to those of the L2: SR 99 Mixed Profile Light Rail Alternative; however, it would avoid effects to Lake Ballinger and some stormwater ponds, while posing a risk to others. Also, this variation would place retained fill in the vicinity of Hall Creek and its associated floodplain. The Roosevelt Way Variation would also have similar effects to those of the L2: SR 99 Mixed Profile Light Rail Alternative, although it would avoid effects to the City of Seattle flood area. The Roosevelt Way Variation would have a greater potential to increase impervious surface compared to the other alignment in the L2: SR 99 Mixed Profile Light Rail Alternative.