1.0 Purpose and Need for Federal Way Link Extension

The Central Puget Sound Regional Transit Authority (Sound Transit) is proposing the Federal Way Link Extension (FWLE) to expand the regional light rail system south from SeaTac to Des Moines, Kent and Federal Way in King County. This 7.6-mile extension would connect the Angle Lake Station at S 200th Street in SeaTac with the Federal Way Transit Center in Federal Way. The FWLE corridor parallels State Route 99 (SR 99) and Interstate 5 (I-5), and generally follows a topographic ridge between Puget Sound and the Green River Valley. This project was previously known as the Federal Way Transit Extension and is part of the Sound Transit 2 (ST2) program of projects.

Exhibit 1-1 shows how the FWLE would integrate into the planned regional light rail system and connect the northern, southern, and eastern reaches of the greater Seattle metropolitan area. Exhibit 1-2 shows the project location relative to the four FWLE corridor cities and major destinations in these cities. As of the 2010 U.S. Census, about 85,000 people lived within a half mile of the project corridor in SeaTac, Des Moines, Kent, and Federal Way, and the Puget Sound Regional Council (PSRC) estimates there are about 27,000 jobs in the corridor. The total population and employment in these cities is even higher, with 278,000 people and 125,000 jobs as of 2014 (PSRC, 2015a).

1.1 Purpose of the Project

The purpose of the FWLE is to expand the Sound Transit Link light rail system from the city of SeaTac to the cities of Des Moines, Kent, and Federal Way in King County. The project will:

- Provide a rapid, reliable, accessible, and efficient alternative for travel to and from the corridor and other urban growth and activity centers in the region, with sufficient capacity to meet projected demand.

Purpose and Need Statement

The purpose and need section describes why the agency is proposing to invest taxpayer dollars in the project. It clarifies what problems the project is addressing and justifies the expenditure needed. The purpose and need therefore drive the process for alternatives consideration, in-depth analysis, and ultimate project selection.

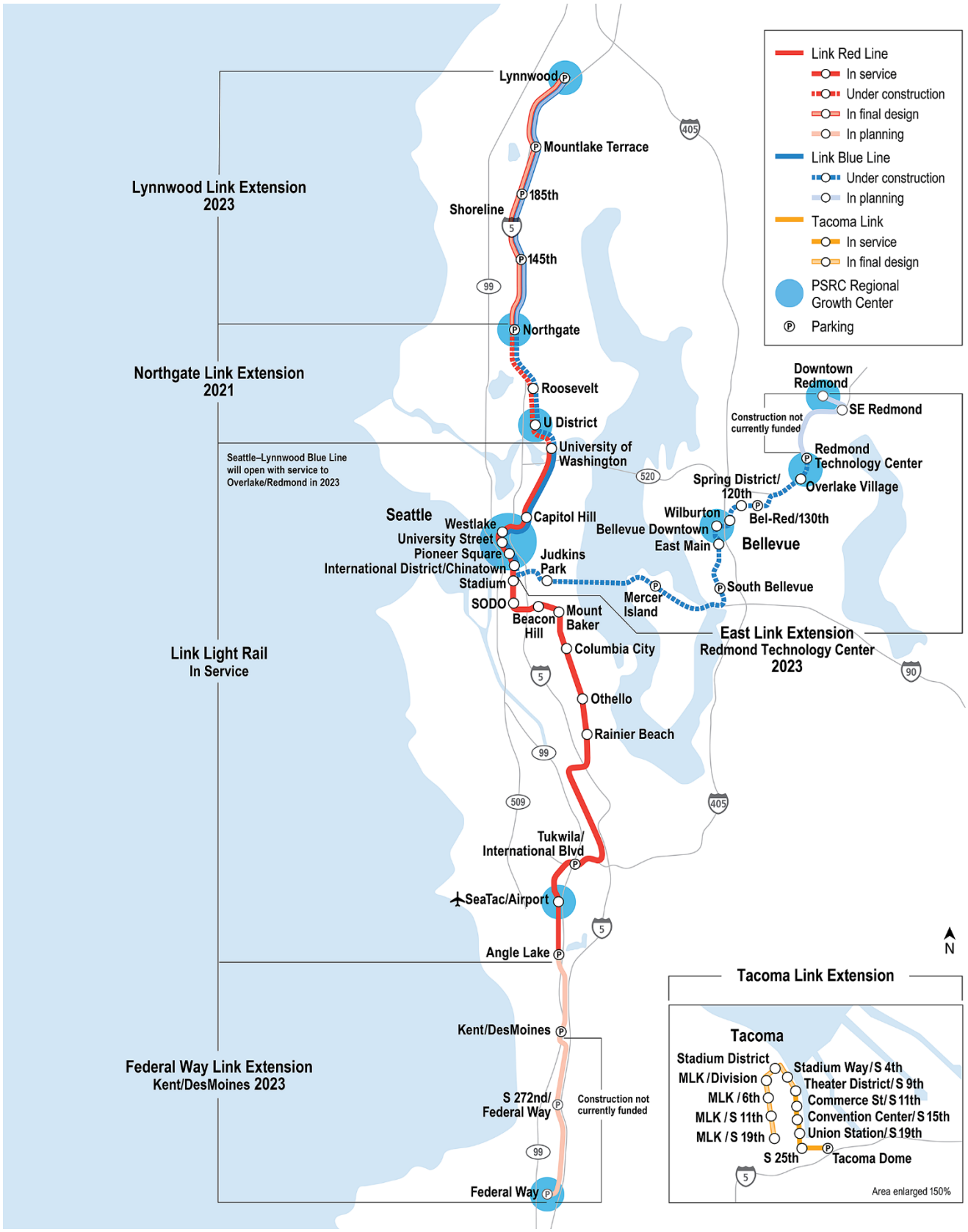
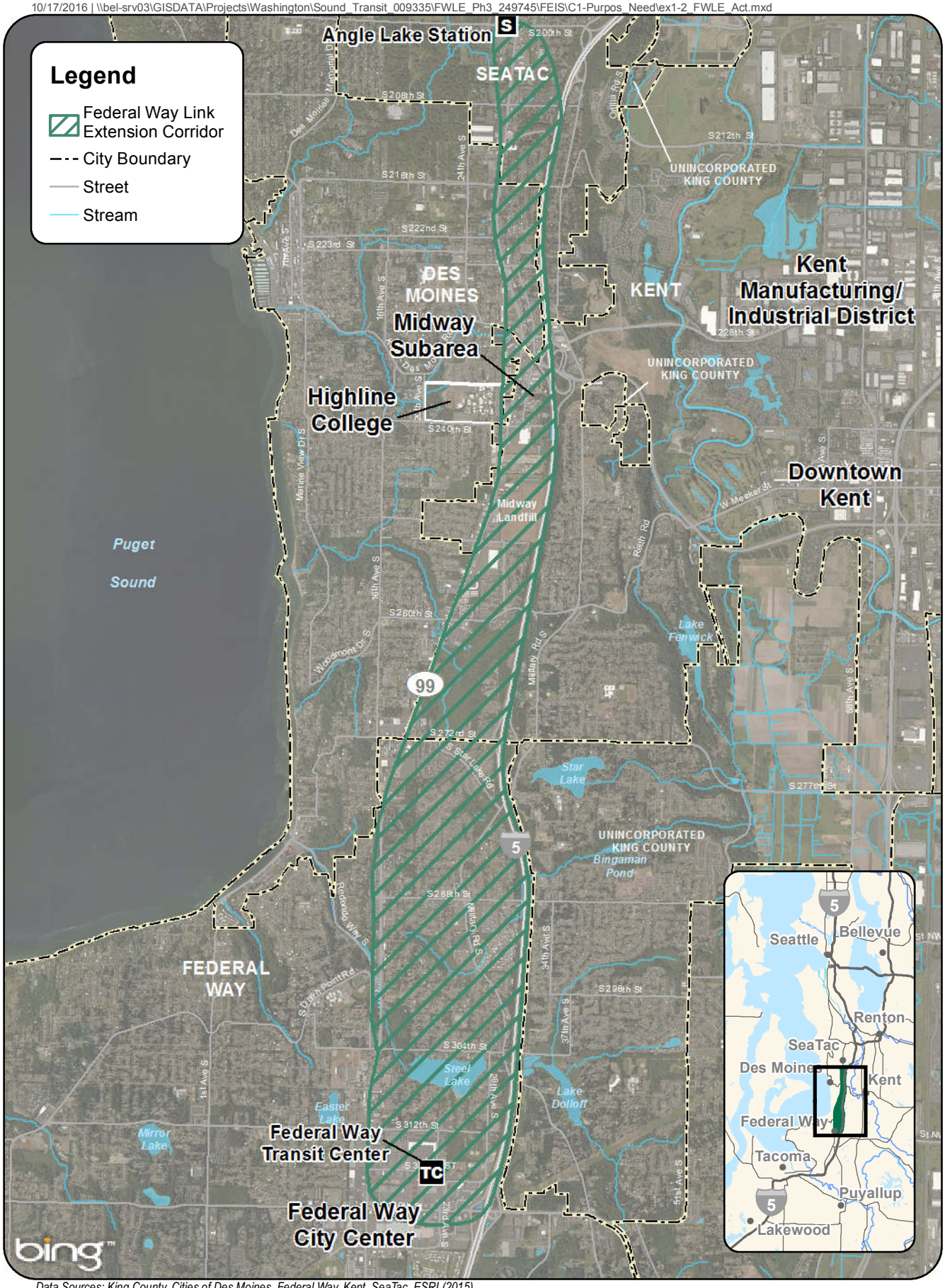


EXHIBIT 1-1
Sound Transit Link Light Rail System and FWLE Location



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac, ESRI (2015).

N

0 0.5 1 2 Miles

EXHIBIT 1-2
FWLE Corridor and Activity Centers

- Expand mobility by improving connections to the regional multimodal transportation system with peak and off-peak transit service.
- Provide the high-capacity transit (HCT) infrastructure and service to support the adopted regional and local land use, transportation, and economic development plans. Plans such as PSRC's *VISION 2040* call for growth to be concentrated in designated urban centers connected to each other by HCT. Land use plans for individual cities support this regional vision.
- Advance the Sound Transit Long-Range Plan's vision, goals, and objectives for high-quality regional transit service connecting major activity centers in King, Pierce, and Snohomish counties (Sound Transit, 2014a).
- Implement a financially feasible HCT system to help preserve and promote a healthy environment.

High-Capacity Transit (HCT)

High-capacity transit carries a larger volume of passengers using larger vehicles and/or more frequent service than a standard fixed-route bus system. It can operate on exclusive rights-of-way such as a rail track or dedicated busway, or on existing streets with mixed traffic. Its main goal is to provide faster, more convenient, and more reliable service for more passengers.

1.2 Need for the FWLE

The FWLE is needed for six key reasons described below.

Need #1: Increasing congestion on I-5 and on the key arterials leading in and out of the study area will further degrade existing transit performance and reliability.

- Transit options in the FWLE corridor depend on the existing roadway infrastructure. Congestion on I-5, SR 99, and the key corridor arterials is expected to increase and degrade transit performance and reliability. Section 3.4.2, Transit Operations, provides additional information on existing transit performance in the FWLE area.
- Despite some substantial investments benefitting transit in the corridor (see text box), congestion extends well beyond typical commuting hours and leads to unreliable travel times. I-5 between Federal Way and Seattle is typically congested for 10 hours each weekday. By 2035, without major investments, it is expected to worsen to 14 hours on weekdays.
- A single-occupancy driver going between Federal Way and Downtown Seattle (approximately 22 miles) during peak

Transportation Investments in the FWLE Corridor Benefitting Transit

Several locations within the FWLE corridor already feature investments to help improve transit speed and reliability. These include:

- Continuous high-occupancy vehicle (HOV) lanes on I-5 between Federal Way and the south Downtown Seattle area
- Continuous business access and transit (BAT) lanes on both sides of SR 99 from S 216th Street to just south of S 320th Street, along with intersection signals that are programmed to give transit travel priority
- A "Texas T" HOV direct-access ramp connecting S 317th Street to the center HOV lanes on I-5, allowing buses to bypass the freeway interchange congestion
- Ramp metering and HOV bypass lanes on most I-5 interchange ramps to help control the flow of traffic onto the freeway

periods, when congestion is high and delays are unpredictable, must allow 62 minutes in the morning and 46 minutes in the afternoon to ensure arriving on time 95 percent of the time. In 20 years, with the projected population and employment growth in the region, the trip will take at least 10 more minutes in the morning peak hour and about 10 minutes more in the afternoon peak hour.

- Projected growth and increasing congestion will further degrade bus service. Section 3.4.3, Arterial and Local Streets Operations, describes the intersections in the FWLE study area that already fail, or barely meet, state and/or local standards, including 13 intersections along SR 99, Kent-Des Moines Road (SR 516), S 272nd Street, and Military Road S. By 2035, 20 intersections in the study area will fail or will barely meet state and/or local standards. This congestion will particularly affect the RapidRide A Line, which currently takes over 40 minutes during peak periods to travel 11 miles between the Federal Way Transit Center and Tukwila International Boulevard light rail station. When this trip is combined with Central Link light rail, it takes up to 75 minutes to travel between Federal Way and Downtown Seattle. Accessing existing direct service (Metro and Sound Transit Express) between Federal Way Transit Center and Downtown Seattle can require out-of-direction travel for some riders located north of the transit center, increasing the total trip time.

Need #2: North-south transit demand is expected to grow by up to 80 percent by 2035 as a result of residential and employment growth in the FWLE study area (Sound Transit, 2014b). This growth will require additional and more reliable transportation options than currently exist.

- Between 2010 and 2035, population will grow over 24 percent in cities within the FWLE corridor, and employment will grow over 66 percent (PSRC, 2013). Section 4.3, Economics, provides additional information on projected growth within the study area.
- PSRC's *VISION 2040* (PSRC, 2009), the regional growth strategy, includes SeaTac, Kent, and Federal Way among the 14 core cities intended to accommodate 22 percent of the region's population growth and 29 percent of its employment growth by the year 2040. SeaTac and Federal Way also contain two of PSRC's 27 designated Regional Growth Centers, where population and

employment growth should be focused. Exhibit 1-1 shows the Regional Growth Centers (including those in the FWLE corridor) that have either existing or planned Link access.

- PSRC's metropolitan transportation plan, *Transportation 2040* (PSRC, 2015c), identifies new transportation improvements needed in and between these growth centers to support concentrating growth in existing urbanized areas. These improvements cover multiples modes, including transit.
- The anticipated growth will substantially increase transit demand in the FWLE study area. Key King County Metro and Sound Transit routes between Federal Way and Seattle already operate at or above capacity in the peak periods. This undesirable condition may worsen in the future, forcing passengers to stand for the duration of their travel and slowing passenger loading and unloading.

Need #3: People in the FWLE corridor need reliable and efficient peak and off-peak transit service to connect with the region's growth centers.

Limits of Existing Transit Service:

- Most regional express bus service in the FWLE study area running on I-5 is Seattle-centric and operates at 30-minute headways in the peak periods, with limited or non-existent off-peak and weekend service. The bus routes using I-5 make limited stops and primarily connect the Federal Way Transit Center to Seattle-Tacoma International Airport (Sea-Tac Airport), Downtown Seattle, and the University of Washington.
- Along SR 99, there is very limited peak-period and off-peak period direct bus service to and from Downtown Seattle and other regional centers. RapidRide A Line provides frequent service along SR 99 but requires a transfer to other bus service or to Central Link Light Rail for travel to Downtown Seattle and/or other regional centers.
- Without major investments, the study area will continue to lack reliable and efficient transit service to other regional centers (such as Bellevue, Redmond, Northgate, and Lynnwood). This lack of reliable and efficient service limits opportunities for people in the FWLE corridor to work in these employment centers. It also limits access for people in other areas of the region to jobs in the

regional growth centers along and near the FWLE corridor, including the Kent manufacturing/industrial district, downtown Kent, and the Federal Way city center).

Reliable and Efficient Off-Peak Service is Important in the FWLE Corridor:

- Over 40 percent of workers residing in the corridor worked in retail, manufacturing, warehousing, transportation, communications, or utilities in 2015 (PSRC, 2015b). Retail and manufacturing work schedules frequently do not conform to peak-hour commute transit service. For instance, about 14 percent of 2013 U.S. Census American Community Survey respondents in the FWLE corridor began their commute between 4 p.m. and 5 a.m.
- Households in the corridor need reliable transit service to employment centers outside the FWLE corridor during non-peak hours to take advantage of different employment opportunities.
- Highline College employs approximately 1,100 people and has approximately 16,500 students per year, 65 percent of whom come from SeaTac, Des Moines, Kent, and Federal Way. Classes occur throughout the day and evening, and students and employees depend on reliable off-peak transit to get to and from the college.

Employment and Activity Centers in the FWLE Corridor

Large employers in the FWLE vicinity include Sea-Tac Airport and support industries such as hotels and restaurants in SeaTac, Highline College in Des Moines, and the Commons Mall and big-box retailers in Federal Way.

Need #4: The corridor has a high concentration of transit-dependent populations who need efficient and reliable regional transit connectivity.

Improved transit increases access to expanding regional job markets by providing affordable and accessible commuting options for low-income households. It improves access to schools, jobs, family, and health care for transit-dependent youth and seniors.

- Transportation costs are problematic and rising steadily. Tolls are being implemented on major freeways in the region, with more tolls expected in the next several years. The price of fuel fluctuates, but generally increases over time. PSRC forecasts a 40 percent increase in parking costs for major regional growth centers. All these expenses increase burdens on low-income residents and impede access to employment and educational opportunities, and health care services.

- The corridor has a higher proportion of low-income residents than King County as a whole. The 2010-2014 American Community Survey reported that nearly 18 percent of the population in the FWLE corridor had incomes at or below the federal poverty level, compared to less than 12 percent for King County. There are some areas along SR 99 where over 50 percent of the residents had incomes below the poverty level. At 14 of the 15 elementary schools in the study area, the majority of students qualified for free or reduced lunches in the 2014-2015 school year.
- The corridor has higher percentages of populations under age 18 and over 65 years old than King County as a whole. These populations tend to have higher percentages of residents who rely on transit.

Need #5: Regional and local plans call for HCT in the corridor consistent with PSRC's *VISION 2040* and Sound Transit's Long-Range Plan.

Agencies have been planning for HCT in the FWLE corridor for over 30 years. Table 1-1 lists the plans that have called for HCT in this corridor over the last 35 years. As the population grows, the need for regional mobility remains vital to maintain a healthy economy. In anticipation of this project, cities in the corridor updated their local comprehensive plans to encourage transit-oriented development in certain areas.

TABLE 1-1

History of HCT/Light Rail Planning in the FWLE Corridor

1981	Puget Sound Council of Governments completes light rail study.
1986	Puget Sound Council of Governments publishes *Regional Multi-Corridor Project Summary Report.*
1990	Puget Sound Regional Council (PSRC) adopts *VISION 2020.*
1993	Regional Transit System Plan EIS. Joint Regional Policy Committee adopts Regional Transit System Plan; Snohomish, King, and Pierce counties form the Central Puget Sound Regional Transit Authority (RTA).
1996	Sound Transit adopts Long-Range Vision, which identifies potential rail extension in the corridor; voters approve funding for *Sound Move*, the initial package of HCT investment.
2000	Des Moines adopts Pacific Ridge Element of Comprehensive Plan that anticipates light rail.
2001	PSRC adopts *Destination 2030*, identifies HCT expansion in corridor.
2004	PSRC publishes *Central Puget Sound HCT Corridor Assessment.*
2005	Sound Transit publishes Regional Transit Long-Range Plan Supplemental EIS and updates the Long-Range Plan, which identifies light rail extension in the corridor.

TABLE 1-1 (CONTINUED)

History of HCT/Light Rail Planning in the FWLE Corridor

2008	*Sound Transit 2* funds construction of light rail to S 272nd Street and environmental review of extensions farther south to Tacoma.
2010	PSRC adopts *VISION 2040* and *Transportation 2040*, which include light rail extension in the corridor; Des Moines updates Pacific Ridge Element of *Comprehensive Plan*; Federal Way updates City Center Chapter of *Comprehensive Plan* that anticipates light rail.
2011	Kent publishes *Midway Subarea Plan* that anticipates light rail.
2012	Sound Transit publishes *TOD Program Strategic Plan.*
2012	PSRC approves Central Puget Sound Regional 2010-2013 Transportation Improvement Program, which includes light rail extension in the corridor.
2013	Sound Transit completes Federal Way Transit Extension Alternatives Analysis; PSRC publishes *The Growing Transit Communities Strategy* report.
2014	Sound Transit publishes Regional Transit Long-Range Plan Supplemental EIS and updates the Long-Range Plan, which continues to identify light rail extension in the corridor.
2016	Sound Transit adopts the Sound Transit 3 (ST3) plan; if funding approved by voters, it funds FWLE construction to the Federal Way Transit Center.

TOD = transit-oriented development

Need #6: Environmental and sustainability goals of the state and region include reducing vehicle miles traveled and greenhouse gas emissions.

State and regional policies support actions to increase energy efficiency and reduce harmful greenhouse gas (GHG) emissions, especially from transportation sources. The FWLE would reduce dependency on single-occupancy vehicles, slow down growth in vehicle miles traveled, conserve energy, and lower air pollution.

Greenhouse Gases

GHGs are gaseous compounds (such as carbon dioxide) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect and climate change. Transportation generates about half of the GHGs in the state.

Washington law sets goals to decrease the annual per capita vehicle miles traveled by 30 percent by 2035 and 50 percent by 2050. Another state goal is to reduce overall emissions of greenhouse gases in Washington to 25 percent below 1990 levels by 2035 and to 50 percent below 1990 levels by 2050.

Washington State Executive Order 14-04, signed in April 2014, calls on state agencies to assist regional and local jurisdictions in "implementing measures to improve transportation efficiency, and to update their comprehensive plans to produce travel and land-use patterns that maximize efficiency in movement of goods and people, and reduce costs and greenhouse gases."

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2.0 Alternatives Considered

This chapter describes the Final Environmental Impact Statement (Final EIS) alternatives for the Federal Way Link Extension (FWLE). It also summarizes the alternatives developed but not further considered during the early scoping process and Alternatives Analysis. This Final EIS evaluates a Preferred Alternative, three other light rail alternatives, and a No Build Alternative. The No Build Alternative allows an analysis of the potential impacts of not building the FWLE, and provides a basis for comparing the build alternatives to a future baseline condition.

This chapter is organized into the following sections:

- 2.1 Overview
- 2.2 FWLE Project Alternatives
- 2.3 Alternatives Development and Early Scoping
- 2.4 Environmental Practices and Commitments
- 2.5 Estimated Project Costs and Funding
- 2.6 Relationship to RapidRide A Line and SR 509 Extension Project
- 2.7 Next Steps and Schedule

2.1 Overview

The FWLE corridor is generally bounded by State Route (SR) 99 to the west, Interstate 5 (I-5) to the east, S 200th Street to the north, and S 320th Street to the south (see Exhibit 1-2). Alternatives outside this area or with different origins or destinations were not considered because they would not meet the project's purpose and need. The FWLE alternatives generally follow two corridors, SR 99 and I-5, between SeaTac and Federal Way. Sound Transit developed the alternatives through an early scoping and Alternatives Analysis process during 2012 and 2013 that included public and agency input. Section 2.3 presents additional detail on this process, the alternatives evaluated, and the alternatives not carried forward. As shown in Exhibit 2-1 and Table 2-1, this Final EIS evaluates a No Build Alternative and four build alternatives, including the Preferred Alternative. Each build alternative includes three stations: Kent/Des Moines, S 272nd Street, and the Federal Way Transit Center.

Station Option

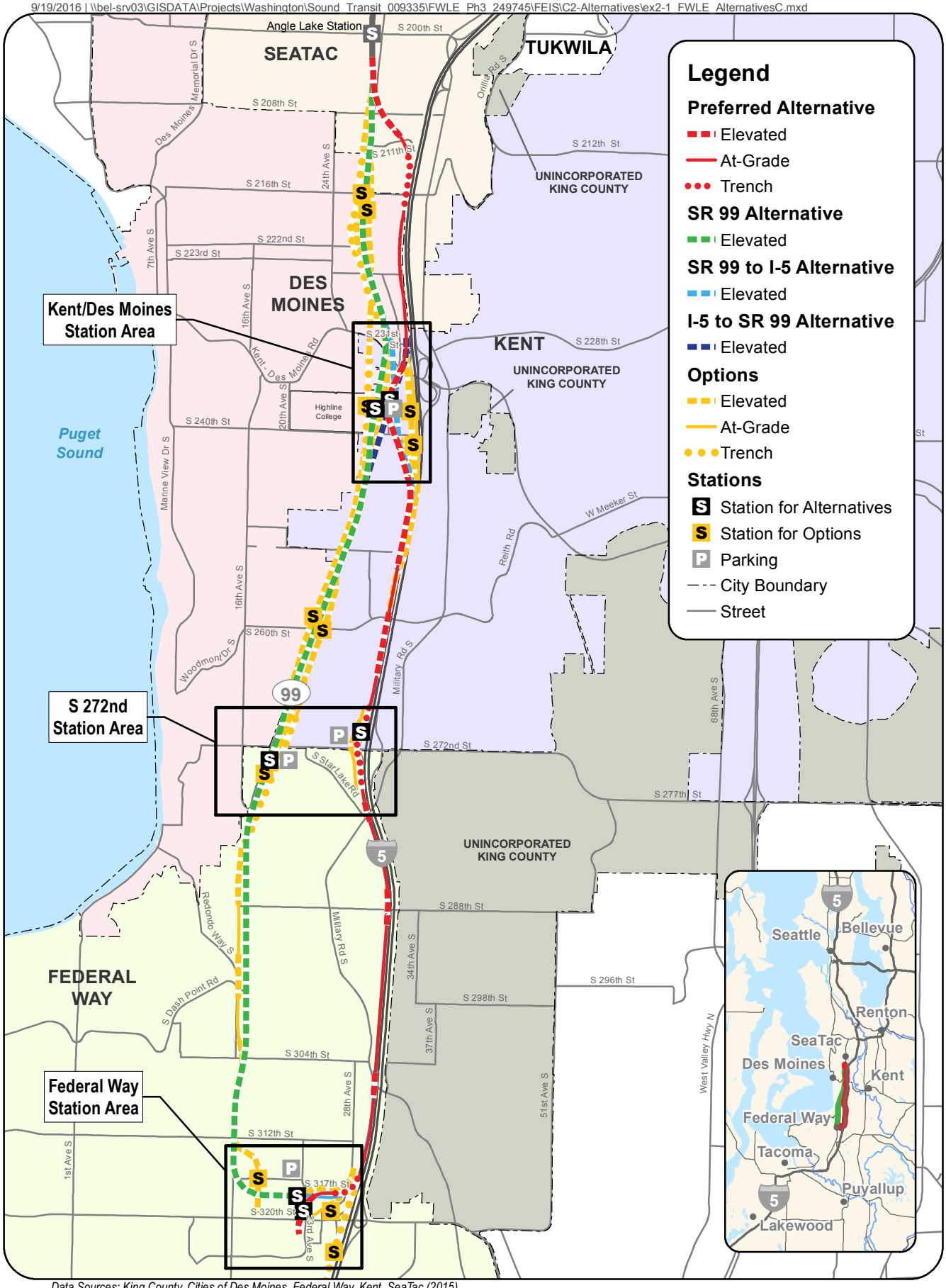
Station options are alternate locations for each station area: Kent/Des Moines, S 272nd Street, and Federal Way City Center. Options for a station generally have the same station characteristics and serve the same population.

Potential Additional Station

The Alternatives Analysis process for the FWLE identified additional station locations on SR 99. These stations could be added to the SR 99 alternatives but are not funded and would require additional approvals.

Alignment Option

An alignment option is an alternate route along a portion of the alternative. An alignment option does not include a station.



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

N

0 0.5 1 2 Miles

EXHIBIT 2-1
FWLE Alternatives

Federal Way Link Extension

TABLE 2-1
Summary of Alternatives Evaluated in the Final EIS

Alternative	Stations	Station Options	Potential Additional Stations (not funded in ST2 or ST3)	Alignment Options
No Build	None	None	None	None
Preferred	• Kent/Des Moines • S 272nd Star Lake • Federal Way Transit Center	• Kent/Des Moines At-Grade • Kent/Des Moines I-5 • S 272nd Star Lake Elevated • Federal Way I-5 • Federal Way S 320th Park-and-Ride	None	• Landfill Median • S 317th Elevated
SR 99	• Kent/Des Moines SR 99 West • S 272nd Redondo • Federal Way Transit Center	• Kent/Des Moines Highline College (HC) Campus • Kent/Des Moines SR 99 Median • Kent/Des Moines SR 99 East • S 272nd Redondo Trench • Federal Way SR 99	• S 216th West • S 216th East • S 260th West • S 260th East	None
SR 99 to I-5	• Kent/Des Moines 30th Avenue East • S 272nd Star Lake • Federal Way Transit Center	• Federal Way I-5 • Federal Way S 320th Park-and-Ride	• S 216th West • S 216th East	• Landfill Median
I-5 to SR 99	• Kent/Des Moines 30th Avenue West • S 272nd Redondo • Federal Way Transit Center	• S 272nd Redondo Trench • Federal Way SR 99	• S 260th West • S 260th East	None

ST2 = Sound Transit 2 (Sound Transit, 2008)
ST3 = Sound Transit 3 (Sound Transit, 2016)

For the Kent/Des Moines and Federal Way Transit Center stations, a primary location and one or more station options have been identified. The SR 99 Alternative has one station option at S 272nd Street. The Preferred Alternative also has an alignment option at the Midway Landfill for avoiding or minimizing impacts at this location.

After considering the Draft EIS and the public and agency comments received, the Sound Transit Board passed Motion M2015-56 in July 2015, identifying the I-5 Alternative with the Kent/Des Moines SR 99 East Station Option as the Preferred Alternative. (Throughout the Final EIS, this alternative is referred to as the Preferred Alternative.)

When it identified the Preferred Alternative, the Board directed Sound Transit staff to work with stakeholders to develop and evaluate potential improvements to it in three areas. These include:

- Optimize the location of the Preferred Kent/Des Moines Station to facilitate access to Highline College and enhance future transit-

oriented development (TOD) potential in the Midway area of Kent and Des Moines.

- Identify ways to improve the potential for TOD all along the corridor, such as through better east-west transit connections to stations, pedestrian and bike access improvements, and placemaking initiatives and development opportunities.
- Modify the preferred Federal Way Transit Center station to facilitate multimodal connections to the existing Federal Way Transit Center, enhance TOD potential in the downtown area, and accommodate a future light rail extension to the south on either I-5 or SR 99.

Sound Transit conducted four stakeholder workshops for the Kent/Des Moines Station in September and October 2015. The stakeholders reached consensus that the Preferred Kent/Des Moines Station should optimize access for all modes of transport, create a safe pedestrian environment, and create near-term and long-term development opportunities. Following the workshops, the group recommended the location on the west side of 30th Avenue S with the following refinements (some of which are beyond Sound Transit's authority):

- Provide a connection to campus.
- Include walkways, lighting, and other treatments.
- Enhance pedestrian crossing safety at SR 99.
- Facilitate near-term TOD and mixed-income housing along S 236th Street.
- Maintain existing on-campus Metro bus stops and consider providing more frequent east-west transit service.
- Improve pedestrian access to neighborhoods.
- Consider naming the station "Highline Station" or "Highline College Station."
- Continue stakeholder engagement for station planning.

Stakeholder Workshops

Stakeholders that were invited to participate in workshops for one or more of the Preferred Alternative stations include:

- City of Kent
- City of Des Moines
- Highline College
- Highline College students
- WSDOT
- King County Metro
- Puget Sound Regional Council
- King County Executive's Office
- Transportation Choices
- OneAmerica
- Futurewise
- Urban Land Institute

Sound Transit met with the City of Federal Way and King County Metro in September and October 2015 to optimize the location of the Preferred Federal Way Transit Center Station. The preferred alignment for this station is along the west side of 23rd Avenue S and north of S 320th Street. The tail track would extend over S 320th

Street. A stakeholder workshop was conducted in December 2015 to review the station layout and discuss multimodal connections to the transit center and TOD potential.

Sound Transit met with the City of Kent, Federal Way Public Schools, and King County Metro throughout fall 2015 and winter 2016 to optimize the Preferred S 272nd Star Lake Station. A stakeholder workshop was also conducted in March 2016 that focused on potential non-motorized station access improvements, particularly along S 272nd Street to SR 99. The participants developed improvements that could be implemented, some of which would require collaboration among multiple jurisdictions.

Accordingly, Sound Transit modified the design of the Preferred Alternative to shift the Kent/Des Moines Station about 200 feet from the east side of SR 99 to the west side of 30th Avenue S, and to re-orient the Federal Way Transit Center Station from east-west to north-south. These changes also affected the alignments to and from the stations to some degree.

In addition to these workshops, additional changes to the Preferred Alternative were made since the Draft EIS was published to minimize impacts or address challenges identified during preliminary engineering. These include:

- Adding the S 272nd Elevated Star Lake Station Option and the S 317th Elevated Alignment Option, to address higher than expected groundwater levels in both locations
- Shifting the alignment east approximately 15-feet to avoid impacts on the Puget Sound Energy Midway Substation
- Elevating the alignment entirely over Bingaman Creek and realigning the creek around the guideway columns, due to new information on fish use of the creek downstream
- Extending the pocket track between S 304th Street and S 317th Street to accommodate overnight storage of up to two 4-car trains
- Refining the footprint to allow for landscaping around project elements as mitigation for visual impacts

Compared to the I-5 Alternative with the Kent/Des Moines SR 99 East Station Option in the Draft EIS, these changes would have the following effects:

- Minor changes in properties affected, with fewer residential, business, and employee displacements
- Acquisition of one more high-risk hazardous materials site for the Federal Way Transit Center Station
- Reduced stream impacts from elevating the alignment over Bingaman Creek
- Reduced upland habitat impacts from footprint minimization efforts
- Additional visual and noise impacts with the S 272nd Elevated Star Lake Station Option and the S 317th Elevated Alignment Option
- Permanent impacts to a portion of the playfield at Mark Twain Elementary School from the S 272nd Elevated Star Lake Station Option

There would not be substantial differences in impacts related to the changes in the Preferred Alternative alignment and footprint for traffic, light rail operations, land use, social, air quality, vibration, energy, geology, utilities, and historic and archaeological resources.

For this Final EIS, the Federal Way Transit Center is the terminus of the project. Any of the Federal Way Transit Center station options would permit a future Link extension to Tacoma along either the SR 99 or I-5 corridor.

The FWLE could be constructed in phases, with an interim terminus station at either Kent/Des Moines or S 272nd Street. Therefore, where having an interim station would result in different impacts, this Final EIS analyzes the impacts of two shorter segments: Angle Lake to Kent/Des Moines and Angle Lake to S 272nd Street.

Interim Terminus

The southernmost station of the FWLE that could operate if the project were built in phases. It represents the "end of the line" for the project that could be successfully operated on an interim or long-term basis if necessary until the project were built to the Federal Way Transit Center.

The Preferred Alternative has no potential additional stations. However, other build alternatives include potential additional stations along SR 99 at S 216th Street and S 260th Street. Both station locations include options on the eastern and western sides of SR 99. These stations were not part of the ST2 funding package and are not included in the ST3 funding package, but could be added to the project if Sound Transit determines that they are consistent with those plans, if additional funding becomes available, and if an alignment on SR 99 were built.

The SR 99 to I-5 and I-5 to SR 99 alternatives use portions of both the Preferred and SR 99 alternatives. The Final EIS analyzes them with stations at three locations: Kent/Des Moines, S 272nd Street, and Federal Way Transit Center. Table 2-1 shows the station or alignment options that could be included with these alternatives.

2.2 FWLE Project Alternatives

This section describes in more detail the project alternatives shown in Exhibit 2-1.

2.2.1 No Build Alternative

The No Build Alternative includes projects, funding packages, and proposals in the central Puget Sound Region that are planned to occur with or without the FWLE. No Build improvements include roadway and transit actions by state, regional, and local agencies that are currently funded or committed, and those that are likely to be implemented based on approved and committed funding. The same population and employment growth projections by Puget Sound Regional Council through 2035 inform the No Build and build alternatives.

No Build Alternative

The No Build Alternative includes the transportation system and environment as they would exist without the proposed project.

The No Build Alternative includes the following major improvements by Sound Transit:

- Northgate Link Extension to Northgate Transit Center in Seattle
- Lynnwood Link Extension to Lynnwood Transit Center in Lynnwood
- East Link Extension to Overlake Transit Center in Redmond
- Service enhancements to Sound Transit Express bus and Sounder commuter rail systems
- A satellite light rail maintenance and operations facility in Bellevue

It also includes the SR 509 Extension Project (SR 509 Extension), a Washington State Department of Transportation (WSDOT) major freeway extension connecting the existing SR 509 terminus in SeaTac with I-5 at the northern end of the FWLE corridor. King County Metro, Pierce Transit, and Sound Transit are planning bus service modifications to take advantage of the SR 509 Extension. There will be more bus routes serving the FWLE corridor, with better headways. The bus network used in the Final EIS

SR 509 Extension Project

This project is sometimes known by other names, such as the "State Route 509: Corridor Completion/I-5/South Access Road Project" (2003 Record of Decision), the "SR 509 Corridor Freight and Congestion Relief Project" (WSDOT website), and the "SR 167, SR 509 and I-5 Puget Sound Gateway Project" (WSDOT website and Connecting Washington Transportation Bill).

analysis is consistent with the future service plans developed by the transit agencies. Appendix A of the Transportation Technical Report (Appendix G1 of this EIS) describes the major projects assumed in the No Build Alternative.

2.2.2 Components of Build Alternatives

This section summarizes the general components common to the four build alternatives and then describes in detail the alignments and the stations associated with each alternative, including park-and-rides and other station access.

All of the light rail alternatives would operate in exclusive right-of-way (referred to as light rail guideway), outside of traffic, to avoid operating and safety conflicts. This would assure the fast and frequent service needed to serve the FWLE corridor, with trains arriving as often as every 8 minutes and track speeds of up to 55 miles per hour (see Table 2-2 in Section 2.2.7 for the operating plan). The light rail guideway would be 30 to 40 feet wide, with two sets of tracks. This includes room for the poles and overhead catenary system (contact wire) needed to power the trains. Many sections would also contain space for emergency access and walls or barriers to restrict other access. Emergency access points would be located approximately every 2,500 feet. Alternatives along I-5 would require construction of new limited-access roads for these access points.

Elevated structures would require support columns or other bridging support structures. For at-grade guideway in areas with slopes, retaining walls might be needed next to an adjacent hillside or to support fill material below the guideway. In some places, sound walls would be added to the guideway or to retaining walls to reduce noise impacts.

2.2.2.1 Profiles

The profile along I-5 would vary between at-grade, elevated, and trench, based on topography. The developed nature of the FWLE corridor and large number of cross streets require an elevated guideway along SR 99. The profiles of the alternatives and options are shown in Exhibits 2-8 to 2-10, 2-12, 2-13, and 2-17 through 2-23 later in this chapter.

Light Rail Profiles

Light rail can have several profile types: **at-grade**, **elevated**, **trench**, **retained fill**, or **tunnel**. "At-grade" means that the rail track is at the same grade (ground level) as the surrounding terrain. Tunnel profiles were ruled out for the FWLE during the alternatives analysis process.

At-Grade

At-grade light rail operates best in areas with less than 6 percent grade and in areas with adequate space within reserved street rights-

of-way or off-street corridors. At-grade is typically the least-cost profile. This project would have an at-grade profile only within WSDOT's I-5 right-of-way for the Preferred Alternative, the SR 99 to I-5 Alternative, and the I-5 to SR 99 Alternative. No at-grade crossings of roadways are proposed.

Vegetation Next to the Guideway

Per Sound Transit's Design Criteria Manual, Sound Transit must maintain an approximately 11-foot zone beyond the guideway footprint free of trees that could overhang onto the guideway. Depending on the profile type and site conditions, the width of this zone varies slightly. Sound Transit would plant shrubs and groundcover in this area.

Elevated

Sound Transit uses light rail on elevated structures where the system must be grade-separated to cross over geographic or physical barriers and accommodate higher train frequencies, and where at-grade trackway might not be appropriate for surface corridors with high traffic levels. An elevated guideway must have a minimum clearance of at least 16.5 feet near roadways, but topography and other considerations can result in a profile as high as 50 feet or more. Pier supports holding up the guideway are typically about 10 feet by 10 feet square at the ground, although the underground support structure might be wider.

An elevated guideway can travel in the median of existing roadways, along the side of the roadway, or in off-street corridors.

Trench and Retained Fill

With a trench profile, the trackway is cut into the ground with a retaining wall on one side or both sides. With a retained fill profile, the trackway is built above the ground surface with a retaining wall on one side or both sides supporting the guideway. Portions of the guideway might involve trench or retained fill because of topography or to travel under roadways.

2.2.2.2 Stations

The project includes three light rail stations and two potential additional stations. The stations would be elevated, at-grade, or in a trench depending upon the site conditions and the engineering requirements of the guideway.

Boarding platforms about 380 feet long would serve four-car trains with center platforms (in the center with tracks on both sides) (Exhibit 2-2) or side platforms (on the outer side of the tracks). Escalators, elevators, and stairs would provide access to the elevated or trenched platforms (Exhibit 2-3). All stations would meet Americans with Disabilities Act (ADA), public access, fire code, and life-safety requirements.

Station Features

Stations would accommodate pedestrian, bicycle, and bus access. Each station would have a bicycle storage area with space for expansion. The station plans include connecting bus stops, paratransit stops, and handicapped-accessible drop-off areas. All station areas would accommodate a traction power substation and a signal bungalow. They would also include ticket vending machines, closed-circuit television cameras, a public address system, emergency phones, and variable message signage. Most of the stations would have parking for transit patrons in either a garage or a surface lot.

Depending on funding, Sound Transit may build the FWLE in phases. The Kent/Des Moines Station or the S 272nd Street Station (or both in different phases) could serve as an interim terminus station before construction extends to the Federal Way Transit Center. An interim terminus station would have a tail track beyond the station platform, parking for operators, and office and storage space for light maintenance activities, such as cleaning interiors of vehicles.

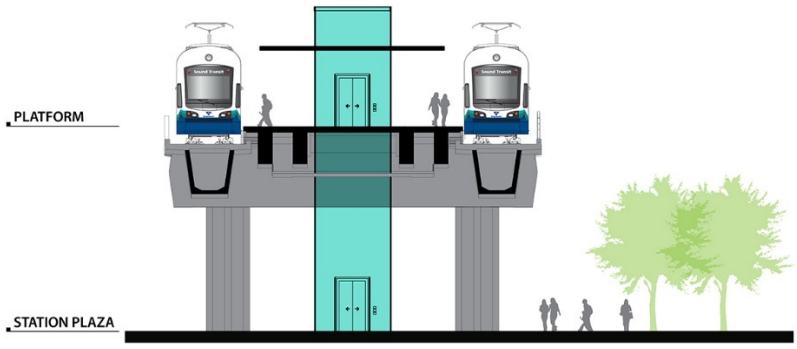


EXHIBIT 2-2
Elevated Center Platform Station

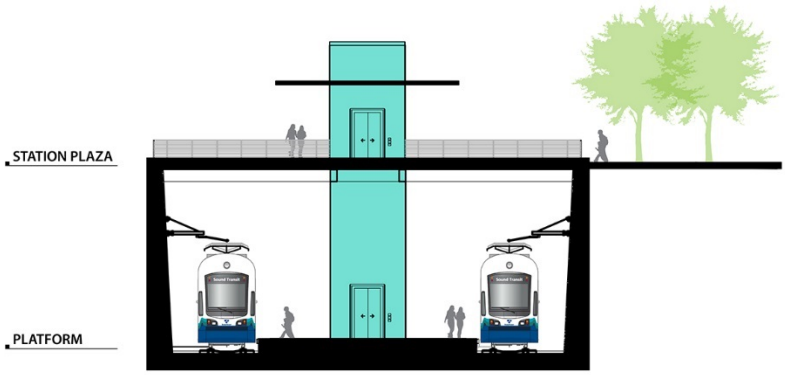


EXHIBIT 2-3
Trench Center Platform Station

2.2.2.3 Access

Link riders could access stations by bus, automobile, bicycle, and walking. Sound Transit and King County Metro transit routes would provide service based on the FWLE Conceptual Transit Service Plan, which is described in more detail in the Transportation Technical Report in Appendix G1. Each station would include an area for riders to transfer to or from buses. Depending on the projected level of future bus service, stations would have either bus stops on nearby streets or dedicated bus facilities within the station area.

Parking lots or garages would be built at the Kent/Des Moines, S 272nd Street, and Federal Way Transit Center stations, but not at the potential additional stations at S 216th Street and S 260th Street. Each station's parking allocation reflects the existing parking supply and use, surrounding land use characteristics, multi-modal access expectations (pedestrian, bicycle, arterial and highway connections, and transit transfers), and parking use at comparable facilities. Extra parking would be provided at the Kent/Des Moines Station if it were an interim terminus, but only temporarily because the demand for parking would shift to the south when the project extended to the S 272nd Street and Federal Way Transit Center stations. Additional parking would not be needed at the S 272nd Street station if it were

an interim terminus. All stations would have areas for rider drop-off/pick-up. Sound Transit would make road improvements (such as sidewalks, bike lanes, or widening to accommodate projected traffic levels) or extensions at some stations.

2.2.2.4 Tail Tracks and Crossovers

Tail tracks are tracks that extend past a terminus station far enough to allow the temporary layover of one four-car train—typically 850 feet beyond the end of the station platform. They are included at all FWLE terminus station alternatives, including interim ones.

Crossover tracks connect two parallel tracks and allow trains to change safely from one track to the other (Exhibit 2-4). FWLE will include crossovers in various locations to allow for maintenance that requires removing one track from service, to bypass a stalled train, to turn trains in the opposite direction, or to operate in the event of emergencies or blockages. Crossover trackwork requires special signaling control equipment under or adjacent to the guideway.

EXHIBIT 2-4
Crossover Tracks

2.2.2.5 Overhead Catenary System

An overhead catenary system (OCS) delivers electricity to light rail vehicles. The OCS requires two wires for each track, supported on 15- to 23-foot-high steel poles about 200 feet apart (Exhibit 2-5). The poles are typically between the two tracks.

EXHIBIT 2-5
Overhead Catenary System

2.2.2.6 Traction Power Substation

Traction power substations (TPSSs) boost the power to the OCS. The TPSSs are metal buildings about 20 feet wide by 60 feet long, with an additional 10 to 20 feet of clearance required around each unit, screened by a wall or fence (Exhibit 2-6). TPSSs would be at the Kent/Des Moines, S 272nd (Redondo or Star Lake), and Federal Way Transit Center stations, and near S 221st Street and S 288th Street. They would likely be placed in the footprint of a light rail station or beneath the guideway.

EXHIBIT 2-6
Traction Power Substation

2.2.3 Preferred Alternative

The Preferred Alternative (Exhibits 2-7 and 2-8) would leave the Angle Lake Station and cross to the east side of SR 99 near the proposed SR 509 Extension (see Section 2.6 for additional information on the SR 509 Extension). It would continue in the future SR 509 WSDOT right-of-way until it reaches I-5. From S 211th Street to S 231st Street, the alignment would be west of the WSDOT right-of-way to allow for the planned future build-out of I-5. Appendix F, Conceptual Design Drawings, shows the proposed SR 509 Extension in relation to the FWLE. Between S 231st Street and S 317th Street, the alignment would be mostly within the I-5 right-of-way, except to access stations. Some parts of this alternative would be at-grade (Exhibit 2-7) or in a trench where topography allows. All road crossings would be grade-separated. All stations would have center platforms and transit connections.

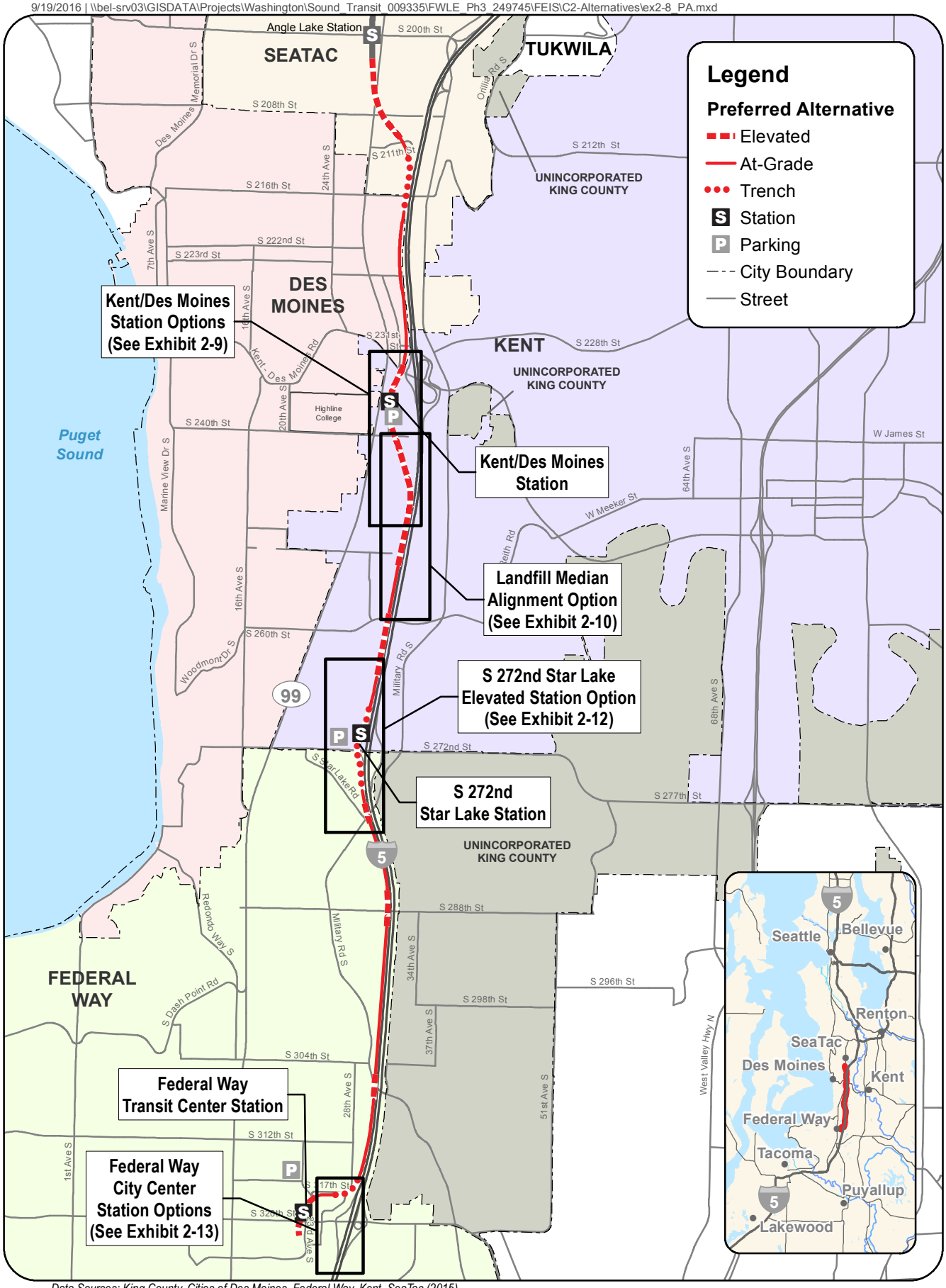
EXHIBIT 2-7
Typical Cross-Section, At-Grade Profile - Preferred Alternative

2.2.3.1 Kent/Des Moines Station

This elevated station would be along the west side of 30th Avenue S, spanning a new S 236th Street that would extend between SR 99 and the I-5 right-of-way. This would place it approximately 200 feet east of the SR 99 East Station Option in the Draft EIS. It would have approximately 1,000 parking spaces (500 surface, 500 in a new garage) if used as an interim terminus. Parking would be reduced to 500 spaces when the system was extended south with additional parking at other stations. After construction of the station, approximately 1.2 acres of surplus staging area between the proposed surface parking lots and S 236th Street would be available for TOD.

Kent/Des Moines Station

The Preferred Kent/Des Moines Station would include a new S 236th Street east and west of SR 99 to provide access to the station and parking areas. In a change from the Draft EIS, two other roadways would connect SR 99 to 30th Avenue S at S 234th and S 238th streets to provide parking access. S 236th Street would be used for bus and paratransit access as well. Bus layover space would be provided east of 30th Avenue S.



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

EXHIBIT 2-8
Preferred Alternative

Federal Way Link Extension

Non-motorized access improvements proposed in the station area (generally between Kent-Des Moines Road and S 240th Street) as part of the project include:

- Sidewalks on SR 99, S 236th Street, 30th Avenue S, the new S 234th Street, and the new S 238th Street
- Shared-use path on the east side of 30th Avenue S and on the south side of S 236th Street (west of SR 99)

2.2.3.2 S 272nd Star Lake Station

This trenched station would be at the Star Lake Park-and-Ride and have up to 1,240 parking spaces in a new parking garage, about 700 more than the existing parking. Its construction would require realigning 26th/28th Avenue S for approximately 250 feet. Access to the station and parking garage would be from 26th/28th Avenue S. This station would be approximately 140 feet north of its location in the Draft EIS, but would still be on the park-and-ride property.

Non-motorized access improvements proposed in the station area as part of the project include:

- Pedestrian crossing improvement of 28th Avenue S north of Star Lake Park-and-Ride
- An ADA accessible pathway to the station plaza from S 272nd Street
- Sidewalk improvements along 26th/28th Avenue S and S 272nd Street
- Pedestrian and bike connections from 28th Avenue S and S 272nd Street to station plaza
- Improved flyer stop connection
- Pedestrian intersection improvements at 26th Avenue S and S 272nd Street
- A shared use path on the south side of S 272nd Street, west of 26th Avenue S
- Lighting and aesthetic improvements on S 272nd under I-5
- Pedestrian safety improvements across the northbound on-ramp from S 272nd Street

Other Kent/Des Moines Station Non-Motorized Access Improvements

Through the stakeholder workshops, the following non-motorized access improvements were also recommended for local jurisdictions to lead:

- Connections to the Barnes Creek Trail and Green River Trail (via Veterans Drive and Kent-Des Moines Road)
- Access across Kent-Des Moines Road at 30th Avenue S and improvements on 30th Avenue S north of Kent-Des Moines Road
- A connection south along I-5 to S 260th and 272nd streets
- Access north to residential neighborhoods and west through the Highline College campus and to the Des Moines waterfront
- A connection east over I-5 near S 240th Street
- A connection to the I-5 flyer stop at Kent-Des Moines Road
- A mid-block crossing of SR 99 south of S 240th Street

Other S 272nd Star Lake Station Non-Motorized Access Improvements

Through the stakeholder workshops, the following non-motorized access improvements were also recommended for local jurisdictions to lead:

- Improvements to existing bike routes on 16th Avenue S and Military Road S
- Creation of bike routes on S Star Lake Road and S 272nd Street
- A pedestrian path connection between Redondo Heights Park-and-Ride and S 272nd Street
- Extension of shared-use path on the south side of S 272nd Street
- Improved bike and pedestrian access under I-5
- Shared use path on north side of S 272nd Street between I-5 and Military Road S
- Improved pedestrian lighting on S 272nd Street.

2.2.3.3 Federal Way Transit Center Station

This station would be elevated and in a north-south orientation south of the existing Federal Way Transit Center, parallel to 23rd Avenue S and north of S 320th Street, unlike in the Draft EIS, where this station was oriented east-west. The station would have a 400-space parking garage and a pedestrian connection to the existing 1,200-space Federal Way Transit Center parking garage. The transit center would be relocated south to the west side of the station to more directly link bus service and light rail. A roundabout would be added to the intersection of S 317th Street and 23rd Avenue S along with a one-way transit-only road into the station area and transit center for more direct bus access. This would be different from the Draft EIS, which used the existing transit center for bus circulation.

Non-motorized access improvements proposed in the station area as part of the project include:

- Sidewalks on new S 318th and 319th streets between 21st Avenue S and 23rd Avenue S and along new 22nd Avenue S between S 317th and 320th streets
- Sidewalks and protected pedestrian crossings at new roundabout at 23rd Avenue S and S 317th Street
- New pedestrian crossing of S 317th Street at 22nd Avenue S
- A shared-use pathway on south side of S 317th Street between 28th Avenue S and 23rd Avenue S

Other Federal Way Transit Center Station Non-Motorized Access Improvements

Through the stakeholder workshops, the following non-motorized access improvements were also recommended for local jurisdictions to lead:

- Sidewalks east of Town Square Park
- Mid-block crossings of S 316th Street at 21st Avenue S and of SR 99 at S 318th Street
- Consolidated driveways and improved sidewalks along S 320th Street between 23rd Avenue S and SR 99
- Completion of proposed bike routes along S 324th Street, 23rd Avenue S, Gateway Center Boulevard S, 28th Avenue S, and S 312th Street
- Wayfinding to connect S 320th Park-and-Ride and Federal Way Transit Center Station
- Pedestrian and bike connection to east of I-5

2.2.3.4 Kent/Des Moines Station Options

All Kent/Des Moines Station options (Exhibit 2-9) would have center platforms and parking for approximately 1,000 vehicles (500 surface, 500 in a new garage) if used as an interim terminus. Parking could be reduced to 500 spaces when the station is no longer the terminus.

Kent/Des Moines I-5 Station Option

This station option would be elevated adjacent to the west side of I-5. It would transition into the I-5 right-of-way south of S 240th Street. This station would include construction of a new S 236th Street.

The at-grade station option would be next to the I-5 right-of-way, just south of S 240th Street, and would follow the same alignment as the I-5 Station Option.

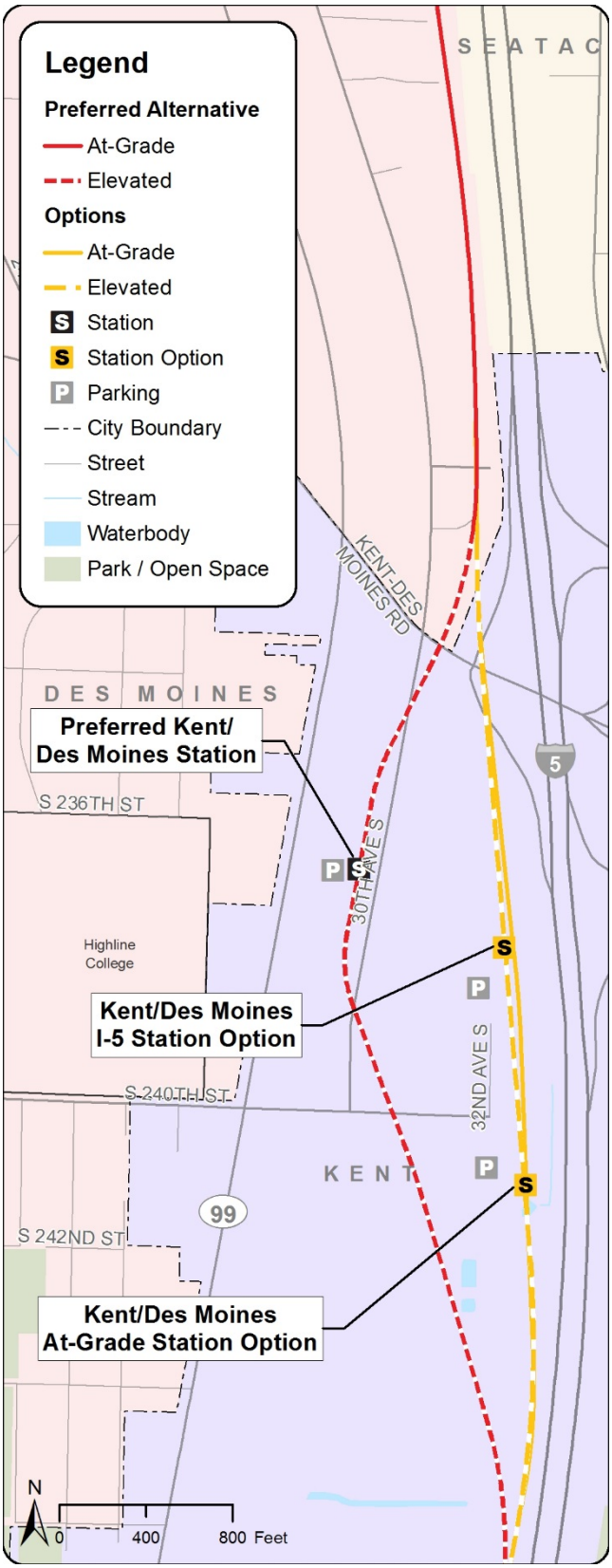


EXHIBIT 2-9
Kent/Des Moines Station Options

2.2.3.5 Landfill Median Alignment Option

To avoid the potential engineering challenges of crossing the Midway Landfill, the Landfill Median Alignment Option was developed during the Draft EIS to address uncertainties about geologic conditions under the landfill and regulatory requirements for construction. Geotechnical borings completed to date confirm that crossing the landfill is viable. This alignment option (Exhibits 2-10 and 2-11) would transition to the I-5 median south of S 240th Street and then back to the west side of I-5 at approximately S 252nd Street. It would span the southbound lanes of I-5 to access the median.

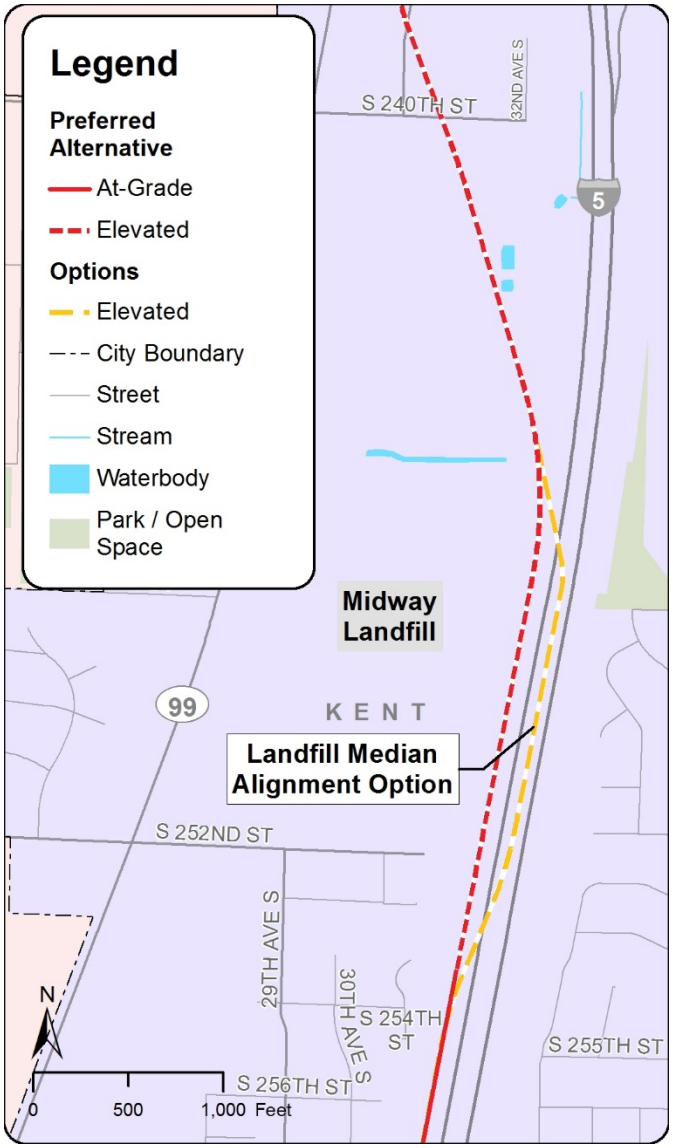


EXHIBIT 2-10
Landfill Median Alignment Option

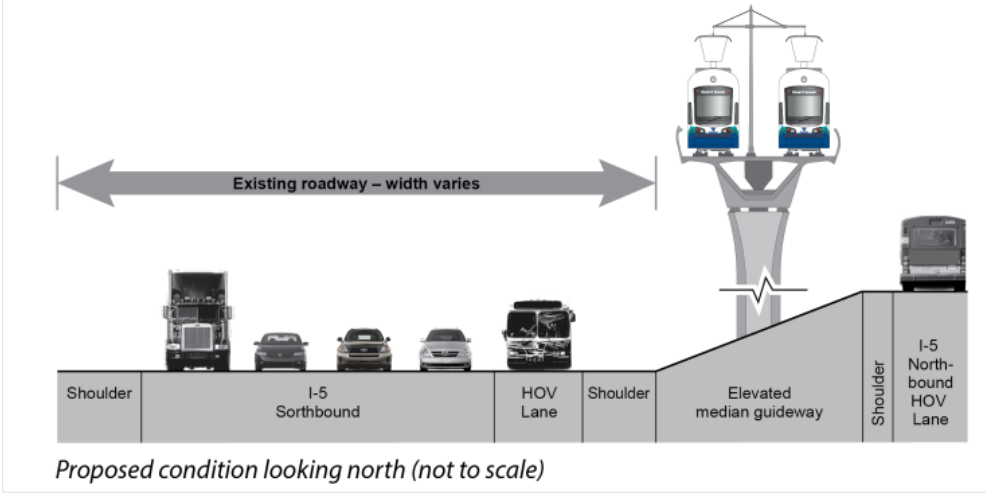


EXHIBIT 2-11
Typical Cross-Section – Landfill Median Alignment Option

2.2.3.6 S 272nd Star Lake Elevated Station Option

The S 272nd Star Lake Elevated Station Option would be an elevated alignment for approximately 3,000 feet (Exhibit 2-12). The station would be in the same location as the trench station, and the layout of the parking garage and bus circulation would be the same. The guideway would be on retained fill on the east side of 28th Avenue S up to the station, and then on columns from the station to the south side of S 272nd Street. It would return to retained fill to cross the east side of the Mark Twain Elementary School property before entering the I-5 right-of-way south of the school. This option was added due to the potential challenges in constructing, operating, and maintaining a trenched facility where groundwater levels are higher than had been anticipated.

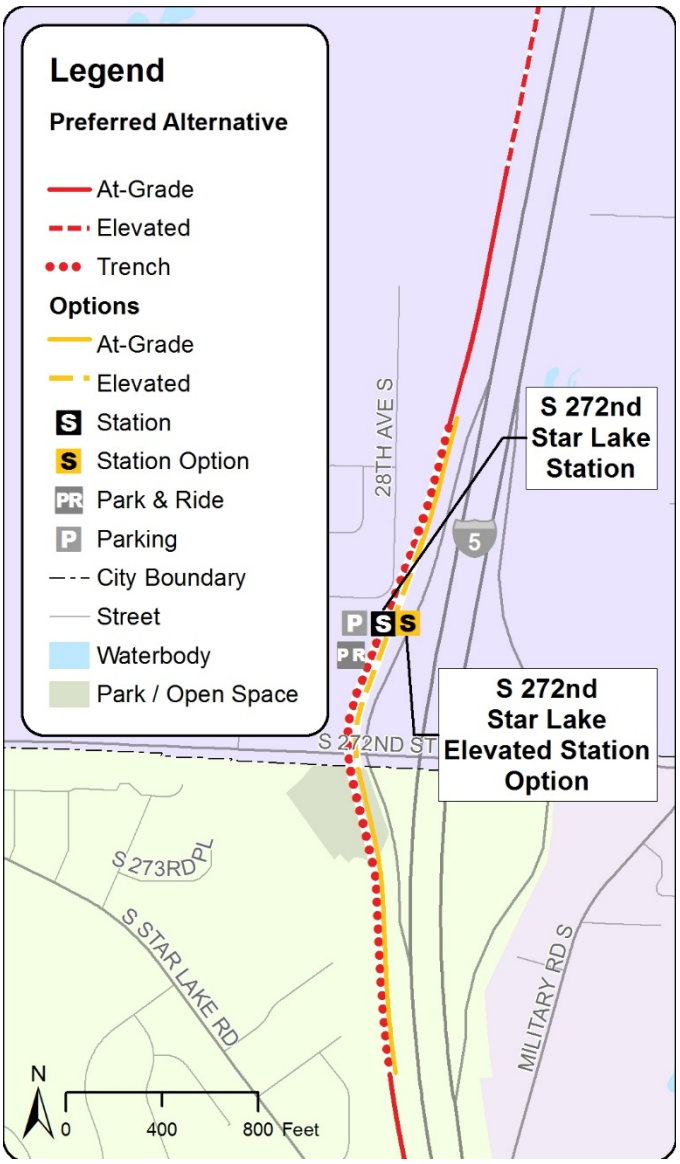


EXHIBIT 2-12
S 272nd Star Lake Elevated Station Option

2.2.3.7 S 317th Elevated Alignment Option

This alignment option would be an elevated guideway between approximately S 312th Street and 23rd Ave S (Exhibit 2-13). The alignment would be the same as the Preferred Alternative except for crossing the 28th Avenue S and S 317th Street intersection. It would span over the intersection on the north side of the roundabout. South of S 317th Street, the alignment is the same as the Preferred Alternative and would not change the Federal Way Transit Center Station. This option was added due to the potential challenges in constructing, operating, and maintaining a trenched facility where groundwater levels are higher than had been anticipated. This option could not be combined with either of the Federal Way City Center station options due to differences in profiles.

2.2.3.8 Federal Way City Center Station Options

All the Federal Way City Center station options (Exhibit 2-13) have center platforms.

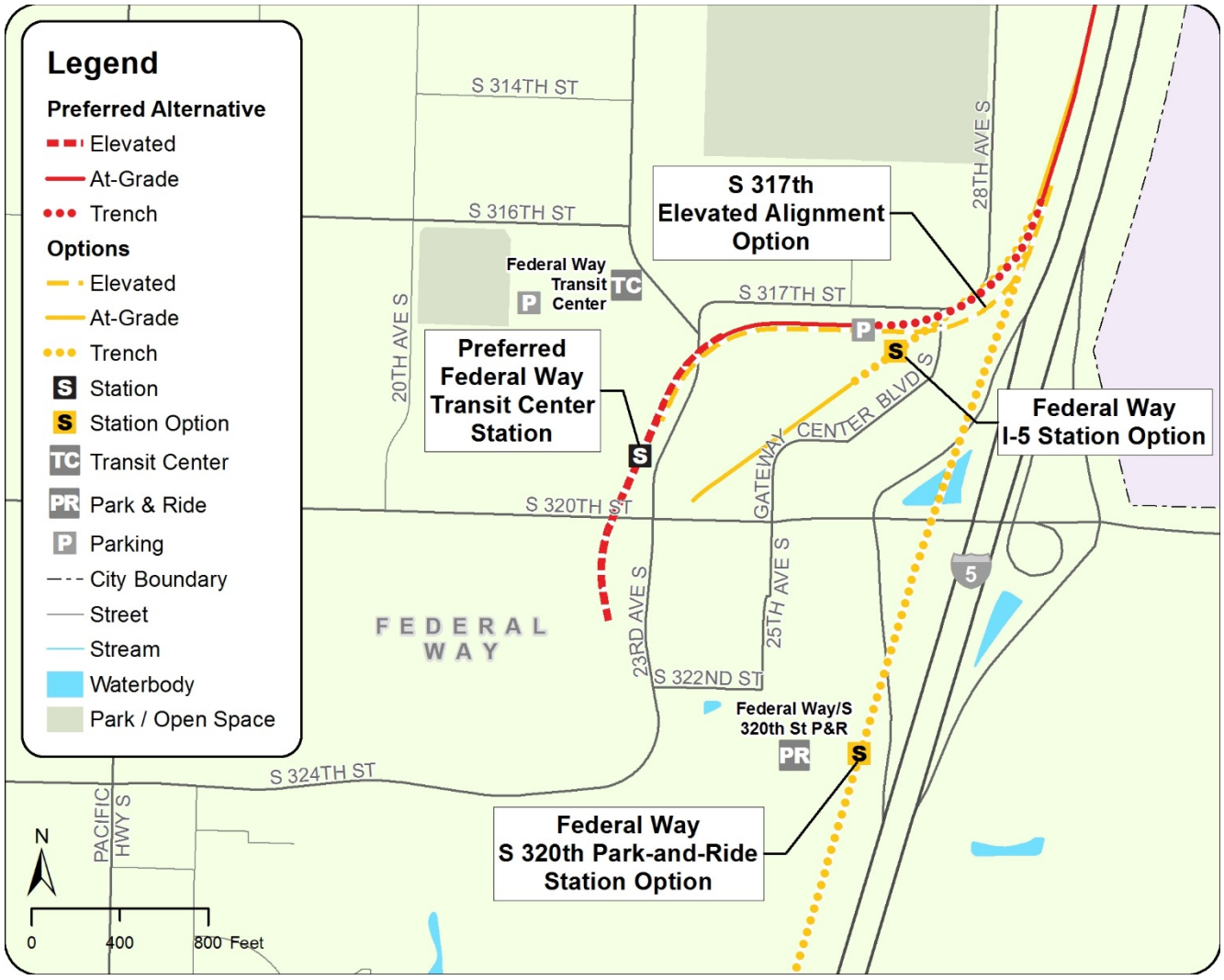


EXHIBIT 2-13
S 317th Elevated Alignment Option and Federal Way City Center Station Options

Federal Way I-5 Station Option

This station option would be both in a trench and at-grade and close to I-5, between S 317th Street and S 320th Street, parallel to Gateway Center Boulevard. It would add 400 surface parking spaces to the existing 1,200 spaces at the transit center.

Federal Way S 320th Park-and-Ride Station Option

This station option would be at-grade near the west side of I-5 at the S 320th Street Park-and-Ride. It would add about 700 parking spaces in a parking garage, for a total of approximately 1,600 spaces. Transit service would be provided, including connections to the Federal Way Transit Center.

2.2.4 SR 99 Alternative

The SR 99 Alternative (Exhibit 2-14) would exit the Angle Lake Station along 28th Avenue S, cross over WSDOT's proposed SR 509 Extension (see Section 2.6), and transition to the existing SR 99 median near S 208th Street. It would remain in the median of SR 99 except at station areas and at the crossings of Kent-Des Moines Road and S 272nd Street. The alignment would be largely in the public right-of-way, and both the alignment and the stations would be elevated.

It would require additional right-of-way in some areas for intersection widening or station access improvements. The three stations below would be center-platform configurations. Any potential additional stations would have side-platform configurations. Typical cross-sections for median, west, and east alignments are shown on Exhibits 2-15, 2-16, and 2-17.

2.2.4.1 Kent/Des Moines SR 99 West Station

This station would be on the west side of SR 99 between S 236th Street and S 240th Street. After exiting the station, the alignment would transition back to the SR 99 median south of S 240th Street. This station would have approximately 1,000 parking spaces (500 surface, 500 in a new garage) if the station were an interim terminus. Parking could be reduced by about half when the station is no longer the terminus.

Kent/Des Moines Station

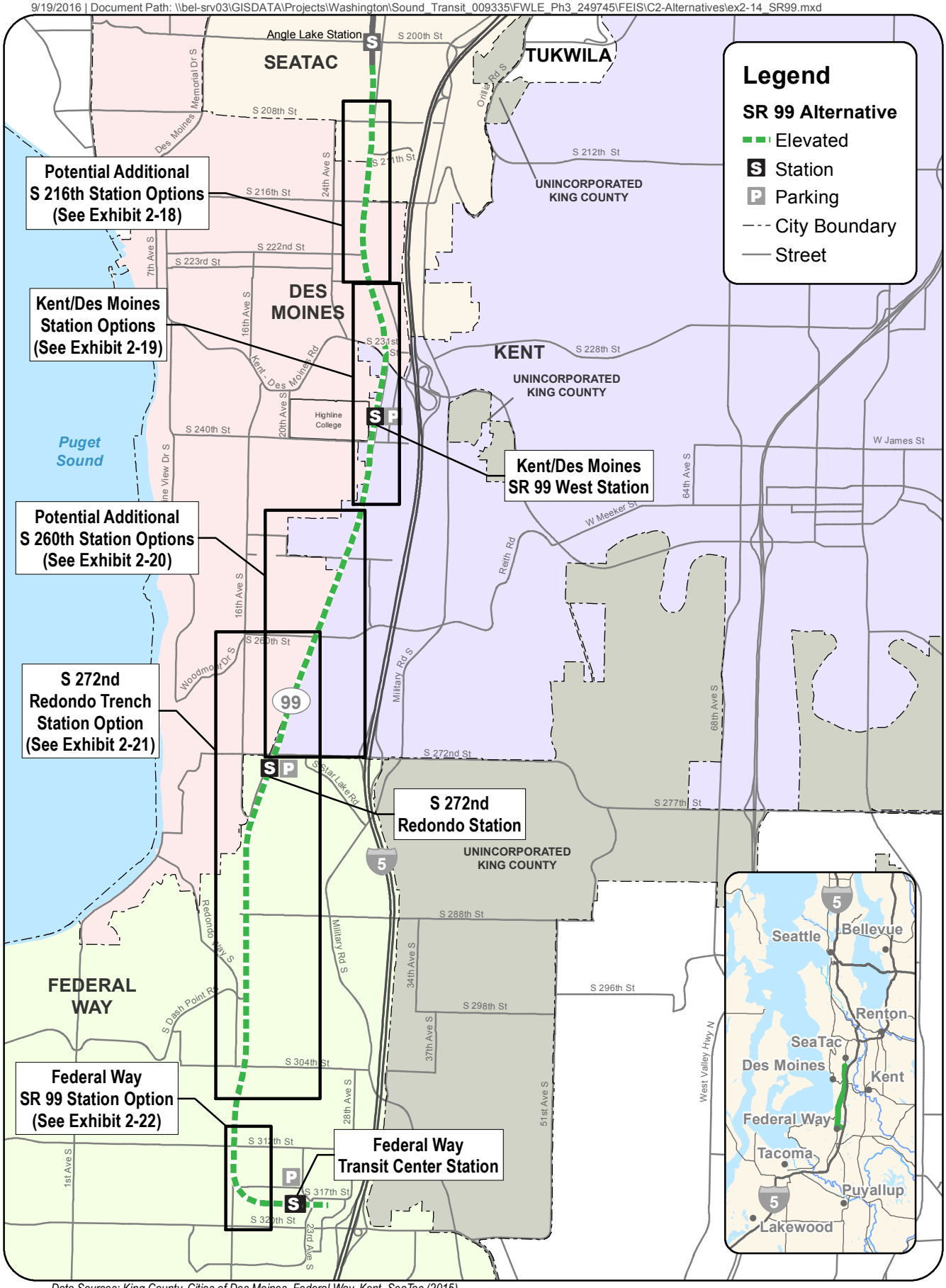
The Kent/Des Moines Station and station options for the SR 99 Alternative would include construction of a new S 236th Street east of SR 99 to provide access to the station and parking area.

2.2.4.2 S 272nd Redondo Station

The guideway would transition to the east side of SR 99 north of S 272nd Street before entering an elevated station at the existing Redondo Heights Park-and-Ride. This station would have access from SR 99 and S 272nd Street and approximately 1,400 combined surface and garage parking spaces, about 700 more than now. It would not need additional parking if it were a terminus. After exiting the station, the alignment would transition back to the SR 99 median near S 279th Street.

2.2.4.3 Federal Way Transit Center Station

The alignment would exit the SR 99 median north of S 316th Street and head east to an elevated Federal Way Transit Center Station on the south side of the existing transit center. This station would add approximately 400 new surface parking spaces to the 1,200 existing parking spaces.



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

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EXHIBIT 2-14
SR 99 Alternative

Federal Way Link Extension

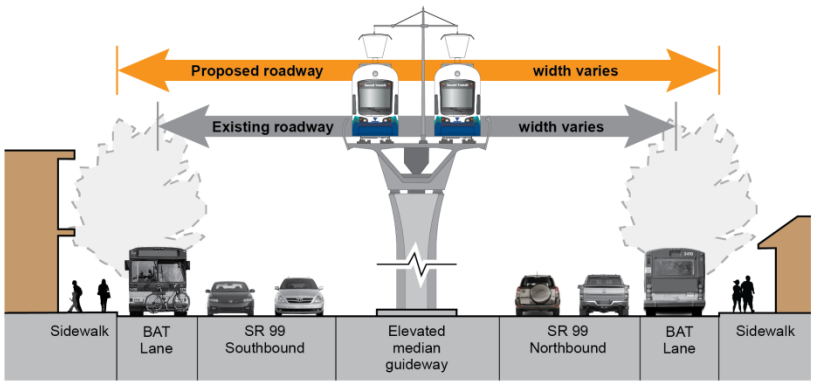


EXHIBIT 2-15
Typical Cross-Section - SR 99 Alternative - Median

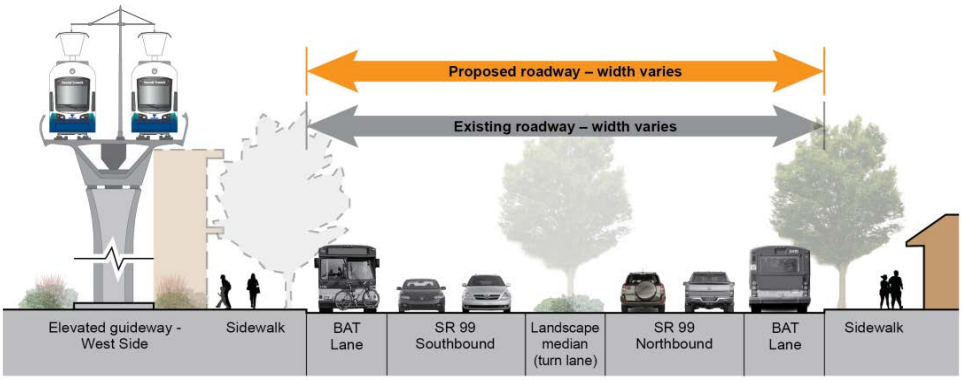


EXHIBIT 2-16
Typical Cross-Section - SR 99 Alternative and Station Options- West or East Side

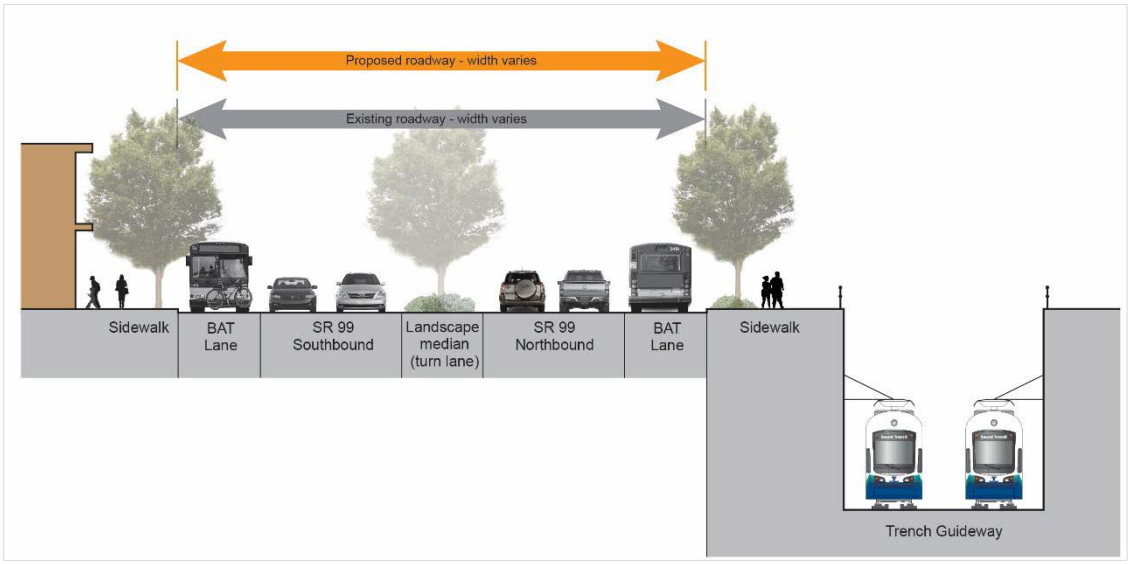


EXHIBIT 2-17
Typical Cross-Section for SR 99 Station Options with Trench-West or East Side

2.2.4.4 S 216th Potential Additional Station

A potential additional S 216th Station (Exhibit 2-18) could be built on either side of SR 99. A side-platform design would preserve the ability to add the station at a later time. There would be no patron parking built with this station. This station is not funded under ST2 or the proposed ST3.

S 216th West Station Option

Similar to the SR 99 Alternative, the alignment for this potential additional station would exit the Angle Lake Station and follow the SR 509 right-of-way to the west side of SR 99. It then would remain behind the sidewalk on the west side of SR 99 to S 216th Street, entering a trench near S 211th Street. It would remain in a trench, with the station under S 216th Street, until it approached S 220th Street. Entrances to the station would be on the north and south sides of S 216th Street. After exiting the trench, the alignment would cross S 220th Street and transition to the SR 99 median.

S 216th East Station Option

The alignment for this potential additional station would be the same as the SR 99 Alternative until approximately 300 feet north of S 216th Street, where it would transition to the east side of SR 99 and enter an elevated station south of S 216th Street. After exiting the station, it would transition back to the SR 99 median near S 222nd Street.

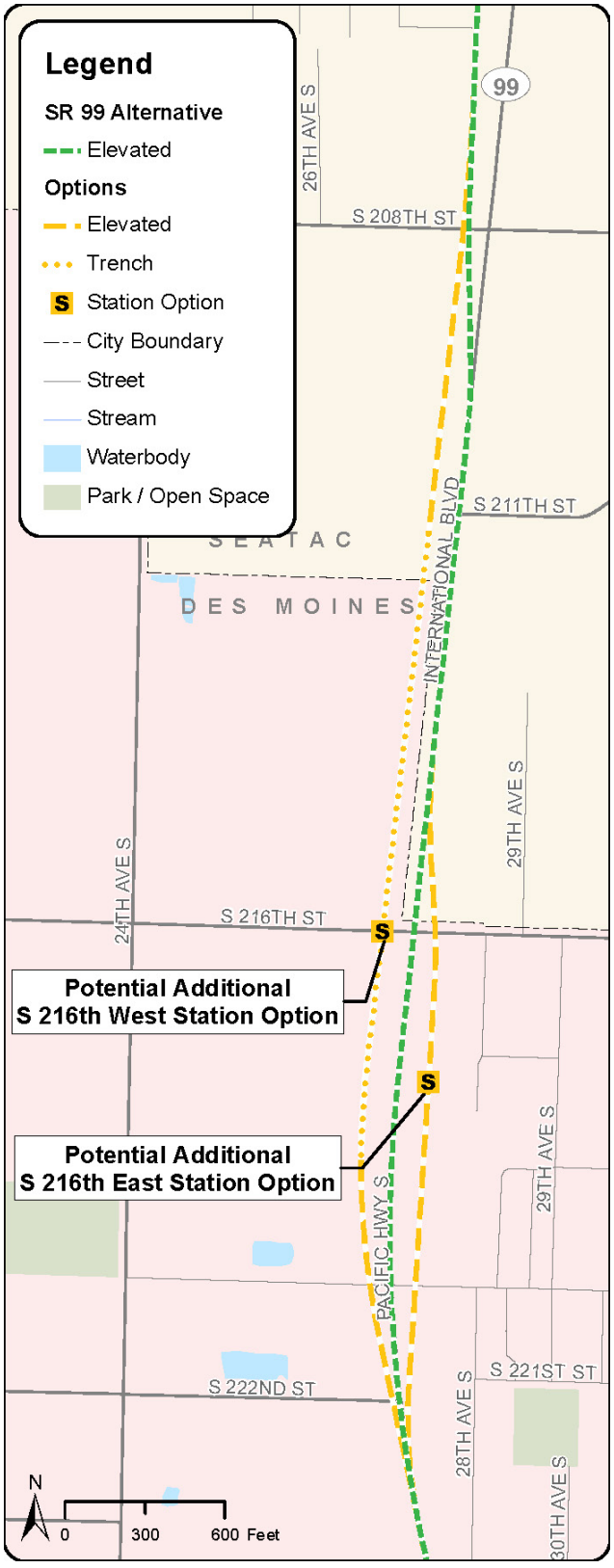


EXHIBIT 2-18
S 216th Potential Additional Station Options

2.2.4.5 Kent/Des Moines Station Options

All Kent/Des Moines station options (Exhibit 2-19) would have center platforms and parking for approximately 1,000 vehicles (500 surface, 500 in a new garage) if an interim terminus. The parking could be reduced to 500 spaces when the station is no longer the terminus.

Kent/Des Moines HC Campus Station Option

The alignment for this station option would transition to the west side of SR 99 north of S 226th Street and generally follow the east side of 28th Avenue S across Kent-Des Moines Road. It would then enter a trench south of S 232nd Street and continue in a trench to a station on the eastern edge of the Highline College (HC) campus east parking lot and then under S 240th Street. It would become elevated and return to the SR 99 median south of S 240th Street. If this station option were combined with the S 216th West Station Option, the alignment would remain on the west side of SR 99 between these two station options.

Kent/Des Moines SR 99 Median Station Option

The alignment for this station option would transition from the west side of SR 99 south of Kent-Des Moines Road to enter the median. The station would be in the SR 99 median at approximately S 236th Street. The alignment would stay in the median after exiting this station.

Kent/Des Moines East Station Option

This station option would transition to the east side of SR 99 north of Kent-Des Moines Road and would span this intersection to enter an elevated station on the east side of SR 99, north of S 240th Street. The alignment would return to the SR 99 median south of S 240th Street.

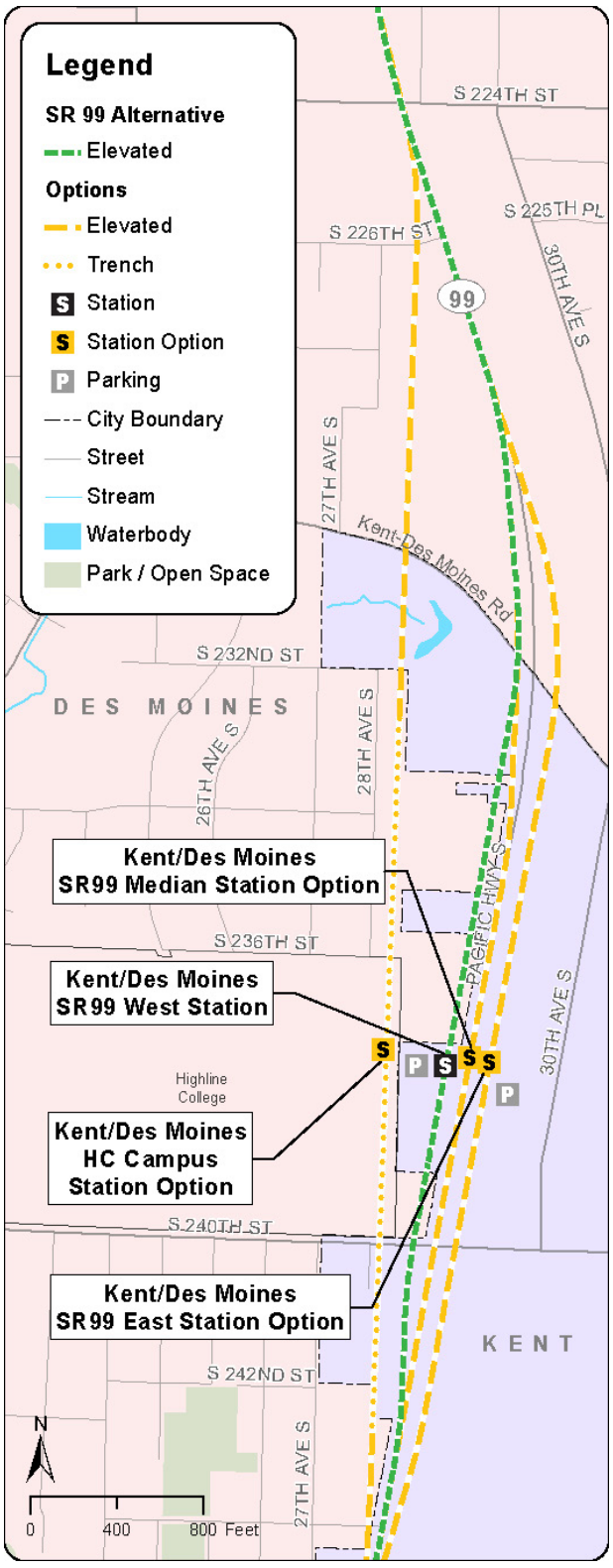


EXHIBIT 2-19
Kent/Des Moines Station Options

2.2.4.6 S 260th Potential Additional Station

The project could have a potential additional station (Exhibit 2-20) on either the east or west side of SR 99. A side-platform design would preserve the potential for this station to be built at a later time. There would be no patron parking built with this station. This station location is not funded under ST2 or the proposed ST3.

S 260th West Station Option

The alignment for the S 260th West potential additional station would transition to the west side of SR 99 south of S 240th Street and continue behind the sidewalk to an elevated station north of S 260th Street. It would transition back to the SR 99 Alternative just south of S 260th Street.

S 260th East Station Option

The alignment for the S 260th East potential additional station would transition to the east side of SR 99 north of S 260th Street and continue to a station straddling S 260th Street. Entrances to the station would be on both sides of S 260th Street. The alignment would then continue on the east side of SR 99 to the S 272nd Street Redondo Station and reconnect with the SR 99 Alternative.

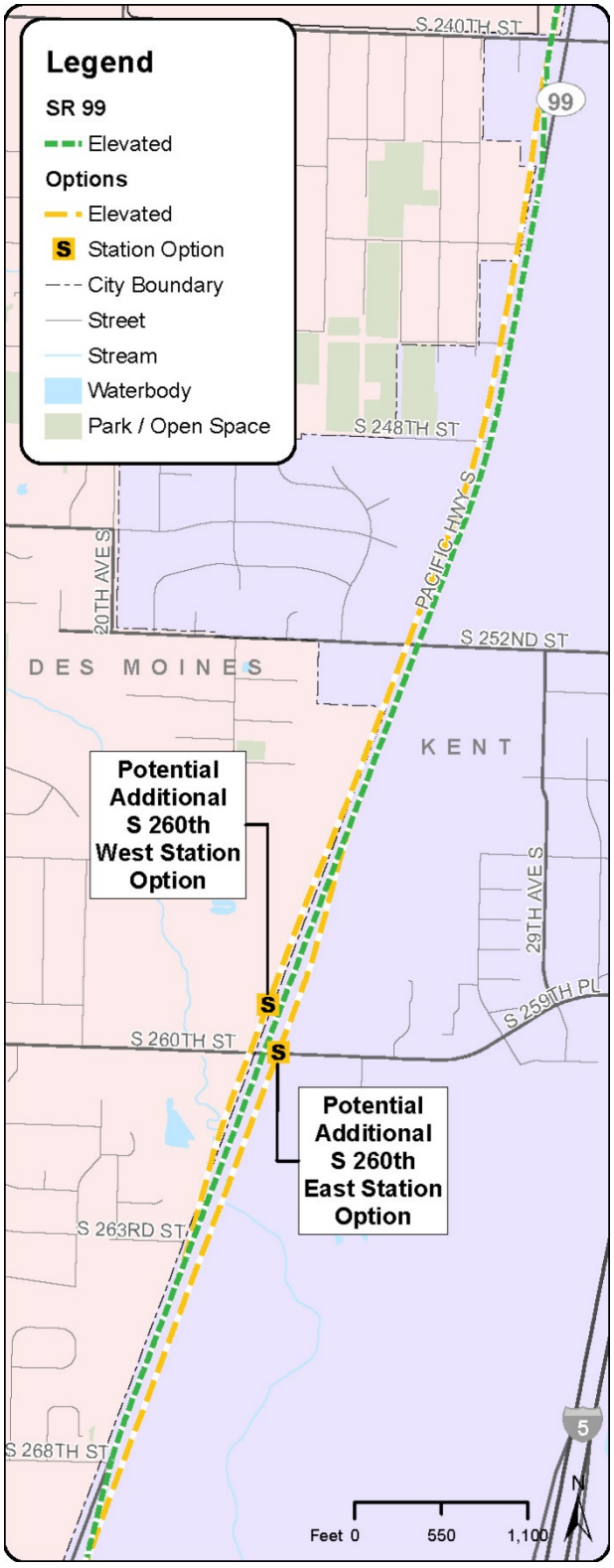


EXHIBIT 2-20
S 260th Potential Additional Station Options

2.2.4.7 S 272nd Redondo Trench Station Option

The alignment for the S 272nd Redondo Trench Station Option (Exhibit 2-21) would shift from the SR 99 median to the east side of SR 99 just south of S 260th Street and then transition to a trench by S 272nd Street. The guideway would cross under S 272nd Street to a trench station at the existing Redondo Heights Park-and-Ride and then continue south, crossing under SR 99 near S 279th Street. It would travel behind properties fronting the west side of SR 99 and would be elevated but lower than SR 99, due to the terrain sloping down to the west. It would cross over 16th Avenue S, enter an existing utility corridor south of S 288th Street, and follow this corridor south and span over Dash Point Road. It would then travel on the east side of 16th Avenue S until SR 99 near S 308th Street, where it would transition back to the SR 99 median.

Parking for this station would be the same as described for the S 272nd Redondo Station.

2.2.4.8 Federal Way SR 99 Station Option

The alignment for the Federal Way SR 99 Station Option (Exhibit 2-22) would leave the SR 99 median between S 308th Street and S 312th Street, and would travel southeast outside of existing public right-of-way to an elevated center-platform station between SR 99 and 20th Avenue S, straddling S 316th Street. This station would add 400 new parking spaces to the 1,200 existing parking spaces at the Federal Way Transit Center.

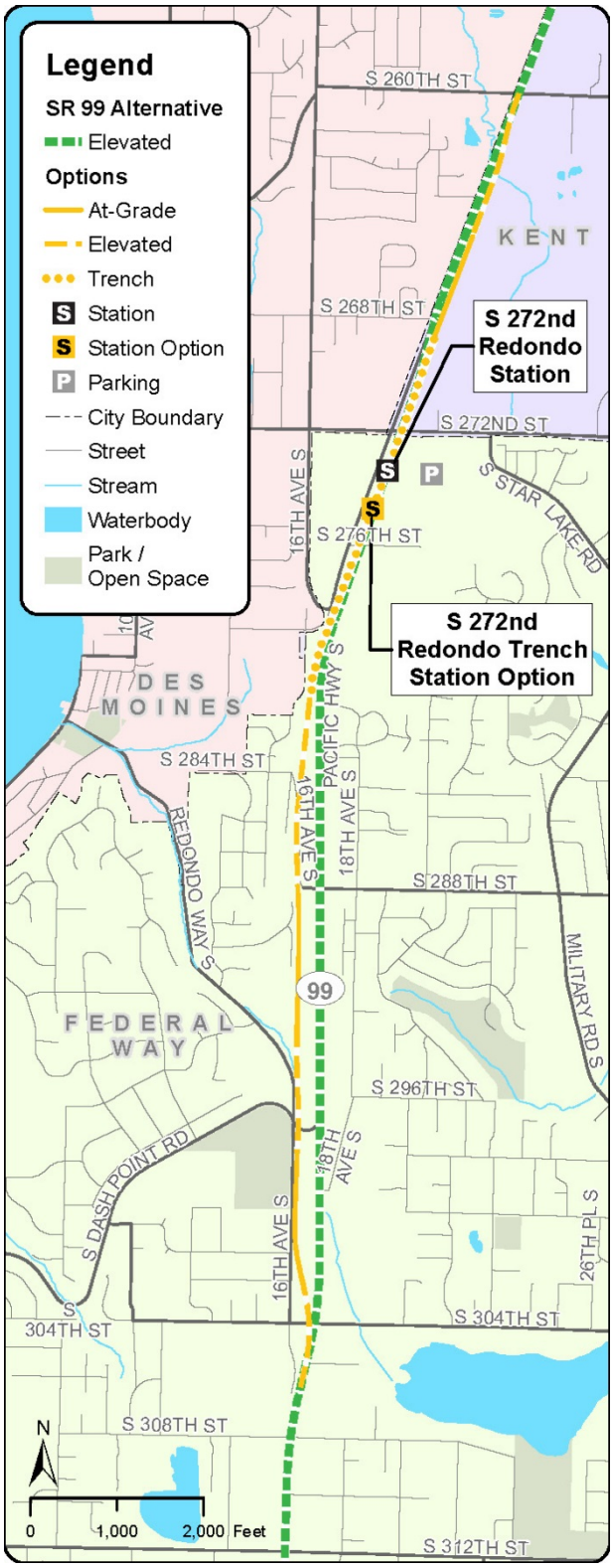


EXHIBIT 2-21
S 272nd Redondo Trench Station Option

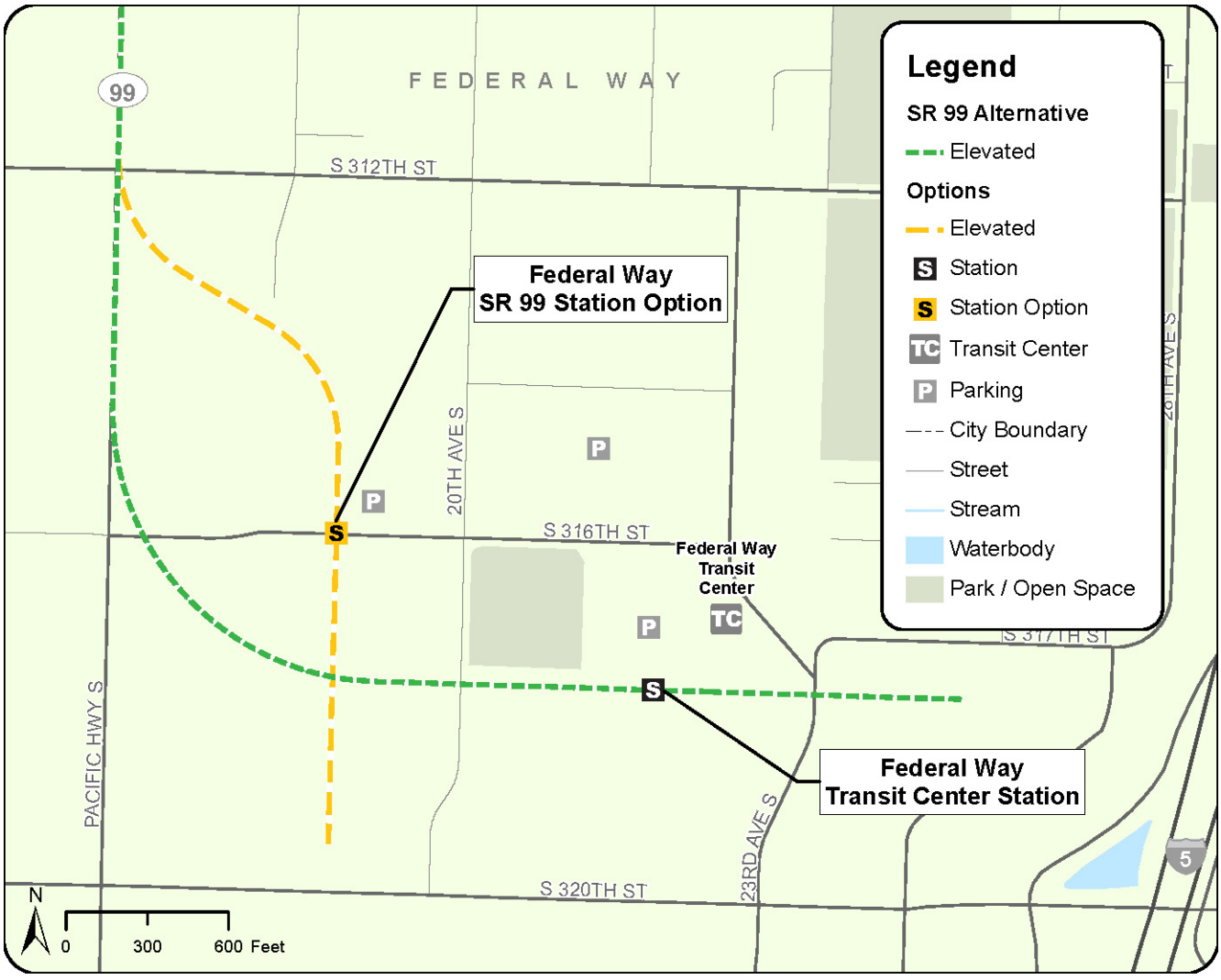


EXHIBIT 2-22
Federal Way SR 99 Station Option

2.2.5 SR 99 to I-5 Alternative

The SR 99 to I-5 Alternative (Exhibit 2-23) would have the same alignment as the SR 99 Alternative from the Angle Lake Station to just north of Kent-Des Moines Road (Exhibit 2-1). It would then transition to 30th Avenue S with a Kent/Des Moines 30th Avenue East Station north of S 240th Street. After leaving the station, the alignment would transition to the I-5 right-of-way and remain in the right-of-way to S 317th Street, where it would exit and travel west to the Federal Way Transit Center Station.

The S 272nd Star Lake Station would be the same as the Preferred Alternative, but the Federal Way Transit Center Station would be directly south of the transit center and oriented east-west. This alternative would be mostly elevated (Exhibit 2-24).

SR 99 to I-5 Alternative Station Options

This alternative could have the following station options associated with the Preferred Alternative south of Kent-Des Moines Road:

- Federal Way I-5 Station Option
- Federal Way S 320th Station Option

Potential Additional Stations

It could also have the following potential additional station options associated with the SR 99 Alternative:

- S 216th West Station Option
- S 216th East Station Option

2.2.5.1 Kent/Des Moines 30th Avenue East Station

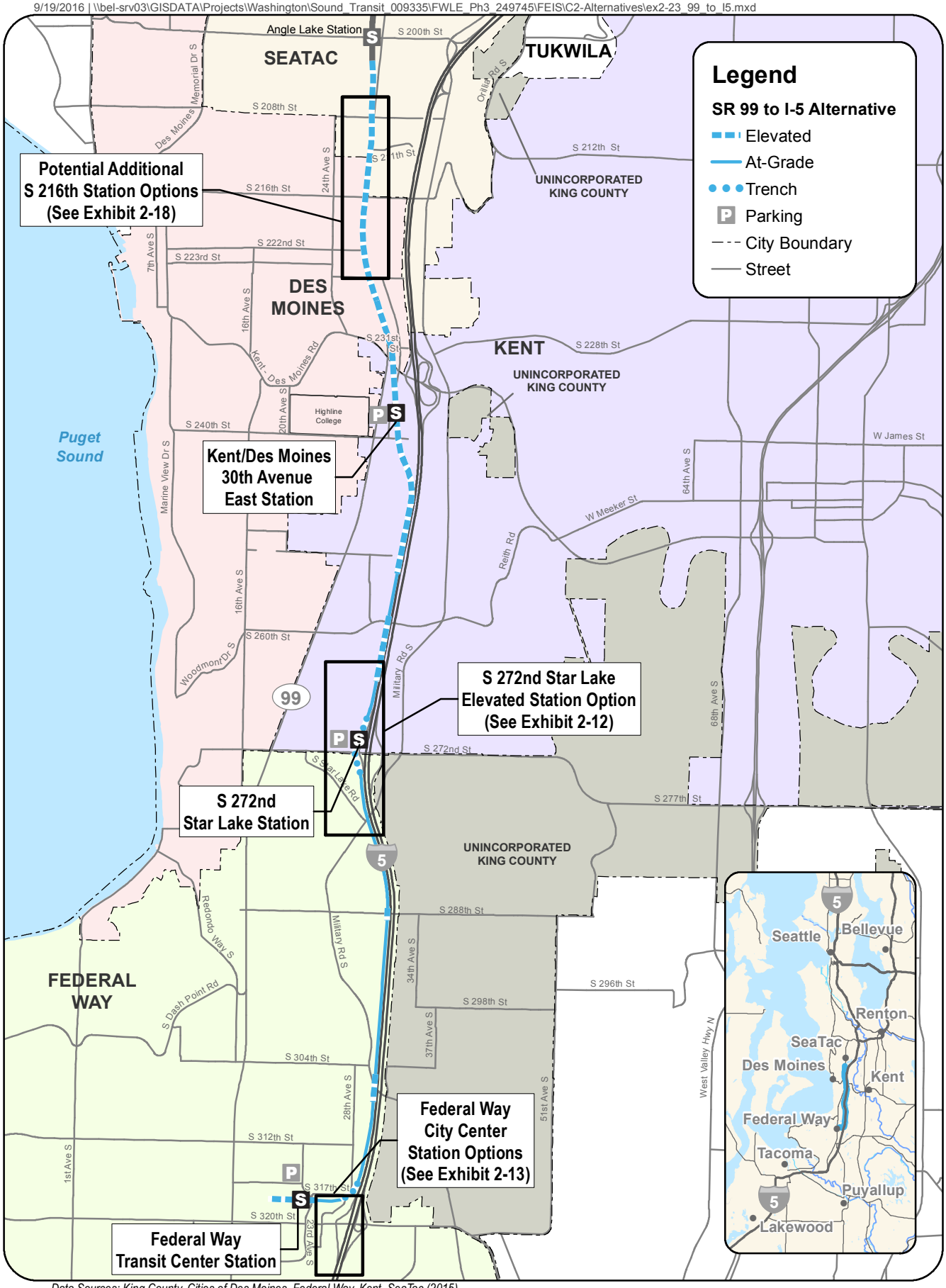
This elevated station would be just east of 30th Avenue S between Kent-Des Moines Road and S 240th Street. It would have approximately 1,000 parking spaces (500 surface, 500 in a new garage) if used as an interim terminus, reduced to 500 when the station is no longer the terminus.

2.2.5.2 S 272nd Star Lake Station

This trenched station would be at the Star Lake Park-and-Ride and have up to 1,240 parking spaces in garage parking, about 700 more than the existing.

2.2.5.3 Federal Way Transit Center Station

This station would be elevated on the south side of the existing Federal Way Transit Center. It would add about 400 new parking spaces to the current 1,200.



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

EXHIBIT 2-23
SR 99 to I-5 Alternative

Federal Way Link Extension

2.2.6 I-5 to SR 99 Alternative

The I-5 to SR 99 Alternative (Exhibit 2-24) would exit the Angle Lake Station and head east, crossing SR 99 and following the future SR 509 Extension to just north of Kent-Des Moines Road (Exhibit 2-1). The alignment would then transition to 30th Avenue S with a station north of S 240th Street. After leaving this station, the alignment would transition to the SR 99 median and be the same as the SR 99 Alternative to the Federal Way Transit Center. Stations at S 272nd Street and the Federal Way Transit Center would be the same as the SR 99 Alternative. This alternative would be elevated except from S 211th Street to S 216th Street and from S 218th Street to S 231st Street, where it would be at-grade.

I-5 to SR 99 Alternative Station Options

This alternative could have the following station options associated with the SR 99 Alternative south of Kent-Des Moines Road:

- S 272nd Redondo Trench Station Option
- Federal Way SR 99 Station Option

Potential Additional Stations

It could also have the following potential additional station options associated with the SR 99 Alternative:

- S 260th West Station Option
- S 260th East Station Option

2.2.6.1 Kent/Des Moines 30th Avenue West Station

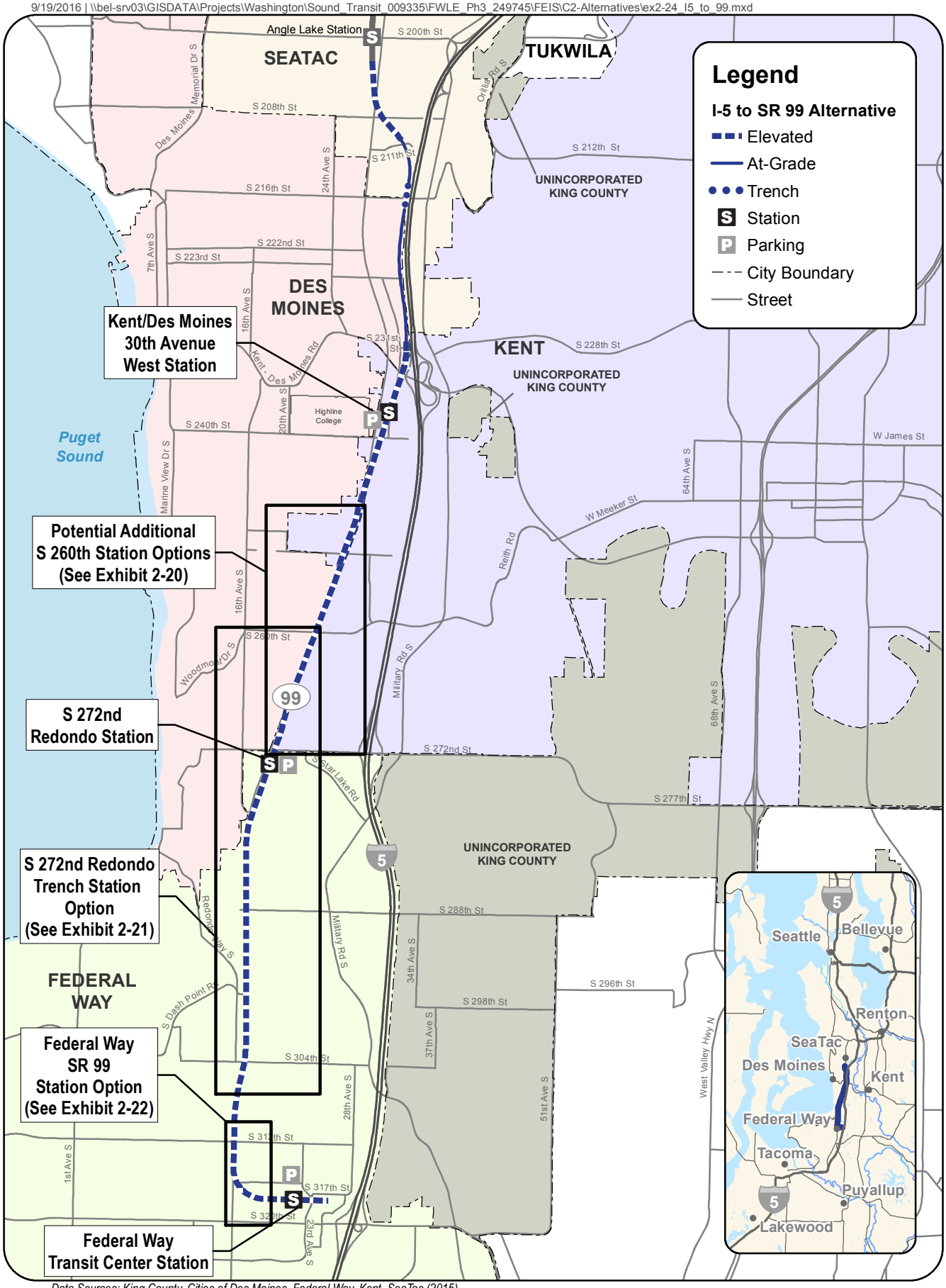
This elevated station would be just west of 30th Avenue S between Kent-Des Moines Road and S 240th Street. It would have approximately 1,000 parking spaces (500 surface, 500 in a new garage) if used as an interim terminus. Spaces could be reduced to 500 when the station is no longer the terminus.

2.2.6.2 S 272nd Redondo Station

The alignment would transition to the east side of SR 99 north of S 272nd Street before entering an elevated station at the existing Redondo Heights Park-and-Ride. This station would have approximately 1,400 combined surface and garage parking spaces, about 700 more than the existing. The alignment would transition back to the SR 99 median near S 279th Street.

2.2.6.3 Federal Way Transit Center Station

The alignment would exit the SR 99 median north of S 316th Street and head east to an elevated station on the south side of the existing transit center. This station would add approximately 400 new surface parking spaces to the current 1,200.



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

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0 0.5 1 2 Miles

EXHIBIT 2-24
I-5 to SR 99 Alternative

Federal Way Link Extension

2.2.7 Operation and Vehicle Maintenance

The FWLE is planned to operate 20 hours per day Monday through Saturday and 18 hours on Sunday. Train frequency would vary during the day based on ridership demand or other service standards. Table 2-2 shows the proposed service schedule for weekdays. Trains would operate with up to four cars.

TABLE 2-2
Weekday Service Periods

Service Period	Time Period	Service Type	Train Frequency (minutes)
Early morning	5 a.m. to 6 a.m.	Early/late	15
Morning peak	6 a.m. to 8:30 a.m.	Peak	8
Midday	8:30 a.m. to 3 p.m.	Base	10
Afternoon peak	3 p.m. to 6:30 p.m.	Peak	8
Evening	6:30 p.m. to 10 p.m.	Base	10
Evening late night	10 p.m. to 1 a.m.	Early/late	15

There is currently one Link operations and maintenance facility (OMF) in Seattle, constructed as part of Central Link and opened in 2009. Sound Transit plans to construct a second operations and maintenance facility in Bellevue, expected to be complete by 2020. These two facilities will meet the operation, storage, and maintenance needs for the fleet of light rail vehicles that will serve the expanded regional light rail system funded under ST2. The light rail vehicles for FWLE would be stored, maintained, inspected, and repaired at the Seattle OMF and would be deployed primarily from this OMF, although a terminus station (either interim or the Federal Way Transit Center) could provide overnight storage of up to four four-car trains. (Overnight storage at a terminus station would allow deployment of northbound trains at the beginning of service each day.) Trains could be stored on the tail tracks, station platform areas, or in a pocket track near the end of the line at the close of service each night. Support facilities at the station may include parking for light rail operators and office space for operator check-in facilities. They may also have space for maintenance personnel and materials to allow daily vehicle inspections and interior cleaning of vehicles. Vehicle, track, and systems maintenance occurs between 1 a.m. and 5 a.m. daily, outside of normal hours of light rail service.

Preliminary operating plans have two trains deployed between approximately 4:30 and 5 a.m., to be staged for the beginning of morning service at FWLE stations. Similarly, two trains may operate between approximately 1 and 1:30 a.m. along the FWLE as they return to the OMF or terminus station at the close of service each day.

If voters approve ST3 funding to extend light rail south of the Federal Way Transit Center, Sound Transit would evaluate the need for an additional OMF for south King County. An OMF is not proposed for the FWLE corridor and is not evaluated in this Final EIS.

2.3 Alternatives Development and Scoping

2.3.1 Development of Draft EIS Alternatives

Sound Transit began planning in 2004 for the next phase of investment to follow Sound Move. This included updating Sound Transit's Long-Range Plan and associated environmental review. Following several years of system planning work to define, evaluate, and prioritize the next round of regional transit system expansion, voters in 2008 authorized funding to extend the regional light rail system south to Federal Way as part of the ST2 Plan. The ST2 Plan also called for Sound Transit to extend light rail from downtown Seattle to Bellevue and Redmond to the east, and to Northgate and Lynnwood to the north. The planning history for the FWLE corridor is summarized in Table 1-1 in Chapter 1. (Until September 2013, this project was referred to as the Federal Way Transit Extension.)

Sound Transit completed early scoping and an Alternatives Analysis process in 2012 and 2013 to identify reasonable alternatives to be evaluated in the Draft EIS. The 30-day early scoping period was held in October and November 2012. Additional information on public involvement for this process is described in Appendix B.

Feedback received during the early scoping period was positive and supported improved transit service in the project corridor, with noticeable support for light rail. Based on input received during this period and on information in previous regional and local planning studies, Sound Transit established an initial range of alternatives to be evaluated in the Alternatives Analysis, including multiple modes (Exhibit 2-25).

The Alternatives Analysis included Level 1 and Level 2 evaluations. Seven of the initially identified alternatives did not make it to Level 1 because they did not meet the project purpose and need or had impacts or costs that outweighed potential benefits. Sound Transit evaluated the remaining 14 alternatives in Level 1 and narrowed this to 5 alignments in Level 2. Level 2 also evaluated potential additional station locations in the following areas: S 216th Street, S 260th Street, S 288th Street, and Dash Point Road (SR 99 only).

Screening Details

The Level 1 and Level 2 alternatives screening reports in Appendix C, Alternatives Analysis Reports and Scoping Summary, detail the specific measures used and the results of the evaluation.

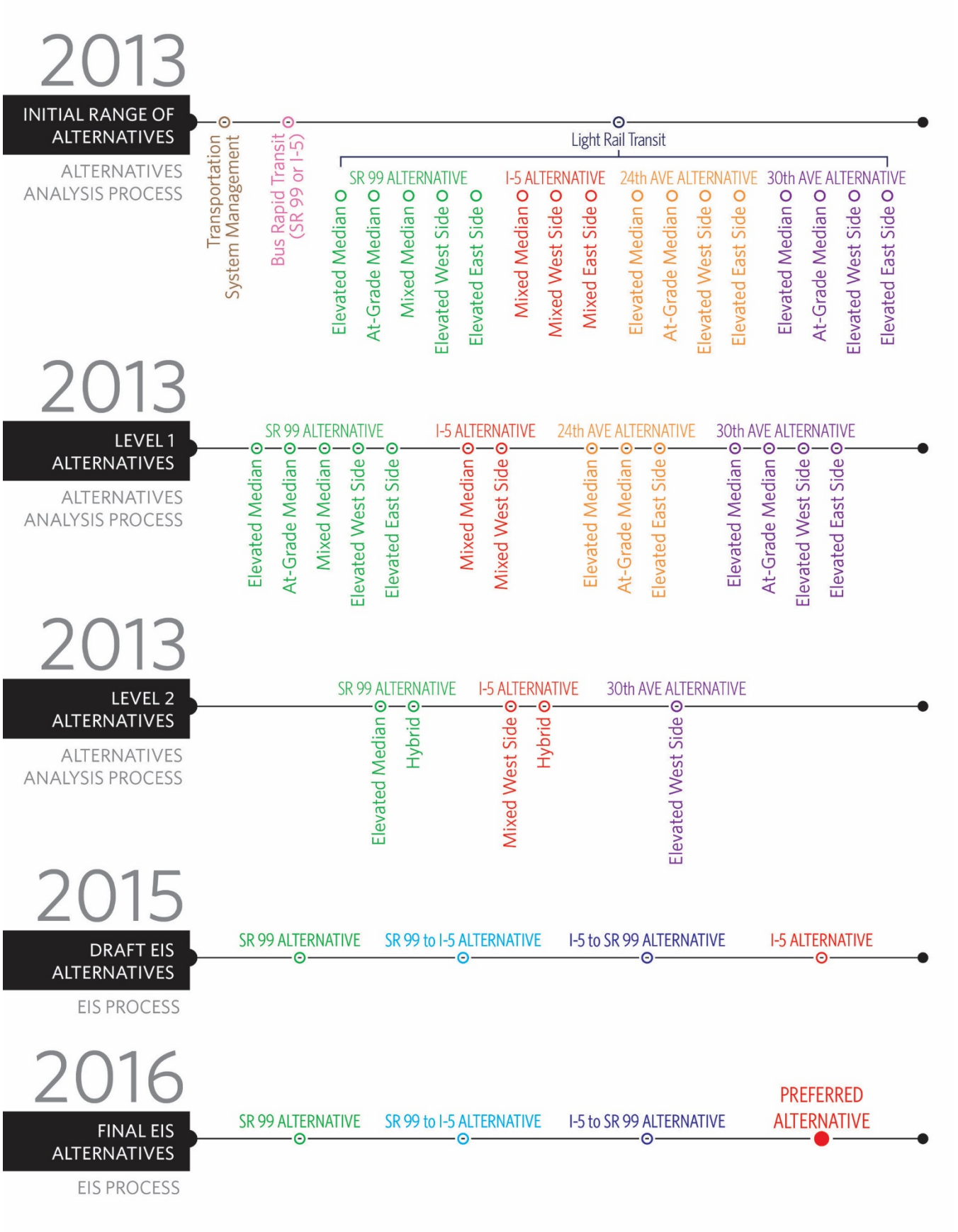


EXHIBIT 2-25
FWLE Alternatives Development and Evaluation

Table 2-3 lists the criteria used for Level 1 and Level 2 alternatives evaluations. All Level 2 alignment and station alternatives were carried forward into the scoping process for the EIS.

After the Alternatives Analysis, Sound Transit conducted another scoping process under the National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) to solicit further input on the project Purpose and Need statement and on the appropriate alternatives and elements of the environment for study in the Draft EIS.

Scoping included a 30-day public comment period from June 17 through July 17, 2013. Additional information on public involvement for this process is described in Appendix B. The scoping process generated some new alternative suggestions that were considered but not carried forward in the Draft EIS for the reasons shown in Table 2-4.

TABLE 2-3
FWLE Alternatives Analysis Evaluation Criteria

Purpose and Need Objective	Evaluation Criterion	Level 1 Measures	Level 2 Measures
Provide Effective Transportation Solution to Meet Mobility Needs	Ridership potential (year 2035)	M1: 2035 daily project riders and 2035 annual project riders	Daily and annual project ridership
			Station boardings
		M2: Travel time in study area	Travel time
	Connections to regional multimodal transportation systems	M3: Transit integration with Link system	Integration with Link system
		M4: Transit integration with facilities in the study area	Integration with bus facilities and services
Support Equitable Mobility	Transit-dependent and environmental justice populations	EM5: Low-income population within 1/2 mile of station	Does not differentiate between alternatives; not considered in Level 2
		EM6: Elderly population (age 65 or older) within 1/2 mile of station	Does not differentiate between alternatives; not considered in Level 2
		EM7: Youth population (age 16 or younger) within 1/2 mile of station	Does not differentiate between alternatives; not considered in Level 2
		EM8: 0-car households within 1/2 mile of stations	Does not differentiate between alternatives; not considered in Level 2
			Student poverty
			Subsidized housing
			Cost of commuting
			Access to express transit
			Minority populations
Support Land Use Plans and	Transit-supportive land use and	LU9: How well an alternative provides enhanced mobility to	Existing land use
			Planned land use

TABLE 2-3
FWLE Alternatives Analysis Evaluation Criteria

Purpose and Need Objective	Evaluation Criterion	Level 1 Measures	Level 2 Measures
Economic Development	economic development policies	existing high-density land use centers	High density/TOD zoning
			Underutilized parcels
			Population
			Employment
			Households
			Parking opportunities
			Non-motorized access
Preserve a Healthy Environment	Effect on natural environment	EN10: Impacts on wetlands	Wetlands
		EN11: Potential to affect streams (crossings)	Streams
	Effect on built environment	EN12: Visual and aesthetic impacts of alternative	Visual effects
		EN13: Potential property acquisition	Potential displacements
		EN14: Impacts to known parks	Does not differentiate between alternatives; not considered in Level 2
		EN15: Number of community facilities affected	Community facilities
		EN16: Impacts on known or eligible historic or other sensitive properties access	Does not differentiate between alternatives; not considered in Level 2
		EN17: Number of potentially impacted noise receptors	Noise
			Vibration
		EN18: Level of service (LOS) at intersections; evaluation of capacity/flow (existing conditions)	Traffic
		EN19: Traffic circulation and access; number of mid-block turning opportunities	
			Construction effects
Design an Affordable and Constructible Project	Design considerations	DC20: Potential utility effects	Utilities
		DC21: High-risk hazardous materials within 1/4 mile of alternative	Hazardous materials
		DC22: Geologic hazards	Geologic issues
		DC23: Park-and-ride lot locations	Combined with parking measure under "Transit-supportive land use and economic development policies"
	System costs	DC24: Estimated capital cost ($2013)	Estimated capital cost
		DC25: Estimated annual operation and maintenance cost ($2013)	Estimated operation and maintenance cost

TABLE 2-4
Alternatives Suggested During Scoping and Not Carried Forward

Alternative Suggested	Reason not Evaluated in Draft EIS
24th Avenue South corridor.	The 24th Avenue S Alternative was evaluated in the Level 1 evaluation but did not advance due to high environmental impacts and few benefits over SR 99 alternatives.
A line down SR 167 that could join the southbound eastside line before a South Center station that continued to Vashon and Gig Harbor.	This alignment would not meet the purpose of the project, which is to expand the light rail system from SeaTac to Federal Way, consistent with Sound Transit's Long-Range Plan.
329th Place South in the neighborhood where Waterbury Park Apartments are.	The southern limit of the project is the Federal Way Transit Center at approximately S 317th Street. This takes advantage of the existing transit center and the many bus routes that serve it. The Waterbury Park Apartments are approximately one mile southwest of the transit center. Relocating the Federal Way Transit Center Station to this location would not take advantage of the existing bus transit connections. Adding an additional station at this location would not be warranted because it would be so close to the Federal Way Transit Center Station.
Run the rail down SR 99 to 25th and run it down that street just to the east of Highline College.	This alternative is similar to the HC Campus Station Option, which is evaluated in the Draft EIS. 25th Avenue S would be farther west than the HC Campus Station Option and would result in a longer route with greater neighborhood impacts.
A bridge at 240th to extend this road over the freeway.	The City of Kent's *Midway Subarea Plan* calls for this road extension in the future. Roadway improvements, such as extending S 240th Street over I-5, are not proposed as part of the FWLE because access to the station from the east will be provided from Kent-Des Moines Road.
Station at S 288th and Pacific Highway.	A S 288th Street station was evaluated during the Alternatives Analysis, but did not advance because of the lower population and employment within 1/2 mile as well as limited access.

Following the public scoping period, the Sound Transit Board reviewed the comments received and the Alternatives Analysis findings. In September 2013, the Board approved Motion 2013-77, which directed Sound Transit staff to study four alternatives in the Draft EIS (see Exhibit 2-25). It also called for potential design options on SR 99 and I-5, and established baseline stations at Kent/Des Moines, S 272nd Street, and Federal Way Transit Center, and potential additional stations for the SR 99 Alternative at S 216th Street and S 260th Street. During development of the Draft EIS, Sound Transit continued to coordinate with agencies and local jurisdictions to refine the conceptual design of these alternatives for evaluation in the Draft EIS.

2.3.2 Draft EIS Public and Agency Comments Suggesting New or Modified EIS Alternatives

Before preparing the Final EIS, Sound Transit reviewed comments on the Draft EIS that suggested modifying the alternatives or adding

other alternatives. Some comments suggested minor shifts in the alignments and stations. No comments suggested any entirely new alignments in the FWLE corridor.

More details on specific comments and Sound Transit's responses are provided in Chapter 9, Comment Summary, and in Appendix I, Response to Draft EIS Comments.

2.4 Environmental Practices and Commitments

As an agency that has built and operated light rail, commuter rail, and regional express bus service in multiple Puget Sound communities, Sound Transit has established programs, best practices, and policies. These include the agency's sustainability and environmental management program (as outlined in Sound Transit's 2015 Sustainability Plan update) and a commitment to satisfying all applicable laws and regulations and mitigating significant adverse environmental impacts responsibly and reasonably, consistent with Sound Transit's policies. Because compliance with these programs, practices, and policies is incorporated into the planning, development, construction, and operation of the FWLE project, they are relevant to understanding the project's environmental impacts.

The key goals of Sound Transit's sustainability and environmental management program are to protect the environment and create a healthy community and economy. The agency's core mission of moving people on transit is the most important action the agency can take to improve the local environment, connect communities, reduce sprawl, and enable citizens to thrive within their means by saving dollars on transportation. The agency is also working to conserve resources and incorporate sustainability into everyday operations.

In 2004, the Sound Transit Board adopted an environmental policy for the agency that applies to all activities, from planning and design to construction and operations. The policy commits Sound Transit to protect the environment for present and future generations, by doing the following:

- Comply fully with all environmental laws and regulations and strive to exceed compliance by continually improving environmental performance through cost-effective innovation and self-assessment.

- Restore the environment by providing mitigation and corrective action, and monitor to ensure that environmental commitments are implemented.
- Improve the ability to manage and account for environmental risk.
- Avoid environmental degradation by minimizing releases to air, water, and land.
- Prevent pollution and conserve resources by reducing waste, reusing materials, recycling, and preferentially purchasing materials with recycled content.
- Educate the public about the environmental benefits of transit.

In 2007, the Sound Transit Board directed the agency's Chief Executive Officer to integrate sustainable practices and strategies throughout the agency. In addition to setting yearly targets for sustainability, in 2011, Sound Transit adopted a Sustainability Plan establishing long-term and short-term priorities. The plan, which was updated in 2015, addresses areas such as energy use, water use, stormwater management, wetland mitigation, air quality improvements (including greenhouse gas emissions), toxic materials, materials consumption, and solid waste. These areas are to be considered in all of the agency's activities, including planning, design, operation, and maintenance of investments such as the FWLE.

Sound Transit's design and operation standards incorporate guidelines from the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) certification system. The agency design criteria include a checklist of required and voluntary measures with specific, measurable standards to help maximize sustainability opportunities for the project during design, construction, and operation. While some of these sustainability opportunities may also support permit requirements or help mitigate environmental impacts, others can help maximize and extend the environmental and public benefits of the project.

Since 2007, Sound Transit has been one of a select number of transit agencies nationwide to achieve certification to the international ISO 14001 standard. The system holds the agency accountable for identifying and controlling environmental impacts, setting and achieving objectives and targets, and demonstrating continual improvements in performance. In August 2015, the American Public Transportation Association awarded Sound Transit the highest level

of recognition ("platinum") for Sound Transit's commitment to sustainability.

In addition to meeting environmental commitments, Sound Transit will avoid and minimize impacts where possible. Where adverse impacts cannot be avoided, this Final EIS identifies potential measures to mitigate the adverse impacts of the FWLE. Mitigation measures will be refined through final design and permitting. Appendix H, Mitigation Plan, contains a preliminary list of the mitigation commitments for the Preferred Alternative. When a project alternative is selected to be built, mitigation commitments will be finalized and documented in the NEPA Record of Decision (ROD).

2.5 Estimated Project Costs and Funding

2.5.1 Project Funding

In 2008, voters approved funding for ST2, which included funding to construct the portion of the FWLE from the Angle Lake Station in SeaTac to S 272nd Street. Following this vote, the Great Recession lowered Sound Transit's revenue forecast through 2023 by 30 percent. Sound Transit thus realigned the ST2 program in 2010 to ensure that it can deliver the majority of the ST2 program, including part of FWLE, by 2023. The current projection of ST2 tax revenue only allows for construction to Kent/Des Moines. Additional funding sources to complete the project could include Federal Transit Administration (FTA) grants or additional voter-approved tax revenue. Funds for construction to the Federal Way Transit Center are included in the Sound Transit 3 (ST3) funding package (Sound Transit, 2016) to be submitted to the voters in November 2016.

Sound Transit Funding

Sound Transit's regional transit programs and projects are typically funded through a combination of voter-approved taxes collected in a three-county district, Federal Transit Administration grants, bonds, and fare box revenue.

2.5.2 Project Cost Estimates

Estimated project costs based on the current level of design are shown in Table 2-5. Table 2-6 reflects the potential costs to construct from the Angle Lake Station to each potential interim terminus, and shows how selecting any of the options would affect the cost. The estimated project cost includes construction costs, right-of-way acquisition costs, engineering costs, and contingency, but not the cost of additional light rail vehicles needed to operate the FWLE.

TABLE 2-5
Estimated Project Cost in 2016$ for Full Project (Angle Lake to Federal Way Transit Center)

Alternative	Estimated Cost
Preferred Alternative	$1.54 billion
Kent /Des Moines At-Grade Station Option	- $110 million
Kent /Des Moines I-5 Station Option	+ $20 million
Landfill Median Alignment Option	- $10 million
S 272nd Star Lake Elevated Station Option	- $30 million
S 317th Elevated Alignment Option	- $2 million
Federal Way I-5 Station Option	- $40 million
Federal Way S 320th Park-and-Ride Station Option	+ $130 million
SR 99 Alternative	$1.89 billion
S 216th Street Potential Additional Station (West Option)	+ $90 million
S 216th Street Potential Additional Station (East Option)	+ $80 million
Kent/Des Moines HC Campus Station Option	- $20 million
Kent/Des Moines HC Campus Station Option from S 216th W Station Option	+ $250 million
Kent/Des Moines SR 99 Median Station Option	+ $20 million
Kent/Des Moines SR 99 East Station Option	+ $10 million
S 260th Street Potential Additional Station (West Option)	+ $70 million
S 260th Street Potential Additional Station (East Option)	+ $90 million
S 272nd Redondo Trench Station Option	- $10 million
Federal Way SR 99 Station Option	- $60 million
SR 99 to I-5 Alternative	$1.59 billion
I-5 to SR 99 Alternative	$1.84 billion

TABLE 2-6
Interim Termini Estimated Cost in 2016$ (Cost from Angle Lake Station)

Terminus	Preferred Alternative	SR 99 Alternative	SR 99 to I-5 Alternative	I-5 to SR 99 Alternative
Kent/Des Moines Station	$490 million	$570 million	$580 million	$520 million
S 272nd Street Station	$900 million	$1.18 billion	$1.08 billion	$1.10 billion

Table 2-7 provides an estimate of annual operating costs for the Preferred Alternative and a range for all the alternatives. The major determinants of maintenance and operating costs are service levels, running time, and trackway profile. Like the capital costs in Tables 2-5 and 2-6, these estimates will be refined during final design.

TABLE 2-7
Estimated Annual Operating Cost in 2016$ (Cost from Angle Lake Station)

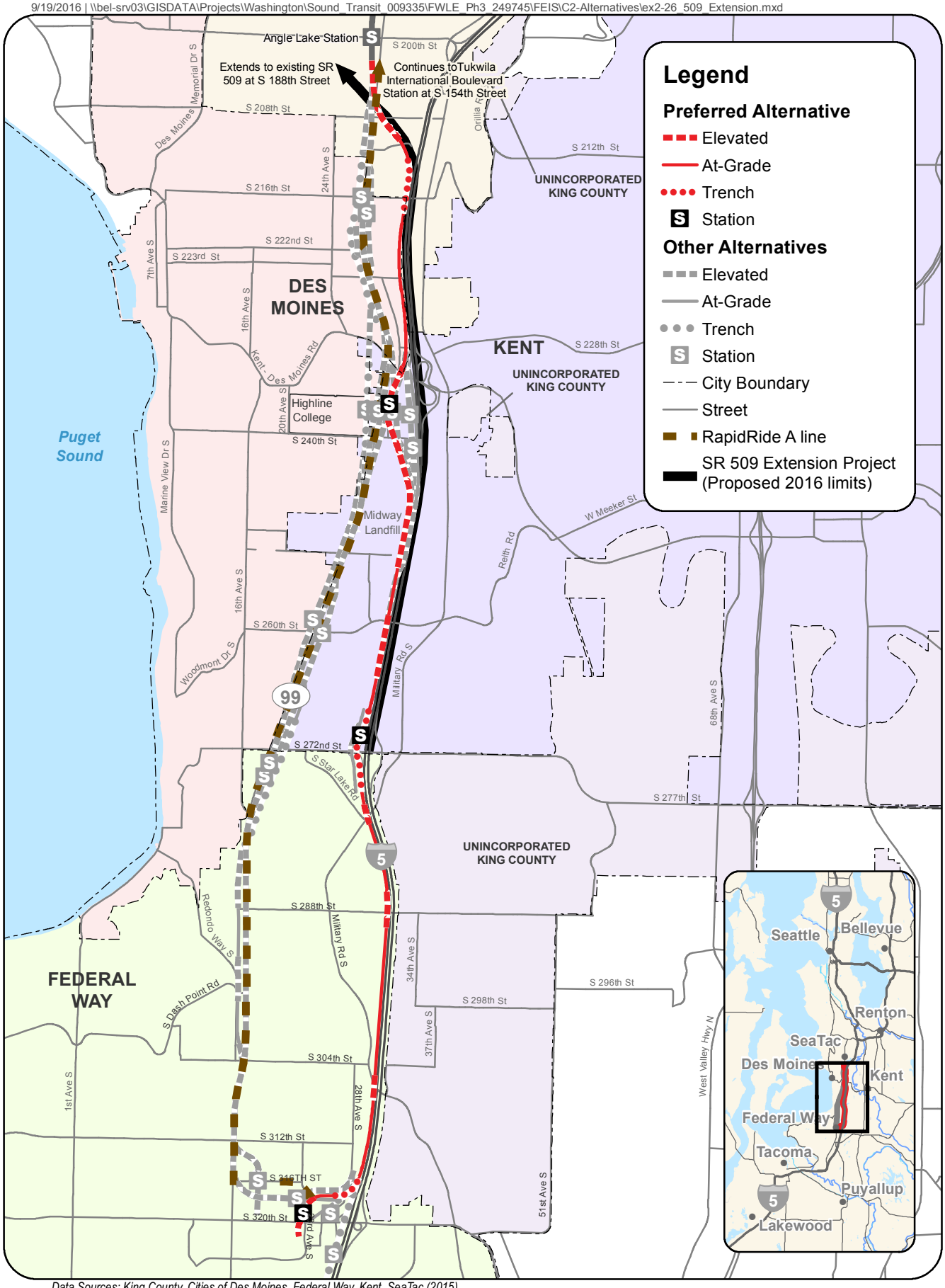
Terminus	Preferred Alternative	All FWLE Alternatives
Federal Way Station (Full-length)	$12.1 million	$11.7 to 12.5 million
Kent/Des Moines Station	$4.8 million	$4.8 to 5.3 million
S 272nd Street Station	$7.5 million	$7.1 to 7.6 billion

2.6 Relationship to RapidRide A Line and SR 509 Extension Project

The FWLE would intersect with the King County Metro RapidRide A Line and the planned WSDOT SR 509 Extension (Exhibit 2-26). FWLE operations would complement RapidRide's service. RapidRide A Line would continue to serve SR 99 with the FWLE, providing local service between the stations and helping transit-dependent populations and others access Link and the regional transportation system.

The proposed WSDOT SR 509 Extension received a federal ROD in 2003, but funding up until 2015 was limited to right-of-way acquisition. The project described in the ROD would extend SR 509 from S 188th Street in SeaTac east to I-5. It would connect to I-5 between S 208th and S 216th streets, and would include additional collector/distributor lanes from the new SR 509/I-5 interchange to the S 320th Street interchange. The Washington State Legislature approved funding for the project in June 2015. Appendix F, Conceptual Design Drawings, shows the proposed SR 509 Extension in relation to the FWLE using the design approved in 2003. WSDOT is currently revisiting the proposed design and NEPA documentation for this project.

As design of the SR 509 Extension and FWLE projects advance, Sound Transit and WSDOT will work together to identify opportunities for cost sharing, reduced impacts, and combined mitigation. Construction of the two projects is expected to overlap in some areas, with FWLE construction planned for 2019 to 2023 and SR 509 Extension construction planned for 2021 to 2030 (Exhibit 2-27).



Data Sources: King County, Cities of Des Moines, Federal Way, Kent, SeaTac (2015).

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EXHIBIT 2-26

SR 509 Extension Project and RapidRide A Line within FWLE Corridor

Federal Way Link Extension

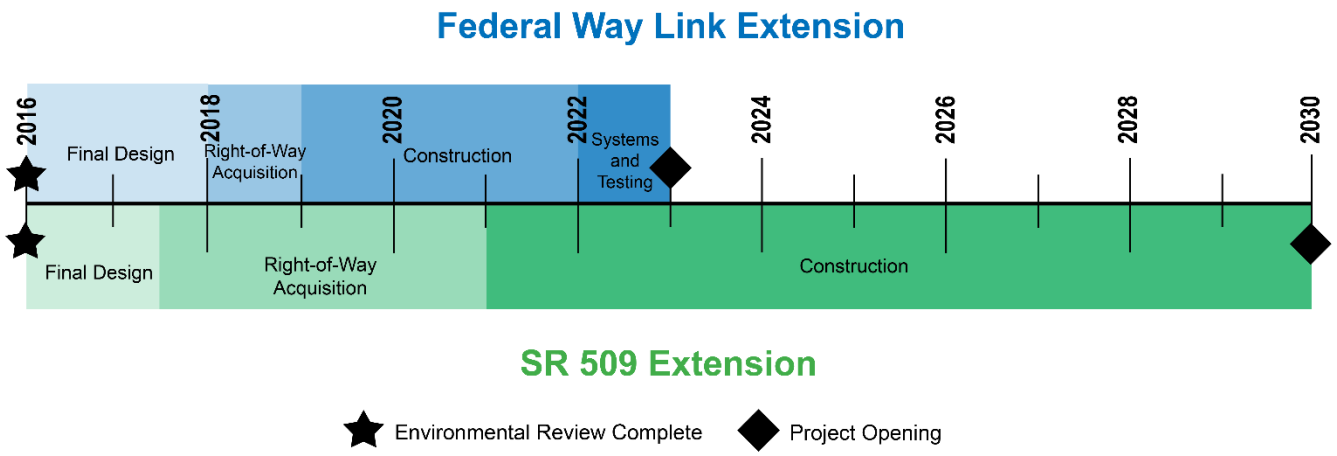

EXHIBIT 2-27
Construction Schedules for FWLE and SR 509 Extension

2.7 Next Steps and Schedule

FTA will accept comments on the Final EIS for 30 days. All comments on the Final EIS are due by close of business on December 19, 2016. After considering the analysis in the Final EIS, including public and agency comments and responses, the Sound Transit Board will select the project alternative to build. FTA is then expected to publish a ROD that will document how the project has met the requirements of NEPA and related environmental regulations. The ROD will describe FTA's environmental determination on the project, the alternatives considered, the basis for the decision to approve the project, and the required mitigation measures. Issuance of the ROD completes FTA's NEPA process and is a prerequisite for federal funding or approvals.

In general, FTA must combine the Final EIS and ROD into a single document (49 United States Code 304(a)b). That requirement does not apply when FTA finds that it is not practicable to combine the documents, however, such as when a Draft EIS does not identify a Preferred Alternative or when timing requirements make a joint Final EIS/ROD impracticable (e.g., if state law bars a final project decision until the Final EIS has issued). Both of those circumstances exist in this case.

Because FTA has determined it is not practical to issue a combined Final EIS and ROD, it is publishing these documents separately.

After the Sound Transit Board selects the project to be built and FTA issues a ROD, Sound Transit will initiate final design, begin property

acquisition, conduct construction planning, and apply for other permits and approvals needed to construct and operate the light rail project within the interstate right-of-way. The Federal Highway Administration is expected to issue a combined ROD with FTA or its own ROD for the project and can use this Final EIS to meet its NEPA and other decision requirements. Similarly, local jurisdictions issuing permits for the project may rely on the Final EIS to satisfy their SEPA requirements. Sound Transit anticipates final design, permitting, and right-of-way acquisition in 2017 and 2018, construction starting in 2019, and service starting in 2023.

2.7.1 Project Schedule

Exhibit 2-28 shows the anticipated schedule milestones for construction to Kent/Des Moines and start-up. In June 2016 the Sound Transit Board adopted the ST3 Plan. If funding for the plan is approved by voters in November 2016, the project schedule would be adjusted accordingly. The ST3 Plan calls for building the FWLE from Angle Lake to Federal Way Transit Center with service at all three stations opening concurrently in 2024.

2.7.2 Benefits and Disadvantages of Delaying Implementation

As required by SEPA, this section discusses the benefits and disadvantages of delaying the proposed project instead of approving it now.

Delaying the project would postpone impacts associated with project construction but would also postpone realizing a major component of the region's long-range plans for managing growth and transportation and the opportunity to link neighborhoods with Puget Sound regional employment centers. Delay would limit economic development from the movement of people and goods. Delay would also allow projects to develop that might preclude or increase the cost of the FWLE.

A substantial delay in implementing FWLE would inhibit the region's ability to accommodate growth, as articulated repeatedly in local and regional plans. This would trigger a number of other consequences, including changed development patterns and steadily increasing corridor congestion, with consequent air quality issues and higher energy usage.

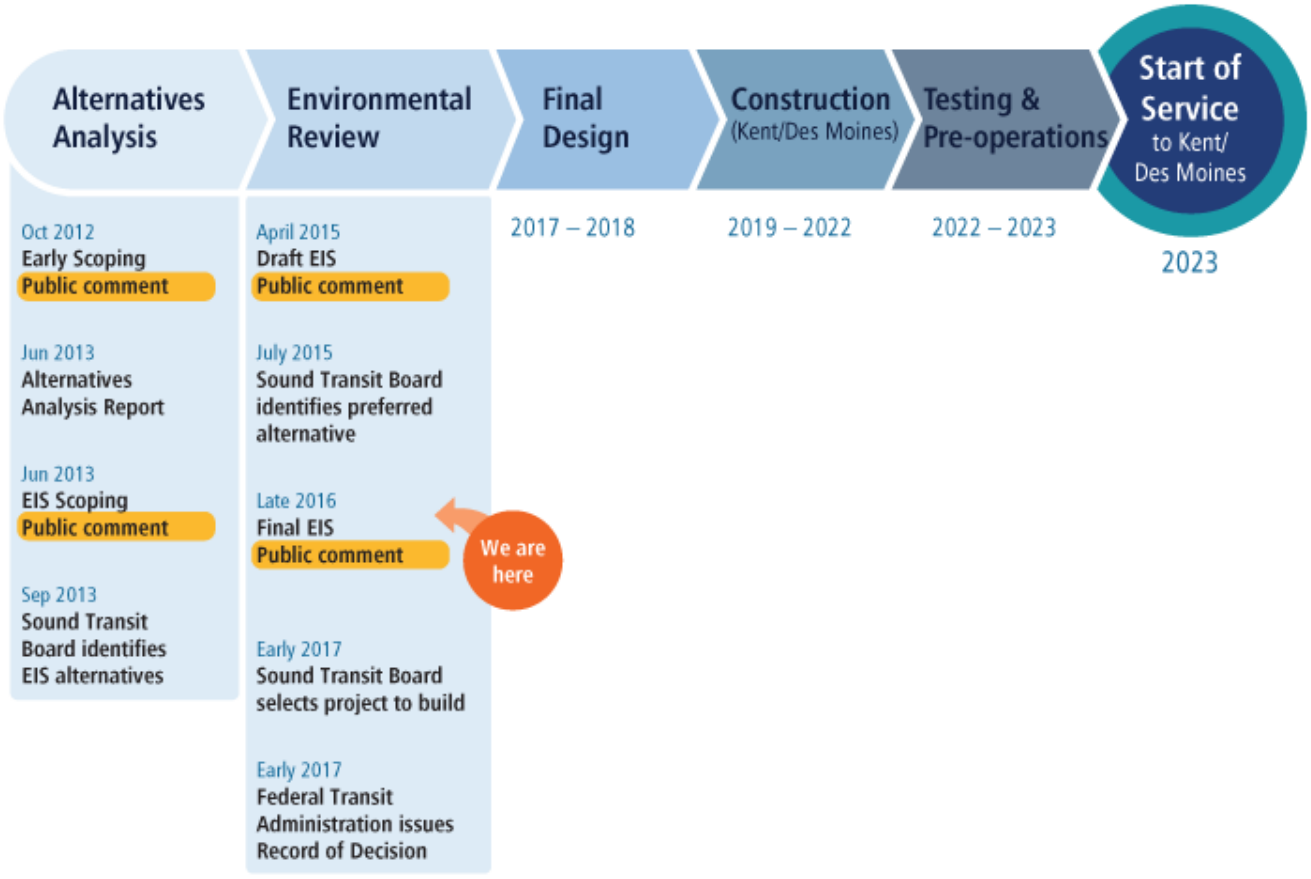

EXHIBIT 2-28
Project Milestones

Delaying the project due to funding limitations could cause further delays in project construction, because inflation would increase construction and right-of-way costs. If the project is built only to an interim terminus, impacts at the terminus station would increase. However, waiting until the entire project could be funded would delay the transportation improvements and other benefits that the first interim segment would produce.