February 2019

Tacoma Dome Link Extension

Pre-Screening and Level 1 Alternatives Evaluation Report

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Tacoma Dome Link Extension

Pre-Screening and Level 1 Alternatives Evaluation Report

Prepared for:
Sound Transit

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February 18, 2019

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Acronyms and Abbreviations

BNSF	Burlington Northern Santa Fe
BPA	Bonneville Power Administration
DAHP	Department of Archaeology and Historic Preservation
EIS	environmental impact statement
EJ	environmental justice
ELG	Elected Leadership Group
ESA	Endangered Species Act
ET	East Tacoma
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HCT	high-capacity transit
I-5	Interstate 5
I-705	Interstate 705
IAG	Interagency Group
LRT	light rail transit
mph	miles per hour
NEPA	National Environmental Policy Act
OMF South	Operations and Maintenance Facility South
OMF	Operations and Maintenance Facility
PSRC	Puget Sound Regional Council
Puyallup Tribe	Puyallup Tribe of Indians
ROW	right-of-way
SEPA	State Environmental Policy Act
SF	South Federal Way
Sound Transit	Central Puget Sound Regional Transit Authority
SR 99	State Route 99
ST	Sound Transit
ST3 Plan	Sound Transit 3 Plan
TD	Tacoma Dome
TDLE	Tacoma Dome Link Extension

TOD	transit- oriented development
WISAARD	Washington Information System for Architectural and Archaeological Records Data
WSDOT	Washington State Department of Transportation

Executive Summary

Purpose of the Report

The Central Puget Sound Regional Transit Authority (Sound Transit) and the Federal Transit Administration (FTA) are conducting an alternatives analysis to start the public planning and environmental processes for the Tacoma Dome Link Extension (TDLE). The proposed project is part of the Sound Transit 3 (ST3) Plan approved by voters in 2016. The project starts where the Federal Way Link Extension ends at the Federal Way Transit Center in the City of Federal Way in south King County and continues to the Tacoma Dome area in the City of Tacoma in Pierce County. Exhibit E-1 shows where the TDLE is located. The TDLE is an element of the regional Metropolitan Transportation Plan (the Puget Sound Regional Council [PSRC] 2040 Transportation Plan), and Sound Transit's Long-Range Transit Plan.

As part of the ST3 Plan, two new light rail maintenance facilities, one in the north and one in the south service area, were identified to support the expansion of light rail. The operations and maintenance facility (OMF) to serve overall regional system expansion, particularly for service in South King and Pierce counties, is called the Operations and Maintenance Facility: South (OMF South) and is evaluated in a separate report.

The public planning and environmental processes begin with development of this Level 1 Alternatives Analysis. The Level 1 Alternatives Analysis is intended to define a reasonable range of options that meet the project Purpose and Need, can be implemented at a reasonable cost, and would not result in unacceptable affects to the environment or community.

This report is organized into five sections:

- Introduction
- Pre-Screening of Alternatives
- Level 1 Evaluation Criteria
- Level 1 Analysis Results
- Findings and Conclusions

Draft Purpose and Need

The purpose of the Tacoma Dome Link Extension is to expand the Link light rail system from the Federal Way Transit Center to the Tacoma Dome Station area in order to:

- Provide high quality rapid, reliable, accessible, and efficient light rail transit service connecting the communities of Federal Way, Milton, Fife, Tacoma, and the Puyallup

Tribe of Indians (Puyallup Tribe) to other destinations on the regional high-capacity transit (HCT) system.

- Meet projected transit demand and offer an alternative to travel on congested roadways, better connecting people to where they live, work, and play.
- Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Regional Transit Long-Range Plan Update (Sound Transit 2014b).
- Develop a light rail extension that is technically and financially feasible to build, operate, and maintain, consistent with the regional system defined by the Sound Transit 3 Plan (Sound Transit 2016) and the Regional Transit Long-Range Plan update, which was developed through a robust local planning process that established transit mode, corridor, and general station locations.
- Expand mobility for people in the corridor and region, including low income, minority, and transit-dependent populations.
- Encourage equitable and sustainable urban growth in station areas through support of transit oriented development and multimodal integration in a manner that is consistent with adopted local comprehensive plans and policies, including Sound Transit's Transit Oriented Development and Sustainability Policies.
- Preserve and promote a healthy and sustainable environment and economy by minimizing adverse impacts on the natural, built, and social environments.
- Encourage convenient and safe nonmotorized access to stations such as bicycle and pedestrian connections consistent with Sound Transit's System Access Policy.

The project is needed because:

- Roadway congestion is increasing on Interstate 5 (I-5) and State Route 99 (SR 99), two of the primary highways connecting King and Pierce counties, affecting reliability for transit, automobiles, and freight.
- There is not enough transit capacity to serve the corridor's riders today or in the future.
- PSRC, the regional metropolitan planning organization, and local plans call for HCT to serve long-term population and employment growth in the corridor, consistent with PSRC's VISION 2040 (PSRC 2009) and the Sound Transit Regional Transit Long-Range Plan Update.
- South King and Pierce counties' citizens and communities, including its low income and minority populations, and/or transit-dependent populations and residents, need

long-term regional mobility and multimodal connectivity as called for in the Washington State Growth Management Act.

- Regional and local plans call for increased residential, commercial, and employment growth and density in areas to be served by HCT and multimodal transportation systems.
- Environmental and sustainability goals of the state and region include reducing greenhouse gas emissions by reducing total vehicle miles traveled and by increasing mobility options that do not rely on combustible fuels (RCW 47.01.440, PSRC VISION 2040, and 2018 Regional Transportation Plan [Sound Transit 2018a]).

Federal Way
South Federal Way
Tacoma
East Tacoma
Tacoma Dome
Fife
Milton
Pacific
King County
Pierce County

SF1 SF2 SF3 SF4A-D SF5A-B SF6 SF7 SF8 SF9 SF10 SF11 SF12 SF13

ET 1A-B ET 2 ET 3 ET 4A-C ET 5 ET 6 ET 7 ET 8

TD 1 TD 2 TD 3 TD 4A-B TD 5A-B

Fife 1 Fife 2A-B Fife 3A-B Fife 4A-C Fife 5A-C Fife 6 Fife 7 Fife 8 Fife 9A-B

S 320TH ST
S 321ST ST
46TH PL S
1ST AVE S
1ST WAY S
SW CAMPUS DR
SW 340TH ST
21ST AVE SW
HOYT RD SW
NORTHSHORE PKWY NE
N SHORE PKWY
E SIDE DR NE
BROWNS POINT BLVD NE
MARINE VIEW DR
33RD ST NE
49TH AVE NE
29TH ST NE
SW 356TH ST
S 356TH ST
NORPOINT WAY NE
S 348TH ST
ENCHANTED PKWY S
S 342ND ST
STATE HWY 509
PACIFIC HWY E
EELLS ST
E ALEXANDER AVE
MILWAUKEE WAY
LINCOLN AVE
PORT OF TACOMA RD
ALEXANDER AVE
54TH AVE E
20TH ST E
RIVER RD E
24TH ST
E 11TH ST
ST PAUL AVE
E 15TH ST
E 26TH ST
E D ST
E L ST
PORTER WAY
MILTON WAY
YUMA ST
JOVITA BLVD E
MERIDIAN E
MERIDIAN AVE E
STATE HWY 167
N 30TH ST
SCHUSTER PKWY
N TACOMA AVE
N 1ST ST
N 6TH ST
DIVISION AVE
6TH AVE
S 1ST ST
S 11TH ST
S 12TH ST
S 19TH ST
S 25TH ST
MARKET ST
TACOMA AVE S
JEFFERSON AVE
PACIFIC AVE
CENTER ST

99 5 705 509 18 161

City/County Boundaries
Station
Station Area
Segment Boundaries

Highway Improvements
Funded
Planned

Source: © Mapbox, © OpenStreetMap

0 0.25 0.5 1 Miles

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Exhibit E-1
Level 1 Alternatives for the Tacoma Dome Link Extension

Overview of Alternatives Analysis Process

The purpose of the alternatives analysis process is to identify the alternatives to be evaluated in an environmental impact statement (EIS), including the preferred alternative. To refine the alternatives, input from the tribes, agencies, and the public was considered throughout the process. Because the resulting project will seek federal funding, FTA's general guidance for conducting alternatives analysis was incorporated into the study process. This process included initiating the study, developing and refining alternatives and methodologies, analyzing and evaluating alternatives, and (in the future) identifying a preferred alternative, as shown on Exhibit E-2.

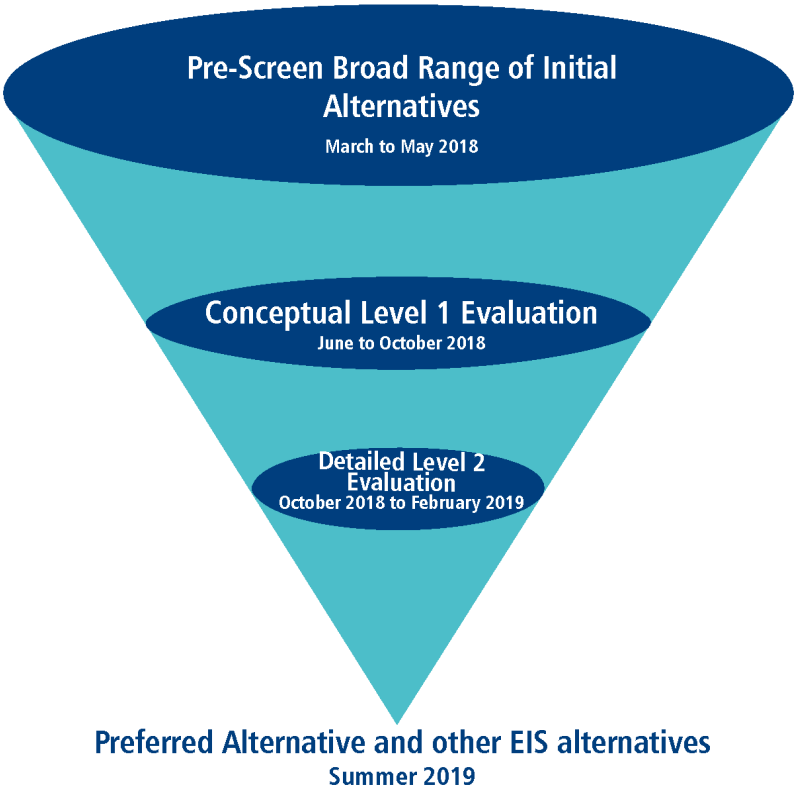


EXHIBIT E-2
Alternatives Evaluation Process

Information from the regional and local plans and projects, as well as previous work from the ST3 Plan, was reviewed as part of initiating the TDLE project, and a draft Purpose and Need of the project was developed. The draft Purpose and Need established the objectives that were used to develop the evaluation criteria and measures for the Level 1 analysis.

The next step, pre-screening alternatives to identify those that do not meet the Purpose and Need, helped to refine the alternatives that were analyzed in the Level 1 screening. The alternatives were then defined so that the evaluation measures of the study could be used to assess the transportation, environmental, and financial effects of each alternative. At this early stage in the process, the Level 1 analysis applied both qualitative and quantitative criteria to evaluate the alternatives based on early conceptual design. The representative project from ST3 was included in the Level 1 alternatives. The alternatives selected by the Elected Leadership Group (ELG) were refined and carried forward into the Level 2 analysis.

The Level 2 Evaluation will apply more quantitative criteria and compare the alternatives for the TDLE. The results of the Level 2 analysis will be presented to the Sound Transit Board to help them identify a preferred alternative to be evaluated in the EIS.

Pre-Screening

The initial pre-screening process involved two steps: 1) considering if the alternatives being studied satisfy the purpose and need Statement, and 2) evaluating the alternatives for consistency with the project scope defined in the ST3 Plan, which is the basis for the proposed project.

FTA guidelines were used to develop and analyze the project alternatives. Potential alternatives for the TDLE came from previous regional and local planning studies (see Section 2.2) and input from agencies, tribes, and the public during a 30-day early scoping period between April 2 and May 3, 2018. The early scoping period included three public open houses (in Federal Way, Fife, and Tacoma). The public open houses provided several interactive opportunities for attendees to provide input and draw alignment and station location suggestions on a large map of the project corridor. An online open house also provided opportunities to learn about the project and provide comments. During the early scoping process, people could provide comments in the following ways:

- Online open house survey: tdlink.participate.online
- Email: tdlink@soundtransit.org
- Mail: Sound Transit, c/o Senior Environmental Planner Steve Kennedy, 401 S. Jackson Street, Seattle, WA 98104
- Community Open Houses: Written comment forms, interactive boards/roll plots, and a computer survey

In addition to the public meetings, an early scoping meeting was held in Tacoma on the afternoon of April 17, 2018, for tribes, agencies, and jurisdictions. Agency participants could

learn about the project, ask questions, and provide informal comments on interactive roll plot maps of the corridor in advance of providing their formal early scoping comment letters.

Early scoping comments were received from one Tribal government and 11 agencies, and over 550 written comments were received from members of the public. Common project-wide themes included:

- Support for the light rail system
- Concern about taxes and project costs
- Providing adequate parking at stations
- Evaluating economic tradeoffs: increased access to local and regional job opportunities and potential impacts to businesses along the route
- Interest in transit oriented development (TOD)

The Early Scoping Summary Report contains further information about the comments received (Sound Transit 2018b).

Potential concepts for the TDLE project began by reviewing previous work done in regional planning studies, including Sound Move—The Ten-Year Regional Transit System Plan (Sound Transit 1996), the Regional Transit Long-Range Plan (Sound Transit 2005), Sound Transit 2: A Mass Transit Guide—The Regional Transit System Plan for Central Puget Sound (Sound Transit 2008), Sound Transit 3: The Regional Transit System Plan for Central Puget Sound (Sound Transit 2016), and the Federal Way to Tacoma High Capacity Transit Corridor Study (Sound Transit 2014a). Local planning studies were also reviewed. The existing transit network and plans for the Federal Way Link Extension were also considered.

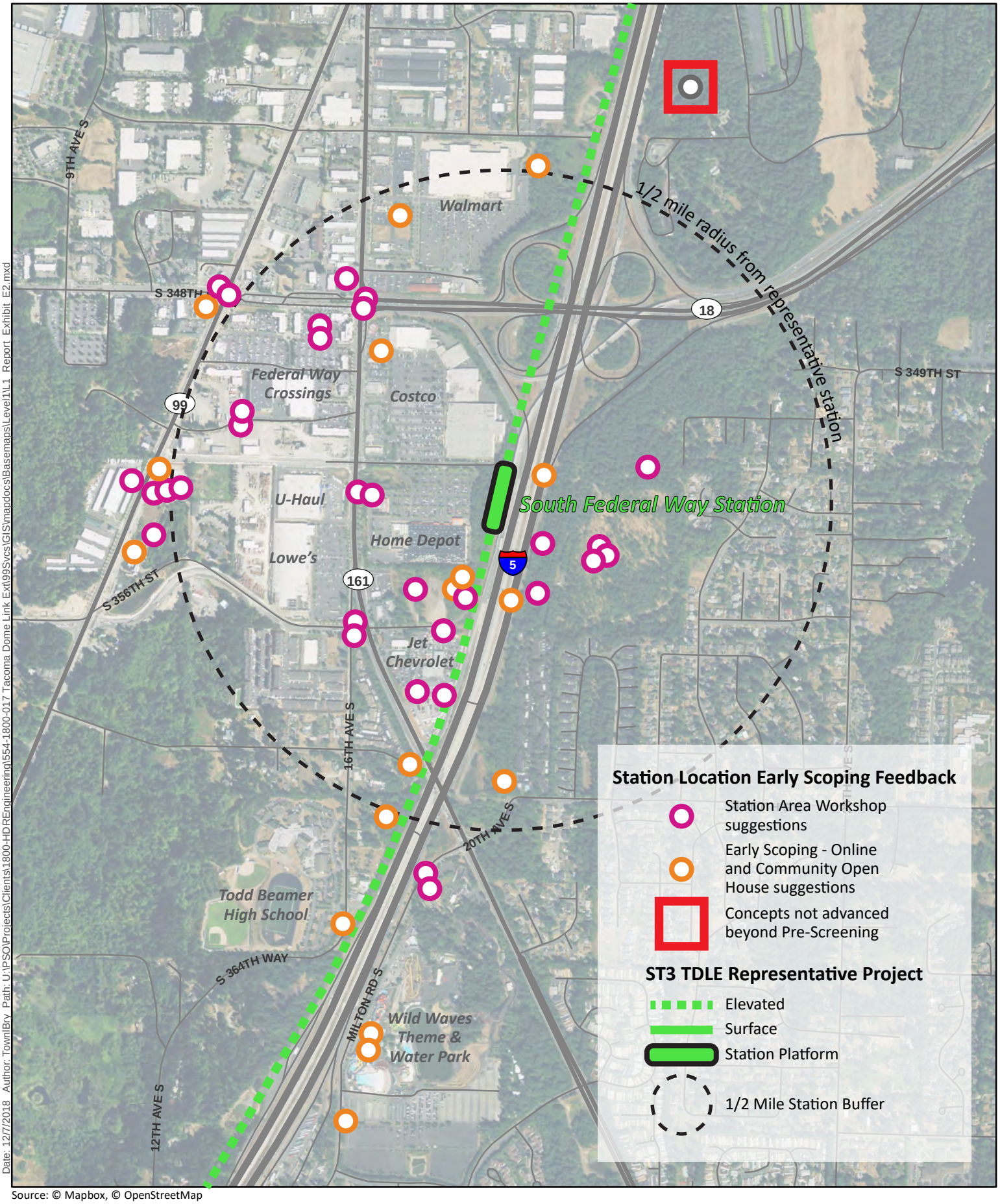
Based on previous studies and public involvement completed for the adoption of the Long-Range Plan and the EIS, and on the results of the Federal Way to Tacoma High Capacity Transit Corridor Study and related ST3 planning and outreach, the Sound Transit Board has adopted light rail transit (LRT) as the mode to serve the South Corridor connecting Seattle to Tacoma. Therefore, only LRT alternatives are being considered for the Tacoma Dome Link Extension.

Alternatives considered during the pre-screening and Level 1 evaluation included different alignment and station concepts. The alignment refers to the horizontal location on the ground within a corridor and the vertical elevation of the aerial guideway. The initial range of alternatives are generally located within the SR 99 or I-5 corridors as shown in Exhibit E-1. The pre-screening of alternatives was undertaken to identify and screen out alignment and station concepts that did not warrant further consideration in the Level 1 evaluation.

A few alignment concepts outside of the SR 99 and I-5 corridors were considered in the pre-screening, such as an alignment along the Interurban Trail corridor and extending Tacoma Link west of the Tacoma Dome to East Tacoma (see Exhibit E-5). These concepts were not brought forward into the Level 1 evaluation because of inconsistency with the Purpose and Need, inconsistency with the ST3 Plan, circuitous routing that would add travel time to the HCT service, and environmental constraints. The SR 99 and I-5 corridors are the only practicable options to meet the project Purpose and Need to extend the HCT system between the Federal Way Transit Center and the Tacoma Dome station area, providing direct connections with Sounder commuter rail, Tacoma Link light rail, and Amtrak passenger rail (future), as well as the Sound Transit Express, Pierce Transit, Greyhound, and King County Metro bus transit systems.

Station concepts that were not brought forward into the Level 1 evaluation are shown on Exhibits E-3 to E-5. These station concepts included:

- A station located to the northwest of the I-5/SR 18 interchange in the Weyerhaeuser property—this station concept is inconsistent with ST3 because it is located outside of the South Federal Way activity center.
- A station located in Milton just north of 70th Avenue E between I-5 and Pacific Highway E—this station concept is inconsistent with ST3 because it is located outside of the Fife activity center.
- A station located in Tacoma in the SR 509 right-of-way (ROW) in the Burlington Northern Santa Fe (BNSF) Railyard – this station concept is inconsistent with ST3 because it is located outside of both the East Tacoma and Tacoma Dome activity centers.
- A series of stations located in McKinley Park in Tacoma—these station concepts are inconsistent with ST3 because of the location outside of the Tacoma Dome activity center and within a major public park facility.
- A series of stations located to the west of I-705 in Tacoma—these station concepts are inconsistent with ST3 because of the location outside of the Tacoma Dome activity center.



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Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

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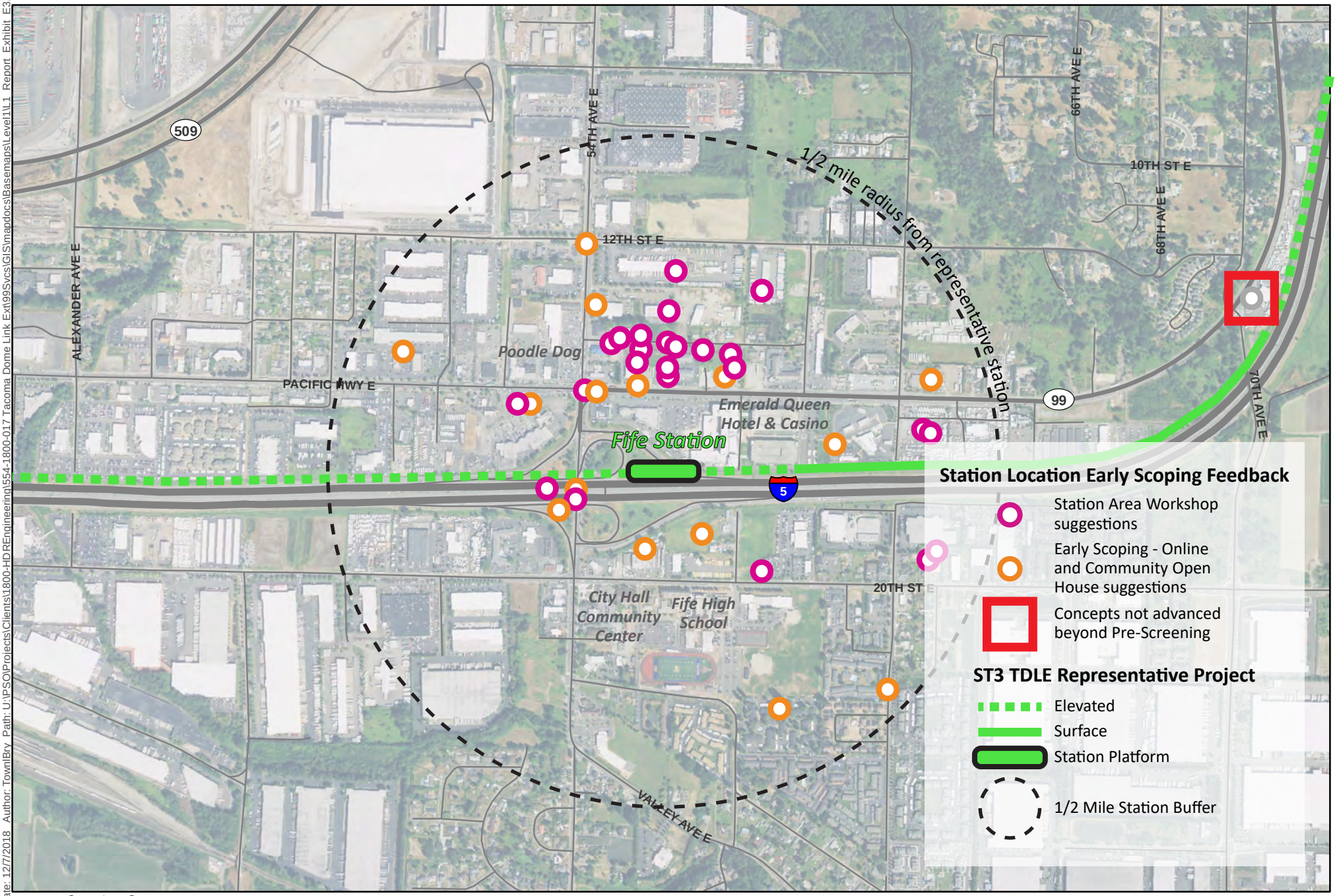
Exhibit E-3
TDLE Station Location Feedback
South Federal Way



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Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

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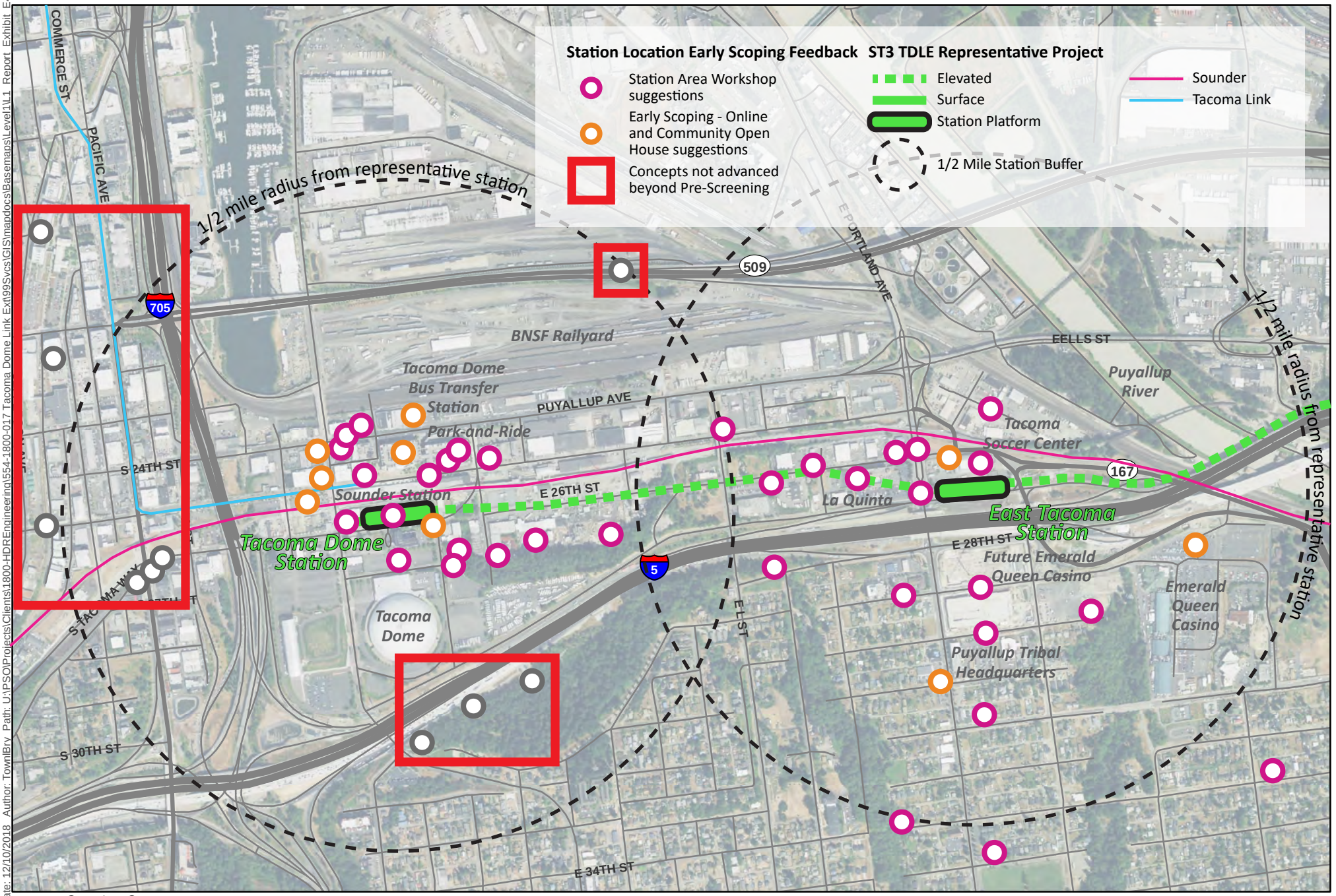
Exhibit E-4

TDLE Station Location Feedback

Fife



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Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

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Exhibit E-5
TDLE Station Location Feedback
East Tacoma and Tacoma Dome

Level 1 Alternatives

There are a total of 51 alternatives in the segments that were evaluated in Level 1. The representative project, which was included in ST3, is included in the alternatives that were evaluated in Level 1. The vertical profile of all TDLE alternatives is assumed to be elevated except for relatively short at-grade alignment sections in locations where elevated street crossings are not required. More detailed information regarding specific design details will be developed in later phases of the project. This analysis assumed that all alternatives would be elevated.

South Federal Way

There are 17 alternatives in South Federal Way (SF) that can generally be categorized into four alignment families: Enchanted Parkway, SR 99, I-5 West/Representative, and I-5 Median/I-5 East, as shown on Exhibit E-6.

Enchanted Parkway

The Enchanted Parkway alternatives include SF 1 Enchanted/348th, SF 2 Enchanted/352nd, and SF 3 Enchanted/356th, as depicted on Exhibit E-7. For a detailed description of the Enchanted Parkway alternatives, see Section 2.2.

SR 99

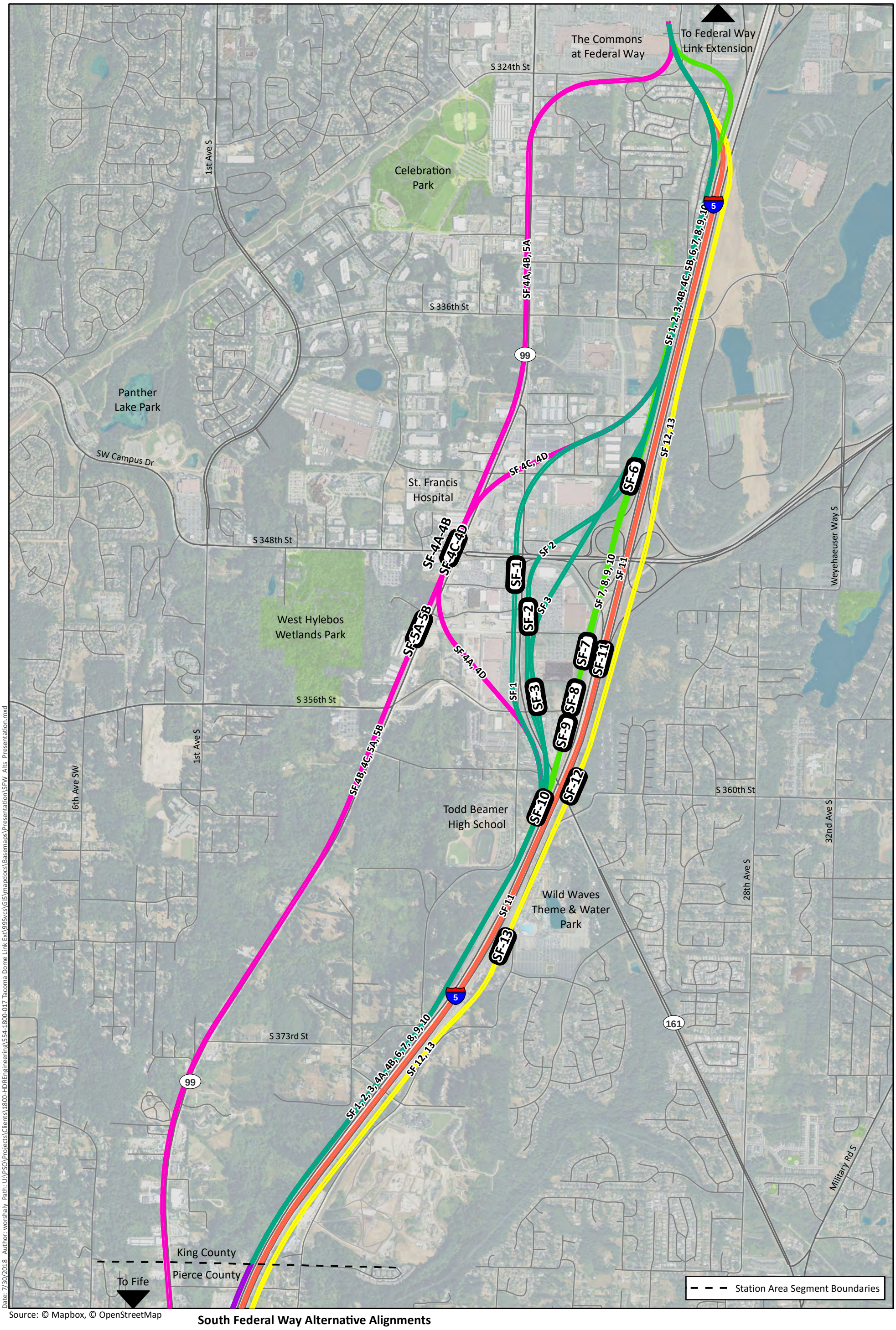
The SR 99 alternatives include SF 4A 99 North (SR 99 to I-5), SF 4B 99 North (SR 99), SF 4C 99 North (I-5 to SR 99), SF 4D 99 North (I-5 to SR 99 to I-5), SF 5A 99 South (SR 99), and SF 5B 99 South (I-5 to SR 99), as depicted on Exhibit E-8. For a detailed description of the SR 99 alternatives, see Section 2.2.

I-5 West/Representative Alignment

The I-5 West/Representative alternatives include SF 6 I-5/344th, SF 7 I-5/352nd (Representative), SF 8 I-5/356th, SF 9 I-5/Jet, and SF 10 I-5/359th, as depicted on Exhibit E-9. For a detailed description of the I-5 West/Representative Alignment alternatives, see Section 2.2.

I-5 Median/I-5 East

The I-5 Median/I-5 East alternatives include SF 11 Median, SF 12 I-5 East/Enchanted, and SF 13 I-5 East/Wild Waves, as depicted on Exhibit E-10. For a detailed description of the I-5 Median/I-5 East alternatives, see Section 2.2.



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Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

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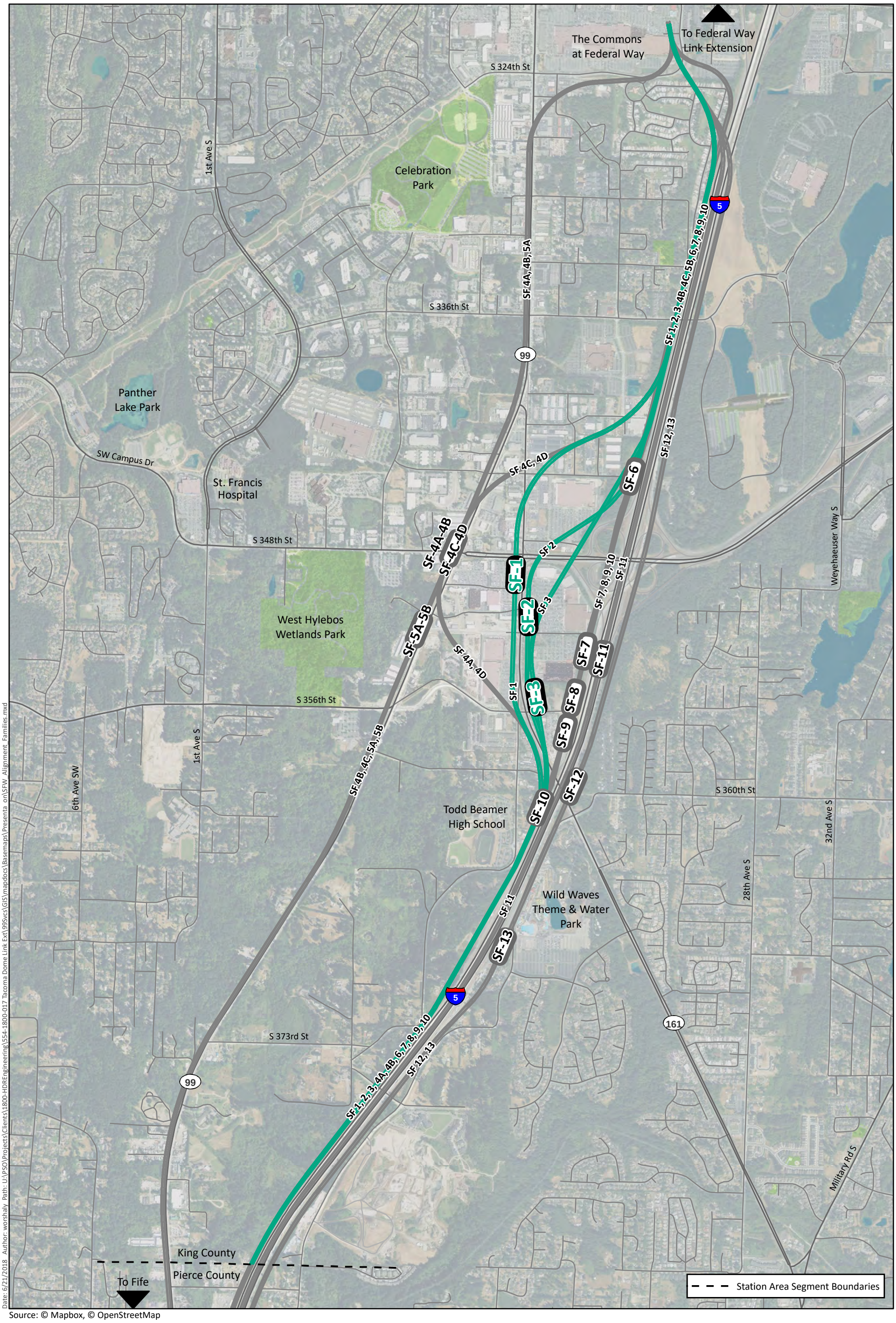
South Federal Way Alternative Alignments

- SF 1 Enchanted/348th
- SF 2 Enchanted/352nd
- SF 3 Enchanted/356th
- SF 4A SR 99 to I-5
- SF 4B SR 99
- SF 4C I-5 to SR 99
- SF 4D I-5 to SR 99 to I-5
- SF 5A SR 99
- SF 5B I-5 to SR 99
- SF 6 I-5/344th
- SF 7 I-5/352nd/Representative
- SF 8 I-5/356th
- SF 9 I-5/Jet
- SF 10 I-5/359th
- SF 11 I-5 Median
- SF 12 I-5 East/Enchanted
- SF 13 I-5 East/Wild Waves

Exhibit E-6

Level 1 Alternatives - South Federal Way



Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presenta on\SFW_Alignment_Families.mxd

Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

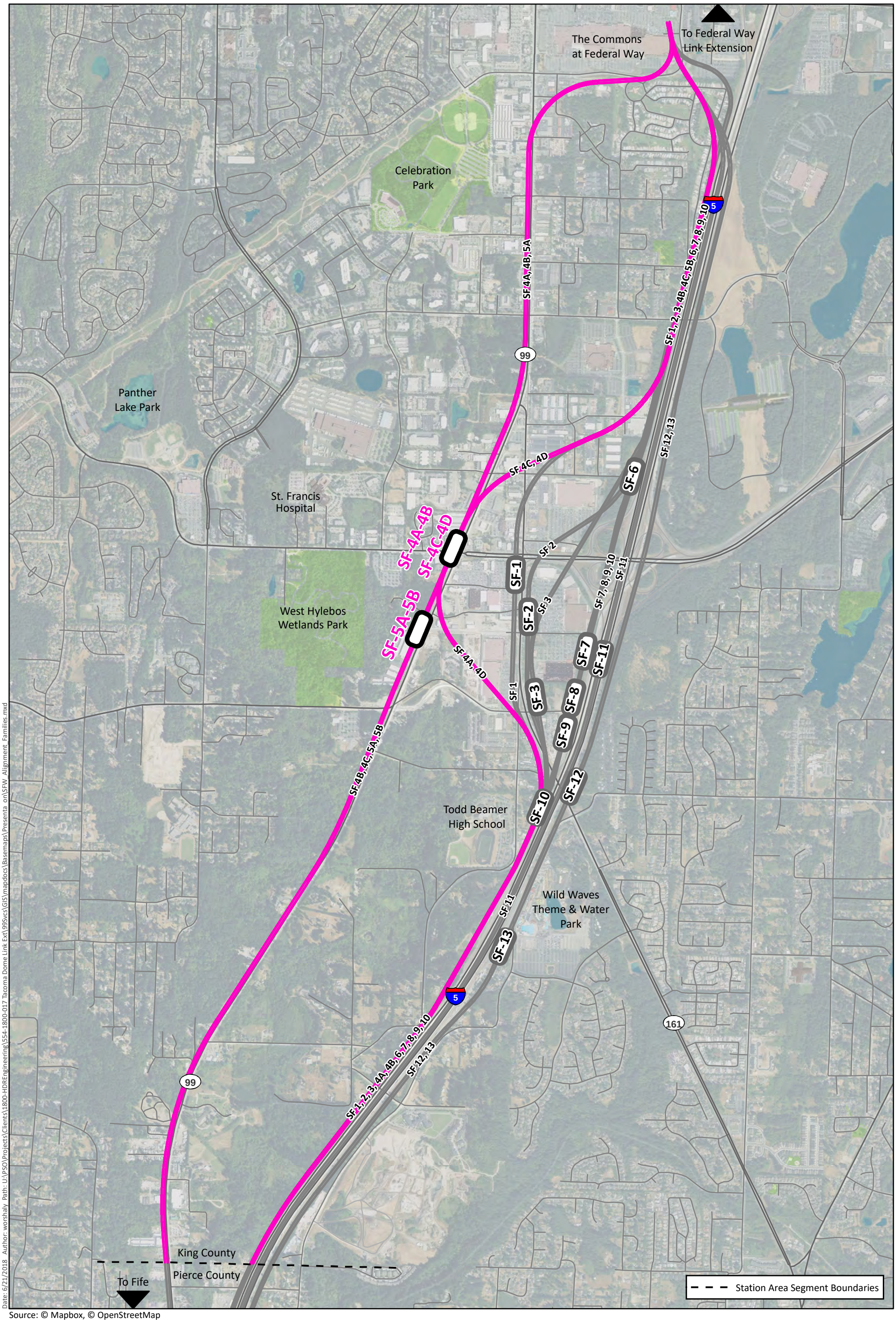
SOUNDTRANSIT

Enchanted Parkway Alignment Family

- Other Alignments
- SF 1 Enchanted/348th
- SF 2 Enchanted/352nd
- SF 3 Enchanted/356th

Exhibit E-7

Level 1 Alternatives - South Federal Way - Enchanted Parkway Alignment Family



Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

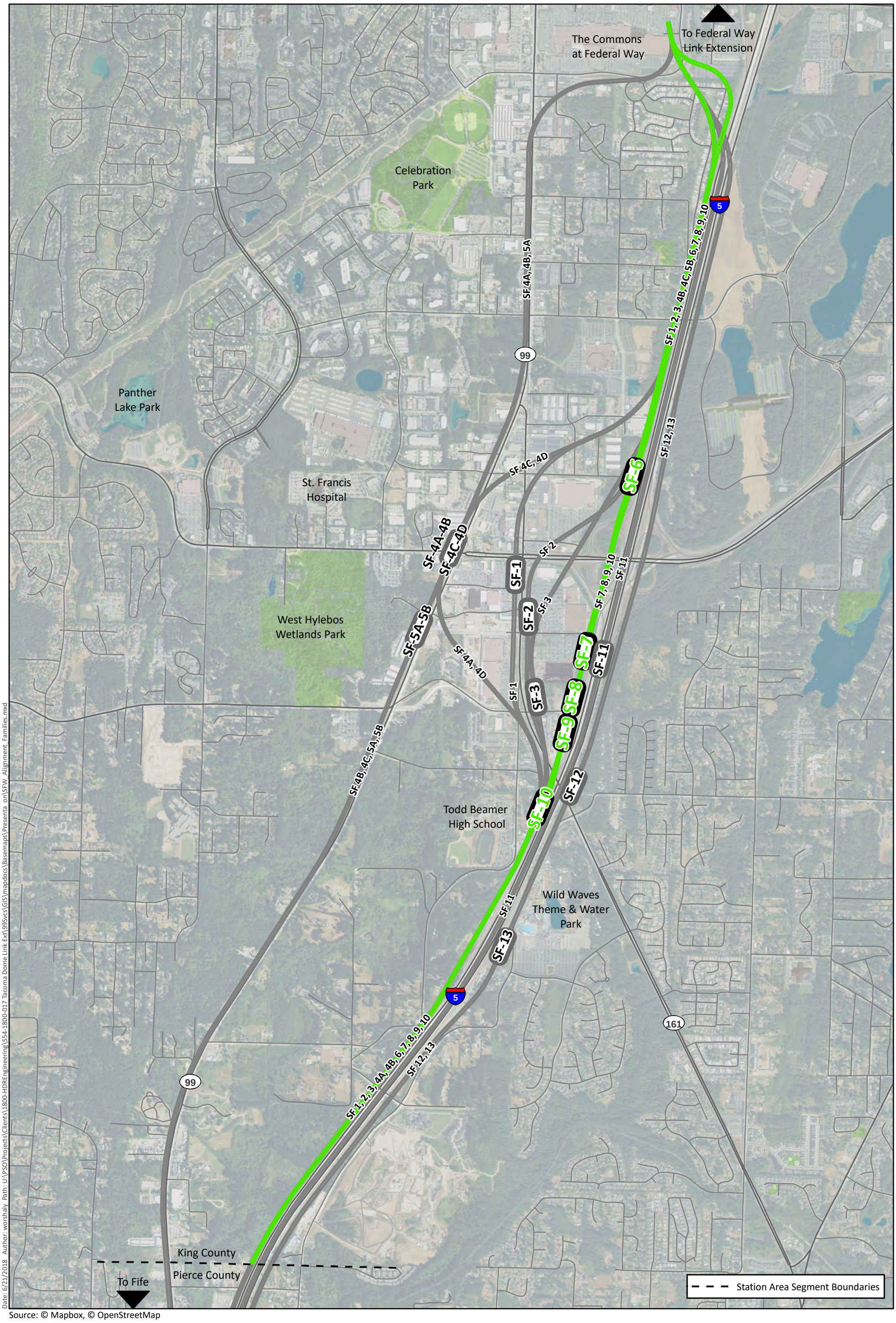
SOUNDTRANSIT

SR 99 Alignment Family

- Other Alignments
- SF 4A SR 99 to I-5
- SF 4B SR 99
- SF 4C I-5 to SR 99
- SF 4D I-5 to SR 99 to I-5
- SF 5A SR 99
- SF 5B I-5 to SR 99

Exhibit E-8

Level 1 Alternatives - South Federal Way - SR 99 Alignment Family



Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\SFW_Alignment_Families.mxd

Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

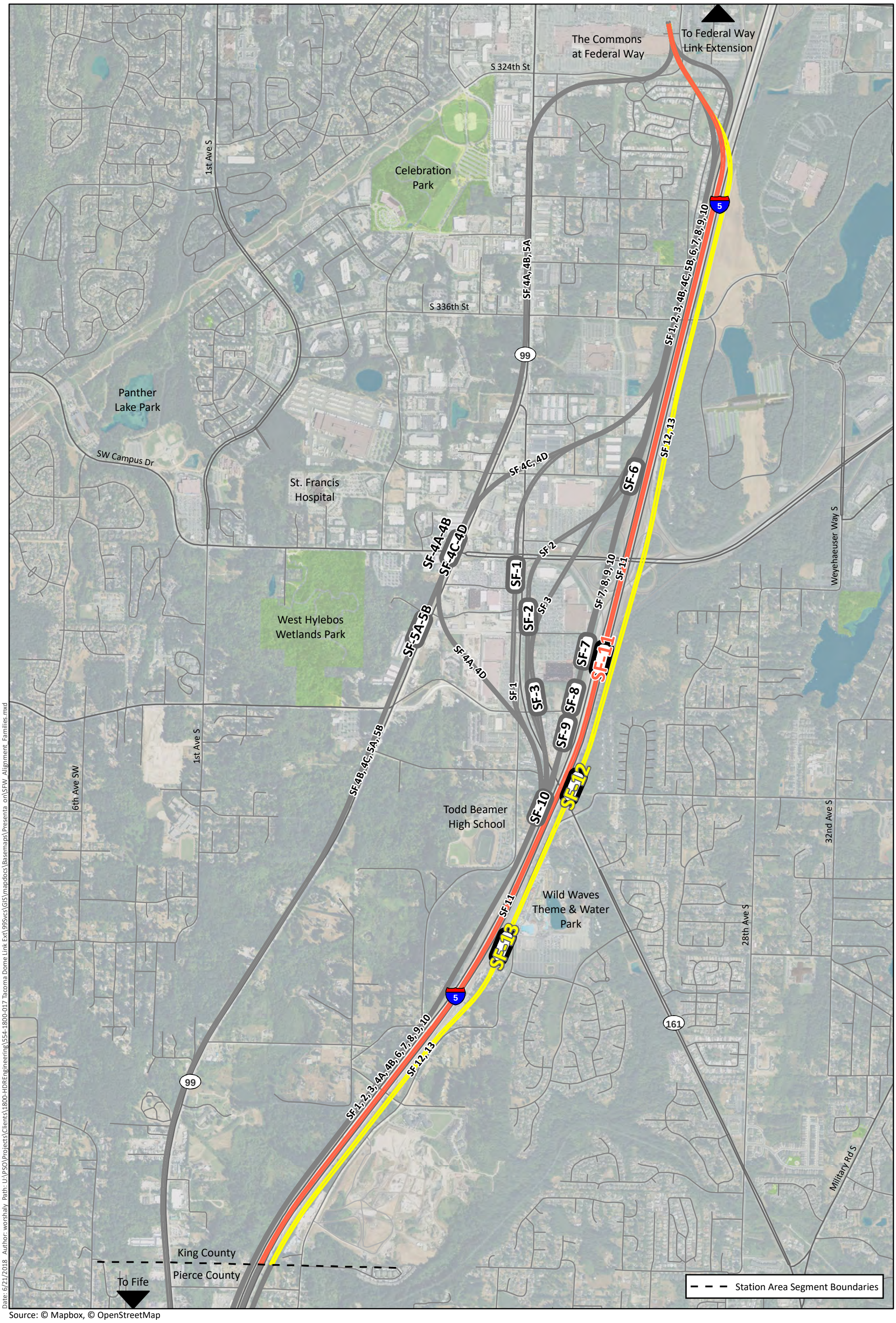
SOUNDTRANSIT

I-5 West/Representative Alignment Family

- Other Alignments
- SF 6 I-5/344th
- SF 6 I-5/344th
- SF 8 I-5/356th
- SF 9 I-5/Jet
- SF 10 I-5/359th

Exhibit E-9

Level 1 Alternatives - South
Federal Way - I-5 West/
Representative Alignment Family



Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\SFW_Alignment_Families.mxd

Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

SOUNDTRANSIT

I-5 Median/I-5 East Alignment Family

- Other Alignments
- SF 11 I-5 Median
- SF 12 I-5 East/Enchanted
- SF 13 I-5 East/Wild Waves

Exhibit E-10

Level 1 Alternatives - South Federal Way - I-5 Median/I-5 East Alignment Family

Fife

There are 16 alternatives in Fife that can generally be categorized into five alignment families: I-5 West to 12th Street, Pacific Highway/15th Street, Pacific Highway East/South, I-5 West/Representative, and I-5 Median/I-5 South, as shown on Exhibit E-11.

I-5 West to 12th Street

The I-5 West to 12th Street alternative includes Fife 1 12th Street, as depicted on Exhibit E-12. For a detailed description of the I-5 West to 12th Street alternative, see Section 2.2.

Pacific Highway West/15th Street

The Pacific Highway West/15th Street alternatives include Fife 2A-B Pacific Highway West and Fife 3A-B 15th Street, as depicted on Exhibit E-13. For a detailed description of the Pacific Highway West/15th Street alternatives, see Section 2.2.

Pacific Highway East/South

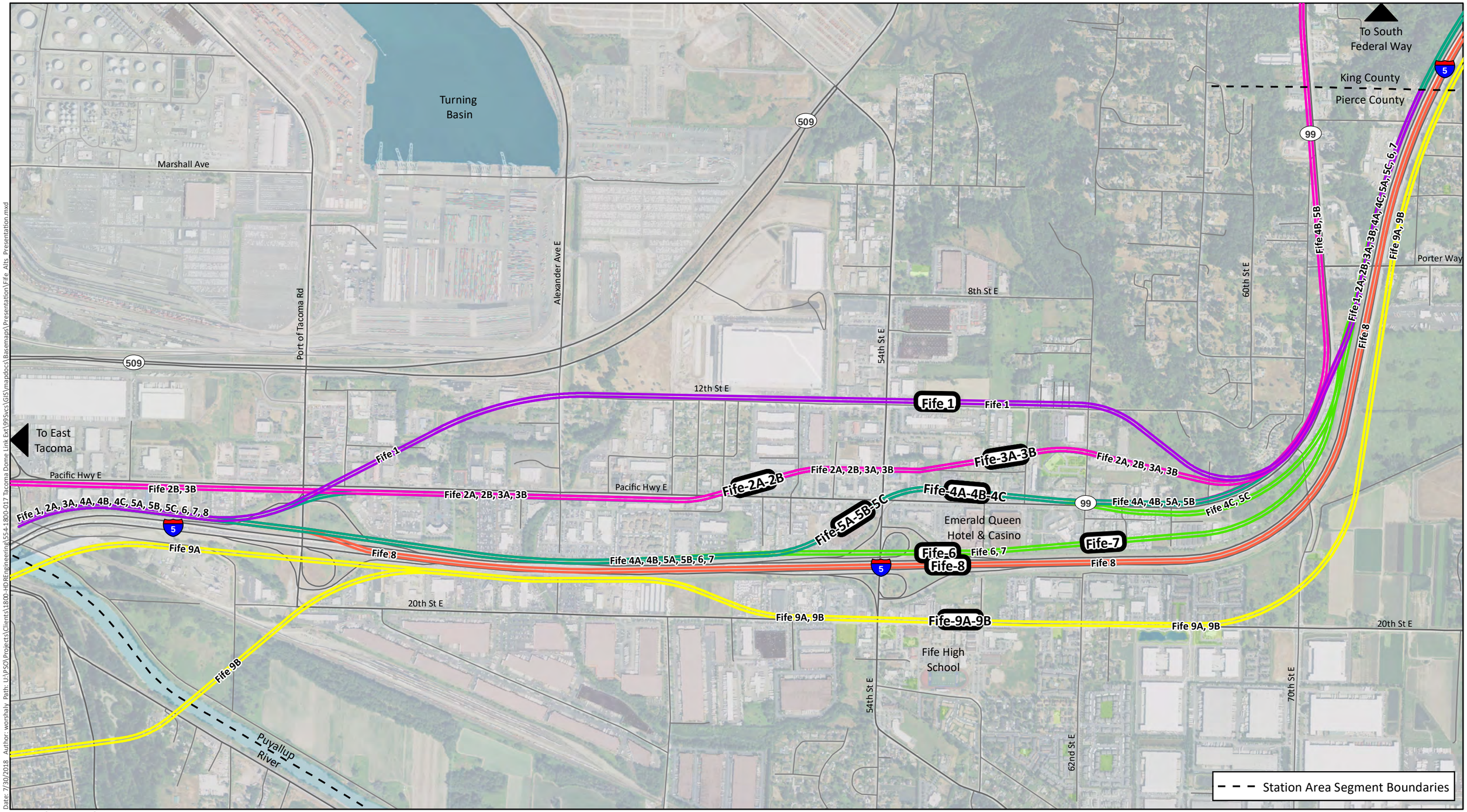
The Pacific Highway East/South alternatives include Fife 4A-C Pacific Highway East and Fife 5A-C Pacific Highway South, as depicted on Exhibit E-14. For a detailed description of the Pacific Highway East/South alternatives, see Section 2.2.

I-5 West/Representative

The I-5 West/Representative alternatives include Fife 6 I-5 West (Representative) and Fife 7 I-5 East, as depicted on Exhibit E-15. For a detailed description of the I-5 West/Representative alternatives, see Section 2.2.

I-5 Median/I-5 South

The I-5 Median/I-5 South alternatives include Fife 8 I-5 Median and Fife 9A-B 20th Street, as depicted on Exhibit E-16. For a detailed description of the I-5 Median/I-5 South alternatives, see Section 2.2.



Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

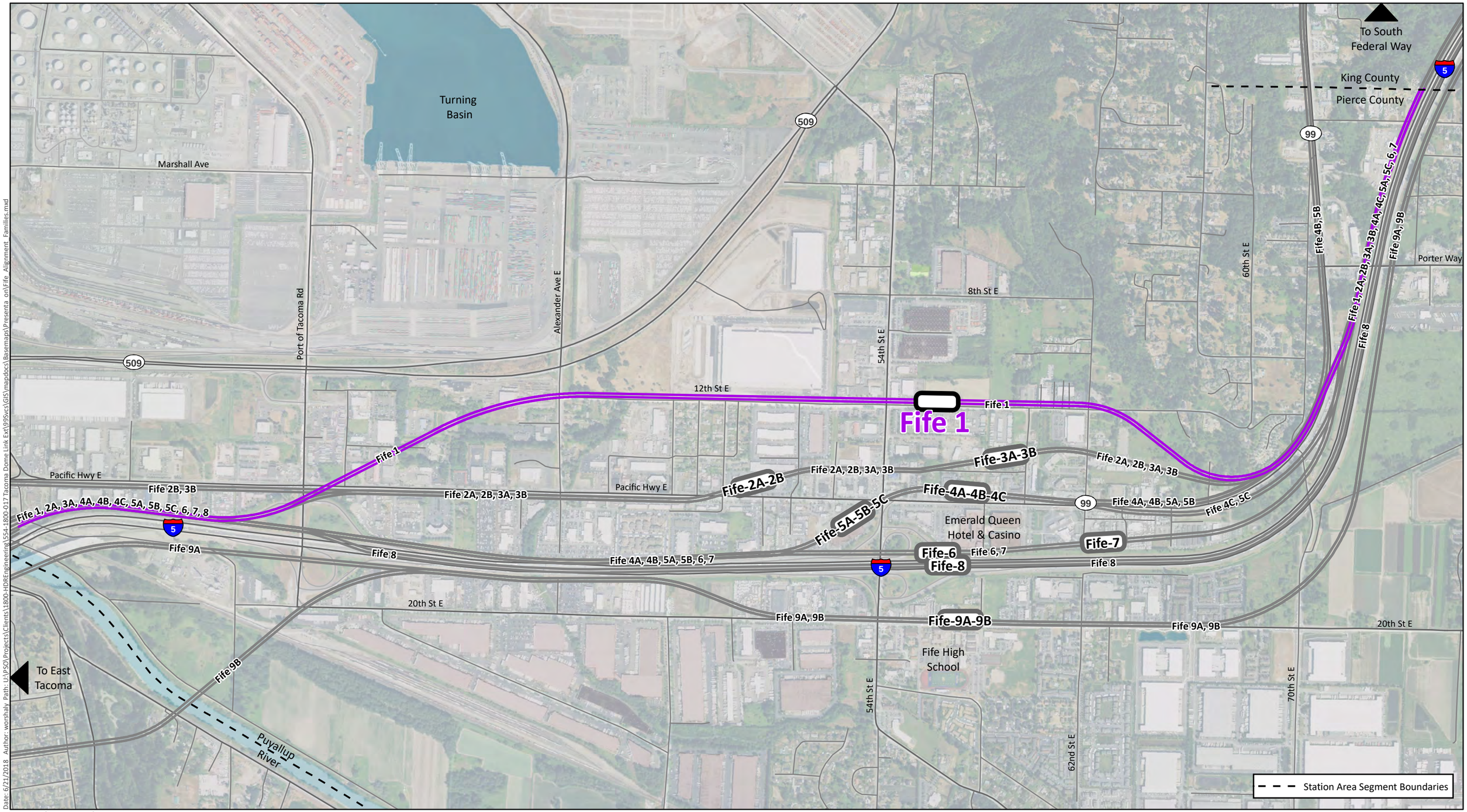
SOUNDTRANSIT

Fife Alternative Alignments

- Fife 1 12th Street
- Fife 2A Pacific Hwy West
- Fife 2B Pacific Hwy West
- Fife 3A 15th Street
- Fife 3B 15th Street
- Fife 4A Pacific Hwy East
- Fife 4B Pacific Hwy East
- Fife 4C Pacific Hwy East
- Fife 5A Pacific Hwy South
- Fife 5B Pacific Hwy South
- Fife 5C Pacific Hwy South
- Fife 6 I-5 West/Representative
- Fife 7 I-5 East
- Fife 8 I-5 Median
- Fife 9A 20th Street
- Fife 9B 20th Street

Exhibit E-11

Level 1 Alternatives - Fife



Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

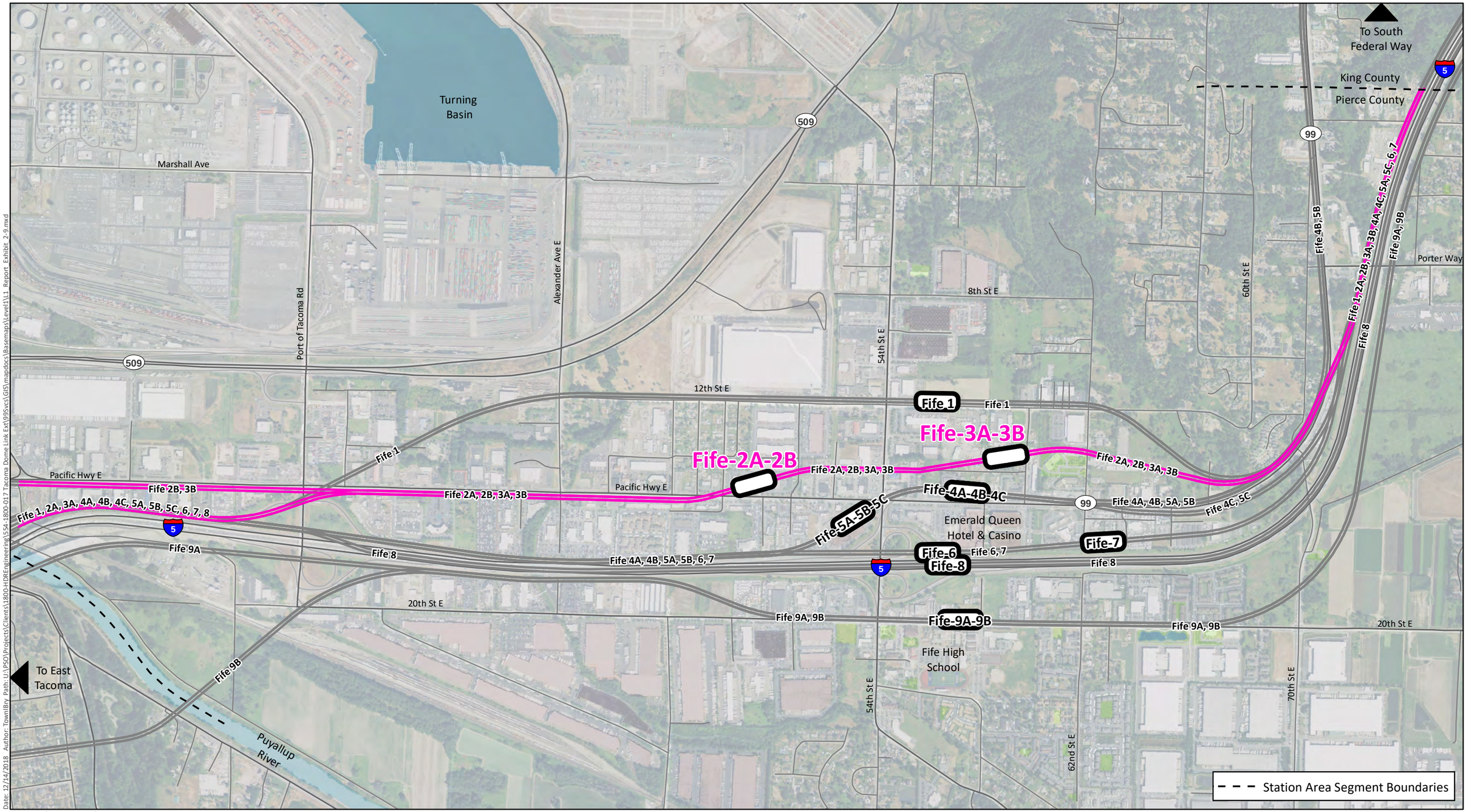
I-5 West to 12th Street Alignment Family

- Other Alignments
- Fife 1 12th Street

Exhibit E-12

Level 1 Alternatives - Fife - I-5 West to 12th Street Alignment Family

Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presenta on\Fife_Alignment_Families.mxd



Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SoundTransit

Pacific Highway West/15th Street Alignment Family

- Other Alignments
- Fife 2A Pacific Highway West
- Fife 2B Pacific Highway West
- Fife 3A 15th St
- Fife 3B 15th St

Exhibit E-13

Level 1 Alternatives - Fife - Pacific Highway West/15th Street Alignment Family

Turning Basin
Marshall Ave
Port of Tacoma Rd
Alexander Ave E
509
12th St E
54th St E
8th St E
60th St E
99
To South Federal Way
King County
Pierce County
Porter Way
Fife 1
Fife 1, 2A, 2B, 3A, 3B, 4A, 4C, 5A, 5C, 6, 7
Fife 4B, 5B
Fife 9A, 9B
Fife 8
Pacific Hwy E
Fife 2B, 3B
Fife 2A, 2B, 3A, 3B
Fife 2A-2B
Fife 3A-3B
Fife-4A-4B-4C
Fife 4A, 4B, 5A, 5B
Fife 4C, 5C
Fife-5A-5B-5C
Emerald Queen Hotel & Casino
Fife 1, 2A, 3A, 4A, 4B, 4C, 5A, 5B, 5C, 6, 7, 8
Fife 9A
Fife 8
Fife 4A, 4B, 5A, 5B, 6, 7
Fife-6
Fife-8
Fife 6, 7
Fife-7
20th St E
Fife 9A, 9B
Fife-9A-9B
Fife High School
To East Tacoma
Fife 9B
Puyallup River
54th St E
62nd St E
70th St E
Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SoundTransit

Pacific Highway East/South Alignment Family

- Other Alignments
- Fife 4A Pacific Highway East
- Fife 4B Pacific Highway East
- Fife 4C Pacific Highway East
- Fife 5A Pacific Highway South
- Fife 5B Pacific Highway South
- Fife 5C Pacific Highway South

Exhibit E-14

Level 1 Alternatives - Fife - Pacific Highway East/South Alignment Family

Marshall Ave
Port of Tacoma Rd
Alexander Ave E
509
99
To South Federal Way
5
King County
Pierce County
Fife 4B, 5B
Fife 9A, 9B
Fife 1, 2A, 2B, 3A, 3B, 4A, 4C, 5A, 5C, 6, 7
Fife 8
Porter Way
8th St E
60th St E
54th St E
12th St E
Fife 1
Pacific Hwy E
Fife 2B, 3B
Fife 2A, 2B, 3A, 3B
Fife-2A-2B
Fife-3A-3B
Fife-4A-4B-4C
Fife-5A-5B-5C
Fife 4A, 4B, 5A, 5B
Fife 4C, 5C
Fife 1, 2A, 3A, 4A, 4B, 4C, 5A, 5B, 5C, 6, 7, 8
Fife 9A
Fife 8
Fife 4A, 4B, 5A, 5B, 6, 7
Fife-6
Emerald Queen Hotel & Casino
Fife-7
Fife 6, 7
Fife-8
20th St E
Fife 9A, 9B
Fife-9A-9B
Fife High School
Fife 9B
To East Tacoma
Puyallup River
62nd St E
70th St E
Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

I-5 West/Representative Alignment Family

- Other Alignments
- Fife 6 I-5 West/Representative
- Fife 7 I-5 East

Exhibit E-15

Level 1 Alternatives - Fife - I-5 West/Representative Alignment Family

Date: 12/14/2018 Author: TownIBry Path: U:\PSO\Projects\Clients\1800HDREngineering\544-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Level1\L1_Report_Exhibit_2-12.mxd

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

I-5 Median/I-5 South Alignment Family

- Other Alignments
- Fife 8 I-5 Median
- Fife 9A 20th Street
- Fife 9B 20th Street

Exhibit E-16

Level 1 Alternatives - Fife - I-5 Median/I-5 South Alignment Family

East Tacoma

There are 11 alternatives in East Tacoma (ET) that can generally be categorized into four alignment families: Puyallup Avenue, East 25th Street, East 26th Street/Representative, and East 26th/27th Street, as shown on Exhibit E-17.

Puyallup Avenue

The Puyallup Avenue alternatives include ET 1A Puyallup Avenue (I-5 West to Puyallup) and ET 1B Puyallup Avenue (SR 99 to Puyallup), as depicted on Exhibit E-18. For a detailed description of the Puyallup Avenue alternatives, see Section 2.2.

East 25th Street

The East 25th Street alternative includes ET 2 25th Street, as depicted on Exhibit E-19. For a detailed description of the East 25th Street alternative, see Section 2.2.

East 26th Street/Representative

The East 26th Street/Representative alternatives include ET 3 26th Street East, ET 4A-C 27th Street North, and ET 6 26th Street West, as depicted on Exhibit E-20. For a detailed description of the East 26th Street/Representative alternatives, see Section 2.2.

East 26th/27th Street

The East 26th/27th Street alternatives include ET 5 27th Street South, ET 7 29th Street, and ET 8 34th Street, as depicted on Exhibit E-21. For a detailed description of the East 26th/27th Street alternatives, see Section 2.2.

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SOUNDTRANSIT

Tacoma Dome Alternative Alignments

- TD 1 Puyallup Avenue
- TD 2 25th Street West
- TD 3 25th Street East
- TD 4A 26th Street
- TD 4B 26th Street/Representative
- TD 5A 27th Street
- TD 5B 27th Street

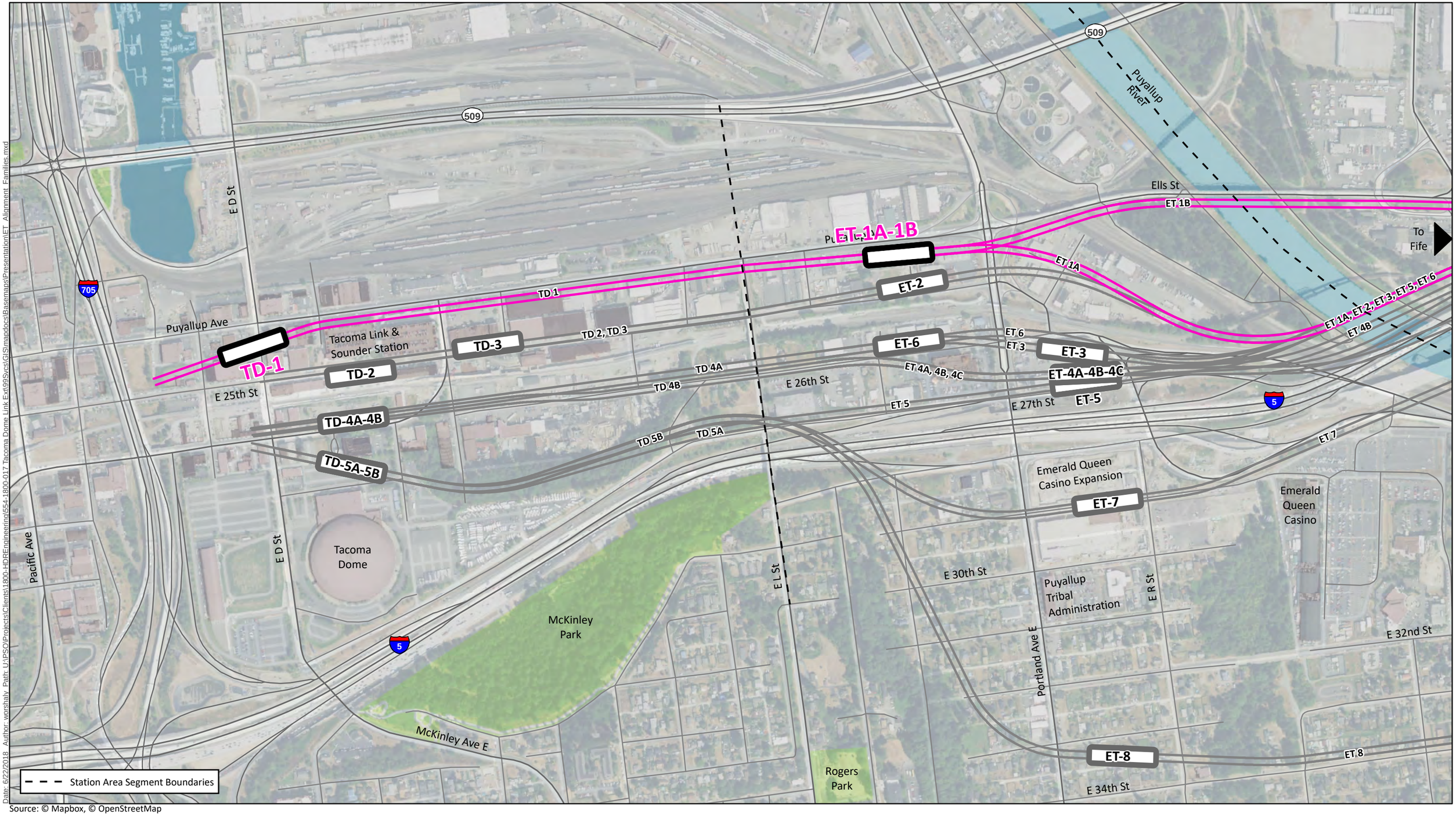
East Tacoma Alternative Alignments

- ET 1A Puyallup Avenue
- ET 1B Puyallup Avenue
- ET 2 25th Street
- ET 3 26th Street East
- ET 4A 27th Street North
- ET 4B 27th Street North/Representative
- ET 4C 27th Street North
- ET 5 27th Street South
- ET 6 26th Street West
- ET 7 29th Street
- ET 8 34th Street

Station Area Segment Boundaries

Exhibit E-17

Level 1 Alternatives - East Tacoma and Tacoma Dome



Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SOUNDTRANSIT

Puyallup Avenue Alignment Family

- Other Alignments
- ET 1A Puyallup Avenue
- ET 1B Puyallup Avenue
- TD 1 Puyallup Ave

Exhibit E-18

Level 1 Alternatives - East Tacoma and Tacoma Dome - Puyallup Avenue Alignment Family

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

Station Area Segment Boundaries

East 25th Street Alignment Family

- Other Alignments
- ET 2 25th Street
- TD 2 25th Street West
- TD 3 25th Street East

Exhibit E-19

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 25th Street Alignment Family

Date: 6/22/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDR\engineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\TD_Alignment_Families.mxd

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

Station Area Segment Boundaries

East 26th Street/Representative Alignment Family

- Other Alignments
- TD 4A 26th Street
- TD 4B 26th Street/Representative
- ET 3 26th Street East
- ET 4A 27th Street North
- ET 4B 27th Street North/Representative
- ET 4C 27th Street North
- ET 6 26th St West

Exhibit E-20

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 26th Street/ Representative Alignment Family

Puyallup River
Ells St
ET 1B
Puyallup Ave
ET-1A-1B
ET-2
TD 1
TD-1
Tacoma Link & Sounder Station
TD-3
TD 2, TD 3
TD-2
ET-6
ET 6
ET 3
ET-3
ET-4A-4B-4C
ET 1A, ET 2, ET 3, ET 5, ET 6
ET 4B
E 25th St
TD 4A
TD 4B
E 26th St
ET 4A, 4B, 4C
TD-4A-4B
ET 5
E 27th St
ET-5
TD 5B
TD 5A
TD-5A-5B
ET 7
Emerald Queen Casino Expansion
Emerald Queen Casino
ET-7
E 30th St
Puyallup Tribal Administration
E R St
Portland Ave E
E 32nd St
E D St
Tacoma Dome
E L St
McKinley Park
McKinley Ave E
ET-8
ET 8
E 34th St
Rogers Park
To Fife
509
705
5

Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SoundTransit

East 26th Street/27th Street Alignment Family

- Other Alignments
- TD 5A 27th Street
- TD 5B 27th Street
- ET 5 27th Street South
- ET 7 29th Street
- ET 8 34th Street

Exhibit E-21

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 26th Street/27th Street Alignment Family

Tacoma Dome

There are seven alternatives at the Tacoma Dome (TD) that can generally be categorized into four alignment families: Puyallup Avenue, East 25th Street, East 26th Street/Representative, and East 26th/27th Street, as shown on Exhibit E-17.

Puyallup Avenue

The Puyallup Avenue alternative includes TD 1 Puyallup Avenue, as depicted on Exhibit E-18. For a detailed description of the Puyallup Avenue alternative, see Section 2.2.

East 25th Street

The East 25th Street alternatives include TD 2 25th Street West and TD 3 25th Street East, as depicted on Exhibit E-19. For a detailed description of the East 25th Street alternatives, see Section 2.2.

East 26th Street/Representative

The East 26th Street/Representative alternatives include TD 4A-B 26th Street, as depicted on Exhibit E-20. For a detailed description of the East 26th Street/Representative alternatives, see Section 2.2.

East 26th/27th Street

The East 26th/27th Street alternatives include TD 5A-B 27th Street, as depicted on Exhibit E-21. For a detailed description of the East 26th/27th Street alternatives, see Section 2.2.

Level 1 Criteria

The Purpose and Need Statement for this project establishes five objectives that have been used to develop the evaluation criteria for the Level 1 analysis of alternatives. These objectives are to:

- Provide Effective Transportation Solutions to meet Mobility, Access, and Capacity Needs;
- Support Sustainable Land Use Plans, Economic Development, and TOD;
- Preserve the Environment;
- Support Equitable Mobility; and
- Provide a Financially Sustainable and Constructible Project.

Exhibit E-22, Level 1 Screening, lists these objectives and evaluation criteria, which were used to develop measures to assess the differences among the alternatives. The qualitative and quantitative measures were used to select alternatives for a more detailed Level 2 evaluation. A broad set of initial alternatives were reviewed against the Purpose and Need of the project and the screening criteria for the Level 1 analysis.

1

EXHIBIT E-22
Level 1 Screening

Evaluation Criteria	Measures
Objective: Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs **Purpose and Need:** • Provide high quality rapid, reliable, accessible, and efficient light rail transit service connecting the communities of Federal Way, Milton, Fife, Tacoma, and the Puyallup Tribe of Indians to other destinations on the regional HCT system. • Meet projected transit demand and offer an alternative to travel on congested roadways, better connecting people to where they live, work, and play. • Expand mobility for people in the corridor and region, including low income, minority, or transit-dependent populations.	
Ridership Potential	L1.1: Travel time L1.2: Total population and employment (2035) within 1/2 mile of stations L1.3: Proximity to existing/future population and employment centers/activity centers and major destinations within 1/2 mile of stations
Objective: Support Sustainable Land Use Plans, Economic Development, and TOD **Purpose and Need:** • Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Regional Transit Long-Range Plan Update(Sound Transit 2014b). • Encourage equitable and sustainable urban growth in station areas through support of TOD and multimodal integration in a manner that is consistent with adopted local comprehensive plans and policies, including Sound Transit's Transit Oriented Development and Sustainability Policies. • Encourage convenient and safe nonmotorized access to stations such as bicycle and pedestrian connections consistent with Sound Transit's System Access Policy.	
Supports future TOD opportunities	L1.4: Consistency with local and Tribal economic development goals, planned development, current and anticipated zoning, and/or comprehensive plans L1.5: Barriers that limit the development potential, walkshed, and range and safety of bicycling around the station such as topography, wide roads, highways, bodies of water, and railways L1.6: Presence of amenities to catalyze complete neighborhoods, such as shops, services, schools, recreational facilities, civic or character amenities, or views/access to nature
Promotes multimodal access and connections	L1.7: Qualitative assessment of bike and pedestrian accessibility and potential for improvement L1.8: Qualitative assessment of transit connections and potential for improvement within station areas
Objective: Preserve the Environment **Purpose and Need:** • Preserve and promote a healthy and sustainable environment and economy by minimizing adverse impacts on the natural, built, and social environments.	
Effects on the natural environment	L1.9: Proximity to major wetlands, streams, floodplains, steep slopes, Endangered Species Act (ESA) species, fisheries, or other natural habitat areas within 100 feet of an alternative (in acres of resources)
Effects on the built environment	L1.10: Estimated levels of property impacts (residential, commercial, other) and number of large tax-generating properties impacted L1.11: Estimated number of Tribal parcels impacted L1.12: Presence of known Section 4(f), park, historic, culturally-significant Tribal properties, or other protected areas

EXHIBIT E-22
Level 1 Screening

Evaluation Criteria	Measures
	L1.13: Presence of a viewshed or proximity to view-dependent businesses L1.14: Potential for impacts from vibration and noise L1.15: Potential for affecting areas with existing traffic congestion L1.16: Potential for affecting parking supply and demand and spillover parking effects L1.17: Potential avoidance of hazardous waste
Objective: Support Equitable Mobility **Purpose and Need:** • Expand mobility for people in the corridor and region, including low income, minority, or transit-dependent populations.	
Provide equitable transit service to low-income, minority, and transit-dependent populations	L1.18: Qualitative demographic differences among the option census data (households with no car, low-income, and minority populations) in station areas L1.19: Potential for impacts on low-income and minority populations
Objective: Provide a Financially Sustainable and Constructible Project **Purpose and Need:** • Develop a light rail extension that is technically and financially feasible to build, operate, and maintain, consistent with the regional system defined by the Sound Transit 3 Plan and the Regional Transit Long-Range Plan update, which was developed through a robust local planning process that established transit mode, corridor, and general station locations.	
Financial considerations	L1.20: Major cost elements beyond the representative project description
Constructability and engineering considerations	L1.21: Potential risks (major utilities or structures) L1.22: Availability and potential to use publicly-owned right-of-way L1.23: Capability to accommodate future expansion included in the Regional Transit Long-Range Plan
Operational considerations	L1.24 Consideration of operational elements (e.g., potential reliability, track alignment, tail tracks and pocket track at Tacoma Dome, number of at-grade crossings, if any)
Schedule considerations	L1.25: Overall schedule risk

The proposed methodologies for assessing the measures outlined in Exhibit E-22 are described in Chapter 3, Level 1 Evaluation Criteria.

Level 1 Evaluation Summary

A total of 51 alternatives across the four segments were evaluated for Level 1 analysis between the Federal Way Transit Center and Tacoma Dome Station area. These alternatives are further described in Chapter 2, Pre-screening of Alternatives.

Process to Identify Level 2 Alternatives

In September 2018, the results of the Level 1 Evaluation were reviewed by the ELG, Interagency Group (IAG), the Stakeholder Group, and the public. These groups provided input on the Level 1 evaluation and findings, and the ELG made a recommendation on which alternatives should continue to Level 2. Exhibit E-23, Summary of Level 1 Findings and Results, summarizes the full range of alternatives reviewed in Level 1 and which of those were advanced to Level 2 by the ELG for further development and evaluation.

EXHIBIT E-23
Summary of Level 1 Findings and Results

Alternative	Results
SOUTH FEDERAL WAY	
Enchanted Parkway	
SF 1 Enchanted/348th	✖ SF 1 is being removed due to higher property impacts of alignment and station compared to SF 2 and SF 3, which serve the same station area and have similar alignment types along Enchanted Parkway South. The alignment is slightly longer and includes an additional major arterial street crossing. Not preferred by the local jurisdiction.
SF 2 Enchanted/352nd	✓ Advance for further study in Level 2.
SF 3 Enchanted/356th	✓ Advance for further study in Level 2.
SR 99	
SF 4A 99 North (SR 99 to I-5) SF 4B 99 North (SR 99) SF 4C 99 North (I-5 to SR 99) SF 4D 99 North (I-5 to SR 99 to I-5)	✓ Advance for further study in Level 2.
SF 5A 99 South (SR 99) SF 5B 99 South (I-5 to SR 99)	✖ SF 5A and 5B are being removed due to lower-performing stations (multimodal access and TOD potential) compared to SF 4 alternatives that have a nearby station and offer the same SR 99 alignment choices. Not preferred by the local jurisdiction.
I-5 West	
SF 6 I-5/344th	✖ Removed due to lower-performing station (multimodal access, stream/wetlands, and TOD) along an alignment that is already being considered in alternatives SF 8 and SF 9.
SF 7 I-5/352nd (Representative)	✖ Removed for same reasons as SF 6 and impacts to major retail business loading area.
SF 8 I-5/356th	✓ Advance for further study in Level 2.
SF 9 I-5/Jet	✓ Advance for further study in Level 2.
SF 10 I-5/359th	✖ Removed for same reasons as SF 6.
I-5 Median	
SF 11 I-5 Median	✖ Removed due to lack of effective multimodal access to station location, lower TOD potential, higher potential environmental impacts due to the need to widen I-5, higher construction impacts, and higher engineering risks and challenges due to additional structures and bridges to cross I-5 and reconfigure existing ramps. Not supported by the Federal Highway Administration (FHWA) or the Washington State Department of Transportation (WSDOT).
I-5 East	
SF 12 I-5 East/Enchanted	✖ Removed due to lower-performing station on multimodal access, ridership and TOD potential, and higher engineering risks and challenges of additional structures to cross I-5.
SF 13 I-5 East/Wild Waves	✖ Removed for same reasons as SF 12.
FIFE	
12th Street	
Fife 1 12th Street	✓ Advance for further study in Level 2, with alignment modifications to avoid an area of Tribal ownership.

EXHIBIT E-23
Summary of Level 1 Findings and Results

Alternative	Results
Pacific Highway West	
Fife 2A Pacific Highway West	✖ Removed due to higher impacts of the alignment to multiple properties under Tribal ownership. Removal was also based on a lower-performing station site that was outside the Fife planned city center area, and for lower multimodal access and TOD potential. In addition, the alignment featured higher property and potential transportation impacts because of its location along SR 99. Not preferred by the local jurisdiction.
Fife 2B Pacific Highway West	✖ Removed for same reasons as Fife 2A, but also due to the SR 99 alignment approaching Tacoma that would have required a Puyallup River crossing on property of cultural importance to the Puyallup Tribe.
Fife 3A 15th Street Fife 3B 15th Street	✓ Advance for further study in Level 2.
Pacific Highway to I-5	
Fife 4A Pacific Highway East Fife 4B Pacific Highway East Fife 4C Pacific Highway East	✓ Advance for further study in Level 2.
Fife 5A Pacific Highway South Fife 5B Pacific Highway South Fife 5C Pacific Highway South	✖ Removed due to lower-performing stations based on congestion, multimodal access, and TOD measures. Aside from the station area, the alignments are being considered in other alternatives. Not preferred by the local jurisdiction.
I-5 West	
Fife 6 I-5 West	✖ Removed due to an alignment that conflicts with the planned SR 167 interchange, and that would impact a major Tribal property. Removal was also due to lower performance for multimodal access, congestion, and TOD measures, largely as a result of the access constraints and development posed by I-5 and the 54th Avenue East Interchange directly adjacent. Not preferred by the local jurisdiction.
Fife 7 I-5 West (Representative)	✖ Removed based on same alignment concerns as Fife 6, and due to a station that is more removed from the planned city center area than other alternatives, with lower performance for multimodal access and TOD potential.
I-5 Median	
Fife 8 I-5 Median	✖ Removed due to longer travel times, lack of effective multimodal access to the median station location, lower TOD potential, higher potential environmental impacts due to the need for major I-5 widening/modifications, higher construction impacts, and higher engineering risks and challenges. Not supported by FHWA or WSDOT.
I-5 South	
Fife 9A 20th Street	✖ Removed due to longer travel times; higher property impacts; higher impacts to farmlands, wetlands, and floodplains; and the need for an additional crossing of I-5 to the north or south. The station served by this alignment was lower-performing on multimodal access and TOD measures, and is well outside the Fife city center area.
Fife 9B 20th Street	✖ Removed for similar reasons as Fife 9A, with a station that is even more distant from Fife's city center area. Their associated alignments also cross into areas that are farmlands and floodplains, with a higher potential for archaeological and cultural impacts.
EAST TACOMA	
Puyallup Avenue	
ET 1A Puyallup Avenue (I-5 West to Puyallup)	✓ Advance for further study in Level 2.
ET 1B Puyallup Avenue (SR 99 to Puyallup)	✖ Removed due to a sub-alignment that impacts an area of cultural significance to the Puyallup Tribe adjacent to the Puyallup River. The same station and the rest of the alignment advanced with ET 1A.
25th Street	
ET 2 25th Street	✓ Advance for further study in Level 2.

EXHIBIT E-23
Summary of Level 1 Findings and Results

Alternative	Results
26th Street	
ET 3 26th Street - East	✓ Advance for further study in Level 2.
ET 6 26th Street - West	✓ Advance for further study in Level 2.
27th to 26th Street	
ET 4A 27th Street - North ET 4B 27th Street - North (Representative) ET 4C 27th Street - North	✓ Advance for further study in Level 2.
27th Street	
ET 5 27th Street - South	✓ Advance for further study in Level 2.
South of I-5	
ET 7 29th Street	✗ Removed due to impacts to major Tribal properties and Tribal economic development plans and carrying more residential displacements. Removal also due to the engineering, construction, and operational challenges of a sloped and curving crossing above one of the wider sections of I-5 where there is an overpass and auxiliary ramps on both sides of the freeway.
ET 8 34th Street	✗ Removed for similar reasons as ET 7, but with higher levels of residential and neighborhood impacts, including to multiple blocks under Tribal ownership. Longer, slower-curving alignment negatively affects travel times and operations. Also, involved an eastern crossing of the Puyallup River with farmland and floodplain impacts and greater potential to impact areas of cultural and historic significance to the Puyallup Tribe.
TACOMA DOME	
Puyallup Avenue	
TD 1 Puyallup Avenue	✓ Advance for further study in Level 2.
25th Street	
TD 2 25th Street - West	✓ Advance for further study in Level 2.
TD 3 25th Street - East	✓ Advance for further study in Level 2.
26th Street	
TD 4A 26th Street TD 4B 26th Street (Representative)	✓ Advance for further study in Level 2.
27th Street	
TD 5A 27th Street TD 5B 27th Street	✗ Removed due to a station that was lower-performing for multimodal access and TOD potential, in part because the Tacoma Dome, topography, and Sounder tracks limited its access potential. Other alignment alternatives include a station in the same general vicinity but with fewer impacts and better connections. Potential connecting alignments crossing I-5 from East Tacoma also were not advanced.

Next Steps

The next steps in the project are to complete the more detailed evaluation of the alternatives that were advanced by the ELG. The conceptual designs of the alternatives will be further developed, and additional measures will be used in the analysis. This evaluation, called the Level 2 evaluation, will be used by the ELG and the Sound Transit Board of Directors to further refine and select the preferred alternative and additional alternatives to study further in the EIS for TDLE.

1 Introduction

The Central Puget Sound Regional Transit Authority (Sound Transit) and the Federal Transit Administration (FTA) are conducting an alternatives analysis to start the public planning and environmental processes for the Tacoma Dome Link Extension (TDLE). The proposed project is part of the Sound Transit 3 (ST3) Plan approved by voters in 2016. The project starts where the Federal Way Link Extension ends at the Federal Way Transit Center in the City of Federal Way in south King County and continues to the Tacoma Dome area in the City of Tacoma in Pierce County. The TDLE is an element of the regional Metropolitan Transportation Plan (the Puget Sound Regional Council [PSRC] 2040 Transportation Plan), and Sound Transit's Long-Range Transit Plan.

As part of the ST3 Plan, two new light rail maintenance facilities, one in the north and one in the south service area, were identified to support the expansion of light rail. The operations and maintenance facility (OMF) to serve overall regional system expansion, particularly for service in South King and Pierce counties, is called the Operations and Maintenance Facility: South (OMF South) and is evaluated in a separate report.

The public planning and environmental processes begin with development of this Level 1 Alternatives Analysis. The Level 1 Alternatives Analysis is intended to define a reasonable range of options that meet the project Purpose and Need, can be implemented at a reasonable cost, and would not result in unacceptable affects to the environment or community.

1.1 Relationship of this Evaluation to Project Development

The initial pre-screening process involved two steps: 1) considering if the alternatives being studied satisfy the Purpose and Need Statement, and 2) evaluating the alternatives for consistency with the Sound Transit 3 (ST3) Plan, which is the basis for the proposed project. The initial alignments and station concepts were developed into potential alternatives for the Level 1 evaluation process. The Level 1 Evaluation assessed the performance of the alternatives using evaluation measures based on the Purpose and Need. During the early phase of the alternatives development, Sound Transit met with local agencies and stakeholders to obtain input on potential projects and transit service ideas.

The alternatives selected by the Elected Leadership Group (ELG) will be advanced and further evaluated in Level 2, using more detailed criteria. The Level 1 and Level 2 evaluations include criteria such as transportation benefits, cost, ridership, transit oriented development (TOD), land use plans, technical feasibility, and environmental impacts. These evaluations will help Sound Transit to identify the alternatives to be considered in an environmental impact statement (EIS), including the preferred alternative.

1.2 Tacoma Dome Link Extension Corridor Background

Sound Transit is building on previous studies and plans that led to the proposed extension of light rail to the Tacoma Dome, called TDLE. These studies include:

- Federal Way to Tacoma High-Capacity Transit (HCT) Study. In 2013 to 2014, Sound Transit conducted an HCT study covering the south corridor, including South King and Pierce counties. The study evaluated multiple corridors and transit modes for extending HCT from Federal Way to Tacoma.
- Regional Long-Range Plan Update. Also in 2013 to 2014, Sound Transit updated its Long-Range Plan and prepared a Washington State Environmental Policy Act (SEPA) EIS. The update confirmed regional light rail as the preferred mode for the extended corridor to Tacoma.
- ST3 System Plan. During ST3 system planning in 2015 and 2016, Sound Transit evaluated representative projects for inclusion in the November 2016 ballot measure. Voters approved the ST3 Plan, which includes an extension of light rail from the Federal Way Transit Center to the Tacoma Dome with stops in the south Federal Way, Fife, east Tacoma, and Tacoma Dome areas. Operations planning also identified the need for an OMF to serve the south corridor and the entire Link system.
- Federal Way Link Extension: The planning for this extension of light rail from the Angle Lake station in SeaTac to the Federal Way Transit Center began in 2012 and completed National Environmental Policy Act (NEPA) and SEPA environmental processes in 2017. The Federal Way Link Extension is now entering its final design and construction phases for opening in 2024. It is the starting point at the north end of the TDLE.

1.3 Overview of Alternatives Analysis Process

The purpose of the alternatives analysis process is to identify the alternatives to be evaluated in an EIS, including the preferred alternative. To refine the alternatives, input from the Tribes, agencies, and the public was considered throughout the process. Because the resulting project will seek federal funding, the FTA general guidance for conducting alternatives analysis was incorporated into the study process. This process included initiating the study, developing and refining alternatives and methodologies, analyzing and evaluating alternatives, and (in the future) identifying a preferred alternative, as shown on Exhibit 1-1.

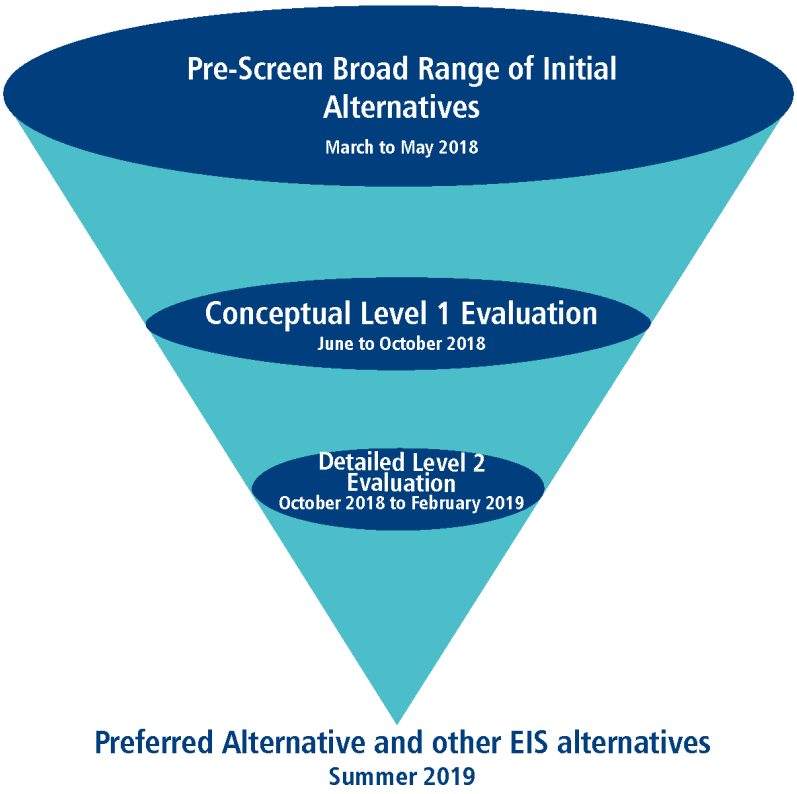


EXHIBIT 1-1
Alternatives Evaluation Process

Information from the regional and local plans and projects, as well as previous work from the ST3 Plan, was reviewed as part of initiating of the TDLE project, and a draft Purpose and Need Statement for the project was developed. The draft Purpose and Need established the objectives that were used to develop the evaluation criteria and measures for the Level 1 analysis.

The next step, pre-screening alternatives to identify those that do not meet the Purpose and Need, helped to refine the alternatives that were analyzed in the Level 1 screening. The alternatives were then defined so that the evaluation measures of the study could be used to assess the transportation, environmental, and financial effects of each alternative. At this early stage in the process, the Level 1 analysis applied both qualitative and quantitative criteria to evaluate the alternatives based on early conceptual design. The representative project from ST3 was included in the Level 1 alternatives. The alternatives selected by the ELG were refined and carried forward into the Level 2 analysis.

The Level 2 Evaluation will apply more quantitative criteria and compare the alternatives for the TDLE. The results of the Level 2 analysis will be presented to the Sound Transit Board to help them identify a preferred alternative to be evaluated in the EIS.

1.4 Organization of this Report

This report is organized into the following chapters:

1. Introduction: This chapter introduces the alternatives evaluation phase of the TDLE, some background on the corridor, and an explanation of the alternatives analysis process.
2. Pre-Screening of Alternatives: This chapter discusses alternatives identified in previous studies or submitted during the early scoping process that were pre-screened from further evaluation because they do not meet the project Purpose and Need, they have engineering or environmental constraints that make them infeasible, or they are inconsistent with adopted local and regional plans for public transportation infrastructure. This chapter also provides a summary of the project Purpose and Need and the alternatives evaluated in Level 1 of the alternatives evaluation.
3. Level 1 Evaluation Criteria: This chapter presents the evaluation criteria used to examine and compare the alternatives defined in Chapter 2. These criteria relate directly to the Purpose and Need and goals and objectives of the project.
4. Level 1 Analysis Results: This chapter provides the results of how each Level 1 alternative described in Chapter 2 performs under each criterion described in Chapter 3. Results are organized by criteria and provide a comparison between alternatives for each criterion.
5. Findings and Conclusions: This chapter summarizes the key findings of each alternative related to the evaluation criteria, and also summarizes which alternatives will not be advanced to Level 2 of alternatives evaluation.
6. References: This chapter lists the references used in this report.

2 Pre-Screening of Alternatives

The initial pre-screening process involves two steps: 1) considering if the alternatives being studied satisfy the Purpose and Need Statement, and 2) evaluating the alternatives for consistency with the project scope defined in the ST3 Plan and selected by the Sound Transit Board for voter approval, which is the basis for the proposed project.

During the pre-screening of alternatives, Sound Transit also received Tribal, agency, and public input during early scoping (April 2 through May 3, 2018).

2.1 Draft Purpose and Need

The purpose of the TDLE is to expand the Link light rail system from the Federal Way Transit Center to the Tacoma Dome Station area in order to:

- Provide high quality rapid, reliable, accessible, and efficient light rail transit service connecting the communities of Federal Way, Milton, Fife, Tacoma, and the Puyallup Tribe of Indians (Puyallup Tribe) to other destinations on the regional HCT system.
- Meet projected transit demand and offer an alternative to travel on congested roadways, better connecting people to where they live, work, and play.
- Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Regional Transit Long-Range Plan Update (Sound Transit 2014b).
- Develop a light rail extension that is technically and financially feasible to build, operate, and maintain, consistent with the regional system defined by the Sound Transit 3 Plan (Sound Transit 2016) and the Regional Transit Long-Range Plan Update, which was developed through a robust local planning process that established transit mode, corridor, and general station locations.
- Expand mobility for people in the corridor and region, including low income, minority, and transit-dependent populations.
- Encourage equitable and sustainable urban growth in station areas through support of TOD and multimodal integration in a manner that is consistent with adopted local comprehensive plans and policies, including Sound Transit's Transit Oriented Development and Sustainability policies.
- Preserve and promote a healthy and sustainable environment and economy by minimizing adverse impacts on the natural, built, and social environments.
- Encourage convenient and safe nonmotorized access to stations such as bicycle and pedestrian connections consistent with Sound Transit's System Access Policy.

The project is needed because:

- Roadway congestion is increasing on Interstate 5 (I-5) and State Route 99 (SR 99), two of the primary highways connecting King and Pierce counties, affecting reliability for transit, automobiles, and freight.
- There is not enough transit capacity to serve the corridor's riders today or in the future.
- The Puget Sound Regional Council (PSRC), the regional metropolitan planning organization, and local plans call for HCT to serve long-term population and employment growth in the corridor, consistent with PSRC's VISION 2040 (PSRC 2009) and the Sound Transit Regional Transit Long-Range Plan Update.
- South King and Pierce counties' citizens and communities, including low-income and minority populations, and/or transit-dependent populations and residents, need long-term regional mobility and multimodal connectivity as called for in the Washington State Growth Management Act.
- Regional and local plans call for increased residential, commercial, and employment growth and density in areas to be served by HCT and multimodal transportation systems.
- Environmental and sustainability goals of the state and region include reducing greenhouse gas emissions by reducing total vehicle miles traveled and by increasing mobility options that do not rely on combustible fuels (RCW 47.01.440, PSRC VISION 2040, and 2018 Regional Transportation Plan [Sound Transit 2018a]).

2.2 Development of Alternatives

Identification of potential concepts for the TDLE project began by reviewing previous work done in regional planning studies, including Sound Move—The Ten-Year Regional Transit System Plan (Sound Transit 1996), the Regional Transit Long-Range Plan (Sound Transit 2005), Sound Transit 2: A Mass Transit Guide—The Regional Transit System Plan for Central Puget Sound (Sound Transit 2008), Sound Transit 3: The Regional Transit System Plan for Central Puget Sound (Sound Transit 2016), and the Federal Way to Tacoma High Capacity Transit Corridor Study (Sound Transit 2014). Local planning studies were also reviewed. The existing transit network and plans for the Federal Way Link Extension were also considered.

Based on previous studies and public involvement completed for the adoption of the Long-Range Plan and the EIS, and on the results of the Federal Way to Tacoma High Capacity Transit Corridor Study and related ST3 planning and outreach, the Sound Transit Board has already adopted light rail transit (LRT) as the mode to serve the South Corridor connecting Seattle to Tacoma. Therefore, only LRT alternatives are being considered for the TDLE.

Alternatives developed during the pre-screening process include different alignment and station concepts. The alignment refers to the horizontal location on the ground within a corridor and

the vertical elevation of the aerial guideway. The vertical profile of all TDLE alternatives is assumed to be elevated except for relatively short at-grade alignment sections in locations where elevated street crossings are not required. More detailed information regarding specific design details will be developed in later phases of the project. The initial range of alternatives are generally located within the SR 99 or I-5 corridors as shown in Exhibit 2-1. The pre-screening of alternatives was undertaken to identify and screen out alignment and station concepts that did not warrant further consideration in the Level 1 evaluation.

2.2.1 South Federal Way

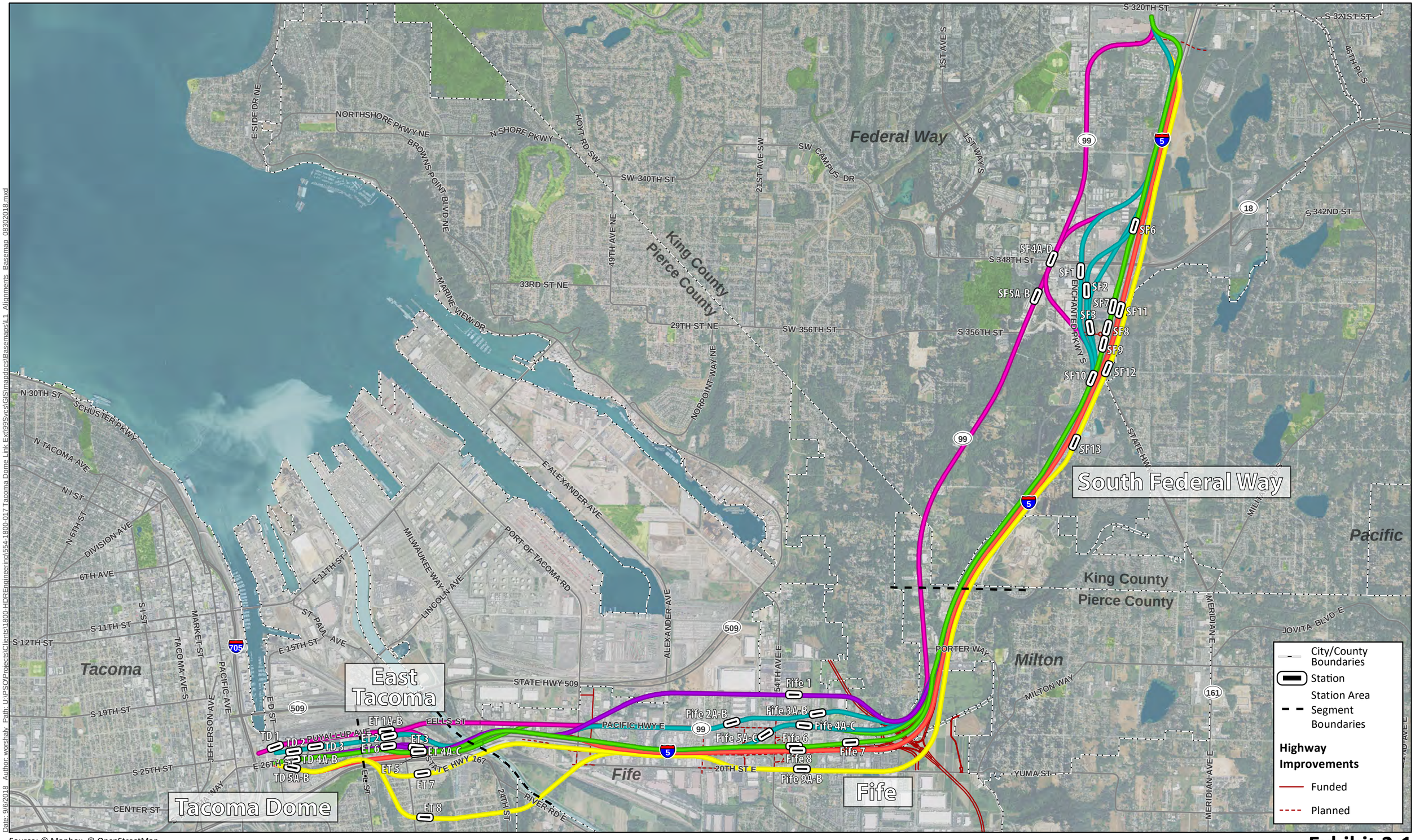
There are 17 alternatives in South Federal Way (SF) that can generally be categorized into four alignment families: Enchanted Parkway, SR 99, I-5 West/Representative, and I-5 Median/I-5 East, as shown on Exhibit 2-2.

2.2.1.1 Alternatives Advanced for Level 1 Evaluation

2.2.1.1.1 Enchanted Parkway

The Enchanted Parkway alternatives include SF 1 Enchanted/348th, SF 2 Enchanted/352nd, and SF 3 Enchanted/356th, as depicted on Exhibit 2-3:

- SF 1 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 until just south of South 336th Street, where the alignment begins to travel southwest towards 16th Avenue South/Enchanted Parkway South. SF 1 then continues to travel along the west side of Enchanted Parkway South until reaching I-5, where the alignment continues along the west side of I-5 through South Federal Way. The station is located at South 348th Street and Enchanted Parkway South.
- SF 2 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 until South 344th Street, where the alignment begins to travel southwest towards 16th Avenue South/Enchanted Parkway South. SF 2 then continues to travel along the east side of Enchanted Parkway South until reaching I-5, where the alignment continues along the west side of I-5 through South Federal Way. The station is located at Enchanted Parkway South and South 352nd Street.
- SF 3 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 until just south of South 344th Street, where the alignment begins to travel southwest towards 16th Avenue South/Enchanted Parkway South. SF 3 then continues to travel along the east side of Enchanted Parkway South until reaching I-5, where the alignment continues along the west side of I-5 through South Federal Way. The station is located at Enchanted Parkway South and South 356th Street.



Source: © Mapbox, © OpenStreetMap

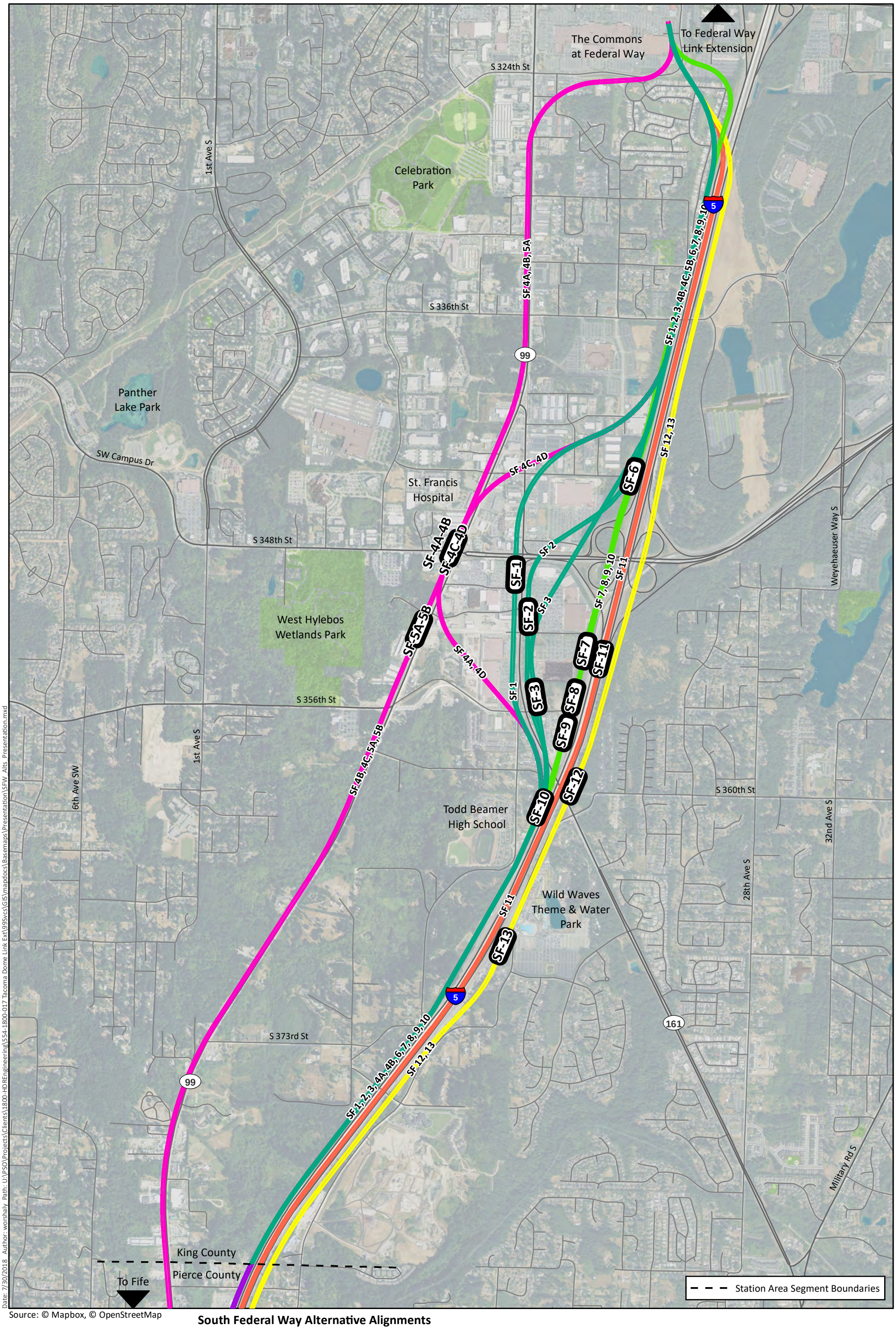
0 0.25 0.5 1 Miles

SOUNDTRANSIT

Exhibit 2-1

Level 1 Alternatives for the Tacoma Dome Link Extension

Date: 9/6/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\L1_Alignments_Basemap_08302018.mxd



Date: 7/30/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\SFW_Alts_Presentation.mxd

Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

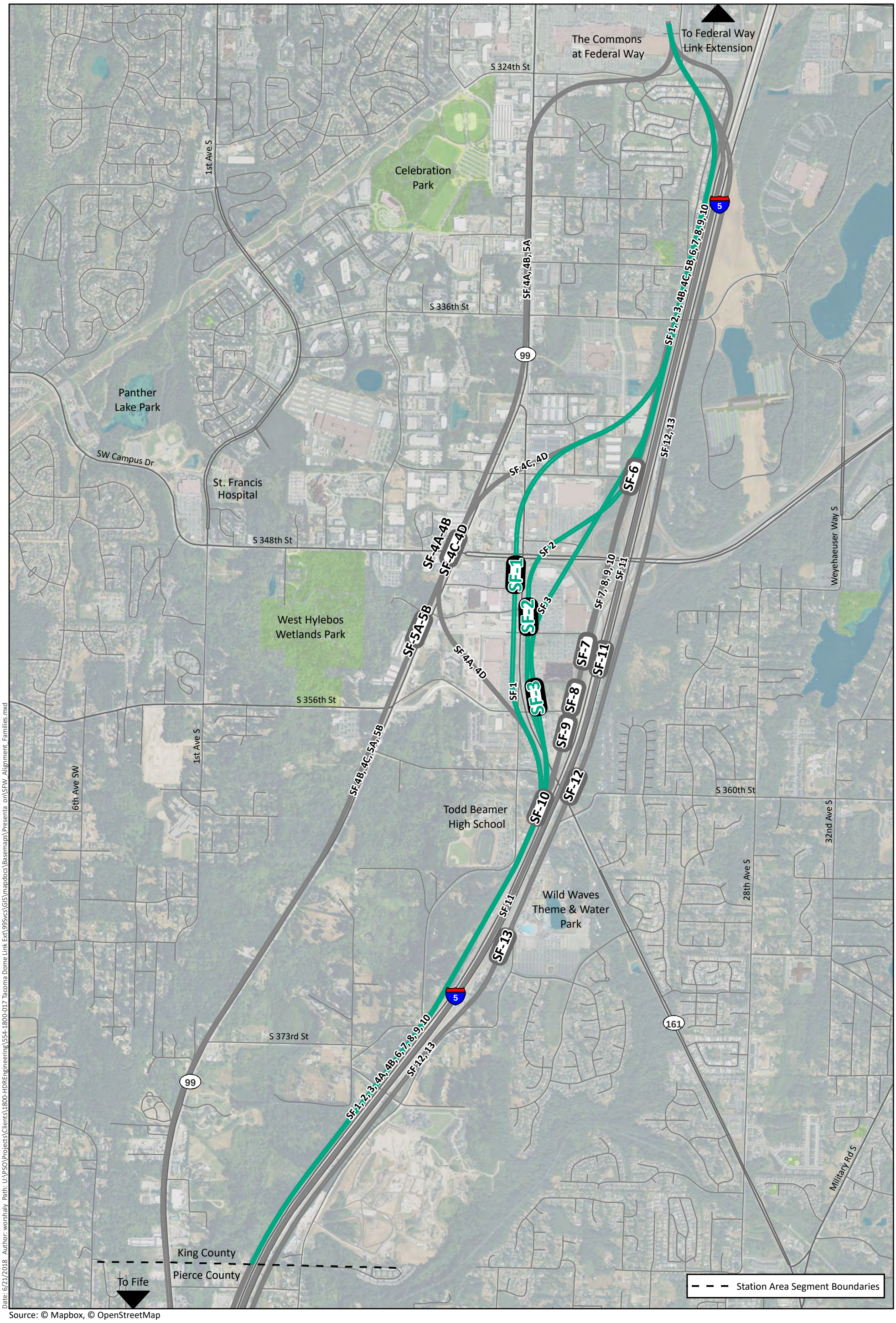
SOUNDTRANSIT

South Federal Way Alternative Alignments

- SF 1 Enchanted/348th
- SF 2 Enchanted/352nd
- SF 3 Enchanted/356th
- SF 4A SR 99 to I-5
- SF 4B SR 99
- SF 4C I-5 to SR 99
- SF 4D I-5 to SR 99 to I-5
- SF 5A SR 99
- SF 5B I-5 to SR 99
- SF 6 I-5/344th
- SF 7 I-5/352nd/Representative
- SF 8 I-5/356th
- SF 9 I-5/Jet
- SF 10 I-5/359th
- SF 11 I-5 Median
- SF 12 I-5 East/Enchanted
- SF 13 I-5 East/Wild Waves

Exhibit 2-2

Level 1 Alternatives - South Federal Way



Source: © Mapbox, © OpenStreetMap

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SOUNDTRANSIT

Enchanted Parkway Alignment Family

- Other Alignments
- SF 1 Enchanted/348th
- SF 2 Enchanted/352nd
- SF 3 Enchanted/356th

Exhibit 2-3

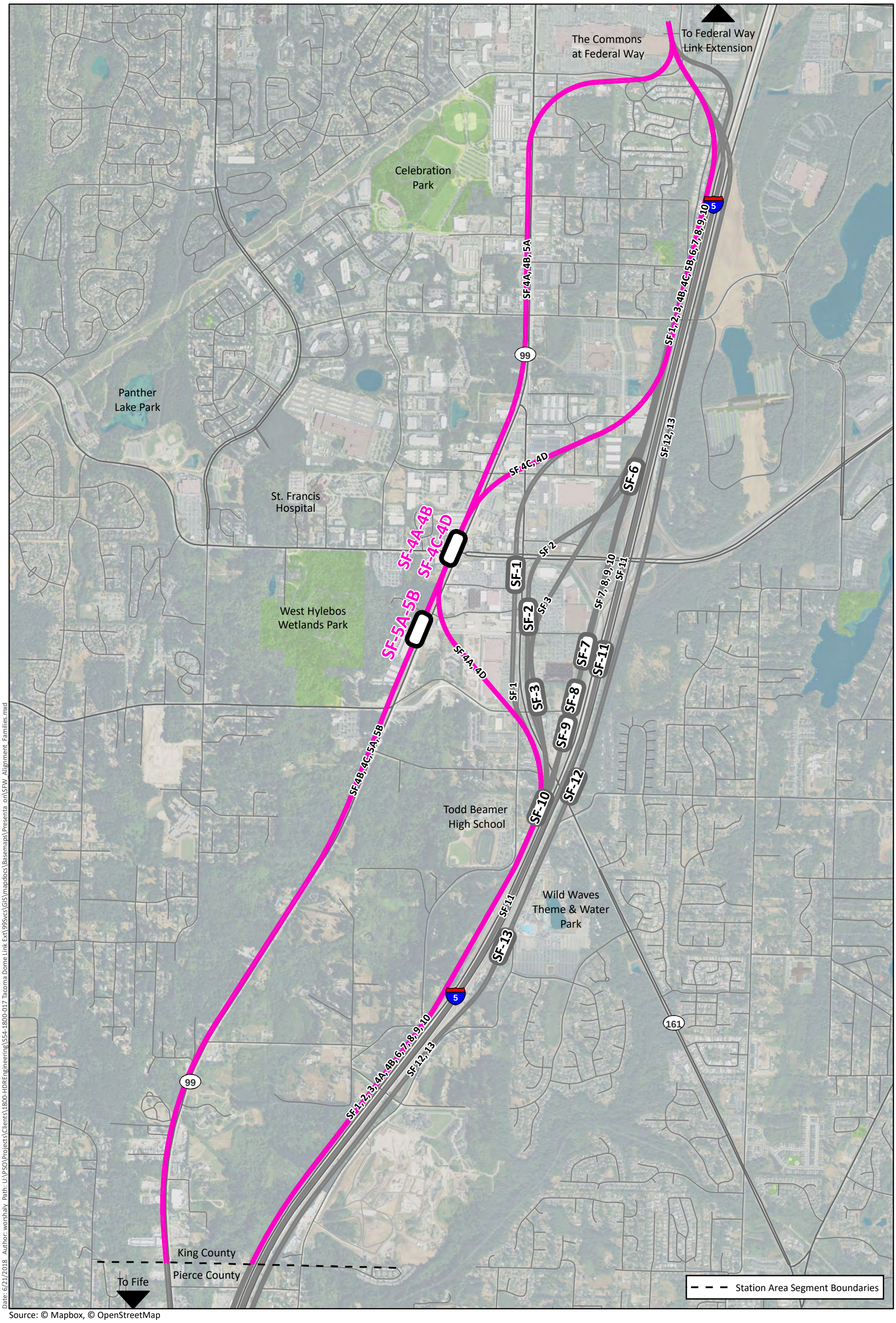
Level 1 Alternatives - South Federal Way - Enchanted Parkway Alignment Family

Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presenta on\SFW_Alignment_Families.mxd

2.2.1.1.2 SR 99

The SR 99 alternatives include SF 4A 99 North (SR 99 to I-5), SF 4B 99 North (SR 99), SF 4C 99 North (I-5 to SR 99), SF 4D 99 North (I-5 to SR 99 to I-5), SF 5A 99 South (SR 99), and SF 5B 99 South (I-5 to SR 99), as depicted on Exhibit 2-4:

- SF 4A travels southwest from the terminus of the Federal Way Link Extension along South 324th Street until SR 99, where it continues south along the west side of SR 99. Just north of South 352nd Street, SF 4A begins to travel southeast until it reaches the west side of I-5 at Enchanted Parkway South. SF 4A continues along the west side of I-5 through the remainder of South Federal Way. The station is located at South 348th Street and SR 99.
- SF 4B travels southwest from the terminus of the Federal Way Link Extension along South 324th Street until SR 99, where it continues south along the west side of SR 99 through South Federal Way. The station is located at South 348th Street and SR 99.
- SF 4C travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 until just south of South 336th Street, where the alignment begins to travel southwest towards SR 99. SF 4C continues along the west side of SR 99 through South Federal Way. The station is located at South 348th Street and SR 99.
- SF 4D travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5until just south of South 336th Street, where the alignment begins to travel southwest towards SR 99. SF 4D continues along the west side of SR 99 until just north of South 352nd Street, where the alignment begins to travel southeast until it reaches the west side of I-5 at Enchanted Parkway South. The station is located at South 348th Street and SR 99.
- SF 5A travels southwest from the terminus of the Federal Way Link Extension along South 324th Street until SR 99, where it continues south along the west side of I-5 through South Federal Way. The station is located at South 352nd Street and SR 99.
- SF 5B travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 until just south of South 336th Street, where the alignment begins to travel southwest towards SR 99. SF 5B continues along the west side of SR 99 through South Federal Way. The station is located at South 352nd Street and SR 99.



Source: © Mapbox, © OpenStreetMap

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SOUNDTRANSIT

SR 99 Alignment Family

- Other Alignments
- SF 4A SR 99 to I-5
- SF 4B SR 99
- SF 4C I-5 to SR 99
- SF 4D I-5 to SR 99 to I-5
- SF 5A SR 99
- SF 5B I-5 to SR 99

Exhibit 2-4

Level 1 Alternatives - South Federal Way - SR 99 Alignment Family

2.2.1.1.3 I-5 West/Representative Alignment

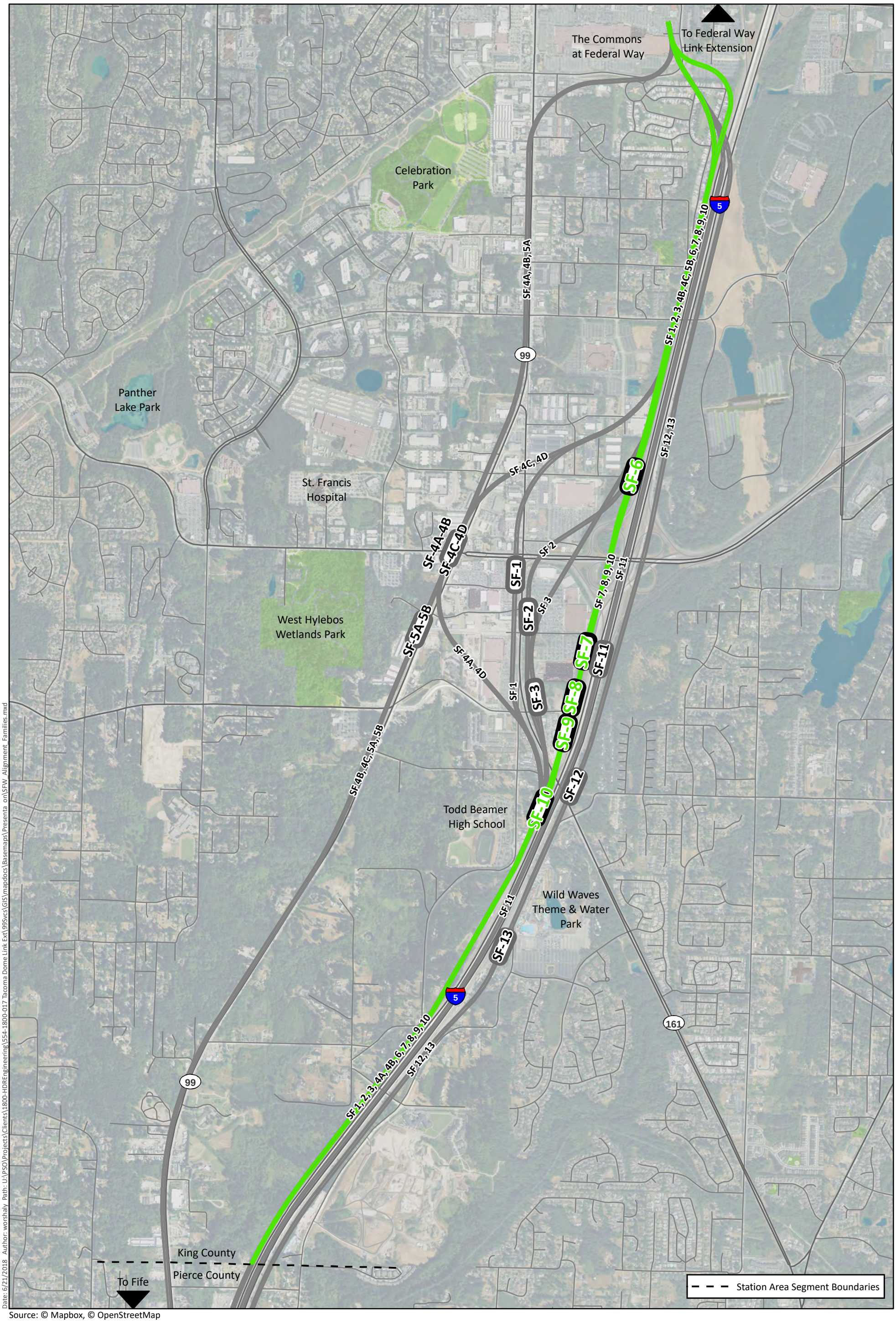
The I-5 West/Representative alternatives include SF 6 I-5/344th, SF 7 I-5/352nd (Representative), SF 8 I-5/356th, SF 9 I-5/Jet, and SF 10 I-5/359th, as depicted on Exhibit 2-5:

- SF 6 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 through South Federal Way. The station is located at South 344th Street and I-5.
- SF 7 travels east just north of Winged Foot Way towards I-5, where the alignment travels along the west side of I-5 from the terminus of the Federal Way Link Extension through South Federal Way. The station is located at South 352nd Street and I-5. SF 7 is the Representative Project.
- SF 8 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 through South Federal Way. The station is located just north of South 356th Street and I-5.
- SF 9 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 through South Federal Way. The station is located just south of South 356th Street and I-5.
- SF 10 travels south-southeast from the terminus of the Federal Way Link Extension to align along the west side of I-5 through South Federal Way. The station is located at South 359th Street and I-5.

2.2.1.1.4 I-5 Median/I-5 East

The I-5 Median/I-5 East alternatives include SF 11 Median, SF 12 I-5 East/Enchanted, and SF 13 I-5 East/Wild Waves, as depicted on Exhibit 2-6:

- SF 11 travels southeast from the terminus of the Federal Way Link Extension into the I-5 median, where the alignment continues through South Federal Way. The station is located adjacent to South 352nd Street in the I-5 median.
- SF 12 travels southeast from the terminus of the Federal Way Link Extension across I-5, where the alignment continues south along the east side of I-5 through South Federal Way. The station is located at Enchanted Parkway South and I-5.
- SF 13 travels southeast from the terminus of the Federal Way Link Extension across I-5, where the alignment continues south along the east side of I-5 through South Federal Way. The station is located South 369th Street and I-5.



Source: © Mapbox, © OpenStreetMap

0 625 1,250 2,500 Feet

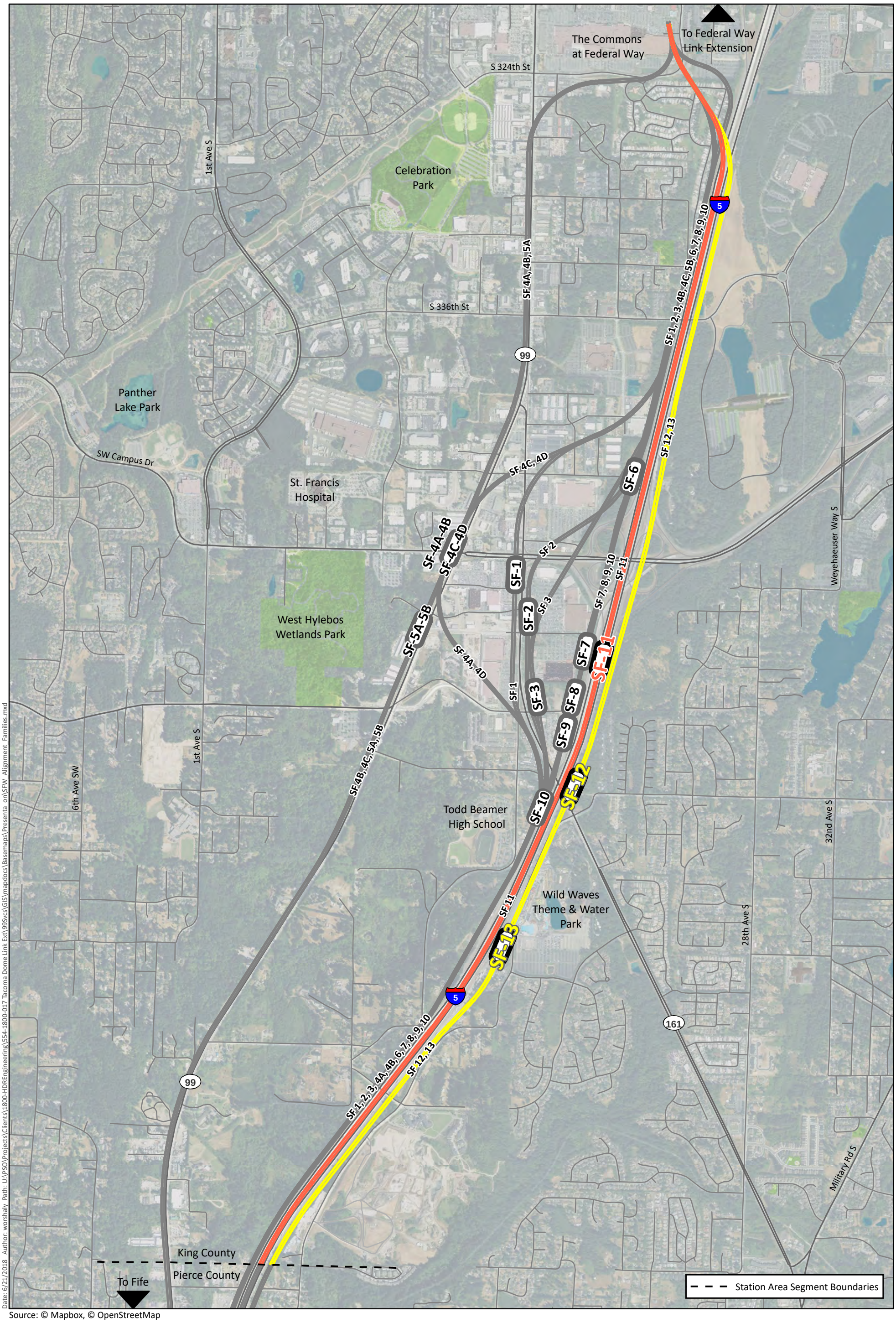
SOUNDTRANSIT

I-5 West/Representative Alignment Family

- Other Alignments
- SF 6 I-5/344th
- SF 6 I-5/344th
- SF 8 I-5/356th
- SF 9 I-5/Jet
- SF 10 I-5/359th

Exhibit 2-5

Level 1 Alternatives - South
Federal Way - I-5 West/
Representative Alignment Family



Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\SFW_Alignment_Families.mxd

Source: © Mapbox, © OpenStreetMap

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SOUNDTRANSIT

I-5 Median/I-5 East Alignment Family

- Other Alignments
- SF 11 I-5 Median
- SF 12 I-5 East/Enchanted
- SF 13 I-5 East/Wild Waves

Exhibit 2-6

Level 1 Alternatives - South Federal Way - I-5 Median/I-5 East Alignment Family

2.2.1.2 Alternatives Not Advanced for Level 1 Evaluation

One station location did not advance from the pre-screening phase into Level 1, as shown on Exhibit 2-7:

- A station located to the northwest of the I-5/SR 18 interchange in the Weyerhaeuser property—this station concept is inconsistent with the ST3 Plan because it is located outside of the South Federal Way activity center.

2.2.2 Fife

There are 16 alternatives in Fife that can generally be categorized into five alignment families: I-5 West to 12th Street, Pacific Highway/15th Street, Pacific Highway East/South, I-5 West/Representative, and I-5 Median/I-5 South, as shown on Exhibit 2-8.

2.2.2.1 Alternatives Advanced for Level 1 Evaluation

2.2.2.1.1 I-5 West to 12th Street

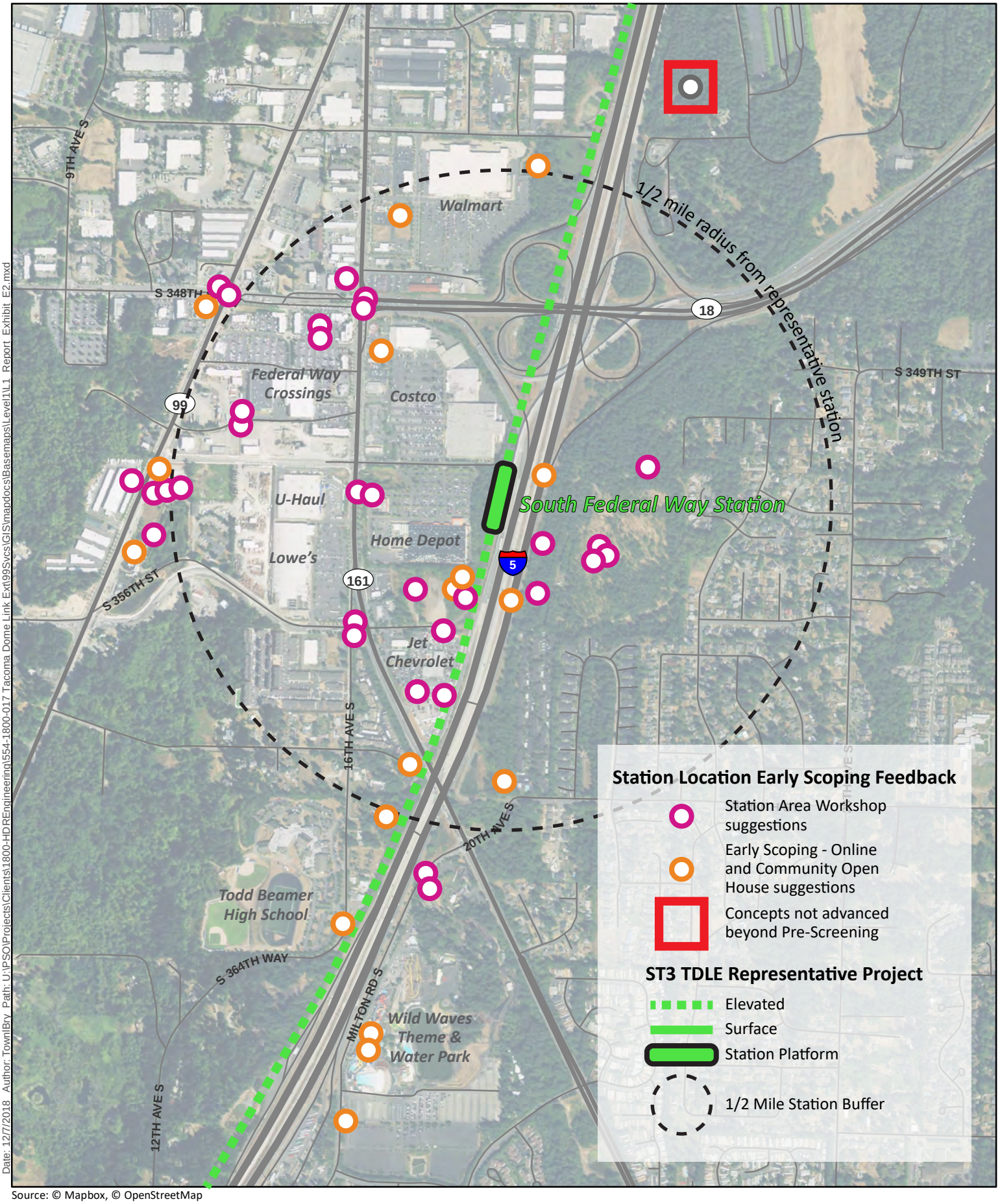
The I-5 West to 12th Street alternative includes Fife 1 12th Street, as depicted on Exhibit 2-9:

- Fife 1 travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest towards Pacific Highway East and northwest around the Fife Ridge. Fife 1 then continues west along the north side of 12th Street East until just west of Alexander Avenue East, where the alignment travels southwest towards the north side of I-5 through the remainder of Fife. The station is located just east of 54th Avenue East on 12th Street East.

2.2.2.1.2 Pacific Highway West/15th Street

The Pacific Highway West/15th Street alternatives include Fife 2A-B Pacific Highway West and Fife 3A-B 15th Street, as depicted on Exhibit 2-10:

- Fife 2A travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest towards Pacific Highway East and northwest around the Fife Ridge. Fife 2A then continues west along 15th Street East until just east of Willow Road East, where it continues southwest to travel along the south side of Pacific Highway East. At the Port of Tacoma Road, Fife 2A travels southwest along the westbound on-ramp to the north side of I-5, where it continues through Fife. The station is located just east of Willow Road East and Pacific Highway East.
- Fife 2B travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest towards Pacific Highway East and northwest around the Fife Ridge. Fife 2B then continues west along 15th Street East until just east of Willow Road East, where it continues southwest to



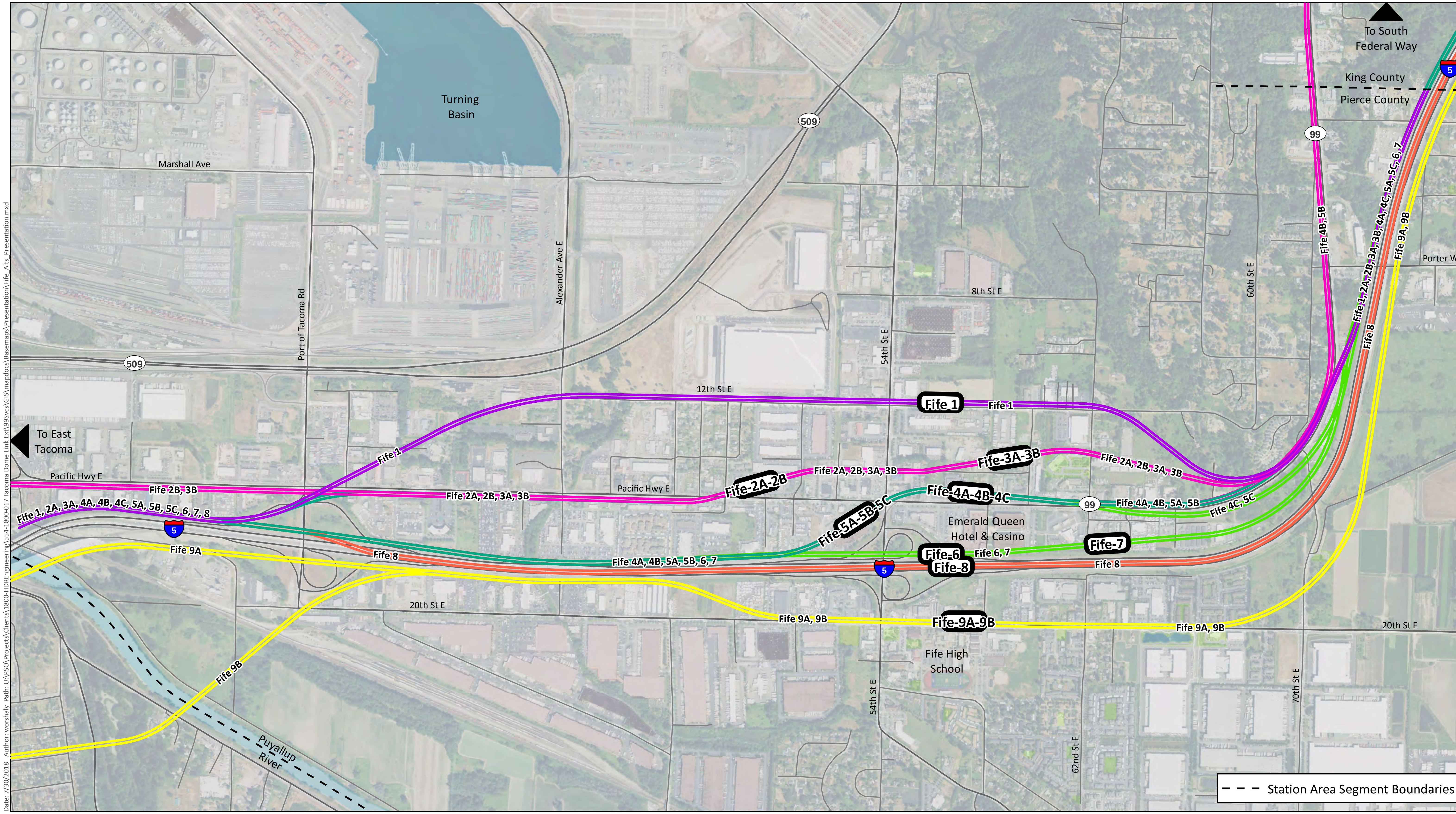
Date: 12/7/2018 Author: TownlBry Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Level1\L1 Report Exhibit E2.mxd

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

Exhibit 2-7
TDLE Station Location Feedback
South Federal Way



Source: © Mapbox, © OpenStreetMap

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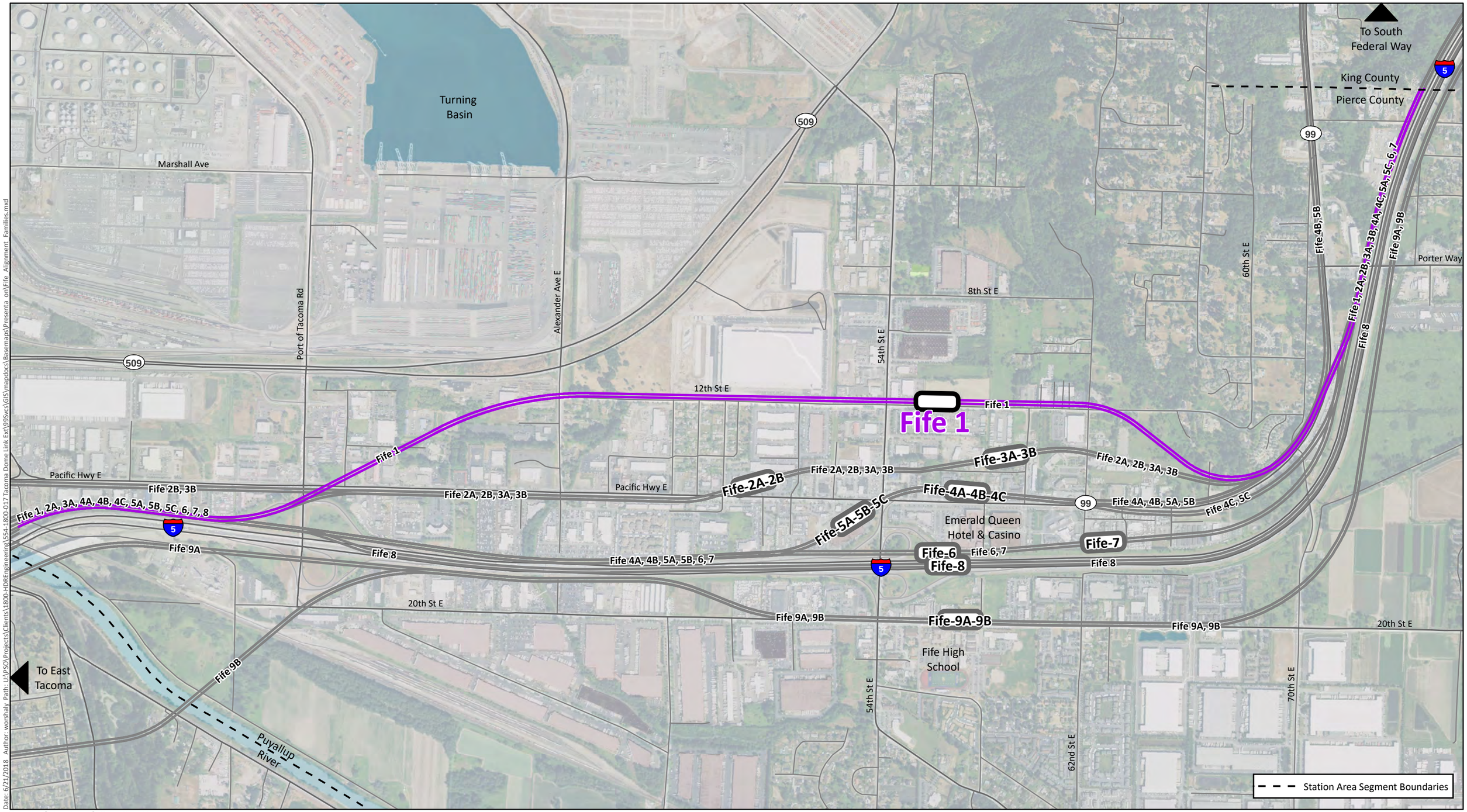
Fife Alternative Alignments

- Fife 1 12th Street
- Fife 2A Pacific Hwy West
- Fife 2B Pacific Hwy West
- Fife 3A 15th Street
- Fife 3B 15th Street
- Fife 4A Pacific Hwy East
- Fife 4B Pacific Hwy East
- Fife 4C Pacific Hwy East
- Fife 5A Pacific Hwy South
- Fife 5B Pacific Hwy South
- Fife 5C Pacific Hwy South
- Fife 6 I-5 West/Representative
- Fife 7 I-5 East
- Fife 8 I-5 Median
- Fife 9A 20th Street
- Fife 9B 20th Street

SOUNDTRANSIT

Exhibit 2-8
Level 1 Alternatives - Fife

Date: 7/30/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\1554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presentation\Fife_Alts_Presentation.mxd



Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

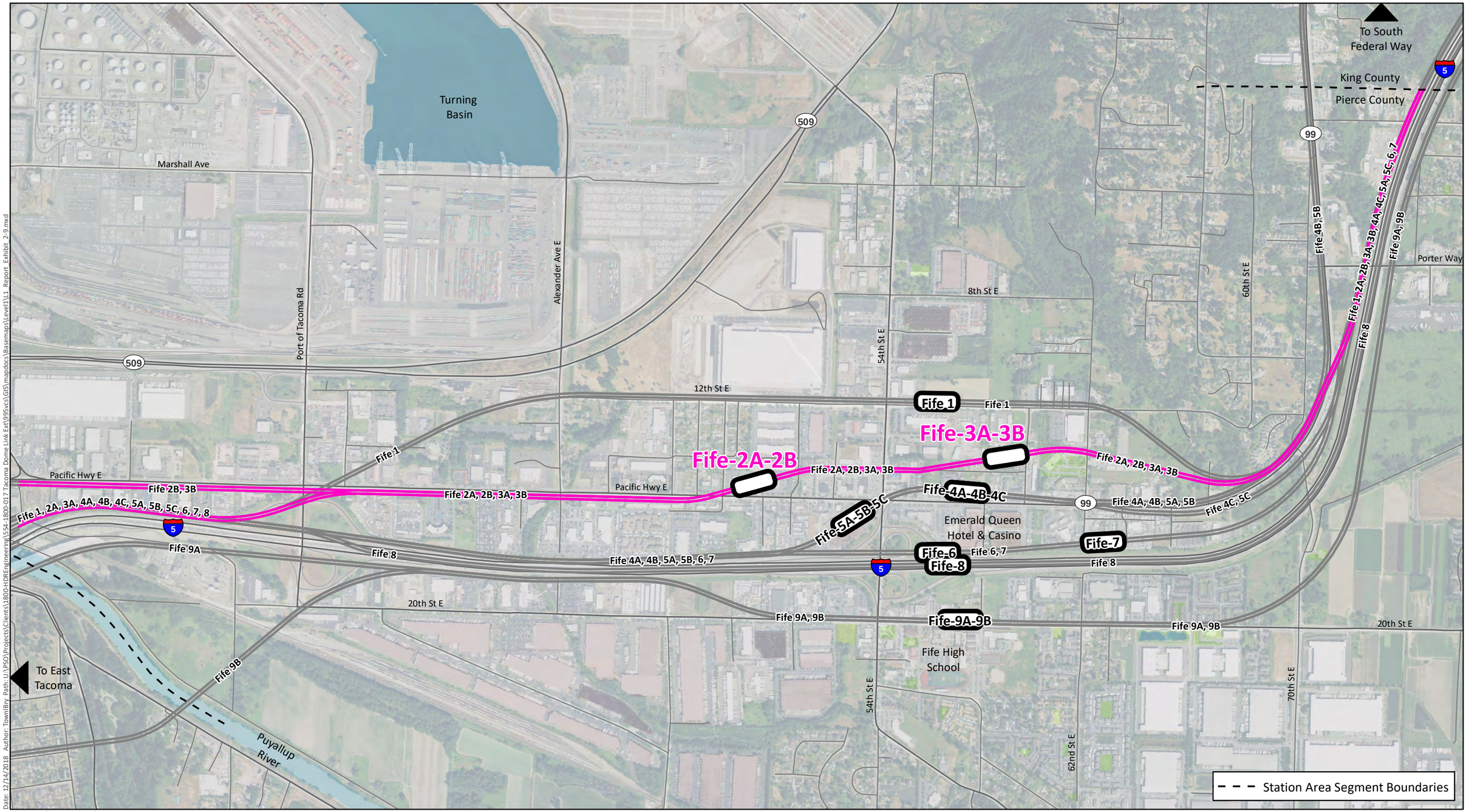
I-5 West to 12th Street Alignment Family

- Other Alignments
- Fife 1 12th Street

Exhibit 2-9

Level 1 Alternatives - Fife - I-5 West to 12th Street Alignment Family

Date: 6/21/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Presenta on\Fife_Alignment_Families.mxd



Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

Pacific Highway West/15th Street Alignment Family

- Other Alignments
- Fife 2A Pacific Highway West
- Fife 2B Pacific Highway West
- Fife 3A 15th St
- Fife 3B 15th St

Exhibit 2-10

Level 1 Alternatives - Fife - Pacific Highway West/15th Street Alignment Family

travel along the south side of Pacific Highway East through Fife. The station is located just east of Willow Road East and Pacific Highway East.

- Fife 3A travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest towards Pacific Highway East and northwest around the Fife Ridge. Fife 3A then continues west along 15th Street East until just east of Willow Road East, where it continues southwest to travel along the south side of Pacific Highway East. At the Port of Tacoma Road, Fife 3A travels southwest along the westbound on-ramp to the north side of I-5, where it continues through Fife. The station is located just west of 59th Avenue Court East at 15th Street East.
- Fife 3B travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest towards Pacific Highway East and northwest around the Fife Ridge. Fife 3B then continues west along 15th Street East until just east of Willow Road East, where it continues southwest to travel along the south side of Pacific Highway East through Fife. The station is located just west of 59th Avenue Court East at 15th Street East.

2.2.2.1.3 Pacific Highway East/South

The Pacific Highway East/South alternatives include Fife 4A-C Pacific Highway East and Fife 5A-C Pacific Highway South, as depicted on Exhibit 2-11:

- Fife 4A travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest to continue along the north side of Pacific Highway East. At 54th Street East and Pacific Highway East, Fife 4A continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located east of 54th Street East on the north side of Pacific Highway East.
- Fife 4B travels along the west side of Pacific Highway East through the Fife curve and into the Fife city center. At 54th Street East and Pacific Highway East, Fife 4B continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located east of 54th Street East on the north side of Pacific Highway East.
- Fife 4C travels along the west side of I-5 from the King/Pierce County boundary until just north of 70th Avenue East, where the alignment travels west along the south side of Pacific Highway East. At 62nd Avenue East, Fife 4C crosses to the north side of Pacific Highway East and continues west until 54th Street East, where the alignment continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located east of 54th Street East on the north side of Pacific Highway East.

Turning Basin
Marshall Ave
Port of Tacoma Rd
Alexander Ave E
509
99
To South Federal Way
King County
Pierce County
Porter Way
8th St E
60th St E
54th St E
12th St E
Fife 1
Fife 1
Fife 1
Fife 3A-3B
Fife 2A-2B
Fife 2A, 2B, 3A, 3B
Fife 2A, 2B, 3A, 3B
Fife 2A, 2B, 3A, 3B
Pacific Hwy E
Pacific Hwy E
Fife 2B, 3B
Fife 1, 2A, 3A, 4A, 4B, 4C, 5A, 5B, 5C, 6, 7, 8
Fife-4A-4B-4C
Fife 4A, 4B, 5A, 5B
Fife 4C, 5C
Fife 1, 2A, 2B, 3A, 3B, 4A, 4C, 5A, 5C, 6, 7
Fife 4B, 5B
Fife 9A, 9B
Fife 8
Fife-5A-5B-5C
Emerald Queen Hotel & Casino
Fife 9A
Fife 8
Fife 4A, 4B, 5A, 5B, 6, 7
Fife-6
Fife-8
Fife 6, 7
Fife-7
Fife 8
20th St E
Fife 9A, 9B
Fife-9A-9B
Fife 9A, 9B
20th St E
Fife High School
Fife 9B
To East Tacoma
Puyallup River
54th St E
62nd St E
70th St E
Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

Pacific Highway East/South Alignment Family

- Other Alignments
- Fife 4A Pacific Highway East
- Fife 4B Pacific Highway East
- Fife 4C Pacific Highway East
- Fife 5A Pacific Highway South
- Fife 5B Pacific Highway South
- Fife 5C Pacific Highway South

Exhibit 2-11

Level 1 Alternatives - Fife - Pacific Highway East/South Alignment Family

- Fife 5A travels along the west side of I-5 from the King/Pierce County boundary until just south of Porter Way, where the alignment begins to travel southwest to continue along the north side of Pacific Highway East. At 54th Street East and Pacific Highway East, Fife 5A continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located at Pacific Highway East and 54th Street East.
- Fife 5B travels along the west side of Pacific Highway East through the Fife curve and into the Fife city center. At 54th Street East and Pacific Highway East, Fife 5B continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located at Pacific Highway East and 54th Street East.
- Fife 5C travels along the west side of I-5 from the King/Pierce County boundary until just north of 70th Avenue East, where the alignment travels west along the south side of Pacific Highway East. At 62nd Avenue East, Fife 5C crosses to the north side of Pacific Highway East and continues west until 54th Street East, where the alignment continues southwest to travel along the north side of I-5 through the remainder of Fife. The station is located at Pacific Highway East and 54th Street East.

2.2.2.1.4 I-5 West/Representative

The I-5 West/Representative alternatives include Fife 6 I-5 West (Representative) and Fife 7 I-5 East, as depicted on Exhibit 2-12:

- Fife 6 travels along the west and north sides of I-5 through Fife. The station is located at I-5 and 54th Street East. This is the Representative Project.
- Fife 7 travels along the west and north sides of I-5 through Fife. The station is located at I-5 and 62nd Avenue East.

2.2.2.1.5 I-5 Median/I-5 South

The I-5 Median/I-5 South alternatives include Fife 8 I-5 Median and Fife 9A-B 20th Street, as depicted on Exhibit 2-13:

- Fife 8 travels in the median of I-5 from the King/Pierce County boundary until the I-5/Port of Tacoma Road interchange, where the alignment transitions to the north side of I-5 through the remainder of Fife. The station is located just east of 54th Street East in the I-5 median.
- Fife 9A travels along the east side of I-5 until just north of 70th Avenue East, where the alignment begins to pull away from I-5 to travel along the north side of 20th Street East. At 51st Avenue East, Fife 9A transitions to the south side of I-5 for the remainder of Fife. The station is located at 20th Street East and 58th Avenue East.
- Fife 9B travels along the east side of I-5 until just north of 70th Avenue East, where the alignment begins to pull away from I-5 to travel along the north side of 20th Street East.

At 51st Avenue East, Fife 9B transitions to the south side of I-5 until Port of Tacoma Road, where the alignment travels southwest through the remainder of Fife. The station is located at 20th Street East and 58th Avenue East.

2.2.2.2 Alternatives Not Advanced for Level 1 Evaluation

One station location and one alignment option did not advance from the pre-screening phase to Level 1, as shown on Exhibit 2-14:

- A station located in Milton just north of 70th Avenue East between I-5 and Pacific Highway East—this station concept is inconsistent with the ST3 Plan because it is located outside of the Fife activity center.
- An alignment option along the Interurban Trail corridor, which did not advance to the Level 1 evaluation because of inconsistency with the Purpose and Need, circuitous routing that would add travel time to the HCT service, and environmental constraints.

Marshall Ave
Port of Tacoma Rd
Alexander Ave E
509
99
To South Federal Way
5
King County
Pierce County
Fife 4B, 5B
Fife 9A, 9B
Fife 1, 2A, 2B, 3A, 3B, 4A, 4C, 5A, 5C, 6, 7
Fife 8
Porter Way
8th St E
60th St E
54th St E
12th St E
Fife 1
Pacific Hwy E
Fife 2B, 3B
Fife 2A, 2B, 3A, 3B
Fife-2A-2B
Fife-3A-3B
Fife-4A-4B-4C
Fife-5A-5B-5C
Fife 4A, 4B, 5A, 5B
Fife 4C, 5C
Fife 1, 2A, 3A, 4A, 4B, 4C, 5A, 5B, 5C, 6, 7, 8
Fife 9A
Fife 8
Fife 4A, 4B, 5A, 5B, 6, 7
Fife-6
Emerald Queen Hotel & Casino
Fife-7
Fife 6, 7
Fife-8
20th St E
Fife 9A, 9B
Fife-9A-9B
Fife High School
Fife 9B
To East Tacoma
Puyallup River
62nd St E
70th St E
Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

I-5 West/Representative Alignment Family

- Other Alignments
- Fife 6 I-5 West/Representative
- Fife 7 I-5 East

Exhibit 2-12

Level 1 Alternatives - Fife - I-5 West/Representative Alignment Family

Turning Basin
Marshall Ave
Port of Tacoma Rd
Alexander Ave E
509
12th St E
54th St E
8th St E
60th St E
99
To South Federal Way
King County
Pierce County
5
Fife 4B, 5B
Fife 1, 2A, 2B, 3A, 3B, 4A, 4C, 5A, 5C, 6, 7
Fife 8
Fife 9A, 9B
Porter Way
Fife 1
Fife 1
Pacific Hwy E
Fife 2B, 3B
Fife 2A, 2B, 3A, 3B
Fife 1, 2A, 3A, 4A, 4B, 4C, 5A, 5B, 5C, 6, 7, 8
Fife 2A-2B
Fife 2A, 2B, 3A, 3B
Fife 3A-3B
Fife 2A, 2B, 3A, 3B
Fife 4A-4B-4C
Fife 4A, 4B, 5A, 5B
Fife 4C, 5C
Fife 5A-5B-5C
Emerald Queen Hotel & Casino
Fife 9A
Fife 8
Fife 4A, 4B, 5A, 5B, 6, 7
Fife 6
Fife 6, 7
Fife 7
Fife 8
Fife-8
20th St E
Fife 9A, 9B
Fife 9A, 9B
Fife 9A, 9B
Fife-9A-9B
Fife High School
To East Tacoma
Fife 9B
Puyallup River
54th St E
62nd St E
70th St E
20th St E
Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

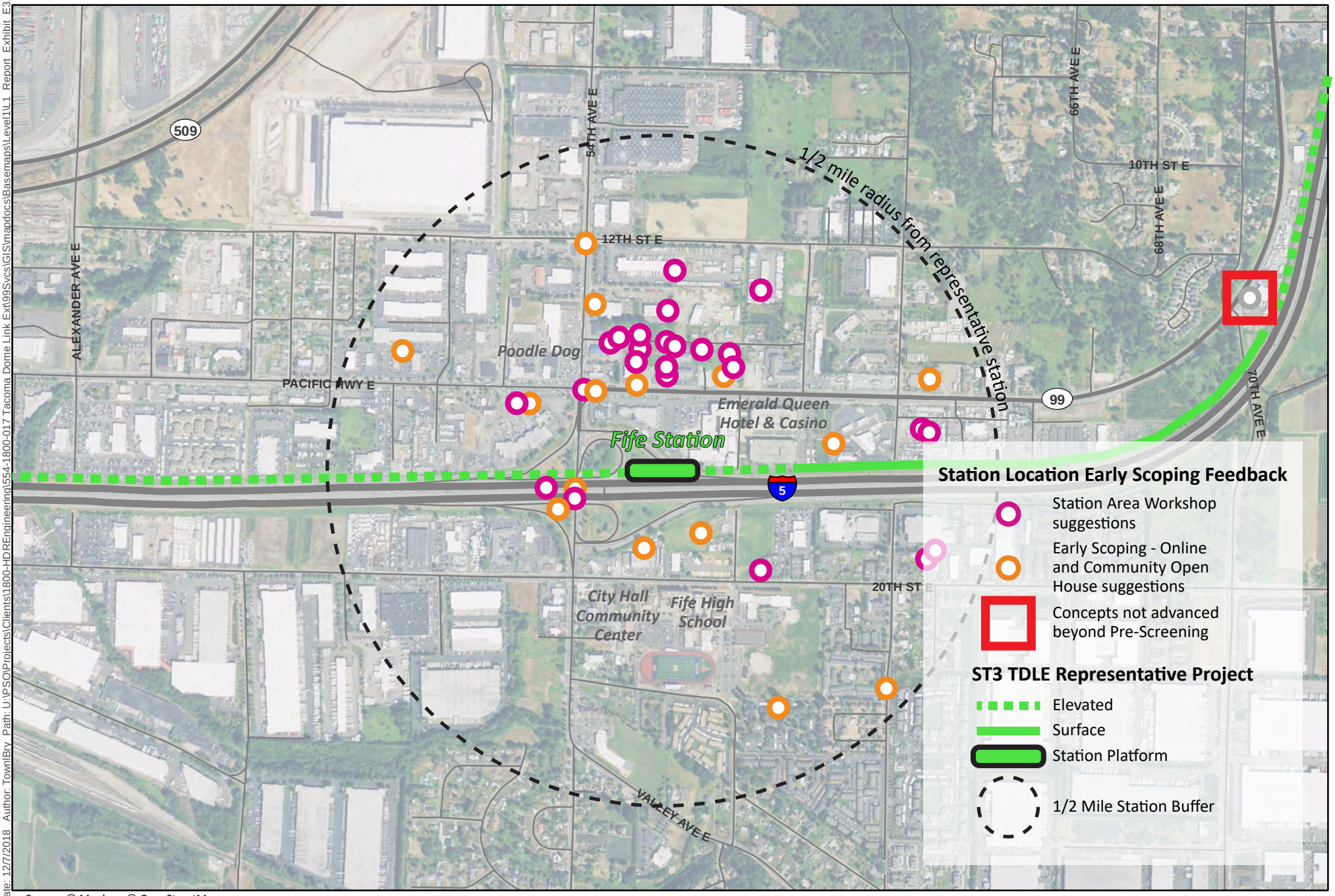
SoundTransit

I-5 Median/I-5 South Alignment Family

- Other Alignments
- Fife 8 I-5 Median
- Fife 9A 20th Street
- Fife 9B 20th Street

Exhibit 2-13

Level 1 Alternatives - Fife -
I-5 Median/I-5 South Alignment Family



Date: 12/7/2018 Author: TownlBry Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Level1\L1 Report Exhibit E3.mxd

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

Exhibit 2-14
TDLE Station Location Feedback
Fife

2.2.3 East Tacoma

There are 11 alternatives in East Tacoma (ET) that can generally be categorized into four alignment families: Puyallup Avenue, East 25th Street, East 26th Street/Representative, and East 26th/27th Street, as shown on Exhibit 2-15.

2.2.3.1 Alternatives Advanced for Level 1 Evaluation

2.2.3.1.1 Puyallup Avenue

The Puyallup Avenue alternatives include ET 1A Puyallup Avenue (I-5 West to Puyallup) and ET 1B Puyallup Avenue (SR 99 to Puyallup), as depicted on Exhibit 2-16:

- ET 1A crosses the Puyallup River along the north side of I-5. At East Bay Street, ET 1A travels northwest to the south side of Puyallup Avenue where it continues through East Tacoma. The station is located at East M Street and Puyallup Avenue.
- ET 1B crosses the Puyallup River along the south side of the Pacific Highway bridge, where it continues along the south side of Puyallup Avenue through East Tacoma. The station is located at East M Street and Puyallup Avenue.

2.2.3.1.2 East 25th Street

The East 25th Street alternative includes ET 2 25th Street, as depicted on Exhibit 2-17:

- ET 2 crosses the Puyallup River along the north side of I-5. At East Bay Street, ET 2 travels northwest to the north side of East 25th Street where it continues through East Tacoma. The station is located at East M Street and East 25th Street.

2.2.3.1.3 East 26th Street/Representative

The East 26th Street/Representative alternatives include ET 3 26th Street East, ET 4A-C 27th Street North, and ET 6 26th Street West, as depicted on Exhibit 2-18:

- ET 3 crosses the Puyallup River north of I-5. At East Bay Street, ET 3 travels northwest to the north side of East 26th Street through the remainder of East Tacoma. The station is located at East 26th Street and East Bay Street.
- ET 4A crosses the Puyallup River along the north side of I-5 and continues west along the north side of East 27th Street. At Portland Avenue, ET 4A continues northwest to the center of East 26th Street through East Tacoma. The station is located at East 27th Street and East Bay Street.
- ET 4B crosses the Puyallup River to the north of I-5 and continues west along the north side of East 27th Street. At Portland Avenue, ET 4B continues northwest to the center of East 26th Street through East Tacoma. The station is located at East 27th Street and East Bay Street. This is the Representative Project.

- ET 4C crosses the Puyallup River just north of I-5 and continues west along the north side of East 27th Street. At Portland Avenue, ET 4C continues northwest to the center of East 26th Street through East Tacoma. The station is located at East 27th Street and East Bay Street.
- ET 6 crosses the Puyallup River north of I-5. At East Bay Street, ET 6 travels northwest to the north side of East 26th Street through the remainder of East Tacoma. The station is located at East 26th Street and East N Street.

2.2.3.1.4 East 26th/27th Street

The East 26th/27th Street alternatives include ET 5 27th Street South, ET 7 29th Street, and ET 8 34th Street, as depicted on Exhibit 2-19:

- ET 5 crosses the Puyallup River north of I-5 and continues west along the north side of East 27th Street through East Tacoma. The station is located at East 27th Street and East Bay Street.
- ET 7 crosses the Puyallup River south of I-5 near East 28th Street and continues along the north side of East 29th Street. Just west of East Portland Avenue, ET 7 travels northwest to cross to the north side I-5. The station is located at East 29th Street and East R Street.
- ET 8 crosses the Puyallup River south of I-5 near East 34th Street. The alignment continues along the north side of East 34th Street until just west of East Portland Avenue, where the alignment travels north to cross to the north side of I-5. The station is located just east of East Portland Avenue and East Wright Avenue.

2.2.3.2 Alternatives Not Advanced for Level 1 Evaluation

One station location did not advance from the pre-screening phase into Level 1, as shown on Exhibit 2-20:

- A station located in Tacoma in the SR 509 right-of-way (ROW) in the Burlington Northern Santa Fe (BNSF) Railyard—this station concept is inconsistent with the ST3 Plan because it is located outside of both the East Tacoma and Tacoma Dome activity centers.

2.2.4 Tacoma Dome

There are seven alternatives in the Tacoma Dome (TD) area that can generally be categorized into four alignment families: Puyallup Avenue, East 25th Street, East 26th Street/Representative, and East 26th/27th Street, as shown on Exhibit 2-15.

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SOUNDTRANSIT

Tacoma Dome Alternative Alignments

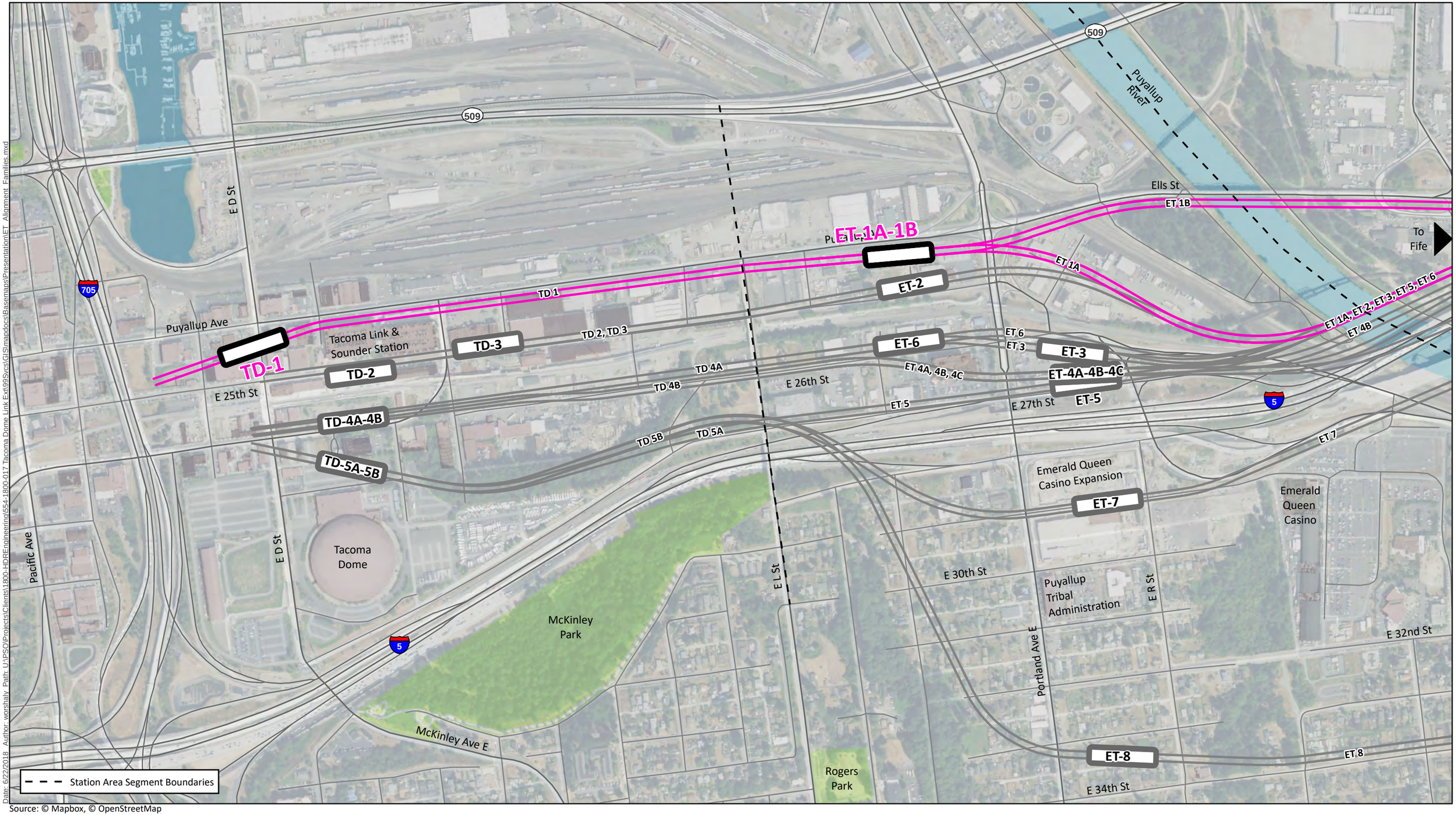
- TD 1 Puyallup Avenue
- TD 2 25th Street West
- TD 3 25th Street East
- TD 4A 26th Street
- TD 4B 26th Street/Representative
- TD 5A 27th Street
- TD 5B 27th Street

East Tacoma Alternative Alignments

- ET 1A Puyallup Avenue
- ET 1B Puyallup Avenue
- ET 2 25th Street
- ET 3 26th Street East
- ET 4A 27th Street North
- ET 4B 27th Street North/Representative
- ET 4C 27th Street North
- ET 5 27th Street South
- ET 6 26th Street West
- ET 7 29th Street
- ET 8 34th Street

Exhibit 2-15

Level 1 Alternatives - East Tacoma and Tacoma Dome



Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SOUNDTRANSIT

Puyallup Avenue Alignment Family

- Other Alignments
- ET 1A Puyallup Avenue
- ET 1B Puyallup Avenue
- TD 1 Puyallup Ave

Exhibit 2-16

Level 1 Alternatives - East Tacoma and Tacoma Dome - Puyallup Avenue Alignment Family

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

Sound Transit

East 25th Street Alignment Family

- Other Alignments
- ET 2 25th Street
- TD 2 25th Street West
- TD 3 25th Street East

Station Area Segment Boundaries

Exhibit 2-17

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 25th Street Alignment Family

Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

SOUNDTRANSIT

East 26th Street/Representative Alignment Family

- Other Alignments
- TD 4A 26th Street
- TD 4B 26th Street/Representative
- ET 3 26th Street East
- ET 4A 27th Street North
- ET 4B 27th Street North/Representative
- ET 4C 27th Street North
- ET 6 26th St West

Exhibit 2-18

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 26th Street/ Representative Alignment Family

Puyallup River
Ells St
ET 1B
Puyallup Ave
ET-1A-1B
ET-2
TD 1
TD-1
Tacoma Link & Sounder Station
TD-3
TD 2, TD 3
TD-2
ET-6
ET 6
ET 3
ET-3
ET-4A-4B-4C
ET 1A, ET 2, ET 3, ET 5, ET 6
ET 4B
E 25th St
TD 4A
TD 4B
E 26th St
ET 4A, 4B, 4C
E 27th St
ET-5
TD-4A-4B
ET 5
TD 5B
TD 5A
TD-5A-5B
ET 7
Emerald Queen Casino Expansion
Emerald Queen Casino
ET-7
E 30th St
Puyallup Tribal Administration
E R St
Portland Ave E
E 32nd St
E D St
Tacoma Dome
E L St
McKinley Park
McKinley Ave E
ET-8
ET 8
E 34th St
Rogers Park
To Fife
509
705
5

Station Area Segment Boundaries

Source: © Mapbox, © OpenStreetMap

0 250 500 1,000 Feet

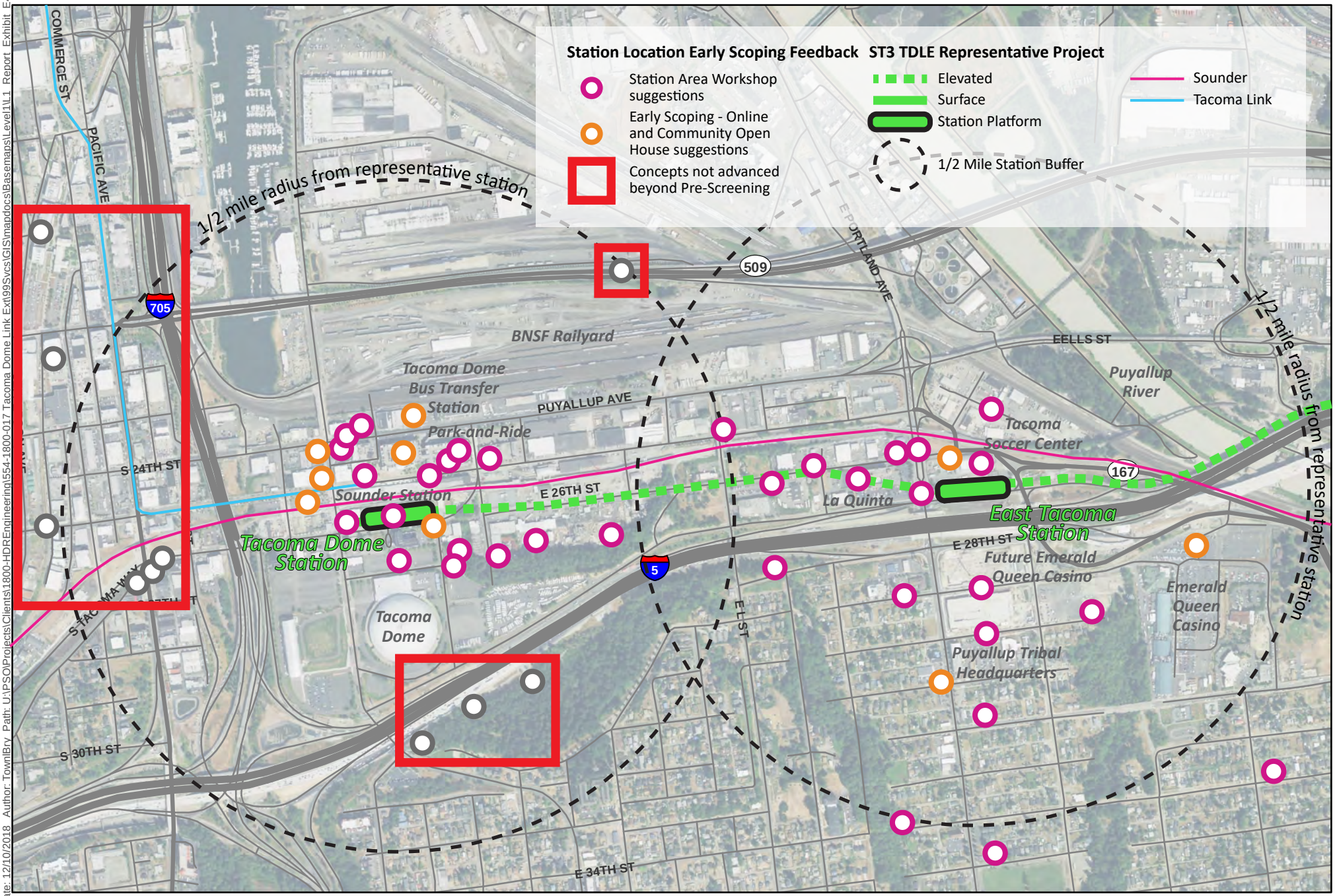
SOUNDTRANSIT

East 26th Street/27th Street Alignment Family

- Other Alignments
- TD 5A 27th Street
- TD 5B 27th Street
- ET 5 27th Street South
- ET 7 29th Street
- ET 8 34th Street

Exhibit 2-19

Level 1 Alternatives - East Tacoma and Tacoma Dome - East 26th Street/27th Street Alignment Family



Date: 12/10/2018 Author: TownlBry Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Level1\L1 Report Exhibit E4.mxd

Source: © Mapbox, © OpenStreetMap

0 500 1,000 2,000 Feet

SOUNDTRANSIT

Exhibit 2-20
TDLE Station Location Feedback
East Tacoma and Tacoma Dome

2.2.4.1 Alternatives Advanced for Level 1 Evaluation

2.2.4.1.1 Puyallup Avenue

The Puyallup Avenue alternative includes TD 1 Puyallup Avenue, as depicted on Exhibit 2-16:

- TD 1 travels along the south side of Puyallup Avenue until just east of I-705. The station is located at Puyallup Avenue and East D Street.

2.2.4.1.2 East 25th Street

The East 25th Street alternatives include TD 2 25th Street West and TD 3 25th Street East, as depicted on Exhibit 2-17:

- TD 2 travels along the center of East 25th Street until just west of East D Street. The station is located east of East D Street along East 25th Street.
- TD 3 travels along the center of East 25th Street until just west of East D Street. The station is located at East G Street and East 25th Street.

2.2.4.1.3 East 26th Street/Representative

The East 26th Street/Representative alternatives include TD 4A-B 26th Street, as depicted on Exhibit 2-18:

- TD 4A travels along the north side of East 26th Street until just west of East D Street. The station is located on East 26th Street just east of East D Street.
- TD 4B travels along the south side of East 26th Street until just west of East J Street, where the alignment crosses to the north side of East 26th Street. TD 4B continues until just west of East D Street. The station is located on East 26th Street just east of East D Street. This is the Representative Project.

2.2.4.1.4 East 26th/27th Street

The East 26th/27th Street alternatives include TD 5A-B 27th Street, as depicted on Exhibit 2-19:

- TD 5A travels along the north side of I-5 and continues northwest just east of East G Street until just west of East D Street. The station is located at East 27th Street and East F Street.
- TD 5B travels along the north side of I-5 and continues northwest just east of East G Street until just west of East D Street. The station is located at East 27th Street and East F Street.

2.2.4.2 Alternatives Not Advanced for Level 1 Evaluation

Two station groupings and one alignment option did not advance from the pre-screening phase into Level 1, as shown on Exhibit 2-20:

- A series of stations located in McKinley Park in Tacoma—these station concepts are inconsistent with the ST3 Plan because of the location outside of the Tacoma Dome activity center and within a major public park facility.
- A series of stations located to the west of I-705 in Tacoma—these station concepts are inconsistent with the ST3 Plan because of the location outside of the Tacoma Dome activity center.
- An alignment option of extending Tacoma Link west of the Tacoma Dome to East Tacoma. This option was not brought forward into the Level 1 evaluation because of inconsistency with the Purpose and Need and the ST3 Plan.

3 Level 1 Evaluation Criteria

The draft Purpose and Need established five objectives that have been used to develop the evaluation criteria and measures. The objectives are to:

- Provide Effective Transportation Solutions to meet Mobility, Access, and Capacity Needs;
- Support Sustainable Land Use Plans, Economic Development, and Transit Oriented Development;
- Preserve the Environment;
- Support Equitable Mobility; and
- Provide a Financially Sustainable and Constructible Project.

The evaluation criteria and measures listed in Exhibit 3-1, Level 1 Screening, have been used to assess the differences in performance or potential effects among the concepts and pre-screen alternatives. The qualitative and quantitative measures are used to determine which alternatives warrant further consideration for more detailed analysis in Level 2.

EXHIBIT 3-1
Level 1 Screening

Evaluation Criteria	Measures
Objective: Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs **Purpose and Need:** • Provide high quality rapid, reliable, accessible, and efficient light rail transit service connecting the communities of Federal Way, Milton, Fife, Tacoma, and the Puyallup Tribe of Indians to other destinations on the regional HCT system. • Meet projected transit demand and offer an alternative to travel on congested roadways, better connecting people to where they live, work, and play. • Expand mobility for people in the corridor and region, including low income, minority, and transit-dependent populations.	
Ridership Potential	L1.1: Travel time L1.2: Total population and employment (2035) within 1/2 mile of stations L1.3: Proximity to existing/future population and employment centers/activity centers and major destinations within 1/2 mile of stations
Objective: Support Sustainable Land Use Plans, Economic Development, and Transit Oriented Development **Purpose and Need:** • Connect regional centers as described in adopted regional and local land use, transportation, and economic development plans and Sound Transit's Regional Transit Long-Range Plan Update. • Encourage equitable and sustainable urban growth in station areas through support of TOD and multimodal integration in a manner that is consistent with adopted local comprehensive plans and policies, including Sound Transit's Transit Oriented Development and Sustainability Policies. • Encourage convenient and safe nonmotorized access to stations such as bicycle and pedestrian connections consistent with Sound Transit's System Access Policy.	

EXHIBIT 3-1
Level 1 Screening

Evaluation Criteria	Measures
Supports future transit oriented development (TOD) opportunities	L1.4: Consistency with local and tribal economic development goals, planned development, current and anticipated zoning, and/or comprehensive plans L1.5: Barriers that limit the development potential, walkshed, and range and safety of bicycling around the station such as topography, wide roads, highways, bodies of water, and railways L1.6: Presence of amenities to catalyze complete neighborhoods, such as shops, services, schools, recreational facilities, civic or character amenities, or views/access to nature
Promotes multimodal access and connections	L1.7: Qualitative assessment of bicycle and pedestrian accessibility and potential for improvement L1.8: Qualitative assessment of transit connections and potential for improvement within station areas
Objective: Preserve the Environment **Purpose and Need:** • Preserve and promote a healthy and sustainable environment and economy by minimizing adverse impacts on the natural, built, and social environments.	
Effects on the natural environment	L1.9: Proximity to major wetlands, streams, floodplains, steep slopes, Endangered Species Act (ESA) species, fisheries, or other natural habitat areas within 100 feet of an alternative (in acres of resources)
Effects on the built environment	L1.10: Estimated levels of property impacts (residential, commercial, other) and number of large tax generating properties impacted L1.11: Estimated number of Tribal parcels impacted L1.12: Presence of known Section 4(f), park, historic, culturally-significant Tribal properties, or other protected areas L1.13: Presence of a view shed or proximity to view-dependent businesses L1.14: Potential for impacts from vibration and noise L1.15: Potential for affecting areas with existing traffic congestion L1.16: Potential for affecting parking supply and demand and spillover parking effects L1.17: Potential avoidance of hazardous waste
Objective: Support Equitable Mobility **Purpose and Need:** • Expand mobility for people in the corridor and region, including low income, minority, and transit-dependent populations.	
Provide equitable transit service to low-income, minority, and transit-dependent populations	L1.18: Qualitative demographic differences among the option census data (households with no car, low income, and minority populations) in station areas L1.19: Potential for impacts on low-income and minority populations
Objective: Provide a Financially Sustainable and Constructible Project **Purpose and Need:** • Develop a light rail extension that is technically and financially feasible to build, operate, and maintain, consistent with the regional system defined by the Sound Transit 3 Plan and the Regional Transit Long Range Plan update, which was developed through a robust local planning process that established transit mode, corridor, and general station locations.	

EXHIBIT 3-1
Level 1 Screening

Evaluation Criteria	Measures
Financial considerations	L1.20: Major cost elements beyond the representative project description
Constructibility and engineering considerations	L1.21: Potential risks (major utilities or structures) L1.22: Availability and potential to use publicly owned ROW L1.23: Capability to accommodate future expansion included in the Sound Transit Long-Range Plan
Operational considerations	L1.24 Consideration of operational elements (e.g., potential reliability, track alignment, tail tracks, pocket track at Tacoma Dome, number of at-grade crossings, if any)
Schedule considerations	L1.25: Overall schedule risk

3.1 Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs

The criteria used to evaluate this objective was ridership potential. This criterion was evaluated using the three measures described below.

3.1.1 Ridership Potential

Ridership potential was quantitatively and qualitatively assessed based on travel time in the corridor, proximity to major activity centers, and proximity to population and employment density.

3.1.1.1 Measure L1.1: Travel time

This measure estimated travel times based on alignment characteristics, including distances and curves from stations to the regional Link system at the Federal Way Link Extension interim terminus.

Alternatives within each segment received a rating of 1 for having the longest travel time and a rating of 5 for having the shortest travel time.

3.1.1.2 Measure L1.2: Total population and employment within a half mile of stations

This measure evaluated total population and employment within a half mile of each station alternative for the existing and future (2040) years.

Alternatives within each segment received a rating of 1 for having the lowest population and employment totals within a half mile and a rating of 5 for having the highest.

3.1.1.3 Measure L1.3: Proximity to existing/future population and employment centers and major destinations within a half mile of stations

This measure evaluated the proximity of each station alternative to existing and future Puget Sound Regional Council (PSRC) designated centers, activity centers, and major destinations within a half mile.

Alternatives within each segment received a rating of 1 for having no designated centers or destinations within a half mile; a 2 for few; a 3 for several; a 4 for many; and a 5 for the highest number of designated centers or destinations.

3.2 Supports Sustainable Land Use Plans, Equitable Access, and Economic Development

The criteria used to evaluate this objective were Supports Future Transit Oriented Development Opportunities and Promotes Multimodal Access and Integration. The criteria were evaluated using the five measures described below.

3.2.1 Supports Future Transit Oriented Development Opportunities

Support of future TOD opportunities was qualitatively assessed based on consistency with local plans and planned development, walkshed barriers, presence of amenities to catalyze complete neighborhoods, and nonmotorized and transit accessibility.

3.2.1.1 Measure L1.4: Consistency with local and tribal economic development goals, planned development, current and anticipated zoning, and/or comprehensive plans

This measure assessed consistency with local and tribal economic development goals, current and future zoning, and land use plans.

Alternatives within each segment received a rating of 1 for plans that do not support TOD and a rating of 5 for plans that are very supportive of TOD.

3.2.1.2 Measure L1.5: Barriers that limit the development potential, walkshed, and range and safety of bicycling around the station

This measure qualitatively assessed barriers such as topography, wide roads, highways, bodies of water, and railways that limit the walkshed and ability of bicycling around station alternatives.

Alternatives within each segment received a rating of 1 for having many barriers in multiple categories; a 2 for many barriers within one or two categories or minor barriers in some categories; a 3 for some barriers, but minor only; a 4 for few barriers, but minor only; and a 5 for no barriers.

3.2.1.3 Measure L1.6: Presence of amenities to catalyze complete neighborhoods

This measure assessed the quantity and quality of "seed amenities" such as shops, services, schools, recreational facilities, civic or character amenities, or views and access to nature in station areas.

Alternatives within each segment received a rating of 1 for having no "seed amenities" or elements of a complete neighborhood that would make someone want to develop or live there; a 2 for one or two elements; a 3 for more than two elements, but not very desirable; a 4 for four or more elements of varying quality; and a 5 for many elements (i.e., shops, services, schools, parks, and views).

3.2.2 Promotes Multimodal Access and Integration

Promoting multimodal access and integration was qualitatively assessed based on availability of existing and planned nonmotorized and transit facilities and the potential to improve access.

3.2.2.1 Measure L1.7: Qualitative assessment of bicycle and pedestrian accessibility and potential for improvement

This measure qualitatively assessed the accessibility of station areas to major existing and planned bicycle and pedestrian facilities. It also identified infrastructure (or lack thereof) that supports walking and/or bicycling within general station areas for bicyclists and pedestrians, including those with limited mobility.

Alternatives within each segment received a rating of 1 for being in an area that is very dangerous or impossible to walk or bicycle with no opportunity to mitigate (due to infrastructure barriers, etc.); a 2 for being possible to walk or bicycle, but many obstacles or risks with minimal opportunities to mitigate; a 3 for being possible to walk or bicycle, but experience is poor with some opportunities to mitigate; a 4 for being possible to walk or bicycle but experience is poor with many opportunities to improve or expand the network, or could be a good place to walk or bicycle if there were useful destinations and there is some opportunity to improve or expand the network; and a 5 for being a good place to walk or bicycle, or could be a good place to walk or bicycle if there were useful destinations and there are many opportunities to improve or expand the network.

3.2.2.2 Measure L1.8: Qualitative assessment of transit connections and potential for improvement within station areas

This measure evaluated the potential to integrate light rail transit with bus and rail service and the ease of transfers for transit customers.

Alternatives within each segment received a rating of 1 for having few existing connections for other transit services and being a missed opportunity to integrate with fixed transit infrastructure (transit centers, other rail stations, etc.); a 2 for some existing connections and a missed opportunity to integrate with fixed transit infrastructure; a 3 for some existing

connections; a 4 for good access to existing transit services; and a 5 for a robust network of other transit services.

3.3 Preserve the Environment

The criteria used to evaluate this objective are Effects on the Natural Environment and Effects on the Built Environment. The criteria were evaluated using the nine measures described below.

3.3.1 Effects on the Natural Environment

Effects on the natural environment were quantitatively assessed based on potential impacts to various elements of the natural environment.

3.3.1.1 Measure L1.9: Impact in approximate acres of major wetlands, streams, floodplains, steep slopes, ESA species, fisheries, or other natural habitat areas within 100 feet of an alternative

This measure evaluated potential impacts to known natural resources including major wetlands, streams, floodplains, steep slopes, ESA species, and fisheries. It quantitatively assessed effects on the natural environment in terms of impacted acres within 100 feet of alignments and stations.

Alternatives within each segment received a rating of 1 for affecting the most wetlands or stream crossings and/or impacting natural areas with two or more acres affected within the footprint and nearby areas, and directly affecting high quality habitat for sensitive species; a 2 for a high potential for wetlands impacts and stream crossings or impacts to natural areas with 1 to 2 acres affected, or affecting high-quality habitat for sensitive species; a 3 for moderate potential for wetlands impacts and stream crossings or impacts to natural areas with less than 1 acre affected, but where sensitive species habitat may be present; a 4 for lower potential for wetlands impacts and stream crossings or impacts to natural areas with less than 1/2 acre affected, and low likelihood for encountering habitat for sensitive species; and a 5 for the least potential for wetlands impacts and stream crossings or impacts to natural areas, with few to no mapped resources for sensitive species encountered.

3.3.2 Effects on the Built Environment

Effects on the built environment were qualitatively and quantitatively assessed based on potential impacts to various elements of the built environment, such as parcel impacts, impacts to traffic, impacts to Tribal properties, and impacts to hazardous waste.

3.3.2.1 Measure L1.10: Estimated level of property impacts

This measure quantitatively assessed the number of potential property acquisitions for alignments and stations by property type (e.g., residential, commercial, other, and large tax-generator properties).

Alternatives within each segment received a rating of 1 for having the highest number of residential and commercial parcels potentially impacted, including several large tax-generator properties; a 2 for a higher number of residential and/or commercial parcels and some large tax-generator properties, several multi-family properties, or commercial complexes with multiple businesses affected; a 3 for a medium number of residential and/or commercial parcels and some large tax-generator properties; a 4 for a lower number of residential and/or commercial parcels and a few large tax-generator properties, or a few multi-family or commercial complexes affected; and a 5 for few to no residential and/or commercial parcels and few large tax-generator properties, multi-family properties, or commercial complexes affected.

3.3.2.2 Measure L1.11: Estimated number of Tribal parcels impacted

This measure quantitatively determined the number of potential Tribal parcels impacted by alignments and stations.

Alternatives within each segment received a rating of 1 for impacting greater than 15 Tribal-owned parcels; a 2 for 10 to 15 Tribal-owned parcels; a 3 for 5 to 9 Tribal-owned parcels; a 4 for 1 to 4 Tribal-owned parcels; and a 5 for having no impacts to Tribal-owned parcels.

3.3.2.3 Measure L1.12: Presence of known Section 4(f), park, historic, culturally significant Tribal properties, or other protected areas

This measure quantitatively evaluated potential impacts of alignments and stations within 100 feet of parks and WISAARD (Washington Information System for Architectural and Archaeological Records Data) historical properties, in addition to resources within standard Department of Archaeology and Historic Preservation (DAHP) buffers for archaeological sites (100 feet) and burials (300 feet).

Alternatives within each segment received a rating of 1 for the highest number of potential impacts to parks, historic properties, or archaeological and cultural resources (10 or more sites); a 2 for multiple potential impacts (6 to 8 sites); a 3 for several potential impacts (3 to 5 sites); a 4 for few potential impacts (1 to 2 sites); and a 5 for having no known impacts.

3.3.2.4 Measure L1.13: Presence of a viewshed and potential for impacts to view-dependent businesses

This measure qualitatively assessed potential visual effects of alignments and stations to nearby properties.

Alternatives within each segment received a rating of 1 for having impacts to a viewshed and many view-dependent businesses; a 2 for moderate impacts to both viewsheds ad several view-dependent businesses; a 3 for moderate impacts to either viewsheds or view-dependent

businesses; a 4 for minimal impacts to either viewsheds or view-dependent businesses; and a 5 for having no impacts to either viewsheds or view-dependent businesses.

3.3.2.5 Measure L1.14: Potential for impacts from vibration and noise

This measure assessed the presence of sensitive receptors along alignments that would be impacted by potential noise and vibration effects (e.g., residences, hospitals, hotels, parks, schools, libraries, churches, etc.).

Alternatives within each segment were evaluated based on the number of parcels within the 175- to 300-foot Federal Transit Authority (FTA) screening distance from the light rail line (FTA 2006). Because the length of the East Tacoma and Tacoma Dome segments are much shorter, different ranges were used for the South Federal Way and Fife segments than for the East Tacoma and Tacoma Dome segments.

For Federal Way and Fife station areas, alternatives received a rating of 1 for greater than 80 residential parcels and 2 to 12 other noise receptor parcels; a 2 for 50 to 80 residential parcels and 2 to 12 other parcels; a 3 for 40 to 60 residential parcels and 2 to 7 other parcels; a 4 for 20 to 50 residential parcels and 0 to 4 other parcels; and a 5 for less than 30 residential parcels and 0 to 2 other parcels.

For East Tacoma and Tacoma Dome station areas, there were almost no other noise receptors within 175 to 300 feet of alignments; therefore, ratings were for the most part based on the number of residential parcels within range. Alternatives received a rating of 1 for 199 to 318 residential parcels; a 2 for 18 to 33 residential parcels; a 3 for 3 to 17 residential parcels; a 4 for 1 other parcel and 1 to 2 residential parcels; and a 5 for 1 or less residential parcels.

3.3.2.6 Measure L1.15: Potential for affecting areas with existing congestion

This measure identified potential impacts to known areas of existing congestion (e.g., major roadways and congested intersections).

Alternatives received a rating of 1 for having a potentially high impact to known areas of congestion; a 2 for moderate impacts; a 3 for some impacts; a 4 for minimal impacts; and a 5 for no impacts.

3.3.2.7 Measure L1.16: Potential for affecting parking supply and demand

This measure identified potential impacts to parking supply and known areas of high parking demand.

Alternatives received a rating of 1 for having a potentially high impact to parking supply and demand; a 2 for moderate impacts; a 3 for some impacts; a 4 for minimal impacts; and a 5 for no impacts.

3.3.2.8 Measure L1.17: Potential avoidance of hazardous waste

This measure estimated the number of hazardous materials sites within 1/8 mile (approximately 660 feet) of each alternative.

Alternatives received a rating of 1 for greater than 110 hazardous materials sites; a 2 for 81 to 110 sites; a 3 for 51 to 80 sites; a 4 for 20 to 50 sites; and a 5 for less than 20 sites.

3.4 Support Equitable Mobility

The criterion used to develop this objective was Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations. The criterion was evaluated using the two measures described below.

3.4.1 Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations

Equitable transit service was qualitatively assessed based on demographic differences between populations located within a half mile of each station and potential acquisition or displacement of property with a presence of low-income and minority populations.

3.4.1.1 Measure L1.18: Qualitative demographic differences among the option census data (households with no car, low income, and minority populations) in station areas

This measure evaluated the percentages of minority and low-income populations within a half-mile radius of each station location and compared these populations to the overall minority and low-income percentages within each city as a whole ("baseline"). The baseline serves as the middle of the scoring range. If the percentage that the station area scored was greater than the baseline, it scored higher (ratings of 4 to 5, darker green); if the percentage that the station area served was lower than the baseline, it scored lower (ratings of 1 to 2, lighter green).

Each scoring band (1, 2, 3, etc.) represents a difference of 2 percentage points of minority and low-income populations. Minority and low-income populations were scored separately and then averaged together for a total rating.

3.4.1.2 Measure L1.19: Potential for impacts on low-income and minority populations

This measure compared the potential for property acquisition and displacement (Measure L1.10) with the presence of environmental justice (EJ) populations (minority and low-income) along the corridor segment. If there was a high potential of acquisition in addition to higher-than-baseline EJ populations, that would result in higher potential impacts. If there was a low potential of acquisition in addition to lower-than-baseline EJ populations, that would result in

lower potential impacts. A scoring matrix was built around these two end points to determine ratings.

Alternatives within each segment received lower ratings for higher potential impacts (ratings of 1 to 2, lighter green) and higher ratings for lower potential impacts (ratings of 4 to 5, darker green). The presence of EJ populations was ranked similar to Measure 18 but with a 100-foot buffer around the corridor instead of a half-mile buffer around the station areas.

3.5 Provide a Financially Sustainable and Constructible Project

The criteria used to evaluate this objective are Financial Considerations, Constructability and Engineering Considerations, Operational Considerations, and Schedule Considerations. The criteria were evaluated using the six measures described below.

3.5.1 Financial Considerations

Financial considerations were qualitatively assessed based on potential major cost elements beyond the representative project description.

3.5.1.1 Measure L1.20: Major cost elements beyond the representative project description

This measure assessed major cost elements of each alternative (e.g., I-5 crossings, major parcel impacts, track lengths, alignment profile, etc.) as compared to the ST3 Plan representative project.

Alternatives within each segment received a rating of 1 for a scope that is substantially inconsistent; a 2 for a moderately consistent scope; a 3 for a scope with minor inconsistencies; a 4 for a similar scope; and a 5 for a scope with a reduced definition.

3.5.2 Constructibility and Engineering Considerations

Constructability and engineering considerations were qualitatively assessed based on potential risks due to major utilities or structures, availability of publicly owned ROW, and capability to accommodate future expansion.

3.5.2.1 Measure L1.21: Potential risks (major utilities or structures)

This measure estimated potential impacts from known major utilities or structures (e.g., power lines, transportation infrastructure, etc.).

Alternatives within each segment received a rating of 1 for substantial impacts; a 2 for moderate impacts; a 3 for some impacts; a 4 for few impacts; and a 5 for no impacts.

3.5.2.2 Measure L1.22: Availability and potential to use publicly owned ROW

This measure assessed the availability of publicly owned ROW.

Alternatives within each segment received a rating of 1 for being located where there is no available publicly owned ROW; a 2 for minimal availability; a 3 for some availability; a 4 for moderate availability; and a 5 for substantial availability.

3.5.2.3 Measure L1.23: Capability to accommodate future expansion included in the Sound Transit Long-Range Plan

This measure evaluated the capability of station locations and alignments to accommodate future expansion in the Sound Transit Long-Range Plan.

Alternatives within each segment received a rating of 1 for no accommodation of future expansion, through a 5 for complete accommodation of future expansion.

3.5.3 Operational Considerations

Operational considerations were qualitatively assessed based on operational elements.

3.5.3.1 Measure L1.24: Consideration of operational elements

This measure compared operational considerations including potential reliability, track alignment, tail tracks, pocket track at Tacoma Dome, number of at-grade crossings (if any), etc.

Alternatives within each segment received a rating of 1 for having elements that create multiple operational concerns, through a 5 for having elements that create no operational concerns.

3.5.4 Schedule Considerations

Schedule considerations were qualitatively assessed based on potential schedule risks.

3.5.4.1 Measure L1.25: Overall schedule risk

This measure considered the potential risks to increase or delay the schedule. Alternatives within each segment received a rating of 1 for multiple potential risks, through 5 for no potential risks.

4 Level 1 Analysis Results

This section summarizes the Level 1 analysis results by criteria for each of the alternatives in the South Federal Way, Fife, East Tacoma, and Tacoma Dome segments. Exhibit 4-1 shows the TDLE corridor segments.

4.1 South Federal Way

The South Federal Way segment begins at the Federal Way Transit Center and extends south to the King-Pierce County boundary line. Exhibit 4-2 summarizes the performance by criteria of each of the South Federal Way alternatives.

4.1.1 Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs

4.1.1.1 Ridership Potential

SF 1 performed the highest on this criterion compared to all other South Federal Way alternatives because it was within a half mile of higher existing and future population and employment and would have shorter travel times. SF 10, SF 12, and SF 13 were the lowest performing for Ridership Potential because these alternatives were within a half mile of lower existing and future population and major population/employment centers and destinations. All other alternatives performed similarly for Ridership Potential.

4.1.2 Support Sustainable Land Use Plans, Equitable Access, and Economic Development

4.1.2.1 Supports Future Transit Oriented Development Opportunities

The South Federal Way alternatives with the highest performance on this criterion included SF 4A-D and SF 6. SF 4A-D had the fewest barriers to the walkshed and development potential and had the best access to amenities. SF 6 was located nearest to a zone that was compatible with TOD and was within proximity to more amenities. SF 7 and SF 12 had the lowest performance of all South Federal Way alternatives on this criterion because of the location within zones that are not compatible with TOD and had the most barriers to the walkshed and development potential. SF 12 also had no amenities within proximity of the station.

4.1.2.2 Promotes Multimodal Access and Integration

SF 1, SF 2, and SF 3 had the highest performance on this criterion of all South Federal Way alternatives primarily because these alternatives included a high number of existing and planned direct bus services. Most of the South Federal Way alternatives had similar nonmotorized access and integration. SF 6 performed the lowest for multimodal access and integration because this alternative has poor multimodal access that would be difficult to improve, and because all existing and planned transit service would require diversions to serve the station.

Date: 9/6/2018 Author: worshaly Path: U:\PSO\Projects\Clients\1800-HDREngineering\554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\L1_Alignments_Basemap_08302018.mxd

Source: © Mapbox, © OpenStreetMap

0 0.25 0.5 1 Miles

SOUNDTRANSIT

Exhibit 4-1

Level 1 Alternatives and Corridor Segments for the Tacoma Dome Link Extension

4.1.3 Preserve the Environment

4.1.3.1 Effects on the Natural Environment

Of all South Federal Way alternatives, SF 1, SF 4A, and SF 4D performed the highest because these alternatives have fewer impacts on wetlands and steep slopes, and no impacts on other environmental categories. SF 4B, SF 4C, SF 5A, and SF 5B performed the lowest because these alternatives have higher impacts on wetlands.

4.1.3.2 Effects on the Built Environment

SF 8, SF 9, SF 10, SF 12, and SF 13 performed the highest on this criterion of all South Federal Way alternatives. Compared to the other South Federal Way alternatives, all these alternatives would have fewer impacts on viewsheds or proximity to view-dependent businesses, lower potential for impacts from vibration and noise, lower potential for impacting areas of existing congestion, and fewer impacts from hazardous waste sites. SF 12 and SF 13 also have the fewest property impacts. SF 4A-C, SF 5A, and SF 11 performed the lowest on this criterion. All these alternatives generally had more impacts on all elements of the built environment, especially to property. The alignment of these alternatives would result in higher amounts of property impacts compared to other South Federal Way alternatives.

4.1.4 Support Equitable Mobility

4.1.4.1 Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations

Many of the South Federal Way alternatives had a similar performance on this criterion. SF 1, SF 2, SF 3, SF 4D, SF 6, SF 7, SF 8, SF 11, and SF 12 would moderately support equitable mobility. All these alternatives would serve slightly less to slightly more low-income and minority populations when compared to Federal Way citywide and would not have high impacts from acquisitions and displacements on EJ populations. All other South Federal Way alternatives (SF 4A-C, SF 5A-B, SF 9, SF 10, and SF 13) performed lower. SF 4A-C and SF 5A-B performed lower because these alternatives would have higher impacts from acquisitions and displacements on EJ populations. SF 9, SF 10, and SF 13 had a lower performance because these stations would serve less low-income and minority populations.

4.1.5 Provide a Financially Sustainable and Constructible Project

4.1.5.1 Financial Considerations

Most of the alternatives in South Federal Way would have additional cost elements beyond the representative project description and, therefore, are lower performing. SF 1, SF 2, SF 3, SF 4A-C, SF 5A-B, SF 11, SF 12, and SF 13 were all lower performing because of additional alignment length and more potential to impact higher complexity properties. SF 4A-B and SF 5A would also have additional design considerations because the guideway would travel parallel to the Bonneville Power Administration (BPA) high-voltage transmission line. SF 11, SF 12, and SF 13

would also require additional overcrossings and/or structures over I-5. SF 6, SF 8, SF 9, and SF 10 were higher performing because these alternatives would have minimal major cost elements beyond the representative project.

4.1.5.2 Constructibility and Engineering Considerations

Many of the South Federal Way alternatives performed similarly for this criterion, with moderate performance on constructibility and engineering considerations. SF 6, SF 8, SF 9, and SF 10 performed the highest of all South Federal Way alternatives. All these alternatives would have the potential to use the Washington State Department of Transportation (WSDOT) ROW and would only have some potential risks. SF 4B and SF 5A were the lowest performing for this criterion, primarily because the alignment for each of these alternatives would cross and run parallel to the BPA high-voltage transmission line and neither alternative would have the potential to use publicly owned ROW.

4.1.5.3 Operational Considerations

Most of the alternatives in South Federal Way performed well on operational considerations. SF 1, SF 3, SF 4C, SF 5B, SF 6, SF 8, SF 9, and SF 10 would have no major operational considerations. SF 4A performed the worst of all the alternatives in South Federal Way because it has three curves that reduce operating speeds below 55 miles per hour (mph).

4.1.5.4 Schedule Considerations

SF 4D performed the best on this measure; this alternative would have one potential higher complexity property impact but no other schedule risks. SF 11, SF 12, and SF 13 performed the worst. These alternatives would have potential schedule risks that include possible high complexity property impacts and crossings of I-5. SF 11 also includes potential coordination with the SR 18 off-ramp and would have a structure over Enchanted Parkway. SF 12 and SF 13 would also have impacts to a Tribal parcel. All other alternatives performed similarly for Schedule Considerations.

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

	Enchanted Parkway			SR 99 to I-5/SR 99/I-5 to SR 99/I-5 to SR 99 to I-5			
EVALUATION CRITERIA	**SF 1 Enchanted/348th**	**SF 2 Enchanted/352nd**	**SF 3 Enchanted/356th**	**SF 4 99 North** a	**SF 4 99 North** b	**SF 4 99 North** c	**SF 4 99 North** d
							
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS							
Ridership Potential	• Faster travel time • Population and employment within 1/2 mile of station are higher compared to other stations • Station is within 1/2 mile of some major shopping destinations	• Travel time is in the middle compared to other alternatives • Population and employment within 1/2 mile of station are higher compared to other stations • Station is within 1/2 mile of major employers and destinations	• Fastest travel time • Population and employment within 1/2 mile of station is in the middle compared to other alternatives • Station is within 1/2 mile of some major shopping destinations as well as educational and recreational facilities	• Slower travel time due to length and curves • Population and employment within 1/2 mile of station are highest • Station is within 1/2 mile of some major employers and destinations	• Slower travel time due to length and curves • Population and employment within 1/2 mile of station are highest • Station is within 1/2 mile of some major employers and destinations	• Travel time is in the middle compared to other alternatives • Population and employment within 1/2 mile of station are highest • Station is within 1/2 mile of some major employers and destinations	• Slower travel time due to length and curves • Population and employment within 1/2 mile of station are highest • Station is within 1/2 mile of some major employers and destinations
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT							
Supports Future Transit-Oriented Development (TOD) Opportunities	• Commercial Enterprise Zone; also 1/2 mile from zone that allows residential • Few walkshed barriers within 1/4 mile but I-5, heavy traffic arterials create barriers within 1/2 mile of station • Station located near amenities such as major retail businesses and other retail businesses	• Commercial Enterprise Zone; zoning does not allow residential development • Large hill, I-5, heavy traffic arterials, and large block sizes are a barrier to the walkshed within 1/2 mile • Station located near amenities such as major retail businesses and others further south	• Commercial Enterprise Zone with small area of fully built-out multifamily housing; no other residential development nearby is possible • Topography, I-5, and busy arterials within 1/2 mile of the station are a walkshed barrier • Station located near limited amenities to support complete neighborhoods	• Commercial Enterprise Zone; near an Office Park Zone and 1/2 mile from zone that allows multifamily residential • Few walkshed barriers within 1/2 mile of station • Station located near the highest number of amenities to support complete neighborhoods	• Commercial Enterprise Zone; near an Office Park Zone and 1/2 mile from zone that allows residential • Few walkshed barriers within 1/2 mile of station • Station located near the highest number of amenities to support complete neighborhoods	• Commercial Enterprise Zone; near an Office Park Zone and 1/2 mile from zone that allows multifamily residential • Few walkshed barriers within 1/2 mile of station • Station located near the highest number of amenities to support complete neighborhoods	• Commercial Enterprise Zone; near an Office Park Zone and 1/2 mile from zone that allows multifamily residential • Few walkshed barriers within 1/2 mile of station • Station located near the highest number of amenities to support complete neighborhoods
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access • Highest number of direct bus routes with minor diversions required for others	• Some potential for improved nonmotorized access • Highest number of direct bus routes with minor diversions required for others	• Some potential for improved nonmotorized access • Highest number of direct bus routes with minor diversions required for others	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct bus service with diversions required for several routes	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct bus service with diversions required for several routes	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct service with diversions required for several routes	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct bus service with diversions required for several routes
PRESERVE THE ENVIRONMENT							
Effects on the Natural Environment	• Minimal impacts to wetlands (0.8 acres). No major stream crossings and some minor stream crossings. No floodplain/floodway impacts. Some steep slope impacts.	• Few impacts to wetlands (1 acre). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Few impacts to wetlands (1.1 acres). No major steam crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Minimal impacts to wetlands (0.7 acres). No major stream crossings and few minor stream crossings. No floodplain/floodway impacts. Some steep slope impacts.	• Several impacts to wetlands (4.5 acres). Few major and minor stream crossings. No floodplain/ floodway impacts. Fewer steep slope impacts.	• Several impacts to wetlands (4.5 acres). Few major and minor stream crossings. No floodplain/ floodway impacts. Fewer steep slope impacts.	• Minimal impacts (0.7 acres) to wetlands. No major stream crossings and some minor stream crossings. No floodplain/floodway impacts. Some steep slope impacts.
Effects on the Built Environment	• Middle amount of impacted acreage; tribal parcel impacted • Some impacts to historic properties; potential impacts to cemeteries • Some impacts to viewsheds/view-dependent businesses as well as sensitive noise receptors • Impacts to areas with existing congestion and high potential for hide/ride impacts to parking (commercial property)	• Middle amount of impacted acreage; tribal parcel impacted • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • Some impacts to viewsheds/view-dependent businesses; few impacts to sensitive noise receptors • Impacts to areas with existing congestion and high potential for hide/ride impacts to parking (commercial property)	• More acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • Some impacts to viewsheds/view-dependent businesses; few impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion; high potential for hide/ride impacts to parking (commercial property)	• More acreage of impacted parcels compared to other alternatives; tribal parcel impacted • Some impacts to major parks and historic properties; potential impacts to cemeteries • Many impacts to viewsheds/view-dependent businesses and some impacts to sensitive noise receptors • Some impacts to areas with existing congestion; high potential for hide/ride impacts to parking (commercial property)	• Highest acreage of impacted parcels; tribal parcel impacted • Potential impacts to Spring Valley character • Some impacts to major parks and historic properties; potential impacts to cemeteries and archaeological sites • Many impacts to viewsheds/view-dependent businesses; some impacts to sensitive noise receptors • Some impacts to areas with existing congestion; high potential for hide/ride impacts to parking (commercial property)	• Higher amount of impacted parcels acreage; tribal parcel impacted • Potential impacts to Spring Valley character • Some impacts to parks and historic properties; potential impacts to cemeteries and archaeological sites • Several impacts to viewsheds/view-dependent businesses and many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; high potential for hide/ride impacts to parking (commercial property)	• Middle amount of impacted parcels acreage; tribal parcel impacted • Some impacts to historic properties; potential impacts to cemeteries • Some impacts to viewsheds/view-dependent businesses and many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; high potential for hide/ride impacts to parking (commercial property)

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

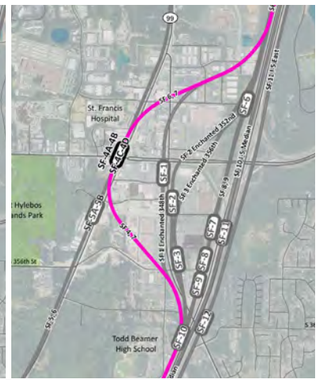
	Enchanted Parkway			SR 99 to I-5/SR 99/I-5 to SR 99/I-5 to SR 99 to I-5			
EVALUATION CRITERIA	SF 1 Enchanted/348th	SF 2 Enchanted/352nd	SF 3 Enchanted/356th	SF 4 99 North a	SF 4 99 North b	SF 4 99 North c	SF 4 99 North d
							
SUPPORT EQUITABLE MOBILITY							
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves similar low-income/minority populations compared to Federal Way's average • Moderate amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT							
Financial Considerations (compared to Representative Project)	• Additional potential full property acquisitions (multifamily and commercial properties) • Additional property impacts on Enchanted Parkway • Additional alignment length (0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily and commercial properties) • Additional property impacts on Enchanted Parkway • Additional alignment length (0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily and retail properties) • Additional property impacts on Enchanted Parkway • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily, major retail, and commercial properties) • Additional property impacts on SR 99 • Additional alignment length (0.3 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (commercial properties) • Additional property impacts on SR 99 • Additional alignment length (0.3 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily and commercial properties) • Additional property impacts on SR 99 • Additional alignment length (0.2 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily, major retail, and commercial properties) • Additional alignment length (0.4 miles) • No additional crossings of I-5
Constructability and Engineering Considerations	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • No crossings of I-5 mainline • Some potential to use public right-of-way (ROW) north and south of station	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • No crossings of I-5 mainline • Some potential to use public ROW north and south of station	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • No crossings of I-5 mainline • Some potential to use public ROW north and south of station	• Alignment crosses BPA high voltage transmission lines at S 324th Street and runs parallel along S 324th Street • No crossings of I-5 mainline • Some potential to use public ROW south of station	• Alignment crosses BPA high voltage transmission lines at S 324th Street and runs parallel along S 324th Street • No crossings of I-5 mainline • No potential to use public ROW	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • No crossings of I-5 mainline • Some potential to use public ROW north of station	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • No crossings of I-5 mainline • Some potential to use public ROW north and south of station
Operational Considerations	• All curves at least 55 MPH	• Curve at S 348th reduces operating speed to 40 MPH	• All curves at least 55 MPH	• Curves near S 324th and S 322nd reduce operating speed to 30 MPH and 45 MPH • Curve back to I-5 at 352nd reduces speed to 45 MPH	• Curves near S 324th and Pacific Highway S reduce operating speed to 30 MPH and 45 MPH	• All curves at least 55 MPH	• Curve at 352nd reduces speed to 45 MPH
Schedule Considerations	• Impacts multifamily and commercial properties • Potential property acquisitions along Enchanted Parkway • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily and commercial properties • Potential property acquisitions along Enchanted Parkway • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily properties • Potential property acquisitions along Enchanted Parkway • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily and major retail properties • Potential property acquisitions along SR 99 • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Potential property acquisitions along SR 99 • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily property • Potential property acquisitions along SR 99 • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily, major retail, and commercial properties • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING → HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	SR 99/I-5 to SR 99		I-5 West				
	SF 5 99 South a	SF 5 99 South b	SF 6 I-5/344th	SF 7 I-5/352nd (Representative Project)	SF 8 I-5/356th	SF 9 I-5/Jet	SF 10 I-5/359th
							
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS							
Ridership Potential	• Slower travel time due to length and curves • Population and employment within 1/2 mile of station are higher • Station is within 1/2 mile of major employers and destinations	• Travel time is towards the middle compared to other alternatives • Population and employment within 1/2 mile of station are higher • Station is within 1/2 mile of major employers and destinations	• Travel time is fastest • Population and employment within 1/2 mile of station are middle to higher • Station is within 1/2 mile of some major shopping destinations	• Travel time is towards the middle compared to other alternatives • Population and employment within 1/2 mile of station are towards the middle • Station is within 1/2 mile of major shopping destinations	• Fastest travel time • Population and employment within 1/2 mile of station are towards the middle comapred to other alternatives • Station is within 1/2 mile of major shopping destinations as well as educational and recreational facilities	• Fastest travel time • Population and employment within 1/2 mile of station are towards the middle compared to other alternatives • Station is within 1/2 mile of major shopping destinations as well as educational and recreational facilities	• Fastest travel time • Population and employment within 1/2 mile of station are lower compared to other alternatives • Station is within 1/2 mile of few major destinations (educational and recreational facilities)
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT							
Supports Future Transit-Oriented Development (TOD) Opportunities	• Commercial Enterprise Zone; near single family homes with larger lot sizes • Few walkshed barriers within 1/2 mile of station • Station located near few amenities to support complete neighborhoods	• Commercial Enterprise Zone; near single family homes with larger lot sizes • Few walkshed barriers within 1/2 mile of station • Station located near few amenities to support complete neighborhoods	• Commercial Enterprise Zone; adjacent to multifamily zone and zone that allows mixed uses • I-5 is major barrier to walkshed as well as the layout of the street network • Station located near a number of amenities to support complete neighborhoods	• Commercial Enterprise Zone; no residential development is possible • I-5 is major barrier to walkshed as well as the layout of the street network • Station located near some amenities to support complete neighborhoods	• Commercial Enterprise Zone; some existing residential but no additional residential development is possible • I-5, topography are major barriers to walkshed • Station located near limited amenities to support complete neighborhoods	• Commercial Enterprise Zone; some existing residential but no additional residential development is possible • I-5, topography are major barriers to walkshed • Station located near limited amenities to support complete neighborhoods	• Located in residential zones • I-5, topography are major barriers to walkshed; Todd Beamer HS is also a barrier • Station located near limited amenities to support complete neighborhoods
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct bus service with diversions required for several routes	• Some potential for improved nonmotorized access; large block sizes a barrier • Minimal direct bus service with diversions required for several routes	• Minimal potential for improved nonmotorized access; large block sizes a barrier • No direct bus service; all routes would require diversions and loops	• Minimal potential for improved nonmotorized access; large block sizes a barrier • Highest number of direct bus routes with minor diversions for others and loops in/of stations required	• Some potential for improved nonmotorized access; large block sizes a barrier • Highest number of direct bus routes with minor diversions for others and loops in/of stations required	• Some potential for improved nonmotorized access; large block sizes a barrier • Highest number of direct bus routes with minor diversions required for others	• Sidewalks and bicycle facilities present or planned on many streets • Minimal to some potential for improved pedestrian access at I-5 • Highest number of direct bus routes with minor diversions required for others
PRESERVE THE ENVIRONMENT							
Effects on the Natural Environment	• Several impacts to wetlands (4.5 acres). Few major and minor stream crossings. No floodplain/floodway impacts. Fewer steep slope impacts.	• Several impacts to wetlands (4.5 acres). Few major and minor stream crossings. No floodplain/floodway impacts. Fewer steep slope impacts.	• Minimal impacts to wetlands (0.9 acres). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Minimal impacts to wetlands (0.9 acres). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Minimal impacts to wetlands (0.9 acres). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Minimal impacts to wetlands (0.9 acres). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.	• Minimal impacts to wetlands (0.9 acres). No major stream crossings and some minor stream crossings parallel to Hylebos Creek. No floodplain/floodway impacts. Some steep slope impacts.
Effects on the Built Environment	• Highest amount of impacted acreage; tribal parcel impacted • Potential impacts to Spring Valley character • Some impacts to major parks, historic properties; potential impacts to cemeteries and archaeological sites • Many impacts to viewsheds/view-dependent businesses and some impacts to sensitive noise receptors • Some impacts to areas with existing congestion and some potential for hide/ride impacts to parking	• Higher amount of impacted acreage; tribal parcel impacted • Potential impacts to Spring Valley character • Some impacts to parks, historic properties; potential impacts to cemeteries and archaeological sites • Several impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Some impacts to areas with existing congestion and some potential for hide/ride impacts to parking	• Lower acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • Some impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Many impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Lower acreage of impacted parcels; tribal parcel impacted • Potential impacts to major retail business loading • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • Minimal impacts to viewsheds/view-dependent businesses and sensitive noise receptors • Some impacts to areas with existing congestion and high potential for hide/ride impacts to parking (commercial property)	• Lower acreage of impacted parcels; tribal parcel impacted • Minimal impacts to historic properties; potential impacts to cemeteries and archaeological site • Minimal impacts to viewsheds/view-dependent businesses and impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Lower acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • No impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Lower acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties; potential impacts to cemeteries and archaeological site • Minimal impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion and low potential for hide/ride impacts to parking

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	SR 99/I-5 to SR 99		I-5 West				
	SF 5 99 South a	SF 5 99 South b	SF 6 I-5/344th	SF 7 I-5/352nd (Representative Project)	SF 8 I-5/356th	SF 9 I-5/Jet	SF 10 I-5/359th
							
SUPPORT EQUITABLE MOBILITY							
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves similar low-income/minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves slightly less low-income/ minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves slightly less low-income/ minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT							
Financial Considerations (compared to Representative Project)	• Additional potential full property acquisitions (commercial properties) • Additional property impacts on SR 99 • Additional alignment length (0.3 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily and commercial properties) • Additional property impacts on SR 99 • Additional alignment length (0.2 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily properties) • No additional alignment length • No additional crossings of I-5	• Potential additional costs associated with impacts to businesses • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily property) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily and commercial properties) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (multifamily property) • No additional alignment length • No additional crossings of I-5
Constructability and Engineering Considerations	• Alignment crosses BPA high voltage transmission lines at S 324th Street and runs parallel along S 324th • No crossings of I-5 mainline • No public ROW available	• Alignment crosses BPA high voltage transmission lines at S 324th Street • No crossings of I-5 mainline • Some potential to use public ROW north of station	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Coordination with planned SR-18 SB off-ramp • No crossings of I-5 mainline • Potential to use WSDOT ROW	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Coordination with planned SR-18 SB off-ramp • No crossings of I-5 mainline • Potential public ROW constricted by off-ramp from SR 18	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Coordination with planned SR-18 SB off-ramp • No crossings of I-5 mainline • Potential to use WSDOT ROW	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Coordination with planned SR-18 SB off-ramp • No crossings of I-5 mainline • Potential to use WSDOT ROW	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Coordination with planned SR-18 SB off-ramp • No crossings of I-5 mainline • Potential to use WSDOT ROW
Operational Considerations	• Curves near S 324th and Pacific Highway S reduce operating speed to 30 MPH and 45 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH	• Curves near S 324th and S 322nd reduce operating speed to 30 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH
Schedule Considerations	• No impacts to major parcels • Potential property acquisitions along SR 99 • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily parcel • Potential property acquisitions along SR 99 • Impacts to tribal parcel • No anticipated interaction with other planned transportation projects or infrastructure	• Impacts multifamily parcels • Impacts to tribal parcel • Coordination with SR 18 SB off-ramp necessary	• Impacts multifamily and major retail parcels • Impacts to tribal parcel • Coordination with SR 18 SB off-ramp necessary	• Impacts multifamily parcels • Impacts to tribal parcel • Coordination with SR 18 SB off-ramp necessary	• Impacts multifamily parcels • Impacts to tribal parcel • Coordination with SR 18 SB off-ramp necessary	• Impacts multifamily parcels • Impacts to tribal parcel • Coordination with SR 18 SB off-ramp necessary

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

	I-5 Median	I-5 East	
EVALUATION CRITERIA	SF 11 I-5 Median	SF 12 I-5 East/ Enchanted	SF 13 I-5 East/ Wild Waves
			
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS			
Ridership Potential	• Faster travel time • Population and employment within 1/2 mile of station are towards middle compared to other alternatives • Station is within 1/2 mile of few major destinations (educational and recreational facilities)	• Faster travel time • Population and employment within 1/2 mile of station are lowest compared to other alternatives • Station is within 1/2 mile of few major destinations (educational and recreational facilities)	• Faster travel time • Population and employment within 1/2 mile of station are lowest compared to other alternatives • Station is within 1/2 mile of few major destinations (educational and recreational facilities)
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT			
Supports Future Transit-Oriented Development (TOD) Opportunities	• No zoning over I-5; located near Commercial Enterprise Zone; no additional residential development possible • Access to the station could be possible on either side of I-5 • Station located near limited amenities to support complete neighborhoods; educational facility nearby	• Single-family zone with some existing exceptions for low-rise apartments • The station is reachable from either side of I-5 via Enchanted Pkwy but the roadway network and topography east of I-5 reduces the walkshed • There are no amenities to support complete neighborhoods	• Office Park zone; two single family zones nearby • I-5 is a major barrier to the walkshed but access to the south and east is possible • There are no amenities to support complete neighborhoods
Promotes Multimodal Access and Integration	• Potential for improved pedestrian access; large block sizes a barrier • Highest number of direct bus routes with minor diversions for others and loops in/of stations required	• Limited nonmotorized access due to I-5 and large block sizes and minimal improvement potential • Highest number of direct bus routes with minor diversions for others and loops in/of stations required	• Limited potential for improved pedestrian access; large block sizes a barrier • No direct bus service; diversions from arterials would result in unserved areas
PRESERVE THE ENVIRONMENT			
Effects on the Natural Environment	• Minimal impacts to wetlands (< 0.1 acres). No major stream crossings and few minor stream crossings. No floodplain/floodway impacts. Some steep slope impacts. • Potential additional impacts from freeway demolition and widening	• Minimal impacts to wetlands (0.3 acres). No floodplain/floodway impacts. Several steep slope impacts. • Alignment impacts existing open space areas	• Minimal impacts to wetlands (0.3 acres). No floodplain/floodway impacts. Several steep slope impacts. • Alignment impacts existing open space areas
Effects on the Built Environment	• Lower acreage of impacted parcels; extensive WSDOT ROW needed; no tribal parcels impacted if within WSDOT ROW • Potential additional impacts from freeway demolition and widening • No impacts to historic properties; potential impacts to cemeteries and archaeological site • No impacts to viewsheds/view-dependent businesses; few impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Least acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties • Minimal impacts to viewsheds/view-dependent businesses and sensitive noise receptors • Minimal impacts to areas with existing congestion and low potential for hide/ride impacts to parking	• Least acreage of impacted parcels; tribal parcel impacted • Few impacts to historic properties • Minimal impacts to viewsheds/view-dependent businesses and sensitive noise receptors • Minimal impacts to areas with existing congestion and medium potential for hide/ride impacts to parking

EXHIBIT 4-2: SOUTH FEDERAL WAY STATION AREA

Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 Median	I-5 East	
	SF 11 I-5 Median	**SF 12 I-5 East/ Enchanted**	**SF 13 I-5 East/ Wild Waves**
			
SUPPORT EQUITABLE MOBILITY			
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves similar low-income/minority populations compared to Federal Way's average • Highest amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly less low-income/ minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves less low-income/minority populations compared to Federal Way's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT			
Financial Considerations (compared to Representative Project)	• Additional potential full property acquisitions (multifamily property) • No additional alignment length • 1 additional crossing of I-5 • Additional pedestrian overpasses on either side of I-5 • Additional cost from freeway demolition and widening	• Additional potential full property acquisitions (multifamily property) • No additional alignment length • 1 additional crossing of I-5	• Additional potential full property acquisitions (multifamily property) • No additional alignment length • 1 additional crossing of I-5
Constructability and Engineering Considerations	• Alignment crosses BPA high voltage transmission lines, I-5 southbound lanes into median, and major I-5 highway crossings at SR-18 and Enchanted Parkway • Coordination with planned SR-18 SB off-ramp • Potential to use WSDOT ROW but could require freeway widening	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Crosses I-5 mainline • Potential to use WSDOT ROW	• Alignment crosses BPA high voltage transmission lines near 23rd Avenue S • Crosses I-5 mainline • Potential to use WSDOT ROW
Operational Considerations	• Curve near S 324th and S 322nd reduces speed to 50 MPH	• Curve near S 324th and S 322nd reduces speed to 50 MPH	• Curve near S 324th and S 322nd reduces speed to 50 MPH
Schedule Considerations	• Impacts multifamily parcel • No impacts to tribal parcels • Coordination with SR 18 SB off-ramp necessary • Crossing of I-5 southbound lanes into median and major I-5 highway crossings at SR-18 and Enchanted Parkway • Potential freeway demolition and widening	• Impacts multifamily parcel • Impacts to tribal parcel • Crossing of I-5	• Impacts multifamily parcel • Impacts to tribal parcel • Crossing of I-5

4.2 Fife

The Fife Segment begins at the King-Pierce County line and extends west to the Fife-Tacoma city boundary just east of the Puyallup River. Exhibit 4-3 summarizes the performance by criteria of each of the Fife alternatives.

4.2.1 Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs

4.2.1.1 Ridership Potential

Most of the Fife alternatives performed similarly for Ridership Potential. Generally, all the Fife alternatives would be within proximity to similar existing and future population, major destinations, and have similar travel times. Fife 1, Fife 2A-B, Fife 8, and Fife 9A were slightly lower performing compared to the other alternatives in Fife because each were within proximity to fewer major destinations and had more curves and/or alignment length that reduced travel times.

4.2.2 Support Sustainable Land Use Plans, Equitable Access, and Economic Development

4.2.2.1 Supports Future Transit Oriented Development Opportunities

Fife 4A-C were the highest performing of all the Fife alternatives because these alternatives are located within the Community Commercial zone that is the most compatible with TOD, have fewer barriers due to locations away from I-5, and have a good mix of amenities nearby. Fife 7 performed the lowest of all the Fife alternatives, particularly because there are no amenities nearby and it has many barriers because of its adjacency to I-5 and the presence of a steep slope to the northeast.

4.2.2.2 Promotes Multimodal Access and Integration

Many of the Fife alternatives performed higher on this criterion, including Fife 2A-B, Fife 3A-B, Fife 4A-C, and Fife 5A-C. These alternatives performed higher because of minimal deviations of bus routes required to serve the stations, and because these alternatives would have more potential for improvement of nonmotorized access. Fife 1 performed the lowest because it is not currently served by any bus service and diversions would be necessary.

4.2.3 Preserve the Environment

4.2.3.1 Effects on the Natural Environment

All the Fife alternatives would have many impacts on floodplains and major and minor stream crossings.

Most of the Fife alternatives would have a similar, moderate performance for effects on the natural environment. Fife 2A-B, Fife 3A-B, Fife 4A-C, Fife 5A-C, Fife 6, and Fife 7 performed

better than other Fife alternatives primarily because of fewer wetlands impacts. Fife 9A and Fife 9B performed the lowest because of many impacts to wetlands and more impacts to floodplains than the other Fife alternatives.

4.2.3.2 Effects on the Built Environment

Most of the Fife alternatives performed moderately on this criterion. The highest performing alternative in Fife is Fife 7. This is because Fife 7 would have fewer property impacts, no impacts associated with viewsheds or view-dependent businesses, few impacts from vibration and noise, and low impacts to parking supply and demand. Fife 8 performed the lowest, primarily because of the potential to have many impacts to property due to the need to widen I-5, including major congestion impacts during freeway widening.

4.2.4 Support Equitable Mobility

4.2.4.1 Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations

Fife 6, Fife 7, and Fife 8 performed the highest compared to other Fife alternatives because of serving more low-income and minority populations when compared to Fife citywide, and would have less acquisitions and displacements that could impact EJ populations. All other Fife alternatives performed moderately on this criterion.

4.2.5 Provide a Financially Sustainable and Constructible Project

4.2.5.1 Financial Considerations

Most Fife alternatives performed moderately on this criterion. Fife 8, Fife 9A, and Fife 9B had the lowest performance because these alternatives would require additional structures and/or overcrossings of I-5.

4.2.5.2 Constructibility and Engineering Considerations

Fife 4A and Fife 5A performed the highest primarily because there would be some availability to use publicly owned ROW and there would be minimal potential risks. All other Fife alternatives had a similar, moderate performance on this criterion.

4.2.5.3 Operational Considerations

Fife 9A and Fife 9B performed the highest for Operational Considerations because these alternatives have no curves that reduce operating speeds below 55 mph. Fife 1, Fife 2A-B, and Fife 3A-B performed lower because of multiple curves that would reduce operating speeds.

4.2.5.4 Schedule Considerations

Most of the Fife alternatives performed similarly with a moderate performance for Schedule Considerations. The alternatives with the lowest performance were Fife 6, Fife 7, and Fife 9A-B. These alternatives would have more possible high-complexity property impacts, impacts on Tribal parcels, and coordination with the SR 167 project and 54th Street Interchange project.

EXHIBIT 4-3: FIFE STATION AREA

Draft Level 1 Detailed Results

DRAFT 10/29/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

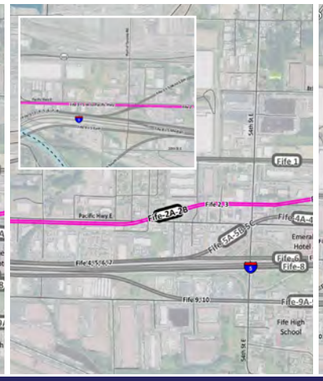
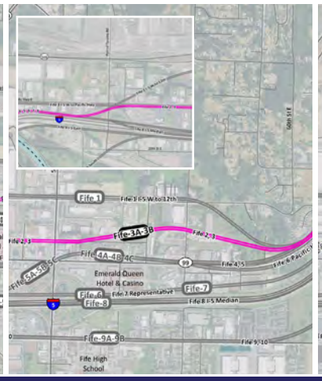
EVALUATION CRITERIA	I-5 West to 12th	I-5 to Pacific Hwy to I-5/Pacific Hwy to I-5			
	Fife 1 12th St	**Fife 2 Pacific Hwy West a**	**Fife 2 Pacific Hwy West b**	**Fife 3 15th St a**	**Fife 3 15th St b**
					
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS					
Ridership Potential	• Slower travel time • Station is within 1/2 mile of some major employers and destinations	• Slower travel time • Station is within 1/2 mile of some major employers and destinations as well as the Port of Tacoma Manufacturing/Industrial Center	• Slower travel time • Station is within 1/2 mile of some major employers and destinations as well as the Port of Tacoma Manufacturing/Industrial Center	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of more major employers and destinations as well as the Port of Tacoma Manufacturing/Industrial Center	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of more major employers and destinations as well as the Port of Tacoma Manufacturing/Industrial Center
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT					
Supports Future Transit-Oriented (TOD) Development Opportunities	• Industrial zone; less supportive of housing and business development • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St; existing development may prevent infill of street network • Near few amenities except amenities at Fife Square	• Business Park zone; supports business development; no residential development is possible • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near some amenities that include small-scale shopping and services	• Business Park zone; supports business development; no residential development is possible • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near some amenities that include small-scale shopping and services	• Three zones that are supportive of housing and business development; also City of Fife's future City Center • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near few amenities	• Station is located in 3 zones that are supportive of housing and business development as well as the City of Fife's future City Center • Few walkshed barriers with the exception of heavy semi truck traffic on Pacific Hwy and 54th • Near few amenities
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access • No bus service currently provided; options available to provide for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications
PRESERVE THE ENVIRONMENT					
Effects on the Natural Environment	• Few impacts to wetlands (1.6 acres). Impacts to several major and minor stream crossings and restoration areas of Wapato Creek. Several impacts to floodplains/floodways (36 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.5 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (25 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.5 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (25 acres). Minimal steep slope impacts. Minimal steep slope impacts.	• Minimal impacts to wetlands (0.5 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (25 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.5 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (25 acres). Minimal steep slope impacts.
Effects on the Built Environment	• More acreage of impacted parcels; several tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; many impacts to sensitive noise receptors • Few impacts to areas with existing congestion; low potential for hide/ride impacts to parking	• Middle amount of impacted parcel acreage; several tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Some impacts to viewsheds/view-dependent businesses and many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• Middle amount of impacted parcel acreage; several tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites and sensitive tribal cultural areas • Some impacts to viewsheds/view-dependent businesses; many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• Middle amount of impacted parcel acreage; several tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Some impacts to viewsheds/view-dependent businesses; many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; low potential for hide/ride impacts to parking	• Middle amount of impacted parcel acreage; several tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites and sensitive tribal cultural areas • Some impacts to viewsheds/view-dependent businesses and many impacts to sensitive noise receptors • Some impacts to areas with existing congestion; low potential for hide/ride impacts to parking

EXHIBIT 4-3: FIFE STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

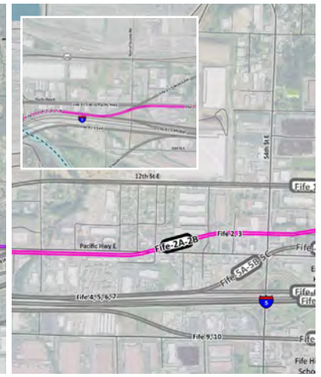
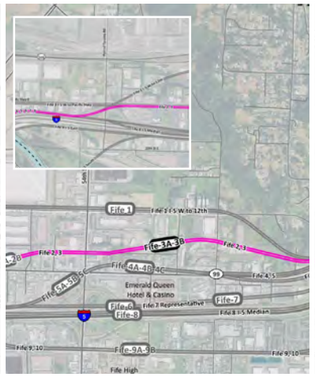
EVALUATION CRITERIA	I-5 West to 12th	I-5 to Pacific Hwy to I-5/Pacific Hwy to I-5			
	Fife 1 12th St	**Fife 2 Pacific Hwy West a**	**Fife 2 Pacific Hwy West b**	**Fife 3 15th St a**	**Fife 3 15th St b**
					
SUPPORT EQUITABLE MOBILITY					
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves similar levels of low-income/ minority populations compared to Fife's average • Higher amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves similar levels of low-income/ minority populations compared to Fife's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves similar levels of low-income/ minority populations compared to Fife's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT					
Financial Considerations (compared to Representative Project)	• Additional potential full property acquisitions (industrial property) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (commercial property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (commercial property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (commercial property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (commercial property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5
Constructability and Engineering Considerations	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Some public ROW available north of Fife Heights and after Port of Tacoma Rd; large portion with no public ROW available	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Small portion of public ROW near Port of Tacoma Rd; large portion with no public ROW available	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • No public ROW available	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Small portion of public ROW near Port of Tacoma Rd; large portion with no public ROW available	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • No public ROW available
Operational Considerations	• Curve around Fife Heights Ridge reduces operating speed to 35 MPH and 45 MPH	• Curve around Fife Heights is 40 MPH • Two curves along 15th Ave are 45 MPH • One curve reduces speeds to 50 MPH	• Curve around Fife Heights is 40 MPH • Two curves along 15th Ave are 45 MPH	• Curve around Fife Heights is 40 MPH • Two curves along 15th Ave are 45 MPH • One curve reduces speeds to 50 MPH	• Curve around Fife Heights is 40 MPH • Two curves along 15th Ave are 45 MPH
Schedule Considerations	• Impacts to industrial parcels • Impacts to several tribal parcels	• Impacts to commercial parcel • Impacts to several tribal parcels	• Impacts to commercial parcel • Impacts to several tribal parcels	• Impacts to commercial parcel • Impacts to several tribal parcels	• Impacts to commercial parcel • Impacts to several tribal parcels

EXHIBIT 4-3: FIFE STATION AREA

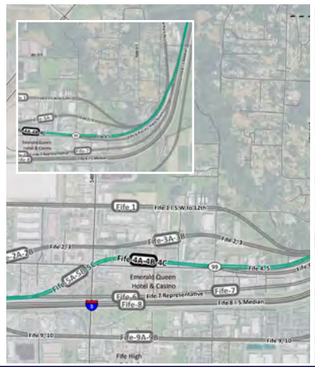
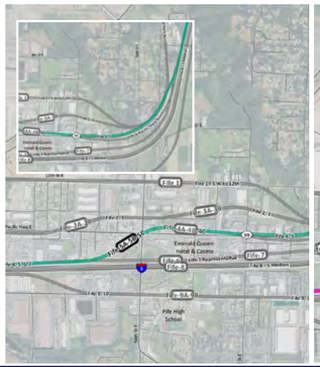
Draft Level 1 Detailed Results

DRAFT 10/29/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 to SR 99/Pacific Hwy E/Pacific Hwy S					
	Fife 4 Pacific Hwy East a	Fife 4 Pacific Hwy East b	Fife 4 Pacific Hwy East c	Fife 5 Pacific Hwy South a	Fife 5 Pacific Hwy South b	Fife 5 Pacific Hwy South c
						
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS						
Ridership Potential	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations	• Faster travel time • Station is within 1/2 mile of some major employers and destinations	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations	• Faster travel time • Station is within 1/2 mile of some major employers and destinations	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT						
Supports Future Transit-Oriented (TOD) Development Opportunities	• Community Commercial Zone; very supportive of housing and business development • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near amenities such as small shops and services	• Community Commercial Zone; very supportive of housing and business development • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near amenities such as small shops and services	• Community Commercial Zone; very supportive of housing and business development • Few walkshed barriers except heavy semi-truck traffic on Pacific Hwy, 54th St • Near amenities such as small shops and services	• Regional Commercial zone; supportive of housing and business development but site is outside the City Center area • I-5 is a major barrier; major arterials also limit walkshed • Near some amenities that include small-scale shopping and services	• Regional Commercial zone; supportive of housing and business development but site is outside the City Center area • I-5 is a major barrier; major arterials also limit walkshed • Near some amenities that include small-scale shopping and services	• Regional Commercial zone; supportive of housing and business development but site is outside the City Center area • I-5 is a major barrier; major arterials also limit walkshed • Near some amenities that include small-scale shopping and services
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency transit service with options for service modifications	• Some potential for improved nonmotorized access • Highest frequency bus service with options for service modifications
PRESERVE THE ENVIRONMENT						
Effects on the Natural Environment	• Minimal impacts to wetlands (0.4 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (21 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.4 acres). Some major and minor stream crossings. Many impacts to floodplains/floodways (19 acres). Minimal steep slope impacts.	• No impacts to wetlands. Some major and minor stream crossings. Many impacts to floodplains/floodways (28 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.4 acres). Few major and minor stream crossings. Many impacts to floodplains/floodways (21 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.4 acres). Few major and minor stream crossings. Many impacts to floodplains/floodways (19 acres). Minimal steep slope impacts.	• No impacts to wetlands. Some major and minor stream crossings. Many impacts to floodplains/floodways (28 acres). Minimal steep slope impacts.
Effects on the Built Environment	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; some impacts to sensitive noise receptors • Major impacts to areas with existing congestion; high potential for hide/ride parking impacts (commercial property)	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to parks, historic properties; potential impacts to archaeological sites • Some impacts to viewsheds/view-dependent businesses; many impacts to sensitive noise receptors • Major impacts to areas with existing congestion; high potential for hide/ride parking impacts (commercial property)	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; some impacts to sensitive noise receptors • Major impacts to areas with existing congestion; high potential for hide/ride parking impacts parking (commercial property)	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; some impacts to sensitive noise receptors • Major impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to parks, historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; many impacts to sensitive noise receptors • Major impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• Fewer acreage of impacted parcels; some tribal parcels impacted • Some impacts to historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses; some impacts to sensitive noise receptors • Major impacts to areas with existing congestion; medium potential for hide/ride parking impacts

DRAFT 10/29/18

EXHIBIT 4-3: FIFE STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING: LOWER PERFORMING → HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

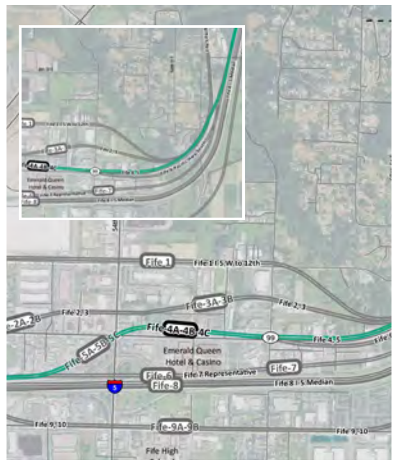
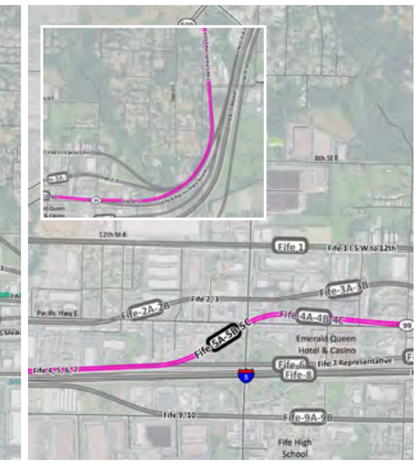
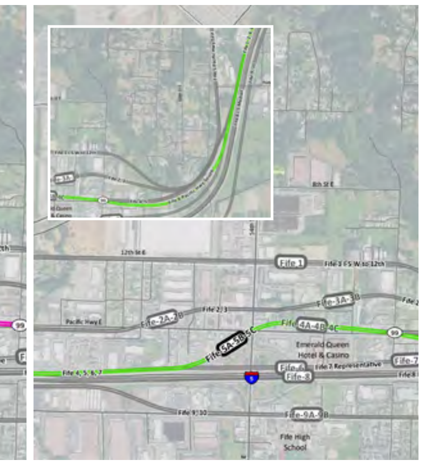
EVALUATION CRITERIA	I-5 to SR 99/Pacific Hwy E/Pacific Hwy S					
	Fife 4 Pacific Hwy East a	Fife 4 Pacific Hwy East b	Fife 4 Pacific Hwy East c	Fife 5 Pacific Hwy South a	Fife 5 Pacific Hwy South b	Fife 5 Pacific Hwy South c
						
SUPPORT EQUITABLE MOBILITY						
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in few potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT						
Financial Considerations (compared to Representative Project)	• Additional potential full property acquisitions (retail property) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (retail property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (retail property) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (retail property) • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions (retail property) • Shorter alignment length (-0.1 miles) • No additional crossings of I-5	• Additional potential full property acquisitions (retail property) • No additional alignment length • No additional crossings of I-5
Constructability and Engineering Considerations	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Some public ROW north of Fife Heights and west of 54th St interchange	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Minimal public ROW west of 54th St interchange	• Crosses two ramps of the planned SR 167 project • No crossings of the I-5 mainline • Some public ROW north of Fife Heights and west of 54th St interchange	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Public ROW north of Fife Heights and the west of 54th St interchange	• Crosses a single ramp of the planned SR 167 project • No crossings of the I-5 mainline • Minimal public ROW west of 54th St interchange	• Crosses two ramps of the planned SR 167 project • No crossings of the I-5 mainline • Some public ROW north of Fife Heights and west of 54th St interchange
Operational Considerations	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH	• Curves on Pac Hwy reduce operating speed to 45 MPH and to 50 MPH
Schedule Considerations	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels	• Impacts to multifamily and retail parcels • Impacts to some tribal parcels

EXHIBIT 4-3: FIFE STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

	I-5 West		I-5 Median	I-5 South	
EVALUATION CRITERIA	**Fife 6 I-5 West** (Representative Project)	**Fife 7 I-5 East**	**Fife 8 I-5 Median**	**Fife 9 20th St a**	**Fife 9 20th St b**
					
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS					
Ridership Potential	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations	• Travel time is in the middle compared to other alternatives • Station is within 1/2 mile of some major employers and destinations but no existing/future population and employment centers	• Slower travel time • Station is within 1/2 mile of some major employers and destinations	• Slowest travel time • Station is within 1/2 mile of some major employers and destinations but no existing/future population and employment centers	• Faster travel time • Station is within 1/2 mile of some major employers and destinations
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT					
Supports Future Transit-Oriented (TOD) Development Opportunities	• Regional Commercial zone; supportive of housing and business development but site is outside the City Center area • Potential impacts to tribal facilities • I-5 is a major walkshed barrier; major arterials and large developments also limit the walkshed • Near few amenities that include small-scale shopping and services	• Regional Commercial zone; supportive of housing and business development but site is outside the City Center area • I-5 is a major walkshed barrier; topography also limits the walkshed • Minimal amenities near the station	• Nearby zoning (Regional Commercial, Community Mixed Use) are supportive of housing and business development • I-5 is a major walkshed barrier; major arterials also limit the walkshed but access into the station helps reduce I-5 as a barrier • Some amenities near the station that support complete neighborhoods	• Residential uses near the station; more limited area that can be commercially developed • There are some barriers to the walkshed due to I-5 and large street grid • Civic and community amenities exist but minimal opportunity to develop service and retail amenities	• Residential uses near the station; more limited area that can be commercially developed • There are some barriers to the walkshed due to I-5 and large street grid • Civic and community amenities exist but minimal opportunity to develop service and retail amenities
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access at I-5 • Highest frequency bus service with options for service modifications	• Minimal potential for improved nonmotorized access at I-5 • Highest frequency bus service with options for service modifications	• Some potential for improved nonmotorized access at I-5 however median location reduces pedestrian experience • Highest frequency bus service with options for service modifications but a longer walk than other stations with access from SR 99	• Some potential for improved nonmotorized access at I-5; large block size and access to commercial areas sizes a barrier • Less frequent bus service than other alternatives with options for service modifications	• Some potential for improved nonmotorized access at I-5; large block size and access to commercial areas sizes a barrier • Less frequent bus service than other alternatives with options for service modifications
PRESERVE THE ENVIRONMENT					
Effects on the Natural Environment	• No impacts to wetlands. Few major and minor stream crossings parallel to Hylebos Creek. Many floodplain/floodway impacts (25 acres). Minimal steep slope impacts.	• No impacts to wetlands. Few major and minor stream crossings parallel to Hylebos Creek. Many impacts to floodplains/floodways (25 acres). Minimal steep slope impacts.	• Minimal impacts to wetlands (0.1 acres). Few major and minor stream crossings parallel to Hylebos Creek. Some impacts to floodplains/floodways (14 acres). Minimal steep slope impacts. • Additional potential impacts from freeway widening	• Many impacts to wetlands (> 10 acres). Some major and minor stream crossings parallel to Hylebos Creek. Many impacts to floodplains/floodways (36 acres). Minimal steep slope impacts.	• Many impacts to wetlands (> 10 acres). Some major and minor stream crossings parallel to Hylebos Creek. Many impacts to floodplains/floodways (35 acres). Minimal steep slope impacts.
Effects on the Built Environment	• Fewer acreage of impacted parcels; some tribal parcels impacted including a regionally significant employer • Some impacts to historic properties; potential impacts to archaeological sites • No impacts to viewsheds/view-dependent businesses; few impacts to sensitive noise receptors • Major impacts to areas with existing congestion and high potential for hide/ride parking impacts (commercial property)	• Fewer acreage of impacted parcels; some tribal parcels impacted including a regionally significant employer • Some impacts to historic properties; potential impacts to archaeological sites • No impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Moderate impacts to areas with existing congestion and low potential for hide/ride impacts to parking	• Fewer acreage of impacted parcels; extensive WSDOT ROW needed; no tribal parcels impacted if within WSDOT ROW • Additional potential impacts from freeway widening • Some impacts to historic properties; potential impacts to archaeological sites • No impacts to viewsheds/view-dependent businesses; few impacts to sensitive noise receptors • Some impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• Middle amount of impacted parcel acreage; some tribal parcels impacted • Moderate impacts to parks; historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses and some impacts to sensitive noise receptors • Some impacts to areas with existing congestion; medium potential for hide/ride parking impacts	• More acreage of impacted parcels; some tribal parcels impacted • Moderate impacts to parks, historic properties; potential impacts to archaeological sites • Minimal impacts to viewsheds/view-dependent businesses and some impacts to sensitive noise receptors • Some impacts to areas with existing congestion; medium potential for hide/ride parking impacts

EXHIBIT 4-3: FIFE STATION AREA

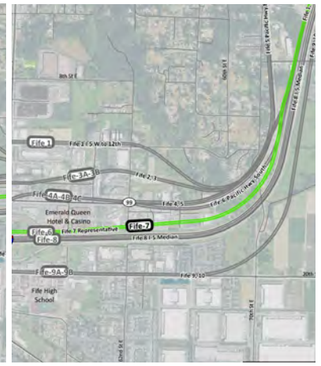
Draft Level 1 Detailed Results

DRAFT 10/29/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

	I-5 West		I-5 Median	I-5 South	
EVALUATION CRITERIA	**Fife 6 I-5 West** (Representative Project)	**Fife 7 I-5 East**	**Fife 8 I-5 Median**	**Fife 9 20th St a**	**Fife 9 20th St b**
					
SUPPORT EQUITABLE MOBILITY					
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in lower potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lower amounts of acquisition/displacement would result in lower potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Lowest amounts of acquisition/displacement would result in lower potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Higher amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves slightly more low-income/ minority populations compared to Fife's average • Higher amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT					
Financial Considerations (compared to Representative Project)	• Potential property acquisitions accounted for • No additional alignment length • No additional crossings of I-5	• Potential property acquisitions accounted for • No additional alignment length • No additional crossings of I-5	• Potential property acquisitions accounted for • Additional alignment length (0.1 miles) • 1 additional crossing of I-5 • Additional pedestrian overpasses on both sides of I-5 at the station	• Additional full property acquisitions are possible (multifamily property) • Additional alignment length (0.2 miles) • 1 additional crossing of I-5 at Puyallup River	• Additional full property acquisitions are possible (multifamily property) • Shorter alignment length (-0.1 miles) • 1 additional crossing of I-5 at Puyallup River
Constructability and Engineering Considerations	• Multiple crossings of the planned SR 167 project and crossing of planned 54th St interchange project • No crossings of the I-5 mainline • Minimal ROW because of SR 167 Project auxiliary lane	• Multiple crossings of the planned SR 167 project and crossing of planned 54th St interchange project • No crossings of the I-5 mainline • Potential to use WSDOT ROW	• Two crossings of the planned SR 167 project and crossing of planned 54th St interchange project • Potential constructibility challenegs from traveling in I-5 median • Minimal potential to use WSDOT ROW	• Multiple crossings of the planned SR 167 project and crossing of planned 54th St interchange project • 1 crossing of the I-5 mainline • Public ROW north of Fife Heights and the west of 54th St	• Multiple crossings of the planned SR 167 project and crossing of planned 54th St interchange project • 1 crossing of the I-5 mainline • Public ROW north of Fife Heights and the west of 54th St
Operational Considerations	• Two curves reduce speed to 50 MPH near I-5 bend	• Two curves reduce speed to 50 MPH near I-5 bend	• Two curves near Port of Tacoma Road interchange reduce speeds to 50 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH
Schedule Considerations	• Impacts to commercial and multifamily parcels • Impacts to some tribal parcels • Coordination with the planned SR 167 project and 54th St interchange project	• Impacts to commercial and multifamily parcels • Impacts to some tribal parcels • Coordination with the planned SR 167 project and 54th St interchange project	• No impacts to major parcels • No impacts to tribal parcels • Coordination with the planned SR 167 project and 54th St interchange project	• Impacts to multifamily parcels • Impacts to some tribal parcels • Coordination with the planned SR 167 project and 54th St interchange project	• Impacts to multifamily parcels • Impacts to several tribal parcels • Coordination with the planned SR 167 project and 54th St interchange project

4.3 East Tacoma

The East Tacoma Segment begins at the Fife-Tacoma city limits, crossing the Puyallup River to East L Street. Exhibit 4-4 summarizes the performance by criteria for each of the East Tacoma alternatives.

4.3.1 Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs

4.3.1.1 Ridership Potential

The highest performing alternative in East Tacoma was ET 5. This alternative had a higher performance because it was within proximity to more existing and future population and employment and would have a faster travel time. All other East Tacoma alternatives were similar for ridership potential.

4.3.2 Support Sustainable Land Use Plans, Equitable Access, and Economic Development

4.3.2.1 Supports Future Transit Oriented Development Opportunities

Most East Tacoma alternatives were lower performing for supporting future TOD opportunities, primarily because existing zoning in the East Tacoma station area does not allow transit compatible uses. ET 3, ET 4A-C, and ET 5 were slightly higher performing because these alternatives had better access to the residential neighborhood to the south of I-5, and, therefore, fewer barriers to access and development. ET 8 also was slightly higher performing because it had the fewest barriers to access and development.

4.3.2.2 Promotes Multimodal Access and Integration

Most East Tacoma alternatives performed similarly for multimodal access and integration. Compared to other East Tacoma alternatives, ET 3, ET 4A-C, ET 5, ET 6, and ET 7 performed slightly higher. ET 3, ET 4A-C, ET 5, and ET 6 performed higher because these alternatives were within proximity to the most direct bus service and would require only moderate diversions to provide service to the station. ET 7 performed better because it had better nonmotorized access and potential for improvement than most other East Tacoma alternatives while also being located near existing transit service. All other East Tacoma alternatives performed moderately.

4.3.3 Preserve the Environment

4.3.3.1 Effects on the Natural Environment

All the East Tacoma alternatives were lower performing for effects on the natural environment. These alternatives would all have impacts from the crossing of the Puyallup River and impacts on floodplains and floodways. ET 8 had the lowest performance because it would have

additional impacts on wetlands and more acreage of impacts on floodplains and floodways than other East Tacoma alternatives.

4.3.3.2 Effects on the Built Environment

ET 1A-B, ET 2, ET 3, and ET 4A-B performed the highest on this criterion. ET 1A-B and ET 2 had an even higher performance because these alternatives would have no impacts associated with viewsheds or view-dependent businesses, minimal impacts from noise and vibration, and low impacts on parking supply and demand. ET 3 and ET 4A-B performed higher primarily because of fewer impacts on properties, no impacts associated with viewsheds or view-dependent businesses, and minimal impacts from noise and vibration. ET 7 and ET 8 performed the lowest because of numerous impacts on Tribal parcels and Section 4(f), park, historic, culturally significant Tribal properties, or other protected areas. These alternatives would also have higher impacts on properties compared to most other alternatives in East Tacoma.

4.3.4 Support Equitable Mobility

4.3.4.1 Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations

Many of the East Tacoma alternatives performed similarly for this criterion. ET 1A, ET 2, ET 3, ET 4A-C, ET 5, and ET 6 all performed slightly higher than ET 1B, ET 7, and ET 8 because of serving more low-income and minority populations when compared to Tacoma citywide, and would have less acquisitions and displacements that could impact EJ populations.

4.3.5 Provide a Financially Sustainable and Constructible Project

4.3.5.1 Financial Considerations

Most East Tacoma alternatives performed similarly for this criterion. ET 1A-B, ET 2, ET 3, ET 5, and ET 6 performed higher because of less potential for higher complexity property impacts and no other differences compared to the representative project. ET 7 and ET 8 performed the lowest of the East Tacoma alternatives because of additional structures over I-5. ET 7 would also have additional costs associated with impacts on new development. ET 8 would also have additional costs for acquiring residential parcels and additional alignment length.

4.3.5.2 Constructibility and Engineering Considerations

ET 2, ET 5, and ET 6 performed the highest for this criterion. These alternatives would have the fewest potential risks and would not have potential space constraints for siting station amenities. ET 8 performed the lowest because it would have no potential to use publicly owned ROW and would include a crossing of I-5.

4.3.5.3 Operational Considerations

ET 1B, ET 3, ET 5, and ET 6 performed the highest for this criterion because these alternatives would have no curves that reduce operating speeds below 55 mph. ET 8 performed the lowest because it has one curve that reduces operating speeds to 35 mph just west of East Portland Avenue, and one curve that reduces operating speeds to 40 mph just east of East M Street.

4.3.5.4 Schedule Considerations

ET 1A, ET 2, ET 3, ET 4A, and ET 6 have minimal schedule risks except for impacts to a few Tribal parcels and, therefore, are higher performing. ET 7 is the lowest performing of all East Tacoma alternatives because of impacts to many Tribal parcels and a crossing of I-5.

EXHIBIT 4-4: EAST TACOMA STATION AREA

Draft Level 1 Detailed Results

DRAFT 08/31/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

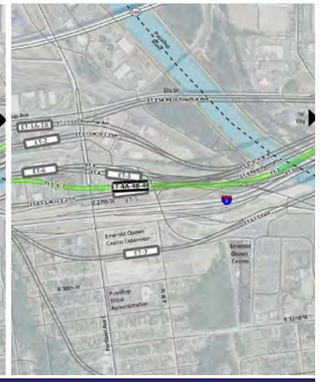
	I-5 to Puyallup/SR 99 to Puyallup		I-5 West to 25th	I-5 West to 25th North	SR 99 to I-5 W to 26th/Representative/I-5 W to 26th		
EVALUATION CRITERIA	**ET 1 Puyallup Ave a**	**ET 1 Puyallup Ave b**	**ET 2 25th St**	**ET 3 26th St East**	**ET 4 27th St North a**	**ET 4 27th St North b (Representative Project)**	**ET 4 27th St North c**
							
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS							
Ridership Potential	• Travel time is in the middle compared to other alternatives • Lowest population and highest employment • Station is near major employers and destinations	• Faster travel time • Lowest population and highest employment • Station is near major employers and destinations	• Travel time is in the middle compared to other alternatives • Lower population and middle employment • Station is near major employers and destinations	• Faster travel time • Population and employment is in the middle compared to other alternatives • Station is near major employers and destinations, including educational facility	• Travel time is in the middle compared to other alternatives • Population and employment is in the middle compared to other alternatives • Station is near major employers and destinations, including educational facility	• Travel time is in the middle compared to other alternatives • Population and employment is in the middle to upper end compared to other alternatives • Station is near major employers and destinations, including educational facility	• Travel time is in the middle compared to other alternatives • Population and employment is in the middle to upper end compared to other alternatives • Station is near major employers and destinations, including educational facility
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT							
Supports Future Transit-Oriented Development (TOD) Opportunities	• Light industrial zone; minimal potential for residential development • Existing transit infrastructure and overpasses constrain walkshed, require nonmotorized users to travel in unpleasant environment • Minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Existing transit infrastructure and overpasses constrain walkshed, require nonmotorized users to travel in unpleasant environment • Minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Existing transit infrastructure and overpasses constrain walkshed, require nonmotorized users to travel in unpleasant environment • Minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Closer to most pleasant underpassage of I-5 • Minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Closer to most pleasant underpassage of I-5 • There are minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Closer to most pleasant underpassage of I-5 • There are minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Closer to most pleasant underpassage of I-5 • There are minimal amenities that support complete neighborhoods
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• More access to the neighborhood south of I-5 • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• More access to the neighborhood south of I-5 • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• More access to the neighborhood south of I-5 • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications
PRESERVE THE ENVIRONMENT							
Effects on the Natural Environment	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (3 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and several minor stream crossings. Few impacts to floodplains/floodways (3 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and several minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.
Effects on the Built Environment	• Some acreage of impacted parcels; a few tribal parcels impacted • Minimal impacts to historic properties • Many impacts to areas with existing congestion and low potential for hide/ride impacts to parking	• Some acreage of impacted parcels; a few tribal parcels impacted • Puyallup River bridge crossing impacts a sensitive tribal cultural area • Minimal impacts to historic properties • Many impacts to areas with existing congestion and low potential for hide/ride impacts to parking	• More acreage of impacted parcels; a few tribal parcels impacted • Minimal impacts to historic properties • Many impacts to areas with existing congestion and low potential for hide/ride impacts to parking	• Less acreage of impacted parcels; a few tribal parcels impacted • Minimal impacts to historic properties • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Less acreage of impacted parcels; several tribal parcels impacted • Minimal impacts to historic properties • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Less acreage of impacted parcels; several tribal parcels impacted • Minimal impacts to historic properties • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Less acreage of impacted parcels; several tribal parcels impacted • Minimal impacts to historic properties • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking • Potential impacts to hazmat sites

EXHIBIT 4-4: EAST TACOMA STATION AREA

Draft Level 1 Detailed Results

DRAFT 08/31/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

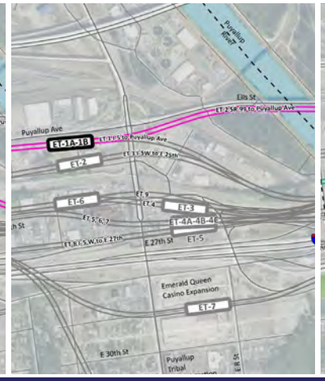
	I-5 to Puyallup/SR 99 to Puyallup		I-5 West to 25th	I-5 West to 25th North	SR 99 to I-5 W to 26th/Representative/I-5 W to 26th		
EVALUATION CRITERIA	**ET 1 Puyallup Ave a**	**ET 1 Puyallup Ave b**	**ET 2 25th St**	**ET 3 26th St East**	**ET 4 27th St North a**	**ET 4 27th St North b (Representative Project)**	**ET 4 27th St North c**
							
SUPPORT EQUITABLE MOBILITY							
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's averageHigher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in some potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT							
Financial Considerations (compared to Representative Project)	• Less potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• Less potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• Less potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• Less potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential full property acquisitions • No additional alignment length • No additional crossings of I-5
Constructability and Engineering Considerations	• No crossings of I-5 mainline • No available public ROW	• Bridge crossing of Puyallup River is in an area of concern • No crossings of I-5 mainline • Limited potential to use public ROW	• No crossings of I-5 mainline • Limited potential to use public ROW	• No crossings of I-5 mainline • Limited potential to use public ROW; potential space constraints for siting station amenities	• No crossings of I-5 mainline • Limited potential to use public ROW; potential space constraints for siting station amenities	• No crossings of I-5 mainline • Limited potential to use public ROW; potential space constraints for siting station amenities	• No crossings of I-5 mainline • Limited potential to use public ROW; potential space constraints for siting station amenities
Operational Considerations	• Curves at Puyallup River reduce operating speed to 45 MPH and 50 MPH	• All curves at least 55 MPH	• Curves at Puyallup River reduce operating speed to 45 MPH and 50 MPH	• All curves at least 55 MPH	• Curves near Portland Ave and N St reduce speed to 50 MPH	• Curves near Portland Ave and N St reduce speed to 50 MPH	• Curves near Portland Ave and N St reduce speed to 50 MPH
Schedule Considerations	• No impacts to major parcels • Impacts to a few tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to a few tribal parcels • Coordination needed on location of Puyallup River crossing	• No impacts to major parcels • Impacts to a few tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to a few tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to several tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to several tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to several tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure

EXHIBIT 4-4: EAST TACOMA STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 West to 27th	I-5 West to 26th	I-5 South	
	ET 5 27th St South	ET 6 26th St West	ET 7 29th St	ET 8 34th St
				
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS				
Ridership Potential	• Faster travel time • Population and employment is in the middle to upper end compared to other alternatives • Station is near major employers and destinations, including educational facility	• Faster travel time • Lower population and employment is in the middle compared to other alternatives • Station is near major employers and destinations, including educational facility	• Slower travel time • Higher population and lower employment compared to other alternatives • Station is near major employers and destinations, including educational and community facilities	• Slower travel time • Highest population and lower employment compared to other alternatives • Station is near major employers and destinations, including educational and community facilities
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT				
Supports Future Transit-Oriented Development (TOD) Opportunities	• Light industrial zone; minimal potential for residential development • Closer to most pleasant underpassage of I-5 • There are minimal amenities that support complete neighborhoods	• Light industrial zone; minimal potential for residential development • Further from most pleasant underpassage of I-5 • There are minimal amenities that support complete neighborhoods	• Inconsistent with tribal economic development and land use goals • I-5 is a barrier to the north but there are no other barriers to the walkshed • The station would provide access to the tribal headquarters and activity center but there are limited other clusters of amenities	• Inconsistent with tribal economic development and land use goals • There are minimal barriers to the walkshed • There are minimal amenities to support complete neighborhoods
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Highest levels of bus service with options for service modifications	• High potential for improved bicycle access although there are limited crossings of I-5 • Less bus service compared to other alternatives with options for service modifications	• Residential neighborhood allows for comfortable cycling without designated facilities • Many potential opportunities for improved nonmotorized access • Lowest levels of bus service with significant diversions from major roadways to provide service
PRESERVE THE ENVIRONMENT				
Effects on the Natural Environment	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and some minor stream crossings. Few impacts to floodplains/floodways (2 acres). No steep slope impacts.	• No impacts to wetlands. Puyallup River crossing and few minor stream crossings. Few impacts to floodplains/floodways (4 acres). No steep slope impacts.	• Minimal impacts to wetlands (0.1 acres). Puyallup River crossing, few major and minor stream crossings. Several impacts to floodplains/floodways (7 acres). Few steep slope impacts.
Effects on the Built Environment	• More acreage of impacted parcels; some tribal parcels impacted • Minimal impacts to historic properties • Minimal impacts to viewsheds/view-dependent businesses and minimal impacts to sensitive noise receptors • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• More acreage of impacted parcels; a few tribal parcels impacted • Minimal impacts to historic properties • No impacts to viewsheds/view-dependent businesses and minimal impacts to sensitive noise receptors • Some impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Less acreage of impacted parcels; numerous tribal parcels impacted; many residential parcels • Impacts to regional employer • Some impacts to historic properties; potential impacts to cemetery and archaeological sites • Some impacts to viewsheds/view-dependent businesses and moderate impacts to sensitive noise receptors • Some impacts to areas with existing congestion and high potential for hide/ride impacts to parking	• Most acreage of impacted parcels; some tribal parcels impacted; many impacts to residential parcels • Moderate impacts to historic properties; potential impacts to cemetery and archaeological sites • Some impacts to viewsheds/view-dependent businesses and many impacts to sensitive noise receptors • Minimal impacts to areas with existing congestion and high potential for hide/ride impacts to parking

EXHIBIT 4-4: EAST TACOMA STATION AREA

Draft Level 1 Detailed Results

DRAFT 08/31/18

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 West to 27th	I-5 West to 26th	I-5 South	
	ET 5 27th St South	ET 6 26th St West	ET 7 29th St	ET 8 34th St
				
SUPPORT EQUITABLE MOBILITY				
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT				
Financial Considerations (compared to Representative Project)	• Less potential full property acquisitions (commercial property) • No additional alignment length • No additional crossings of I-5	• Less potential full property acquisitions (commercial property) • No additional alignment length • No additional crossings of I-5	• Less potential full property acquisitions (commercial property) • Potential impacts to new development • No additional alignment length • 1 additional crossing of I-5	• Less potential full property acquisitions (commercial property) • Additional costs for acquiring residential parcels • Additional alignment length (0.6 miles) • 1 additional crossing of I-5
Constructability and Engineering Considerations	• No crossings of I-5 mainline • Limited potential to use public ROW	• No crossings of I-5 mainline • Limited potential to use public ROW	• Crosses I-5 mainline • Minimal potential to use public ROW for short portion across Puyallup River	• Crosses I-5 mainline • No potential to use public ROW
Operational Considerations	• All curves at least 55 MPH	• All curves at least 55 MPH	• Curves (3) before and after station and at I-5 reduce speeds to 45 MPH	• Curve after station reduces speeds to 35 MPH and to 40 MPH at I-5
Schedule Considerations	• No impacts to major parcels • Impacts to some tribal parcels • No coordination needed with other transportation infrastructure or planned projects	• No impacts to major parcels • Impacts to a few tribal parcels • No coordination needed with other transportation infrastructure or planned projects	• No impacts to major parcels • Impacts to numerous tribal parcels • Coordination for crossing of I-5	• No impacts to major parcels • Impacts to some tribal parcels • Coordination for crossing of I-5

4.4 Tacoma Dome

The Tacoma Dome Segment extends from East L Street to the terminus near East D Street. Exhibit 4-5 summarizes the performance by criteria of each of the Tacoma Dome alternatives.

4.4.1 Provide Effective Transportation Solutions to Meet Mobility, Access, and Capacity Needs

4.4.1.1 Ridership Potential

All Tacoma Dome alternatives performed the same for Ridership Potential, with a moderate performance.

4.4.2 Support Sustainable Land Use Plans, Equitable Access, and Economic Development

4.4.2.1 Supports Future Transit Oriented Development Opportunities

TD 1 performed the highest for support of future TOD opportunities because it is in a zone that is compatible with TOD and would have fewer barriers and more amenities located nearby compared to other Tacoma Dome alternatives. TD 2 was the second-highest performing alternative because it is located on the edge of a zone that is compatible with TOD and had moderate barriers that limit the walkshed. All other alternatives in the Tacoma Dome area performed similarly for this criterion.

4.4.2.2 Promotes Multimodal Access and Integration

TD 1, TD 2, and TD 3 performed the highest because of having more nonmotorized access because of being on the north side of the Sounder tracks. These alternatives also performed higher for transit integration because of being closer to the existing transit hub and requiring fewer deviations to provide service to the stations. All other Tacoma Dome alternatives performed the same.

4.4.3 Preserve the Environment

4.4.3.1 Effects on the Natural Environment

All the Tacoma Dome alternatives had no impacts on the natural environment and performed the same.

4.4.3.2 Effects on the Built Environment

TD 2, TD 3, and TD 4B performed the highest for effects on the built environment. These alternatives performed higher because of having fewer property impacts, no impacts to Tribal parcels, and few to no impacts to sensitive noise receptors. All other Tacoma Dome alternatives performed the same.

4.4.4 Support Equitable Mobility

4.4.4.1 Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations

Most Tacoma Dome alternatives performed similarly for this criterion. TD 1, TD 2, TD 3, and TD 4A-B performed higher because of serving more low-income and minority populations when compared to Tacoma citywide, and would have less acquisitions and displacements that could impact EJ populations. TD 5A and TD 5B performed slightly lower because of having more acquisitions and displacements that could impact EJ populations.

4.4.5 Provide a Financially Sustainable and Constructible Project

4.4.5.1 Financial Considerations

Most Tacoma Dome alternatives had a moderate performance for Financial Considerations. TD 1, TD 3, TD 4A-B, TD 5, and TD 6 have no additional cost elements beyond the representative project. TD 2 performed slightly lower because it includes additional potential impacts on higher complexity property.

4.4.5.2 Constructibility and Engineering Considerations

TD 4A-C and TD 5 performed higher for this criterion because of having no potential risks. Furthermore, the location of the stations for these alternatives would provide the greatest potential for extending light rail under I-705. TD 1 and TD 5 performed the lowest. TD 1 performed lower primarily because the location of the station would have the lowest potential to extend the light rail line under I-705. TD 5 performed lower because it would include an additional crossing of I-5.

4.4.5.3 Operational Considerations

TD 2, TD 3, and TD 4A-B performed the highest because of having no curves that reduced operating speeds below 55 mph. All other Tacoma Dome alternatives performed moderately for this criterion because of having curves that reduce operating speeds.

4.4.5.4 Schedule Considerations

TD 1, TD 2, and TD 3 performed the highest for Schedule Considerations. These alternatives have no major considerations that could result in schedule risks. TD 4A-B were lower performing primarily because the station for these alternatives is located on Tribal land.

EXHIBIT 4-5: TACOMA DOME STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	Puyallup Ave	I-5 West to E 25th		I-5 West to 26th North	Representative
	TD 1 Puyallup Ave	TD 2 25th St West	TD 3 25th St East	TD 4 26th St a	TD 4 26th St b (Representative Project)
					
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS					
Ridership Potential	• Slower travel time • Population and employment are highest • Station is near major employers and destinations	• Travel time is in the middle compared to other alternatives • Population and employment are lower • Station is near major employers and destinations	• Travel time is in the middle compared to other alternatives • Population and employment are lowest • Station is near major employers and destinations	• Travel time is in the middle compared to other alternatives • Population and employment are towards middle • Station is near major employers and destinations	• Travel time is in the middle compared to other alternatives • Population and employment are towards middle • Station is near major employers and destinations
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT					
Supports Future Transit-Oriented Development (TOD) Opportunities	• Supportive of housing and business development; surrounded by other zones that limit development potential • Railway, SR 509, and I-705 limit walkshed • Access under I-705 is best at this station • Some amenities to support complete neighborhoods but some categories are still missing	• Supportive of housing and business development • Railway, SR 509, and I-705 limit walkshed • Access under I-705 is best at this station • Some amenities to support complete neighborhoods but some categories are still missing • Station would likely impact nearby businesses	• Manufacturing zones; least residential development potential • Railway, SR 509, and I-705 limit walkshed • Some amenities to support complete neighborhoods but some categories are still missing	• Supportive of housing and business development; adjacent to industrial zones; • Inconsistent with tribal land use and economic goals • Railway, topography, SR 509, and I-705 limit walkshed • Some amenities to support complete neighborhoods but some categories are still missing	• Supportive of housing and business development; adjacent to industrial zones; • Inconsistent with tribal land use and economic goals • Railway, topography, SR 509, and I-705 limit walkshed • Some amenities to support complete neighborhoods but some categories are still missing
Promotes Multimodal Access and Integration	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Station in close proximity to other transit facilities and services	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Station in close proximity to other transit facilities and services	• Some potential for improved nonmotorized access although there are limited crossings of I-5 • Station in close proximity to other transit facilities and services	• Topography and Sounder tracks make nonmotorized connections less convenient • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Station in close proximity to other transit facilities and services	• Topography and Sounder tracks make nonmotorized connections less convenient • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Station in close proximity to other transit facilities and services
PRESERVE THE ENVIRONMENT					
Effects on the Natural Environment	• No impacts	• No impacts	• No impacts	• No impacts	• No impacts
Effects on the Built Environment	• Some acreage of impacted parcels; no tribal parcels impacted • Some impacts to historic properties • Moderate impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Least acreage of impacted parcels; no tribal parcels impacted • Minimal impacts to historic properties • Moderate impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Least acreage of impacted parcels; no tribal parcels impacted • Minimal impacts to historic properties • Moderate impacts to areas with existing congestion and medium potential for hide/ride impacts to parking	• Some acreage of impacted parcels; several tribal parcels impacted • Easement for station location; title ownership of land not possible • Some impacts to historic properties • Few impacts to sensitive noise receptors • Higher impacts to areas with existing congestion and high potential for hide/ride impacts to parking	• Least acreage of impacted parcels; several tribal parcels impacted • Easement for station location; title ownership of land not possible • Minimal impacts to historic properties • Few impacts to sensitive noise receptors • Higher impacts to areas with existing congestion and high potential for hide/ride impacts to parking

EXHIBIT 4-5: TACOMA DOME STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	Puyallup Ave	I-5 West to E 25th		I-5 West to 26th North	Representative
	TD 1 Puyallup Ave	TD 2 25th St West	TD 3 25th St East	TD 4 26th St a	TD 4 26th St b (Representative Project)
					
SUPPORT EQUITABLE MOBILITY					
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Lower amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Moderate amounts of acquisition/displacement would result in moderate potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT					
Financial Considerations (compared to Representative Project)	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5	• Additional potential full property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5
Constructability and Engineering Considerations	• No crossings of I-5 mainline • No public ROW available • Lowest potential to extend the light rail line under I-705 and requires crossing over Sounder/ heavy rail	• No crossings of I-5 mainline • No public ROW available • Lower potential to extend the light rail line under I-705 and requires crossing over Sounder/ heavy rail; • An extension at this location would need to avoid Tacoma Link	• No crossings of I-5 mainline • No public ROW available • Lower potential to extend the light rail line under I-705 and requires crossing over Sounder/ heavy rail; • An extension at this location would need to avoid Tacoma Link	• No crossings of I-5 mainline • No public ROW available • Greatest potential to extend the light rail line under I-705 and creates no conflicts with Sounder/heavy rail	• No crossings of I-5 mainline • No public ROW available • Greatest potential to extend the light rail line under I-705 and creates no conflicts with Sounder/heavy rail
Operational Considerations	• Curves at D St and I-705 reduce operating speed to 40 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH	• All curves at least 55 MPH
Schedule Considerations	• No impacts to major parcels • No impacts to tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • No impacts to tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • No impacts to tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to several tribal parcels • Coordination for impacts to tribal property • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to several tribal parcels • Coordination for impacts to tribal property • No anticipated interaction with other planned transportation projects or infrastructure

EXHIBIT 4-5: TACOMA DOME STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 W to 27th	I-5 East
	TD 5 27th St a	**TD 5 27th St** b
		
PROVIDE EFFECTIVE TRANSPORTATION SOLUTIONS TO MEET MOBILITY, ACCESS, AND CAPACITY NEEDS		
Ridership Potential	• Slower travel time • Population and employment are towards middle compared to other alternatives • Station is near major employers and destinations	• Slower travel time • Population and employment are towards middle compared to other alternatives • Station is near major employers and destinations
SUPPORT SUSTAINABLE LAND USE PLANS, EQUITABLE ACCESS, AND TRANSIT ORIENTED DEVELOPMENT		
Supports Future Transit-Oriented Development (TOD) Opportunities	• Supportive of housing and business development; adjacent Warehouse/Retail zone also compatible • Railway, topography, SR 509, and I-705 limit walkshed • Some amenities to support complete neighborhoods but some categories are still missing and potential for new amenities is limited due to development	• Supportive of housing and business development; adjacent Warehouse/Retail zone also compatible • Railway, topography, SR 509, and I-705 limit walkshed • Some amenities to support complete neighborhoods but some categories are still missing and potential for new amenities is limited due to development
Promotes Multimodal Access and Integration	• Topography and Sounder tracks make nonmotorized connections less convenient • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Farthest from other transit facilities and services	• Topography and Sounder tracks make nonmotorized connections less convenient • Some potential for improved nonmotorized access although there are limited crossings of I-5 • Farthest from other transit facilities and services
PRESERVE THE ENVIRONMENT		
Effects on the Natural Environment	• No impacts	• No impacts
Effects on the Built Environment	• Some acreage of impacted parcels; a few tribal parcels impacted • Easement for station location; title ownership of land not possible • Some impacts to historic properties • Minimal impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Moderate impacts to areas with existing congestion and high potential for hide/ride impacts to parking	• Some acreage of impacted parcels; a few tribal parcels impacted • Easement for station location; title ownership of land not possible • Some impacts to historic properties • Minimal impacts to viewsheds/view-dependent businesses and few impacts to sensitive noise receptors • Moderate impacts to areas with existing congestion and high potential for hide/ride impacts to parking

EXHIBIT 4-5: TACOMA DOME STATION AREA

Draft Level 1 Detailed Results

KEY TO RATING

LOWER PERFORMING — HIGHER PERFORMING

The ratings are a comparison of each alternative against all other alternatives in the station area.

EVALUATION CRITERIA	I-5 W to 27th TD 5 27th St a	I-5 East TD 5 27th St b
		
SUPPORT EQUITABLE MOBILITY		
Provide Equitable Transit Service to Low-Income, Minority, and Transit-Dependent Populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations	• Station area serves more low-income/minority populations compared to Tacoma's average • Higher amounts of acquisition/displacement would result in substantial potential impacts to Environmental Justice populations
PROVIDE A FINANCIALLY SUSTAINABLE AND CONSTRUCTIBLE PROJECT		
Financial Considerations (compared to Representative Project)	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5	• No additional potential property acquisitions • No additional alignment length • No additional crossings of I-5
Constructability and Engineering Considerations	• No crossings of I-5 mainline • No public ROW available • Greatest potential to extend the light rail line under I-705 and creates no conflicts with Sounder/heavy rail	• Crosses I-5 mainline • No public ROW available • Greatest potential to extend the light rail line under I-705 and creates no conflicts with Sounder/heavy rail
Operational Considerations	• Curves at I-5 and after station reduces speed to 45 MPH and 40 MPH	• Curves at I-5 and after station reduces speed to 45 MPH and 40 MPH
Schedule Considerations	• No impacts to major parcels • Impacts to a few tribal parcels • No anticipated interaction with other planned transportation projects or infrastructure	• No impacts to major parcels • Impacts to a few tribal parcels • Coordination for crossing of I-5

5 Findings and Conclusions

The Level 1 evaluation results reflect the potential of each alternative to meet the Purpose and Need of the project and related goals. In September 2018, the results of the Level 1 evaluation were reviewed by the ELG, Interagency Group (IAG), the Stakeholder Group, and the public. These groups provided input on the Level 1 evaluation and findings, and the ELG made a recommendation on which alternatives should continue into Level 2. Exhibit 5-1 and Exhibit 5-2 summarize the full range of alternatives reviewed in Level 1 and indicate which ones were advanced by the ELG to Level 2 for further development and evaluation. Exhibit 5-2 also displays the alternatives that are being advanced to Level 2. Alternatives advancing into Level 2 are in color, and alternatives not advancing into Level 2 are shown in grey.

EXHIBIT 5-1
Summary of Level 1 Findings and Results

Alternative	Results	
SOUTH FEDERAL WAY		
Enchanted Parkway		
SF 1 Enchanted/348th	✖	SF 1 is being removed due to higher property impacts of alignment and station compared to SF 2 and SF 3, which serve the same station area and have similar alignment types along Enchanted Parkway South. The alignment is slightly longer and includes an additional major arterial street crossing. Not preferred by the local jurisdiction.
SF 2 Enchanted/352nd	✓	Advance for further study in Level 2.
SF 3 Enchanted/356th	✓	Advance for further study in Level 2.
SR 99		
SF 4a 99 North (SR 99 to I-5) SF 4b 99 North (SR 99) SF 4c 99 North (I-5 to SR 99) SF 4d 99 North (I-5 to SR 99 to I-5)	✓	Advance for further study in Level 2.
SF 5a 99 South (SR 99) SF 5b 99 South (I-5 to SR 99)	✖	SF 5A and B are being removed due to lower performing stations (multimodal access and TOD potential) compared to SF 4 alternatives that have a nearby station and offer the same SR 99 alignment choices. Not preferred by the local jurisdiction.
I-5 West		
SF 6 I-5/344th	✖	Removed due to lower performing station (multimodal access, stream/wetlands, and TOD) along an alignment that is already being considered in alternatives SF 8 and SF 9.
SF 7 I-5/352nd (Representative)	✖	Removed for same reasons as SF 6 and impacts to major retail business loading area.
SF 8 I-5/356th	✓	Advance for further study in Level 2.
SF 9 I-5/Jet	✓	Advance for further study in Level 2.
SF 10 I-5/359th	✖	Removed for same reasons as SF 6.

EXHIBIT 5-1
Summary of Level 1 Findings and Results

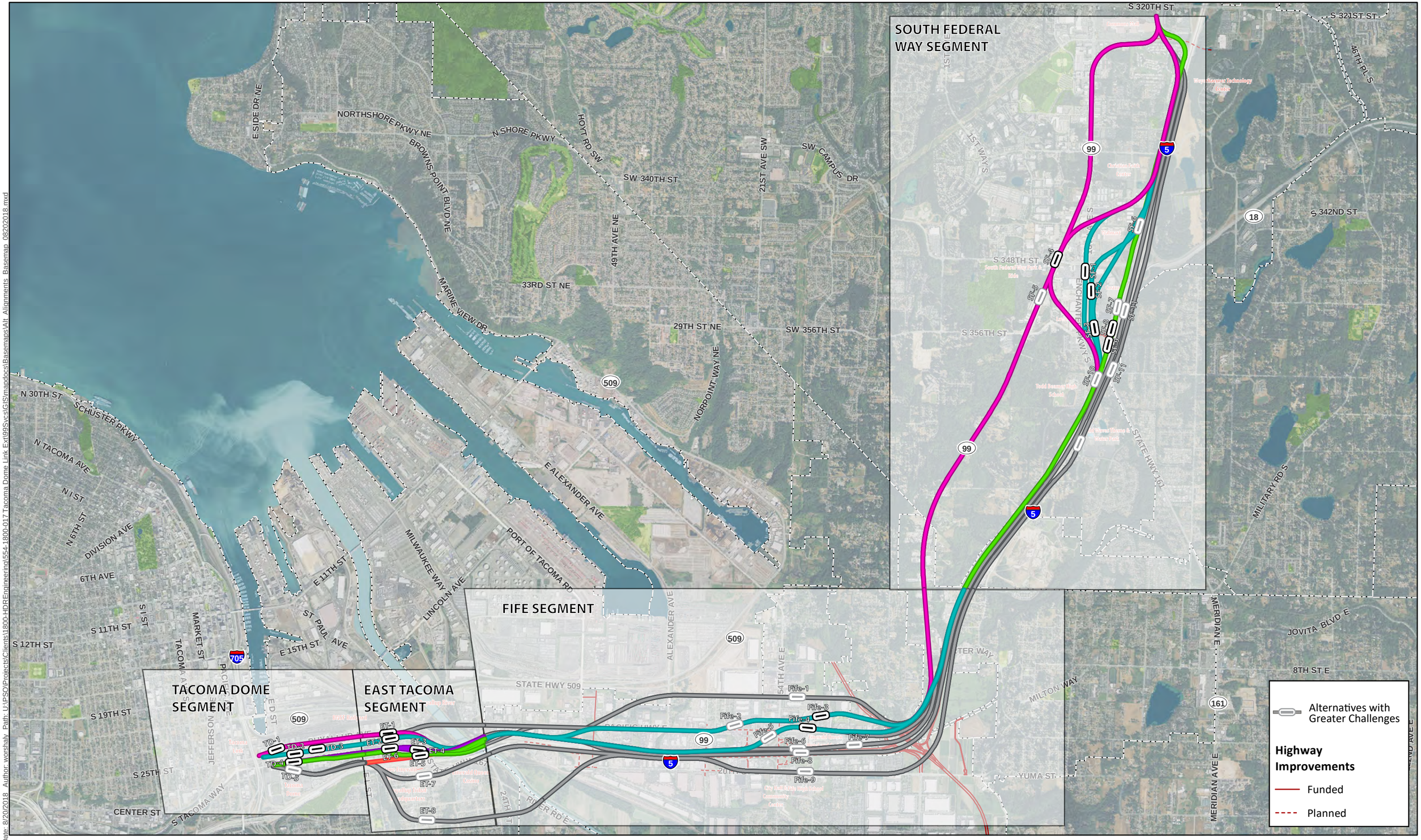
Alternative	Results	
I-5 Median		
SF 11 I-5 Median	✗	Removed due to lack of effective multimodal access to station location, lower TOD potential, higher potential environmental impacts due to the need to widen I-5, higher construction impacts, and higher engineering risks and challenges due to additional structures and bridges to cross I-5 and reconfigure existing ramps. Not supported by the Federal Highway Administration (FHWA) or WSDOT.
I-5 East		
SF 12 I-5 East/Enchanted	✗	Removed due to lower performing station on multimodal access, ridership, and TOD potential, as well as higher engineering risks and challenges of additional structures to cross I-5.
SF 13 I-5 East/Wild Waves	✗	Removed for same reasons as SF 12.
FIFE		
Alternative	**Results**	
12th Street		
Fife 1 12th Street	✓	Advance for further study in Level 2, with alignment modifications to avoid an area of Tribal ownership.
Pacific Highway West		
Fife 2a Pacific Highway West	✗	Removed due to higher impacts of the alignment to multiple properties under Tribal ownership. Also, removed based on a lower performing station site that was outside the Fife planned city center area, and for lower multimodal access and TOD potential. In addition, the alignment featured higher property and potential transportation impacts from being along SR 99. Not preferred by the local jurisdiction.
Fife 2b Pacific Highway West	✗	Removed for same reasons as Fife 2A, but also due to the SR 99 alignment approaching Tacoma that would have required a Puyallup River crossing on property of cultural importance to the Puyallup Tribe.
Fife 3a 15th Street Fife 3b 15th Street	✓	Advance for further study in Level 2.
Pacific Highway to I-5		
Fife 4a Pacific Highway East Fife 4b Pacific Highway East Fife 4c Pacific Highway East	✓	Advance for further study in Level 2.
Fife 5a Pacific Highway South Fife 5b Pacific Highway South Fife 5c Pacific Highway South	✗	Removed due to lower performing stations based on congestion, multimodal access, and TOD measures. Aside from the station area, the alignments are being considered in other alternatives. Not preferred by the local jurisdiction.
I-5 West		
Fife 6 I-5 West	✗	Removed due to an alignment that conflicts with the planned SR 167 interchange and that would impact a major Tribal property. Also, removed due to lower performance for multimodal access, congestion, and TOD measures, largely as a result of the constraints to access and development posed by I-5 and the 54th Avenue East Interchange directly adjacent. Not preferred by the local jurisdiction.
Fife 7 I-5 West (Representative)	✗	Removed based on same alignment concerns as Fife 6, and due to a station that is more removed from the planned city center area than other alternatives, with lower performance for multimodal access and TOD potential.

EXHIBIT 5-1
Summary of Level 1 Findings and Results

Alternative	Results	
I-5 Median		
Fife 8 I-5 Median	✗	Removed due to longer travel times, lack of effective multimodal access to the median station location, lower TOD potential, higher potential environmental impacts due to the need for major I-5 widening/modifications, higher construction impacts, and higher engineering risks and challenges. Not supported by FHWA or WSDOT.
I-5 South		
Fife 9a 20th Street	✗	Removed due to longer travel times; higher property impacts; higher impacts to farmlands, wetlands, and floodplains; and the need for an additional crossing of I-5 to the north or south. The station served by this alignment was lower performing on multimodal access and TOD measures, and is well outside the Fife city center area.
Fife 9b 20th Street	✗	Removed for similar reasons as Fife 9A, with a station that is even more distant from Fife's city center area. Their associated alignments also cross into areas that are farmlands and floodplains, with a higher potential for archaeological and cultural impacts.
EAST TACOMA		
Puyallup Avenue		
ET 1a Puyallup Avenue (I-5 West to Puyallup)	✓	Advance for further study in Level 2.
ET 1b Puyallup Avenue (SR 99 to Puyallup)	✗	Removed due to a sub-alignment that impacts an area of cultural significance to the Puyallup Tribe adjacent to the Puyallup River. The same station and the rest of the alignment advanced with ET 1A.
25th Street		
ET 2 25th Street	✓	Advance for further study in Level 2.
26th Street		
ET 3 26th Street - East	✓	Advance for further study in Level 2.
ET 6 26th Street - West	✓	Advance for further study in Level 2.
27th to 26th Street		
ET 4a 27th Street - North ET 4b 27th Street - North (Representative) ET 4c 27th Street - North	✓	Advance for further study in Level 2.
27th Street		
ET 5 27th Street - South	✓	Advance for further study in Level 2.
South of I-5		
ET 7 29th Street	✗	Removed due to impacts to major Tribal properties, including Tribal economic development plans, and carrying more residential displacements. Also, removed due to the engineering, construction, and operational challenges of a sloped and curving crossing above one of the wider sections of I-5 where there is an overpass and auxiliary ramps on both sides of the freeway.
ET 8 34th Street	✗	Removed for similar reasons as ET 7, but with higher levels of residential and neighborhood impacts, including impacts to multiple blocks under Tribal ownership. Longer, slower curving alignment negatively affects travel times and operations. Also, involved an eastern crossing of the Puyallup River with farmland and floodplain impacts and greater potential to impact areas of cultural and historic significance to the Puyallup Tribe.

EXHIBIT 5-1
Summary of Level 1 Findings and Results

Alternative	Results	
TACOMA DOME		
Puyallup Avenue		
TD 1 Puyallup Avenue	✓	Advance for further study in Level 2.
25th Street		
TD 2 25th Street - West	✓	Advance for further study in Level 2.
TD 3 25th Street - East	✓	Advance for further study in Level 2.
26th Street		
TD 4a 26th Street TD 4b 26th Street (Representative)	✓	Advance for further study in Level 2.
27th Street		
TD 5a 27th Street TD 5b 27th Street	✖	Removed due to a station that was lower performing for multimodal access and TOD potential, in part because the Tacoma Dome, topography and Sounder tracks limited its access potential. Other alignment alternatives include a station in the same general vicinity but with fewer impacts and better connections. Potential connecting alignments crossing I-5 from East Tacoma also were not advanced.



Source: © Mapbox, © OpenStreetMap

0 0.25 0.5 1 Miles

SOUNDTRANSIT

Exhibit 5-2

Level 1 Alternatives Advancing to Level 2 for Tacoma Dome Link Extension

Date: 8/20/2018 Author: worshaly Path: U:\PSO\Projects\Clients\11800-HDREngineering\1554-1800-017 Tacoma Dome Link Ext\99Svcs\GIS\mapdocs\Basemaps\Alt Alignments Basemap 08202018.mxd

5.1 Relative Performance of Level 1 Alternatives by Segment

The following describes the relative performance of each Level 1 alternative by segment. It focuses primarily on the highest and lowest performing alternatives by segment.

5.1.1 South Federal Way

All of the South Federal Way alternatives feature one station with a parking garage and are 4.3 to 4.6 miles in length from the terminus of the Federal Way Link Extension and the end of this segment at the King County/Pierce County line.

5.1.1.1 Enchanted Parkway

SF 1 Enchanted/348th, SF 2 Enchanted/352nd, SF 3 Enchanted/356th

This family of three alternatives is mostly I-5-based. These alternatives leave the Federal Way Link Extension terminus and turn southwest to align along the west side of I-5, then curve toward Enchanted Parkway for a station between South 348th Street to South 356th Street before returning to the west side of I-5 to continue south to the King County/Pierce County line. The alternatives vary primarily on the station site on Enchanted Parkway and how the alignment curves to the station and then back to I-5. A summary of these alternatives includes:

- Higher performance in ridership measures, and moderate performance in TOD measures due to the station location on Enchanted Parkway, in a larger commercial area with residential uses to the south. The station for SF 3 is farthest south, away from more of the amenities in the area.
- Good vehicular connections to the stations, but large block sizes, topography, and busy arterials create a moderate rating for overall multimodal access.
- Moderate level of property-related impacts, with more related to the station location and nearby alignment.
- Having most of the remaining alignment along I-5 helps reduce both built and natural environmental impacts.
- Potential historic and archaeological impacts, including to cemeteries in the southern part of the alignment, but more of the area along I-5 and the Enchanted Parkway has been previously disturbed.
- These three alternatives are the same for most of the length except for the specific station site on Enchanted Parkway and nearby alignment sections. Station-centric measures such as TOD potential and multimodal access, and localized property impacts, were the primary differentiators among the alternatives.

5.1.1.2 SR 99

SF 4A SR 99 North (SR 99 to I-5), SF 4B SR 99 North (SR 99), SF 4C SR 99 North (I-5 to SR 99), SF 4D SR 99 North (I-5 to SR 99 to I-5)

This family of alternatives is focused around a station on SR 99 at South 348th Street. There are different sub-alignment choices to the station from the north and to the south, which affects the level of impacts, travel times, constructibility, and financial performance. From the terminus of the Federal Way Link Extension, the alternatives turn west to SR 99 or curve in from I-5. To the south, the alternatives either continue south along SR 99 or turn back toward I-5 to continue south to the King County/Pierce County line. A summary of these alternatives includes:

- Higher performance for ridership potential and multimodal access to the station at South 348th Street, but slower travel times due to a longer alignment and more curves getting to SR 99.
- Higher performance for TOD potential with the station location on SR 99 in the center of a larger area with a good mix of land uses and amenities nearby.
- Moderate to high level of property-related impacts, partly due to a longer alignment compared to others, particularly for SR 99 back to I-5 alignment (SF 4C and SF 4D).
- Station area and street network connecting to the station are congested.
- Potential for higher natural resource and archaeological impacts in the southern parts of either the I-5 or SR 99 portions of the alignments, but with a larger wetland complex potentially impacted along SR 99.
- The I-5 to SR 99 alignments (SF 4C and SF 4D) and the SR 99 alignments (SF 4A and SF 4B) both have potential Tribal property and archaeological impacts, although the full-length SR 99 alignment (SF 4B) crosses through more areas with a higher probability of containing archaeological resources.
- All four alternatives serve the same “promising” station, but feature an array of sub-alignments connecting to the station to and from I-5 or SR 99.

SF 5A SR 99 South (SR 99), SF 5B SR 99 South (I-5 to SR 99)

These alternatives are similar to SF 4B and SF 4C but feature a station farther south on SR 99 at South 352nd Street, which is essentially a station siting/design option for the other SR 99

alternatives. The SF 5 alternatives differ primarily in terms of the route taken to reach SR 99. A summary of these alternatives includes:

- The performance for the SF 5 alternatives is similar to the SF 4 alternatives because the alignments are the same; the primary difference between SF 5 and SF 4 alternatives is the station site.
- The station location for SF 5 alternatives is lower performing for multimodal access and congestion, and it has a lower potential for TOD, including for multi-family development.

5.1.1.3 I-5 West/Representative Alignment

SF 6 I-5/344th, SF 7 I-5/352nd, SF 8 I-5/356th, SF 9 I-5/Jet, SF 10 I-5/359th

These I-5 alternatives are based on the representative alternative (SF 7) from ST3, which stayed adjacent to the west side of I-5 after leaving the terminus of the Federal Way Link Extension. These alternatives feature different station siting options adjacent to the freeway, with some alignments farther north or south of the station locations featured in the Enchanted Parkway alignment family. The station siting is the primary driver for the differences in performance among these alternatives. A summary of these alternatives includes:

- Faster travel times due to shorter overall alignment and fewer curves compared to other South Federal Way alternatives.
- All I-5 West alternatives have potential conflicts with a planned SR 18 ramp.
- The stations included in the I-5 West alternatives have a lower to moderate performance for ridership, multimodal access, and TOD potential due to access and development barriers presented by I-5 and larger commercial parcels nearby the stations.
- The lower performing I-5 West stations for multimodal access and TOD were SF 6, SF 7, and SF 10, which were more remote.
- The higher performing stations for multimodal access and TOD in this alignment family were the SF 8 and SF 9 stations, which had good access from Enchanted Parkway.
- Property acquisition impacts performed moderately; however, the SF 7 station and alignment were the most constrained due to the lack of space between larger commercial properties and I-5.
- Having the alignment along I-5 helps reduce both built and natural environmental impacts.

5.1.1.4 I-5 Median / I-5 East

SF 11 I-5 Median, SF 12 I-5 East/Enchanted, SF 13 I-5 East/Wild Waves

The I-5 Median/I-5 East alternatives would all rely on more I-5 ROW, placing the alignment and stations either within the median (SF 11 where there are currently no cross streets/overpasses) or to the east of I-5 (at Enchanted Parkway or at Wild Waves). A summary of these alternatives includes:

- All I-5 Median/I-5 East alternatives performed lower on multimodal access and TOD potential for the stations.
- All would require additional structures and bridges across I-5 to reach these lower scoring stations.
- All reported similar to slightly lower environmental and property impacts compared to other Federal Way alternatives, but the level of additional widening or other requirements to use I-5 ROW was not included in the evaluation.
- Moving to the median or staying on the east side of I-5 also does not present advantages for the better performing alternatives in the Fife or Tacoma segments, and these alternatives would require two crossings of I-5 to reach its terminus at the Tacoma Dome and meet the requirements of the Purpose and Need.

5.1.2 Fife

The Fife alternatives begin at the King County/Pierce County line, are 3.9 to 4.3 miles long, and have one station with a parking garage located in Fife near 54th Avenue East.

5.1.2.1 I-5 West to 12th Street

Fife 1 12th Street

For analysis, this alternative assumes a pairing with alternatives on the west side of I-5 from Federal Way but could be matched with SR 99 alternatives. After leaving I-5 near the Fife curve, the alternative crosses southwest to align with 12th Street East to reach a station east of 54th Avenue East. The alternative then continues westbound on 12th Street East to East Alexander Avenue, then curves south toward I-5, crossing over near the East 34th Avenue and Port of Tacoma Road interchange. A summary of these alternatives includes:

- Station was lower performing for multimodal access and TOD measures due to more limited multimodal access and mostly industrial zoning, and longer travel times due to length and curves.
- Station is located outside of the City of Fife's planned city center area, where Fife's future growth is planned.

- Higher environmental impacts in the north portion of the alignment but also for the alignment transition to 12th Street East, with crossings of acres of lands with critical areas, including floodways and floodplains, steep slopes, and some wetlands.
- Property impacts are in the higher mid-range of alternatives and includes some impacts to Tribal parcels.
- Higher end of alternatives for potential historic and archaeological property impacts, but this is partly due to the north alignment portions along SR 99 that are not unique to this alternative.

5.1.2.2 Pacific Highway West / 15th Street

Fife 2A Pacific Highway West, Fife 2B Pacific Highway West

The performance of Fife 2A and Fife 2B assumes a pairing with alternatives on the west side of I-5 from Federal Way but could be matched with SR 99 alternatives. After leaving I-5 near the Fife curve, these alternatives curve to the west of SR 99, run between 12th Street East and 15th Street East, and curve back toward SR 99/Pacific Highway for a station west of 52nd Avenue East. The alternatives then continue west along SR 99 to East Alexander Avenue, with Fife 2A curving back toward I-5, crossing near the East 34th Avenue and Port of Tacoma Road interchange, and Fife 2B following SR 99/Pacific Highway. A summary of these alternatives includes:

- Station location performed moderately for multimodal access and TOD measures and is located near some of the area attractions but is outside of the City of Fife's planned city center area, where growth is planned.
- Mid-level environmental impacts in most areas but higher impacts from crossings of acres of lands with critical areas, including floodways and floodplains, steep slopes, and wetlands.
- Higher potential historic and archaeological property impacts, but this is partly due to north alignment portions that are not unique to this alternative.
- Impacts to five Tribal parcels, which could be avoided with alignment modifications but likely would require lower speeds and operating tradeoffs.
- Most challenging would be the alignment of Fife 2B on Pacific Highway to Tacoma, which leads to a river crossing in an area of cultural significance to the Puyallup Tribe.

5.1.2.3 15th Street

Fife 3A 15th Street, Fife 3B 15th Street

Fife 3A and Fife 3B assume a pairing with the alternatives on the west side of I-5 from Federal Way, but other combinations could be used. After leaving I-5 near the Fife curve, the alternatives curve to the west of SR 99 and run between 12th Street East and 15th Street East, before curving back toward SR 99 for a station east of 54th Avenue East. Fife 3A and Fife 3B then follow the same alignments used by Fife 2A and Fife 2B. A summary of these alternatives includes:

- Supports the City of Fife's planned city center for a more livable, walkable, accessible, and business-friendly city center.
- Higher performance for TOD , including greater opportunities for housing and business development near the station.
- Higher performance for multimodal access with effective access for people walking, bicycling, taking transit, or driving, as well as good siting opportunities for a parking garage.
- Other performance measures are the same as Fife 2A and Fife 2B because the alignments are similar.
- Most challenging would be the alignment of Fife 3B on Pacific Highway to Tacoma, which leads to a river crossing in an area of cultural significance to the Puyallup Tribe.

5.1.2.4 Pacific Highway East/South

Fife 4A Pacific Highway East, Fife 4B Pacific Highway East, Fife 4C Pacific Highway East

The ratings for Fife 4A, Fife 4B, and Fife 4C assume a pairing of the alternatives on the west side of I-5 from Federal Way (Fife 4A and Fife 4C) or from SR 99 (Fife 4B). After leaving I-5 or SR 99 near the Fife curve, these alternatives curve to the west of SR 99 with a station between 59th Avenue East and 54th Avenue East. The alternatives then cross over SR 99 near 54th Avenue East to align along the west side of I-5. A summary of these alternatives includes:

- Supports the City of Fife's planned city center for a more livable, walkable, accessible, and business-friendly city center.
- Higher scoring for TOD, including greater opportunities for housing and business development near the station.
- Higher performance for multimodal access with effective access for people walking, bicycling, taking transit, or driving, as well as good siting opportunities for a parking garage.
- Potential parking and property impacts with the SR 99 alignment north of 54th Street East, but potential to reduce the impacts through alignment modifications.

- Some sub-segments of the alignment had somewhat lower property impacts than other alignments once they merged towards I-5, although stakeholders and the local jurisdiction stated concerns about visual and economic impacts.

Fife 5A Pacific Highway South, Fife 5B Pacific Highway South, Fife 5C Pacific Highway South

Fife 5A, Fife 5B, and Fife 5C assume a pairing of the alternatives on the west side of I-5 from Federal Way (Fife 5A and Fife 5C) or from SR 99 (Fife 5B). These alternatives continue to the west of SR 99 with a station between 59th and 54th Avenues East. The alternatives then cross over SR 99 near 54th Avenue East to align along the west side of I-5. A summary of these alternatives includes:

- The station performed lower for TOD measures. While it is located near some of the area attractions, it is outside of the City of Fife's planned city center area, where growth is planned.
- Outside of the station area, the north and south sub-segments of Fife 5A-C are already featured in other alternatives (Fife 4A-C).

5.1.2.5 I-5 West/Representative

Fife 6 I-5 West (Representative), Fife 7 I-5 East

Fife 6 is based on the ST3 representative project and assumes pairing with the alternatives on the west side of I-5 from Federal Way. This alternative follows the west side of I-5 to reach a station east of 54th Avenue East, near the interchange, and then continues south along the west side of I-5. Fife 7 is identical to Fife 6 but has a station located east of 62nd Avenue East. A summary of these alternatives includes:

- Both stations were rated lower for multimodal access and TOD measures, in part due to the proximity to the interchange and being adjacent to I-5, which restricts access and future development.
- Higher property and potential economic impacts of the stations and the I-5 alignment, including impacts to a major Tribal property, and because of potential visual and property impacts to major economic generating properties abutting the freeway.
- Higher engineering and constructibility concerns due to conflicts with the planned SR 167 interchange.
- North of the Fife curve, less impacting sub-segments of an I-5 alignment are still featured in other alternatives and would remain in consideration.

5.1.2.6 I-5 Median/I-5 South

Fife 8 I-5 Median

This alternative assumes a pairing with the South Federal Way alternative SF 11. The alternative continues along the median to reach a station east of 54th Avenue East, near the interchange,

and then continues westbound in the median of I-5 before crossing over to the north side of I-5 near the Port of Tacoma Road interchange. A summary of this alternative includes:

- The station was lower rated for multimodal access and for lower TOD potential due to the isolated nature of a median station near a congested interchange area.
- Higher engineering risks and challenges due to the need for major I-5 widening and modifications in an area with multiple existing and planned interchanges.
- Higher potential for major construction impacts from the combination of light rail construction and modifications to I-5.
- Approaching Tacoma, the alignment crosses back to be adjacent to the north side of I-5, which is already featured in other available alternatives.
- Slightly longer alignment increases travel times and scope compared to alternatives to the west.
- Because of the slopes, curves, interchanges, ramps, and other constraints for I-5 in East Tacoma, and due to the need to reach the Tacoma Dome to make the connections called for in the Purpose and Need, there is no need for a median alignment beyond Fife.

Fife 9A 20th Street, Fife 9B 20th Street

These two "east of I-5 alternatives" assume pairings with South Federal Way SF 12 and SF 13 east of I-5. These alternatives swing from the east side of I-5 to align with 20th Street East, with a station west of 58th Street East. After crossing 54th Avenue East, the alternatives align with the south side of I-5. Approaching Puyallup River, Fife 9B turns farther south, away from I-5. A summary of these alternatives includes:

- The station was lower rated for multimodal access and for TOD because the station is across the freeway from Fife's planned city center area; there is a high school and municipal buildings or parks nearby; and the block sizes are large.
- Higher potential for residential impacts, including impacts to several multi-family complexes.
- Higher potential for wetland and floodplain impacts.
- Impacts to several Tribal parcels, as well as impacts to potential archaeological sites and sites of cultural significance.
- Potential conflicts with planned improvements for the SR 167 project, as well as the 54th Street interchange project.

5.1.3 East Tacoma

The East Tacoma alternatives include the bridge crossing of the Puyallup River, along with a station near Portland Avenue. Based on preliminary information from the U.S. Coast Guard, vertical navigational requirements are minimal and set by existing bridges over the river. All

alternatives assume a similar bridge height, and do not preclude a given bridge type or the potential for a multimodal bridge.

5.1.3.1 Puyallup Avenue

ET 1A Puyallup Avenue (I-5 West to Puyallup), ET 1B Puyallup Avenue (SR 99 to Puyallup)

The Puyallup Avenue alternatives include ET 1A-B, which involve the same station and alignment along Puyallup Avenue but a different crossing location of the Puyallup River. ET 1A crosses the Puyallup River along the north side of I-5. At East Bay Street, ET 1A travels northwest to the south side of Puyallup Avenue where it continues through East Tacoma to the station at East M Street and Puyallup Avenue. ET 1B crosses the Puyallup River along the south side of the Pacific Highway bridge but is otherwise the same as ET 1A once it reaches Puyallup Avenue. A summary of these alternatives includes:

- Lower performance for station area TOD potential due to the location in a light industrial area on a busy street with higher levels of freight movement, and with railyards and major municipal infrastructure nearby.
- Lower to moderate performance for multimodal access, although Puyallup Avenue has additional multimodal facilities planned that would improve access.
- Station is farthest away from more populated areas and Puyallup Tribe facilities to the south of I-5.
- The Puyallup River crossing adjacent to the SR 99 bridge has impacts to a riverfront property with cultural significance to the Puyallup Tribe.
- Two to three parcels under Tribal ownership are affected.
- Other environmental or property impacts are moderate.

5.1.3.2 East 25th Street

ET 2 25th Street

The East 25th Street alternative, ET 2, crosses the Puyallup River along the north side of I-5. At East Bay Street, ET 2 travels northwest to the north side of East 25th Street where it continues through East Tacoma. The station is located at East M Street and East 25th Street. A summary of this alternative includes:

- Lower performance for TOD due to location in light industrial area.
- Slightly better access for transit and closer connections to more areas, but area is currently not attractive for pedestrian or bicycle trips due to lack of facilities and visual/physical barriers.
- Low levels of environmental impacts.
- Station is closer to more populated areas and Puyallup Tribe facilities to the south of I-5.
- Three parcels under Tribal ownership are affected.
- Moderate property impacts due to more constrained ROW along East 25th Street.

5.1.3.3 East 26th Street/Representative

ET 3 26th Street East, ET 4A 27th Street North, ET 4B 27th Street North (Representative), ET 4C 27th Street North, ET 6 26th Street West

The East 26th Street/Representative alternatives include ET 3, ET 4A-C, and ET 6. ET 3 crosses the Puyallup River along the north side of I-5. At East Bay Street, ET 3 travels northwest to the north side of East 26th Street through the remainder of East Tacoma. The station is located at East 26th Street and East Bay Street. The ET 4A-C alternatives cross the river in a similar location as ET 3 but follow the north side of East 27th Street, and have slightly different alignments from the river crossing to a station at East 27th Street and East Bay Street.

Alternative ET 6 crosses the Puyallup River north of I-5 and travels northwest to the north side of East 26th Street to a station at East N Street and East 26th Street. A summary of these alternatives includes:

- Overall similar performance as ET 2 in most categories, but with station locations that are closer to the more populated areas and Puyallup Tribe facilities south of I-5, and south of the commuter rail tracks.
- Pedestrian and bicycle connectivity performance remains low due to lack of multimodal facilities and visual/physical barriers to walking destinations.

5.1.3.4 East 26th/27th Street

ET 5 27th Street South

ET 5 crosses the Puyallup River along the north side of I-5 and continues along the north side of East 27th Street through the remainder of East Tacoma. The station is located at East Bay Street and East 27th Street. A summary of this alternative includes:

- Lower performance for TOD due to location in light industrial area.
- Better multimodal access due to the station being closer to the more populated areas and Puyallup Tribe facilities south of I-5, and south of the commuter rail tracks.
- More impacts to property and five parcels under Tribal ownership are affected.

ET 7 29th Street, ET 8 34th Street

Alternatives ET 7 and ET 8 feature river crossings south of I-5 and alignments that continue south of I-5 to stations east of Portland Avenue East, before traveling towards the northwest and crossing over I-5. A summary of these alternatives includes:

- The stations had lower ratings for TOD potential due to siting on the Puyallup Tribe reservation where either residential properties or major Tribal facilities are already located.

- Moderate performance for multimodal access.
- Higher levels of property impacts, including residential displacements with ET 8, which has a longer curving alignment that crosses through multiple blocks of single-family residential areas.
- Higher levels of engineering risks and construction and operational challenges due to a longer, curving alignment, topography, and an I-5 crossing. The I-5 crossing requires a sloped and curving crossing above one of the wider sections of I-5 where there is an overpass as well as auxiliary ramps on both sides of the freeway.
- Impacts to multiple parcels under Tribal ownership.
- South of the I-5 crossing of the Puyallup River, farmland and floodplain impacts are greater, with more potential to impact areas of cultural and historic significance to the Puyallup Tribe compared to other alternatives.

5.1.4 Tacoma Dome

The Tacoma Dome alternatives are located in the vicinity of the Tacoma Dome within proximity to each other, making most performances similar. Differences in performance largely relate to the trade-offs from property impacts in the different alignments, all of which are in constrained areas. Each of the Tacoma Dome alternatives is located relatively close to the multi-block intermodal transit hub (bus, Tacoma Link, Sounder commuter rail, and Amtrak), although some alternatives are closer than others.

5.1.4.1 Puyallup Avenue

TD 1 Puyallup Avenue

TD 1 travels along the south side of Puyallup Avenue until just east of I-705 with a station at Puyallup Avenue and East D Street. A summary of this alternative includes:

- Higher performance for TOD potential due to location within a TOD-compatible zoning designation and mix of several amenities nearby.
- TD 1 has potential conflicts with plans by the City of Tacoma for a more multimodal complete street approach for Puyallup Avenue.
- TD 1 presents more challenges for future extensions of light rail under I-705 because it results in the shortest distance to elevate the alignment over Pacific Avenue on the western side of I-705, would require additional property impacts, and would require the alignment to cross over the Tacoma Link and Sounder tracks.
- TD 1 would have the potential to impact historic-era properties and is near archaeological sites, but the specific impacts and the significance of most of the historic properties requires further study.

- Most other types of environmental impacts are low, although many properties have the potential for hazardous materials contamination.

5.1.4.2 East 25th Street

TD 2 25th Street West, TD 3 25th Street East

TD 2 and TD 3 travel along the center of East 25th Street until west of East D Street, with the TD 2 station east of East D Street and the TD 3 station at East G Street. A summary of these alternatives includes:

- Moderate to low performance for TOD measures because the stations are either on the edge or located immediately adjacent to a TOD-compatible zone and the mix of amenities nearby is moderate. TD 2 would likely remove Freighthouse Square, which provides several amenities.
- TD 2 and TD 3 would have the potential to impact historic-era properties and are near archaeological sites, but the specific impacts and the significance of most of the historic properties requires further study.
- Most other types of environmental impacts are low, although many properties have the potential to have hazardous materials contamination.
- These alternatives have a lower performance for extending light rail under I-705 because the location results in a shorter distance to elevate the alignment over Pacific Avenue on the western side of I-705 and would require the alignment to avoid Tacoma Link and cross the Sounder tracks.
- These alternatives would have the potential to impact historic-era properties and is near archaeological sites, but the specific impacts and the significance of most of the historic properties requires further study.

5.1.4.3 East 26th Street/Representative

TD 4A-B 26th Street

TD 4A travels along the north side of East 26th Street to a station east of East D Street, while TD 4B travels along the south side of East 26th Street and then crosses to the north side of the street to the same station at East D Street.

A summary of the above alternatives includes:

- Lower performance on TOD potential because the location is inconsistent with Tribal land use and economic goals, and because there are some additional barriers that limit the walkshed compared to other alternatives, such as the Sounder tracks to the north and topography.
- There are more impacts to Tribal properties compared to other alternatives.

- These alternatives have a higher potential to extend the light rail line under I-705 because they allow the longest distance to elevate the line over Pacific Avenue on the western side of I-705 and do not conflict with Tacoma Link or Sounder.
- These alternatives would have the potential to impact historic-era properties and are near archaeological sites, but the specific impacts and the significance of most of the historic properties requires further study.
- Most other types of environmental impacts are low, although many properties have potential for hazardous materials contamination.

5.1.4.4 East 26th/27th Street

TD 5A 27th Street and TD 5B 27th Street

TD 5A and TD 5B travel along the north side of I-5 and continue northwest just east of East G Street until turning to a station at East 27th Street and East F Street. The alignments vary slightly based on which East Tacoma alignment is being connected to. A summary of these alternatives includes:

- Lower performance for TOD potential because nearby development would likely be limited by the surrounding street grid and uses, nearby amenities are limited, and additional barriers limit the walkshed compared to other alternatives, such as the Sounder tracks to the north and topography.
- The station is the greatest distance to connections to downtown Tacoma, including Tacoma Link and the transit center on Puyallup Avenue.
- The station and adjacent alignment affect Tribal property, and the alignment is in the vicinity of cultural and archaeological resources.
- The alignment features more curves and slope challenges than other alternatives but would allow future extensions.
- Most other types of environmental impacts are low, although many properties have potential for hazardous materials contamination.

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