West Seattle to Downtown Seattle Light Rail

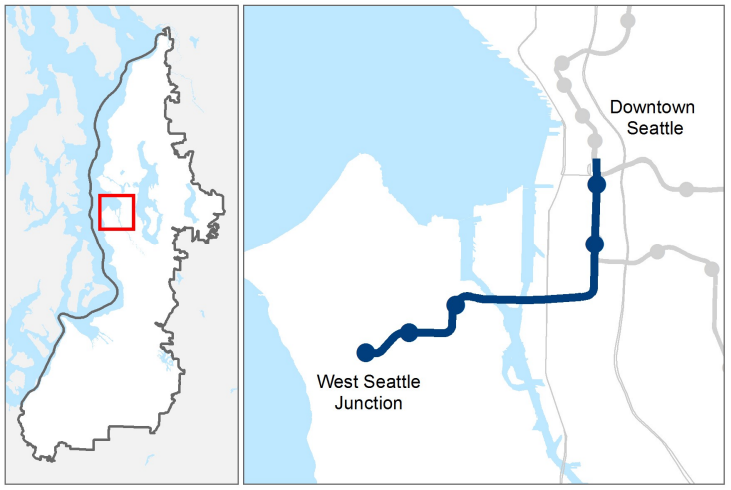
Subarea	North King
Primary Mode	Light Rail
Facility Type	Corridor
Length	4.7 miles
Date Last Modified	July 1, 2016

SHORT PROJECT DESCRIPTION

This project would provide a light rail connection from Downtown Seattle to the vicinity of West Seattle's Alaska Junction neighborhood including an alignment primarily on elevated light rail, a new rail-only fixed span crossing of the Duwamish River, and five stations.

Note: The elements included in this representative project will be refined during future phases of project development and are subject to change.

PROJECT AREA AND REPRESENTATIVE ALIGNMENT



KEY ATTRIBUTES	
REGIONAL LIGHT RAIL SPINE *Does this project help complete the light rail spine?*	No
CAPITAL COST *Cost in Millions of 2014 $*	$1,431 — $1,531
RIDERSHIP *2040 daily project riders*	32,000 — 37,000
PROJECT ELEMENTS	• Approximately 4.7 miles of light rail in combination of elevated and at-grade alignment • One at-grade station: Stadium • Four elevated stations: SODO, Delridge, Avalon, Alaska Junction • Stations are approximately 400 feet long to accommodate 4-car trains • High-level rail-only fixed span crossing of the Duwamish River • Access to Forest Street Operations and Maintenance Facility (OMF) • Peak headways: 6 minutes • 1 percent for art per Sound Transit policy • Non-motorized access facilities (bicycle/pedestrian), bus/rail integration facilities, transit-oriented development (TOD)/planning due diligence, and sustainability measures (see separate document titled "Common Project Elements")
NOT INCLUDED	• Parking not included • Light rail vehicles not included • Operations and maintenance facility not included • See separate documents titled "Common Project Elements," "Light Rail Operations and Maintenance Facilities," and "Light Rail Vehicles"
ISSUES & RISKS	• Construction would have some effect on Central Link operations during off-peak conditions • Project crosses Duwamish River in highly constrained and utilized corridor near Terminal 18 with potential soil contamination; assumed fixed span crossing requires over-water clearance of approximately 150 feet • Topography in West Seattle presents design challenges • Light rail currently operates in Seattle and specific station area standards are codified; light rail is included in the Comprehensive Plan and other planning documents

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Sound Transit developed a conceptual scope of work for this project for the purpose of generating a representative range of costs, both capital and operating; and benefits, including ridership forecasts, TOD potential, multi-modal access and others. This information was developed to assist the Sound Transit Board as it developed the ST3 system plan, including phasing of investments and financial plan, for voter consideration. Final decisions on project elements (e.g., alignment, profile, station locations, and number of parking stalls) will be determined after completion of system planning, project level environmental review, and preliminary engineering during which additional opportunities for public participation will be provided. Therefore, this scope definition should not be construed as a commitment that all representative features will be included in the final developed project.

Long Description:
This representative light rail project would connect West Seattle to downtown Seattle via Alaska Street, Fauntleroy Way, Genesee Street, Delridge Avenue, Spokane Street, and the SODO Busway. The alignment would include five stations – one at-grade, and four elevated. The alignment would include new connection to existing Downtown Seattle Transit Tunnel south of International District/Chinatown Station, a new rail-only high-rise bridge structure over the Duwamish Waterway (with a vertical clearance of approximately 150 feet above the waterway), elevated alignment over SR99 and S. Spokane Street Viaduct, and an elevated alignment in West Seattle.

Assumptions:
- Generally within existing street right-of-way
- No additional parking assumed
- Traction power substations are generally placed at 1-mile intervals, close to stations, if possible, with additional right-of-way acquisition included
- For non-motorized station access allowances, the Alaska Junction, Avalon, Delridge, and SODO stations are categorized as Urban stations and the Stadium station is categorized as an Urban/CBD station
- Bus/rail integration facilities have been assumed at the Delridge and Alaska Junction stations
- Connection to Forest Street OMF is via aerial yard lead

Environmental:
Sound Transit will complete project-level state and federal environmental reviews as necessary; provide mitigation for significant impacts; obtain and meet the conditions of all required permits and approvals; and strive to exceed compliance and continually improve its environmental performance.

Utilities:
Utility relocation as needed to complete the project, including fiber optics, sewer, water, overhead electric/communications, etc.

Right-of-Way and Property Acquisition:
- Potential property acquisitions anticipated at stations and intersections where protected turns are to be maintained
- The alignment would require property acquisition for the Forest Street yard lead, and traction power substations
- Sound Transit would work with partner agencies to utilize E-3 Busway right-of-way for light rail construction and operations
- Property acquisition for bus/rail integration facilities (Delridge and Alaska Junction Stations)

Potential Permits/Approvals Needed:
- Building permits: Electrical, Mechanical, Plumbing
- Utility connection permits
- Construction-related permits (clearing and grading, stormwater management, street use, haul routes, use of city right-of-way)
- Land use approvals (Conditional use, design review, site plans, Comprehensive Plan or development code consistency, Special Use Permits)
- USCG Bridge Permit
- US Army Corps of Engineers Section 10
- FAA/Air Navigation Review
- All required local, state, and federal environmental permits
- NEPA/SEPA and related regulations

Project Dependencies:
The operations plan assumes that trains from West Seattle would continue north through the Downtown Seattle Transit Tunnel to Northgate and beyond. Purchase of additional light rail vehicles is required to operate service on this corridor. Construction of new operations and maintenance base capacity is required to accommodate the fleet required for this corridor.

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Potential Project Partners:

- City of Seattle
- Port of Seattle
- Transit partner serving this project: King County Metro
- King County
- Coast Guard
- U.S. Army Corps of Engineers
- FTA
- WSDOT

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Cost:
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In Millions of 2014$

ITEM	COST	COST WITH RESERVE
Agency Administration	$76.05	$81.38
Preliminary Engineering & Environmental Review	$44.10	$47.18
Final Design & Specifications	$87.22	$93.32
Property Acquisition & Permits	$150.53	$161.06
Construction	$889.60	$951.87
Construction Management	$78.49	$83.99
Third Parties	$17.64	$18.88
Vehicles	$0.00	$0.00
Contingency	$87.22	$93.32
Total	**$1,430.85**	**$1,531.01**

Design Basis: Conceptual

The costs expressed above include allowances for TOD planning and due diligence, Sustainability, Bus/rail integration facilities, and Non-Motorized Access. These allowances, as well as the costs for Parking Access included above, are reflected in the following table. Property acquisition costs are not included in the table below, but are included within the total project cost above. For cost allowances that are not applicable for this project, "N/A" is indicated.

ITEM	COST	COST WITH RESERVE
TOD planning and due diligence	$0.69	$0.74
Sustainability	$14.23	$15.22
Parking access	N/A	N/A
Non-motorized (bicycle/pedestrian) access	$23.07	$24.68
Bus/rail integration facilities	$5.50	$5.89

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Evaluation Measures:

MEASURE		MEASUREMENT/RATING	NOTES
	**Regional Light Rail Spine** *Does project help complete regional light rail spine?*	No	
	**Ridership** *2040 daily project riders*	32,000 — 37,000	
	**Capital Cost** *Cost in Millions of 2014 $*	$1,431 — $1,531	
	**Annual O&M Cost** *Cost in Millions of 2014 $*	$15	
	**Travel Time** *In-vehicle travel time along the project (segment)*	12 min	
	**Reliability** *Quantitative/qualitative assessment of alignment/route in exclusive right-of-way*	High	100% in exclusive right-of-way
	**System Integration** *Qualitative assessment of issues and effects related to connections to existing local bus service and potential future integration opportunities*	Medium-High	Low to medium number of existing daily transit connections and opportunities for integration with realigned bus service
	**Ease of Non-motorized Access** *Qualitative assessment of issues and effects related to non-motorized modes*	Medium-Low	Low to medium intersection density providing non-motorized access with open space, large parcels as barriers
	Percent of Non-motorized Mode of Access *Percent of daily boardings*	70-80%	
	**Connections to PSRC-designated Regional Centers** *Number of PSRC-designated regional growth and manufacturing/industrial centers served*	2 centers	Seattle CBD, Duwamish MIC
	**Land Use and Development/TOD Potential** *Quantitative/qualitative assessment of adopted Plans & Policies and zoning compatible with transit-supportive development within 0.5 mile of potential stations* *Qualitative assessment of real estate market support for development within 1 mile of potential corridor* *Density of activity units (population and employment for 2014 and 2040) within 0.5 mile of potential station areas*	Medium-Low Medium Pop/acre: 2014: 6; 2040: 9 Emp/acre: 2014: 15; 2040: 17 Pop+Emp/acre: 2014: 21; 2040: 25	Moderate support in local and regional plans; approx. 15% land is compatibly zoned Moderate market support
	**Socioeconomic Benefits** *Existing minority / low-income populations within 0.5 mile of potential station areas* *2014 and 2040 population within 0.5 mile of potential station areas* *2014 and 2040 employment within 0.5 mile of potential station areas*	28% Minority; 12% Low-Income Pop: 2014: 13,400; 2040: 18,300 Emp: 2014: 31,500; 2040: 35,200	

For additional information on evaluation measures, see http://soundtransit3.org/document-library