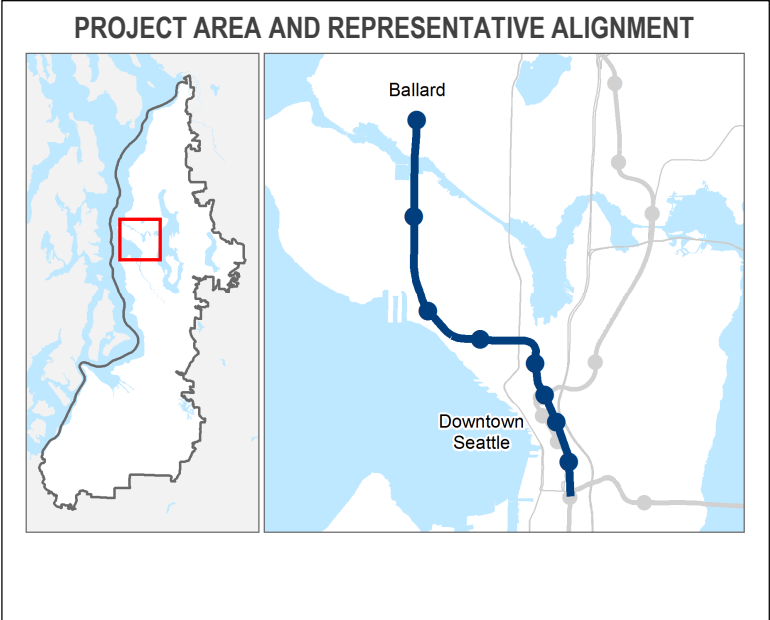


C-01b: Downtown Seattle to Ballard (Market Street vicinity) LRT, primarily elevated along Elliott and 15th Avenue with Tunnel Options

Project Number	C-01b
Subarea	North King
Primary Mode	Light Rail
Facility Type	Corridor
Length	6.9 miles
Version	ST Board Workshop
Date Last Modified	11-25-2015



SHORT PROJECT DESCRIPTION

This project would build light rail from Downtown Seattle to Ballard’s Market Street area. It would include primarily elevated light rail on 15th Avenue NW and Elliott Avenue West and a rail-only movable bridge over Salmon Bay. It includes a tunnel through the Uptown neighborhood into Downtown Seattle.

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

KEY ATTRIBUTES	
REGIONAL LIGHT RAIL SPINE <i>Does this project help complete the light rail spine?</i>	No
CAPITAL COST <i>Cost in Millions of 2014 \$</i>	\$4,391 — \$4,699
RIDERSHIP <i>2040 daily boardings</i>	67,000 — 87,000
PROJECT ELEMENTS	<ul style="list-style-type: none"> • Approximately 6.9 miles of light rail in combination of elevated and tunnel • Three elevated stations: Ballard, Interbay North, Interbay South • Five tunnel stations: Uptown, South Lake Union, Westlake, Midtown, International District/Chinatown • New rail-only movable bridge over Salmon Bay • Operations and maintenance facility • Purchase of 33 light rail vehicles • Peak headways: 6 minutes • 1 percent for art per Sound Transit policy • Non-motorized access facilities (bicycle/pedestrian), transit-oriented development (TOD)/planning due diligence, bus/rail integration facilities, and sustainability measures (see separate document titled “Common Project Elements”)
NOT INCLUDED	<ul style="list-style-type: none"> • Parking not included • See separate document titled “Common Project Elements”
ISSUES & RISKS	<ul style="list-style-type: none"> • Risk and complexity associated with alignment through Fisherman’s Terminal/Salmon Bay and construction of a new movable bridge • Displacing vehicle travel lanes for the alignment • Risk and complexity associated with a tunnel through Downtown Seattle • Reliability issues related to movable bridge over Salmon Bay • Construction would require some impacts to Link operations, which could potentially be limited so they occur during off-peak conditions

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KEY ATTRIBUTES

ISSUES & RISKS

- Constructing a new rail-only movable bridge over Salmon Bay
- Maintenance of traffic during construction on arterials
- US Coast Guard approval is needed for Salmon Bay crossing
- An alignment running west of the Ballard Bridge could require acquiring property from the Fisherman’s Terminal and impact buildings, docks, vessels, and equipment associated with maritime businesses
- Providing land for a maintenance facility could require acquiring private property
- Tunnel construction in mature urban environment, including potential of encountering elevator shafts, electrical grounding rods, geothermal wells
- 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 has developed a conceptual scope of work for this candidate 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 is being developed to assist the Sound Transit Board as it develops an ST3 system plan, including phasing of investments and financial plan, for voter consideration. Final decisions on project elements (e.g., alignment, profile, number of stations, 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 project would build light rail from downtown Seattle to Ballard's Market Street area. The representative alignment for this light rail project would be elevated along 15th Avenue NW starting at Market Street, crossing Salmon Bay on a rail-only new bridge near the Ballard Bridge. The alignment would continue elevated through the Interbay corridor along 15th Avenue NW and Elliott Avenue W. The alignment would transition to a tunnel alignment through the Uptown neighborhood and continue downtown to a tunnel portal and terminus south of Royal Brougham Way. This project includes eight stations – three elevated and five underground.

The City of Seattle has requested information regarding additional costs associated with replacing the Ballard Bridge in conjunction with this project. See Evaluation section for information on these potential additional costs, for which the City of Seattle would be solely responsible.

Assumptions:

- Alignment generally along existing arterials
- 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 Ballard and Uptown stations are categorized as Urban stations and the South Lake Union, Westlake, Midtown, and International District/Chinatown stations are categorized as Urban/CBD stations; the Interbay North and Interbay South stations are categorized as Urban stations with a Major Bicycle Intercept
- For bus/rail integration, facilities have been assumed at the Ballard and Interbay South stations

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:

- Generally located within existing city-owned street right-of-way
- Potential property acquisitions anticipated at stations
- Potential easements anticipated for tunnel alignments under privately-owned properties
- The alignment would require property acquisition for the operations and maintenance facility, access to the facility, and traction power substations
- Property acquisition for bus/rail integration facility

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)
- Master use
- 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

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Project Dependencies:

- This project requires the development of C-03a which would connect the existing Central Link line currently running through the Downtown Seattle Transit Tunnel to a line extension to West Seattle. The operations plan assumes that trains from Ballard would connect to the existing Central Link line south at Royal Brougham Way and continue south to Rainier Valley and beyond.
- Impacted by C-03a

Potential Project Partners:

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

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Cost:

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In Millions of 2014\$

ITEM	COST	COST WITH RESERVE
Agency Administration	\$233.95	\$250.33
Preliminary Engineering & Environmental Review	\$129.88	\$138.97
Final Design & Specifications	\$258.34	\$276.42
Property Acquisition & Permits	\$416.63	\$445.79
Construction	\$2,635.08	\$2,819.53
Construction Management	\$232.51	\$248.78
Third Parties	\$51.87	\$55.50
Vehicles	\$174.90	\$187.14
Contingency	\$258.34	\$276.42
Total	\$4,391.49	\$4,698.90

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.

ITEM	COST	COST WITH RESERVE
TOD planning and due diligence	\$0.91	\$0.98
Sustainability	\$9.39	\$10.04
Parking access	N/A	N/A
Non-motorized (bicycle/pedestrian) access	\$41.74	\$44.66
Bus/rail integration facilities	\$5.51	\$5.89

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Evaluation Measures:

MEASURE	MEASUREMENT/RATING	NOTES
 Regional Light Rail Spine <i>Does project help complete regional light rail spine?</i>	No	
 Ridership <i>2040 daily station boardings</i>	67,000 — 87,000	
 Capital Cost <i>Cost in Millions of 2014 \$</i>	\$4,391 — \$4,699	Additional cost of optional Ballard Bridge replacement is \$260m - \$500m. Sound Transit would not be responsible for this additional cost
 Annual O&M Cost <i>Cost in Millions of 2014 \$</i>	\$42.63	
 Travel Time <i>In-vehicle travel time along the project (segment)</i>	18 min	
 Reliability <i>Quantitative/qualitative assessment of alignment/route in exclusive right-of-way</i>	Medium-High	100% in exclusive right-of-way; reliability could be affected by movable bridge over Salmon Bay
 System Integration <i>Qualitative assessment of issues and effects related to connections to existing local bus service and potential future integration opportunities</i>	High	Medium-low to high number of existing transit connections and strong opportunities for integration with realigned bus service
 Ease of Non-motorized Access <i>Qualitative assessment of issues and effects related to non-motorized modes</i>	Medium-High	Low to high intersection densities providing non-motorized access, with rail lines and steep hillsides as barriers
	Percent of Non-motorized Mode of Access <i>Percent of daily boardings</i>	75-85%
 Connections to PSRC-designated Regional Centers <i>Number of PSRC-designated regional growth and manufacturing/industrial centers served</i>	4 centers	Ballard-Interbay MIC, Uptown, South Lake Union, Seattle CBD
 Land Use and Development/TOD Potential <i>Quantitative/qualitative assessment of adopted Plans & Policies and zoning compatible with transit-supportive development within 0.5 mile of potential stations</i>	Medium-High	Strong support in local and regional plans; approx. 35% land is compatibly zoned
	<i>Qualitative assessment of real estate market support for development within 1 mile of potential corridor</i>	High
 Socioeconomic Benefits <i>Existing minority / low-income populations within 0.5 mile of potential station areas</i>	32% minority; 17% low-income	
<i>2014 and 2040 population within 0.5 mile of potential station areas</i>	Pop: 2014: 69,600; 2040: 105,900	
<i>2014 and 2040 employment within 0.5 mile of potential station areas</i>	Emp: 2014: 206,400; 2040: 310,300	

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