S-05: Tacoma Dome Station to Tacoma Mall LRT

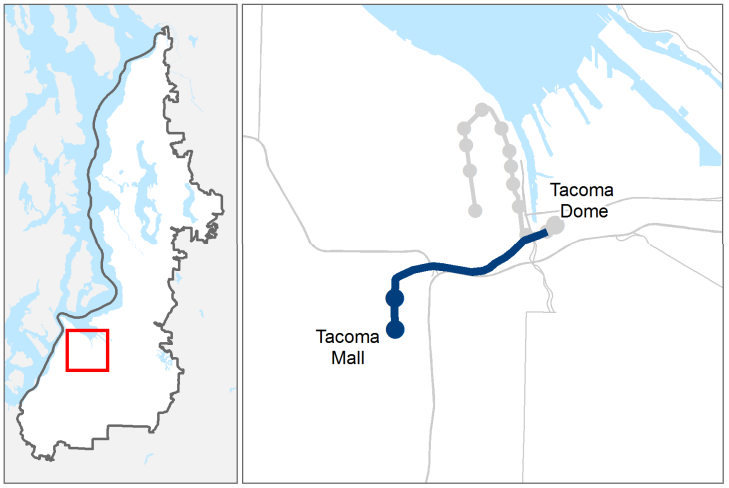
Project Number	S-05
Subarea	Pierce
Primary Mode	Light Rail
Facility Type	Corridor
Length	3.55 miles
Version	ST Board Workshop
Date Last Modified	11-25-2015

SHORT PROJECT DESCRIPTION

This project would extend light rail from Tacoma Dome station to Tacoma Mall with two elevated stations; one at Tacoma Mall and the other at S Pine Street, near S 36th Street.

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?*	Yes
CAPITAL COST *Cost in Millions of 2014 $*	$975 — $1,043
RIDERSHIP *2040 daily boardings*	6,000 — 8,000
PROJECT ELEMENTS	• Approximately 3.55 miles of light rail in a mixture of at-grade and elevated guideway, as well as a cut and cover tunnel • Two elevated stations: Tacoma Mall and S Pine Street, near S 36th Street • Stations accommodate 4-car trains • Parking garage at the Tacoma Mall station with approximately 500 stalls; the scope of the transit parking components included in this project could be revised to include a range of strategies for providing rider access to the transit facility; along with, or instead of, parking for private vehicles or van pools, a mix of other investments could be accomplished through the budget for this project • Realign and rebuild freight rail line near E 26th Street and E C Street • Purchase of 15 light rail vehicles • Peak headways: 6 minutes • 1 percent for art per ST 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	• See separate document titled "Common Project Elements"
ISSUES & RISKS	• Ongoing WSDOT project work with the Nalley Valley – SR16 project and coordination with the proposed track alignment • Roadway construction impacts to the Port of Tacoma and freight mobility

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	KEY ATTRIBUTES
ISSUES & RISKS	• Signal pre-emption and traffic circulation near Tacoma Dome and potential conflicts with the other services triggering the signals, including Tacoma Link, Amtrak, and Sounder • Impacted by WSDOT – Amtrak Station improvements and track work at Freight House Square and WSDOT – Nalley Valley – SR16 Improvements • Freight rail re-alignment at E 26th Street and E C Street • Light rail currently operates in Tacoma and specific station area standards are codified; light rail mentioned in the Comprehensive Plan • The Hood Street Reservoir at Yakima Street is located adjacent to the representative alignment; final project design would need to take this into consideration • At-grade profiles included in this project could result in more potential conflicts with other modes; this could affect speed and reliability • Requires FHWA/WSDOT approvals for use of interstate right-of-way • Requires WSDOT approvals for use of state highway right-of-way

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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 construct an extension of light rail from the Tacoma Dome station to the Tacoma Mall. Leaving the Tacoma Dome Station, the alignment would be at-grade. It would follow E 26th Street where it would cross under Highway 705 in a bridge section over the existing of the Mountain Division line owned by Tacoma Rail. The alignment would elevate over Pacific Avenue, and cross over S Tacoma Way. It would then return to an at-grade alignment running parallel to the south side of S Tacoma Way until just east of S M Street. The alignment would be elevated over S M Street, and then begin transitioning into a cut and cover structure underneath S Tacoma Way at the I-5 interchange at SR 16. It would return to an at-grade alignment and continue along S Tacoma Way to just past Sprague Street at which point it would become elevated again. The elevated alignment would continue to follow S Tacoma Way until its intersection with S Pine Street The elevated alignment would continue to follow S Pine Street on the west side until crossing over to the east side at S 42nd Street. It would transition to a retained fill alignment until its terminus at the station on the west side of the Tacoma Mall. An elevated station would be located in the vicinity of S 36th Street along Pine Street. An elevated station would be located along the west side of Tacoma Mall and include a 500 stall parking garage.

Assumptions:
- Reconstruction of portions of South Tacoma Way
- Realignment of the freight rail near I-705 and E C Street as a result of the LRT track
- Tacoma Ave S bridge may be reconstructed as a result of the track alignment underneath
- S Tacoma Way bridge may be reconstructed as a result of the track alignment underneath
- Crossover and tail track storage are included within the estimate assuming this segment acts as a terminus station for the interim
- One additional crossover located on S Tacoma Way in the cut and cover section of track
- For non-motorized station access allowances, the Tacoma Mall Station is categorized as an Urban LRT station and the Pine Street station is characterized as a Suburban LRT station
- For bus/rail integration, facilities have been assumed at the Tacoma Mall Station

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:
- Property acquisitions anticipated at stations 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)
- All required local, state, and federal environmental permits
- Requires FHWA/WSDOT approvals for use of interstate right-of-way
- Requires WSDOT approvals for use of state highway right-of-way NEPA/SEPA and related regulations

Project Dependencies:
- Completion of Link extension to the Tacoma Dome

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Potential Project Partners:

- City of Tacoma
- WSDOT
- Transit Partners Also Serving Project: Pierce Transit
- Tacoma Mall
- Tacoma Rail
- Pierce County
- FTA

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Cost:
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In Millions of 2014$

ITEM	COST	COST WITH RESERVE
Agency Administration	$51.92	$55.55
Preliminary Engineering & Environmental Review	$29.14	$31.18
Final Design & Specifications	$57.74	$61.79
Property Acquisition & Permits	$46.22	$49.45
Construction	$589.00	$630.23
Construction Management	$51.97	$55.61
Third Parties	$11.75	$12.57
Vehicles	$79.50	$85.07
Contingency	$57.74	$61.79
Total	**$974.98**	**$1,043.23**

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	$0.47	$0.50
Sustainability	$6.50	$6.96
Parking access	$25.78	$27.58
Non-motorized (bicycle/pedestrian) access	$13.18	$14.10
Bus/rail integration facilities	$2.75	$2.95

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Evaluation Measures:

MEASURE		MEASUREMENT/RATING	NOTES
	**Regional Light Rail Spine** *Does project help complete regional light rail spine?*	Yes	
	**Ridership** *2040 daily station boardings*	6,000 — 8,000	
	**Capital Cost** *Cost in Millions of 2014 $*	$975 — $1,043	
	**Annual O&M Cost** *Cost in Millions of 2014 $*	$11.80	
	**Travel Time** *In-vehicle travel time along the project (segment)*	8 min	
	**Reliability** *Quantitative/qualitative assessment of alignment/route in exclusive right-of-way*	Medium-High	Some at-grade crossings
	**System Integration** *Qualitative assessment of issues and effects related to connections to existing local bus service and potential future integration opportunities*	Medium	Medium-low number of existing daily transit connections Tacoma Mall to S Pine Street/S 36th Street; multi-multi-modal integration opportunities at Tacoma Dome Station
	**Ease of Non-motorized Access** *Qualitative assessment of issues and effects related to non-motorized modes*	Medium	Medium to low intersection density providing nonmotorized access, with few barriers
	Percent of Non-motorized Mode of Access *Percent of daily boardings*	50-60%	
	**Connections to PSRC-designated Regional Centers** *Number of PSRC-designated regional growth and manufacturing/industrial centers served*	3 centers	Regional growth centers: Downtown Tacoma, Tacoma Mall Manufacturing and Industrial Center: Port of Tacoma
	**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-High Medium Pop/acre = 2014: 4; 2040: 13 Emp/acre = 2014: 11; 2040: 19 Pop + Emp/acre = 2014: 15; 2040: 32	Strong support in local and regional plans; approx. 50% 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*	43% Minority; 24% Low-Income Pop: 2014: 3,300; 2040: 10,400 Emp: 2014: 8,400; 2040: 14,700	

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