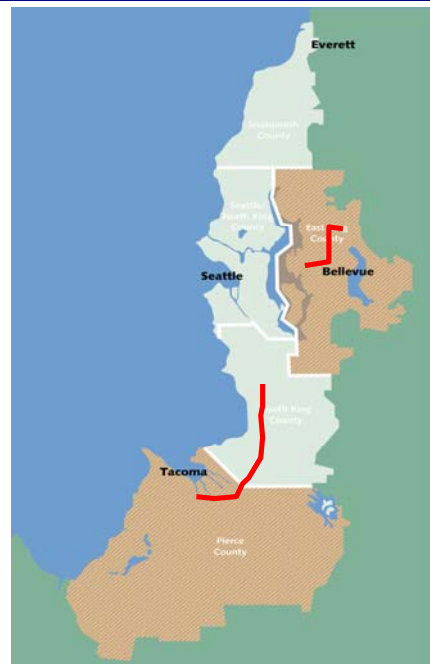


Link LRT: Maintenance Bases, Vehicles and Operations for ST2 Expansion

Project Number	SYS-LRT
Subareas	All
Primary Mode Impacted	Link
Facility Type	Link Service
Version Number	1.0
Date Last Modified	12/14/2006

Project Locator Map



Short Project Description

Construct new light rail maintenance and operations facility capacity to accommodate light rail vehicle fleet. Purchase vehicles for light rail operations. Operate and maintain expanded light rail service between Lynnwood, Overlake TC, and the Port of Tacoma.

Project Purpose: Provide systemwide elements to support expansion of Link light rail service.

Cost and Schedule

Cost (in Millions of 2006 \$)

Schedule

East Base	Low	High
Agency Admin	\$21.8	\$25.0
Environmental Clearance and PE	\$4.1	\$4.7
Final Design, Specs, Permitting	\$10.3	\$11.8
ROW Acquisition	\$80.7	\$92.7
Construction	\$89.0	\$102.4
Contingency	\$7.1	\$8.2
Total	\$212.9	\$244.8

Proposed Schedule Not Yet Completed

South Base	Low	High
Agency Admin	\$34.0	\$39.1
Environmental Clearance and PE	\$6.0	\$6.9
Final Design, Specs, Permitting	\$15.0	\$17.3
ROW Acquisition	\$40.8	\$46.9
Construction	\$130.4	\$150.0
Contingency	\$12.0	\$13.8
Total	\$238.3	\$274.1

Proposed Schedule Not Yet Completed

Total	Low	High
Agency Admin	\$55.8	\$64.1
Environmental Clearance and PE	\$10.1	\$11.6
Final Design, Specs, Permitting	\$25.3	\$29.1
ROW Acquisition	\$121.5	\$139.7
Construction	\$219.4	\$252.4
Contingency	\$19.1	\$22.0
Maintenance Bases	\$451.2	\$518.9
Vehicles for LRT System	\$661.1	\$760.3
Total Bases and Vehicles	\$1,112.3	\$1,279.1

Annual Added O&M*	\$96.3
Design Basis	Conceptual

* Includes maintenance facility operations

Link LRT: Maintenance Bases, Vehicles and Operations for ST2 Expansion

Environmental Documentation Required

- Environmental Impact Statement Required
- Environmental Assessment Required
- Environmental Checklist Required

Relationships to Other Projects

<i>Relationship</i>	<i>Project</i>
Dependent on	Link LRT extensions and all associated projects that they are dependent on or impacted by

Project Partners

<i>Agency</i>	
King County jurisdictions	Bellevue, Redmond, SeaTac, Des Moines, Kent, Federal Way and/or King County
Pierce County jurisdictions	Milton, Fife, Tacoma and/or Pierce County
WSDOT	
BNSF Railroad	
KC Metro	

Long Description

This capital project scope, and the companion capital cost estimate, are intended to include the entire project development cycle (agency and project administration, environmental clearance, design, all aspects of property acquisition, permits, agreements, construction, testing, commissioning and contingencies) from project initiation through the start-up of the revenue operations.

Description:
 This project includes three systemwide components to support Link LRT system expansion:

- Purchase light rail vehicles (LRV) for service expansion.
- Ongoing operations and maintenance of expanded light rail service.
- Construct two maintenance facilities to accommodate the future light rail vehicle fleet. One facility will be located along the LRT alignment in East King county, and one along the LRT alignment in South King county south of Sea-Tac Airport.

Vehicles: Up to 160 new light rail vehicles will be purchased (includes spares).

Operations: This project includes annual operating funds to operate and maintain all light rail system extensions built under the ST2 program. The operating plan supporting the light rail system in service between Lynnwood, Overlake TC, and the Port of Tacoma at the completion of ST2 is anticipated to be as follows:
 Line 1: Northgate to Port of Tacoma. 4-car trains running every 10 minutes peak, and 15 minutes midday and night.
 Line 2: Lynnwood to Kent-Des Moines Road. 3-car trains running every 15 minutes peak and midday, and 20 minutes at night.
 Line 3: Lynnwood to Overlake Transit Center. 4-car trains running every 6 minutes peak, and 15 minutes midday and night.

Maintenance Bases
 The two new maintenance bases, combined with the Forest Street LRT base, will provide light rail vehicle maintenance and storage capacity for the entire Link LRT system, including expansion during ST2. In addition to maintenance capacity for the light rail system between the University of Washington and South 200th Street, the Forest Street base will provide communications and control systems and selected heavy maintenance functions for the entire LRT system. Forest Street base expansion to accommodate and service 75 LRVs is already programmed in *Sound Move*. Project N6 to extend the Central Link system from the University of Washington to Northgate includes further expansion to the maximum 105 LRVs at this site. Link LRT system expansion beyond that level requires new maintenance base capacity, which will be provided at the proposed new bases.

Link LRT: Maintenance Bases, Vehicles and Operations for ST2 Expansion

Description (cont.):

The East base will store and maintain up to 40 LRVs, and the South base will store and maintain up to 90 LRVs during ST2 to support expansion of the light rail system to Lynnwood, Overlake Transit Center, and the Port of Tacoma. The Property acquisition for the South base site will provide enough ROW to accommodate a potential future expansion of the base to store and maintain up to 105 LRVs. Representative sites were used to develop cost estimates for each of the new maintenance facilities. The final site for each base would be determined through project level design and environmental review. The basic cost estimates include design allowance contingency, construction change order contingency, and unallocated contingency.

Project Elements Included (for each base unless otherwise noted):

- Sites centrally located within the East and South light rail corridors, large enough to accommodate the maximum foreseeable future vehicle storage capacity necessary at each site
- Lead track to/from the LRT guideway
- Service and storage track and switches
- Vehicle barn
- Train washer
- Maintenance of way facilities
- Administration offices
- Operator reporting, dispatching and break areas
- LRV parking and storage area
- Employee/visitor parking
- Environmental mitigation
- 1 percent for art per ST policy
- Allowances for:
 - Site circulation
 - Site landscaping / setbacks
 - Stormwater detention
- Equipment: Cost estimate for the South Base equipment is based on the following types of equipment (includes "heavy" equipment) that are provided at Sound Transit's Forest Street Link Base:
 - Underfloor wheel profiling system
 - Jib cranes
 - Rail yard shuttle
 - Turntables - 60,000 lbs.
 - Turntables - 16,000 lbs.
 - Monorail cranes system
 - Compressed air equipment
 - Vehicle lifts
 - Truck lift with turntable
 - Truck repair lift
 - Bridge crane - 10 ton (for maintenance of equipment)
 - Bridge crane - 2 ton (for maintenance of way)
 - Dock lifts
 - LRV washer system
 - Sand distribution equipment
 - Industrial waste system
 - Parking control equipment
 - Spray paint booth
 - Portable rail car lifts
- Equipment: Cost estimate for the East Base equipment is a pro-rated amount (30%) and is based on the types of equipment listed above for South Base.

Project Elements Included (vehicles):

- Up to 160 90-foot low-floor light rail vehicles

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Utilities:

Utility investigations have not yet been carried out. Relocation of standard utilities along the alignment has been assumed as part of the scope and has been estimated using an average per route foot allowance. Standard public utilities will be provided at each base.

Right-of-Way and Property Acquisition:

Property interests required for the prototypical alignment include fee acquisitions, partial takes, easements and interagency agreements. Right-of-way requirements include construction staging and contractor laydown areas. No specific provisions are made for contractor parking. Cost estimates include associated relocation, administration and legal costs, and contingency.

Mitigation:

The final project scope will include all mitigation(s) committed to by ST in pertinent, future project-level environmental documents.

Exclusions:

- Maintenance base capacity necessary to serve the light rail system between Northgate and South 200th Street (see project N6).

Permits Required:

- Building, electrical, mechanical, utility, construction-related, and land use permits by local jurisdictions
- BNSF permits / easements for access to the East base

Agreements Required:

- Transitway agreements with jurisdictions in east and south King County
- Potential operating agreement with King County Metro

ST has developed scope definitions for ST2 project proposals for the purposes of developing cost estimates, implementation schedules, a financial plan, and the estimation of project benefits. This scope definition should not be construed as a commitment that all defined features will be included in the final developed project.

Evaluation Measures

Measure	Measurement/ Rating	Notes
Average Weekday Ridership	N/A	
Capital Cost	\$1,112.3 - \$1,279.1	in Millions of 2006 \$
Annual Added O&M Costs	\$96.3	in Millions of 2006 \$
Travel Time & Reliability	N/A	
Connectivity & Integration	N/A	
Land Use & Development	N/A	
Customer Experience	N/A	
Risk Avoidance	Low	

Key Issues and Benefits

Issues:

- There is limited availability of land parcels in east and south King County near the light rail corridors to accommodate new LRT maintenance facilities.

Benefits:

- Facilities and additional fleet are necessary to support the light rail service expansion under ST2
- Additional maintenance facilities increase light rail operations efficiency and flexibility