

RESOLUTION NO. R2015-24

Creates the ST2 Light Rail Vehicle Fleet Expansion Project and Establishes the Baseline Budget and Schedule

| MEETING: | DATE: | TYPE OF ACTION: | STAFF CONTACT: |
|-------------------|-----------|-------------------------|---|
| Capital Committee | 9/10/2015 | Recommendation to Board | Ahmad Fazed, DECM Executive Director |
| Board | 9/24/2015 | Final Action | Aniekan Usoro, Deputy Executive Director, Project Control and Value Engineering Rob Chappell, Deputy Director, Systems Engineering & Integration |

PROPOSED ACTION

(1) Adopts the ST2 Light Rail Vehicle Fleet Expansion project baseline schedule and budget by (a) adopting September 2024 as the project completion milestone, (b) adopting the Project Lifetime Budget of \$733,006,000 and (c) adopting the 2015 Annual Budget of \$1,036,750; and (2) approves Gates 1 through 6 within Sound Transit’s Phase Gate process.

KEY FEATURES SUMMARY

- This action adopts the ST2 Light Rail Vehicle (LRV) project baseline schedule and budget, which constitutes approval of Gates 1 through 6 within Sound Transit’s Phase Gate process.
- The Lifetime Budget of \$733,006,000 will provide for project management, design, manufacturing, delivery, assembly, inspection and testing of 122 low floor light rail vehicles to meet fleet requirements to support revenue service of all the ST2 light rail expansion projects.
- Addition of these 122 LRVs will bring the total fleet to 184 vehicles.
- This action establishes September 2024 as the project completion milestone. The project schedule will continue through the final acceptance and warranty period for each LRV. Sound Transit expects to receive all required LRVs prior of the opening of each Link extension.
- Funding for engineering, inspection and procurement of 42 of the 122 LRVs was included in the adopted Baseline budget for the Northgate Link project, and engineering has commenced. However, before baselining the East Link Extension, Sound Transit determined that procurement of all 122 LRVs under a single project would provide efficiencies in coordinating, monitoring, tracking and reporting of the project progress.
- A separate action is being brought concurrently (Resolution No. R2015-23) that will reduce the Northgate Link Extension Baseline Budget by \$236,900,000 to allow the transfer of funds to this project.
- Costs incurred for engineering under the Northgate Link project will be transferred to this project.

BACKGROUND

Voters approved the ST2 package in November of 2008, which included light rail expansion to Northgate, Lynnwood, Redondo/Star Lake area in Federal Way, and Redmond, as well as the LRV fleet expansion necessary to operate those extensions.

This project is necessary to complete the procurement and delivery of 122 additional LRVs. Initially, ST2 estimated additional LRVs for all the Link extensions. When Sound Transit finalized the Fleet Management Plan for ST2 light rail extensions, 12 additional LRVs were necessary to

accommodate the increase in train consists (from two LRVs to three to four LRVs) for higher ridership. This brought the total ST2 LRVs to 118. The original basis of 118 vehicles assumed 100% compatibility with the current Sound Transit Light Rail Vehicle procured under Sound Move. Through industry outreach it was determined that the significant impacts to cost and schedule for manufacture and delivery of compatible vehicles and the modifications to the existing fleet would not meet the needs of the fleet sizing. The addition of four vehicles allows for separation of the fleet by consist type to meet Sound Transit's revenue service needs. The newly procured vehicles will have the required features for structural integrity as well as the ability to couple to existing fleet vehicles. This brings the ST2 LRVs to 122, for a total Sound Transit fleet of 184 LRVs.

Delivery of the vehicles will be sequenced for design, fabrication and delivery in phases to ensure that each vehicle is fully tested and delivered to meet service requirements prior to the opening of Northgate Link, East Link, and Lynnwood Link per the current and future Rail Fleet Management Plan meeting the needs for ST2.

The Request For Proposal (RFP) will be issued this fall and the contract to design, fabricate and deliver the vehicles awarded after the review and evaluation of proposals received. The project schedule anticipates the first vehicle delivery as early as 2019 for testing, with the remainder of the fleet scheduled to meet the service requirements.

If this budget is approved, staff will begin a procurement process for the 122 vehicles and return to seek Board authorization in mid-2016 for award of the contract.

Environmental compliance pursuant to the State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA) has been completed for Northgate Link, East Link, and Lynnwood Link with issuance of a Final Environmental Impact Statement (EIS) and Federal Transit Administration Record of Decision for each project. Completion of the SEPA and NEPA process for the OMSF is required prior to award of the contract to deliver the vehicles. Issuance of the OMSF Final EIS, Board selection of the site and project to be built, and Record of Decision are anticipated in fall 2015.

PROJECT STATUS

| Project Identification | Alternatives Identification | Conceptual Engineering | Preliminary Engineering | Final Design | Construction |
|------------------------|-----------------------------|------------------------|-------------------------|--------------|--------------|
| | | | | ○ | |

Projected Completion Date for development of the RFP: 3Q 2015

FISCAL INFORMATION

The proposed action amends the Adopted 2015 Budget and the 2015 Transit Improvement Plan (TIP) to create the ST2 Light Rail Vehicle Fleet Expansion project. It approves the 2015 Annual Budget of \$1,036,750, and the Project Lifetime Budget in the amount of \$733,006,000; and establishes the project's baseline schedule and budget.

This project will centralize the procurement of the light rail vehicles (LRVs) into one project, in lieu of distributing costs between three projects: the Northgate Link Extension, Lynnwood Link Extension and, East Link Extension. During Sound Move the practice had been to include the LRV procurement costs in each Link segment project (Initial Segment, University Link, and Airport Link) that required the procurement of LRVs. A single project will take advantage of some efficiencies,

and enable the agency to track costs more efficiently. This will still allow the agency to report on vehicles assigned to each segment, as needed, for federal purposes related to the East Link TIFIA loan and a potential Lynnwood Link FFGA, both of which will include a portion of the vehicles.

A vehicle budget had already been established (at baseline) for procurement of LRVs within the Northgate Link Extension. A budget transfer in the amount of \$236,900,000 to the new ST2 LRV Fleet Expansion project to procure LRVs for Northgate Link is concurrently proposed in Resolution No. R2015-23.

The total cost of the LRV project to procure 122 vehicles is anticipated to be \$733 million in year of expenditure dollars. The original ST2 high cost estimate to procure 106 vehicles was approximately \$659 million YOES, an increase of \$74 million. On a cost per vehicle basis, the proposed baseline budget is 3% lower than the original ST2 high cost estimate.

Consequently, the increase in cost for the LRV project is due to the increase in the number of vehicles being procured from 106 to 122. As described earlier in the report, four of the added vehicles are due to the need to operate the new vehicles and the current vehicles in separate consists. The remaining 12 additional vehicles will allow the agency to increase the current two car consists to three to four car consists. This will provide additional capacity to serve the higher ridership that will exist when the fully built out system is in operation.

In 2010, due to the effects of the great recession, project reserves were removed from the capital plan and all non-construction cost elements were trimmed by 5%. As a result, the estimate that has been carried forward in the finance plan is \$634 million. The proposed lifetime budget for this project reflects an increase to the finance plan of \$99 million. This increase in budget is affordable to the agency and the specific subareas. However, the higher project cost will require additional bonding by the agency, increasing total agency debt service.

BUDGET AMENDMENT

| ST2 LRV Fleet Expansion Phase | 2015 Annual Budget | | | Lifetime Budget | | |
|---|-----------------------------|-----------------|------------------------|-----------------------------|------------------|------------------------|
| | Adopted 2015 Project Budget | Budget Transfer | Revised Project Budget | Adopted 2015 Project Budget | Budget Transfer | Revised Project Budget |
| Agency Administration | \$0 | \$18 | \$18 | \$0 | \$4,748 | \$4,748 |
| Preliminary Engr / Environmental Review | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Final Design / Specifications | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Third Party | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| ROW Acquisition and Permits | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Construction | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Construction Services | \$0 | \$1,018 | \$1,018 | \$0 | \$14,090 | \$14,090 |
| Vehicles | \$0 | \$0 | \$0 | \$0 | \$714,168 | \$714,168 |
| Testing and Start-up | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Contingency | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total | \$0 | \$1,037 | \$1,037 | \$0 | \$733,006 | \$733,006 |

Notes:

Amounts are expressed in Year of Expenditure \$000s.

SMALL BUSINESS/DBE PARTICIPATION

Sound Transit promotes and encourages small business participation, which also includes Disadvantaged Business Enterprises (DBEs). Small Business and DBE goals are based upon an examination of subcontracting opportunities contained in the work of this contract and the number of Small Businesses/DBEs available to perform such subcontracting work.

Sound Transit determined that Small Business and DBE subcontracting opportunities are infeasible or improbable based upon the work described in this contract, so Small Business/DBE goals were not established or required.

PUBLIC INVOLVEMENT

Not applicable to this action.

PRIOR BOARD/COMMITTEE ACTIONS

None.

TIME CONSTRAINTS

A one-month delay would impact the project by delaying procurement and delivery activities.

ENVIRONMENTAL REVIEW

JI 9/2/2015

LEGAL REVIEW

LA 4 September 2015

RESOLUTION NO. R2015-24

A RESOLUTION of the Board of the Central Puget Sound Regional Transit Authority (1) Adopting the ST2 Light Rail Vehicle Fleet Expansion project baseline schedule and budget by (a) adopting September 2024 as the project completion milestone, (b) adopting the Project Lifetime Budget of \$733,006,000 and (c) adopting the 2015 Annual Budget of \$1,036,750; and (2) approves Gates 1 through 6 within Sound Transit's Phase Gate process.

WHEREAS, the Central Puget Sound Regional Transit Authority, commonly known as Sound Transit, was formed under RCW Chapters 81.104 and 81.112 for the Pierce, King, and Snohomish Counties region by action of their respective county councils pursuant to RCW 81.112.030; and

WHEREAS, Sound Transit is authorized to plan, construct, and permanently operate a high-capacity system of transportation infrastructure and services to meet regional public transportation needs in the Central Puget Sound region; and

WHEREAS, in general elections held within the Central Puget Sound Regional Transit Authority district on November 5, 1996 and November 4, 2008, voters approved local funding to implement a regional high-capacity transportation system for the Central Puget Sound region; and

WHEREAS, the ST2 plan approved light extensions to Northgate, Lynnwood, and East as well as the light rail vehicle fleet necessary to operate these extensions; and

WHEREAS, the ST2 Light Rail Vehicle Expansion will be a centralized procurement of 122 low floor light rail vehicles for the Northgate Link, East Link, and Lynnwood Link Extensions; and

WHEREAS, a single project will take advantage of some efficiencies, and enable the agency to track costs more efficiently; and

WHEREAS, a vehicle budget had already been established (at baseline) for procurement of LRVs within the Northgate Link Extension; and

WHEREAS, a budget transfer in the amount of \$236,900,000 to the proposed ST2 LRV Fleet Expansion project to procure LRVs for Northgate Link is concurrently proposed in Resolution No. R2015-23; and

WHEREAS, delivery of the vehicles will be sequenced for design, fabrication and delivery in phases to ensure that each vehicle is fully tested and delivered to meet service requirements prior to the opening of Northgate Link, East Link, and Lynnwood Link per the current and future Rail Fleet Management Plan meeting the needs for ST2; and

WHEREAS, the newly procured vehicles will have the required features for structural integrity as well as the ability to couple to existing fleet vehicles; and

WHEREAS, the procurement of 122 LRVs allows for separation of the fleet by consist type to meet Sound Transit's revenue service needs, and allows for increases from two LRVs to three to four LRVs for higher ridership; and

WHEREAS, approval of Gates 1 through 6 of Sound Transit's Phase Gate process for the project creates the project, defines the scope of the project, fully funds the project and authorizes the project to proceed to procurement.

NOW, THEREFORE, BE IT RESOLVED by the Board of the Central Puget Sound Regional Transit Authority that:

Section 1: The ST2 Light Rail Vehicle Fleet Expansion project baseline schedule and budget is adopted by (a) adopting September 2024 as the project completion milestone, (b) adopting the Project Lifetime Budget of \$733,006,000 and (c) adopting the 2015 Annual Budget of \$1,036,750.

Section 2: Gates 1 through 6 within Sound Transit's Phase Gate process are approved.

ADOPTED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on September 24, 2015.



Dow Constantine
Board Chair

ATTEST:


Kathryn Flores
Board Administrator



PHASE GATE ACTION
ST2 Light Rail Vehicle Fleet Expansion Project

| MEETING | DATE | STAFF CONTACT | PHONE |
|-------------------|----------|---|----------------------------------|
| Capital Committee | 09/10/15 | Ahmad Fazel, DECM Executive Director | (206) 398-5389 |
| Board | 09/24/15 | Rob Chappell, Deputy Director, Systems Engineering & Integration John Prosper, Project Manager | (206) 903-7017 (206) 398-5317 |

| GATE 1 Enter Project Development | GATE 2 Identify Alternatives | GATE 3 ID Preferred Alternative | GATE 4 Enter Final Design | GATE 5 Establish Baseline | GATE 6 Proceed to Construction | GATE 7 Transition to Operations | GATE 8 Close Out Project |
|-------------------------------------|---------------------------------|------------------------------------|------------------------------|------------------------------|-----------------------------------|------------------------------------|-----------------------------|
| | | | | | | | |

ACTION REQUESTED

Approve Phase Gates 1 through 6 to establish the baseline budget and schedule for the ST2 Light Rail Vehicle Fleet Expansion Project.

PROJECT BUDGET

Baseline Budget: \$733,006,000

PROJECT SCHEDULE

Baseline Project Completion: September 2024

PROJECT DESCRIPTION

This project is necessary to complete the procurement and delivery of 122 additional LRVs required for revenue service in the ST2 expansion program, bringing the total fleet to 184 LRVs.

Delivery of the vehicles will be sequenced for design, fabrication and delivery in phases to ensure that each vehicle is fully tested and delivered to meet service requirements prior to opening of Northgate Link, East Link, and Lynnwood Link per the current and future Rail Fleet Management Plan meeting the needs for ST2.

The Request For Proposal (RFP) will be issued this fall and the contract to design, fabricate and deliver the vehicles awarded after the review and evaluation of proposals received. The project schedule anticipates the first vehicle delivery as early as 2019 for testing, with the remainder of the fleet scheduled to meet the service requirements.

Consistent with Sound Transit policy and practices, a non-qualitative project-wide Risk Assessment was conducted for the ST2 Light Rail Vehicle Expansion Project in preparation for project baselining. The proposed baseline schedule would establish September 2024 as the project completion milestone. The baseline budget would establish a Project Lifetime Budget of \$733,006,000 (YOES) to provide design, manufacture, assembly, inspection, testing and agency administration as required to deliver 122 Light Rail Vehicles.

ACTION APPROVED

Dow Constantine
 Dow Constantine
 Board Chair

9/24/15
 Date