



Motion No. M2024-14

Contract Modification with Siemens Industry Inc. for 10 Additional Light Rail Vehicles and Spare Parts

Meeting:	Date:	Type of action:	Staff contact:
System Expansion Committee Board	03/14/2024 03/28/2024	Recommend to Board Final action	Ron Lewis, DECM Executive Director Tracy Reed, Deputy Executive Director Project Management & Program Strategy Shankar Rajaram, Executive Project Director – Revenue Vehicles

Proposed action

Authorizes the chief executive officer to execute a sole source contract modification with Siemens Industry, Inc. to (a) procure 10 additional Light Rail Vehicles and additional spare parts in the amount of \$76,000,000 and (b) increase the contract contingency by \$2,000,000, for a combined total of \$78,000,000, for a new total authorized contract amount not to exceed \$763,491,565.

Key features summary

- The contract modification with Siemens Industry, Inc. will be used to procure an additional 10 low-floor light rail vehicles (LRVs), with an option to order up to six additional LRVs, through a sole source change order in the amount of approximately \$66,000,000, including taxes.
- The contract modification will also include provisions for additional spare parts in an amount estimated at \$10,000,000, aimed at long-term obsolescence management by investing in more than originally planned spares for key components such as trucks, communication systems, and brake components.
- The change order for 10 additional LRVs will include management, quality assurance and testing, field commissioning support, shipping and insurance, warranty, and a 25% Performance Bond.
- Delivery and Conditional Acceptance of all additional 10 vehicles is expected no later than March 2028. This milestone includes approximately 6 months of schedule float.
- The vehicle design for the additional light rail vehicles will be the same as that approved for the existing order of 152 Series 2 LRVs. The total number of vehicles procured under this contract will increase from 152 to 162 LRVs, with an option for six additional LRVs.
- Purchasing additional LRVs using a sole source contract modification to the existing Siemens Industry, Inc. contract enables Siemens to reuse the existing manufacturing jigs and expedite delivery of the additional cars to Seattle for commissioning and acceptance years faster than any other type of procurement. Because of the existing Sound Transit contract, Siemens is the only LRV vendor in a position to meet Sound Transit's immediate needs for additional vehicles.

- These additional vehicles will afford Sound Transit needed flexibility to have more 4-car trains, more often, to alleviate projected service capacity shortages and bring service levels closer to original plans.

Background

As discussed with the Board over the last year, Link light rail run times and the spare ratio needed to operate and maintain the LRV fleet are higher than assumed when the ST2 and ST3 system expansion plans were developed. These factors indicate that when all 214 LRVs (Series 1 and Series 2 LRVs combined) are available for revenue service in 2025 light rail capacity will be lower than what was planned to accommodate projected rider demand.

Procuring 10 additional Siemens S700 LRVs and introducing them into revenue service, at least four years ahead of the expected delivery of Series 3 LRVs will afford flexibility for Link light rail to have more 4-car trains, more often. This will help to alleviate the projected service capacity shortages by bringing the service levels closer to the original ST2 plan. The modification includes an option for Sound Transit to order an additional 6 LRVs under this contract. Exercise of that contract option would require Board approval.

Purchasing additional LRVs as a sole source change order under the existing Siemens Industry, Inc. contract has the advantage of utilizing an approved design verified by successful qualification tests and enables the contractor to reuse the existing manufacturing jigs and reduce the otherwise lengthy design and production time for delivery of the additional cars to Seattle.

Based on the Series 2 vehicle fleet performance, and the industry recommendations for obsolescence management, additional spare parts will also be needed for key components such as trucks, communication systems, and brake components.

Two constraints were factored in determining the optimal number of additional LRVs to be procured at this time:

- The Operating and Maintenance Facility (OMF) Central and OMF East facilities are designed to support a total LRV fleet size of 214 vehicles comprised of 152 Series 2 LRVs in revenue service alongside the 62 Series 1 LRV assuming some overnight storage at end of the line and siding tracks. Until OMF South is built, Link light rail would have to explore multiple options for maximizing use of existing infrastructure on the mainline and/or within the boundaries of the two existing OMFs.
- This change order for the additional cars is considered a sole source action because ST had previously executed all options for additional cars established at the time of executing the Siemens contract.

The project was originally baselined in August 2015 and supported by a draft Rail Fleet Management Plan that demonstrated a need for procurement of 122 LRVs to support operation of the Northgate Link, Lynnwood Link and East Link Extension projects funded by the ST2 Plan. Notice to Proceed (NTP) on the LRV Fleet Expansion Contract with Siemens Industry, Inc. was issued on September 27, 2016, for a base order of 122 LRVs and a total amount not to exceed \$553,854,725. The Contract included Options for delivery of up to an additional 30 LRVs and additional spare parts.

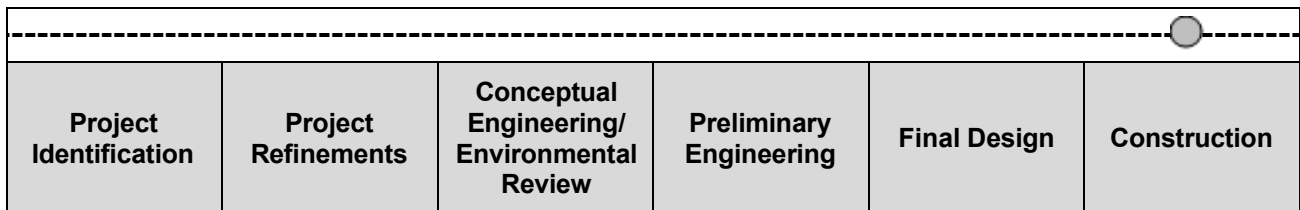
The option for delivery of the 30 additional LRVs was authorized in April 2017 by Board Resolution No. R2017-15 that increased the project baseline budget from \$733,006,000 to \$740,718,000 to account for the additional cost. The option LRVs are meant to provide sufficient fleet availability to operate the Federal Way Link and Downtown Redmond Link Extensions approved in the ST3 Plan.

Last year, Sound Transit staff and service planning consultants reviewed updated: i) roundtrip run times that can be achieved on the extended light-rail lines between Lynnwood, Redmond, and Federal Way

currently in construction, ii) ridership forecasts, and iii) out-of-service time required for LRV fleet maintenance. The results were reported to the Sound Transit Board of Directors REO Committee over several months. That analysis concluded that the currently in-progress fleet expansion to 214 light-rail vehicles is insufficient to meet originally planned service levels and avoid over-crowding of trains in peak periods. An additional 10 vehicles need to be added to the in-service fleet by 2026 to better meet anticipated passenger demand in 2026.

In November 2023, the project baseline budget was increased by \$96,156,000 from \$740,718,000 to \$836,874,000 to allow for the purchase of 10 additional light rail vehicles and additional spare parts, and to replenish contingency for the remainder of commissioning Sound Transit’s existing 152 vehicle order. It was noted that the additional LRVs will allow Link light rail to have more 4-car consists more often in service before Series 3 LRVs are delivered. Sound Transit has determined that a sole source modification to the existing contract for 10 additional LRVs is justified because this is the only practicable manner to timely increase the LRV fleet to meet the project service needs. Exercise of the option to order additional 6 LRVs under this modification would require Board approval.

Project Status



The LRV Manufacturer's approved contract schedule for the Conditional Acceptance milestone of the 10 additional LRVs will be extended to March 2028.

Procurement information

A competitive Request for Proposals for 122 LRVs was issued in November 2015. Of the three submittals received in response to this solicitation, Siemens Industry, Inc. was top ranked and awarded the contract approved by the Board through Motion No. M2016-101 in September 2016.

The initial contract included options for 30 additional light rail vehicles and spare parts for the additional vehicles. The Board authorized the execution of the option in Motion No. M2017-50. A change order to exercise the option for the 30 additional vehicles was executed on May 11, 2017. No further options remain in the contract: as a result, this modification is a sole source modification action.

Sound Transit recommends this contract modification with Siemens Industry, Inc. based upon a determination that the LRVs are being satisfactorily manufactured, that additional ridership capacity is required before the delivery of Series 3 light rail vehicles is feasible. The Sound Transit Chief Procurement Officer has determined that a sole source procurement for 10 additional Series 2 vehicles, with an option for an additional 6 vehicles is justified, and that Siemens Industry Inc. contract is the only practicable source available to Sound Transit to improve our ability to meet passenger and service demands. The Contract Specialist, working with the project team, has determined that the negotiated price for the change order, including the option for up to 6 additional vehicles, is fair and reasonable. Therefore, this modification is in the best interests of Sound Transit.

Siemens Industry, Inc., is the only vendor with production capacity and availability to provide LRV’s in the required timeframe. Sound Transit is pursuing a sole source contract for at least ten additional LRVs to minimize the technical challenges associated with insuring fleet compatibility while benefiting from

shorter development and delivery lead times. This contract modification will also have up to 6 LRVs as options, in addition to the 10 LRVs. The quantity of LRVs feasible is limited by storage constraints until additional operations and maintenance facilities are built. Based on the existing contract with Sound Transit and ongoing production capacity, Siemens Industry, Inc. is the only LRV vendor in a position to meet Sound Transit's near-term needs. Notice of non-competitive procurement was publicly posted for this purchase with no interest from any other 3rd party vendors.

Fiscal information

This is a concurrent action with Motion No. M2024-13 to authorize a contract modification with Hatch Associates Consultants Inc. (formerly known as LTK Engineering) to extend the engineering and inspection consultant services for Series 2 LRVs.

This action is within the baseline budget and sufficient monies remain after approval of this action to fund the remaining work in the Vehicles phase. The current project budget is included in the existing Long Range Financial Plan.

The baseline budget for the Series 2 Long Range Vehicle Fleet Expansion project is \$836,874,000. Within that amount, \$787,168,750 has been set aside in the Vehicles phase. Within the Vehicles phase, \$763,693,000 has been allocated to the budget line item for Light Rail Vehicles. The action would commit \$78,000,000 to this line item and leave a budget balance of \$195,000.

Series 2 LRV Fleet Expansion

(in thousands)

Phase	Authorized Project Allocation	Board Approvals	This Action	Board Approved Plus Action	Uncommitted / (Shortfall)
Agency Administration	\$18,020	\$9,124	\$0	\$9,124	\$8,896
Construction Services	31,685	\$26,066	-	26,066	5,619
Vehicles	787,169	698,956	78,000	776,956	10,213
Total	\$836,874	\$734,146	\$78,000	\$812,146	\$24,728

Phase Detail -

Vehicles

Light Rail Vehicles	\$763,693	\$685,498	\$78,000	\$763,498	\$195
Other Vehicles	23,476	13,458	-	13,458	10,018
Total Phase	\$787,169	\$698,956	\$78,000	\$776,956	\$10,213

Siemens Industry Inc.	Board Approvals to Date	Proposed Action	Proposed Total for Board Approval	Current Contract Spend Status
Contract Amount	\$657,342	\$76,000	\$733,342	\$527,924
Contract Contingency	28,149	2,000	30,149	-
Total Contract Amount	\$685,492	\$78,000	\$763,492	\$527,924
Percent Contingency	4%	3%	4%	0%

Notes:

- Amounts are expressed in Year of Expenditure \$000s.
- System Testing and Start-up are combined with Vehicles.
- For detailed project information, see page 70 of 194 in the 2024 Financial Plan and Proposed Budget.
- * Board Approvals = Commitment and PO Contingency Remaining as of 1/31/2024.

Disadvantaged and small business participation

Participation by small businesses and disadvantaged business enterprises (DBEs)

Not applicable to this action.

Public involvement

Not applicable to this action.

Time constraints

Timely action on this item is required to support negotiation on the pricing for the additional LRVs. An additional month could increase the price by \$200,000.

Prior Board/Committee actions

Resolution No. R2023-35: (1) Amended the Light Rail Vehicle Fleet Expansion project baseline budget by increasing the allocated project baseline budget by \$96,156,000 from \$740,718,000 to \$836,874,000 to allow for the purchase of 10 additional light rail vehicles, additional spare parts, and to replenish contingency for the remainder of commissioning Sound Transit's existing 152 vehicle order, (2) revised the Project Completion Milestone from September 2024 to two distinct Completion Milestones -- Q4 2025 for Conditional Acceptance of the existing order of 152 light rail vehicles, and Q1 2028 for Conditional Acceptance of the additional 10 light rail vehicles, and (3) changed the project name from "Light Rail Vehicle Fleet Expansion" to "Series 2 Light Rail Vehicle Fleet Expansion."

Motion No. M2017-50: Authorized the chief executive officer to execute a contract amendment with Siemens Industry, Inc. to exercise options for 30 additional Light Rail Vehicles and additional spare parts in the amount of \$124,236,840, with a 6% contingency of \$7,400,000, totaling \$131,636,840, for a new total authorized contract amount not to exceed \$685,491,565.

Resolution No. R2017-15: (1) Amended the ST2 Light Rail Vehicle Fleet Expansion project baseline budget to allow for the procurement of 30 additional light rail vehicles by: (a) increasing the baseline budget by \$7,712,000 from \$733,006,000 to \$740,718,000; and; (b) increased the 2017 Annual Budget by \$12,400,000 from \$59,534,335 to \$71,934,335; and (2) adopted Light Rail Vehicle Fleet Expansion as the new project name.

Motion No. M2016-101: Authorized the chief executive officer to execute a contract with Siemens Industry, Inc. to provide 122 light rail vehicles for the ST2 light rail expansion projects, including Northgate Link, East Link, and Lynnwood Link Extensions, in an amount not to exceed \$517,621,239, with a 7% contingency of \$36,233,486, for a total authorized amount not to exceed \$553,854,725.

Resolution R2015-24: (1) Adopted 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) approved Gates 1 through 6 within Sound Transit's Phase Gate process.

Environmental review – KH 2/15/24

Legal review – JSA 3/12/24

Motion No. M2024-14

A motion of the Board of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a sole source contract modification with Siemens Industry, Inc. to (a) procure 10 additional Light Rail Vehicles and additional spare parts in the amount of \$76,000,000 and (b) increase the contract contingency by \$2,000,000, for a combined total of \$78,000,000, for a new total authorized contract amount not to exceed \$763,491,565.

Background

The light-rail vehicle fleet expansion project was originally baselined in August 2015 and supported by a draft Rail Fleet Management Plan that demonstrated a need for procurement of 122 light-rail vehicles to support operation of the Northgate Link, Lynnwood Link and East Link Extension projects funded by the ST2 Plan. In 2016, after a competitive process, Sound Transit entered a contract with Siemens to purchase 122 vehicles with an option for 30 additional vehicles plus spare parts.

In 2017, Sound Transit exercised its option to purchase the 30 additional vehicles (Resolution No. R2017-15), which increased the project baseline budget from \$733,006,000 to \$740,718,000 to account for the additional cost. The additional vehicles were ordered to provide sufficient fleet to operate the Federal Way Link and downtown Redmond Link Extensions approved in the ST3 Plan.

As discussed with the Board over the last year, at least 10 additional vehicles are required because train travel times and the spare ratio needed to operate and maintain the vehicle fleet are higher than assumed in the ST2 and ST3 system expansion plans. The increased run times and projected passenger demand indicate that the 214-vehicle fleet in revenue service in 2025 will not be sufficient to provide the service levels and capacity required to accommodate projected rider demand. Staff determined that the projected service capacity shortages would be best eased within existing vehicle storage constraints by procuring 10 additional light-rail vehicles for revenue service in 2028, (four years ahead of schedule). The additional vehicles will afford the flexibility to operate four-car trains more often.

Based on the Series 2 vehicle fleet performance, and the industry recommendations for obsolescence management, additional spare parts will also be needed for key components such as trucks, communication systems, and brake components.

In November 2023, the project baseline budget was increased by \$96,156,000 from \$740,718,000 to \$836,874,000 to purchase 10 additional light-rail vehicles and additional spare parts, for the existing 152 vehicle order. Because the 10 vehicles are needed as soon as 2026 and must be both reliable and compatible with our existing fleet, Siemens is the only source from which to procure the vehicles within the time needed. Siemens can manufacture the vehicles using an approved design verified by successful qualification tests. Unlike a new procurement which would require seven years before vehicle delivery, Siemens can reuse the existing manufacturing jigs and expedite delivery of the additional vehicles so that they can be put in service by 2028,

The proposed sole-source contract modification with Siemens will be used to procure an additional 10 low-floor light rail vehicles (LRVs), with an option to order up to six additional vehicles, in the amount of approximately \$66,000,000, including taxes. The vehicle design for the additional vehicles will be the same as that approved for the existing order of 152 Series 2 vehicles. The total number of vehicles procured under this contract will increase from 152 to 162.

The contract modification will also include provisions for additional spare parts in an amount estimated at \$10,000,000, aimed at long-term obsolescence management by investing in more than originally planned spares for key components such as trucks, communication systems, and brake components.

The contract modification will include management, quality assurance and testing, field commissioning support, shipping and insurance, warranty, and a 25% Performance Bond.

The 10 vehicles are scheduled to be delivered no later than March 2028.

Motion

It is hereby moved by the Board of the Central Puget Sound Regional Transit Authority that the chief executive officer is authorized to execute a sole source contract modification with Siemens Industry, Inc. to (a) procure 10 additional Light Rail Vehicles and additional spare parts in the amount of \$76,000,000 and (b) increase the contract contingency by \$2,000,000, for a combined total of \$78,000,000, for a new total authorized contract amount not to exceed \$763,491,565.

APPROVED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on March 28, 2024.



Dow Constantine
Board Chair

Attest:



Kathryn Flores
Board Administrator