

MOTION NO. M2012-74
Contract Amendment for Design Services and Testing of Track Bridge System for the East Link Extension

MEETING:	DATE:	TYPE OF ACTION:	STAFF CONTACT:	PHONE:
Capital Committee	10/11/12	Recommendation to Board	Ahmad Fazel, DECM Executive Director	206-398-5389
Board	10/25/12	Final Action	Ron Lewis , Executive Project Director, East Link John Sleavin, Deputy Project Director, East Link	206-689-4905 206-398-5150

PROPOSED ACTION

Authorizes the chief executive officer to execute a contract amendment with Parsons Brinckerhoff, Inc. for fabrication and testing of the I-90 track bridge system prototype in an amount of \$10,073,327, with a 20% contingency of \$2,014,673, totaling \$12,088,000 for a total authorized contract amount not to exceed \$16,969,800.

KEY FEATURES

- The proposed action funds Phase 2 of the contract for (1) the fabrication of the I-90 Track Bridge System prototype, (2) the design and construction of a test track at the national testing facility in Colorado, and (3) the testing and monitoring of the track bridge prototype. The testing includes:
 - Replicating all movement of the transition spans
 - Testing of the track bridge through critical movements
 - Monitoring rider comfort levels
 - Measuring noise levels
 - Transporting the light rail vehicles (LRV) to and from Colorado for the testing.
 - Designing modifications and retesting, if needed
- Testing is scheduled to be completed in winter 2013/2014. This schedule meets recommendations of several expert and independent reviews for early design and testing.
- The original contract includes the option to negotiate amendments for Phase 2, subject to Board authorization. Also, Phase 2 of the contract has an incentive-based fee to encourage and reward completion of the testing as efficiently as possible.
- Due to the unique nature of the research and development project, a 20% contingency is needed. The contingency covers additional testing, if desired.

BACKGROUND

East Link extends light rail to east King County via I-90 from downtown Seattle to downtown Bellevue and the Overlake area of Redmond, with stations serving Rainier Avenue/I-90, Mercer Island, South Bellevue, Downtown Bellevue, Overlake Hospital, the Bel-Red Corridor, Overlake Village, and the Overlake Transit Center. The East Link project route, profiles, and station locations, including the tunnel route in downtown Bellevue, were selected by the Sound Transit Board on July 28, 2011. Revenue service between Seattle and the Overlake Transit Center is forecast for 2023.

The Track Bridge System will allow LRVs to travel across the existing I-90 bridge expansion joints. The expansion joints, which connect the floating section of the I-90 bridge to the fixed bridge piers, move by expansion, contraction and rotation to accommodate movement of the floating sections of

the bridge. Light rail tracks will need to move with the expansion joints to allow continuous contact between the tracks and LRVs. Prototype design and testing of the Track Bridge System is planned to be completed before construction on the I-90 floating bridge reversible HOV-lanes.

In 2008, the Washington State Legislature Joint Transportation Committee (JTC), hired an Independent Review Team (IRT) to evaluate the original floating bridge analysis, subsequent studies, tests, and concept studies to determine the feasibility and impact of construction and operation of light rail on the I-90 Floating Bridge and approach spans. While there are similar examples of light rail across suspension and cable-stayed bridges elsewhere, there is no precedent for implementing light rail across a floating bridge. Based on extensive study, analysis, and discussions with Sound Transit and WSDOT, the IRT concluded that all issues associated with the construction of light rail on the I-90 floating bridge and approach spans could be addressed or mitigated. The IRT recommended early prototype development and testing due to the unique nature of the Track Bridge System. The ST2 Expert Review panel concurred with the findings of the IRT and also recommended early prototyping.

In December 2009, Sound Transit held a track bridge workshop to verify and improve the concept design of the track bridge. The expert panel at the workshop recommended considering special contracting approaches to design, fabricate, and test the prototype. Sound Transit developed the contracting approach in consultation with WSDOT and the industry and advertised the procurement in the fall of 2010. A selection panel composed of Sound Transit and WSDOT staff selected Parsons Brinckerhoff, Inc. as the most qualified for negotiation. The Parsons Brinckerhoff, Inc. team was selected as the best qualified team to complete Phase 1, Track Bridge System design, and also to complete Phase 2, the prototype construction and testing. The Sound Transit team is recommending the Parsons Brinckerhoff, Inc. continue with Phase 2 of the project.

Phase 1 of the project investigated various track bridge design options and selected the CESURA option to take to 90% drawings and specifications. It also performed computer modeling of the LRV over the different track bridge concepts and a computer model of the track bridges. The last part of the Phase 1 work is the component testing of the CESURA track bridge at the University of Washington Engineering Laboratory.

Phase 3 is an option in the Parsons Brinckerhoff, Inc. contract. Phase 3 allows for the construction and installation of the eight track bridges in the I-90 corridor.

FISCAL IMPACT

East Link	2012 TIP	Commitment to Date	This Action	Board Approved Plus Action	Uncommitted / (Shortfall)
Agency Administration	66,539	12,662	0	12,662	53,876
Preliminary Engineering	61,123	55,190	0	55,190	5,933
Final Design	223,685	132,975	12,088	145,063	78,622
Right of Way	365,408	14,827	0	14,827	350,581
Construction	0	0	0	0	0
Construction Services	0	0	0	0	0
Third Party Agreements	40,064	3,876	0	3,876	36,188
Vehicles	0	0	0	0	0
Total Current Budget	756,819	219,531	12,088	231,619	525,200
Phase Detail - Preliminary Engineering					
Track Bridge (Phase 1)	5,000	4,896	0	4,896	104
Other Preliminary Engineering Phase Activities	56,123	50,294	0	50,294	5,829
Total Phase	61,123	55,190	0	55,190	5,933
Phase Detail - Final Design					
Track Bridge (Phase 2)	15,900	0	12,088	12,088	3,812
Other Final Design Phase Activities	207,785	132,975	0	132,975	74,810
Total Phase	223,685	132,975	12,088	145,063	78,622
Phase 1 of Track Bridge System Contract Details					
	Board Approvals to Date	Current Approved Contract Status	Proposed Action	Proposed Total for Board Approval	
Contract Amount	4,438	4,438	0	4,438	
Contingency	444	444	0	444	
Total	4,882	4,882	0	4,882	
Percent Contingency	10%	10%	0%	10%	
Phase 2 of Track Bridge System Contract Details					
	Board Approvals to Date	Current Approved Contract Status	Proposed Action	Proposed Total for Board Approval	
Contract Amount	0	0	10,073	10,073	
Contingency	0	0	2,015	2,015	
Total	0	0	12,088	12,088	
Percent Contingency	0%	0%	20%	20%	

Notes:

Amounts are expressed in Year of Expenditure \$000s.
 Board Approvals to Date includes amounts through August 30th 2012, plus any pending Board Actions.
 Project Budget is located on page 47 of the 2012 Transit Improvement Plan (TIP).
 Board Approvals = Committed to-date + Contingency.
 I-90 Track Bridget System Phase 1 contract Board has approved on 02.10.2011, M2011-08.

SMALL BUSINESS PARTICIPATION

Subconsultant/Subcontractor	Business Type	% of Work	Dollar Value
KBA	DBE	0.3%	\$ 26,000
SC Solutions	Small Business	2.3%	\$ 230,000
Daniels Railroad Engineering	Small Business	0.2%	\$ 22,000
Ergosynch	DBE	1.0%	\$ 105,000
Wilson Ihrig Associates, Inc	Small Business	1.8%	\$ 180,000
Total		5.6%	\$563,000

EQUAL EMPLOYMENT WORKFORCE PROFILE

40 employees; 13% women; 15% minority

PRIOR BOARD/COMMITTEE ACTIONS

Motion No. M2011-08 - Authorized the chief executive officer to execute a contract with Parsons Brinkerhoff Inc. to design a prototype of the I-90 Track Bridge System for the East Link project in the amount of \$4,438,000, with a 10% contingency of \$443,800, for a total authorized contract amount not to exceed \$4,881,800.

TIME CONSTRAINTS

A one month delay would not have a significant impact on this contract.

ENVIRONMENTAL REVIEW

JI 09/21/2012

LEGAL REVIEW

LA 10/5/12

MOTION NO. M2012-74

A motion of the Board of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a contract amendment with Parsons Brinckerhoff, Inc. for fabrication and testing of the I-90 track bridge system prototype in an amount of \$10,073,327, with a 20% contingency of \$2,014,673, totaling \$12,088,000 for a total authorized contract amount not to exceed \$16,969,800.

BACKGROUND:

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MOTION:


It is hereby moved by the Board of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a contract amendment with Parsons Brinckerhoff, Inc. for fabrication and testing of the I-90 track bridge system prototype in an amount of \$10,073,327, with a 20% contingency of \$2,014,673, totaling \$12,088,000 for a total authorized contract amount not to exceed \$16,969,800.

APPROVED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on October 25, 2012.



Pat McCarthy
Board Chair

ATTEST:



Marcia Walker
Board Administrator