

**SOUND TRANSIT
STAFF REPORT**

MOTION NO. M2003-102

**Contract amendment for additional Link civil engineering final design services for the
Beacon Hill Tunnel**

Meeting:	Date:	Type of Action:	Staff Contact:	Phone:
Finance Committee	10/2/03	Discussion/Possible Action to Recommend Board Approval	Ahmad Fazel, Link Director Joe Gildner, Link Deputy Director	(206) 398-5389 (206) 689-3350
Board	10/9/03	Action	Bob Parsons, Link Civil Engineering Manager	(206) 398-5150

Contract/Agreement Type:	✓	Requested Action:	✓
Competitive Procurement	4	Execute New Contract/Agreement	
Sole Source		Amend Existing Contract/Agreement	4
Interlocal Agreement		Contingency Funds Required	
Purchase/Sale Agreement		Budget Amendment Required	

3Applicable to proposed transaction

OBJECTIVE OF ACTION

To amend the civil facilities final design contract for Beacon Hill Tunnel (Segment D710) to include the following:

- Design modifications to incorporate changes to excavation methods and initial support measures for the Beacon Hill Tunnel station structures based on results of the exploratory test shaft program.
- Extend design services to provide support for two-step bid process, and support for bid program through revised construction Notice to Proceed in June 2004.

ACTION

Authorizes the Chief Executive Officer to execute a contract amendment with the Hatch Mott MacDonald/Jacobs Joint Venture to provide additional civil engineering final design services for the Beacon Hill Tunnel in the amount of \$975,000, with a 10% contingency of \$97,500, for a total of \$1,072,500, and for a new total contract amount not to exceed \$13,088,763.

KEY FEATURES

- Provides additional engineering services to allow incorporation into the contract documents of changes to the excavation methods and initial support measures for the station headhouse basement structures, station shafts, and station tunnels, based on information on ground and groundwater conditions obtained from the exploratory test shaft program, as proposed by Hatch Mott MacDonald/Jacobs Joint Venture (HMMJ) and as recommended by Sound Transit's independent Tunnel Peer Review Panel.

- Extends design services to provide support for the two-step bid process (Pre-Qualification + Bid) for the D710 contract expanded to include for construction of McClellan Station, and support for the bid program through the revised construction Notice to Proceed in June 2004.

BUDGET IMPACT SUMMARY

Project Description: Central Link Initial Segment
Current Status: Final Design/Construction
Projected Completion Date: 2009

Action Outside of Adopted Budget:	Y/N	Y Requires Comment
This Line of Business	N	
This Project	N	
This Phase	N	
This Task	Y	Requires transfer from Final Design Unallocated Contingency
Budget amendment required	N	
Key Financial Indicators:	Y/N	Y Requires Comment
Contingency funds required	N	
Subarea impacts	N	
Funding required from other parties other than what is already assumed in financial plan	N	

N = Action is assumed in current Board-adopted budget. Requires no budget action or adjustment to financial plan

BUDGET DISCUSSION

This proposed action authorizes execution of a contract amendment with the HMMJ and allocation of contingency for a total not to exceed \$1,072,500 for additional civil engineering final design services for the Beacon Hill Tunnel, yielding a new total authorized expenditure not to exceed \$13,088,763.

The total adopted capital budget for the Initial Segment is \$2.07 billion. Within the final design phase of that budget, the current approved budget for Segment D710 final design is \$12,100,000. The Sound Transit Board has previously authorized expenditures in the amount \$12,016,263. Should the proposed action be approved, the revised total expenditure would be \$13,088,763, which exceeds the current budget by \$988,763. This shortfall would be funded through a transfer from the unallocated contingency within the final design phase with a current balance of \$2,069,673.

REVENUE, SUBAREA, AND FINANCIAL PLAN IMPACTS

The proposed action is consistent with the Board adopted 2003 budget and is affordable within the agency’s current long-term financial plan and subarea financial capacity. The action will have no new revenue impacts on Sound Transit.

BUDGET TABLE

Action Item: Hatch Mott McDonald/Jacobs (provide additional civil engineering final design services for the Beacon Hill Tunnel (Segment D710))

(Year of Expenditure \$000)

Initial Segment	Adopted FY2003 Budget (A)	Committed To Date (B)	This Action (C)	Total Committed & Action (D)	Uncommitted (Shortfall) (E)
1 Agency Administration	226,780	108,036		108,036	118,744
2 Preliminary Engineering	35,000	33,358		33,358	1,642
3 Final Design	123,000	111,828	1,073	112,901	10,099
4 Right of Way	233,016	116,660		116,660	116,356
5 Construction	1,172,633	156,019		156,019	1,016,614
6 Construction Services	82,464	9,008		9,008	73,456
7 Third Party Agreements	58,800	42,395		42,395	16,405
8 Vehicles	138,307	-		-	138,307
9 Contingency				-	-
10 Total Current Budget	2,070,000	577,304	1,073	578,377	1,491,623

Phase Budget Detail

11 Segment D710 Final Design	12,100	12,016	1,073	13,089	(989)
12 Other Segments	107,740	98,721	-	98,721	9,018
13 Unallocated Contingency	3,160	1,091	-	1,091	2,070
14 Total Phase	123,000	111,828	1,073	112,901	10,099

(B) Committed to Date amounts are from the Link Program Cost Summary Report (HQ Reports) for August 2003 + board motions not yet included in report as follows:

	Final Design	Right of Way	Construction	Construction Svcs	Third Parties
Commitments through August 2003	110,533	116,468	10,400	3,432	26,888
Other board motions	1,296	193	145,619	5,575	15,507
Total phase commitments	111,828	116,660	156,019	9,008	42,395

Contract Budget	Current Approved Contract Value (F)	Spent to Date (G)	Proposed Action (H)	Proposed Total Contract Value (I)
15 Contract Amount	11,192	10,306	975	12,167
16 Contingency	824	-	98	922
17 Total	12,016	10,306	1,073	13,089
18 Percent Contingency	7%	0%	10%	8%

(F) Current Approved Contract Value reflects prior agreement amendments for Shannon & Wilson to provide geotechnical services as authorized by board motions M99-17, M2000-19, M2000-40, M2000-46, M2000-107, and M2002-136.

Budget Shortfall

Task Level	\$ (J)	Potential Resources (K)	Source (L)
19 Segment D710 Final Design	989	2,070	Unallocated Final Design Phase Contingency

M/W/DBE – SMALL BUSINESS PARTICIPATION

Prime Consultant/Contractor

HMMJ's original M/W/DBE goal on the contract established in 2000 was 19.24%. In February 2002, the contract was amended and a revised M/W/DBE goal was established at 13% due to the specialized nature of the work to be performed. However, the additional scope for this current contract amendment requires primarily the services of highly specialized tunnel and

geotechnical engineers who are currently engaged in the project, but are not M/W/DBE. As a result, the M/W/DBE participation will decrease to 12.17%.

Utilization Breakdown Table

Subconsultant	Business Type	% of Work	Dollar Value
ICON	M/DBE	2.32%	\$ 289,518
Bright Engineering	M/DBE	2.25%	\$ 280,503
EnviroIssues	W/DBE	.41%	\$ 50,748
Rosewater	W/DBE	2.74%	\$ 341,705
C3MG	W/DBE	1.26%	\$ 156,897
Gary Struthers	M/DBE	1.62%	\$ 202,287
Symonds	W/DBE	.75%	\$ 94,194
Shannon & Wilson 2 nd Tier subs	W/DBE	.60%	\$ 74,896
Shannon & Wilson 2 nd Tier subs	M/DBE	.22%	\$ 27,878
Total		12.17%	\$1,518,626

HISTORY OF PROJECT

A contract with HMMJ was executed on August 1, 2000, for final design of the civil facilities for the Beacon Hill Tunnel. Scope included design of a limited portion of the shaft and tunnel structures for the Beacon Hill Station and the completion was to be deferred to a future construction phase. Subsequently, and after a pause in the design program from February 23, 2001 through November 14, 2001, the Sound Transit Board in February 2002 authorized completion of the Beacon Hill Station with a revised station configuration and a revised tunnel alignment to avoid contaminated ground identified on the original alignment.

In March 2002, Sound Transit's Tunnel Peer Review Group recommended that an exploratory test shaft be excavated down to platform level at the location of the future station entrance shaft to examine the soils and anticipated tunneling conditions. It was the opinion of the Tunnel Peer Review Group (with which Sound Transit staff concurred) that the exploratory shaft and associated testing program would allow the tunneling risks to be better evaluated and the design to be modified appropriately as required. Of equal importance, the tunnel contractors bidding on the C710 construction would be able to inspect the ground at tunnel depths and would be invited to observe the ground's behavior during test shaft construction. They would thus be better able to estimate the tunneling risks involved and would have increased confidence in submitting competitive bids, avoiding the addition of unnecessary construction contingencies. The Federal Transit Administration (FTA) subsequently confirmed that such test shafts had been installed with beneficial results during final design of other FTA tunnel projects around the country, as a means of reducing construction risks and costs. Accordingly, in September 2002, the Sound Transit Board authorized the exploratory test shaft program to proceed in conjunction with an extended civil design program required to accommodate architectural final design delayed pending FTA final design approval.

Excavation for the test shaft was started in April 2003 and was completed in August 2003. Following completion of test shaft excavation, modifications to design of the excavation methods and initial support measures for the station headhouse basement structures, station shafts and station tunnels were proposed by HMMJ, based on the experiences of the test shaft construction and the ground and groundwater conditions identified. These proposals were

endorsed by staff and by Sound Transit's independent Tunnel Peer Review Panel at meetings on September 3, 2003 and September 4, 2003, as a means of reducing construction risks and costs to Sound Transit. As an additional means of reducing construction risks, Sound Transit staff, with concurrence of the Tunnel Peer Review Panel, are proposing to implement a two-step bid process of pre-qualification and then bid for the Beacon Hill Tunnel Contract.

**Prior Board or Committee Actions
and Relevant Board Policies**

Motion or Resolution Number	Summary of Action	Date of Action
M2002-98	Executed a contract amendment with the Hatch Mott MacDonald/Sverdrup Joint Venture to provide additional civil engineering final design services for the Beacon Hill Station in the amount of \$2,571,701 for a new total authorized contract amount not to exceed \$12,016,263.	9/12/02
M2002-09	Executed a contract amendment with Hatch Mott MacDonald/Sverdrup (HMM/S) Joint Venture to provide additional Civil Engineering Final Design Services in the amount of \$3,355,269 plus a contingency of \$287,293 for a total of \$3,642,562 and for a new total authorized contract amount not to exceed \$9,444,562	2/14/02
M2000-55	Executed a contract with Hatch Mott MacDonald/Sverdrup for civil engineering final design services associated with construction of the Beacon Hill tunnel segment for the Central Link Light Rail project for a contract amount of \$5,275,000 with a 10% contingency of \$527,000 for a total authorized amount not to exceed \$5,802,000.	7/13/00

CONSEQUENCES OF DELAY

Significant delay in Board action would result in delay to construction Notice to Proceed for the Beacon Hill Tunnel contract which would result in a reduction in the available overall project construction schedule flexibility.

PUBLIC INVOLVEMENT

Not applicable to this action.

LEGAL REVIEW

MB 9/19/03

SOUND TRANSIT

MOTION NO. M2003-102

A motion of the Board of the Central Puget Sound Regional Transit Authority authorizing the Chief Executive Officer to execute a contract amendment with the Hatch Mott MacDonald/Jacobs Joint Venture to provide additional civil engineering final design services for the Beacon Hill Tunnel in the amount of \$975,000, with a 10% contingency of \$97,500, for a total of \$1,072,500, and for a new total contract amount not to exceed \$13,088,763.

Background:

A contract with Hatch Mott MacDonald/Sverdrup Joint Venture (HMMJ) was executed on August 1, 2000, for final design of the civil facilities for the Beacon Hill Tunnel Segment (D710). Scope included design of a limited portion of the shaft and tunnel structures for the Beacon Hill Station and completion was to be deferred to a future construction phase. Subsequently, and after a pause in the design program from February 23, 2001 through November 14, 2001, the Sound Transit Board in February 2002 authorized completion of the Beacon Hill Station with a revised station configuration and a revised tunnel alignment to avoid contaminated ground identified on the original alignment.

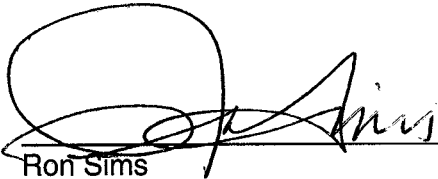
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Motion:

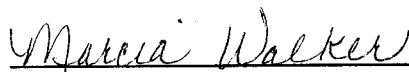
It is hereby moved by the Board of the Central Puget Sound Regional Transit Authority that the Chief Executive Officer is authorized to execute a contract amendment with the Hatch Mott MacDonald/Jacobs Joint Venture to provide additional civil engineering final design services for the Beacon Hill Tunnel in the amount of \$975,000, with a 10% contingency of \$97,500 for a total of \$1,072,500, and for a new total contract amount not to exceed \$13,088,763.

APPROVED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on October 9, 2003.



Ron Sims
Board Chair

ATTEST:



Marcia Walker
Board Administrator