

**SOUND TRANSIT
STAFF REPORT**

MOTION NO. M2003-101

Contract amendment for additional geotechnical work 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 geotechnical engineering contract for Beacon Hill Tunnel (segment D710).

ACTION

Authorizes the Chief Executive Officer to execute a contract amendment with the Shannon & Wilson, Inc., to provide additional geotechnical engineering services for the Beacon Hill Tunnel in the amount of \$251,800, with a 10% contingency of \$25,180 for a total of \$276,980, and for a new total authorized contract amount not to exceed \$11,078,581.

KEY FEATURES

- Provides for additional geotechnical borings and testing in the vicinity of Beacon Hill Station as a result of information obtained from the recently completed Test Shaft program at the station site.
- Scope includes the following:
 - Additional geotechnical subsurface exploration in the vicinity of Beacon Hill Station as determined to be necessary following completion of the Test Shaft.
 - Additional geotechnical engineering support to the civil facilities final designer for the Beacon Hill Tunnel contract, including revisions to previously prepared geotechnical reports.
 - Support to Sound Transit staff for the two-step bid process (pre-qualification + bid) for the C710 tunnel construction contract.

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 Phase 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 will authorize execution of a contract amendment with Shannon & Wilson, Inc., and assignment of contingency for a total amount not to exceed \$276,980 to provide additional geotechnical engineering services for the Beacon Hill Tunnel (Segment D710) in the Initial Segment, yielding a revised total not to exceed expenditure of \$11,078,581 under this contract for multiple Link projects (i.e., Initial Segment and North Link).

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 geotechnical engineering of tunnels is \$2,216,872. Of this amount, the Sound Transit Board has previously authorized expenditures in the amount of \$2,178,999. Should the proposed action be approved, the revised total not to exceed expenditure would be \$2,455,979, which would exceed the current budget by \$239,107. 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: Shannon & Wilson (provide additional geotechnical engineering 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	112,624	277	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	578,100	277	578,377	1,491,623

Phase Budget Detail

11 Segment D710 Geotech	2,217	2,179	277	2,456	(239)
12 Other Segments	117,623	109,354	-	109,354	8,269
13 Unallocated Contingency	3,160	1,091	-	1,091	2,070
14 Total Phase	123,000	112,624	277	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	2,091	193	145,619	5,575	15,507
Total phase commitments	112,624	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	9,840	9,971	252	10,092
16 Contingency	961	-	25	986
17 Total	10,802	9,971	277	11,079
18 Percent Contingency	10%	0%	10%	10%

(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 Geotech	239	2,070	Unallocated Final Design Phase Contingency

M/W/DBE – SMALL BUSINESS PARTICIPATION

Prime Consultant/Contractor

Shannon & Wilson, Inc.'s goal for M/W/DBE participation in the original 1999 contract was 25%. This participation stands at 24.25%, as of the last payment invoice. Shannon & Wilson, Inc., will not be utilizing any M/W/DBE subcontractors to perform this work. However, Shannon & Wilson, Inc., will utilize M/W/DBE subcontractors if subcontractor opportunities arise.

The overall impact to the M/W/DBE attainment of this additional work will be 23.94%, which exceeds the agency DBE goal of 18%.

Shannon & Wilson, Inc., typically use M/DBE subcontractors for drilling, testing, and geological logging services. However, the explorations planned in the proposal include continuous sonic core drilling, for which there are no M/DBE firms in the northwest that perform this type of work.

Utilization Breakdown Table

Subconsultant	Business Type	% of Work	Dollar Value
PacRim Geotechnical	M/DBE	3.58%	\$367,393.10
Myers Biodynamics	WBE	1.16%	\$118,992.79
Civil Tech Corporation	M/W/DBE	0.57%	\$58,208.60
Yonemitsu Geological Services	M/DBE	1.82%	\$186,546.75
TDX	M/DBE	0.41%	\$42,028.68
Cherokee General Corporation	M/W/DBE	10.38%	\$1,066,011.15
Fujitani Hilts & Associates	M/DBE	2.47%	\$253,565.84
Pitcher Drilling	WBE	3.55%	\$364,173.35
Total		23.94%	\$2,456,920.26

HISTORY OF PROJECT

A contract with Shannon & Wilson, Inc., was originally executed in early 1999 for the provision of geotechnical services for the design of the Central Link project, including the Beacon Hill Tunnel and station. 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 Beacon Hill 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.

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 the Beacon Hill final design contractor, Hatch Mott McDonald Jacobs Joint Venture, 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.

Sound Transit staff is thus seeking authorization for a contract amendment with Shannon & Wilson, Inc., for additional geotechnical subsurface exploration in the vicinity of Beacon Hill, additional geotechnical engineering support to the civil facilities final designer for the Beacon Hill tunnel contract, together with authorization for additional civil engineering support for the two-step bid program.

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

Motion or Resolution Number	Summary of Action	Date of Action
M2002-136	Executed a contract amendment with Shannon & Wilson, Inc., to provide geotechnical services necessary for final design of the Link Pine Street Stub Tunnel in the amount of \$200,000, with a 10% contingency of \$20,000, for a total of \$220,000, and a new total authorized contract amount not to exceed \$10,801,601.	12/12/02
M2000-107	Executed an amendment to contract RTA/LR 106-98F with Shannon & Wilson, Inc., for geotechnical engineering services of the Central Link light rail project. The action extends the contract period to June 30, 2001 and establishes a contract amendment amount of \$1,093,250 and a 10% contingency of \$109,325 for a total contract amendment amount not to exceed \$1,202,575 and for a total contract amount not to exceed \$10,581,601.	10/26/00
M2000-46	Executed a contract amendment with Shannon & Wilson, Inc., to proceed with additional professional geotechnical engineering boring, lab work and reports for the north corridor in the amount of \$192,931 plus a 10% contingency of \$19,293 for a total amendment not to exceed \$212,224, and for a total contract amount not to exceed \$9,379,026.	6/22/00
M2000-40	Executed a contract amendment with Shannon & Wilson, Inc., adding a 10% contingency of \$131,790 to a previously approved contract amendment of \$1,317,898 for a total authorized amount not to exceed \$1,449,688 for geotechnical engineering services on the Central Link Light Rail project.	5/18/00
M2000-19	Executed a contract amendment to Contract No. RTA/LR 106-98B for geotechnical engineering services with Shannon & Wilson, Inc., and to proceed with professional geotechnical engineering work on the Northgate segment in an amount of \$1,317,898, with a 20 percent contingency of \$260,000 for a total amount not to exceed \$1,577,898.	2/24/00
M99-17	Executed a contract with Shannon & Wilson, Inc. for geotechnical engineering services for design support on the Central Link Light Rail Project in an amount not to exceed \$7,736,407, which includes a 10% contingency.	3/25/99

CONSEQUENCES OF DELAY

Significant delay in Board action would result in delay in the completion of the Beacon Hill Tunnel contract documents and a potential delay to the Notice to Proceed for the Beacon Hill Tunnel contract.

PUBLIC INVOLVEMENT

Sound Transit staff will notify affected properties before and geotechnical work is undertaken.

LEGAL REVIEW

MB 9/19/03

SOUND TRANSIT

MOTION NO. M2003-101

A motion of the Board of the Central Puget Sound Regional Transit Authority authorizing the Chief Executive Officer to execute a contract amendment with Shannon & Wilson, Inc., to provide additional geotechnical engineering services for the Beacon Hill Tunnel in the amount of \$251,800, with a 10% contingency of \$25,180, for a total of \$276,980, and for a new total authorized contract amount not to exceed \$11,078,581.

Background:

A contract with Shannon & Wilson, Inc. was originally executed in early 1999 for the provision of geotechnical services for the design of the Central Link project, including the Beacon Hill tunnel and station. 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 Beacon Hill 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.

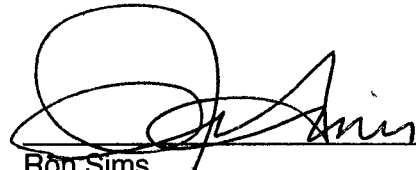
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Sound Transit staff is thus seeking authorization for a contract amendment with Shannon & Wilson, Inc. for additional geotechnical subsurface exploration in the vicinity of Beacon Hill, additional geotechnical engineering support to the civil facilities final designer for the Beacon Hill tunnel contract, together with authorization for additional civil engineering support for the two-step bid program.

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 Shannon & Wilson, Inc., to provide additional geotechnical engineering services for the Beacon Hill Tunnel in the amount of \$251,800, with a 10% contingency of \$25,180, for a total of \$276,980, and for a new total authorized contract amount not to exceed \$11,078,581.

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