

STAFF REPORT
SOUND TRANSIT
MOTION NO. M2000-93

**Contract with Modern Transit Constructors
for Conceptual Engineering of Design Options
for the Design-Build Tunnel**

Meeting:	Date:	Type of Action:	Staff Contact:	Phone:
Finance Committee	9/21/00	Discussion/Possible Action	Paul Bay, Director, Link Bill Houppermans, Chief Engineer, Link	(206)398-5134 (206)398-5125

PROPOSED ACTION

This action authorizes the Executive Director to execute a contract with Modern Transit Constructors (MTC) for conceptual engineering of a large number of design options for the design-build tunnel, with the aim of identifying and evaluating the potential cost-savings for each option. Conceptual engineering will enable the agency to evaluate the cost-effectiveness of each option, whether it is technically viable, and whether it is consistent with scope, schedule and budget requirements for the design-build contract. The action establishes a not-to-exceed contract amount of \$1.8 million.

KEY FEATURES

Highlights of Proposed Action:

- ◆ Authorizes the Executive Director to execute a contract with MTC for conceptual engineering of design options.
- ◆ Establishes a not-to-exceed contract amount of \$1.8 million.

Discussion of Proposed Action:

Sound Transit issued a Request for Proposals (RFP) for the design and construction of tunnels and subway stations under a design-build contract. Two technical and cost proposals were submitted, including the one submitted by MTC. After evaluating the proposals in accordance with the criteria set forth in the RFP, Sound Transit selected MTC as the contractor-elect, and has begun negotiations with MTC for a design-build contract.

MTC submitted various ideas for achieving substantial cost savings, which if determined to be cost-effective, technically viable, and consistent with scope, schedule and budget requirements, would result in substantial cost savings. The level of design effort required to conduct these analyses is beyond the scope of engineering work required by the RFP and is work that MTC would not ordinarily be expected to perform as part of its response to the RFP or in the course of the contract negotiations. The attached work sheet describes the additional work tasks to be included in the proposed scope of work.

Recent experience indicates that additional value engineering work can result in substantial savings to the agency. The Finance Committee approved Motion M2000-16 to authorize a \$1.65 million to fund additional engineering and redesign work to be performed by the Burlington Northern & Santa Fe Railroad in order to evaluate potential design revisions to the capital improvements plan proposed by the railroad. As a result of this additional work, the agency reduced the cost of the capital improvements by \$40-45 million.

Approval by the Finance Committee of this contract for a not-to-exceed amount of \$1.8 million will provide the funds necessary to compensate MTC for this additional engineering and design work needed to meaningfully evaluate which cost saving ideas are feasible, cost-effective and within scope, schedule, and budget needs. If a cost-saving idea is determined to be cost-effective and technically viable without causing adverse impact to scope, schedule and budget, that idea will become the subject of contract negotiations with MTC and may be incorporated into the proposed design-build contract to be considered by the Board when the negotiations are completed.

In the event that negotiations with MTC are not successful, Sound Transit will own the work products generated by MTC under this contract. These work products may be used by Sound Transit in any subsequent negotiations with Puget Link Constructors (the other design-build proposer), or to pursue a traditional design-bid-build approach, if necessary.

The RFP selection process evaluated MTC's history and commitment to equal opportunity and utilization of MWDBE, small and local businesses. MTC's member companies have a strong history of such utilization on prior public works projects. MTC has committed to make good faith efforts to continue these practices, commensurate with the opportunities available in the scope of work under this contract.

BUDGET

Funding for this scope of work is included in the overall project budget, the budget for the design-build contract (LB235) and in the FY2000 capital budget. Total construction for Central Link is budgeted to be \$1,747,985,000 (page 124 of the 2000 Adopted budget). The construction budget for the LB235 line segment is \$586,130,000, which includes not only the design-build work (\$557 million), but also construction management, certain mitigation, and other activities related to this line segment.

To date, the Board has approved two motions that draw on the budget for this task: the Finance Committee authorized the payment of up to three honorarium payments at \$900,000 each to compensate the unsuccessful design-build firms for the work in preparing proposals (because only two firms submitted proposals, only one \$900,000 honorarium payment will be required); and authorized \$2,865,000 to fund a MOA with King County for use of Convention Place Station for construction staging.

Total Project Budget	Budget for this Task (A)	Expenditures to Date (B)	Total Amount Requested (C)	Shortfall* or Surplus (A-[B+C])
\$1,747,985,000	\$586,130,000	\$4,665,000	\$1,800,000	\$579,665,000
*Amount of Shortfall	Potential Revenues	Funding Sources		

ALTERNATIVES

- Completion of the analyses of cost-saving ideas by a separate firm or firms other than MTC.
- Negotiation of a design-build contract with MTC without fully exploring the cost-saving ideas.

The first alternative would take additional time and would make negotiation of a successful design-build contract much more difficult. The second alternative would result in a less cost-effective contract and one with a higher risk of subsequent expensive change orders.

CONSEQUENCES OF DELAY

Authorization of this agreement is critical to completion of work necessary to bring a recommended design-build contract to the Board for review by the end of this year.

REGIONAL PARTNERSHIP AND COOPERATION

N/A.

PUBLIC INVOLVEMENT

N/A.

LEGAL REVIEW

DLB -9/13/2000

SOUND TRANSIT

MOTION NO. M2000-93

A motion of the Finance Committee of the Central Puget Sound Regional Transit Authority authorizing the Executive Director to execute a contract with Modern Transit Constructors (MTC) for conceptual engineering of a large number of design options for the design-build tunnel, with the aim of identifying and evaluating the potential cost-savings for each option. The action establishes a not-to-exceed contract amount of \$1.8 million.

Background:

Sound Transit issued a Request for Proposals (RFP) for the design and construction of tunnels and subway stations under a design-build contract. Two technical and cost proposals were submitted, including the one submitted by MTC. After evaluating the proposals in accordance with the criteria set forth in the RFP, Sound Transit selected MTC as the contractor-elect, and has begun negotiations with MTC for a design-build contract.

MTC submitted various ideas for achieving substantial cost savings, which if determined to be cost-effective, technically viable, and consistent with scope, schedule and budget requirements, would keep the price of the design-build contract at an affordable level. Additional conceptual engineering will enable the agency to assess cost-effectiveness of each option, whether it is technically viable, and whether it is consistent with scope, schedule and budget requirements for the design-build contract. The level of design effort required to conduct these analyses is beyond the scope of engineering work required by the RFP and is work that MTC would not ordinarily be expected to perform as part of its response to the RFP or in the course of the contract negotiations. Approval by the Finance Committee of this contract for a not-to-exceed amount of \$1.8 million will provide the funds necessary to compensate MTC for the additional engineering and design work needed to meaningfully evaluate which of the cost saving ideas is feasible, cost-effective and consistent with our schedule and budget. The Finance Committee's previous approval of additional engineering work under similar circumstances resulted in substantial savings of \$40-45 million on the cost of the railroad capital improvements for the Sounder Commuter Rail Project.

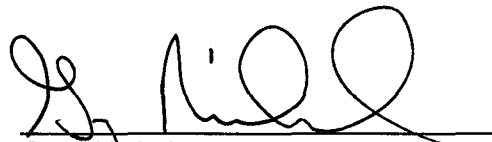
If a cost-saving idea is determined to be cost-effective and technically viable without causing adverse impact to scope, schedule and budget, that idea will become the subject of contract negotiations with MTC or with Puget Link Constructors (the other design-build proposer) and may be incorporated into the proposed design-build contract to be considered by the Board when the negotiations are completed. Alternatively, such cost-saving ideas may be used by Sound Transit if a bid build approach is ultimately approved.

Motion:

It is hereby moved by the Finance Committee of the Central Puget Sound Regional Transit Authority that the Executive Director is authorized to execute a contract with Modern Transit Constructors for conceptual engineering of a substantial number of additional engineering and design options for the design-build tunnel, with the aim of identifying and evaluating the potential cost-savings for each option. Conceptual engineering will enable the agency to assess the cost-effectiveness of each option, whether it is technically viable, and whether it is consistent


with scope, schedule and budget requirements for the design-build contract. The action establishes a not-to-exceed contract amount of \$1.8 million.

APPROVED by the Finance Committee of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on the 21st day of September 2000.



Greg Nickels
Finance Committee Chair

ATTEST:



Marcia Walker
Board Administrator

Conceptual Engineering Contract For the Design Build Tunnel

Key Work Scope Aspects of the Contract

Evaluate the Modern Transit Constructors proposed potential cost saving aspects of the following means and methods, which are different from those that would be used on the project as portrayed by the mandatory contract documents. Perform conceptual engineering to determine whether these topics are cost effective, technically viable and can be accomplished without causing adverse impacts to the scope, schedule or budget of the Design Build Contract:

- Use a large diameter single tube tunnel in lieu of smaller twin tube tunnels
 - With and without a center divider wall
 - With under platform emergency exhaust ventilation
- Eliminate the SR 520 Vent Shaft through the use of the under platform emergency exhaust ventilation in a single tube tunnel
- Use a method of excavation for the deep mined stations that is different from the referenced method (Sequential Excavation Mining). This would of necessity result in a different excavation configuration (single cavern vs. twin tubes):
 - Rodio method
 - Stacked drift method
 - TBM (single tube tunnel) through station, slash out remaining later
 - Pipe arch method
- Revise the location of the Capitol Hill station from Broadway Ave. to Nagle Pl.; identify the reduction of construction impacts
- For the two cross-over track facilities, the potential to eliminate the open cut excavation at Capitol Hill and the deep SEM mined crossover in the University District, if a single tube tunnel is used. Place the crossover within the tunnel bore.
- Potential cost saving track alignments
 - CPS to First Hill using Convention Place Station (eliminate majority of Pine St. open cut excavation/construction)
 - Westlake Station to First Hill; (eliminate majority of Pine St. open cut excavation/construction)
 - Portage Bay to NE 45th raise the grade (reduce the depth of the Pacific Street Station and the NE 45th Street Station as a result of placing the University District cross-over in the single tube tunnel)