**SOUND TRANSIT**
**STAFF REPORT**

**MOTION NO. M2009-65**

**University Link Additional Systems Engineering Final Design Consultant Services**

| Meeting: | Date: | Type of Action: | Staff Contact: | Phone: |
|---|---|---|---|---|
| Finance Committee | 8/6/09 | Discussion/Possible Action to Recommend Board Approval | Ahmad Fazel, Link Executive Director | (206) 398-5389 |
| Board | 8/13/09 | Action | John Harrison, University Link Project Director | (206) 398-5309 |
| | | | **George Hodges, Civil/Systems Integration Manager** | (206) 398-5473 |

| Contract/Agreement Type: | ✓ | Requested Action: | ✓ |
|---|---|---|---|
| Competitive Procurement | | Execute New Contract/Agreement | |
| Sole Source | | Amend Existing Contract/Agreement | ✓ |
| Agreement with Other Jurisdiction(s) | ✓ | Budget Amendment | |
| Real Estate | | Property Acquisition | |

## PROJECT NAME

University Link – Pine Street Stub Tunnel to University of Washington Station

## PROPOSED ACTION

Authorizes the chief executive officer to execute a contract amendment with LTK Engineering Services, LLC to provide additional systems engineering final design work, design services during construction, and light rail vehicle inspection and test support services required for the University Link project in the amount of $1,579,576, with a contingency of $158,023, totaling $1,737,599, for a new total authorized contract amount not to exceed $9,922,972.

## KEY FEATURES of PROPOSED ACTION

- LTK Engineering is providing systems engineering final design services for University Link. The proposed contract amendment would authorize the following:
    1. Final design scope and budget for LTK to develop a new construction contract package for Contract U835, Electro-Magnetic Interference (EMI) & Vibration Monitoring System, separate from the U830 Systems contract;
    2. LTK bid support and design services during construction (DSDC) for the U820, light rail vehicle (LRV) Yard Expansion contract; and
    3. Expanded LTK contract budget for LRV inspection and test support services during the manufacturing of the vehicles.

- Future Board action will be requested to authorize funding for the remaining U-Link bid support services, i.e., for Contract U830, Systems.

- The current LTK contract authorizes Phase 1 – final design services, and Phase 2 – bid support and design support during construction. Funding for Phase 2 requires further Board action as stated in Board Motion No. M2008-52. The current contract does not include light rail vehicle inspection.

- The proposed new U835 contract package will include software development, prototype system development and beta testing on the Initial Segment, early equipment procurement, installation, and commissioning of an EMI and Vibration Monitoring system at the University of Washington to meet the requirements of the Master Implementation Agreement in advance of and in support of the U830 Systems contract.

**BUDGET IMPACT SUMMARY**

Current Project Phase: Final Design/Construction
Projected Completion Date: 2016

| Action Outside of Adopted Budget: | | Comments on Checked Items |
|---|---|---|
| This Project | | |
| This Phase | | |
| This Task | | Proposed action requires funding from unallocated contingency within the construction services phase of the University Link project. |
| Budget Amendment Required | | |

| Key Financial Indicators: | | Comments on Checked Items |
|---|---|---|
| Contingency Funds Required | | |
| Funding required from other parties (other than what is in financial plan) | | |

Not checked = action is assumed in current Board-adopted budget. No budget action or adjustment to financial plan required.

**BUDGET and FINANCIAL PLAN DISCUSSION**

The Adopted 2009 Lifetime Capital Budget for University Link is $1.756 billion. Within that amount:

- $9,788,000 has been set aside for Systems Design Services within the final design phase. The proposed action would increase current commitments for this line item by $264,734 to a revised total commitment of $8,450,107, and leave a remaining budget balance of $1,337,893.

- $2,302,000 has been set aside for Systems Design Services during Construction (DSDC) within the final design phase. The proposed action would commit $247,623 for this line item and leave a remaining balance of $2,054,377 for this budget line item for the remaining U830 Systems contract.

- $237,000 has been set aside for Other Miscellaneous CM within the construction services phase. Since no specific line item was budgeted for Vehicle Inspection in the construction services phase, the proposed action would commit $1,225,242 to this budget line item and result in a shortfall of $988,242, which will be funded from construction services phase unallocated contingency.

- $3,585,000 has been set aside for unallocated contingency within the construction services phase. The proposed action would use $988,242 of that amount, and leave a remaining balance of $2,626,758 for construction services phase unallocated contingency.

The proposed action is consistent with the current adopted budget and is affordable within the agency's long-term financial plan and sub-area financial capacity. The action will have no new revenue impact on Sound Transit.

## BUDGET TABLE

**Action Item:** LTK Engineering Services, LLC (contract amendment to provide additional systems engineering services and light rail vehicles inspection and test support services required for the University Link project)

(Year of Expenditure $000)

| **University Link** | Adopted 2009 Budget (A) | Committed To Date (B) | This Action (C) | Total Committed & Action (D) | Uncommited (Shortfall) (E) |
|---|---|---|---|---|---|
| Agency Administration | 115,229 | 36,886 | | 36,886 | 78,343 |
| Preliminary Engineering | 24,388 | 24,329 | | 24,329 | 59 |
| Final Design | 77,944 | 69,718 | 512 | 70,230 | 7,714 |
| Right of Way | 167,332 | 124,505 | | 124,505 | 42,827 |
| Construction | 1,180,033 | 408,504 | | 408,504 | 771,529 |
| Construction Services | 68,526 | 64,704 | 1,225 | 65,929 | 2,597 |
| Third Party Agreements | 18,646 | 13,531 | | 13,531 | 5,115 |
| Vehicles | 103,909 | 99,185 | | 99,185 | 4,724 |
| **Total Current Budget** | **1,756,007** | **841,361** | **1,738** | **843,099** | **912,908** |
| **Final Design Phase Budget Detail** | | | | | |
| Systems Design | 9,788 | 8,185 | 265 | 8,450 | 1,338 |
| Systems DSDC | 2,302 | - | 248 | 248 | 2,054 |
| Other Final Design | 62,339 | 61,532 | | 61,532 | 807 |
| Final Design Unallocated Contingency | 3,515 | - | | - | 3,515 |
| **Total Phase** | **77,944** | **69,718** | **512** | **70,230** | **7,714** |
| **Construction Services Phase Budget Detail** | | | | | |
| Other Miscellaneous CM | 237 | - | 1,225 | 1,225 | (988) |
| Other Construction Services | 64,704 | 64,704 | | 64,704 | - |
| Constr Services Unallocated Contingency | 3,585 | - | | - | 3,585 |
| **Total Phase** | **68,526** | **64,704** | **1,225** | **65,929** | **2,597** |

| **Contract Amount** | Board Approvals to Date (F) | Current Approved Contract Value (G) | Proposed Action (H) | Proposed Total for Board Approval (I) | Proposed Contract Value (J) |
|---|---|---|---|---|---|
| Contract Amount | 7,441 | 7,613 | 1,580 | 9,021 | 9,193 |
| Contingency | 744 | 572 | 158 | 902 | 730 |
| **Total Contract** | **8,185** | **8,185** | **1,738** | **9,923** | **9,923** |
| Percent Contingency | 10% | 8% | 10% | 10% | 8% |

| **Budget Shortfall Task Level** | $Amount (K) | Potential Resources (L) | Source (M) |
|---|---|---|---|
| Other Miscellaneous CM | 988 | 3,585 | Unallocated contingency within the Construction Services phase |

(A) ADOPTED 2009 BUDGET amounts as adopted by resolution of the Sound Transit Board (R2008-14, approved 12/11/08).

(B) COMMITTED TO DATE amounts are from Agency WBS Report as of May 2009 + approved and pending board actions not recorded as of 5/31/09, or submitted after that date.

## SMALL BUSINESS PARTICIPATION

Prime Consultant/Contractor

LTK Engineering Services Inc. is the prime contractor for this contract. LTK is committed to 18% small business participation for the entire contract. To date, LTK has achieved 16.5% small business participation. This contract amendment includes a small business commitment of 34.6%, which will improve LTK's total contract performance.

Utilization Breakdown Table

| Subconsultant | Business Type | % of Work | Dollar Value |
|---|---|---|---|
| Bolima Drafting | M/DBE | 0.8% | $12,558 |
| Virginkar & Associates | M/DBE | 33.8% | $533,303 |
| **Total** | | **34.6%** | **$545,861** |

EEO Commitment

In its proposal, LTK provided an EEO profile for the contract of 5% People of Color, 22% Women, and .04% Persons with Disabilities.

**PROJECT DESCRIPTION and BACKGROUND for PROPOSED ACTION**

The North Link Final SEIS was published on April 7, 2006, which informed the Board's final decision on the North Link project to be built including route, station locations, project phasing, and financing. On April 27, 2006, the Sound Transit Board adopted Resolution No. R2006-07, which selected the University Link project to be advanced to final design and property acquisition, followed by construction and operation; in addition to approval of a revised lifetime project budget. The University Link project is a 3.15-mile extension of the Initial Segment of light rail in twin-bored tunnels with two cut-and-cover stations connecting downtown Seattle with Capitol Hill and the University of Washington (UW) campus.

Preliminary Engineering for University Link was completed in spring 2006. Sound Transit transmitted a request for final design approval to the Federal Transit Administration (FTA) in May 2006. The Record of Decision (ROD) for North Link was issued by the FTA in June 2006, completing the environmental review process. Permission from the FTA to enter into final design was received on December 11, 2006.

The LTK contract amendment includes:

Final Design Services – New U835 contract package: The Vibration and EMI Monitoring System, which is required by the Master Implementation Agreement (MIA) with UW is currently included as part of the U830 (Signal, Communication & Traction Power Systems) contract package. However, after many technical reviews and discussion by both UW and Sound Transit, it was determined that an alternate procurement strategy for the monitoring system is warranted in order to improve the system design development process by conducting early testing on the Initial Segment light rail facilities. This requires the monitoring system to be removed from Contract U830 and a new contract (U835) to be created to include software development, conducting a beta test on the Initial Segment, procuring equipment, and commissioning the final system on University Link alignment in 2015. This approach allows earlier procurement of the monitoring system and time to evaluate effectiveness prior to U-Link systems installation by the U830 contractor. Design and procurement can be performed during or in parallel with final design of North Link tunnels, which will allow incorporating the appropriate monitoring system elements in the design of the tunnels under the UW main campus.

Bid Support: Bid support services for the U820 contract.

Design Support During Construction: DSDC services for the U820 contract.

LRV Inspection and Test Support: Similar to the inspection and test support services provided by LTK on the Initial Segment and Airport Link, Sound Transit wishes to encompass within LTK's current Task 3, Light Rail Vehicle scope the inspection and testing support services for the 27 additional LRVs being built by Kinkisharyo for U-Link, as allowed by the terms of the contract. The assembly of the first car shell will begin in December 2009 at the Kinkisharyo facility in Osaka, Japan. Sound Transit needs to have an inspector on site by that time.

LTK designed these vehicles and prepared the vehicle specifications. It provided the LRV inspection / testing support services for the Initial Segment and Airport Link LRVs built by Kinkisharyo, which LTK also designed. LTK is familiar with Sound Transit's and the vehicle manufacturer's processes and procedures. Requesting additional contract authority to provide these inspection services has been determined to be the most cost-effective method to ensure vehicle manufacturing quality.

**Prior Board/Committee Actions on this Project and Relevant Board Policies**

| Motion/Resolution Number and Date | Summary of Action |
|---|---|
| M2008-52<br>5/22/08 | Authorizing the chief executive officer to execute a contract amendment with LTK Engineering Services to complete systems design and contract documents to the Issue-for-Bid level (100%) for the University Link project in the amount of $844,357, with a 10% contingency of $84,436 totaling $928,793, for a new total authorized contract amount not to exceed $8,185,373. |
| M2007-51<br>5/10/07 | Authorizes the chief executive officer to execute a contract with LTK Engineering Services, LLC to provide systems engineering final design services for the University Link Project in the amount of $6,596,891 with a 10% contingency of $659,989, for a total authorized contract amount not to exceed $7,256,580. |

**CONSEQUENCES of DELAY**

This contract amendment allows for timely assistance from LTK Engineering Services to provide additional final design services and support Sound Transit's University Link construction effort. A short delay in the approval of this contract amendment would not affect Sound Transit's work progress. A longer delay could affect Sound Transit's ability to complete the Project within its baseline schedule.

**PUBLIC INVOLVEMENT**

Not applicable to this action.

**ENVIRONMENTAL COMPLIANCE**

JI, 06/29/09

**LEGAL REVIEW**

JN 7/29/09

**SOUND TRANSIT**

**MOTION NO. M2009-65**

A motion of the Board of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a contract amendment with LTK Engineering Services, LLC to provide additional systems engineering final design work, design services during construction, and light rail vehicle inspection and test support services required for the University Link project in the amount of $1,579,576, with a contingency of $158,023, totaling $1,737,599, for a new total authorized contract amount not to exceed $9,922,972.

**Background:**

The North Link Final SEIS was published on April 7, 2006, which informed the Board's final decision on the North Link project to be built including route, station locations, project phasing, and financing. On April 27, 2006, the Sound Transit Board adopted Resolution No. R2006-07, which selected the University Link project to be advanced to final design and property acquisition, followed by construction and operation; in addition to approval of a revised lifetime project budget. The University Link project is a 3.15-mile extension of the Initial Segment of light rail in twin-bored tunnels with two cut-and-cover stations connecting downtown Seattle with Capitol Hill and the University of Washington (UW) campus.

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Requesting additional contract authority to provide these inspection services has been determined to be the most cost-effective method to ensure vehicle manufacturing quality.

**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 LTK Engineering Services, LLC to provide additional systems engineering final design work, design services during construction, and light rail vehicle inspection and test support services required for the University Link project in the amount of $1,579,576, with a contingency of $158,023, totaling $1,737,599, for a new total authorized contract amount not to exceed $9,922,972.

APPROVED by the Board of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on August 13, 2009.

Claudia Thomas
Board Vice Chair

ATTEST:

Marcia Walker
Board Administrator