

**MOTION NO. M2018-144**
**Amend Contract for Noise and Vibration Program Track Condition and Wayside Noise Diagnostic System and Database**

<b>MEETING:</b>	<b>DATE:</b>	<b>TYPE OF ACTION:</b>	<b>STAFF CONTACT:</b>
Capital Committee	11/08/2018	Final Action	Ron Lewis, Acting Executive Director, DECM <b>Kerry Pihlstrom, Director – Civil and Structural Engineering</b> <b>Shankar Rajaram, Manager – Engineering, Rail Vehicles</b>

**PROPOSED ACTION**

Authorizes the chief executive officer to execute a contract amendment with Acoustics Strategies, Inc. (dba ATS Consulting) to provide a track condition and wayside noise diagnostic system and database in the amount of \$449,308, for a new total authorized contract amount not to exceed \$1,158,308.

**KEY FEATURES SUMMARY**

- Sound Transit currently has a contract with Acoustics Strategies, Inc. (dba ATS Consulting) to build an onboard noise tool for Link light rail and perform studies on managing the train noise levels. The original contract was authorized in November 2016 for a three-year period with twelve one-year contract options.
- Data collection using the custom built tool indicated that a detailed wheel rail interaction study could help to optimize the shape of the rail head and the wheel surface of the light rail vehicles.
- The proposed amendment is to procure services to: a) perform a detailed wheel rail interaction study, b) build computer models of the light rail vehicles, and c) identify test wheel shapes for optimizing the life cycle cost of the light rail vehicles and the rail. The scope also includes field trials of the candidate wheel shapes and evaluating them for ride quality, wayside noise, and vibration.
- The overall goal of the study is to extend the service life of capital assets such as the light rail vehicles and rails at an optimized maintenance cost. The work could also help Sound Transit Link light rail operations to manage train noise and vibration to comply with federal and local commitments on a sustained basis.
- The study is anticipated to be completed in 2019.

**BACKGROUND**

The noise diagnostic system was procured in 2016 through a contract with ATS Consulting under Motion No. M2016-114. The scope included developing a custom built diagnostic tool to efficiently scan the relative noise levels along the light rail alignment. It also included scope to perform periodic noise data collection and to build a database that allows the agency to proactively identify areas that need detailed investigation or additional maintenance. The Board authorized a three year contract for the period covering 2016 through 2019. The contract also included a provision for twelve one-year options between 2020 and 2031.

The tool was developed and implemented into the Link light rail system for periodic data collection in 2017. The routine data set and preliminary analysis indicated opportunities to optimize the

wheel rail interface and the need to perform a detailed study. The contract authorized by the Board in 2016 included the possibility of a detailed wheel rail interaction study, but it was not funded.

The scope covered by this amendment includes computer modeling of Sound Transit's light rail vehicles, conducting field testing with candidate wheel profiles in 2019, evaluating vehicle components, and recommending optimized wheel and rail surface shapes. The information would help to minimize vibration risks under the UW campus both under new and worn conditions of wheels and rails. The information would also help to identify appropriate maintenance cycles when there will be two types of light rail vehicles. The overall goal of the study is to extend the service life of capital assets such as the light rail vehicles and rails at optimized maintenance costs. The work could also help Sound Transit Link light rail operations to manage train noise and vibration to comply with federal and local commitments on a sustained basis.

## **PROCUREMENT INFORMATION**

Sound Transit issued a Request for Proposal (RFP) in June 2016 to procure this contract. Three proposals were received in July 2016. Acoustics Strategies, Inc. (dba ATS Consulting) was determined to be the highest-ranked firm and awarded the contract in December 2016.

## **FISCAL INFORMATION**

The authorized project allocation to date for Northgate Link Extension project is \$1,899,755,500. Within that amount, \$1,343,022,559 has been allocated to the construction phase. Of this amount, \$6,026,000 is allocated to the EMI/Vibration monitoring line. This proposed action will commit \$449,308 to this line, leaving a remaining uncommitted budget balance of \$167,358.

The ATS Consulting contract is funded by three sources, the DECM Department, the University Link project and Northgate Project. The DECM department contributed \$514,500, the University Link project contributed \$194,500 and the Northgate Link project is contributing \$449,308 (this action). The ATS consulting total contracting value is \$1,158,308.

This action is within the adopted project allocation and sufficient monies remain after the approval of this action to fund the remaining work in the construction phase as contained in the current cost estimates.

## Northgate Link Extension

(in thousands)

	Baselined Budget	Board Approvals	This Action	Board Approved Plus Action	Uncommitted / (Shortfall)
Agency Administration	\$144,879	\$63,026	\$	\$63,026	\$81,853
Preliminary Engineering	15,077	15,077		15,077	
Final Design	132,167	125,397		125,397	6,770
Right of Way	112,300	100,440		100,440	11,860
Construction	1,343,023	1,267,852	449	1,268,301	74,721
Construction Services	118,310	105,096		105,096	13,213
Third Party	11,800	9,840		9,840	1,960
Vehicles					
Contingency	22,200				22,200
<b>Total Current Budget</b>	<b>\$1,899,756</b>	<b>\$1,686,728</b>	<b>\$449</b>	<b>\$1,687,178</b>	<b>\$212,578</b>

### Phase Detail

#### Construction

EMV/Vibration Monitoring	\$6,026	\$5,409	\$449	\$5,859	\$167
Other Construction Phase	1,336,997	1,262,443		1,262,443	74,554
<b>Total Phase</b>	<b>\$1,343,023</b>	<b>\$1,267,852</b>	<b>\$449</b>	<b>\$1,268,301</b>	<b>\$74,721</b>

### Contract Detail

#### ATS Consulting

	Board Approvals to Date	Current Approved Contract Status	Proposed Action	Proposed Total for Board Approval
Contract Amount		\$	\$449	\$449
Original University Link Contract	\$195	195		195
Original DECM Dept Contact	\$515	515		515
Contingency				
<b>Total</b>	<b>\$709</b>	<b>\$709</b>	<b>\$449</b>	<b>\$1,158</b>
Percent Contingency	0%	0%	0%	0%
<b>Total NorthGate Link Extension</b>	<b>\$709</b>	<b>\$709</b>	<b>\$449</b>	<b>\$1,158</b>

#### Notes:

Amounts are expressed in Year of Expenditure

Board Approvals = Committed To-Date + Contingency as of Sep 2018 and includes pending Board actions.

For detailed project information, see page 22 of the Adopted 2018 Transit Improvement Plan, as amended by resolution of the ST Board in May 2018 (R2018-16, adopted 05/24/18).

## SMALL BUSINESS/DBE PARTICIPATION AND APPRENTICESHIP UTILIZATION

Sound Transit promotes and encourages small business participation, which also includes Disadvantaged Business Enterprises (DBEs). Small Business and DBE goals are based upon an examination of subcontracting opportunities contained in the work of this contract and the number of Small Businesses/DBEs available to perform such subcontracting work.

Sound Transit determined that there were few Small Business and DBE subcontracting opportunities based upon the work described in this contract. Therefore, Small Business/DBE goals were not established or required.

## PUBLIC INVOLVEMENT

Not applicable to this action.

## **TIME CONSTRAINTS**

A one-month delay would not have a significant impact to this project.

## **PRIOR BOARD/COMMITTEE ACTIONS**

Motion No. M2016-114: Authorized the chief executive officer to execute a three year contract with twelve one-year options to extend with Acoustics Strategies, Inc. (dba ATS Consulting) to provide a Track Condition and Wayside Noise Diagnostic System and Database for the Noise and Vibration Program in the amount of \$709,000.

## **ENVIRONMENTAL REVIEW**

KH 10/31/18

## **LEGAL REVIEW**

AJP 11/2/18

## **MOTION NO. M2018-144**

A motion of the Capital Committee of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a contract amendment with Acoustics Strategies, Inc. (dba ATS Consulting) to provide a track condition and wayside noise diagnostic system and database in the amount of \$449,308, for a new total authorized contract amount not to exceed \$1,158,308.

### **BACKGROUND:**

Sound Transit currently has a contract with Acoustics Strategies, Inc. (dba ATS Consulting) to build an onboard noise tool for Link light rail and perform studies on managing the train noise levels. The original contract was authorized in November 2016 for a three-year period with twelve one-year contract options. Data collection using the custom built tool indicated that a detailed wheel rail interaction study could help to optimize the shape of the rail head and the wheel surface of the light rail vehicles.

The proposed amendment is to procure services to: a) perform a detailed wheel rail interaction study, b) build computer models of the light rail vehicles, and c) identify test wheel shapes for optimizing the life cycle cost of the light rail vehicles and the rail. The scope also includes field trials of the candidate wheel shapes and evaluating them for ride quality, wayside noise, and vibration.

The noise diagnostic system was procured in 2016 through a contract with ATS Consulting under Motion No. M2016-114. The scope included developing a custom built diagnostic tool to efficiently scan the relative noise levels along the light rail alignment. It also included scope to perform periodic noise data collection and to build a database that allows the agency to proactively identify areas that need detailed investigation or additional maintenance. The Board authorized a three year contract for the period covering 2016 through 2019. The contract also included a provision for twelve one-year options between 2020 and 2031.

The tool was developed and implemented into the Link light rail system for periodic data collection in 2017. The routine data set and preliminary analysis indicated opportunities to optimize the wheel rail interface and the need to perform a detailed study. The contract authorized by the Board in 2016 included the possibility of a detailed wheel rail interaction study, but it was not funded.

The scope covered by this amendment includes computer modeling of Sound Transit's light rail vehicles, conducting field testing with candidate wheel profiles in 2019, evaluating vehicle components, and recommending optimized wheel and rail surface shapes. The information would help to minimize vibration risks under the UW campus both under new and worn conditions of wheels and rails. The information would also help to identify appropriate maintenance cycles when there will be two types of light rail vehicles. The overall goal of the study is to extend the service life of capital assets such as the light rail vehicles and rails at optimized maintenance costs. The work could also help Sound Transit Link light rail operations to manage train noise and vibration to comply with federal and local commitments on a sustained basis.


**MOTION:**

It is hereby moved by the Capital Committee of the Central Puget Sound Regional Transit Authority that the chief executive officer is authorized to execute a contract amendment with Acoustics Strategies, Inc. (dba ATS Consulting) to provide a track condition and wayside noise diagnostic system and database in the amount of \$449,308, for a new total authorized contract amount not to exceed \$1,158,308.

APPROVED by the Capital Committee of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on November 8, 2018.

  
\_\_\_\_\_  
Claudia Balducci  
Capital Committee Chair

ATTEST:

  
\_\_\_\_\_  
Kathryn Flores  
Board Administrator