

**MOTION NO. M2017-152**
**Light Rail Vehicle Oil-less Rotary Scroll Air Compressor Upgrade**

<b>MEETING:</b>	<b>DATE:</b>	<b>TYPE OF ACTION:</b>	<b>STAFF CONTACT:</b>
Operations and Administration Committee	12/07/2017	Final Action	Bonnie Todd, Executive Director of Operations <b>George McGinn, Link Maintenance Manager</b>

**PROPOSED ACTION**

Authorizes the chief executive officer to execute a contract with Powerex-Iwata Air Technology, Inc. to provide Light Rail Vehicle's Oil-less Rotary Scroll Air Compressors for a total authorized contract amount not to exceed \$650,100 plus applicable taxes, contingent upon the adoption of the 2018 Budget and Transit Improvement Plan.

**KEY FEATURES SUMMARY**

- The current light rail vehicles (LRVs) are reaching mid-life overhaul mileage on several systems. This includes existing conventional air compressor units that are reaching the end of their useful life.
- Market research has shown that oil-less rotary scroll air compressors have higher reliability and require less maintenance than conventional air compressors.
- If approved, this project will be executed in two phases: During Phase-I, a pilot phase, Sound Transit will test two oil-less rotary scroll air compressors using predefined criteria for six months. If the Phase-I pilot project is successful, Sound Transit will exercise an option in Phase-II to order the remaining units.
- This procurement would provide oil-less rotary scroll air compressor units to the entire LRV fleet plus four spare units. The units are environmentally sustainable as they are oil-less and do not require oil-change and/or disposal of oil.
- The current estimated tax amount is \$65,660.

**BACKGROUND**

Many of the current light rail vehicles have been in operation since 2007 (when testing and pre-revenue service began), and many are reaching mid-life overhaul mileage on several major systems earlier than previously anticipated due to increases in operations with higher than expected ridership.

The Link light rail maintenance division anticipates that the existing conventional air compressor units will need to go through replacement within the next year, and the division is aligning resources to replace them with oil-less rotary scroll air compressor during the LRV mid-life overhaul.

These new oil-less rotary scroll air compressors will eliminate the need of purchasing lube oil and filters that need to be replaced every 5,000 miles, or every couple of weeks. They will also eliminate used oil and filter disposal costs. The current annual oil consumption is 543 gallons.

The new oil-less air compressor cost-benefit analysis (based on currently available information and the life-cycle cost data provide by the offeror) shows an estimated cost savings of 31 percent for routine preventive maintenance over the course of the next 15 years.

## PROCUREMENT INFORMATION

The Request for Proposal was issued on September 25, 2017. Proposals were evaluated on a number of evaluation criteria including life-cycle cost. The life-cycle cost showed that the new oil-less air compressors are significantly more cost-effective. One proposal was received in response to this competitive solicitation and negotiations were conducted. As a result, Sound Transit realized a cost saving of \$73,194 (11.26 percent) over the proposed amount.

## FISCAL INFORMATION

Higher usage of the light rail vehicles (LRV) in support of increased link ridership necessitates initial planning and the scheduling of the overhaul of components of the LRV. Link maintenance staff have chosen to replace the air compressor units in lieu of rebuilding them to take advantage of technological advancements of air compressor systems. Although the overhaul cost on the existing units is approximately \$3,500 and the replacement with a new unit at \$9,850 the new unit has twice the life (15 versus 8) as the old unit. Additionally, the new compressor has extended preventive maintenance intervals increasing uptime availability of the LRV for riders. As mentioned above the savings on the preventive maintenance is several hundred thousand dollars over the life of the compressor.

Further, as the new unit is oil-less, there is savings and positive impacts to the environment from the elimination of the purchase, storage and disposal of oil for this particular unit(s).

### Link Light Rail Vehicle Overhaul

Project Phase	2018 Proposed Project Allocation to Date	Board Approvals	This Action	Board Approved Plus Action	Uncommitted / (Shortfall)
Agency Administration	\$	\$	\$	\$	\$
Preliminary Engineering					
Final Design					
Right of Way					
Construction					-
Construction Services					
Third Party Agreements					
Vehicles	10,115		650	650	9,465
Contingency					
<b>Total Current Budget</b>	<b>\$10,115</b>	<b>\$</b>	<b>\$650</b>	<b>\$650</b>	<b>\$9,465</b>
<b>Phase Detail</b>					
<b>Vehicles</b>					
Vehicles	\$10,115	\$	\$650	\$650	\$9,465
Other (Phase Name)					
<b>Total Phase</b>	<b>\$10,115</b>	<b>\$</b>	<b>\$650</b>	<b>\$650</b>	<b>\$9,465</b>
<b>Powerex-Iwata Air Technology, Inc.</b>					
	Board Approvals to Date	Current Approved Contract Status	Proposed Action	Proposed Total for Board Approval	
Contract Amount	\$	\$	\$650	\$650	
Contingency					
Estimated Tax			66	66	
<b>Total</b>	<b>\$</b>	<b>\$</b>	<b>716</b>	<b>716</b>	
Percent Contingency	0%	0%	0%	0%	

This action is contingent on the adoption of the 2018 Budget and Transit Improvement Plan.

## **SMALL BUSINESS/DBE PARTICIPATION**

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 Small Business and DBE subcontracting opportunities are infeasible or improbable based upon the work described in this contract, so Small Business/DBE goals were not established or required.

## **PUBLIC INVOLVEMENT**

Not applicable to this action.

## **TIME CONSTRAINTS**

A one-month delay would not create a significant impact to the project schedule.

## **ENVIRONMENTAL REVIEW**

KH 11/27/17

## **LEGAL REVIEW**

AJP 12/1/17



## **MOTION NO. M2017-152**

A motion of the Operations and Administration Committee of the Central Puget Sound Regional Transit Authority authorizing the chief executive officer to execute a contract with Powerex-Iwata Air Technology, Inc. to provide Light Rail Vehicle's Oil-less Rotary Scroll Air Compressors for a total authorized contract amount not to exceed \$650,100 plus applicable taxes, contingent upon the adoption of the 2018 Budget and Transit Improvement Plan.

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This project will be executed in two phases: During Phase-I, a pilot phase, Sound Transit will test two oil-less rotary scroll air compressors using predefined criteria for six months. If the Phase-I pilot project is successful, Sound Transit will exercise an option in Phase-II to order the remaining units.

**MOTION:**

It is hereby moved by the Operations and Administration Committee of the Central Puget Sound Regional Transit Authority that the chief executive officer is authorized to execute a contract with Powerex-Iwata Air Technology, Inc. to provide Light Rail Vehicle's Oil-less Rotary Scroll Air Compressors for a total authorized contract amount not to exceed \$650,100 plus applicable taxes, contingent upon the adoption of the 2018 Budget and Transit Improvement Plan.

APPROVED by the Operations and Administration Committee of the Central Puget Sound Regional Transit Authority at a regular meeting thereof held on December 7, 2017.



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Paul Roberts  
Operations and Administration Committee Chair

ATTEST:



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Kathryn Flores  
Board Administrator