



## **COMMISSION AGENDA**

Ted Fick, Chief Executive Officer

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identifying issues and providing data that can be used for planning purposes. This work provides a different level of review of the HVAC system than maintenance performs during their normal preventative maintenance. As a result there are opportunities to investigate and document the systems resulting in recommended energy conservation measures within the system from both a holistic and seasonal perspective.

The two scopes of work are grouped together under one contract as the firms that perform this work provide both of these related services and the work is performed on the same HVAC systems. Both the annual safety testing and the energy conservation work require the same certification and utilize the same test procedures. The HVAC system is complex requiring the use of specialized professional personnel to optimize and test and by using the same firm the work can be performed more efficiently.

This contract replaces an expiring contract and continues annual safety assurance and energy conservation work. No budget request is associated with this authorization because the necessary funds will be included within annual operating budget requests. \$150,000 of the costs to be incurred in 2016 relating to this IDIQ contract is already included in the approved 2016 budget. Facilities and Infrastructure (F&I) manages the contract with support from Aviation Maintenance and the Fire Department staff for the two purposes of this requested action.

### **BACKGROUND**

#### Smoke Control:

The Port of Seattle is required to test (annual certification) the smoke control systems each year as prescribed in the National Fire Protection Association (NFPA 92) standards which are referenced in the International Building Code (IBC 900). Smoke control systems are installed in the following areas: Airport Office Building, Central Terminal, Combined Communication Control Center including backup systems, Combined Baggage Screening Facility, Concourse A, and Gina Marie Lindsey Arrivals Hall. The smoke system controls the operation of the fans, blowers and terminal boxes in the HVAC system in the event of an emergency. Areas are tested in multiple modes (Smoke Exhaust, Outdoor Air Pressurization and Smoke Purge). Areas are divided into multiple fire zones and contain multiple air handlers and the testing plan must address these zones separately. The testing requires the services of a balance/controls firm that satisfies the Authority Having Jurisdiction (AHJ) requirements for an independent third party confirmation that the system will operate in an emergency.

#### System Balance Measurement:

Energy optimization is enhanced by measuring and balancing of the HVAC systems at the airport. The HVAC systems are of varied age and condition in different sections of the airport. The HVAC systems include approximately 200 mechanical rooms, the Central plant chillers and boilers, the Building Automated Controls System and over 2,500 terminal devices throughout the Airport. Much of the existing system dates back to the 1970's and 1980s. In addition when airlines or concessions have relocated over time, modifications were made to the HVAC system (ductwork, vents and controls) as interior walls were moved. The overall system is rarely rebalanced from an airflow and temperature optimization perspective during individual projects,

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therefore it is important to continue to check functional balancing on aging portions of the system and as each new concession or use change occurs for conservation purposes.

### **PROJECT JUSTIFICATION AND DETAILS**

Indefinite Delivery Indefinite Quantity (IDIQ) contracts provide the Port with the flexibility to meet business requirements to accomplish tasks within a general, pre-defined scope of work on an as-needed basis for a fixed period of time and a maximum contract amount.

#### ***Project Objectives:***

- Complete code required Annual Certification of Safety Systems
- Identify and capture energy savings

#### ***Scope of Work:***

Consultant shall work with staff to prepare, perform and document all work for the annual smoke certification testing on Airport systems with smoke control zones. The plan includes researching direct distributed control system code, engineering documents, control software, and previous smoke tests. Once planning is complete, the final annual testing is generally completed in a short time frame, approximately 5 to 7 night operations, once per year. Final reports record the test results and adjustments made.

Consultant shall work with the Aviation Facilities and Infrastructure Energy Engineer to obtain and document an inventory of the air handling equipment and appurtenances serving the Airport concourse, bag well, lobby and ticketing areas. The consultant will also compile a complete inventory including all applicable requirements, of the HVAC, exhaust, make-up, and concession or tenant facilities. The focus of this work is to identify, investigate, recommend and document any energy savings opportunities with respect to the HVAC operations at the Airport.

#### ***Schedule:***

It is estimated that the contract will be executed by June, 2016 and have a maximum three-year contract ordering period.

### **FINANCIAL IMPLICATIONS**

#### ***Budget Status and Source of Funds:***

The estimated cost for energy conservation balancing and annual smoke control services will have a total maximum value of \$450,000. No work is guaranteed to the consultant, and the Port is not obligated to pay the consultant. The budget for work performed under this contract will be included in the Airport's annual operating budget. The 2016 approved operating budget includes budget for work to be performed under this contract.

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### **STRATEGIES AND OBJECTIVES**

The services provided under this contract will help the Port meet its Century Agenda strategic goal of being the greenest, and most energy efficient port in North America, and with making the airport the gateway of choice by travelers.

Any firm proposing on this contract will need to be a National Environmental Balancing Bureau (NEBB) certified firm, provide documentation of experience with large HVAC systems (100,000 cfm or greater and with 100 or more zones) and plan to assign to the contract employees with Siemens DDC training. Due to this type of certification, we have not identified any small businesses within our Small Contractor and Supplier (SCS) program who perform this type of service so we are not establishing requirements; however, we are including language within the RFP that supports the Port's overall small business enterprise (SBE), minority, and woman owned business enterprise goals.

This requested action supports the Port's strategy to lead the U.S. airport industry in environmental innovation and minimize the Airport's environmental impacts. The balancing and re-commissioning of the Airport mechanical systems to operate in the most efficient manner while achieving acceptable passenger comfort levels works towards these goals. The objective of this initiative is to achieve overall energy savings well beyond the costs of implementation.

This requested action also supports the Airport's strategy to operate world-class international airport by ensuring safe and secure operations. Assuring that vital safety fire systems operate correctly in the event of an emergency is consistent with this strategy.

### **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

All of the alternatives include the annual smoke control testing as the Port is required to have an independent third party confirmation that the smoke control system will operate in an emergency (NFPA 92 requirement).

**Alternative 1** – Do not perform the Energy Balancing and complete only the Smoke Control Testing under contract.

Cost Implications: \$50,000/year      \$150,000 total

Pros:

- (1) Eliminates budgeted expense spending for Energy Balancing work.

Cons:

- (1) Airport would continue using excess energy to temper the terminal building conditions.

This is not the recommended alternative.

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**Alternative 2** – Add additional Port staff of one full time employee Test and Balance Journeyman for the Energy Balancing work and complete the Smoke Control Testing under contract only.

Cost Implications: \$200,000/year (\$50,000 smoke testing, \$150,000 balancing) \$600,000 total

### Pros:

- (1) The Port would gain in-house experience and certified personnel

### Cons:

- (1) Airport does not currently have on staff a person with the test and balance certification to perform this type of work, therefore this option would require hiring an HVAC balancer full-time and paying for certification.
- (2) Work load does not support a fulltime position and work is not evenly spread over a full year. For example the most useful data is obtained during the summer when air conditioning load peaks and during night shifts when traveler flows are not as high.
- (3) Work at night is required to minimize impact on Airport and Tenant operations, which is most efficiently preformed in a shorter time frame by a staff of two or three balancers that the consultant can provide

This is not the recommended alternative.

**Alternative 3** – Prepare separate procurements for the Energy Balancing and Smoke Control Testing.

Cost Implications: \$150,000/year plus additional \$30,000 one-time = \$480,000 total

### Pros:

- (1) None

### Cons:

- (1) More procurement processes, therefore increasing administrative costs
- (2) Extended time required to complete separate procurements
- (3) The same firms provide both of these related services as both balancing and smoke testing require an extensive knowledge of HVAC systems and utilize the same test procedures
- (4) By using the same firm for both services the consultant gains knowledge of the details of the Airport HVAC systems
- (5) One firm gains experience with Airport operations so as to perform the work in an efficient manner without disruptions to airlines or travelers

This is not the recommended alternative.

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**Alternative 4** – Status Quo – Issue IDIQ contract to perform this work with Port staff

**Cost Implications:** \$150,000/year \$450,000 total

### Pros:

- (1) This approach combines the best technically qualified personnel from both the Port of Seattle and a consultant in their areas of specialty
- (2) Achieves energy savings
- (3) The same firms provide both of these related services as both balancing and smoke testing utilize the same test procedures and require an extensive knowledge of HVAC systems
- (4) By using the same firm for both services the consultant gains knowledge of the operation of Airport specific HVAC system

### Cons:

- (1) Spending remains at budgeted level

**This is the recommended alternative.**

## **ATTACHMENTS TO THIS REQUEST**

- (1) None

## **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- (1) February 5, 2013 – Commission authorized IDIQ for Energy Conservation Balancing and Annual Smoke Control Services (Consent Calendar Item 5b).