



**COMMISSION  
AGENDA MEMORANDUM**

**Item No.** 6k

**ACTION ITEM**

**Date of Meeting** February 26, 2019

**DATE:** February 6, 2019

**TO:** Stephen P. Metruck, Executive Director

**FROM:** Jeffrey Brown, Director of Aviation Facilities and Capital Programs  
Michael Tasker, Senior Manager of Aviation Facilities and Infrastructure

**SUBJECT:** Aviation Asset Management Program

**Amount of this request:** \$5,000,000

**ACTION REQUESTED**

Request Commission authorization for the Executive Director to execute an asset management services contract for up to 5 years for Seattle-Tacoma International Airport, with an estimated value of \$5,000,000.

**EXECUTIVE SUMMARY**

The Airport has more than \$4 billion in facilities and equipment assets (historical cost, before depreciation). The capital program will be delivering many more assets to the Port of Seattle in the near future. Asset Information is critical for managing the Port of Seattle infrastructure, fleet, and facilities. It helps inform maintenance and capital planning for renewal and replacement or for capacity enhancement, allowing the Port to manage total cost of ownership and ensure investment in the right assets at the right time to achieve the right level of service. This request is for consultant services to assist Aviation staff in obtaining asset data that will be placed into system where the information can be readily used to inform decision makers on managing the airport's assets.

**JUSTIFICATION**

Sound asset management practices reduce the total cost of ownership and enhance maximum asset life and reliability. Asset management is widely recognized as a smart ownership practice and widely adopted by large infrastructure system owners. Asset management is one of the most cost-effective methods for ensuring system reliability, safety, and energy efficiency. Typical Return on Investment (ROI) of the implementation of an Enterprise Asset Management System and development of an asset inventory is as follows:

1. Labor utilization/ productivity is improved by 10-20% through better organization of work activities. (it is noted that the 10-20% improvement identified above includes

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improved decisions coming from an asset management program not just implementation of those decisions).

2. Inventory stock is typically reduced by 20-30% as a result of better managed work activities – resulting in reduce stock holding, which has both a direct finance impact as well as indirect through storage etc.
3. Asset downtime is typically reduced 5-20%.
4. Productivity benefit – 20 - 30% reduction in labor hours after a 5 to 10-year period.
5. Improved safety – 2 to 3 times reduction in safety incidents
6. Improved performance – 40 to 80% improvement in customer service
7. Improved use of available resources – 20 to 30% reduced outages, reduced overtime
8. Improved environmental performance – reduced CO<sub>2</sub> emissions and reduced environmental incidents
9. Reduced risks – resulting in reduced insurance premiums (up to 30% reduction in premiums), and incident payouts.

Another perspective is that the asset will cost on average 20% less to maintain over its lifetime to achieve the same performance outcomes.

Effective asset management provides guidance direction and optimization of intelligent maintenance practices that become a resource generating substantial energy savings.

Inadequate maintenance of energy-using systems is a major cause of energy waste. Energy losses from steam, water and air leaks, uninsulated pipes, maladjusted or inoperable controls, and other losses from poor maintenance can be substantial.

### **DETAILS**

The Aviation Division is looking to improve its existing asset management program by using industry best practices to place geo-referenced asset management and work order history information into our Computerized Maintenance Management System (CMMS). This will allow reporting that will drive renewal and replacement strategies and maximize asset life, reducing total cost of ownership.

The current asset management system, begun in 2011-2012 for the Aviation Division, has naming conventions, hierarchies, and asset condition analysis completed for approximately 50 percent of the airport assets. The system has identified and defined assets and links PeopleSoft (financial) information with the Port's CMMS (Maximo) information. The data is currently maintained in excel spreadsheets.

In January 2018, the Aviation Division began a gap analysis of its asset management program and current practices against industry best practices. This gap analysis was done with WSP, an

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industry leading asset management consulting firm, headed up by Dr. Christian Roberts. Dr. Roberts was one of the authors of the ISO 55000: the international standard for asset management.

WSP leveraged their industry-leading Asset Management Capability Assessment model, which draws on over 20 years of experience managing critical infrastructure, to assess the Port of Seattle’s Aviation Division level of asset management maturity.

***Scope of Work***

The contract’s scope of work includes the following:

1. Develop and Implement Enterprise Asset Hierarchies
2. Develop Data Collection Process
3. Asset Inventory Data Collection
4. Develop Condition Assessment Guidelines and Scoring for All Asset Classes
5. Conduct Condition and Capacity Assessments across All Asset Classes
6. Develop Asset Management Reporting
7. Perform PeopleSoft / Maximo Integration/ GIS Integration assess applicability of design attribute integration via a design management tool
8. Develop Introductory and Ongoing Asset Management Training
9. Migrate existing Asset data into Maximo
10. Develop Enhancements to Asset Commissioning/Onboarding Process
11. Develop a process for Asset Program Sustainability

***Schedule***

- |           |   |
|-----------|---|
| Q3 2019 – | Selection of Asset Management Consultant.                               |
| 2019-     | Develop and Implement Asset Hierarchies                                 |
|           | Develop Discovered Asset Process  |
|           | Develop Condition Assessment Guidelines and Scoring                     |
|           | Begin Asset Discovery, Inventory Collection and Condition Assessment    |
| 2020-     | Develop Asset Management reporting                                      |
|           | Continue Asset Discovery, Inventory Collection and Condition Assessment |
|           | Migrate Existing Data into Maximo                                       |
|           | Develop enhancements to Asset Commissioning Onboarding process          |
|           | Develop Introductory and ongoing asset management training              |
| 2021-     | Perform Tool integration  |
|           | Continue Asset Discovery, Inventory Collection and Condition Assessment |
|           | Develop a process for Asset Program Sustainability                      |

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***Diversity in Contracting***

This contract will include a 15 percent woman- and minority-owned business enterprise (WMBE) aspirational goal.

**ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1** – Use Port staff and existing resources.

Cost Implications:

It is estimated that the current STIA Asset Management system has assessed approximately 50% of all airport facility capital assets over the course of the last 7 years, utilizing approximately 20,000 staff hours working around other duties as assigned. Completion of these tasks for the rest of the STIA assets would require roughly an additional 20,000 hours of staff engagement.

Pros:

- (1) Saves expense budget.
- (2) Develops staff knowledge to be able to manage the future requirement

Cons:

- (1) Requires additional FTEs and resources to complete in a timeframe that supports the capital program.
- (2) Training required for the staff to implement industry best practices.
- (3) Could take another 7 years to implement working around other job responsibilities.
- (4) Capital program projections will be delayed.

This is not the recommended alternative.

**Alternative 2** – Hire additional staff and perform the work with in-house resources.

Cost Implications:

Assessing the remaining assets is approximately 20,000 hours.

Pros:

- (1) Develops staff knowledge to manage the future requirement.

Cons:

- (1) Training of staff will be required to implement industry best practices.
- (2) Could take longer to implement as the time required would be dependent on the number of staff hired. Once the bow wave of work implementation is accomplished the number of staff required to sustain the program will be less. Staff would have to be reassigned.

This is not the recommended alternative.

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**Alternative 3** – Hire an asset management consulting firm to implement industry best asset management practices and develop a training and maintenance program where the work can potentially be transitioned to staff in the future.

Cost Implications:

\$5,000,000 in expense authorization required over 5 years.

Pros:

- (1) Faster implementation of industry best practices.
- (2) Better Capital Budget projection.
- (3) Reduction in total cost of ownership.
- (4) Better asset reliability.
- (5) Better capital decision making, using data and metrics for informing decisions.
- (6) Develop training programs to share with and mentor staff to develop best practices.

Cons:

- (1) Higher expense burn rate.

***This is the recommended alternative.***

**FINANCIAL IMPLICATIONS**

***Annual Budget Status and Source of Funds***

The 2019 operating budget includes \$1,000,000 for this effort. The remainder of the funding will be included in the operating budget of future years. The funding source will be the Airport Development Fund.

**ATTACHMENTS TO THIS REQUEST**

- (1) Presentation slides
- (2) Aviation Asset Management Gap Assessment Report
- (3) Facility Information Exchange (Fx) Roadmap

**PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

None