COMMISSION
AGENDA MEMORANDUM **Item No.** 6c

ACTION ITEM **Date of Meeting** April 24, 2018

DATE: April 6, 2018

TO: Stephen P. Metruck, Executive Director

FROM: Jeffrey Brown, Director of Aviation Facilities and Capital Programs
Mike Tasker, General Manager, Aviation Facilities and Infrastructure

SUBJECT: Airport Utilities Master Plan

Amount of this request: $0
Total estimated project cost: $6,000,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to execute a 5-year contract for planning studies, measurements, modelling, analysis, and project development to complete infrastructure master planning for Airport utility systems, for an amount not to exceed $6,000,000.

EXECUTIVE SUMMARY

The Port of Seattle is responsible for maintaining utility infrastructure systems at the Seattle-Tacoma International Airport and staff desires to complete utility master plans to address existing and future infrastructure needs. The master plans will provide a road map to keep the airport utility systems capable of providing reliable, efficient, and sustainable utility services. The utility master plans will address current deficiencies, currently proposed capital improvements of existing facilities, and proposed future expansion plans to include the Sustainable Airport Master Plan (SAMP). Currently proposed capital improvements include but are not limited to the South Satellite renovation, C1 Building, restroom upgrades, tenant improvements, and consolidated deicing facilities.

Each of the utility systems (listed in the scope on page 3) will have a stand-alone master plan. The plans will be coordinated to ensure that all airport utility development is attained in the most efficient manner possible. The master plan effort will also address naming convention and standards to address current technologies, sustainability goals, and to ensure consistency between all current and future facilities where practical.

JUSTIFICATION

The Seattle-Tacoma International Airport needs to improve its utility infrastructure. The airport has multiple utility “lines” (pipes, conductors, conduits) that were built in the 1960s and 1970s.

Some of these "lines" are at capacity or are in poor condition. Although they are functioning today, several utilities are or will soon be outdated and need replacement to avoid airport operational delays, costly repairs, and short-term fixes.

Infrastructure system planning was last accomplished in the 1999-2001 era. Those documents supported the new A Concourse, Central Terminal Expansion, and the Delta Hangar but are now beyond the intended planning horizon. This project is necessary to ensure that the Port's utility infrastructure is in place to support the Airport's near and long-term capital development program and to meet the new Century Agenda goals related to environment, sustainability, and resource use.

The airport also needs to improve its approach to accomplishing utility infrastructure projects. As individual capital projects move forward, the airport conducts project-specific condition assessments and addresses utility need – replacement of old lines or addition of new lines – applicable only to that project. With the region's unprecedented growth in aviation demand, the airport has multiple large-scale capital improvement projects scheduled to be constructed, and coordination to ensure efficient implementation warrants study. There are multiple large capital projects planned or scheduled for construction over the next ten years. An abbreviated list of those capital improvement projects includes:

- South Satellite Renovations
- C1 Building
- Restroom Upgrades
- Consolidated Deicing
- SAMP Near-Term Projects (2027)
- ADR Program
- Tenant improvement projects

The Utility Master Plan will also conduct scenario planning to consider potential requirements of projects included in the SAMP Long-Term Vision.

The airport requires a forward-looking Utility Master Plan that considers campus-wide needs over time. This Utility Master Plan will better inform the Airport of all the necessary infrastructure improvements and will aid the Airport in developing a prioritized and phased program. The program will recommend specific projects to replace aging infrastructure, increase capacity, provide appropriate redundancies or backup systems to mitigate the risk of utility outages or failures, and identify new technology and efficiency systems to manage operational costs.

DETAILS

Pending Commission approval, the Utility Master Plan project will procure a planning and engineering consultant team under a project-specific request for qualifications.

Scope of Work

A high-level scope of work for the Utility Master Plan includes the following tasks:

1. Project Management
2. Develop existing utility distribution plans and condition assessments
3. Develop utility system models and evaluate capacities
4. Review future utility needs and develop delivery alternatives
5. Develop future utility phasing plans
6. Prepare cost estimates
7. Prepare utility master plan document findings

Inclusive of but not exclusive to the following systems:

- Mechanical Systems including Hot and Chilled Water, Steam and Condensate, and Preconditioned Air
- Sanitary Sewer and biffy dump (aircraft lavatory waste)
- Surface Water Systems including Storm and Industrial Waste System (IWS)
- Domestic Water System
- Airfield Fuel System
- Electrical Power System including energy supplies, backup/emergency generation, electric vehicle (including electric ground support equipment) charging and 400 Hz power
- Natural Gas System
- Solid Waste Management System
- Information and Communications Technology Systems
- Utility Metering and Data Acquisition System

Small Business

This contract will include a 15% Small Business requirement

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Advertise and execute multiple individual project specific contracts (one for each specific Utility Master Plan; i.e., Mechanical, Storm Water, Power, etc.)

This alternative would require that both Port staff and consultants participate in multiple solicitation processes. The solicitation process is lengthy and costly. The consultant teams will need to repeatedly evaluate their team's availability and capacity to conduct each individual Utility Master Plan element and the Port may see an overall reduction in response to the procurement process. This is not a viable alternative if the Port is committed to best practices for project delivery and meeting our business sponsor needs. This is not the recommended alternative.

Cost Implications:
Procurement of additional staff costs and higher consultant management costs to provide utility master plans.

Pros:

(1) Separate contracts would allow consulting firms multiple opportunities to compete for each individual utility master plan project.

Cons:

(1) This alternative is an inefficient use of Port resources and staff time and does not leverage the Port's contracting methods. It would increase overhead and administrative costs to the Port, as we would need to manage more procurement processes and contracts.
(2) This alternative will add time to each project schedule to complete the procurement process for each individual project and would impact the ability to meet project and customer needs.
(3) Costs to the consulting companies may increase as they would be responding to multiple procurements.
(4) Integration of the individual utility master planning efforts into a coordinated campus-wide executive summary document would be more difficult to achieve.

This is not the recommended alternative.

Alternative 2 – Advertise and execute one project specific contract with an appropriate qualified consulting firm to perform all Utility Master Planning for the following Airport utility systems to include but not exclusive to:

- Mechanical Systems including Hot and Chilled Water, Steam and Condensate, and Preconditioned Air
- Sanitary Sewer and biffy dump (aircraft lavatory waste)
- Surface Water Systems including Storm and Industrial Waste System (IWS)
- Domestic Water System
- Airfield Fuel System
- Electrical Power System including energy supplies, backup/emergency generation, electric vehicle (including electric ground support equipment) charging and 400 Hz power
- Natural Gas System
- Solid Waste Management System
- Baggage and Vertical Conveyance System
- Information and Communications Technology System
- Utility Metering and Data Acquisition System

Cost Implications:

The capital program includes substantial infrastructure implications as new facilities and capital improvements are envisioned which will require utility support. This planning effort will apprise the Port with appropriate forethought and intelligent design analysis to intelligently inform program capital funding decisions.

Pros:

(1) The Port will minimize duplications of effort and cost increases by conducting holistic infrastructure systems planning and development. This alternative reduces costs in staff time and overhead for each utility involved - the solicitation, evaluation and selection process for design services is completed upfront for multiple planning efforts.
(2) This alternative reduces the schedule for each utility involved in that the solicitation, evaluation and selection for design services has already been completed. Typically, this process consumes approximately 3 to 4 months.
(3) This alternative more effectively provides for the "consistency" of parallel utility master planning efforts with sub consultants all being directed by a single prime consultant. The end result will be a fully integrated all-utility location and construction phasing plan.

Cons:

(1) None

This is the recommended alternative.

FINANCIAL IMPLICATIONS

Annual Budget Status and Source of Funds

$500,000 was included in the operating budget for 2018. The remainder of the funding will be included in the operating budget of future years.

ATTACHMENTS TO THIS REQUEST

(1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None