



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8b

ACTION ITEM

Date of Meeting May 24, 2022

DATE: May 13, 2022
TO: Stephen P. Metruck, Executive Director
FROM: Eileen Francisco, Director, Aviation Project Management
SUBJECT: **Water Reservoir Rehabilitation (C801172)**

Amount of this request: \$1,000,000
Total estimated project cost: \$3,169,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to (1) prepare design and construction bid documents, and (2) utilize Port of Seattle crews and small works contracts for the Water Reservoir Rehabilitation project at Seattle-Tacoma International Airport. The amount of this request is \$1,000,000. The total estimated project cost is \$3,169,000.

EXECUTIVE SUMMARY

The 2-million-gallon water reservoir at Seattle-Tacoma International Airport is an above ground steel tank that provides water storage for domestic use and firefighting to the entire airport. The recent inspection indicates that severe corrosion has appeared in many areas on the reservoir and, if not addressed, could result in deformation of the structure. Additionally, the presence of rust also puts the water quality into jeopardy. This project will rehabilitate the structure to extend its useful life.

JUSTIFICATION

The Department of Health requires that water reservoirs be kept in good operating condition. The reservoir was built in the year 2000 as a requirement under the National Fire Protection Association 24 code, ensuring the airport has reliable water on hand (in a tank) to fight any fire on the airport. Without the rehabilitation efforts the reservoir is at risk of potential structural failure and water quality degradation.

Diversity in Contracting

This project will utilize the mechanical IDIQ contract P00320719 – AMC Engineers and leverage their established WMBE goal of 17%.

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DETAILS

The water reservoir is located north of the airport off Host Road. The reservoir can hold 2 million gallons of fire and domestic water. It is generally recommended that water reservoirs of this type be inspected and cleaned every 3 to 5 years. Previous inspections include a 2013 dive inspection, 2017 cathodic protection survey, and 2018 dive inspection. The most recent inspections include a 2021 dive inspection, cathodic protection inspection, and 2022 exterior coating test.

The Department of Health requires that water reservoirs be kept in good, operating condition.

During construction, the airport’s water source will be switched over from the reservoir to Seattle Public Utilities. Coordination and planning efforts with Aviation Maintenance, Boiler, and the Fire Department are underway for this event, as well as giving contractors access to the tank during construction.

Some scope items require that the water reservoir be drained completely. Due to environmental restrictions, the water cannot be drained directly into the sewer. Therefore, it is likely that storage tanks will be brought onto the site to hold the water during construction.

Scope of Work

The scope for this project includes recommendations from the 2021 dive inspection report. Additional scope items from project stakeholders have also been included. The project scope seeks to rehabilitate the structure and extend the asset’s useful life by 20 years by implementing the following improvements:

- (1) Complete replacement of interior and exterior coatings
- (2) Cathodic protection system improvements
- (3) Rebuild interior and exterior access ladders to meet safety codes
- (4) Replace weathered tank hardware including nuts, bolts, cables, and pulleys
- (5) Install tank sampling ports
- (6) Valve vault improvements and repairs
- (7) Cleaning/Removing vegetation between the pavement joints and around the perimeter of the concrete foundation
- (8) Repairing broken concrete curb around the base of the water reservoir

Schedule

Activity

Design start	Q2 2022
Commission construction authorization	Q1 2023
Construction start	Q4 2023
In-use date	Q3 2024

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Cost Breakdown	This Request	Total Project
Design	\$1,000,000	\$1,150,000
Construction	\$0	\$2,019,000
Total	\$1,000,000	\$3,169,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Proceed with only the scope items outlined in the 2021 Inspection Report.

Cost Implications: \$3,024,000

Pros:

- (1) Eliminates risk of the tank’s structural integrity becoming compromised.
- (2) Eliminates risk of jeopardizing water quality.
- (3) Decreases direct costs over Alternative 1 by \$145K.

Cons:

- (1) These scope items will need to be completed at another date, requiring the water reservoir be drained a second time.
- (2) The project will not include the scope items required by the Washington Administrative Code.

This is not the recommended alternative.

Alternative 2 – Replace the tank entirely.

Cost Implications: \$20,000,000

Pros:

- (1) Eliminates risk of the tank’s structural integrity becoming compromised.
- (2) Eliminates risk of jeopardizing water quality.

Cons:

- (1) Significantly increases project cost with little to no added benefit.
- (2) The reservoir will be out of service for a much longer duration.

This is not the recommended alternative.

Alternative 3 – Proceed with the full scope of the Water Reservoir Rehabilitation project.

Cost Implications: \$3,169,000

Pros:

- (1) Eliminates risk of the tank’s structural integrity becoming compromised.
- (2) Eliminates risk of jeopardizing water quality.
- (3) Some of the additional scope items require the tank be empty. Including them in this project eliminates the need to drain the tank a second time, saving both time and money.

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- (4) Including the additional scope items will fulfill requirements set by the Washington Administrative Code regarding storage requirements and sampling ports for water quality monitoring.

Cons:

- (1) Increases direct costs over Alternative 2 by \$145K.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$1,572,000	\$0	\$1,572,000
Current change	\$1,571,000	\$26,000	\$1,597,000
Revised estimate	\$3,143,000	\$26,000	\$3,169,000
AUTHORIZATION			
Previous authorizations	\$150,000	0	\$150,000
Current request for authorization	\$974,000	\$26,000	\$1,000,000
Total authorizations, including this request	\$1,124,000	\$26,000	\$1,150,000
Remaining amount to be authorized	\$2,019,000	\$0	\$2,019,000

Annual Budget Status and Source of Funds

This project, CIP C801172, was included in the 2022-2026 capital budget and plan of finance with a budget of \$1,572,000. A budget increase of \$1,571,000 was transferred from the Aeronautical Reserve CIP (C800753) resulting in zero net change to the Aviation capital budget. The funding source will include the Airport Development Fund.

Financial Analysis and Summary

Project cost for analysis	\$3,169,000
Business Unit (BU)	Utilities
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase due to inclusion of capital (and operating) costs in airline rate base.
IRR/NPV (if relevant)	N/A
CPE Impact	\$.01 in 2026

Future Revenues and Expenses (Total cost of ownership)

No additional maintenance costs are anticipate following the completion of this project.

ATTACHMENTS TO THIS REQUEST

- (1) Presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None.