



**COMMISSION
AGENDA MEMORANDUM**

Item No. 8j

ACTION ITEM

Date of Meeting April 26, 2022

DATE: April 15, 2022

TO: Stephen P. Metruck, Executive Director

FROM: Eileen Francisco, Interim Director, AV Facilities & Capital Programs
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Tye Pond Effluent Pipe Replacement (C801173)

Amount of this request: \$390,000

Total estimated project cost: \$2,540,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to complete design for the Tye Pond Effluent Pipe Replacement Project located just south of the Seattle-Tacoma International Airport in the amount of \$390,000. The total estimated project cost is \$2,540,000.

EXECUTIVE SUMMARY

The Tye Pond stormwater pond and its control structures are a regional detention facility that the Port of Seattle owns, maintains, and operates. This detention facility is regulated by the Department of Ecology (DOE) Dam Safety Program. The downstream effluent pipe is over 30 years old and shows signs of damage and deterioration. The pipe needs to be replaced to ensure that the detention facility and downstream effluent pipe can function as designed for the next 50 years. Emergency repairs have already been needed and DOE issued a requirement for a permanent repair to be completed by 2025.

JUSTIFICATION

This project will support the following Century Agenda goals:

- To be the greenest and most energy-efficient port in North America by meeting or exceeding agency requirements for stormwater leaving Port-owned or operated facilities.
- To become a model for equity, diversity, and inclusion by increasing utilization of Women and Minority Business Enterprise (WMBE) and Disadvantage Business Enterprise (DBE) firms and eliminating disparity of access to opportunities.

In December 2021, a pipe assessment was completed that examined the existing pipe downstream of the repaired section (approximately 382 linear feet). The Pipe Assessment Report noted joint separation, deformation, and corrosion in the downstream pipe and recommended

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replacing the entire pipe. If the pipe completely fails, the hydraulics of Des Moines Creek will be affected impacting the downstream salmon bearing creek habitat. In the worst-case scenario, with the detention facility at full capacity, the pipe failure can result in the failure of the Tye Pond embankment sending several thousand gallons of stormwater towards downstream residents adjacent to Des Moines Creek in an uncontrolled fashion.

Diversity in Contracting

The design of this project will utilize an existing indefinite delivery indefinite quantity (IDIQ) contract that has an established WMBE goal of 10%. The project team will work with Diversity in Contracting department to establish additional WMBE goals within the construction phase of this effort.

DETAILS

Tye Pond is located south of Seattle-Tacoma International Airport and is located on the east fork of Des Moines Creek flowing south from Bow Lake. The pond has a capacity of 19.7 acre-ft and is therefore regulated by DOE Dam Safety program. The pond and effluent pipe were originally constructed in the late 1980’s. In 2020, emergency repairs were made to a small section of the pipe (approximately 32 linear feet) that was leaking and causing sinkholes to appear on the pond embankment above the pipe. DOE accepted the interim repairs but required a permanent repair by 2025.

Scope of Work

The project will replace the entire downstream effluent pipe with a 72-inch diameter reinforced concrete pipe. In addition, two manhole structures will be added to the northern section of the pipe to provide energy dissipation.

Schedule

Commission design authorization	2022 Quarter 2
Design start	2022 Quarter 2
Commission construction authorization	2023 Quarter 1
Construction start	2023 Quarter 2
In-use date	2023 Quarter 4

Cost Breakdown

	This Request	Total Project
Design	\$390,000	\$625,000
Construction	\$0	\$1,915,000
Total	\$390,000	\$2,540,000

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ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – No improvements

Cost Implications: \$0

Pros:

- (1) Requires no capital investment

Cons:

- (1) Does not address integrity of Tye Pond dam required by DOE
- (2) Does not address long-term viability of the storm water infrastructure

This is not the recommended alternative.

Alternative 2 – Utilize the bypass system

Cost Implications: \$702,000

Pros:

- (1) Requires less capital investment

Cons:

- (1) Does not address integrity of Tye Pond dam required by DOE
- (2) Does not address long-term viability of the storm water infrastructure
- (3) Potential to damage downstream salmon bearing creek habitat (and trigger fines)

This is not the recommended alternative.

Alternative 3 – Replace the effluent pipe

Cost Implications: \$2,540,000

Pros:

- (1) Permanent solution ensuring Tye Pond dam integrity
- (2) Offers maximum stormwater flow control from the Tye Pond
- (3) Doesn't adversely impact flow to downstream salmon bearing creek

Cons:

- (1) Requires greater capital investment
- (2) Permits may be required by the Corps of Engineers to complete this project potentially delaying project completion by a year.

This is the recommended alternative.

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FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$2,791,000	\$0	\$2,791,000
Current change	(\$251,000)	\$0	(\$251,000)
Revised estimate	\$2,540,000	\$0	\$2,540,000
AUTHORIZATION			
Previous authorizations	\$235,000	\$0	\$235,000
Current request for authorization	\$390,000	\$0	\$390,000
Total authorizations, including this request	\$625,000	\$0	\$625,000
Remaining amount to be authorized	\$1,915,000	\$0	\$1,915,000

Annual Budget Status and Source of Funds

This project CIP #801173 was included in the 2022-2026 capital budget and plan of finance as a budget of \$2,791,000. A budget decrease of \$251,000 was transferred to the Aeronautical Reserve (CIP #800753) resulting in a zero-net change to the Aviation capital budget. The funding source for this project will be the Airport Development Fund (ADF) and revenue bonds.

Financial Analysis and Summary

Project cost for analysis	\$2,540,000
Business Unit (BU)	Airfield Movement Area
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 2024

Future Revenues and Expenses (Total cost of ownership)

Operations and maintenance costs are anticipated to be minimal. The pipe will be video inspected once every 3-5 years.

ATTACHMENTS TO THIS REQUEST

- (1) Vicinity Map

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None