

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 4e
Date of Meeting May 12, 2015

DATE: May 4, 2015
TO: Ted Fick, Chief Executive Officer
FROM: Dave Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group
SUBJECT: Domestic Piping Branch Replacement (CIP #800657)

Amount of This Request:	\$1,392,000	Source of Funds:	Airport Development Fund (ADF)
Est. Total Project Cost:	\$1,950,000		
Est. State and Local Taxes:	\$115,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to advertise, bid and execute a major works construction contract for the Domestic Piping Branch Replacement project at Seattle-Tacoma International Airport. This authorization is for \$1,392,000 of a total estimated project cost of \$1,950,000.

SYNOPSIS

This authorization would allow for the construction required to replace aging domestic water pipes and associated valves in the Airport's Main Terminal.

BACKGROUND

There are four domestic water piping branches and manifolds in the Main Terminal, one serving each mechanical room (rooms 1-4). These piping branches are approximately 43 years old. During recent maintenance activities, portions of the piping were disassembled. The pipes were found to be severely corroded, with the interior of pipes and fittings nearly completely plugged with rust deposits. Also, many of the valves no longer function, leaving the Port vulnerable to a water shutdown in the event of failure.

PROJECT JUSTIFICATION AND DETAILS

This request would authorize construction work for the replacement of the water pipes prior to failure. Water pipes corrode through age and use. These pipes are over 40 years old and show considerable corrosion. The disruption of domestic water supply in the event of failure would be unacceptable to airport operations.

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Construction will be performed by a major works contractor with support from Port maintenance and Port Construction Services.

Project Objectives

- Replace existing domestic water piping from the water main in the utilidor through the reducing stations in Mechanical Rooms 1-4.
- Reduce risk of domestic water disruption to large portions of the Airport caused by pipe or valve failure.
- Evaluate existing pipe sizes based on current demands and planned expansions and resize piping as appropriate.
- Design and integrate domestic water metering into the existing Direct Digital Control System.
- Replace existing valves that enable the Airport to shut down water in the event of an emergency or for future work shutdowns.
- Minimize water supply disruption by performing root valve replacements overnight and back feeding each mechanical room with water during construction to avoid outages.

Scope of Work

- Replace four 6" and 8" domestic piping branches and associated sub-branches from the 12" main in the utilidor up to and including the reducing stations located near the mechanical rooms in the Main Terminal; and
- Perform necessary work to keep the domestic water system functional through the construction period.

Schedule

Project Notebook Approval	3 rd Quarter 2014
Commission Authorization for Design	4 th Quarter 2014
Design Start	4 th Quarter 2014
Design Completion	2 nd Quarter 2015
Commission Authorization for Construction	2 nd Quarter 2015
Construction	4 th Quarter 2015 through 1 st Quarter 2016

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$1,950,000	\$0	\$1,950,000
Previous Authorizations	\$558,000	\$0	\$558,000
Current request for authorization	\$1,392,000	\$0	\$1,392,000
Total Authorizations, including this request	\$1,950,000	\$0	\$1,950,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$1,950,000	\$0	\$1,950,000

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Project Cost Breakdown

	This Request	Total Project
Design	\$0	\$558,000
Construction	\$1,392,000	\$1,392,000
Total	\$1,392,000	\$1,950,000

Budget Status and Source of Funds

This project was included in the 2015-2019 capital budget and plan of finance with a budget of \$1,950,000. The funding source will be the Airport Development Fund.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Renewal and Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$1,950,000
Business Unit (BU)	Terminal cost center
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	CPE will increase by less than \$.01 in 2017. This project was included in the business plan forecast.

STRATEGIES AND OBJECTIVES

This project supports the Port's Century Agenda objective of meeting the region's air transportation needs at Sea-Tac Airport for the next 25 years. Maintaining our existing assets and infrastructure is necessary to meeting this objective.

This project is not impacted by the airport's Sustainable Airport Master Plan.

TRIPLE BOTTOM LINE

Economic Development

This project will allow the Port to continue providing Airport and concessions tenants with uninterrupted domestic water. Completion of this project will significantly reduce the chances of a domestic water outage and also prevent the economic impacts of an emergency repair project and potential costs to tenants.

Environmental Responsibility

This project will provide the opportunity to apply environmental sustainability principles primarily through the use of ductile iron pipe that has a high recycled content

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Community Benefits

This project saves the Port the potential cost and operational impacts of a domestic water failure that could take several months to correct. Concessions and the traveling community will also benefit by maintaining an uninterrupted water supply.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Status Quo.

Capital Cost: \$0; increased maintenance expense

Pros:

- The Port could delay expenditure of the cost of pipe replacement, using the funds for other purposes.

Cons:

- Valves are already partially plugged and do not function. A more significant failure is likely within the next two years.

Alternative 2) – Perform complete piping replacement of the entire main terminal.

Cost: \$8,203,000

Pros:

- This option replaces all the corroded domestic water piping through the main terminal.

Cons:

- This option is prohibitively expensive and does not take advantage of the efficiencies gained by combining future plumbing repair into other upcoming construction that will occur in the same locations.

Alternative 3) – Perform selective replacement where the problems are the worst - mechanical rooms 1-4.

Cost: \$1,950,000

Pros:

- This option is a cost effective way to replace a major portion of the corroded domestic water piping in the mechanical rooms and takes advantage of the efficiencies gained by combining remaining piping replacement into upcoming work that will occur in the same locations.

Cons:

- This option does not replace all the domestic water piping that will eventually need to be replaced.

The recommendation is to pursue Alternative 3.

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ATTACHMENTS TO THIS REQUEST

- Computer slide presentation.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- November 4, 2014 – Commission approved \$558,000 for preparation of design and construction contract documents.