PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 5b

Date of Meeting September 28, 2010

DATE: September 13, 2010

TO: Tay Yoshitani, Chief Executive Officer

FROM: David Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Isolation Valve Upgrade project at Seattle-Tacoma International Airport (CIP # C102334).

This Request: $1,149,000

Source of Funds: Airport Development Fund

Total Project Budget: $2,147,000

Jobs Created: 20 (entire project)

Sales Tax Paid: $60,000 (this authorization)

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to (1) complete design of the entire Seattle-Tacoma International Airport (Airport) Water Isolation Valve Upgrade Project; (2) execute a contract to purchase valves and related equipment; and (3) utilize Port crews to complete installation of the isolation valves in non-secure Airport areas. The amount of this request is $1,149,000. The total cost of the project is estimated to be $2,147,000.

SYNOPSIS:

The water distribution system at the Airport is almost 40 years old. Presently, several areas of the water piping system have malfunctioning isolation valves, including some locations on the airfield. This project will replace failing valves and add valves in several strategic locations so that major sections of the water system are less vulnerable to outages. It will enable the Airport Water Department to isolate sections of the domestic water mains at the Airport in the event of a water main break or for construction-related activities. The projected design operating life of the new valves is 30 years.

The CIP will be executed in two parts: (1) a Port Construction Services (PCS) managed project to replace or install several valves in the non-secure areas of the Airport, and (2) a major construction contract to replace or install several valves inside the security fenced areas (airfield).

The (1) PCS managed project has an estimated total project cost of $704,000 and will be constructed in Spring 2011 with Port crews and small works contractors using the existing design provided by Port Staff. This request authorizes the Port to pre-purchase the valves and associated equipment and to construct this portion of the project.

The (2) major construction project has an estimated total project cost for replacement of the valves of $1,443,000. The design will be completed by Port staff and it will be included in the larger 2011 Airfield Improvement Project (AIP) with construction beginning in May 2011. This request authorizes the Port to complete design of a major construction project related to the isolation valves and pre-purchase the valves and associated equipment. The Port will seek authorization to advertise the 2011 AIP in January 2011.

Both portions of the project require special manufacturing of valves with an estimated 18-week purchasing lead time. Estimated cost of the valves for the total project is $382,000. The Port has determined that it is in the best interest of both portions to pre-purchase the valves because of the 18-week lead time for manufacturing. The Port anticipates executing a contract for construction around March/April 2011 so that construction can start by May/June 2011 in order to meet the December completion schedule.

BACKGROUND:

The majority of the water distribution system at the Airport is almost 40 years old. The system is equipped with buried pipes and some strategically located valves so that portions of the system can be isolated in the event of breaks, leaks, or tie-ins.

Certain valves do not work properly, have failed altogether, or have reached the end of their life expectancy. Major vital portions of the water system cannot be isolated because either an existing valve does not work or an isolation valve was never originally installed.

PROJECT DESCRIPTION/SCOPE OF WORK:

Project Statement:

This project will add or replace strategic valves to allow isolation of portions of the water system where existing valves are either missing or have failed.

Project Objectives:

- Replace existing valves that have reached or exceeded their useful life
- Install additional valves at strategic locations
- Reduce impacts to Airport operations during maintenance and future tie-ins
- Minimize water loss
- Minimize future life-cycle costs

- Maximize coordination with other projects (such as the 2011 AIP)
- Optimize use of infrastructure capacity
- Complete project on schedule and within budget.

Projected design operating life for the new valves is 30 years.

Scope of Work:

This project will replace selected isolation valves and add new isolation valves to the domestic/fire water system.

STRATEGIC OBJECTIVES:

Ensure Airport and Seaport Vitality

The project provides enhanced reliability and performance for critical water system infrastructure in strategically important areas of the Airport, which facilitates use of the Airport by the traveling public.

Exhibit Environmental Stewardship through Our Actions

This project is consistent with the Port's goal of improving the long-term sustainability of its facilities and operations by replacing equipment that has reached the end of its useful life. This project has a generally positive effect on the environment to the extent that the existing valves are old and malfunctioning and will be replaced with functional valves resulting in less water wastage and reduced system down time.

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary

Original Budget	$1,055,000
Budget increase	$1,092,000
Revised Budget	$2,147,000
Previous Authorizations	$ 0
Current request for authorization	$1,149,000
Total Authorizations, including this request	$1,149,000
Remaining budget to be authorized	$ 998,000

Project Cost Breakdown (This Authorization)

Construction costs (PCS and small works contractors)	$ 490,000
Pre-purchased valves	$ 382,000
Design	$ 96,000
Project Management	$ 39,000
Construction management/Admin/Procurement	$ 42,000
Sales tax	$ 60,000
Outside professional services	$ 40,000
Other	$ 0
Total	$ 1,149,000

Source of Funds

The Water Isolation Valve project (CIP # C102334) was included in the 2010-2014 capital budget and plan of finance as a committed project. The source of funds for the project will be the Airport Development Fund.

Financial Analysis Summary

CIP Category	***Renewal/Enhancement***
Project Type	Renewal & Replacement
Risk adjusted Discount rate	Not Applicable
Key risk factors	Not Applicable
Project cost for analysis	$2,147,000
Business Unit (BU)	Division-wide
Effect on business performance	Costs will be recovered through rates and charges
IRR/NPV	Not Applicable
CPE Impact	Less than $0.01 in 2012, but no change compared to business plan forecast as this project was included.

ECONOMIC IMPACTS:

The project does not create any incremental economic impacts apart from supporting the existing operations of the Airport.

ENVIRONMENTAL/COMMUNITY BENEFITS:

The project will utilize energy efficient equipment, reduce water loss, improve quality of water delivered to users, and reduce unplanned disruptions to operations.

TRIPLE BOTTOM LINE SUMMARY:

This project provides a cost effective means of accomplishing necessary renewal and replacement of critical Airport infrastructure.

PROJECT SCHEDULE:

- Complete Design – December 2010
- Pre Purchase Valves – January 2011
- Start Construction – March 2011
- Project Completion – December 2011

ALTERNATIVES CONSIDERED/RECOMMENDED ACTION:

Alternative 1: Renew and Replace Selected Valves in the Water System. Many of the water valves to be replaced are nearly 40 years old and need to be replaced. Other valves, however, continue to work well despite their age. These valves continue to perform as intended and would not be replaced. Known defective valves would be replaced (and selected new valves added at strategic locations) under this alternative. Lessons learned in this project would be used in additional renewal and replacement projects for our water system and other similar utilities. **This is the recommended alternative**.

Alternative 2: Do Nothing. The water system would remain as is. Existing valves, including those that are broken or compromised, would remain, and new valves would not be added. Under this option, certain portions of the water system cannot be isolated without shutting down major portions of the water system affecting major areas of the Airport. As the water system continues to age, more frequent failures and unanticipated outages will occur. Adding additional water system tie-ins as requested by customers will be more difficult in the future without the ability to isolate portions of the water system. Disruptions to tenant and Airport operations will increase. In addition, the Airport water system is a dual system providing water for domestic uses and fire water. Pressure in the water system increases dramatically in the event of a fire, as large diesel-powered fire pumps activate. An un-isolatable water main breakage corresponding with a fire event could compromise response, increasing life safety and property damage risks. This is not the recommended alternative.

Alternative 3: Replace all Older Valves in the Water System. This would further enhance reliability by replacing all older valves in the water system, but would be substantially more

expensive, cause more temporary disruptions to operations, and is not proven to be needed at this time. This is not the recommended alternative.

PREVIOUS COMMISSION ACTION:

No previous Commission action.