

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6d

Date of Meeting March 1, 2011

DATE: February 22, 2011

TO: Tay Yoshitani, Chief Executive Officer

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

SUBJECT: 2011 Airfield Improvement Projects – Contract 2 (CIPs # C102573, # C800469).

Amount of This Request: \$6,481,000

Source of Funds: Existing Revenue Bond Proceeds

State and Local Taxes Paid: \$509,000

Jobs Created: 13

Total Estimated Project Costs: \$7,320,000

ACTION REQUESTED:

Request authority for the Chief Executive Officer to advertise and execute a construction contract for the 2011 Airfield Improvement Projects – Contract 2, made up of two work projects: 1) slot drain, pavement and joint seal replacement at the South Satellite, and perform installation of temporary common use podiums and minor removal of hazardous materials through Port Construction Services with a construction cost request of \$6,235,000 for total project cost of \$6,629,000; and 2) water isolation valve upgrades, with a construction cost request of \$246,000 for a total project cost of \$691,000 at Seattle-Tacoma International Airport.

SYNOPSIS:

This authorization will complete the construction work associated with two earlier Commission actions in August and September of 2010 where the Commission authorized final design and pre-purchase of equipment. The single construction contract is comprised of work from two different capital improvement programs. One portion of this contract will replace slot drains (a long, narrow drain system to convey runoff from the pavement surface), concrete pavement panels, joint seal, utilities, common use gate and podiums with communication infrastructure, and other related scope items at the South Satellite. The second portion of the contract will replace inoperable or failing water valves and add strategically needed valves at the South Satellite and a location in the vicinity of the North Satellite within the airfield operations area. The two types of projects are being combined into a single construction contract because they both are located in the airfield operations area that has strict access and safety requirements, both have common elements of work, and a single contractor could provide efficiency. The Port's

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project labor agreement will be applied to this project as a result of the safety and time-sensitivity needs associated with working in the airfield restricted areas.

BACKGROUND:

In 2009, Airport staff conducted a visual survey of the non-runway pavement on the airfield, to determine which pavement needed replacing, and in what sequence. It was determined that the South Satellite work should be completed first, due to the deteriorating condition of the pavement caused primarily by the design of the original 40 year old slot drain system, which is at the end of its useful life. To that end, work in 2011 will focus on replacement of the slot drains and the associated pavement around the South Satellite. Pavement joint seals will also be replaced, to take advantage of the already closed gates.

The slot drain and adjacent concrete were originally installed in 1971 with an expected service life of 20 years. Typical degradation of the concrete is occurring. In the areas adjacent to the slot drains the concrete is degrading at an accelerated rate. Joint seal in the area has degraded and in some cases is nonexistent.

The concrete, slot drain and joint seal work must occur in a phased, gate by gate, fashion to keep the Satellite functional for our airline tenants. Advance acquisition and installation of temporary common use passenger processing equipment is required in order to enable a more efficient shift of airlines between gates to allow the work in the vicinity of respective gates to proceed.

The scope of work for concrete, slot drain and joint seal work includes temporary common use podiums for flights displaced by this project. Gates S8 and S9, which do not have common use equipment, will be used while other gates are not available. The temporary common use podiums will allow flights to be shifted to gates that currently do not have common use equipment and minimize impacts to the airlines and passengers. On September 28, 2010, the Commission provided authorization to design, acquire equipment, and install the temporary common use podiums. As the design progressed, it became apparent that the electrical and communication connections were more challenging than anticipated and that the acquisition of the equipment would cost approximately \$178,000 more than anticipated. Therefore, additional funds are included in this request to allow installation of the common use equipment.

This project is part of a multi-year program to replace some of the worst pavement and joint seal on the airfield. The project will generally replace the most critical pavement first, but will include other pavement sections when it makes sense, such as replacing aging pavement that still have some service life remaining can avoid future operational impacts. The criticality and order of the multi-year pavement replacement program may change over time, based on pavement deterioration, operational impacts, and available funding. The 2011 project is anticipated to be approximately \$6,629,000, which includes the funds currently being requested. The overall program amount for work from 2010 to 2015 is \$30.8 million.

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. However, certain valves do not work properly or are inoperable and have reached the end of their life expectancy. Major, critical

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sections of the water system cannot be isolated because either an existing valve does not work or an isolation valve does not exist. This creates operational risk to the Port's water supply system.

PROJECT JUSTIFICATION:

In areas around the South Satellite, the design used for the existing slot drain system is causing accelerated deterioration of the surrounding pavement. There is also other pavement in the vicinity of the South Satellite that needs to be replaced. Concrete debris resulting from the deteriorating pavement is a hazard for aircraft and personnel. As the gates are taken out of service for the pavement and slot drain replacement, it presents an opportunity to also replace the deteriorating pavement joint seal in the immediate area.

Replacing failing valves and adding strategically placed valves will enable the Airport Water Department to isolate sections of the water system in the event of a water main break or for construction-related activities.

Project Objectives:

Replacement of the slot drain, pavement panels, and joint sealant around the South Satellite. Also replace and install new water valves as indicated in design drawings.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

Replace failed slot drain, pavement panels, and joint seal around the South Satellite; replace failing water valves and add valves in several strategic locations around the airfield.

Project Labor Agreement:

This project will include a Project Labor Agreement due to the time sensitivity and safety issues associated with runway work.

Schedule:

- Complete Design 1st Quarter 2011
- Bid and Award 2nd Quarter 2011
- Start Construction 3rd Quarter 2011
- In-Use Date 4th Quarter 2011
- Project Completion 4th Quarter 2011

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary:

Slot Drains, Pavement Panel Replacement and Joint Sealant

Original Budget	\$30,800,000
Budget Increase	\$0
Revised Budget	\$0
Previous Authorizations this CIP	\$394,000
Current request for authorization	\$6,235,000

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Total Authorizations, including this request	\$6,629,000
Remaining budget to be authorized	\$24,171,000

The \$30,800,000 original budget for pavement replacement was set by the Aviation Investment Committee and is intended to cover replacement over the next several years. Each successive authorization will be requested from the commission on a yearly basis.

Water Isolation Valve Upgrade

Original Budget	\$1,055,000
Budget Increase	\$1,092,000
Revised Budget	\$2,147,000
Previous Authorizations (CIP # C102334)	\$1,149,000
Current request for authorization (CIP # C800469)	\$246,000
Total Authorizations, including this request	\$1,395,000
Remaining budget to be authorized (CIP # C800469)	\$752,000

The original CIP budget of \$2,147,000 was split after the previous authorization of \$1,149,000. \$704,000 of the authorized funds was retained in (CIP # C102334) for non-airfield work. The remaining budget \$1,443,000, of which \$445,000 was authorized, was moved into (CIP # C800469) for secured-airfield work.

Project Cost Breakdown:

Slot Drains, Pavement Panel Replacement and Joint Sealant

Design	\$388,000
Site Work	\$4,855,000
PMG and Soft Costs	\$925,000
WA State Sales Taxes	\$461,000
Total	\$6,629,000

Water Isolation Valve Upgrade

Design	\$40,000
Site Work	\$506,000
PMG and Soft Costs	\$97,000
WA State Sales Taxes	\$48,000
Total	\$691,000

Combined – Contract Cost Breakdown

Design	\$428,000
Site Work	\$5,361,000
PMG and Soft Costs	\$1,022,000
WA State Sales Taxes	\$509,000
Total	\$7,320,000

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Budget Status and Source of Funds:

These projects are included in the 2011-15 capital budget and plan of finance within (CIP # C102573) and (CIP # C102334). The funding source will be existing revenue bond proceeds.

Financial Analysis and Summary:

Slot Drains, Pavement Panel Replacement and Joint Sealant

CIP Category	Renewal/Enhancement
Project Type	Infrastructure Upgrade
Risk adjusted Discount rate	n/a
Key risk factors	n/a
Project cost for analysis	\$6,629,000
Business Unit (BU)	Airfield – capital costs will be fully recovered in landing fees over the life of the asset
Effect on business performance	No change: NOI after depreciation will increase since capital and operating costs will be recovered through landing fees.
IRR/NPV	n/a
CPE Impact	CPE will increase less than \$.04 in 2012, but no impact on business plan forecast as this project was included.

Water Isolation Valve Upgrade

CIP Category	Renewal/Enhancement
Project Type	Infrastructure Upgrade
Risk adjusted Discount rate	n/a
Key risk factors	n/a
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	n/a
CPE Impact	CPE will increase by \$.01 in 2012, but no change compared to business plan forecast as this project was included.

Lifecycle Cost and Savings:

The service life for concrete pavement and slot drains on the airfield is 20 years. The service life for water valves is 20 years. This project is replacing components that have exceeded their expected service life.

Annual Estimated O&M:

No additional O&M costs beyond current levels are anticipated. Buried gate valves and the slot drain design are compatible with current O&M procedures. The replacement of deteriorating

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concrete will relieve maintenance of ongoing patching and repair in the affected area. A savings of approximately 200 hours of labor or \$10,000 to \$11,000 may be realized.

ENVIRONMENT AND SUSTAINABILITY:

The concrete panel and slot drain repair and maintenance is eligible for a Categorical Exclusion and Categorical Exemption under the National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) due to the nature of the project. The environmental review for the project will be completed before the project is advertised for construction.

The Airport's ramp area is comprised of a series of concrete pavement panels, and its slot drain system services the various Airport concourses. The ramp provides parking and access to the gate positions for aircraft. The slot drain system allows for drainage of the ramp area. Maintaining the ramp and slot drain system is critical for preserving access to aircraft parking.

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

STRATEGIC OBJECTIVES:

This project supports the Port's strategy to "Ensure Airport Vitality" by maintaining a safe operating environment as well as maximizing asset utilization.

TRIPLE BOTTOM LINE SUMMARY:

Replacement of slot drains, concrete pavement panels, and the joint sealant are a financially responsible way to insure continued access to the gate areas for the airline tenants and continued gate availability for the traveling public.

Combining the water valve replacement project with the slot drains and concrete panel replacement project provides a cost effective means of accomplishing necessary renewal and replacement of critical Airport infrastructure and minimizes impacts to the airlines and passengers.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Slot Drains, Pavement Panel Replacement and Joint Sealant

- 1) Do nothing: This alternative would result in an increasing risk of aircraft ingesting concrete debris into aircraft engines around the South Satellite and possible need for closure of gates. Additionally, the Port would not be able to shut down and isolate sections of the water system. This is not the recommended alternative.
- 2) Treat the two CIPs as different projects and separate them into two distinct contracts. The replacement of the pavement, slot drain system, and joint seal would be one project and the water isolation valves would be project two. Without proper coordination the ultimate result would be an increased impact to the airlines and escalation in construction costs due to duplication of effort. This is not the recommended alternative.

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- 3) Replace the slot drains, pavement, joint seal and water isolation valves during the 2011 construction season (approximately seven months). **This is the recommended alternative.**

Water Isolation Valve Upgrade

- 1) 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 protection. 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.
- 2) 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.
- 3) 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.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None

PREVIOUS COMMISSION ACTION:

On September 22, 2009, Senior Aviation Staff briefed Commission on Seattle-Tacoma International Airport Facility Functionality and Readiness.

On August 10, 2010, the Commission authorized the Chief Executive Officer to direct staff to: 1) proceed with project management, design, environmental support, and preparation of 100 percent design level construction documents for the replacement of slot drains, pavement and joint seal at the South Satellite at Seattle-Tacoma International Airport; 2) execute and award outside professional service agreements; 3) pre-purchase common-use gate equipment; and 4) allow Port Construction Services to self-perform, advertise for bids, and execute and award small works construction contracts for common use equipment installation.

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On September 28, 2010, the Commission authorized the Chief Executive Officer to: 1) complete design of the entire 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.