

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 5d

ACTION ITEM

Date of Meeting April 2, 2013

DATE: March 26, 2013

TO: Tay Yoshitani, Chief Executive Officer

FROM: Michael Ehl, Director, Airport Operations
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: 2014 Airfield Apron Pavement Replacement Design (CIP #C102573)

Amount of This Request: \$300,000 **Source of Funds:** Existing 2010 Revenue Bonds

Est. State and Local Taxes: TBD **Est. Jobs Created:** TBD

Est. Total Project Cost: \$6,500,000

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to design, prepare construction documents, and perform advanced preparatory work to replace distressed concrete pavement panels and joint sealant for the 2014 Airfield Apron Pavement Replacement project at Seattle-Tacoma International Airport in the amount of \$300,000. The total estimated project cost in 2014 is \$6,500,000.

SYNOPSIS:

This project is part of an ongoing pavement management program to replace aged and distressed pavement and joint sealant in non-runway areas. Many sections of pavement have exceeded their 20-year service life and have become cracked and damaged. Sealing joints between panels helps to prevent water intrusion to the subgrade and extends the life of the pavement. The pavement management program is necessary for safe and continued aircraft operations to occur. This project was included in the 2013 – 2017 capital budget and plan of finance. One area where work will be concentrated is the Cargo 6 hardstand area, which has a high percentage of distressed panels. Although currently not anticipated, additional funds may be requested if design and implementation reveal that additional pavement or mitigation for aircraft operations will be required during construction.

BACKGROUND:

The 2014 Airfield Apron Pavement Replacement project proposes to replace distressed concrete pavement panels and joint sealant in a programmatic approach as part of a multi-year program. This approach would involve the replacement of distressed panels and additional panels in the direct vicinity of the distressed panels. Concrete pavement panels have a service life of 20 years. Joint sealant typically has a service life of 10 years. A significant amount of existing airfield apron pavement and joint sealant has far exceeded its expected service life. This strategy of

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replacing larger groups of panels will allow aged panels to be systematically and more efficiently replaced than if only individual panels were replaced. Over time, this approach should be less disruptive to airline operations since the areas will not need to be closed again for construction for many years. The replacement of the joint sealant helps to extend the life of pavements.

Port staff has specifically identified a location with a high percentage of distressed panels, the Cargo 6 hardstand area north of the Fire Station (See Attachment A). The Cargo 6 area has one of the highest concentrations of distressed panels at the Airport. This work will be included in a contract to enhance Cargo 6 for improved cargo operations. The cost for this portion of the apron panel replacement is estimated to be in the \$4 million range.

This project will also identify other sections of distressed airfield pavement and joint sealant for replacement. These sections can occur anywhere on the airfield, not including runways. Runway pavement replacement is conducted under a different program. These sections of panels and joint sealant will be replaced under a separate contract from the Cargo 6 panels. The construction costs for this project have yet to be determined but a projected estimate is in the \$2.5 million range.

The current request accounts for the design and implementation of a minimal amount of temporary measures required to mitigate airline impact due to anticipated gate and cargo aircraft parking closures. Closure of gates and cargo aircraft parking areas, required by the construction of the project, may cause reassignment of domestic and international flights on multiple concourses. Port staff will return to the Commission to request additional funding in the event that extensive temporary modifications for reassigning gates and parking areas are required that exceed the authorized funds. The estimated total cost for apron panel replacement and joint seal in 2014 is yet to be determined but is projected to be in the \$6.5 million range.

The original budget for the program is \$30,800,000. The remaining funds for the last two funded years of the program, is approximately \$10.1 million with approximately \$6.5 million to be used for the pavement project in 2014 and \$3.6 million for the pavement project in 2015. Previous cost saving accounts for the difference between the approximately \$10.1 million of funds remaining and the \$8,617,000 of remaining budget to be authorized.

PROJECT JUSTIFICATION:

Aging existing concrete across the Airport Operations Area (AOA) has resulted in cracked and damaged panels. Concrete debris resulting from deteriorating pavement can become a hazard for aircraft and personnel. The replacement of joint sealant helps to extend the life of the pavement.

This project will likely impact air cargo operations at hardstands across the Airport and impact taxiway configurations. If additional distressed concrete panels are discovered in gate areas prior to construction, advanced preparations such as temporary podiums at the gates within the interior of the terminal may be necessary to facilitate airline tenant relocation. The need for temporary modifications requires discussion and coordination with the airlines during the design phase and is dependent upon the anticipated impact during construction.

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Project Objectives:

- Replace aged pavement and joint sealant as part of the pavement management program that allows aircraft operations to safely occur.
- Complete the final design for the pavement, and joint seal replacement in preparation for construction in summer of 2014.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

Produce final design for the apron pavement, and joint seal replacement. The design will include utilities, temporary striping and lighting and other scope items related to the project.

Schedule: General 2014 Panel and Joint Seal Replacement

Begin Design	April 2013	
Final Design	March 2014	
Commission Authorize Advertise	March 2014	
Advertise	March 2014	
Construction	May to	October 2014

Schedule: Cargo 6 Panel Replacement

Begin Design	April 2013	
Final Design	July 2013	
Commission Authorize Advertise	August 2013	
Advertise	September 2013	
Construction	January – October	2014

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary:

Original Budget	\$30,800,000
Budget Decrease (2012)	\$(537,965)
Previous Authorizations	\$21,345,035
Current request for authorization	\$300,000
Total Authorizations, including this request	\$21,645,035
Remaining budget to be authorized	\$8,617,000

Project Cost Breakdown:

Design	\$150,000
Project Management	\$90,000
Survey	\$40,000
Internal POS Support and Review	\$20,000
Total	\$300,000

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Budget Status and Source of Funds:

The airfield panel and joint seal replacement is included in the 2013-2017 capital budget and plan of finance. The airfield panel and joint seal replacement project, CIP #C102573, is part of a multi-year program to replace deteriorating pavement panels and joint seal. The funding source will be existing revenue bond proceeds and future bonds.

Financial Analysis and Summary:

CIP Category	New/Enhancement
Project Type	Renewal & replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$6,500,000
Business Unit (BU)	Airfield
Effect on business performance	NOI after depreciation will occur
IRR/NPV	N/A
CPE Impact	By 2014, the combined effect of these projects will increase CPE by less than \$0.03.

Lifecycle Cost and Savings:

Annual Operating and Maintenance costs are not anticipated to change appreciably. The replacement of concrete panels and joint seal will result in cost avoidance for maintaining them.

STRATEGIC OBJECTIVES:

Maintaining critical airfield assets supports the Port's Century Agenda objective to meet the region's air transportation needs at Sea-Tac for the next 25 years. Top-notch air cargo facilities are fundamental to becoming a premier international logistics hub.

ENVIRONMENTAL SUSTAINABILITY:

During repair and maintenance activities, various sustainable practices will be considered and implemented when practicable. These include, but are not limited to, performing a lifecycle analysis of materials used to ensure that resources being used and/or recycled are environmentally and economically practical; utilizing onsite water for dust control and irrigation; the reuse of materials such as concrete and soil; and employing low emission construction equipment.

BUSINESS PLAN OBJECTIVES:

This project furthers the Airport's business plan objectives to operate a world-class international airport by ensuring safe and secure operations and by managing our assets to minimize the total long-term cost of ownership.

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ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

- 1) Do nothing: This alternative would result in an increasing risk of aircraft ingesting concrete debris into aircraft engines from distressed pavement, adversely affecting Airport operations. This is not the recommended alternative.
- 2) Replace the pavement and joint seal at Cargo 6 and at other non-runway areas during the 2014 construction season. This allows for the programmatic replacement of aged and distressed pavement and joint sealant. **This is the recommended alternative.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

- None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

C102573 – Airfield Pavement Replacement

- On April 10, 2012, the Commission authorized an additional \$1,467,000 because the bids exceeded the engineer's estimate by greater than 10 percent; and authorized the Chief Executive Officer to execute a contract in the amount of \$6,553,964 with the low responsive and responsible bidder for the 2012 Exterior Gates and Airfield Improvement Projects. This authorization increased the budget by \$1,467,000 due to the higher than expected bids, for a total project cost of \$10,500,000.
- On January 24, 2012, the Commission authorized \$4,707,000 and for the Chief Executive Officer to advertise and execute a construction contract that included Apron Pavement Replacement, Exterior Gate Improvements, Runway 16C/34C Panel Replacement, and South Snow Dump Pavement Expansion.
- On July 26, 2011, the Commission authorized \$465,000 and for the Chief Executive Officer to complete the design and perform any advance work in support of the 2012 Pavement and Joint Replacement and Sealant Project for non-runway concrete pavement panels, joint seal replacement, spall repair, and associated or temporary facilities, such as striping, lighting, etc., on the Aircraft Operations Area.
- On March 1, 2011, the Commission authorized \$6,235,000 and for the Chief Executive Officer to advertise and execute a construction contract that included slot drain, pavement, and joint seal replacement at the South Satellite and perform installation of temporary facilities in concourses.
- On August 10, 2010, the Commission authorized \$394,000 and for 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.