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**COMMISSION
AGENDA MEMORANDUM**

Item No.

4c

ACTION ITEM

Date of Meeting

May 9, 2017

DATE: May 2, 2017

TO: Dave Soike, Interim Chief Executive Officer

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

SUBJECT: 2018 Airfield Pavement Project (CIP #C800483)

Amount of this request: \$1,000,000

Total estimated project cost: \$20,000,000

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to (1) design and prepare construction documents for the replacement of distressed pavement and joint sealant for the 2018 Airfield Pavement portion of the 2016-2020 Airfield Pavement Program at the Seattle-Tacoma International Airport in the amount of \$1,000,000; and (2) utilize a project labor agreement (PLA) for this project.

EXECUTIVE SUMMARY

This project is part of an ongoing Pavement Management and Maintenance Program (PMMP) as required by the Federal Aviation Administration (FAA). The focus of this program is to replace distressed pavement and aged joint sealant on the airfield. The project includes emergent distressed areas on the airfield as well as areas surrounding the aircraft gates.

Replacing damaged pavement and joint sealant on the airfield supports the long-term strategy of the Port's Century Agenda objective to "Meet the region's air transportation needs at Seattle-Tacoma International Airport for the next 25 years." The PMMP maintains the integrity of airfield pavements and enables efficient airport operations. Deferring panel and joint sealant replacement could potentially increase risk to airfield operations and drive costs higher in the future.

This project was included in the 2017 – 2021 capital budget and plan of finance. Compared to that plan, this authorization request increases scope and spending in 2018 to take advantage of the closure of Runway 16L/34R for other work, thereby minimizing disruption to airfield operations. The Port anticipates receiving a grant from the Federal Aviation Administration (FAA) of approximately \$5.5 million.

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JUSTIFICATION

The 2018 Airfield Pavement Program is a continuation of the programmatic approach of replacing aged and distressed pavement and joint sealant as part of a multi-year program. Many sections of airfield pavement have exceeded their 20-year service life and have become cracked and damaged. Replacement of joint sealant typically needs to occur every 8 to 10 years.

This project consists of three key components:

1. Replace sections of aged and distressed concrete pavements on Taxiway B;
2. Replace the joint sealant located at touch down zones on Runway (RW) 16L/34R;
3. Replace sections of failing asphalt pavement located west and north of the South Satellite with concrete pavement.

The sections of pavements on Taxiway B were identified during inspections with high severity pavement distress. The replacement will require the closure of the section of Taxiway B and utilize the RW16L/34R for aircraft taxiing. Including the work in 2018, Airfield Pavement Project can take advantage of the RW16L/34R closure already scheduled for the 2018 Taxiway (A/B/L/Q) Improvement Projects to minimize construction impacts to airfield operations. Taxiway B panel replacement work is estimated to cost approximately \$14 million.

The joint sealant located at touch down zones on RW 16L/34R is in generally poor condition with the complete absence of sealant in some areas. Joint seal damage enables the accumulation of incompressible materials and significant infiltration of water, which would consequently result in pavement failures. The replacement of joint sealant in 2018 will help extending the pavement service life. The joint sealant replacement work is estimated to cost approximately \$1.5 million.

The sections of asphalt pavement located west and north of the South Satellite are no longer structurally adequate to handle the weight of aircraft and ground support equipment (GSE). There has been Foreign Object Debris (FOD), safety and equipment issues around the South Satellite, related to asphalt rutting and potholing from GSE. This project will interface with the International Arrivals Facility and future South Satellite Renovation projects so that the scope and schedule of this project will not be in conflict with either of these projects. The replacement of asphalt pavement around the south satellite is estimated to cost approximately \$4.1 million.

In addition, this project will replace isolated distressed concrete panels on the airfield identified during the airfield inspections. Additional distressed panels that are deemed critical by airport Operations, and need urgent replacement, could be added to this project. The cost estimate for the replacement of isolated concrete panels is approximately \$400,000.

Replacing distressed pavement and joint sealant on the airfield ensures safe operations at Seattle-Tacoma International Airport. The Port may take advantage of the pavement

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replacement by also replacing in-pavement utilities and slot drains, when it makes sense, as well as removing abandoned utilities within the general work area.

This pavement and joint sealant replacement work is planned to be combined with Industrial Waste System (IWS) Modifications at Concourse B and 2018 Taxiway (A/B/L/Q) Improvement Projects, which require the closure of RW16L/34R, as a single construction contract. Schedules of the three projects will be coordinated to minimize impacts to airfield operations from construction activities. The combined projects will benefit from a more efficient design, economies of scale and lower administrative costs.

Project Labor Agreements (PLAs) have been used on past airfield projects in order to reduce risk to operations impacts and construction schedule delays caused by potential labor disputes. This project will use a PLA since it would be combined with Industrial Waste System (IWS) Modifications at Concourse B and 2018 Taxiway Improvement Projects that will use a PLA as a single construction contract.

The 2018 Airfield Pavement Project will include federally certified Disadvantage Business Enterprise (DBE) goals. Analysis of DBE utilization will be conducted by the Economic Development Division’s Small Business Group (SBG).

Specific outreach efforts for this project will be conducted through the Port of Seattle’s Small Business Generator (PortGen) program.

DETAILS

Scope of Work

- (1) Replace aged and distressed concrete pavement on the airfield;
- (2) Replace damaged joint seal for the touch done zones at RW16L/34R;
- (3) Replace sections of asphalt with concrete pavement to provide adequate structural support for aircraft operations.
- (4) Replace in-pavement utilities and slot drains, when it makes sense, as well as remove abandoned utilities within the general work area.

Schedule

<i>Activity</i>	
Design start	2017 Quarter 2
Commission construction authorization	2017 Quarter 4
Construction start	2018 Quarter 2
In-use date	2018 Quarter 4

Cost Breakdown

	This Request	Total Project
Design	\$1,000,000	\$2,157,000

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Construction	0	\$17,843,000
Total	\$1,000,000	\$20,000,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Only replace the joint sealant at touch down zones on RW16L/34R

Cost Implications: \$1,500,000

Pros:

- (1) Reduced construction cost for 2018. While the annual maintenance cost would increase, this would be less than the initial capital investment.
- (2) The replacement of joint sealant on the runway will help with ensuring safe aircraft operations and prolonging the service life of pavement to reduce the life cycle cost.

Cons:

- (1) Continued use of the aged and distressed pavement would result in FOD and potentially increase risk to airfield operations.
- (2) Deferring panel replacement would likely shorten the life of pavements and drive costs higher in the future.
- (3) Does not leverage available FAA funding.

This is not the recommended alternative.

Alternative 2 – Delay the project beyond 2018

Cost Implications: \$21,000,000

The estimate is based on the assumption of delay project to 2019. If the project is delayed beyond 2019, the cost estimate would be further increased to reflect annual escalation.

Pros:

- (1) No construction cost for 2018.
- (2) No construction impacts to aircraft operations at affected areas by this project in 2018.

Cons:

- (1) Continued use of the pavement could result in FOD, and/or closure of the area to aircraft use.
- (2) This project would likely lose the opportunity to be combined with other construction projects if it's delayed beyond 2019. This would result in contracting inefficiencies and more impact to airfield operations.

This is not the recommended alternative.

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Alternative 3 – Replace distressed pavement and joint seal on the airfield during the 2018 construction season.

Cost Implications: \$20,000,000

Pros:

- (1) Programmatic replacement of distressed pavement and joint seal provide stable structural support to aircraft operations.
- (2) This project could be combined with other construction projects requiring the closure of RW16L/34R during the 2018 construction season to increase efficiencies and minimize impacts to airport operations.
- (3) Support the Port’s Century Agenda.

Cons:

- (1) Earlier capital spending than the other alternatives.
- (2) Construction impacts to aircraft operations in 2018.

This is the recommended alternative.

FINANCIAL IMPLICATIONS of 2018 Airfield Pavement Project C800483

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original Budget	\$32,500,000	\$0	\$32,500,000
Savings	\$200,000		\$200,000
Current Budget	\$32,300,000		\$32,300,000
2017 Program Budget	\$1,300,000		\$1,300,000
2018 Cost Estimate	\$20,000,000		\$20,000,000
Revised estimate	\$11,000,000	\$0	\$11,000,000
AUTHORIZATION			
Previous authorizations (2017 Program)	\$1,500,000		\$1,500,000
Current request for authorization (2018 Design)	\$1,000,000		\$1,000,000
Total authorizations, including this request	\$2,500,000	\$0	\$2,500,000
Remaining amount to be authorized (2018 Program – Construction)	\$19,000,000		\$19,000,000
Remaining Authorization – Future TBD	\$10,800,000	\$0	\$10,800,000

Annual Budget Status and Source of Funds

The Airfield Pavement Program (C800483) is included in the 2017-2021 capital budget and plan of finance with a budget of \$32,500,000. The 2018 portion is estimated to be \$20 million. The funding sources for this project will be the Airport Development Fund (ADF), revenue bonds,

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and Airport Improvement Program (AIP) grants of approximately \$5.5 million to be determined by the FAA.

Financial Analysis and Summary

Project cost for analysis	\$20,000,000
Business Unit (BU)	Airfield Movement Area and Airfield Apron Area
Effect on business performance (NOI after depreciation)	NOI after depreciation will decrease
IRR/NPV (if relevant)	N/A
CPE Impact	\$0.04 in 2019

Future Revenues and Expenses (Total cost of ownership)

Annual Operating and Maintenance costs are not anticipated to change appreciably. The estimated life expectancy for this project is 20 years for concrete pavement. Replacing pavement will result in maintenance cost avoidance. Replacing joint sealant will help with extending pavement service life and reducing lifecycle cost.

ATTACHMENTS TO THIS REQUEST

Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

October 25, 2016 – The Commission authorized the Chief Executive Officer to advertise and execute a single construction contract comprised of retrofits to five existing 400 Hz In-ground power stations at Cargo Areas 2 and 6, (CIP #C800247 and CIP #C800390, respectively) and the reconstruction of existing pavement at Cargo Area 2 (2017 Airfield Pavement Project - CIP #C800483); and approved use of a project labor agreement (PLA) for the projects.

February 24, 2015 – The Commission authorized the Chief Executive Officer to design, prepare construction documents, and implement advanced measures as necessary to replace distressed pavement and joint sealant for the 2016 Airfield Pavement portion of the 2016-2020 Airfield Pavement Program at the Seattle-Tacoma International Airport in the amount of \$200,000.