

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 5c
Date of Meeting October 22, 2013

DATE: October 15, 2013

TO: Tay Yoshitani, Chief Executive Officer

FROM: Ralph Graves, Managing Director, Capital Development Division
Wayne Grotheer, Director, Aviation Project Management Group
Janice Zahn, Assistant Director of Engineering, Construction Services

SUBJECT: Change Order 173 to Centralized Pre-Conditioned Air Project at Seattle-Tacoma International Airport – CIP # C800238

Amount of This Request: \$ 965,000

Source of Funds: Airport Development Fund,
Revenue bonds, Grants

Est. Total Project Cost: \$ 48,790,000

Est. State and Local Taxes: \$ 3,486,929

ACTION REQUESTED

Request Commission (1) approval of an additional authorization of \$965,000 to replenish construction contingency due to disputed costs and (2) authorization for the Chief Executive Officer to issue Change Order No. 173 for Contract MC-0316677, Centralized Pre-Conditioned Air Project (PC Air) at the Seattle-Tacoma International Airport, in the amount of \$453,143 to resolve the costs related to changes to the pipe hangers/supports and seismic restraints for the PC Air mechanical plant piping.

SYNOPSIS

On September 13, 2010, the Port executed a construction contract for PC Air with Lydig Construction. During construction, many issues were discovered that were not addressed in contract documents. In multiple previous Commission actions, change orders were approved to pay for the difference in cost necessary to resolve individual issues and to extend the project schedule.

The additional authorization of \$965,000 is needed to replenish the construction contingency as a result of change orders issued to resolve construction contract disputes. As there are still dispute issues to resolve along with the indirect costs associated with the schedule delays, staff intends to

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return to Commission as required for additional authorization as those disputes are resolved and costs negotiated.

The work is currently projected to be complete by the fourth quarter of 2013. The indirect costs related to the construction contract have not been fully addressed at this time, as the causes and the costs associated with the schedule delays are currently in dispute. As stated previously, staff will return to Commission when the final contract completion date is known and costs are finalized.

BACKGROUND

Lydig Construction was the low bidder with contract execution on September 13, 2010. The original contract completion date was December 12, 2012. There have been two contract extensions granted, extending the current contract completion by 258 days to August 26, 2013.

Despite the design and contracting challenges, the project is operational on Concourses A, B and C and the South Satellite. Cost growth is far less than the value of the \$21.9 million in FAA grants that were made possible by the expedited design prior to awarding the contract. Nevertheless, project completion has slid from the August 26, 2013, completion date and is now scheduled for the fourth quarter of 2013.

CHANGE ORDER DESCRIPTION

The following information relates to the pending change order scope and cost:

Change Order No. 173

Scope of work: Provide pipe hangers and seismic restraints as required for the PC Air mechanical plant piping for the total cost of \$453,143.

CONTRACT INFORMATION

The following information relates to the contract and competitive award:

Contract award date:	September 13, 2010
Original period of performance:	September 13, 2010 – December 12, 2012
Previous contract extensions:	258 Days
Contract extension this change order:	0* Days
Current Contract Completion Date:	August 26, 2013

FINANCIAL INFORMATION

Original contract amount:	\$27,013,400.00
Previous Change Orders Executed:	\$6,976,664.00
<u>Current contract amount</u>	<u>\$33,990,064.00</u>
This request, Change Order No. 173	\$453,143.00

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Subtotal Construction Costs	\$34,443,207.00
<u>Anticipated sales tax @ 9.5%</u>	<u>\$3,272,140.67</u>
Revised Contract Amount	\$37,715,311.67

*As there are multiple issues affecting the completion of the work, additional time may be granted by separate change order after an analysis of whether this specific issue impacted the project critical path and delayed the construction schedule.

PROJECT JUSTIFICATION AND DETAILS

The Centralized PC Air project is a very large and complex project that benefits airlines and travelers. Regardless of the outside weather conditions, a traveler expects the temperature of the inside of an aircraft to be a comfortable 68 to 70 degrees. Generally, an airplane is able to achieve the right temperature inside by running an auxiliary jet engine. To properly condition the inside of the airplane cabin, the auxiliary engine burns fossil jet fuel. If all the jet auxiliary engines across all gates are considered, the carbon dioxide generated over a year equates to about 8,000 cars on the road, or 40,000 metric tons of greenhouse gases. The estimated amount of jet fuel burned is about 5 million gallons per year.

Instead of burning fossil fuel, the PC Air project is a system of chillers, heaters, and pipes that provide both the heating and cooling to the aircraft from a central plant at the Airport. The Airport central plant can more effectively keep the airplane at a comfortable temperature when it is at any one of SeaTac's gates. The flight crews can turn off aircraft auxiliary engines and plug in at the gate to receive both heated and cooled air.

This will lower costs to the airlines while producing significant environmental benefits by reducing the release of tens of thousands of tons of carbon dioxide (CO₂) emissions each year. This project is a cost-effective way to aid the airlines while improving the quality of the environment. The airlines approved funding for this project, and a Federal Aviation Administration (FAA) Voluntary Airport Low Emission (VALE) grant was obtained. The FAA provided \$21,912,679 in grants for this project.

The most challenging part of building this project has been the piping installation. Conditioned (chilled and heated) glycol is circulated in these pipes from a central location to every aircraft gate. The passenger loading bridge structure is used as the final link to provide warm or cooled air to the airplane passenger cabin. The glycol piping is large (6", 8" and 10" in diameter) and because it is full of liquid, it is very heavy. It is hung from large hangers that penetrate walls, is supported by structural beams and columns across the varying concourses, and has to run for miles across building walls and roofs. This project includes the installation of 15 miles of piping within our existing terminals and going to each jet doorway at 73 gates. The piping installation is completed. Testing, startup and commissioning a system this large is challenging; however, that work is underway and airlines are beginning to use the system.

Due to the expedited design period, many items were omitted from the contract documents. The PC Air mechanical plant piping details were not properly referenced or designed in the contract documents and were thus not fully accounted for in the contractor's bid. The resulting Change

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Order 173 resolves all costs associated with the installation of the pipe hangers, supports and seismic restraints within the Pre-Conditioned Air mechanical plant. The additional funds requested resolve other construction disputes with the contractor that did not require Commission action, some of the items include the North Satellite Tunnel and Utility Room piping modifications, the ground mounting of PC Air units at gates A6/7, and pipe anchors and guide modifications.

Although the cost of the project has increased, the financial benefits remain attractive. The following is based on today's jet fuel price of \$3.06 per gallon minus 10% for energy costs (rough number).

The benefit is the potential annual savings of 5 million gallons of jet fuel.

5,000,000 gallons of jet fuel saving per year @ \$2.75 net benefit = \$13,750,000 per year.

- \$45 million project cost minus \$21.9M VALE: \$23.1M Port cost. Payback period = 1.7 years
- \$50 million project cost minus \$21.9M VALE: \$28.1M Port cost. Payback period = 2.0 years

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FINANCIAL IMPLICATIONS

<i>Budget/Authorization Summary</i>	Capital	Expense	Total Project
Original Budget	\$40,600,000	\$0	\$40,600,000
Previous Authorizations	\$47,235,000	\$590,000	\$47,815,000
Current request for authorization	\$965,000	\$0	\$965,000
Total Authorizations, including this request	\$48,200,000	\$590,000	\$48,970,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$48,200,000	\$590,000	\$48,970,000

<i>Project Cost Breakdown</i>	This Request	Total Project
Construction	\$881,280	\$35,823,242
Construction Management	\$0	\$3,116,244
Design and Construction support	\$0	\$3,759,000
Project Management	\$0	\$1,486,449
Permitting	\$0	\$236,856
State & Local Taxes (estimated)	\$83,720	\$3,486,929
Total	\$965,000	\$48,790,000

Budget Status and Source of Funds

This project (CIP # 800238) was included in the 2013-2017 capital budget and plan of finance with a budget of \$45,535,000. The budget was increased by \$1.1 million in January 2013. The current budget increase of \$965,000 will be transferred from CIP # C800404, Aeronautical Allowance, resulting in no net change to the 2013-2017 capital budget. The funding plan includes \$21.9 million in VALE program grants, existing revenue bonds, and the Airport Development Fund. This project was reviewed by the airline representatives and approved through a Majority-In-Interest vote in June 2008.

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Financial Analysis Summary:

CIP Category	New/Enhancement
Project Type	infrastructure
Risk adjusted Discount rate	10%
Key risk factors	Realization of savings due to lower jet fuel usage
Project cost for analysis	\$25,925,000 (total cost excluding grants)
Business Unit (BU)	Terminal Cost Center
Effect on business performance	NOI after depreciation will decrease due to recognizing depreciation on the full cost yet recovering capital costs for the non-VALE funded portion only
IRR/NPV	NPV range of net saving to airlines: \$5 million to \$30 million. (calculated in 2010)
CPE Impact	CPE will increase by \$.13 in 2014; however, this costs will be offset by decreased airline operating costs. This project was included in the business plan forecast.

ATTACHMENTS TO THIS REQUEST

None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

On September 10, 2013, the Commission authorized a budget increase of \$600,000 for the project design consultant and Port staff support through the completion of the project.

On May 28, 2013, the Commission authorized execution of Change Order 166, a contract extension of 221 days, which established a new project completion of August 26, 2013.

On November 27, 2012, the Commission authorized a budget increase of \$1,100,000 to replenish construction contingency due to disputed costs. Additionally, the Commission authorized the execution of Change Order No. 121 in the amount of \$344,558 to resolve the remaining disputed costs related to Change Order No. 113 due to changes in the routing of PC Air piping at Concourse D.

On October 2, 2012, the Commission authorized a budget increase of \$2,000,000 to cover additional costs related to construction, design support, and Port Construction Services and Port Maintenance support for the project. Additionally, the Commission authorized the execution of Change Order 119 in the amount of \$509,013 for additional costs related to the North Satellite Tunnel pipe routing.

On September 11, 2012, the Commission authorized execution of Change Order 113 in the

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amount of \$776,910 for changes to the pipe routing at Concourse D. Total project funding authorization remained at \$40,600,000.

On September 27, 2011, the Commission authorized a budget increase \$3,525,000 to cover additional costs to the construction budget, outside professional services and project management soft costs. Total project funding authorization increased to \$44,125,000.

On May 24, 2011, the Commission authorized execution of a \$400,000 amendment to the professional service agreement with Stantec Consulting. Total project funding authorization remained at \$40,600,000.

On May 11, 2010, the Commission authorized staff to advertise for bids, apply a Project Labor Agreement (PLA), and authorize Port Construction Services to perform pre-construction work, including moving tenants, for Phase I and Phase II of the PC Air Project (CIP # C800238) at the Airport and execute a construction contract. This authorization was for \$36,830,000. The estimated total project cost is \$40,600,000.

On January 13, 2009, the Commission authorized procurement and execution of service agreements with consultants to perform design, prepare contract documents, and perform contract administration for the Pre-Conditioned Air project at Seattle-Tacoma International Airport in the amount of \$3,770,000.