

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6d

ACTION ITEM

Date of Meeting May 28, 2013

DATE: May 21, 2013

TO: Tay Yoshitani, Chief Executive Officer

FROM: Ralph Graves, Managing Director, Capital Development
Janice Zahn, Assistant Engineering Director

SUBJECT: Centralized Pre-Conditioned Air Project at Seattle-Tacoma International Airport
MC-0316677

Amount of This Request: \$0.00

Total Project Cost: \$47,225,000

Source of Funds: Project Contingency and Airport Development Fund

Est. State and Local Taxes: \$3,194,212.08

Total Contract Cost: \$36,817,497.08

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to issue Change Order No. 166 for Contract MC-0316677, Centralized Pre-Conditioned Air (PC Air) Project at Seattle-Tacoma International Airport to add 221 days to the contract duration for a new contract completion date of August 26, 2013.

SYNOPSIS:

On September 13, 2010, the Port executed a construction contract for PC Air to Lydig Construction. During construction, the contractor identified many obstructions to the pipe routing for Concourse D that were not addressed within the contract documents. In previous Commission actions, Change Orders No. 113 and 121 were issued for the required modifications for the combined amount of \$1,121,468. At that time, it was not known what the impact would be to the project schedule. A schedule analysis, completed jointly by the Port and the contractor, acknowledge that the project schedule has been impacted by 221 days as a result of the needed design changes. A change order is required to extend the contract time so that the contract end date may be enforced and Port staff may begin to negotiate the indirect costs associated with this extension.

This is a no-cost change order. However, this change order does not address the associated indirect costs that may be related to this contract extension. Until the Port has fully evaluated and determined any shared delays associated with completing this work, it is not possible to

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finalize and resolve the extended overhead and other costs associated with this change order. As those costs are resolved, they will be addressed by separate change orders. If required, staff will return to Commission at a later date for additional authorization.

BACKGROUND:

The Centralized Preconditioned 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 set the right temperature inside by running an auxiliary jet. To properly condition the inside of that airplane cabin, that auxiliary engine is burning fossil jet fuel. If all the jet auxiliary engines across all gates are considered, the carbon dioxide generated over a year equates to about 13,000 cars on the road. The estimated amount of jet fuel burned is about 5 million gallons per year.

Instead of burning fossil fuel, the preconditioned air project is a system of chillers, heaters, and pipes that will 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. While the airlines have approved funding for this project, a Federal Aviation Administration (FAA) Voluntary Airport Low Emission (VALE) grant was obtained for this project. 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 jet 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.

Accessing various parts of the airport to install pipe have required relocating existing utilities and equipment while scheduling work to minimize operational impacts. Detailed investigations during design were not practical within the manyh of the occupied areas. The design phase was also negatively impacted by the grant funding deadline to get the project under construction contract.

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Lydig Construction was the low bidder with contract execution on September 13, 2010. The original contract completion date was December 12, 2012. There has been one 37-day contract extension granted, extending the current contract completion date to January 17, 2013. The new contract completion date will be August 26, 2013.

The project budget, including the FAA grants, has increased from \$40,600,000 to \$47,225,000. The budget increase has paid for change orders, added to construction contingency for potential change orders, covered additional consulting costs, and covered additional Port crew costs. The change orders have been due to design errors or omissions due to a rushed design period, access challenges for piping installation, resolution of conflicts & interferences for piping installation given existing conditions, revisions in building & electrical codes, and changes in Port requirements since the project was bid. The Port incurred additional costs to review these change orders and to resolve design issues during construction. Additional Port crew costs were also expended to open and close ceilings and walls in occupied areas, shutdown utilities during construction, and test equipment following construction.

Despite the design and contracting challenges, the project team expects the system to start operating this summer.

CHANGE ORDER DESCRIPTION:

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

Change Order No. 166

Scope of work: The Contract Duration will be extended by 221 days to 1,078 days resulting from delays due to the piping redesign on Concourse D. The Contract Completion date will now be August 26, 2013.

JUSTIFICATION:

Subsequent to the execution of the construction contract, it was discovered that the designed routing did not include enough information for the contractor to properly perform the work. This included interferences where the pipe was to be installed along with missing building details. Working collaboratively with the contractor, Port staff and the design consultant agreed upon a new route. However, omissions in the design regarding building expansion joints required the addition of numerous pipe expansion joints and associated appurtenances that were not in the original bid documents. This routing constitutes the lowest cost and impact option to the project to complete pipe routing on Concourse D, which ultimately feeds the North Satellite as well. Although the direct costs have been addressed via previously issued change orders, subsequent schedule analysis has determined the impact to the critical path of the project. This change order only addresses the time impact as a result of these changes.

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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:	37 Days
Contract extension this change order:	221 Days
Current Contract Completion Date:	August 26, 2013

FINANCIAL INFORMATION:

Original contract amount:	\$27,013,400.00
Previous Change Orders Executed:	\$6,609,885.00
<u>Current contract amount</u>	<u>\$33,623,285.00</u>
This request, Change Order No. 166	\$0.00
 Subtotal Construction Costs	 \$33,623,285.00
<u>Anticipated sales tax @ 9.5%</u>	<u>\$3,194,212.08</u>
Revised Contract Amount	\$36,817,497.08

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

PC Air Construction Photos (Powerpoint)

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

On November 7, 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.

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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 September 11, 2012, the Commission authorized execution of Change Order 113 in the amount of \$776,910 for changes to the pipe routing at Concourse D. Total project funding authorization remained at \$40,600,000.

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.