PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 5a

Date of Meeting May 24, 2011

DATE: May 23, 2011

TO: Tay Yoshitani, Chief Executive Officer

FROM: Dave Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Design Contract Amendment for Centralized Pre-Conditioned Air Project at Seattle-Tacoma International Airport (CIP # C800238)

Amount of This Request: $400,000

Source of Funds: Airport Development Fund Federal Aviation Administration (FAA) Airport Improvement Program (AIP) and Voluntary Airport Low Emission (VALE) Grants

Total Project Budget: $40,600,000

Est. State and Local Taxes: $2,972,000

Grants Available: $25,870,000

Est. Construction Jobs Generated: 120

Net Cost to the Airport: $14,730,000

ACTION REQUESTED:

Requests authorization for the Chief Executive Officer to execute an amendment to the professional services agreement with Stantec Consulting in accordance with Resolution No. 3605, Section 7.2.4, as amended by Resolution No. 3628. The amendment is estimated to be $400,000 and will increase the contract to a total of $2,597,320 for additional design services to support pipe distribution system revisions during the construction phase of the Pre-Conditioned Air (PC Air) project. The total project cost is $40,600,000 with a net cost to the Seattle-Tacoma International Airport of $14,730,000 with the balance to be covered by a Federal Aviation Administration (FAA) Voluntary Airport Low Emission (VALE) Grant. Due to savings in other activities of the project, no additional funding is required.

SYNOPSIS:

On September 13, 2010, the Port awarded the construction contract for PC Air to Lydig Construction. In its submittals for piping fabrication, the contractor proposed alternate pipe routings to avoid obstructions, ease installation, and eliminate issues with roof-top installation. After reviewing the contractor's proposal, the Port determined that the revised routings were

feasible. Revised pipe routing would minimize potential construction contract change orders by avoiding obstructions, minimize potential facility damage from installing the pipe on the roof, and eliminate utility shutdowns to concourse tenants. However, the new routing needs engineering review to determine if any piping and piping support revisions are needed to meet design criteria. The estimated cost of this review is $400,000. This review includes the following:

- Hydraulic and flow analysis
- Pipe size review
- Verification of pump design
- Thermal loss analysis
- Pipe stress analysis
- Seismic review
- Pipe support review and design
- Addressing obstructions
- Mitigating architectural concerns
- Permit document revisions

Staff is negotiating the fee with Stantec Consulting and will finalize the amendment for execution once this request is approved.

The contractor is preparing detailed pipe and pipe-support shop drawings and will be ready to start fabrication within 3-4 weeks.

BACKGROUND:

The PC Air project will allow flight crews to turn off aircraft auxiliary engines and plug in to the Airport infrastructure to receive both heated and cooled air. This will lower costs to the airlines while producing significant environmental benefits by reducing tens of thousands of tons of carbon dioxide (CO_2) emissions each year. This project is a cost-effective way to aid the airlines while improving the quality of the environment. The airlines have approved funding for this project, most of which will now be covered by the Federal Aviation Administration (FAA) Voluntary Airport Low Emission (VALE) grant. The VALE grant is contingent on completing the work within three years of grant approval.

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 Preconditioned Air Project at Seattle-Tacoma International Airport in the amount of $3,770,000.

On July 29, 2009, the Port executed an agreement with Stantec Consulting to provide engineering services to design facilities and utility systems for Preconditioned Air at 73 gates and to provide construction support services. The initial contract amount was $2,011,564 ($1,608,911 for design and $402,653 for construction support). Subsequent to execution of the initial contract, a total of 5 amendments have been executed. All but amendment no. 4 were for

clarification of positions and adjustment of rates. Amendment no. 4 increased the contract by $185,666 to add scope and approved the use of overtime to complete the design to meet revised FAA grant application deadlines. Total contract value is $2,197,230 ($1,794,577 for design and $402,666 for construction support).

Stantec's scope of work included designing utilities to each Preconditioned Air Unit at 73 gates. The design required an extensive pipe distribution from the Central Mechanical Plant to each terminal and then to each individual gate. After reviewing the alternate piping routes, which included ramp-level and roof-top locations; the design team selected the roof-top route to minimize construction impact to airline and tenant operations.

On May 11, 2010, the Commission authorized additional funding of $36,830,000 for the Port to advertising and executing the construction contract. Bids were opened on July 15, 2010. The contract was awarded on September 13, 2010. Notice to proceed was issued November 5, 2010.

As the general contractor and sub-contractor prepared submittals for approval of piping fabrication, they suggested alternate pipe routings at ramp level for South Satellite, Concourse B and Concourse C, to avoid obstructions, ease installation, and eliminate issues with roof-top installation. The contractor's proposed method of material delivery and installation significantly reduced the impacts on operations. After reviewing the Contractor's proposal, the Port agreed to review the revised routing. Staff determined that the revised routing was feasible and would minimize potential change orders by avoiding roof-top obstructions and other utilities, eliminate utility shutdowns to concourse tenants, and minimize potential roof damage.

The contractor is ready to start shop fabrication of the piping and pipe supports. Amending the contract with Stantec Consulting will allow the Port to support the contractor's schedule.

The period of performance for the service agreement will not change. It is from July 29, 2010, through January 30, 2013.

Staff is not requesting additional project funds for this amendment. Cost for project management activities are below budget. However, staff may return to Commission later to request additional funding to address potential change orders related to other aspects of the project.

PROJECT STATEMENT AND OBJECTIVES:

Project Statement:

Construct the PC Air system with an associated central plant including individual PC Air gate units at all passenger loading bridges.

Project Objectives:

Provide a PC Air System that will accomplish the following:

- Decrease the amount of energy used to heat and cool the aircraft.
- Significantly reduce the amount of CO_2 and other air emissions produced.

- Provide aircraft with cabin heating and cooling while eliminating the need for using the onboard auxiliary power unit (APU), which consumes jet fuel.
- Minimize life-cycle costs.
- Minimize fuel consumption.
- Minimize ramp noise.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work (this authorization):

Additional design services to support construction phase activities.

Schedule:

The following is a list of key milestone dates for the Centralized Pre-Conditioned Air Project:

- Awarded Construction Contract July 2010.
- Started Phased Construction Oct. 2010.
- Anticipated Project Completion Dec. 2012.

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary

Previous Authorizations	$ 40,010,000
Current request for authorization	$ 0
Budget Transfers	$ 0
Total Authorizations, including this request	$ 40,010,000
Remaining budget to be authorized	$ 0

Project Cost Breakdown	**This Request**	**Total Project**
Capital:		
Construction	$ 0	$ 31,238,000
Sales Tax	$ 0	$ 2,890,000
Outside Professional Services	$ 400,000	$ 2,909,000
Aviation PMG & Other Soft Costs	$(400,000)	$ 2,973,000
Subtotal Capital Project Costs	$ 0	$ 40,010,000
Asbestos Abatement & Other Expenses:		
Construction		$ 290,000
Environmental & Other Soft Costs		$ 218,000
Sales Tax		$ 82,000
Subtotal Asbestos Abatement & Other Expenses		$ 590,000
Total Project Costs:		**$40,600,000**

Source of Funds

This project (CIP # C800238) is included in the 2011-2015 capital budget and plan of finance. The funding plan is predicated upon the Port receiving $25.87 million in VALE program grants, with the remaining costs funded with the Airport Development Fund and 2010 revenue bonds. This project was reviewed by the airline representatives and approved through a Majority-In-Interest vote in June 2008.

Financial Analysis Summary:

CIP Category	New/Enhancement
Project Type	Infrastructure
Risk adjusted Discount rate	10%
Key risk factors	Realizations of savings due to lower jet fuel usage
Project cost for analysis	$14, 140,000 (Excludes VALE grant funded portion and expense costs.)
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 savings to airlines: $ 5 million to $ 30 million.
CPE Impact	CPE will increase by $.12 in 2013; however, this cost will be more than offset by decreased airline operating costs. This project was included in our business plan forecast so there is no change.

ECONOMIC IMPACTS AND BUSINESS PLAN OBJECTIVES:

From a financial analysis perspective, the positive net present value for this project is based on viewing the Airport and airlines together, as the Port will incur capital and operating costs, while the airlines will realize the cost savings. The extent of the savings is dependent on: 1) the price of jet fuel, 2) the number of days per year the system is actually used, and 3) the number of carriers that use the system rather than their own PC Air systems. The Airport will incur increased Operations and Maintenance costs of about $800,000 per year. In addition, the Port will incur annual debt service costs of about $1.2 million per year. The financial analysis assumes $2/gallon for the price of jet fuel (recent higher prices improve benefits); PC Air System use during summer only (17 weeks), and it assumes Alaska Airlines and Southwest Airlines continue to use all their current systems. These conservative assumptions generate a positive NPV of $5 million and generate net savings to the airlines from the first year of operations. The savings increase each year, making this a financially sound project.

STRATEGIC OBJECTIVES:

The PC Air project supports the following Port strategy:

Ensure Airport Vitality:

This project will provide a cost effective and efficient heating and cooling system for aircraft parked at the gates. It will have a positive effect on the airline's operating costs by reducing fuel consumption through reduced APU operation.

ENVIRONMENTAL SUSTAINABILITY AND COMMUNITY BENEFITS:

There are significant air quality improvements achieved by installing a centralized pre-conditioned air system. CO_2 emissions and other emissions could be reduced by more than 69,000 metric tons per year, which represents 2 percent of emissions from aircraft at the Airport, and is roughly equivalent to taking 13,500 cars off the road. Airport noise will also be reduced.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1: No Action. This alternative would direct the contractor to install the piping as designed in the Contract Bid Documents. A preliminary review of routing for South Satellite, Concourse B and Concourse C, indicated several places where piping will need to be modified to avoid inferences and obstructions. Construction cost for revising the piping is estimated to be $500,000 - $900,000. Also, the construction activity on the roof required concourse tenant utility shutdowns, risked damage to the roof membrane, and potential water damage to other parts of the facility. This is not the recommended alternative.

Alternative 2: Have the engineering consultant use the contractor's proposed piping layout to revise the design. This will remove much of the piping from the roof, eliminate concourse utility shutdowns, and minimize change orders from interferences and obstructions. **This is the recommended alternative.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

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.

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.