

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 4b
Date of Meeting May 26, 2015

DATE: May 18, 2015
TO: Ted Fick, Chief Executive Officer
FROM: Dave Soike, Director, Aviation Facilities and Capital Programs
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Central Terminal HVAC Upgrade project (CIP #C800722)

Amount of This Request:	\$1,114,000	Source of Funds:	Airport Development Fund and Future Bonds
Est. Total Project Cost:	\$6,612,000		
Est. State and Local Taxes:	\$420,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to proceed with design and construction documents for the Central Terminal HVAC Upgrade project at Seattle-Tacoma International Airport for an amount not to exceed \$1,114,000 of a total estimated project cost of \$6,612,000.

SYNOPSIS

This project will install two new air handling units (AHUs) on the roof above the North and South mezzanine levels of the central terminal. The AHUs would provide heating, ventilation and air conditioning (HVAC) infrastructure systems to support the development of the mezzanine spaces for use by the traveling public. Fast growing passenger volumes necessitate development of the mezzanines for passenger services. The central terminal mezzanine spaces are interior spaces that can be used for expansion and do not require weather protection. However, they do require added HVAC in order to be developed for passenger services. Future separate authorization will be sought in the third quarter of this year to lease mezzanine spaces for restaurant use serving passengers. These HVAC improvements will not be impacted by future development recommended as part of the Sustainable Airport Master Plan (SAMP).

BACKGROUND

The CTE project, completed in 2005, included mezzanine spaces above the concourse level restaurants. These mezzanines were intended to be developed when passenger demand supported their use. A portion of the North mezzanine level is already in use as a prep-kitchen and service area for Anthony's restaurant. The demand analysis completed as part of the Airport Dining and Retail master plan forecasts increased passenger demand for food service that cannot be met without development of these spaces. The existing central terminal AHUs are already operating

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at peak capacity, and cannot support the mezzanines. Other nearby spaces developed for the USO, a Starbucks venue, and the US Bank branch similarly needed to create their own HVAC.

This project will provide HVAC for the mezzanines by installing two new AHU's mounted on the roof, and each within its own weather-tight enclosure. The addition of these AHU's will coincidentally improve the emergency smoke evacuation control systems within the central terminal. These new AHUs will be designed to offset the additional heat generated by passengers, employees and new equipment in these mezzanine spaces.

PROJECT JUSTIFICATION AND DETAILS

As part of an overall evaluation of the facility for the expansion of the dining and retail program, the Port conducted a detailed analysis of the existing HVAC and smoke control systems. A recent analysis confirmed that the existing central terminal HVAC AHUs and smoke control are at maximum capacity and could not adequately support any development of the central terminal mezzanine spaces. As a result, staff requests this authorization to support development of the central terminal mezzanines.

Project Objectives

Provide needed HVAC capacity and smoke control in order to develop central terminal mezzanine level space to meet passenger demand for additional seating space and food service. The capacity will be added within a defined schedule and budget.

Scope of Work

Complete design and installation of two new AHUs. Design will be completed by consultant resources within an existing Service Agreement.

Schedule

Start Design	2nd quarter 2015
Complete Design	2nd quarter 2016
Commission Authorization for Construction	3rd quarter 2016
Advertise for Construction	4th quarter 2016
Substantial Construction Complete	4th quarter 2017

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$6,589,000	\$23,000	\$6,612,000
Previous Authorizations	\$25,000	\$0	\$25,000
Current request for authorization	\$1,089,000	\$0	\$1,089,000
Total Authorizations, including this request	\$1,114,000	\$0	\$1,114,000
Remaining budget to be authorized	\$5,475,000	\$23,000	\$5,498,000
Total Estimated Project Cost	\$6,589,000	\$23,000	\$6,612,000

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Project Cost Breakdown

	This Request	Total Project
Design Phase	\$1,114,000	\$1,114,000
Construction	\$0	\$5,078,000
Sales Tax	\$0	\$420,000
Total	\$1,114,000	\$6,612,000

Budget Status and Source of Funds

This project, C800722, was not included in the 2015-2019 capital budget and plan of finance. It was identified as one of the projects on the “delay approval” list when the budget was presented in October of 2014. The need for this project to support the development of the mezzanine space became apparent in late 2014. The budget for this project will be transferred from the Aeronautical Allowance CIP (C800404), resulting in no net change to the airport’s capital budget. The source of funding is the Airport Development Fund and future revenue bonds. The Port anticipates issuing revenue bonds in 2015 to fund a number of projects.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Infrastructure Upgrade
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$6,612,000
Business Unit (BU)	Terminal Building
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	\$.02 in 2018

Lifecycle Cost and Savings

The major assets this project will install are the two air handling systems and the associated electrical and mechanical devices. The air handling equipment will be housed in weather-tight roof top enclosures to lengthen equipment life spans. These assets will have useful life spans of 25-30 years.

STRATEGIES AND OBJECTIVES

This project supports the Port’s Century Agenda goal to “advance the region as a leading tourism destination and business gateway” by providing an extraordinary customer experience at the Airport. The project also supports the Aviation Division’s strategic goal to operate a world-class international airport and increase non-aeronautical revenue. This project will allow for the full development of vacant space in the central terminal and assure that the new spaces have proper HVAC and smoke control. These infrastructure systems are critical to the comfort and safety of

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travelers at the Airport. There is little likelihood that these improvements could be impacted by future development recommended in the Sustainable Airport Master Plan (SAMP).

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) - Maintaining Status Quo

Pros:

- The need to invest in the existing HVAC systems could be deferred if the central terminal mezzanine spaces remain undeveloped for public use.

Cons:

- Increasing passenger demand for food service in the central terminal cannot be met without expansion into undeveloped space on the mezzanine levels.
- Existing HVAC systems cannot provide an acceptably comfortable environment if mezzanine level space is developed for public use.
- The traveling public, airlines, tenants and employees may experience discomfort due to the existing HVAC system's inability to heat and cool parts of the central terminal during peak summer & winter weather.

Alternative 2) - Upgrade/Replace the existing central terminal HVAC system in order to meet the mezzanine demand.

Pros:

- This alternative could satisfy the entire demand for HVAC in the central terminal.

Cons:

- This would require closure during construction of the entire central terminal, including all restaurants, the central security checkpoint, and adjacent facilities such as the new USO and all of the adjacent offices east of the central terminal during construction.
- Costs for this alternative for design and construction are roughly estimated to be in the \$20 million-\$30 million range. The potential revenue losses and financial impacts to operations would be very significant and have not been estimated.

Alternative 3) - Co-locate a new rooftop AHU & weather-tight enclosure to serve the south mezzanine and the proposed nearby Delta Club

Pros:

- Alternative offers efficient use of resources in design and construction.

Cons:

- The emergency smoke control requirements for the south mezzanine and Delta Club differ significantly, and are located within separate fire zones, it would be difficult for the HVAC and smoke control systems to work compatibly together.
- Initial studies indicate ductwork routing complexities and high operational costs due to increased ductwork length.
- Roof sections between the Delta Club area and the central are not adequately designed for the equipment weight and would require extensive structural design and upgrade.
- This alternative does not satisfy the need for HVAC improvements on the North Mezzanine.

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- Cost estimates for this alternative for design and construction are roughly estimated to be in the \$7 million-\$8 million range.

Alternative 4) – Design a separate central terminal mezzanine HVAC system and install the two new roof top AHUs without weather-tight enclosures on either the north or south roofs.

Pros:

- This alternative offers lower first costs for design and construction.
- Cost estimates for this alternative for design and construction are roughly estimated to be in the \$4 million-\$5 million range.

Cons:

- Rooftop AHUs of this type have a shorter equipment life expectancy, as much as 10-15 years less life than AHUs inside weather-tight enclosures.
- These open-air systems have higher operational maintenance costs due to the equipment not being protected from the elements.
- Due to the inferior quality of rooftop units reliability of the overall system will be lower which can cause unplanned outages of HVAC services for several days and more importantly loss of smoke control.

Alternative 5) – Design a separate central terminal mezzanine HVAC system and install two new roof top AHU's with weather-tight enclosures on north and south roofs.

Pros:

- This would provide adequate HVAC capacity for the planned expansion of the mezzanine spaces.
- Allows the development of the mezzanine spaces to serve travelers as intended
- The traveling public, airlines, tenants and staff experience and expectations during peak summer & winter weather will be met given these improvements to the central terminal infrastructure.
- This alternative provides the weather-tight protection for the AHUs ensuring the equipment useful life of 25-30 years and follows the established Port of Seattle standards for construction.
- The air handling units will be heavy industrial grade quality, providing very reliable system, which require minimal maintenance and stable operation which is essential for life safety system such as smoke control.

Cons:

- Estimated cost to design and construct this project is \$6,612,000.

This is the recommended alternative.

ATTACHMENTS TO THIS REQUEST

- Exhibit A: Power Point Presentation

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PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- October 25, 2014 – Authorization for Airport Dining and Retail Infrastructure Modifications (CIP #C800638)
- June 25, 2013 -- Authorization for United Services Organization Northwest Lease and Associated Second Floor Utilities Preparations (CIP #C800615)
- January 22, 2008 -- Authorization for the upgrade of the heating, ventilation, and air-conditioning (HVAC) system to the north side of the second floor of the Main Terminal Administration Building/CTE (CIP #C800249)