PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA **Item No.** 6b

ACTION ITEM **Date of Meeting** September 25, 2012

DATE: September 18, 2012

TO: Tay Yoshitani, Chief Executive Officer

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

SUBJECT: Cargo 6 Enhancements at Seattle-Tacoma International Airport (CIP #C800390)

Amount of This Request: $480,000 **Source of Funds:** Airport Development Fund and future revenue bonds

Est. State and Local Taxes: N/A **Est. Jobs Created:** TBD

Est. Total Project Cost: $6,478,000

ACTION REQUESTED:

Request Port Commission authorization for the Chief Executive Officer to design and prepare construction documents for the Cargo 6 Enhancements at Seattle-Tacoma International Airport. The amount of this request is $480,000. The total estimated cost of the project is $6,478,000.

SYNOPSIS:

This project will update the Cargo 6 off-gate hardstand to meet the needs of two current regular users as well as provide fuel hydrant and ground power capabilities. The expanded ramp would permit simultaneous nose-load capability for two aircraft where today only one aircraft can operate if nose-loading. The project will also speed aircraft ground operations and reduce the amount of time aircraft are on the ramp by providing expedited hydrant system fueling.

The project will promote air freight and regional economic vitality by allowing large freighter aircraft to operate efficiently at the Cargo 6 hardstand. This project enhances Cargo 6 by enlarging the hardstand to accommodate nose-loading operations by large freighter aircraft, eliminating the number of times that the ramp is at capacity due to a single nose-loading operation. The project also extends the fuel hydrant system and installs fuel pits, in-ground power, and lighting. This project is also consistent with, and necessary for, the implementation of the Commission's Century Agenda goals as they relate to air cargo. Specifically, the goal calls for tripling air cargo volume over 25 years, which will require expanded and more efficient

airfield facilities. Efficiently accommodating large nose loading aircraft is one way of making progress towards the century Agenda goal.

This project will reduce carbon and nitrous oxide emissions and fuel consumption by constructing in-ground power to replace auxiliary power units now used while aircraft are on the ground. This "green servicing option" will benefit the region by removing approximately 600 tons of jet engine emissions annually. Airline operating costs are estimated to decrease by more than $225,000 annually once airlines begin to use the in-ground power system.

There are potential construction cost savings estimated at up to $10 million that may be achieved by combining the Cargo 2 West Hardstand Expansion, the Cargo 5 Hardstand Project and this project into a single bid to be completed in the 2014 construction season. This savings represents 16% of the combined total project costs. There is a time sensitivity associated with the authorization of design for both the Cargo 2 and Cargo 6 if the Port is to realize the estimated $10 million savings. Authorization for these projects is needed now in order to combine Cargo 2, Cargo 5, and Cargo 6 projects into a single contract to be constructed in 2014.

The Cargo 6 project was objected to by the airlines in the Majority-in-Interest (MII) vote dated February 24, 2012, triggering a 180-day waiting period that concluded on August 22, 2012. Because staff believes that this project is necessary to meet the long-term goals of the Century Agenda, as well as the very near-term needs of existing tenants, we recommend that the Port proceed with implementation.

One of the primary users of Cargo 6, China Airlines, sent a letter of support of this project to the Commission in August requesting that this project move forward.

This project was included in the 2012-2016 capital budget and plan of finance as a business plan prospective project.

BACKGROUND:

The existing Cargo 6 hardstand cannot currently accommodate simultaneous wide-body freighter aircraft nose-load cargo operations, such as the Boeing 747-400 freighter (B747-400F) or the new Boeing 747-8F aircraft (B747-8F). Expansion of the hardstand, and efficiency upgrades, would allow these and other large aircraft to utilize the area with a higher turnover rate. This project will ensure the separation between aircraft is adequate to perform simultaneous B747F regular or nose-load operations safely and provide room for equipment and staged freight.

The Cargo 6 hardstand, like other off-gate hardstands at the Airport, is not served by the fuel hydrant system and requires a fleet of fuel trucks to service the aircraft. Using the fuel hydrant system has the benefit of reducing the need for fuel tanker trucks, which provides both safety and emission reduction benefits. Providing fuel through the hydrant system also reduces ground time and decreases the cost of fueling, making the Airport more attractive and economical to cargo customers.

Cargo 6 has no ground power, requiring the need for air carriers to run their auxiliary power units (APUs) to power the aircraft while on the ground. In-ground power reduces the emission of greenhouse gasses and other pollutants and produces fuel savings for the airlines. With the addition of the fuel hydrant system and in-ground power, the Airport is providing modern "green" servicing options, providing a financial benefit to the airlines and an environmental benefit to the Airport and region through the removal of approximately 600 tons of jet engine emissions annually.

Replacement of the existing pavement, other than that necessary for the fuel or in-ground power enhancements, is not included as part of this project. However, the condition of the existing pavement will be evaluated as part of the on-going apron pavement replacement program and may be replaced in conjunction with this project.

There are potential cost savings associated with two additional airfield projects (Cargo 2 West Hardstand Expansion, for which design authorization is currently being requested; and the Cargo 5 Hardstand project, authorized for design on March 27, 2012) that have the potential to be combined with Cargo 6 into a single bid to be completed in a single construction season (2014). Airport Project Management has estimated potential savings of up to $10 million with a single, combined contract as compared to the cost of using separate contracts for each project. This savings represents 16% of the combined project costs, or 54% of the total costs of the Cargo 2 and Cargo 6 projects.

There is a time sensitivity associated with the authorization of design for both the Cargo 2 West Hardstand and Cargo 6 Enhancements in order to realize the estimated savings of up to $10 million. Authorization for these projects is needed now in order to combine Cargo 2, Cargo 5, and Cargo 6 projects into a single contract to be constructed in 2014. The lease for Cargo 2 requires a one-year notice to the building tenants and sufficient time for their relocation. Cargo 2 also impacts an FAA ASDE-X antenna. The FAA will need adequate time to relocate its antenna in advance of the demolition of a building. The building demolition is one of the first orders of work in the combined contract to be followed by work that is weather dependent and needs to fully utilize the normal construction season.

Another constraint is that Cargo 2 and Cargo 6 cannot both be out of service at the same time as it would severely impact air cargo operations. It is envisioned that Cargo 2 will be completed first. Authorization for both the design of Cargo 5 and Cargo 6 now will allow for the timely relocation of a tenant and the FAA antenna, for the preparation of contract documents, and for for Cargo 2, Cargo 5, and Cargo 6 to be constructed under one contract that is completed in a single construction season. Should authorization for the design for Cargo 2 and Cargo 6 not occur now, the opportunity to combine those projects with Cargo 5 into a single contract would be lost and result in higher cost and operational impact. Alternatively, a deferral in the authorization for Cargo 2 and Cargo 6 but combining the projects into a single contract would result in the construction occuring over two construction seasons at a higher cost and environmental risk.

PROJECT JUSTIFICATION:

Project Objectives:

- Allow for the simultaneous use of the Cargo 6 off-gate hardstand by two wide-body nose-loading freighter aircraft
- Provide fuel and power systems that will result in airline cost savings, increased efficiency and less environmental impact

The installation of fuel hydrant and ground power infrastructure will allow cargo airlines to realize operational cost savings. Airline operating costs are estimated to decrease by more than $225,000 annually from installing 400Hz power systems. Extension of the fuel hydrant system will cut fueling time by more than an hour, reducing aircraft ground time and associated flight crew expense, and reducing the overall cost of fuel.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

This project will add the necessary improvements to the existing Cargo 6 hardstand to allow its use by simultaneous large aircraft including up to two B747-8F aircraft at the same time. The project will:

- Add four fuel pits and their connection to the Airport fueling system.
- Install three ground power stations and the associated infrastructure.
- Increase the size of the load-bearing surface by approximately 20,000 square feet.
- Improve lighting in the cargo handling area.
- Excavation of possible contaminated soils – EXPENSE ITEM
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Schedule:

Commission Authorization for Hardstand Design	September	2012
Commission Authorization to Advertise	August	2013
Advertise	September	2013
Notice to Proceed	January	2014
Construction Complete	October	2014

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary:	Capital	Expense	Total Project
Original Budget	$5,550,000	$50,000	$6,428,000
Budget Increase	$878,000		$878,000
Revised Budget	$6,428,000	$50,000	$6,478,000
Previous Authorizations	$0	$0	$0
Current request for authorization	$480,000	$0	$480,000
Total Authorizations, including this request	$480,000	$0	$480,000
Remaining budget to be authorized	$5,948,000	$50,000	$5,998,000
Total Estimated Project Cost	$6,428,000	$50,000	$6,478,000

Project Cost Breakdown:	This Request	Total Project
Construction	$0	$4,754,000
Administrative Costs	$480,000	$1,275,000
State & Local Taxes	$0	$449,000
Total	$480,000	$6,478,000

Budget Status and Source of Funds:
Cargo 6 Enhancements (CIP #C800390) is included in the 2012-2016 capital budget and plan of finance as a business plan prospective project. The budget increase of $878,000, which reflects a more comprehensive estimate than the one prepared in 2010 and escalation for a revised construction date, has been transferred from the Aeronautical New Projects CIP #C102165, a business plan prospective project, resulting in no net change to the Aviation capital budget. Expense and construction funds will not be utilized until 2013 - 2014. The source of funds for this project will be the Airport Development Fund and future revenue bonds. Consistent with the Port's plan of finance, the Airport has a number of projects that will require a revenue bond issue in 2013.

Financial Analysis and Summary:

CIP Category	Revenue/Capacity Growth
Project Type	Business Expansion
Risk adjusted Discount rate	N/A
Key risk factors	N/A
Project cost for analysis	$6,428,000
Business Unit (BU)	Airfield
Effect on business performance	NOI after depreciation will increase since capital and operating costs will be recovered through landing fees
IRR/NPV	N/A
CPE Impact	$0.03 in 2014; however, no change from business plan forecast as this project was included in the plan

The revenues as well as the operating and capital costs associated with the cargo business unit are included in the airfield cost center. The net impact of the cargo business unit, including this investment, reduces the landing fee charged to all airlines.

Lifecycle Cost and Savings:

Useful Life:
The estimated life expectancy for this project is 20 years for pavements, 40 years for utilities, 20 years for 400 Hz power system and 30 years for electrical panels and transformers.

The estimated operating and maintenance cost is $37,475 per year with an increase of 3% per year thereafter.

STRATEGIC OBJECTIVES:

This project is consistent with and necessary for the implementation of the Commission's Century Agenda goals that calls for tripling air cargo volume over 25 years.

ENVIRONMENTAL SUSTAINABILITY:

- Energy conservation lighting may be used to reduce energy use, as well as benefits for off-airport glare, and light pollution.

- 400Hz In-Ground Power:

  Utilizing 400 Hz power, versus Auxiliary Power Units (APU) or Ground Power Units, supports the Port's Century Agenda Goal to *Reduce carbon emissions from all Port operations by 50% from 2005 levels and reduce aircraft-related carbon emissions at Sea-Tac by 25%.* Using 400 Hz power at freighter parking and remain-over-night (RON) positions is consistent with previous decisions to reduce noise and emissions.

  The estimated annual emission savings of utilizing 400 Hz power versus APUs for a cumulative 648 hours of B747 or MD11 freighter aircraft operations is:

Hydrocarbon	0.2 tons/yr.
Carbon Monoxide	3.5 tons/yr.
Nitrous Oxides	1.0 tons/yr.
Carbon Dioxide	590 tons/yr.

- Alternative materials may be used in concrete, such as fly ash and slag.
- During periods of non-peak activity, the new hardstand may reduce the need for passenger aircraft to RON at the distant north cargo hardstands, which are designed and utilized for air cargo operations. This improved proximity to the terminal will reduce the travel distance from RON spaces to the terminal, reducing cost and carbon emissions, and will be a more efficient and safe operation for the airlines.

BUSINESS PLAN OBJECTIVES:

This project supports the goal of operating a world-class airport by anticipating and meeting the needs of our tenants, passengers and the region's economy by expanding and modernizing existing on-airport cargo facilities.

TRIPLE BOTTOM LINE SUMMARY:

The enhancement of Cargo 6 will provide a long-term solution for cargo operations at the Airport. It will increase cargo airline efficiency and reduce emissions. The region will continue to receive the economic benefit of the Airport operation.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

1. Alternative 1 – Do Nothing: This alternative limits the size and number of aircraft that can use the area. This alternative is inconsistent with the goal of tripling air freight at the Airport in the next 25 years. This is not the recommended alternative.

2. Alternative 2 – Expand Cargo 6: This alternative supports the goals of the Century Agenda for promoting growth in air cargo. It expands Cargo 6 so that two wide-body freighter aircraft can use the area simultaneously and efficiently, and provides fuel and power enhancements that improve safety, provide cost savings, and reduce energy use and carbon emissions. This alternative promotes air cargo development. **This is the recommended alternative.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

Attachment A – Overview of Cargo Planning

Attachment B – Letter of support from signatory customer airline China Airlines

Attachment C – Cargo 6 Project Depiction

Attachment D – Cargo 6 Hardstand Expansion

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

None.