

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 6e
Date of Meeting September 27, 2016

DATE: September 19, 2016
TO: Ted Fick, Chief Executive Officer
FROM: Michael Ehl, Director, Airport Operations
SUBJECT: Purchase of Hardstand Equipment (CIP #C800838) for Seattle-Tacoma International Airport

Amount of This Request:	\$11,800,000	Source of Funds:	Airport Development Fund
Est. Total Project Cost:	\$11,800,000		
Est. State and Local Taxes:	\$920,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to (1) advertise and execute long-term contracts for up to 10 years for the purchase of hardstand equipment; (2) procure required hardware, software, vendor services, and maintenance to expand the Gate Management System; and (3) use Port staff for implementation for a total authorization of \$11,800,000.

SYNOPSIS

The airport is currently experiencing a shortage of contact gates and the related ability to accommodate passenger loading/unloading at remote facilities. With the temporary loss of gates during the construction of the International Arrivals Facility (IAF), North Satellite Expansion (NSAT) and other future projects, compounded with the unprecedented growth in passenger traffic, this shortage will be exacerbated. To accommodate our current and future flight operations, it will be necessary to operate inbound and outbound aircraft from remote hardstand locations and bus passengers to and from the terminal building. In order to accommodate these passengers, the Airport must purchase airfield ramp buses, aircraft boarding ramps, mobile aircraft power and pre-conditioned air units. An expansion of our current gate management system to manage the hardstand equipment and bus operations is critical for efficiency.

This request authorizes the purchase of equipment that will facilitate up to 12 simultaneous narrow-body-equivalent hardstand operations at one time. The forecasted equipment requirement is based on the number of hardstand operations projected under the following conditions:

- Multiple construction projects simultaneously remove at least five gates from service at a time between 2017–2020
- Aircraft operations continue to increase

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- Until such time as additional terminal gates, as identified by the Sustainable Airport Master Plan, are constructed to meet future demand

The airlines that operate at the Airport have notified the Port of their intent to form a consortium that will manage hardstand operations beginning in 2017. Therefore, the current assumption is that equipment requested in this memo will be leased to the consortium for operation and maintained by the Port.

BACKGROUND

Passenger traffic at Sea-Tac Airport continues to break records and has increased each month for the past 31 straight months (since November 2013). Passenger traffic is up 10 percent for 2016 compared to 2015. This growth in passenger traffic is mirrored in growth in the number of airline operations as well, resulting in the absence of available gates during peak periods.

In 2017, construction activities for two large projects, IAF and NSAT, will exacerbate the current gate shortage as existing gates go out of service for several years. To accommodate operations when sufficient contact gates are not available, the airport will institute hardstand arrivals and departures where passengers are bused between the terminal building and remotely parked aircraft. The Airport is in the process of designing and building terminal waiting areas for hardstand passengers including B Ramp Level Holdroom, D6 Holdroom Modifications and the recently authorized D Hardstand Terminal. However, additional equipment is required to transport passengers and to support remote aircraft operations.

Limited voluntary airline hardstand operations began in the summer of 2015 to allow the carriers the opportunity to evaluate and prepare for the advent of future mandatory, high volume hardstand requirements. Continued overall growth has resulted in increased hardstand activity during the summer of 2016. Since the 2015 inception of hardstand operations, six airlines carrying more than 16,000 passengers on over 170 flights have utilized hardstands for arrivals and departures from Sea-Tac.

In recognition of the greatly increased volumes of hardstand activity experienced, the anticipated closure of several gates due to construction, and the desire to control and maintain their individual customer service and operational standards, the airlines have indicated their intention to form a consortium to lease Port hardstand equipment and conduct hardstand operations beginning in 2017. In the event the Port and the airlines reach agreement, the Port's hardstand equipment, including the equipment subject to this request, will be leased to the airline consortium, and maintained by the Port.

PROJECT JUSTIFICATION AND DETAILS

Aviation Planning and Operations staff forecast that the hardstand peak demand could eventually increase to 11-13 simultaneous operations in the 2018-19 timeframe. This request is to authorize the purchase of equipment and expansion of the gate management system that will facilitate approximately twelve narrow-body equivalent hardstand operations at one time.

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Project Objectives

Provide dedicated equipment to facilitate remote hardstand aircraft operations including:

- Transportation of passengers between the terminals and aircraft parking locations
- ADA compliant aircraft boarding
- Provision of power and pre-conditioned air to remotely parked aircraft

Scope of Work

Purchase equipment to facilitate and support hardstand operations at the Airport such as:

- 400 Hz mobile units
- PC Air mobile units
- ADA aircraft boarding ramps
- High-capacity ramp buses
- Bus washing equipment

The project will also procure and install a new gate management system module designed for mobile operations.

Schedule

Commission Authorization	September 2016
Execute First Set of Purchase Orders (Equipment needed in 2017)	October 2016
First Equipment Delivery	March 2017
Gate Management System Deployment	July 2017

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$11,800,000	\$0	\$11,800,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$11,800,000	\$0	\$11,800,000
Total Authorizations, including this request	\$11,800,000	\$0	\$11,800,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$11,800,000	\$0	\$11,800,000

Budget Status and Source of Funds

This project was not included in the 2016-2020 capital budget and plan of finance. The budget will be transferred from the Aeronautical Allowance CIP (C800753) resulting in no net change to the Aviation capital budget. The funding source will be the Airport Development Fund.

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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	\$11,800,000
Business Unit (BU)	Airfield Apron Area cost center
Effect on business performance	NOI after depreciation will be positive
IRR/NPV	N/A
CPE Impact	Increase by \$.10 by 2018

It is anticipated that the buses will be leased to the airline consortium and operated by the airline consortium. The CPE listed above represents the costs if included in the airline rate base, and indicates the cost to the airlines whether paid to the Port directly or indirectly through the consortium.

Lifecycle Cost and Savings

Aviation Maintenance anticipates total equipment maintenance costs (including maintenance labor and materials) for the hardstand ramp equipment resulting from this project to be \$333,780 annually. These figures do not include fuel consumption to support the equipment. Any additional maintenance costs related to future equipment purchases will be addressed by the acquisition project at that time.

Annual licensing costs for the gate management system are expected to increase by \$20,000. This will be budgeted in the Information & Communication Technology Operating Budget for 2017.

STRATEGIES AND OBJECTIVES

This project supports the Port's Century Agenda objectives of meeting the region's air transportation needs at the Airport for the next 25 years by providing critically needed equipment to facilitate hardstand/off-gate aircraft operations.

Environmental Responsibility

The Port's Century Agenda Goal is to reduce aircraft-related carbon emissions at Seattle-Tacoma International Airport by 25 percent by 2035. Providing pre-conditioned air and 400 Hz will reduce air pollutant and greenhouse gas emissions relative to the aircraft's onboard systems when parked on the ramp. The mobile PC air and 400 Hz units will be equipped with modern Tier 4 diesel engines to ensure pollutant emissions are minimized when serving the aircraft.

Staff explored the feasibility of using electric ramp buses for hardstand operations. Although electric ramp buses are being produced, none are currently in use in North America. They are at least 50% more expensive than diesel buses and would require significant construction on the

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airfield to bring charging utilities to the bus parking location. If bus parking must be relocated in the future, which is probable due to space constraints, additional construction would likely be required to bring charging utilities to the new parking location. Additionally, these buses, on average, require three added months from order to delivery when compared with diesel buses so they would not be available when the increased hardstand operations begin in 2017. Since ramp buses move short distances at low speed they are a minor source of air emissions on an annual basis. Given the high up-front costs, operational constraints, and minimal environmental benefits of electric busses, diesel units were determined to be the most appropriate equipment for this use at this time.

Social Responsibility

The Port is working to maximize small business opportunities on each of the procurements in order to meet our Century Agenda goals.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Status Quo – Do not purchase this equipment

Cost Implications: \$0

Pros:

- (1) Does not require capital investment
- (2) Does not result in additional operating or maintenance cost

Cons:

- (1) Does not provide the required equipment to support hardstand operations
- (2) The Airport will experience additional flights delays
- (3) Would negatively impact the operations of the Terminal D Hardstand

This is not the recommended alternative.

Alternative 2 – Lease the equipment required for hardstand operations

Cost Implications: \$12,000,000 over 10 years (buses and ramps only)

Pros:

- (1) Limited up-front capital investment (compared to preferred alternative)
- (2) Greater flexibility in equipment procurement / disposition

Cons:

- (1) The acquisition of this equipment will require additional Port resources to maintain.
- (2) The cost of this alternative includes only the buses and boarding ramps, but is more expensive than purchasing all of the equipment required.
- (3) The cost of this alternative does not include the purchase of required software or configuration of software.

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- (4) The Port will return equipment at lease-end and not be able to benefit from any residual value.

This is not the recommended alternative.

Alternative 3 – Require the airline consortium to procure and maintain the equipment required for hardstand operations

Cost Implications: \$700,000 for resource scheduling software/hardware

Pros:

- (1) Limited capital investment.
- (2) This option would eliminate the need for additional Port resources to maintain the equipment.

Cons:

- (1) The airline consortium does not have facilities available to maintain the airport ramp buses.
- (2) The Airline Consortium does not currently have means to acquire the capital needed to purchase the equipment. Providing the consortium time to acquire this capacity would not meet the scheduled need for this equipment.
- (3) Since the Port already owns some equipment (buses, 400 hz) required for hardstand operations, the hardstand equipment would be mixed between Port/non-Port resources making scheduling, use and maintenance agreements more complicated.

This is not the recommended alternative.

Alternative 4 – Purchase the identified equipment, including electric ramp buses, and software required to operate approximately 12 narrow-body equivalent hardstand operations simultaneously

Cost Implications: \$14,800,000

Pros:

- (1) Provides all of the passenger conveyance, aircraft boarding, portable utilities and ancillary equipment and software required to facilitate hardstand operations.
- (2) The Port will potentially benefit from residual value of the equipment when it is no longer required for operations.
- (3) Electric ramp buses do not produce carbon emissions.

Cons:

- (1) The purchase of electric ramp buses would require significant construction on the airfield to bring charging utilities to the bus parking location.

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- (2) If the ramp bus parking area is relocated in the future due to airfield space constrictions, construction may be required again to bring charging utilities to the site.
- (3) Electric ramp buses are, on average, 50% more expensive to purchase than diesel buses.
- (4) Electric buses require, on average, three added months between order and delivery and would not be available when hardstand operations increase in 2017.
- (5) The acquisition of this equipment will require additional Port resources to maintain.
- (6) This is the highest cost alternative identified.

This is not the recommended alternative.

Alternative 5 – Purchase the identified equipment, including diesel ramp buses, and software required to operate approximately 12 narrow-body equivalent hardstand operations simultaneously

Cost Implications: \$11,800,000

Pros:

- (1) Provides all of the passenger conveyance, aircraft boarding, portable utilities and ancillary equipment and software required to facilitate hardstand operations.
- (2) The Port will potentially benefit from residual value of the equipment when it is no longer required for operations.

Cons:

- (1) The acquisition of this equipment will require additional Port resources to maintain.

This is the recommended alternative.

ATTACHMENTS TO THIS REQUEST

- Computer slide presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None