

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**  
**ACTION ITEM**

**Item No.** 6b  
**Date of Meeting** February 23, 2016

**DATE:** February 16, 2016  
**TO:** Ted Fick, Chief Executive Officer  
**FROM:** Michael Ehl, Director, Airport Operations  
Wayne Grotheer, Director, Aviation Project Management Group  
**SUBJECT:** South Satellite Narrow-Body Configuration (SSAT NBC) Project Authorization  
(CIP# C800781)

<b>Amount of This Request:</b>	\$5,500,000	<b>Source of Funds:</b>	Airport Development Fund
<b>Est. Total Project Cost:</b>	\$5,500,000		
<b>Est. State and Local Taxes:</b>	\$354,000		

**ACTION REQUESTED**

Request Commission authorization for the Chief Executive Officer to (1) approve the design and construction of the South Satellite Narrow-Body Configuration Project in an amount not to exceed \$5,500,000 and (2) approve design and construction of the project scope to be completed via a contract executed for an existing project. The total estimated cost of this project is \$5,500,000.

**SYNOPSIS**

As briefed to the Commission at the February 9 meeting (Item No. 7b), this project will reconfigure the physical geometry of the existing South Satellite aircraft parking area to yield three additional narrow-body (single-aisle, Boeing 737-sized) aircraft parking positions within the footprint of the existing ramp area. Two of the positions will be ground-loading positions and one will have a new passenger loading bridge connected to the building. These additional narrow-body aircraft parking positions will be available for off-peak evening arrivals, overnight parking, and early morning departures, all complementing the mid-day wide-body peak-hour demand. Adding these three positions will reduce the number of narrow-body flights that would otherwise go to hardstands when existing gates are full. Each of these gates will include sustainable aircraft utilities to provide aircraft electrical power (400 Hz) and conditioned air (PC Air) and improved passenger access to the terminal building where necessary.

This request also authorizes the design and construction of the project by the design/build contractor procured for the International Arrivals Facility (IAF) project based on the following rationale:

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1. The narrow-body layout on the exterior cannot be designed until the wide-body layout required to accommodate the IAF bridge is finalized.
2. The IAF design/build team is facilitating the overall design and construction for related project work in the same footprint as this project.

Timing of this project is urgent in order to limit the number of gate outages involved. Using separate design and construction contracts to perform the work would mean delaying the project until 2019, when the IAF Design Build Project team will have completed their work at the South Satellite. Further, the recommended method for design and construction will not increase the budget of the IAF project.

## **BACKGROUND**

With the rapid growth in enplanements and operations expected to continue, and with the upcoming construction activities that will take existing gates out of service during construction for several years, the Airport will experience a severe shortage of contact gates, i.e., gates with a passenger loading bridge connection between the aircraft and terminal building.

The Sustainable Airport Master Plan (SAMP) calculations forecast the need for 11-13 hardstand parking positions (narrow-body equivalents) by 2020. During SAMP's review of SSAT gating, an opportunity was identified to provide additional narrow-body parking positions in advance of the construction of new SAMP facilities. The SSAT NBC Project was conceived to seize that opportunity and reduce the need for hardstand operations. This project is supported by the airlines and was approved via a Majority in Interest Vote in January.

## **PROJECT JUSTIFICATION AND DETAILS**

The Aviation Division Business Plan calls for "increased productivity of existing terminal facilities" (Strategy 1.2, Objective 6). The need for increased productivity is driven by the following:

1. Recent and forecasted significant growth in enplanements and operations;
2. Construction activities that will take several existing gates out of service during the International Arrivals Facility and North Satellite renovation and expansion projects.

The Airport will face a severe shortage of contact gates for at least the next decade.

The SSAT NBC Project was conceived to address the Airport's near-term need for narrow-body parking positions and operational flexibility. The project will create three additional narrow-body parking positions at the South Satellite. These additional narrow-body positions will reduce the need for hardstand operations as soon as they are in place. Therefore, accelerated execution of this work is critical. Using the IAF Design Build Project team to execute the project design and construction provides the opportunity to complete the project concurrently with the revised wide-body layout. The IAF has been contracted using the progressive design-build delivery method whereby the designer and the construction contractor are contracted as one team and the IAF's

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Design-Build team is already in place. Additionally, the IAF scope includes work for wide-body aircraft that is similar to this project including wide-body gating, fuel system modification, passenger loading bridge purchase and installation, and apron marking in the same location.

While the need for the additional narrow-body positions is not connected to the justification for the IAF, the design is heavily dependent on overall layout of aircraft parking (i.e., narrow- and wide-body) at the South Satellite, which is being redesigned by the IAF in order to accommodate the bridge connector between the South Satellite and the IAF.

### ***Project Objectives***

The SSAT NBC capitalizes on an opportunity to provide the following benefits by early 2018:

- Provide operational flexibility and maximize use of the South Satellite during off-peak wide-body periods during the day
- Reduce frequency of hardstand use

### ***Scope of Work***

The SSAT NBC Project scope elements include:

- One additional passenger loading bridge with standard amenities (preconditioned (PC) air, potable water, 400hz electrical power) at what is currently Gate S9;
- One new fuel pit at Gate S6 for the narrow-body parking position
- New portable PC air and 400Hz units for dedicated ground loading use at Gates S1a and S10b. The new PC air and 400Hz units will be purchased by the project and all necessary infrastructure needed to support these units will be designed and constructed;
- Building modification and new stairway with an integrated wheelchair lift at Gate S10b;
- Ramp markings associated with the narrow-body configuration.

### ***Schedule***

MII ballot	January 2016
NTP issued to IAF contractor to execute SSAT NBC exterior work	February 2016
Design start	1Q2016
Construction start	1Q2017
Construction complete	3Q2017

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### **FINANCIAL IMPLICATIONS**

<b><i>Budget/Authorization Summary</i></b>	<b>Capital</b>	<b>Expense</b>	<b>Total Project</b>
Original Budget	\$5,500,000	\$0	\$5,500,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$5,500,000	\$0	\$5,500,000
Total Authorizations, including this request	\$5,500,000	\$0	\$5,500,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$5,500,000	\$0	\$5,500,000

<b><i>Project Cost Breakdown</i></b>	<b>This Request</b>	<b>Total Project</b>
Design & Construction*	\$4,426,000	\$4,426,000
Port Project & Construction Management**	\$ 700,000	\$ 700,000
Permitting	\$20,000	\$20,000
State & Local Taxes (estimated)	\$354,000	\$354,000
Total	\$5,500,000	\$5,500,000

\* Design and construction activities to be completed by the IAF Design/Build team.

\*\*The integrated Port of Seattle IAF team will provide project management and construction management services.

### ***Budget Status and Source of Funds***

This project was included in the 2016-2020 capital budget and plan of finance as a business plan prospective project. The funding source will be the Airport Development Fund (ADF).

### ***Financial Analysis and Summary***

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Renewal and Replacement
<b>Risk adjusted discount rate</b>	N/A
<b>Key risk factors</b>	N/A
<b>Project cost for analysis</b>	\$5,500,000
<b>Business Unit (BU)</b>	Passenger Loading Bridge, Apron
<b>Effect on business performance</b>	NOI after depreciation will increase
<b>IRR/NPV</b>	N/A
<b>CPE Impact</b>	\$0.02 in 2018

### ***Lifecycle Cost and Savings***

Aviation Maintenance completes regular preventive, corrective, and emergency maintenance on all Port-owned passenger loading bridges (PLBs), and provides customer service support for operations. Aviation Maintenance estimates a current annual maintenance cost per PLB of approximately \$2,500 inclusive of all repair, maintenance, and customer support activities, including 24/7 response.

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Aviation Maintenance also performs regular preventative, corrective, and emergency maintenance for PCAir, potable water, portable PCAir units, and 400Hz units. On average, Aviation Maintenance has performed maintenance on the 400Hz and potable water units approximately twice per year at an average cost of \$500 per repair. Annual maintenance cost is estimated at approximately \$5,000 per year for each portable PCAir unit.

Aviation Maintenance has new portable 400Hz units currently serving hardstand operations. These are still under warranty and have not generated any maintenance records as of yet. Each portable 400Hz unit requires installation of a dedicated electrical connection.

The life expectancy of the stairs and lift at Gate S10b is estimated to be 15 years. We do not anticipate significant ongoing maintenance costs. However, we do anticipate performing refurbishment of the floors, ceiling material, and siding material approximately every 3 to 5 years depending on usage and weather. It is estimated that the cost of these refurbishments will range from \$5,000-\$7,000 per event.

The fuel pit will be leased to and maintained by SEATAC Fuels, LLC, an airline consortium.

## **STRATEGIES AND OBJECTIVES**

This project supports the Port's Century Agenda objectives of making Seattle-Tacoma International Airport the West Coast 'Gateway of Choice' for international and domestic travel and of meeting the region's air transportation needs at the Airport for the next 25 years by providing critically needed close-in or PLB-connected aircraft parking locations that reduce the number of hardstand operations needed due to increased passenger aircraft operations.

Adding new close-in parking positions provides the Port the opportunity to supply sustainable features at new aircraft parking positions such as PC Air and 400 Hz electrical power. This is preferred compared to remote locations where aircraft must leave engines running to have power and air conditioning.

In the course of delivering the project, the IAF team and the Port's Office of Social Responsibility will work together collaboratively to establish small business participation opportunities, in accordance with small business Resolution No. 3618.

This project represents an investment in our current facilities and supports the long-term vitality of the Airport, airlines, and other airport tenants. This project also provides an opportunity to help meet the region's air transportation needs at Seattle-Tacoma International Airport for the next 25 years and encourage the cost-effective expansion of passenger traffic.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

### **Alternative 1) – Maintain the status quo**

This option does not provide additional capacity for narrow body aircraft to load and unload passengers in existing facilities. More aircraft would have to use remote parking positions.

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Cost: \$2,400,000 capital cost for airfield ramp buses and \$620,000 per year in Port operating costs for busing. This assumes six full narrow-body turns per day (2 per gate) that we could avoid if we add these close-in parking positions. No capital investment at the SSAT.

### **Pros:**

- This alternative does not require a capital investment at the South Satellite.

### **Cons:**

- This alternative would require a greater number of aircraft to load and unload at remote parking positions, which requires additional staff and equipment and provides a lower than desired passenger experience.
- This alternative would require the purchase of more airfield ramp buses and funding of more staff to facilitate hardstand operations.

This is not the recommended alternative.

### **Alternative 2) – Add aircraft parking spaces without adding fuel pits, loading bridges, or gate utilities to service aircraft at these locations.**

Capital Cost: No capital investment at the SSAT. The cost of applying markings for three additional narrow-body parking spaces would be approximately \$165,000.

### **Pros:**

- This alternative would only require a modest investment while still providing additional capacity at the SSAT.

### **Cons:**

- This alternative would not provide the best customer experience; since not all spaces would be passenger loading bridge connected or have dedicated passenger pathways for access.
- The passenger routes for this alternative are not ideal and require operational work-arounds such as closing a bagwell entrance and escorting passengers down uncovered stairs.
- This alternative would require additional staffing to ensure passenger control is maintained per the Airport Security Plan.
- This alternative would require the aircraft to run their engines or auxiliary power units (APUs) to provide air conditioning and to power critical systems while on the ground which results in more carbon emissions compared to providing these amenities via PC Air and 400 Hz ground units.

This is not the recommended alternative.

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**Alternative 3) – Add one additional Passenger Loading Bridge (PLB) including gate utilities at the identified positions to service additional narrow-body aircraft at the SSAT as a stand-alone project to be completed utilizing new design and construction contracts and not the IAF Design Build team.**

Capital Cost: \$6,300,000

### **Pros:**

- This alternative provides three additional parking and boarding locations for narrow-body aircraft during late night and morning activities at the SSAT reducing the need for busing/towing during these times.
- This alternative provides full utilities for aircraft reducing the demand for more service vehicles and controlling congestion in the busy ramp area as well as reducing carbon emissions by enabling aircraft engines to be turned off at the gate during ground time.

### **Cons:**

- This alternative could not be designed until the SSAT wide-body layout design is finalized for the placement of the IAF bridge.
- This alternative could not be constructed until the IAF Design/Build contractor vacates the area due to inability to take more than two gates out of service at a time. This would delay these additional narrow-body aircraft parking positions until 2019. Between now and then we would need additional remote parking position operations to accommodate increased flights that could have been parked at the SSAT.
- The construction of this alternative would require gate shutdowns after the SSAT work related to the IAF is complete.
- This alternative has a higher estimated cost because of the two-year delay in design and construction
- This alternative does not provide additional narrow-body parking positions when the demand for wide-body positions is at its peak.

This is not the recommended alternative.

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**Alternative 4) – Add one additional Passenger Loading Bridge (PLB) including gate utilities at the identified positions to service additional narrow-body aircraft at the SSAT as a stand-alone project to be completed via the IAF Design Build Project team.**

Capital Cost: \$5,500,000

### **Pros:**

- This alternative provides three additional parking and boarding locations for narrow-body aircraft during late night and morning activities at the SSAT reducing the need for busing/towing during these times.
- This alternative minimizes operational disruption by designing and constructing the scope at the same time as similar planned work at the satellite.
- This alternative provides full utilities for aircraft reducing the demand for more service vehicles and controlling congestion in the busy ramp area as well as reducing carbon emissions by enabling aircraft engines and APUs to be turned off at the gate during ground time.
- This alternative could be designed concurrently with the SSAT wide-body layout design to ensure that the two do not conflict.
- This alternative could be constructed by the IAF Design/Build contractor, which would provide efficiencies in construction including fewer shutdowns and contractor mobilizations.
- This is the only way, due to gate outage restrictions, to gain these positions in advance of the completion of the SSAT work for the IAF.

### **Cons:**

- This alternative does not provide additional narrow-body parking positions when the demand for wide-body positions is at its peak.

**This is the recommended alternative.**

## **ATTACHMENTS TO THIS REQUEST**

- Layout illustrating three new narrow-body parking positions at the SSAT.

## **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- February 9, 2016 – South Satellite Narrow-Body Configuration Briefing