PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 6a

Date of Meeting May 26, 2015

DATE: May 19, 2015

TO: Ted Fick, Chief Executive Officer

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

SUBJECT: Concourse A and B Airport Fiber to Backstands project at Seattle-Tacoma International Airport (CIP #C800464)

Amount of This Request:	$2,406,000	**Source of Funds:**	Airport Development Fund
Est. Total Project Cost:	$3,195,000		
Est. State and Local Taxes:	$166,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to advertise, award, and execute a major works construction contract for the Concourse A and B Airport Fiber to Backstands Project (CIP #C800464) to improve data and communications infrastructure to gates at Concourses A and B of the Seattle-Tacoma International Airport. The amount of this request is $2,406,000 of a total estimated project cost of $3,195,000.

SYNOPSIS

Travelers rank fast access to the Internet as one of their most important "must haves" at the Airport. Sea-Tac International Airport has been ranked within the Top Ten Technological Airports in the U.S. by Fodor's Travel. This project will improve wireless data, or "Wi-Fi" coverage at all gate hold rooms in Concourses A and B for air travelers through the addition of Wi-Fi access points. Further, this project will provide data infrastructure (fiber to the backstands and communication room fiber optic network connections) and install gate information displays to all gates in Concourses A and B.

Airport-provided data infrastructure allows several airlines to utilize the same fiber optic and copper wire data infrastructure for gate operations. Installation of this infrastructure creates flexible gating opportunities for the future. This will reduce future capital improvement costs for airline relocations as the time to change gates from use by one airline to another will be less than 24 hours and require no new construction. Also, when airlines move gate use from time to time, this project would provide them the ability to quickly connect gate check-in equipment to their data networks, reducing their costs.

Finally, the budget to complete the project is increasing by $866,000 due to errors in and updates to the prior cost estimate. The budget increase is due to the following causes:

(1) The previous estimate mistakenly excluded the cabling cost for fiber optic network redundancy between and among the existing communications rooms on Concourse A. This accounts for an increase of $560,000.

(2) There is gate shutdown support, construction phasing, and night work required that was not fully accounted for in the previous estimate. This accounts for an increase of $38,000.

(3) There are costs for design changes resulting from the need to re-route conduit pathway to avoid site conditions uncovered during a site walk completed during the design review. This also caused an additional design review to be required. The additional design changes and design review along with a specialized Wi-Fi designer and added construction support accounts for an increase of $213,000. Project management increased cost for use of consultant project management services accounting for an increase of $50,000; and additional construction management cost of $5,000.

BACKGROUND

The Airport has recently installed Airport-provided data infrastructure at several locations that can be used interchangeably by the Port for common-use equipment, and by airlines for proprietary equipment, as a flexible cost-savings initiative. This flexibility affords the Airport the ability to provide an agile, quickly configurable system that is adaptable to changing airline needs. This multi-user infrastructure system may be shared, preventing each airline, or the Port, from having to provide separate and costly data infrastructure systems.

Installation of a multi-user infrastructure system has been completed for all gates on Concourse D and the South Satellite and all but four gates on Concourse A by previous projects. American Airlines, Alaska Air Group, JetBlue, Virgin America and United Airlines are all successfully using the infrastructure today in various locations across the Airport. The North Satellite will be covered under the NorthSTAR program. The installation of Wi-Fi access points in this project will complete the Wi-Fi enhancement for all hold rooms in Concourses A and B. The Wi-Fi Enhancement project will follow this project and install Wi-Fi to the ramp level at all gates in Concourses A, B, C, D and South Satellite, as well as the interior Wi-Fi for the rest of the airport.

One of the stated goals of the Airport is to provide an extraordinary customer experience. Current strategic goals include operating a world-class airport by anticipating the needs of our customers. The use of laptops, tablets and smartphones by passengers waiting in hold-rooms continues to increase and our customers have made it clear that having a fast Internet connection in these areas is very important to them. The current Wi-Fi antenna system cannot keep up with growing passenger demand for Internet access. Adding multiple, faster Wi-Fi antennas in each hold-room will improve wireless coverage and access speed for travelers. Installation of Airport provided infrastructure to the gates makes adding more Wi-Fi access points in the hold-rooms more cost effective than ever before and allows the Port to respond to this growing need.

PROJECT JUSTIFICATION AND DETAILS

The purpose of this project is to provide an expansion of Airport provided infrastructure usable by the Port or the airlines at the gates of Concourses A and B at the Airport and support customer service goals to improve the effectiveness and availability of the terminal-wide Wi-Fi antenna system at these same locations.

Project Objectives

- Provide adaptable and agile data infrastructure to meet the changing needs of the Airport community without investing in new facilities at Concourses A and B.
- Minimize air carriers' and Airport costs as airlines relocate within the existing terminal facilities.
- Improve coverage and speed of the Airport's Wi-Fi antenna system at Concourses A and B.
- Provide flight information to passengers in the hold rooms.
- Provide fiber redundancy in Concourse A.

Scope of Work

This request is to install the extension of Port standard fiber and copper infrastructure from existing Port communications rooms to a communications rack in each retrofitted gate check-in backstand. This project will provide fiber to the backstands at four Concourse A gates and nine Concourse B gates. Construction will include new communication racks and backstands casework modification. Equipment will include network switches and patch panels for the gates receiving fiber to backstand and gate information displays for all Concourse A and B gates, but no other equipment. Electrical capacity will be added to the modified backstands. The construction and installation of a second or redundant network connection among the Concourse A communications rooms and main distribution room will also be included.

Project scope will include the addition of wireless access points in close proximity to each gate backstand (hold rooms) and continuously throughout Concourses A and B. Access points will connect to the new Port standard network infrastructure at all Concourse A & B gates. The placement and number of access points have been determined and are included in the design. Access point equipment will conform to existing standards.

Schedule

Commission Authorization for Design	2nd Quarter 2013
Request Commission Authorization to Advertise, Execute and Construct	2nd Quarter 2015
Construction Start	3rd Quarter 2015
Project Complete	3rd Quarter 2016

FINANCIAL IMPLICATIONS

Budget/Authorization Summary	Capital	Expense	Total Project
Original Budget	$3,284,000	$0	$3,284,000
Previous budget transfer	-$955,000		-$955,000
Current budget increase	$866,000		$866,000
Current CIP budget	$3,195,000	$0	$3,195,000
Previous Authorizations	$789,000	$0	$789,000
Current request for authorization	$2,406,000	$0	$2,406,000
Total Authorizations, including this request	$3,195,000	$0	$3,195,000
Remaining budget to be authorized	$0	$0	$0
Total Estimated Project Cost	$3,195,000	$0	$3,195,000

Project Cost Breakdown	This Request	Total Project
Design	$171,000	$764,000
Construction	$2,087,000	$2,280,000
State & Local Taxes (estimated)	$148,000	$151,000
Total	$2,406,000	$3,195,000

Budget Status and Source of Funds

This project (CIP #C800464) was included in the 2015-2019 capital and budget and plan of finance with a budget of $2,329,000. The budget increase is described in detail in the synopsis above. The increased budget was transferred from the Aeronautical Allowance CIP (C800404) resulting in no net change to the capital budget. The funding source for this project is the Airport Development Fund.

Financial Analysis and Summary

CIP Category	New/ Enhancement
Project Type	Renewal/ Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	$3,195,000
Business Unit (BU)	Terminal
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	$.02 in 2017

Lifecycle Cost and Savings

The Port Information and Communication Technology and Aviation Maintenance departments estimate that operations and maintenance cost increases associated with the necessary support plan/contract for the switches and access points included in this project is approximately $550

per gate, per year. For the 13 gates included in the project scope, ICT annual operations and maintenance expenses are estimated to increase by approximately $7,150 per year.

STRATEGIES AND OBJECTIVES

This project supports the Port's Century Agenda objective of meeting the region's air transportation needs at the Airport for the next 25 years by providing the Airport and airlines with greater facility agility and flexibility. Creating a flexible multi-user data network environment allows carriers in the Airport to spend fewer capital dollars when airlines move or expand. More carriers are able to utilize the same facilities without redesign and construction to customize the operating environment to their specific proprietary needs.
This project is not impacted by the airport's Sustainable Airport Master Plan.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Airlines install proprietary infrastructure for data connectivity following legacy method, resulting in a less flexible gate use environment. The Port would only construct and install the redundant network connection among the Concourse A communications rooms and the main distribution room.

Capital Cost: $1,500,000

Pros:

- The Port could delay expenditure of funds for common use infrastructure, using the funds for other purposes. This option would prevent the risk of communication loss during an accidental fiber cut as there is no current fiber redundancy between communication rooms and the main distribution room in Concourse A.

Cons:

- This will not allow the Port or other carriers to benefit from the rapid-convertibility and flexibility of the airport-provided data infrastructure for growth and operational requirements.

- This alternative eliminates the Airport's ability to improve Wi-Fi coverage, our passengers' most popular request.

- Increased potential for future construction costs (to Port or airline).

Alternative 2) –The Port proceeds with providing multiple user infrastructure, gate information displays and Wi-Fi access points but delays constructing and installing the redundant network connection among the Concourse A communications rooms and the main distribution room.

Capital Cost: $2,635,000

Pros:

- The Port could delay expenditure of the redundant fiber infrastructure, using the funds for other purposes.

- This option would optimize flexibility and accommodate growth and operational requirements by all carriers during airline gate changes, completing the airport-wide fiber infrastructure to gate backstands.

- Should an airline depart a gate, the infrastructure remains in place and can be used by the next airline or POS for Common Use System Emulation, CUSE with no construction needed and a turnover period of less than 24-hours.

- This would also utilize the latest technology to respond to our passengers' most popular request by enhancing the aging Wi-Fi system in Concourses A and B.

Cons:

- This option maintains the risk of communication loss during an accidental fiber cut as there is no current fiber redundancy between communication rooms and the main distribution room in Concourse A. Concourse A is currently the only concourse without this redundancy.

Alternative 3) – The Port installs airport-provided, multi-user data infrastructure, data redundancy, gate information displays and new Wi-Fi access points at Concourses A and B and constructs and installs the redundant network connection among the Concourse A communications rooms and the main distribution room.

Capital Cost: $3,195,000

Pros:

- This option would optimize flexibility and accommodate growth and operational requirements by all carriers during airline gate changes, completing the airport-wide fiber infrastructure to gate backstands.

- Should an airline depart a gate, the infrastructure remains in place and can be used by the next airline or POS for CUSE with no construction needed and a turnover period of less than 24-hours.

- This option will utilize the latest technology to respond to our passengers' most popular request by enhancing the technologically outdated Wi-Fi system in Concourses A and B.

- This option will also prevent communication loss in Concourse A during an accidental fiber cut and provide greater capacity for communications traffic.

Cons:

- This option costs the most of the three alternatives being considered.

- This option will not replace the aging Wi-Fi system in Concourses other than Concourses A and B (that would be completed by another project).

This is the recommended alternative.

ATTACHMENTS TO THIS REQUEST

- None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- July 9, 2013 – The Commission authorized $789,000 for design and the purchase of supporting technology and equipment.