



**COMMISSION
AGENDA MEMORANDUM**

Item No. 4c

ACTION ITEM

Date of Meeting August 8, 2017

DATE: July 31, 2017

TO: Dave Soike, Interim Executive Director

FROM: Wayne Grotheer, Director, Aviation Project Management Group
Jeffrey Brown, Director, Aviation Facilities and Capital Program

SUBJECT: Wi-Fi Enhancements Phase 2 (CIP #C800585)

Amount of this request: \$1,491,000

Total estimated project cost: \$10,676,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to (1) advertise and execute contracts for the second phase of construction of the Wi-Fi Enhancement Project at Seattle-Tacoma International Airport in an amount not to exceed \$1,491,000 of a total estimated project cost of \$10,676,000; (2) amend the Infrastructure Design Services for Wi-Fi and Video Surveillance System (VSS) Enhancements Projects service agreement for an additional \$200,000, for a new contract total of \$2,700,000; and (3) use port crews and small works contracts in conjunction with major works contracts to aid in the completion of the project.

EXECUTIVE SUMMARY

This request provides for the construction of the second phase of Wi-Fi enhancements that will provide improvements to the Gina Marie Lindsey Arrivals Hall, Baggage Claim, the baggage make-up areas, the interior of the South Satellite, and the Satellite Transit System Platforms. The first phase of this project, authorized in May of 2016, is providing Wi-Fi improvements to the Ramp (and where needed Concourse levels) of Concourses A, B, C and D, the Ramp level of the South Satellite, as well as the Main Terminal Ticketing level and the security checkpoints.

JUSTIFICATION

The overall Wi-Fi Enhancement project will provide up to 200% increase in the coverage and number of access points on concourse levels, up to tenfold increase in bandwidth, and support for newer devices by supporting today's technology on wireless protocols. Surveys conducted with enplaning passengers clearly demonstrate the desire for high performance and free Wi-Fi in the terminal. We've also received very favorable comments from social media posts on our most recent Wi-Fi upgrades.

Meeting Date: August 8, 2017

Throughout the Wi-Fi project, there are interior and exterior high speed devices being targeted. The interior high-speed wireless access will provide much improved Internet access for passengers and tenants in public areas of the Airport. The exterior devices will support airport, airline, and tenant operations outside the facility on the ramp level at passenger loading bridges.

In public areas, mobile devices will connect to new Wi-Fi access points installed inside the facility, which replace the existing Distributed Antenna System (DAS) Wi-Fi access points in the terminal and concourses. The new Wi-Fi access points will enable higher bandwidth, support more connected devices and comply with the latest Wi-Fi standards used by today's mobile devices. The density of wireless access point coverage will significantly reduce connection problems while providing higher download and upload speeds for passengers and airline staff.

The “ramp level wireless network” will be accessed by both handheld and vehicle-mounted mobile devices and by new aircraft avionics systems. The design of the enhanced Wi-Fi network will support Virtual Private Networks (VPNs) that will be configured for secure Airport, airline, and tenant operations.

The second phase of the Wi-Fi Enhancement Project is tasked with completing the intended coverage and capacity benchmarks across the Airport as put forth at the beginning of the project. Without the second phase, the coverage across the airport will be incomplete and the passenger experience will suffer.

DETAILS

The first phase of the Wi-Fi project received construction bids that were less than estimated. It is assumed that a portion of this savings is due to the quality of the detailed design provided by the design team. However, due to the complexity of the design in other areas, the original design authorization will be inadequate to fully complete the remaining scope of the project.

As a result, the Infrastructure Design Services for Wi-Fi and VSS Enhancements Projects service agreement needs to be amended by an additional \$200,000 for additional Wi-Fi design services, for a new amended total of \$2.7 million. In accordance with RCW 53.19.060 (2), this notifies Commission that the total contract has been increased by more than 50% of the original contract value. The contract will be placed at the bid desk and be available for public inspection.

In 2016, the Commission authorized an increase to the service agreement from \$900,000 to a new total of \$2 million for additional design services. In May 2017, Commission authorized an additional increase of \$500,000 for additional design support of the VSS system, for an amended total of \$2.5 million, which increased the agreement by more than 50 percent of the original value. Commission was notified of this increase and the contract was made available for public inspection.

Meeting Date: August 8, 2017

Scope of Work

When the second phase of this project is complete, the Airport will have an enhanced Wi-Fi system that will provide high-speed Internet access for mobile device users throughout the entire interior and exterior of the airport aside from the North Satellite.

The ramp Wi-Fi system will be supported by the installation of weather tight micro-distribution cabinets, which provide network backbone connectivity for the ramp Wi-Fi access points. These will be installed on the exterior of the building at the ramp level of concourses and South Satellite mounted on or in close proximity to passenger loading bridges. Micro-distribution cabinets will provide the infrastructure necessary for the ramp wireless network as well as other anticipated network connectivity. Micro-distribution cabinets will also provide the required network connectivity for Wi-Fi improvements to the interior of Concourse C hold rooms.

Certain areas and functionality are not included within the above scope of work. While Wi-Fi access points will be installed in hold rooms and aircraft gate areas, this project will not install them within concession lease spaces which were included in the Airport’s Dining and Retail program and associated projects.

Small Business

As part of the scope of work, the use of small works contacts in conjunction with this major works project, promotes strong small business participation.

In an effort to maximize small and diverse (MWBE) business interest, project managers have partnered with the Port’s Small Business Group to conduct outreach and training efforts through PortGen activities. Certified small business requirements will be administered during the time of solicitation.

Schedule

Activity

Phase 2 In Use Date	Q2 2018
---------------------	---------

Cost Breakdown

	This Request	Total Project
Design	\$200,000	\$2,097,000
Construction	\$1,291,000	\$8,579,000
Total	\$1,491,000	\$10,676,000

Meeting Date: August 8, 2017

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 –Do not proceed with phase 2 construction.

Cost Implications: \$0

Pros:

- (1) Costs to deploy new networks could be passed to the tenants.
- (2) Some Wi-Fi coverage would remain via the existing DAS.

Cons:

- (1) Costs have already been incurred for design.
- (2) There will be areas that do not benefit from upgraded Wi-Fi thus encouraging tenants to implement their own systems. This will create multiple different Wi-Fi networks across the airport.
- (3) The passenger experience will continue to suffer.

This is not the recommended alternative.

Alternative 2 – Proceed with construction of portions of phase 2, but do not increase the design budget and therefore do not complete the remaining planned Wi-Fi installation.

Cost Implications: \$1,291,000

Pros:

- (1) Provides a high level of service across interior areas included in the scope of this project
- (2) The airport will have a single, continuous, high speed network across the majority of the Airport Terminal area

Cons:

- (1) The design scope will decrease; therefore, some areas would not receive high speed Wi-Fi upgrades.

This is not the recommended alternative.

Alternative 3 – Proceed with construction of phase 2 and reallocate construction bid savings to the design budget.

Cost Implications: \$1,491,000

Pros:

- (1) Provides a high level of service across all areas included in the scope of this project
- (2) The airport will have a single, continuous, high speed network across the majority of areas with passengers
- (3) The originally promised level of service will be achieved for ramp Wi-Fi

Meeting Date: August 8, 2017

Cons:

- (1) This is the most expensive alternative

This is the recommended alternative.

FINANCIAL IMPLICATIONS

<i>Cost Estimate/Authorization Summary</i>	Capital	Expense	Total
COST ESTIMATE			
Original estimate	\$9,880,000	\$0	\$9,880,000
Previous changes – net	\$796,000	\$0	\$769,000
Current change	\$(145,000)	\$145,000	\$0
Revised estimate	\$10,531,000	\$145,000	\$10,676,000
AUTHORIZATION			
Previous authorizations	\$9,185,000	\$0	\$9,185,000
Current request for authorization	\$1,491,000	\$0	\$1,491,000
Total authorizations, including this request	\$10,676,000	\$0	\$10,676,000
Remaining amount to be authorized	\$0	\$0	\$0

Annual Budget Status and Source of Funds

The Wi-Fi Enhancements Phase 2 (CIP #C800585) was included in the 2017-2021 capital budget and plan of finance with a budget of \$10,676,000. The capital budget decrease of \$145,000 was transferred to the Aeronautical Allowance CIP (800753) to increase the regulated materials operating expense. The funding source will be the Airport Development Fund and 2017 revenue bonds.

Financial Analysis and Summary

Project cost for analysis	\$10,676,000
Business Unit (BU)	Airfield Apron (phase 1) and Terminal Building (phase 2)
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase
IRR/NPV (if relevant)	N/A
CPE Impact	\$.06 in 2019

Future Revenues and Expenses (Total cost of ownership)

Although the enhance Wi-Fi system provides significant performance improvements and better coverage, renewal and replacement of some network components will be required in the three-to-five-year time frame to keep pace with innovation in the wireless industry and compliance with potentially upgraded Port network standards.

Meeting Date: August 8, 2017

A software license and maintenance fee estimated increase of \$20,000 will be budgeted in the ICT Operating Budget. Recurring Port labor costs to maintain the system are not expected to change as a result of this project.

ADDITIONAL BACKGROUND

Sea-Tac Airport has multiple projects that together will provide industry leading high-speed wireless Internet across the Airport terminal buildings. This project, the Wi-Fi Enhancement Project, is providing high speed, Wi-Fi to the interior of Concourses C and D, South Satellite, Central Terminal, TSA Checkpoints, Gina Marie Lindsey Hall, Ticketing, and Baggage Claim. It will also install exterior Wi-Fi on the ramp of Concourses A, B, C, D and the South Satellite. A previous project, The Fiber to Backstands Project, provided Wi-Fi to the interior of Concourses A and B. The International Arrivals Facility (IAF) Project will provide Wi-Fi within the new IAF facility. Finally, the NorthSTAR project will be providing Wi-Fi to the interior and ramp level of the entire North Satellite as part of its construction.

ATTACHMENTS TO THIS REQUEST

- (1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

May 24, 2016 – The Commission authorized construction of phase 1 for \$7,239,000.

August 5, 2014 – The Commission authorized design for \$1,891,000.