

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

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

**Item No.** 4c  
**Date of Meeting** February 23, 2016

**DATE:** February 17, 2016  
**TO:** Ted Fick, Chief Executive Officer  
**FROM:** Dave Soike, Director, AV Facilities and Capital Programs  
Peter Garlock, Chief Information Officer  
**SUBJECT:** Airport Data Network Switch Upgrade (CIP #C800788)

<b>Amount of This Request:</b>	\$2,982,000	<b>Source of Funds:</b>	Airport Development Fund
<b>Est. Total Project Cost:</b>	\$2,982,000		
<b>Est. State and Local Taxes:</b>	\$186,000		

**ACTION REQUESTED**

Request Commission authorization for the Chief Executive Officer to (1) proceed with the Data Network Switch Upgrade project at Seattle-Tacoma International Airport; (2) procure required hardware, software, vendor services, and maintenance; and (3) use Port staff for implementation, for a total project cost not to exceed \$2,982,000.

**SYNOPSIS**

The Sea-Tac airport data network provides data connectivity for systems critical to operations at Seattle-Tacoma International airport. This includes hundreds of security cameras throughout the airport, flight information systems, common-use check-in kiosks, boarding pass printers and readers at airline gates, the baggage messaging system, and the free WiFi system that provides Internet access to the traveling public.

The existing data network switching infrastructure at Sea-Tac was installed over 12 years ago. These older components no longer have sufficient processing power and capacity to accommodate the dramatic increase in data network traffic from the airlines and passengers served by the airport, and the greatly increased use of rich media devices (smartphones, tablets, etc.) to access a wide variety of applications and data. This growing demand for high capacity network service will continue to increase as airlines and travelers take advantage of new technology and applications.

The purpose of this project is to upgrade the airport data network by replacing the existing switching equipment with high capacity, faster processor switching equipment needed to support current and future network requirements. Information & Communication Technology (ICT) and Port Construction Services (PCS) resources will complete the project. Total project costs are

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estimated to be \$2,982,000. Funding for this project was included in the 2016-2020 capital budget and plan of finance. Recurring hardware license and maintenance costs will be budgeted within the ICT department's operating budget.

### **BACKGROUND**

A network switch interconnects data devices such as computers, servers, and printers. Port of Seattle network switches are configured, managed, and monitored remotely by ICT to optimize performance and meet security requirements. The current switching infrastructure consists of 6 core switches, 8 distribution switches, and 197 access layer switches that are dispersed throughout the airport. They were installed over 12 years ago, and are long past their vendor supported lifespan. The data systems that rely upon this aging network are critical to airport and airline operations.

In the last ten years, technology has changed dramatically. At the same time, data growth has increased exponentially, and internet access has become critical to the business. This has resulted in an ever increasing reliance on the fast transmission of large amounts of information and data. For these reasons, our current switches can no longer support the data communication requirements that our critical applications demand.

### **PROJECT JUSTIFICATION AND DETAILS**

There is significant stress on our current aging network infrastructure, because it can't support the data transmission increases from airline data feeds, security cameras, and the traveling public. Airport WiFi use is growing dramatically every year, and the data transmission requirements for this system will soon be unsustainable with our older equipment.

In addition, the age, under capacity, and inadequate processing power of our current airport network switching infrastructure increases our vulnerability in the event of a switch failure. The impact of such a failure ranges from an outage of the Airport free WiFi, which would inconvenience travelers, to an inability to support systems such as those used to board passengers at a gate, resulting in delayed flights.

#### ***Project Objectives***

- Ensure the airport data network will support critical Airport and airline systems by replacing aging network switches with new technology that meets current and future data transmission requirements.
- Deploy new components with no disruption to critical operational systems.

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

- Replacement of approximately 211 Cisco access network switches in communication rooms and data centers with devices that meet ICT's technology Standards.

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### ***Schedule***

Commission Approval	February 2016
Procurement Complete	May 2016
Installation Complete	April 2017

The deployment of equipment will be over a 15 month period to minimize operational impacts.

### **FINANCIAL IMPLICATIONS**

#### ***Budget/Authorization Summary***

	Capital	Expense	Total Project
Original Budget	\$2,982,000	\$0	\$2,982,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$2,982,000	\$0	\$2,982,000
Total Authorizations, including this request	\$2,982,000	\$0	\$2,982,000
Remaining budget to be authorized	\$0	\$0	\$0
Total Estimated Project Cost	\$2,982,000	\$0	\$2,982,000

#### ***Project Cost Breakdown***

	This Request	Total Project
Equipment	\$2,145,000	\$2,145,000
Vendor Services	\$210,000	\$210,000
ICT Labor	\$347,000	\$347,000
PCS	\$75,000	\$75,000
State & Local Taxes (estimated)	\$205,000	\$205,000
Total	\$2,982,000	\$2,982,000

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

This project was included in the 2016-2020 capital budget and plan of finance as a \$3,000,000 business plan prospective project within CIP #C800788, Airport Data Network Switch Upgrade. The source of funds is the Airport Development Fund.

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

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Technology
<b>Risk adjusted discount rate</b>	N/A
<b>Key risk factors</b>	N/A
<b>Project cost for analysis</b>	\$2,982,000
<b>Business Unit (BU)</b>	Terminal Building
<b>Effect on business performance</b>	N/A
<b>IRR/NPV</b>	N/A
<b>CPE Impact</b>	\$.02

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

An estimated \$90,000 increase in annual hardware maintenance costs are expected as a result of this project. This will be budgeted in the ICT Operating Budget.

## **STRATEGIES AND OBJECTIVES**

This project will support the following Century Agenda and Aviation Strategic Goals.

- Advance this region as a leading tourism destination and business getaway
- Meet the region's air transportation needs at Sea-Tac Airport for the next 25 years
- Position the Puget Sound region as a premier international logistics hub

Systems critical to Airport and airline communications and operations, depend on the airport data network for data transmission. This project ensures the high performance, security and network availability required to support these systems.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1)** – Only replace network switching components as they fail.

### Pros:

- Costs would be distributed over multiple years

### Cons:

- Total cost is estimated to 20-30% higher if replaced over this longer period.
- There will be serious operational impacts for any outage of equipment due to the criticality of the systems supported by the airport data network.
- This approach precludes our ability to implement new network functionality and support rapidly increasing computing and data transmission requirements.
- Because the existing equipment is at end of life, bug fixes and security updates will no longer be provided by the vendor.

**This is not the recommended alternative.**

**Alternative 2)** – Replace all aging network switch components on the airport data network.

### Pros:

- This solution will provide a tenfold increase in current capacity, plus the flexibility and scalability of the airport data network to meet rapidly growing demands and security requirements.
- Improves our ability to monitor and manage a highly complex network.
- Substantially reduces the risk of critical system outages caused by equipment failure.

### Cons:

- This solution has a higher short term cost.

**This is the recommended alternative.**

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**ATTACHMENTS TO THIS REQUEST**

- None

**PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- None