

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 5e

Date of Meeting February 28, 2012

DATE: February 17, 2012

TO: Tay Yoshitani, Chief Executive Officer

FROM: David Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Industrial Waste Treatment Plant, Fiber Installation (CIP #800461)

Amount of This Request: \$514,000 **Source of Funds:** Airport Development Fund

State and Local Taxes Paid: \$16,000 **Jobs Created:** 5

ACTION REQUESTED:

Request Port Commission authorization for the Chief Executive Officer to (1) prepare full design documents; (2) execute contracts to prepurchase single-mode fiber optic cable; and (3) authorize Port Crews to install new single-mode fiber optic cable to the industrial waste treatment plant (IWTP) and to Gate E-45 for the IWTP Fiber Installation Project at Seattle-Tacoma International Airport (Airport) for a total cost of \$514,000.

SYNOPSIS:

The Airport operates an industrial waste treatment plant in the southwest corner of the Airport. Existing multi-mode fiber optic cable is not functioning, likely due to breaks in the fiber, as well as the distance the signal has to travel exceeding multi-mode fiber optic cable limits. This project will install new single-mode fiber optic cable from the main terminal to a new telecommunications cabinet located near the Alaska maintenance hangar. This new cabinet will function as a routing hub for continuing on with single-mode fiber optic cable to the IWTP and to Gate E-45.

The design work for this project will be accomplished using Port Engineering resources. Port Construction Services (PCS) will install fiber optic cable and the telecommunications cabinet, and perform the terminations of the new fiber optic cable, using existing on-call small works electrical and communications contracts, coordinated with PCS. The new single-mode fiber optic cable is Systimax cable. The Commission received notice of sole source waiver for Systimax on April 5, 2011. This project was included in the 2012-2016 capital budget and plan of finance as a business plan prospective project.

BACKGROUND:

The original multi-mode fiber was installed in early 2000, and it no longer meets the growing need of the IWTP facility. Since the installation, IWTP agreements with state and local agencies

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have required monitoring and reporting of real-time data related to surface and ground water treatment. This project will install new single-mode fiber that will facilitate the Port's full compliance with those agreements and provide communication growth capability into the future.

The initial design of Gate E-45 was performed prior to the present security checkpoint requirements that occurred after 9/11. The installation of additional single-mode strands will allow capability for greater security data to be collected and monitored, complying with current Transportation Security Administration (TSA) requirements, and those near-term initiatives that TSA has informed the Port are just on the horizon for implementation.

PROJECT JUSTIFICATION:

Facilities and Infrastructure, ICT, and Maintenance staff have investigated and identified a number of issues regarding the communications capabilities to the IWTP and Gate E-45.

Communication to the IWTP: the current multi-mode fiber cable to the IWTP is not adequate to provide continuous, reliable signal strength for the distances that are involved. Communication is currently achieved via radio. The bandwidth for this communication is inadequate and all required functions, such as time sheet entry and process information, i.e., flow, biological oxygen demand levels, and lagoon levels, are not done at the IWTP location. There is no hardwired network connectivity to the IWTP, hence some of the business and water quality reporting functions must be manually performed at the Airport Office Building, effectively requiring duplicate effort. In addition, continuous monitoring, which is a requirement of the agreements with state and local agencies, will be facilitated by this project.

Communication to Gate E-45: Gate E-45 is the busiest access gate to the Airport Operations Area (AOA) for contractors, airline vendors and suppliers. New TSA-mandated security requirements will necessitate greater bandwidth capability to comply with these new standards.

Project Objectives:

1. Provide safe and reliable real-time communication between the IWTP and Maintenance department staff in the terminal building.
2. Provide real-time water quality monitoring capability for the IWTP.
3. Provide a safe, secure and reliable delivery route for airlines, concessionaires, airline vendors, and Port contractors to the AOA via Gate E-45.
4. Provide for future security capacity to meet and maintain TSA-mandated security standards.

PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

Procure and install new single-mode fiber optic cable from the Main Terminal to a new telecommunication cabinet near the Alaska hangar as indicated on the Attachment A - Fiber Path Map. Using the new cabinet as a junction/termination point, 1) install single-mode fiber optic cable to the IWTP, and 2) install single-mode fiber optic cable to Gate E-45. After installation, the new single-mode fiber optic cable will be tested before placing into service. Old cable would be removed.

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Schedule:

- Commission Authorization February 2012
- Start Design February 2012
- Complete Design March 2012
- Procure long lead items (single-mode fiber optic cable) March 2012
- Start Construction August 2012
- Construction Complete September 2012

FINANCIAL IMPLICATIONS:

<u>Budget/Authorization Summary</u>	<u>Capital</u>	<u>Total</u>
Original Budget	\$514,000	\$514,000
Budget increase (decrease)	\$ 0	\$ 0
Revised Budget	\$514,000	\$514,000
Previous Authorizations	\$ 0	\$ 0
Current request for authorization	\$514,000	\$514,000
Total Authorizations, including this request	\$514,000	\$514,000
Remaining budget to be authorized	\$ 0	\$ 0

Project Cost Breakdown:

Construction	\$295,000
Construction Management	\$58,000
Design (includes Pre-design)	\$75,000
Project Management	\$47,000
Permitting	\$23,000
State & Local Taxes (estimated)	\$16,000
Total	\$514,000

Budget Status and Source of Funds:

This project (CIP #C800461) was included in the 2012-16 capital budget and plan of finance as a business plan prospective project. The funding source will be the Airport Development Fund.

Financial Analysis and Summary:

<i>CIP Category</i>	Renewal/Enhancement
Project Type	Infrastructure Upgrade
Risk adjusted Discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$514,000
Business Unit (BU)	Airfield
Effect on business performance	NOI after depreciation will increase

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IRR/NPV	N/A
CPE Impact	Will increase CPE by less than \$.01 by 2013. However, no change to business plan forecast since this project was included.

There are no anticipated increases in annual O&M costs associated with this project.

Lifecycle Cost and Savings:

Fiber cable installation does not require regular maintenance activities; there is no O&M impact expected as a result of this project.

ENVIRONMENT AND SUSTAINABILITY:

The project's construction activities do not materially impact the environment. However, following completion of the project, the Airport will be better able to remain in compliance with environmental requirements such as current state and local sewage agencies agreements and regulations that require monitoring and reporting of real-time data related to surface and ground water treatment.

STRATEGIC OBJECTIVES:

This project supports the Airport's role as a good steward of surface water and ground water resources, and helps to enable the Airport's strategy to reduce the its environmental impacts.

TRIPLE BOTTOM LINE SUMMARY:

This project will provide tangible improvements to the Airport's ability to monitor ground water and surface water quality associated with the IWTP, and helps the Airport maintain its local leadership role in protecting the aquatic environment downstream from the Airport. While this project does not provide significant economic benefits, it does provide community benefit to surrounding cities and agencies who desire to maintain good water quality within their jurisdictions.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1: The ability to maintain real-time communications between the IWTP and the terminal will allow Maintenance to monitor water quality on a continuous basis while remaining in compliance with state and local sewage agencies. Providing additional bandwidth capacity to Gate E-45 will allow the Port to comply with current and future TSA-mandated security requirements. This is the recommended alternative.

Alternative 2: The "Do Nothing" alternative results in data transmission service for the IWTP support. Also, not providing additional bandwidth to Gate E-45 will not allow the Port to comply with future TSA-mandated security requirements. This is not the recommended alternative.

Alternative 3: Use radio network communication between the IWTP and the terminal. During periods of low visibility, aircraft routinely stack up, effectively blocking the line-of-sight radio link between the IWTP and the AOB. This does not allow the Airport to comply with its operating agreements with state and local sewage agencies to provide continuous, real-time

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communications. The Airport conducted a test of a wireless connection between the IWTP and the AOB, and that test demonstrated the necessity to install and utilize a fiber network. This is not the recommended alternative.

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

Attachment A - Fiber Path Map.

PREVIOUS COMMISSION ACTION:

None.