PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 4c

Date of Meeting August 5, 2014

DATE: July 29, 2014

TO: Tay Yoshitani, Chief Executive Officer

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

SUBJECT: Main Terminal South Low Voltage System Upgrade (CIP #C800061)/Main Terminal Center and North Low Voltage System Upgrade (CIP #800231)

Amount of This Request:	$6,072,000	**Source of Funds:**	Airport Development Fund and Future Bonds
Est. Total Project Cost:	$20,730,000		
Est. State and Local Taxes:	$1,158,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to (1) transfer budget and combine the Main Terminal Center and North Low Voltage System Upgrade (CIP #C800231) with the Main Terminal South Low Voltage System Upgrade (CIP #C800061) into a single CIP; (2) direct staff to proceed with project management, design, and preparation of final construction documents for the combined Main Terminal Low Voltage System Upgrade project at Seattle-Tacoma International Airport; and (3) execute a contract for design services. The total value of this request is $6,072,000 of an estimated total project cost of $20,730,000.

SYNOPSIS

This project will replace the low voltage distribution system within the main terminal. This system serves power to every floor of the main terminal including ticketing, baggage claim, and mezzanine offices. The current low voltage system is now ten years beyond the expected lifespan. Outages are becoming more frequent with spare parts increasingly difficult to locate. Replacement of the system will extend the system lifespan, comply with all code requirements, increase reliability, and significantly decrease impacts of planned outages.

The Low Voltage System Upgrade projects include identical scope items differing only in location within the Airport. Combining the projects into a single CIP brings the similar work into a single project and allows for consolidated design and construction efforts. A single design effort will mitigate risks of multiple designers creating functionally identical but physically different systems. Single construction execution will allow for greater flexibility of work in the critical areas of the Airport that are affected.

BACKGROUND

The Airport's medium voltage electrical distribution system and power centers (maximum primary operating voltage levels of 5,000 to 15,000 Volts) have all been renewed and replaced within the last decade. The next phase of the Airport's renewal and replacement program for the electrical system is the low-voltage system (maximum operating voltage distribution levels of 120 to 600 Volts).

Currently, portions of the existing low-voltage electrical distribution system have reached the end of their useful operating life, raising concerns over their continued reliability. The useful operating life of electrical equipment primarily depends on age, with 30 years being a reasonable lifespan. Some of the equipment included in this project is well over 40 years old. Equipment maintainability and availability of spare parts are increasing concerns with aging equipment.

There are areas in the low-voltage electrical system where the available fault current exceeds the current ratings for the existing equipment, thus creating operating and working condition safety issues. Other current safety-related code issues exist for these older installations including dedicated equipment space, working clearances, illumination, identification, and Underwriters Laboratory (UL) listing of all equipment. The Main Terminal Low Voltage System Upgrade project will address all these issues in this area and bring the installation up to current standards. Having adequate and reliable capacity in the low voltage distribution system is also critical in supporting deployment of new technologies that can maximize facility throughput.

This project was originally authorized by Commission in 2007 for $1,925,000 for both design and construction for the South Main Terminal. One hundred percent design concluded in 2009. However, as a result of the economic downturn, the project was delayed and given a lower priority than other projects. In the ensuing years, there have been several revisions to the electrical code standards and many projects executed that required piecemeal upgrading of sections of the low voltage distribution system. It has since been determined the initial scope of work authorized would not fully solve all of the known deficiencies. This current authorization request seeks to reset the authorized amount to match a more complete scope of work.

As a result of the delay, the previous design effort is not usable and will need to be expensed. The total expensed will be approximately $540,000. This request will restart the design process and complete full upgrades to the low voltage distribution in the south main terminal to meet current codes and port standards. Design work will be performed under a single project procurement for design services. Further action will include authorization for construction at the conclusion of the design process.

PROJECT JUSTIFICATION AND DETAILS

The work planned is the start of the renewal and replacement program for the Airport's low voltage electrical system. This infrastructure is critical to ticketing and other operational requirements for all airlines.

Project Objectives

- Upgrade the Main Terminal Power Center Low Voltage System by replacing equipment at the end of its service life and equipment that is underrated for its use.
- Remedy all code compliance and working clearance issues.
- Keep maintenance and spares requirements to a minimum.
- Meet all load requirements and provide for future expansion.
- Minimize operational impact during the replacement of the electrical low-voltage distribution system and its components.

Scope of Work

This project covers the renewal and replacement of low-voltage electrical distribution switchboards, feeders, panels, and tenant metering in the Main Terminal served by the Main Terminal Power Distribution Load Center.

Schedule

Airline Majority in Interest Approval	March 2014, July 2014
Authorize Design	August 2014
Authorize Construction Contract	January 2016
Advertise	February 2016
Construction Start	June 2016
Project Completion	July 2019

FINANCIAL IMPLICATIONS

Budget/Authorization Summary	C800061	C800231	Combined Capital	Expense	Total Project
Original Budget	$1,925,000	$2,700,000	$4,625,000	$0	$4,625,000
Adjust for costs charged to expense		($540,000)	($540,000)	$540,000	$0
Budget Increase	$6,605,000	$8,950,000	$15,555,000	$550,000	$16,105,000
Revised Budget	$8,530,000	$11,110,000	$19,640,000	$1,090,000	$20,730,000
Previous Authorization	$1,385,000	$150,000	$1,535,000	$540,000	$2,075,000
Current request for authorization			$6,072,000		$6,072,000
Total Authorizations, including this request			$7,607,000	$540,000	$8,147,000
Remaining budget to be authorized			$12,033,000	$550,000	$12,583,000
Total Estimated Project Cost			$19,640,000	$1,090,000	$20,730,000

Project Cost Breakdown	This Request	Total Project
Design Phase	$6,072,000	$7,997,000
Construction Phase		$11,575,000
State and Local Taxes		$1,158,000
Total	$6,072,000	$20,730,000

Budget Status and Source of Funds

The Main Terminal South Low Voltage System Upgrade #C800061 and Main Terminal Center and North Low Voltage System Upgrade #C800231 are both included in the 2014-2018 capital budget and plan of finance with a combined budget of $6,900,000. CIP #C800231 budget will be transferred into #C800061. The capital budget increase of $15,555,000 was transferred from the Aeronautical Allowance CIP (C800404) resulting in no net change to the Airport capital budget. The expense budget includes $540,000 of prior design costs that will be written off and charged to expense in 2014 and $550,000 in regulated material expense that will be included in the 2015 operating budget. The funding source will be the Airport Development Fund and future revenue bonds. The Port plans to issue revenue bonds in late 2014 or early 2015 to fund a number of projects.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	$20,730,000
Business Unit (BU)	Terminal
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	$0.02 in 2014 and 2015 for expense items and $.06 beginning in 2019 for ongoing capital costs.

Lifecycle Cost and Savings

The existing low voltage distribution system is ten or more years beyond its 30 year life expectancy. Repair costs have been continuously increasing as replacement parts availability has dwindled. Renovation is expected to reduce repair costs and increase the power available and operational availability of the system. The renovated system is expected to meet or exceed the previous lifespan.

STRATEGIES AND OBJECTIVES

The Low Voltage System Upgrade will support the Century Agenda Strategic Objective of meeting the region's air traffic needs at Seattle-Tacoma International Airport for the next 25 years by ensuring that the low voltage electrical infrastructure of the South Main Terminal will support existing and future electrical needs with greater reliability.

TRIPLE BOTTOM LINE

Economic Development

This project will increase the long-term ability of the Airport to serve all the airlines and passengers who work in and pass through the main terminal. This project increases the reliability of the electrical system and adds additional capacity for future growth.

Environmental Responsibility

The project demonstrates environmental sustainability by improving existing Port assets to extend their life and better utilize existing resources.

Community Benefits

This project will facilitate airline growth. Long-term vitality of the Airport benefits the regional economy, the local environment, and nearby communities.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Do Nothing. This would not address life expectancy of the aging equipment, remedy code compliance issues, or address future growth. This is not the recommended alternative.

Alternative 2) – Proceed with original scope as approved in 2007. This will only partially address the life expectancy of the Low Voltage System and will not address future growth requirements. This alternative will require redesign to comply with current code requirements. This is not the recommended alternative.

Alternative 3) – Proceed with full scope. This will completely address the life expectancy of the Low Voltage System, address all code compliance issues, and address future growth needs. **This is the recommended alternative.**

ATTACHMENTS TO THIS REQUEST

- MT Low Voltage Upgrade Presentation

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- June 8, 2007 – Authorization for Design and Construction.