

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 5e

ACTION ITEM

Date of Meeting July 24, 2012

DATE: July 6, 2012

TO: Tay Yoshitani, Chief Executive Officer

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

SUBJECT: Parking Garage Emergency Lights project at Seattle-Tacoma International Airport
(CIP #C800230)

Amount of This Request: \$1,157,081 **Source of Funds:** Airport Development Fund

Est. State and Local Taxes: \$0

Est. Total Project Cost: \$5,269,600

ACTION REQUESTED:

Request authorization for the Chief Executive Officer to prepare full design and construction bid documents for the Parking Garage Emergency Lights project at Seattle-Tacoma International Airport in the amount of \$1,157,081, with a total estimated budget for the completed project of \$5,269,600.

SYNOPSIS:

This request authorizes the Airport Parking Garage Emergency Lights project to move forward with design and preparation of construction documents. This work will be performed under an existing Emergency System Electrical Infrastructure Design indefinite delivery, indefinite quantity (IDIQ) contract. This project was included in the 2012 – 2016 capital budget and plan of finance.

The parking garage has light fixtures throughout the parking areas and stairwells that allow for 24-hour operations. A small portion of those fixtures have dual functions and one is to serve as emergency light fixtures when normal power is lost. The current emergency lighting system was intended to be a temporary fix after a system failure in 2007. It is not fully code compliant. This project provides the infrastructure that will ensure the Port continues to meet applicable life safety code requirements for egress area illumination levels in the parking garage. In addition, this project will eliminate the need for the battery-powered emergency lights currently in use, therefore eliminating the need to purchase batteries and pay associated disposal fees. During design, staff will review available lighting fixtures and the selection will be based on fixtures that will decrease electrical loads while providing acceptable light output. In addition, this design

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will provide a foundation for a follow-up project to install new light fixtures throughout the garage that will further reduce energy consumption.

BACKGROUND:

In 2007, the existing uninterruptible power supply (UPS) batteries that provided backup power for egress lighting in the parking garage failed. In the event of a normal power failure, these batteries would have provided backup power to the light fixtures on emergency circuits and these fixtures maintained light levels necessary for safe egress from the garage. Following the battery failures in 2007, temporary battery backup fixtures were installed to provide emergency egress lighting until a permanent solution could be implemented. This temporary system is near the end of its life and is not compliant with code requirements. The permanent solution will comply with egress lighting requirements as specified in NFPA 101: Life Safety Code (National Fire Protection Agency). Failure of the UPS batteries and the corresponding costs to maintain the temporary fixtures have compelled the Port to look at light fixtures and emergency power distribution infrastructure alternatives that will utilize energy saving technology with acceptable light quality while reducing maintenance and operating costs to provide reliable egress lighting.

Staff has identified grants that may apply to this project, and will make a determination during design to pursue them if applicable. In addition, staff may partner with the State of Washington energy contracting office, and will make that determination during design if applicable. These decisions would be detailed in future requests for authorization. If grants and state energy partnership are deemed favorable to the project, then staff will return to Commission to request design, scope, and any associated budget changes.

PROJECT JUSTIFICATION:

The purpose of this project is to provide the electrical infrastructure for a new source of emergency power to feed the parking garage emergency lighting circuits in order to ensure that code required level of egress illumination is provided for the safety of customers.

This project will provide the infrastructure for a follow-up project to replace the emergency light fixtures in the parking garage. This new infrastructure capacity will provide the capability to utilize energy saving lighting technology that will significantly decrease energy usage, maintenance, and operating costs.

Project Objectives:

- Satisfy applicable code requirements for emergency lighting;
- Provide proper egress lighting for the safety of customers;
- Allow for the capability to decrease electrical loads on the emergency circuits by utilizing current lighting technology in fixtures that require less power; and
- Decrease maintenance and operations cost by utilizing current lighting technology in fixtures with longer lamp life.

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PROJECT SCOPE OF WORK AND SCHEDULE:

Scope of Work:

- Construction of four new electrical closets to house the new electrical equipment for code compliance that requires normal and emergency power to be segregated.
- Installation of a new distribution panel and automatic transfer switch to support the load transfer during scheduled system testing by maintenance.
- Installation of meters in each of four new normal and emergency circuit panel-boards with Ethernet connection to the Port's existing power monitoring system networks.
- Port Construction Services (PCS) to complete a Regulated Material Management (RMM) good faith survey.
- Installation of conduit and electrical wiring to connect garage lighting to generator facilities in the terminal that have available capacity in the event of a power outage emergency.

Schedule:

Commission Authorization for Design	July 2012
Commission Authorization to Advertise Construction	December 2012
Advertise	February 2013
Notice to Proceed	April 2013
Construction Complete	August 2014

FINANCIAL IMPLICATIONS:

<i>Budget/Authorization Summary:</i>	Capital	Expense	Total Project
Original Budget	\$750,000	\$0	\$750,000
Budget Increase	\$4,519,600	\$0	\$4,519,600
Revised Budget	\$5,269,600	\$0	\$5,269,600
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$1,157,081	\$0	\$1,157,081
Total Authorizations, including this request	\$1,157,081	\$0	\$1,157,081
Remaining budget to be authorized	\$4,112,519	\$0	\$4,112,519
Total Estimated Project Cost	\$5,269,600	\$0	\$5,269,600

<i>Project Cost Breakdown:</i>	This Request	Total Project
Construction	\$0	\$3,293,900
Construction Management	\$50,661	\$554,430
Design	\$652,260	\$652,260
Project Management	\$421,550	\$431,330

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Permitting	\$32,610	\$32,610
State & Local Taxes (estimated)	\$0	\$305,070
Total	\$1,157,081	\$5,269,600

Budget Status and Source of Funds:

The Parking Garage Emergency Lights project (CIP #C800230) is included in the 2012-2016 capital budget and plan of finance as a business plan prospective project in the amount of \$750,000. The budget increase of \$4,519,600 will be transferred from the Non-Aeronautical Renewal/Replacement (C800153), a business plan prospective project allowance, resulting in no net change to the Aviation capital budget. The source of funds for this project is the Airport Development Fund.

The project budget has increased due to scope increase to include replacement of approximately 1,500 emergency light fixtures with more energy-efficient fixtures. This led to design concept modifications to include four new electrical closets to comply with the National Electrical Code that requires the segregation of normal and emergency power. Fire heat sensors were added to comply with Port Fire Department requirements in each closet. The scope also increased to include electric power revenue meters to provide monitoring of electric loads. The project budget was also affected by a scope transfer to include emergency lighting replacement and associated infrastructure on Floors 1 and 2 from the Parking Retrofit Project (CIP #C800225) for design efficiency.

Financial Analysis and Summary:

CIP Category	Electrical Infrastructure
Project Type	Renewal & Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$5,269,600
Business Unit (BU)	Landside, Parking
Effect on business performance	NOI after depreciation will decrease
IRR/NPV	N/A
CPE Impact	N/A

Lifecycle Cost and Savings:

The estimated life expectancy for this project is 40 years for the electrical panels and electrical closets.

STRATEGIC OBJECTIVES:

This project aligns with the Port's objectives to operate a world-class international airport by ensuring safe and secure operations and lead the airport industry in environmental innovation and minimize the Airport's environmental impacts.

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ENVIRONMENTAL SUSTAINABILITY:

This project will provide the opportunity to apply environmental sustainability principles primarily through the use of energy-efficient light fixtures by reducing the energy use by an estimated 50% while providing more than four times the lamp operating life compared to what is currently installed.

TRIPLE BOTTOM LINE SUMMARY:

The project supports economic development by investing in an upgraded parking garage to serve the public's safety needs at the Airport. Environmental sustainability principles will be employed as needed or when practical. Procedures set forth in the Port's new Small Contractor and Supplier Project from the Office of Social Responsibility will be used when applicable in the project contracting process.

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1 – Do nothing. Do not implement any improvements to the existing parking garage. This alternative is not recommended because the temporary battery backup emergency lighting fixtures have reached their life expectancy and will begin to fail and the parking garage currently does not meet egress lighting code. This alternative will negatively affect the safety of the public. This is not the recommended alternative.

Alternative 2 – Provide new emergency power to allow for the emergency light fixtures to be replaced with newer and more energy-efficient lighting technology. This alternative will meet the life/safety code requirements for egress illumination levels and provide safety for the public.

This is the recommended alternative.

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

None.