



**COMMISSION  
AGENDA MEMORANDUM**

**Item No.** 8b

**ACTION ITEM**

**Date of Meeting** January 4, 2022

**DATE:** December 20, 2021

**TO:** Stephen P. Metruck, Executive Director

**FROM:** Eileen Francisco, Interim Director, Aviation Facilities and Capital Programs  
Wayne Grotheer, Director, Aviation Project Management

**SUBJECT: Concourse and Parking Garage Low Voltage Upgrades (CIP# C801280 & C800901) – Design**

**Amount of this request:** \$11,200,000

**Total estimated project cost:** \$40,894,000

**ACTION REQUESTED**

Request Commission authorization for the Executive Director to (1) complete design, (2) advertise and execute up to two professional services contracts for design services for the Concourse Low Voltage Upgrade project (CIP C801280) and the Parking Garage Low Voltage Upgrade project (CIP C800901), (3) advertise and execute a General Contractor, Construction Manager (GCCM) construction contract and authorize pre-construction services for CIP C801280, (4) issue a job order contract (JOC) to carry out pre-construction services for CIP 800901, and (5) use Port of Seattle crews for pre-construction activities for CIPs C801280 and C800901.

The amount of this request is \$11,200,000. The total estimated cost for both projects is \$40,894,000.

<b>Project</b>	<b>Amount of this request</b>	<b>Total estimated project cost</b>
CIP C801280 Concourse Low Voltage Upgrades	\$7,200,000	\$28,350,000
CIP C800901 Parking Garage Low Voltage Upgrades	\$4,000,000	\$12,544,000
<b>Total</b>	<b>\$11,200,000</b>	<b>\$40,894,000</b>

**EXECUTIVE SUMMARY**

Many of the existing power distribution panels in Concourses B, C, D, and the parking garage at the Seattle-Tacoma International Airport (STIA) have been in service for over 30 years and have exceeded their serviceable life expectancy. In many cases, the equipment includes parts which are no longer available from the manufacturer or are no longer maintained as spare parts by the

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Port of Seattle’s electrical shop. Some equipment also require modification to comply with current codes and standards.

These projects will renew and/or replace existing normal and emergency low voltage electrical distribution equipment within Concourses B, C, and D and the parking garage at STIA.

This request will authorize design and pre-construction funds for both projects.

**JUSTIFICATION**

Due to the age and conditions of some electrical equipment in use throughout STIA, risk of failure is moderate to high. A failure of electrical equipment can result in power outages in key areas of STIA with downstream users such as tenants and travelers being significantly affected for extended periods of time. As part of the planning phase of these projects, all existing electrical equipment was surveyed and panels with the highest risk of failure and resulting operational impact were identified as needing replacement.

Many of the current electrical rooms are cramped and do not have space for new panels or conduit, and some of the existing panels have clearance issues which impact maintenance access. As a result, this project must install new electrical rooms and closets to support future electrical power needs at STIA.

Existing panels are not consistently metered and labeled, particularly for older equipment. This project will implement metering for all replaced panels, which will provide opportunities for future energy conservation projects.

C800901 will be implemented in the parking garage and will mostly address lighting panels, many of which can be replaced during daylight hours. C801280 will be implemented in the concourses, which represents additional challenges with mitigation of operational impacts, night outages, and panel relocations. Other than these differences, CIPs C801280 and C800901 will address the same equipment issues and will include similar design scope. Due to the similarities in the mission and scope of these projects, implementation with a consistent approach will result in more efficient procurement, design, and overall project management. As such, projects C801280 and C800901 are being presented together for this Commission request.

The requested authorization will initiate design activities for both projects and begin pre-construction activities such as circuit tracing and outage planning to support the design effort.

***Diversity in Contracting***

The Port of Seattle’s Diversity in Contracting Department performed a Women & Minority Business Enterprises (WMBE) availability analysis during the Notebook phase of these projects. Per this evaluation, an aspirational goal of 13% WMBE participation was determined for the design procurement of both projects (C801280 and C800901), and an aspirational goal of 10% WMBE participation was determined for the procurement of a GCCM for CIP C801280.

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## DETAILS

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

These projects will cover the renewal and replacement of end-of-life low voltage electrical equipment within Concourses B, C, and D and the parking garage at STIA. Replacement will include but is not limited to panelboards, motor control centers, switchboards, feeders, meters, and transformers. The work will be carried out in a manner that minimizes disruptions to normal airport operations.

CIPs were developed separately for Concourses B, C, and D over time. These 3 CIPs represented the same technical scope in different areas. During the Notebook development process, it was determined that combining this scope into a single project would improve efficiency, reduce project risks, mitigate operational impacts, and improve design consistency. The Investment Committee approved of CIPs C800902, C800905, and C801046 being combined into new CIP C801280. The parking garage scope (C800901) will remain a standalone project.

The current budget estimate for C800901 has increased by \$9,276,572 since the original Status 2 plan of finance estimate. This increase is due to the number of panels needing replacement, the need for relocating panels and building new electrical rooms, measures to reduce operational impacts, etc. Note that the recommended scope alternative (Alternative 3) prioritizes the equipment with highest risk and significantly reduces project costs from the initial field survey recommendations (Alternative 2). The Main Terminal Low Voltage System Upgrade project (CIP C800061) – a similar ongoing project – provides further basis for the increased budget.

The design phase will include the following scope items:

- (1) Renew and/or replace existing normal and emergency low voltage (480/277V and 208/120V) electrical distribution equipment within Concourses B, C, and D and the parking garage at STIA. Panels have been prioritized for replacement based on condition and highest risk of operational impact; less than 30% of the panels in each area have been selected for replacement.
- (2) Create new electrical closets for relocated equipment as needed in each area.
- (3) Create a new electrical room in Concourse D to support future power demands.
- (4) Implement metering for all new equipment, whether as branch metering or directly on the new panel.
- (5) Renew and/or replace mechanical equipment (HVAC, fire protection systems, etc.) where necessary to support new electrical equipment.

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**Schedule**

*Activity*

Project	Concourses (C801280)	Parking Garage (C800901)
Design start	2022 Quarter 3	2022 Quarter 3
Commission construction authorization	2024 Quarter 1	2023 Quarter 3
Construction start	2024 Quarter 1	2024 Quarter 1
In-use date	2025 Quarter 3	2025 Quarter 1

**Cost Breakdown**

This Request

Total Project

<b>Concourse Low Voltage (C801280)</b>		
Design	\$5,800,000	\$6,345,000
Pre-Construction	\$1,400,000	\$1,400,000
Construction	\$0	\$20,605,000
<b>Total</b>	<b>\$7,200,000</b>	<b>\$28,350,000</b>
<b>Parking Garage Low Voltage (C800901)</b>		
Design	\$3,600,000	\$3,800,000
Pre-Construction	\$400,000	\$400,000
Construction	\$0	\$8,344,000
<b>Total</b>	<b>\$4,000,000</b>	<b>\$12,544,000</b>
<b>Concourses + Parking Garage (Combined)</b>		
Design	\$9,400,000	\$10,145,000
Pre-Construction	\$1,800,000	\$1,800,000
Construction	\$0	\$28,949,000
<b>Total</b>	<b>\$11,200,000</b>	<b>\$40,894,000</b>

**ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1** – Leave as is.

Cost Implications: \$500,000 (Roughly \$500,000 in planning funds spent to date from the four initial CIPs would be expensed if projects do not move forward)

Pros:

- (1) No capital costs currently.

Cons:

- (1) High risk of panel failures, resulting in outages and significant operational impacts.
- (2) Added costs to small capital and tenant projects replacing panels on an as-needed basis.
- (3) Systems will eventually need to be replaced, either by failure or preventative measures.

This is not the recommended alternative.

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**Alternative 2 – Replace All Outdated Equipment.**

Cost Implications: \$87,629,000

Pros:

- (1) All components originally recommended for replacement will be updated, lowering risk of failure.
- (2) All equipment upgraded at once, rather than on an “as needed” basis to minimize operational impacts.

Cons:

- (1) Panels will be replaced prior to end of life.
- (2) Highest cost: \$67M greater than total Status 2 estimates.

This is not the recommended alternative.

**Alternative 3 – Prioritize High-Risk Equipment**

Cost Implications: \$40,894,000

Pros:

- (1) Equipment in poor condition or at high risk of failure prioritized for replacement.
- (2) Cost: Short-term savings of \$47M versus Alternative 2.
- (3) Utilize full useful life from existing panels.

Cons:

- (1) Increased risk of failures over next 10 years versus Alternative 2.

***This is the recommended alternative.***

**FINANCIAL IMPLICATIONS**

<b>C801280 - Cost Estimate/Authorization Summary</b>	Capital	Expense	Total
<b>COST ESTIMATE</b>			
Plan of Finance Estimate	\$28,350,000	\$0	\$28,350,000
<b>AUTHORIZATION</b>			
Previous authorizations*	\$545,000	\$0	\$545,000
Current request for authorization	\$7,200,000	\$0	\$7,200,000
Total authorizations, including this request	\$7,745,000	\$0	\$7,745,000
Remaining amount to be authorized	\$20,605,000	\$0	\$20,605,000

\*Note: Authorized amounts shown are summed from the planning funds which were authorized separately for CIPs C800902 (Concourse B - \$200,000), C800905 (Concourse C - \$200,000), and C801046 (Concourse D - \$145,000).

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**C800901 - Cost Estimate/Authorization Summary**

Capital

Expense

Total

<b>COST ESTIMATE</b>			
Plan of Finance Estimate	\$3,267,428	\$0	\$3,267,428
Current change	\$9,276,572	\$0	\$9,276,572
Revised estimate	\$12,544,000	\$0	\$12,544,000
<b>AUTHORIZATION</b>			
Previous authorizations	\$200,000	\$0	\$200,000
Current request for authorization	\$4,000,000	\$0	\$4,000,000
Total authorizations, including this request	\$4,200,000	\$0	\$4,200,000
Remaining amount to be authorized	\$8,344,000	\$0	\$8,344,000

**Annual Budget Status and Source of Funds**

The project, CIP C801280, was included in the 2022-2026 capital budget and plan of finance with a budget of \$28,350,000. The budgets and authorizations from CIPs C800902 Concourse B Low Voltage Upgrade, C800905 Concourse C Low Voltage Upgrade, and C801046 Concourse D Low Voltage Upgrade were transferred to this new CIP C801280. This project would submit to the airlines for Majority-In-Interest approval after design has been completed in 2023.

The project, C800901 Parking Garage Low Voltage Upgrade was included in the 2022-2026 capital budget and plan of finance with a budget of \$12,544,000.

Both projects funding sources will include the Airport Development Fund and future revenue bonds.

**Financial Analysis and Summary**

**C801280 Concourse Low Voltage**

Project cost for analysis	\$28,350,000
Business Unit (BU)	Terminal Building
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase due to inclusion of capital (and operating) costs in airline rate base.
IRR/NPV (if relevant)	N/A
CPE Impact	\$.07 in 2026

**C800901 Parking Garage Low Voltage**

Project cost for analysis	\$12,544,000
Business Unit (BU)	Parking
Effect on business performance (NOI after depreciation)	NOI after depreciation will decrease
IRR/NPV (if relevant)	N/A
CPE Impact	N/A

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***Future Revenues and Expenses (Total cost of ownership)***

Renovation is expected to reduce future repair costs and increase the power available and operational availability of the affected systems. Renovation will support expansion of the ADR program which generates revenue. The new major assets will include electrical panels and miscellaneous electrical / mechanical equipment. New electrical equipment will generally have a useful lifespan of thirty years.

**ATTACHMENTS TO THIS REQUEST**

- (1) Presentation slides

**PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

None