

This document is a text-only reovery of the original PDF file. Any graphics that were in the original PDF are not included here. If you need the original document, please contact the Commission Clerk at the Port of Seattle.

**COMMISSION**

AGENDA MEMORANDUM Item No. 8k

ACTION ITEM Date of Meeting March 14, 2023

DATE: March 3, 2023

TO: Stephen P. Metruck, Executive Director

FROM: Keri Stephens, Director AV Facilities and Capital Programs

Eileen Francisco, Director Aviation Project Management Group

SUBJECT: Concourse HVAC Infrastructure Renewal and Replacement (CIP# C801265) Project Definition

Amount of this request: \$7,000,000

Total estimated project cost: \$250,000,000 - \$500,000,000

**ACTION REQUESTED**

Request Commission authorization for the Executive Director to (1) advertise and execute a project specific contract for design services, (2) develop a Project Definition Document and progress the overall design to 30%, (3) utilize Port crews for enabling work related to the Concourse HVAC Infrastructure Renewal and Replacement Program project at the Seattle-Tacoma International Airport. The amount being requested under this authorization is \$7,000,000. The anticipated total project cost is to be determined during project definition.

**EXECUTIVE SUMMARY**

The primary focus of the Concourse HVAC Infrastructure Renewal and Replacement Program (CHIRRP) is the renewal and replacement of the existing heating, ventilation, and air conditioning (HVAC) systems and the addition of smoke control or management systems within Concourses B, C, and D. The project scope will include replacement or refurbishment of rooftop air handling equipment and associated penthouses, removal of ramp level air handling equipment including re-routing associated mechanical ducting, addition of smoke control and or smoke management infrastructure and systems, structural modifications, and emergency power upgrades. It is anticipated this project will impact the inside of the concourses, the extent to which will be further defined within the Project Definition Document (PDD).

This project is necessary to correct code deficiencies that have been impacting planning efforts for the Airport Dining and Retail (ADR), Restroom Renovation, and Concourse Modernization Programs. Those programs cannot succeed in their planned future development without authorization of this scope. In addition, the project will improve life safety systems within the airport through adding smoke control to Concourses B, C, and D.

Template revised January 10, 2019.

COMMISSION AGENDA – Action Item No. 8k Page 2 of 6

Meeting Date: March 14, 2023

**JUSTIFICATION**

Deficiencies in critical HVAC supply infrastructure have been identified in planning efforts for the ADR, Restroom Renovation, and Concourse Modernization Programs. To address immediate facility infrastructure needs for those projects, some smaller projects such as the Concourse C Temporary Air Handling Units (CIP#801149) have been authorized.

The most recent major renovations of Concourses B, C, and D took place in 1990, approximately 33 years ago. HVAC equipment and infrastructure within these concourses is reaching end of useful life and is significantly undersized. Based on the age of the HVAC systems and the present need for greater air supply capacity arising from other capital programs, there is an urgent need to begin renewal and replacement of these systems.

In 2019, the Port of Seattle conducted a Peer Review associated with SEA's approximately \$4 billion Capital Improvement Program (CIP). A key finding from the review stated the importance of combining similar or related projects into larger bundles to aid in expediting approvals, delivery, efficiency, resource utilization, and project management. While smaller projects could be planned reactively as needs are identified, the recommended alternative for CHIRRP is to create a bundled HVAC upgrade project to modernize the critical components of this infrastructure throughout Concourses B, C, and D.

The complexity and operational impacts of this work dictates the need to start planning now to ensure the Project can complete upgrades prior to system failures and within the anticipated five to ten year planned service life of the temporary equipment installed by the Concourse C Temporary Air Handling Units project. This temporary project was required to meet current

supply air demand for ADR spaces and new restrooms but needs a permanent follow-on solution. Supply air deficiencies have been identified in areas of Concourses B and C; if this project is not implemented the need for temporary projects will continue.

Concourses B, C, and D do not have existing smoke control or smoke management systems. Smoke control and smoke management engineering overlaps directly with HVAC infrastructure engineering, as such combination of these elements in the same project is necessary. This largescale renewal and replacement of HVAC systems within these concourses may be the only opportunity for efficient improvement of life safety by implementing smoke control or smoke management until the next major HVAC upgrade. Any new smoke control or management systems on Concourses B, C, and D have to operate in conjunction with existing systems in the Central Terminal, Concourse A, and the Main Terminal.

Opportunities for energy reduction related to modernization of the proposed HVAC equipment and systems will be explored within the PDD effort. In addition, the project will take advantage of efficiency in replacement of building elements which will already be impacted from the base scope of work, such as upgrading ceiling systems, lighting, security cameras, and signage. In replacement of lighting and lighting controls specifically, there exists another opportunity for energy reduction which will also be explored within the PDD.

Template revised June 27, 2019 (Diversity in Contracting).

COMMISSION AGENDA – Action Item No. 8k Page 3 of 6

Meeting Date: March 14, 2023

This initial authorization request will support development of a PDD to finalize the scope, schedule, budget, and project delivery method for the elements outlined above and will subsequently progress the project to a 30% design milestone. Replacement and renewal of these systems within an operational airport will be highly complex. The PDD will explore critical issues such as structural loading and seismic bracing code requirements for permanent and temporary equipment, sequencing and phasing of anticipated gate and occupied space closures, development of a smoke control or smoke management model of the associated concourses, and reviews of both existing and planned HVAC system capacities for the programs identified as reliant on these systems. After the PDD is completed and concurrent with our progression to 30% design, the project will return to commission to request authorization to execute a General Contractor, Construction Manager (GCCM) contract as well as authorization to complete the remainder of the project design documents.

Diversity in Contracting

The project team in coordination with Diversity in Contracting team has set a 17% women-and minority-owned business enterprise (WMBE) aspirational goal for the design contract for this project.

DETAILS

This project includes the renewal and replacement of HVAC systems, updating necessary related utilities, and correcting code and performance related deficiencies in Concourses B, C, and D. It includes a budget for structural upgrades and “ceiling up” renewal of impacted building elements such as impacted ceilings, lighting, security cameras, and signage.

Scope of Work

Concourse HVAC Infrastructure Renewal Replacement Program will focus on HVAC refurbishment/replacement, ceiling and lighting renewal/replacement, and ceiling mounted fixtures renewal replacement.

The scope of work will include:

- (1) Replacement or refurbishment of existing air handlers.
- (2) Addition of supplemental air handlers.
- (3) Replacement of select terminal units for air distribution.
- (4) Upsizing chilled water and hydronic heating water distribution.
- (5) Emergency power system upgrades (panels, distribution gear, and step-down transformers).
- (6) Addition of active smoke control and or smoke management systems.
- (7) Distribution ducting as required including ceiling diffusers.
- (8) Ceiling replacement within the concourses (not including hold rooms).
- (9) Structural seismic upgrades required by the latest building code.
- (10) Fire sprinklers and fire riser upgrades.
- (11) Refreshed exit signage.

Template revised June 27, 2019 (Diversity in Contracting).

COMMISSION AGENDA – Action Item No. 8k Page 4 of 6

Meeting Date: March 14, 2023

(12) Column cover replacements as needed.

(13) Upgraded lighting to LED & new lighting control systems.

(14) Waste and ventilation pipe replacement where impacted.

(15) Ceiling mounted signage updates.

(16) Security camera updates.

(17) Demolition of abandoned conduit & utilities.

(18) Compliance with upcoming State of Washington Clean Buildings Performance Standard will identify energy efficiency measures that may need to be added to CHIRRP's scope for implementation.

Schedule

Activity

Begin Designer Procurement 2023 Quarter 2

PDD Start 2024 Quarter 1

Design Start 2025 Quarter 1

Commission 100% Design Authorization 2024 Quarter 3

Commission Construction Authorization 2027 Quarter 2

Construction Start 2027 Quarter 3

In-use date 2031 Quarter 3

Cost Breakdown This Request Total Project

Design \$7,000,000 \$20,000,000 - \$50,000,000

Construction 0 \$230,000,000 - \$450,000,000

Total \$7,000,000 \$250,000,000 - \$500,000,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Do not renew or replace existing ageing and undersized HVAC infrastructure.

Cost Implications: \$0

Pros:

(1) This is the least expensive alternative.

Cons:

(1) Airport Dining and Retail, Restroom Renovation, and Concourse Modernization

Programs will not be able to proceed with some future planned work.

(2) Ageing infrastructure may fail resulting in the need for emergency repairs and projects to maintain life safety.

This is not the recommended alternative.

Alternative 2 – Renewal and replacement of HVAC systems, updating necessary related utilities, and correcting code related deficiencies. Include budget estimate for structural upgrades and

Template revised June 27, 2019 (Diversity in Contracting).

COMMISSION AGENDA – Action Item No. 8k Page 5 of 6

Meeting Date: March 14, 2023

renewal of impacted building elements such as impacted ceilings, lighting, security cameras, and signage. Also include discretionary scope to raise concourse ceilings for passenger experience improvement including demolition of the abandoned interior roof structures, ceiling replacement in unimpacted hold rooms, and complete re-design of the interior air distribution system.

Cost Implications: \$500,000,000 - \$1,000,000,000

Pros:

(1) This alternative will solve air supply issues required for the Airport Dining and Retail (ADR), Restroom Renovation, and Concourse Modernization Programs.

(2) This alternative includes discretionary upgrades like increasing natural light to the concourses.

Cons:

(1) This is the most expensive alternative.

(2) This alternative is the most invasive and will interrupt occupied use of the concourses significantly.

This is not the recommended alternative.

Alternative 3 – Renewal and replacement of HVAC systems, updating necessary related utilities, and correcting code related deficiencies. Budget for structural upgrades and renewal of “ceiling up” building elements already impacted by the project such as renewal of opened up ceilings, associated lighting, security cameras, and signage.

Cost Implications: \$250,000,000 - \$500,000,000

Pros:

- (1) This alternative will solve air supply issues required for the Airport Dining and Retail (ADR), Restroom Renovation, and Concourse Modernization Programs.
- (2) This alternative takes advantage of cost-efficient upgrades to building elements that will already be impacted by the project.
- (3) This alternative includes budget for structural upgrades which may not be needed but are likely to be required.

Cons:

- (1) This alternative has a significant cost, although less than Alternative 2.
  - (2) This will not increase natural light to the concourses.
- This is the recommended alternative.

Template revised June 27, 2019 (Diversity in Contracting).

COMMISSION AGENDA – Action Item No. 8k Page 6 of 6

Meeting Date: March 14, 2023

FINANCIAL IMPLICATIONS

Cost Estimate/Authorization Summary Capital Expense Total

COST ESTIMATE

Original estimate \$250,000,000 - 0 \$250,000,000 -

\$500,000,000 \$500,000,000

AUTHORIZATION

Previous authorizations \$200,000 0 \$200,000

Current request for authorization \$7,000,000 0 \$7,000,000

Total authorizations, including this \$7,200,000 0 \$7,200,000  
request

Remaining amount to be authorized \$242,800,000 - 0 \$242,800,000 -

\$492,800,000 \$492,800,000

Annual Budget Status and Source of Funds

This project, C801265, was included in the 2023-2027 capital budget and plan of finance with a budget of \$255,000,000. A budget transfer from the Aeronautical Allowance C800753 would occur when the project estimate is known. The funding sources would be the Airport Development Fund (ADF) and revenue bonds.

Financial Analysis and Summary

Project cost for analysis TBD

Business Unit (BU) Terminal Building

Effect on business performance NOI after depreciation will increase due to inclusion of (NOI after depreciation) capital (and operating) costs in airline rate base.

IRR/NPV (if relevant) N/A

CPE Impact TBD

ATTACHMENTS TO THIS REQUEST

(1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

August 11, 2020 – The Commission authorized \$2,000,000 for design and construction of the Concourse C Temporary Air Handling Units (CIP#801149) project.

March 23, 2021 – The Commission authorized \$26,000,000 for the Post IAF Airline Realignment (CIP#801158) project for project management and design services, GCCM services, and a Memorandum of Agreement between the Port and United Airlines.

April 12, 2022 – The Commission authorized an increase to the project budget for the Concourse C Temporary Air Handling Units (CIP#801149) project in the amount of \$1,000,000.

Template revised June 27, 2019 (Diversity in Contracting).