Port of Seattle

Agenda Item 6d_attach
Meeting Date: March 10, 2020

COMMISSION
AGENDA MEMORANDUM **Item No.** 8b

ACTION ITEM **Date of Meeting** September 10, 2019

DATE: September 3, 2019

TO: Stephen P. Metruck, Executive Director

FROM: Jeffrey Brown, Director Aviation Facilities and Capital Programs KC FBO Jeffrey Brn
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Passenger Loading Bridge Renewal & Replacement Phase 2 - Budget Increase Request (CIP #C800793)

Amount of this request: $3,000,000
Total estimated project cost: $13,000,000

ACTION REQUESTED

Request Commission authorization for the Executive Director to (1) increase the project budget for the Passenger Loading Bridge (PLB) renewal & replacement project in the amount of $3,000,000; (2) use Port of Seattle crews, and small and major works on-call contracts to perform the construction work; and (3) advertise, bid, and execute a major works construction project. This request is $3,000,000 for a revised total estimated project cost of $13,000,000.

EXECUTIVE SUMMARY

Critical structural failures, unforeseen site conditions, and addition of new systems since the project was scoped have increased the cost to replace the PLBs. This request will provide the necessary funding to complete the replacement of the nine PLBs and fixed walkways. Reliable, well-operating PLBs are critical to airline and airport operations. Port staff has created a prioritized list of PLBs, whose age and condition indicate a need for replacement. Three of the nine PLBs and associated fixed walkways (S6, S11, and C15) have already been replaced and the others (B10, C9, C11, C18, D4, and D11) are at the highest risk for failure.

JUSTIFICATION

The PLBs at Sea-Tac have high utilization compared to airports with comparable annual enplanements. In 2018, Sea-Tac processed approximately 312,000 passengers per bridge, well above the average of the top 20 airports of approximately 209,000 passengers. Any unplanned downtime due to PLB or fixed walkway failure impacts airlines and customer service. PLBs have a service life of approximately 25 years before replacement is required. Many of the parts for 25+ year old PLBs are no longer available; as a result, repair time is extended while parts are fabricated or re-manufactured or used parts are located from other PLB owners. Unplanned downtime caused by failure of obsolete parts can extend for several weeks, seriously disrupting

airline operations. This has occurred with Gate C15, December 2017, being inoperable for almost a month because of a failed, obsolete motor generator set. Another failure occurred at Gate S12, May 2019, after a quarterly inspection found the structure to be critical; which required the PLB shut down for a significant amount of time to make temporary repairs until the PLB can be replaced.

Diversity in Contracting

The major works contract has a five percent aspirational goal for women- and minority-owned business enterprise (WMBE). No specific diversity in contracting goals were originally set for this project, however, the SWMBE achievements to date are 23.8 percent.

DETAILS

Aviation Project Management has worked in conjunction with AV Operations, AV Planning, AV Facilities and Infrastructure, and AV Maintenance to create a prioritized list of PLBs whose age and condition are cause for replacement or refurbishment. The additional funds will be used to complete the replacement of nine bridges covered under CIP# C800793.

Several factors, as detailed below, have driven the increased cost to replace the PLBs and fixed walkways:

- Gate S6 failed before it was scheduled to be replaced. The expedited replacement incurred additional costs and impacted the other PLB schedules. Other structural modifications, seismic upgrade requirements, telecommunications upgrades, and 400 Hz aircraft power modifications resulted in design and construction changes. This PLB is complete.

- Gate S11 had a severely damaged anchor bolt for one of the foundations requiring a new foundation. Other structural modifications, differing site conditions, utility conflicts, and seismic upgrade requirements resulted in design and construction changes. This PLB and fixed walkway are complete.

- The foundation for Gate C15 needed to be redesigned and constructed differently with a deeper foundation. This resulted from unknown utilities and differing site conditions. This PLB is installed and in close-out.

- The foundation for Gate C11 needs to be redesigned and constructed differently with a deeper foundation. This resulted from unknown utilities and differing site conditions.

- Gate D4 has an issue with the Pre-Conditioned Air hydronic piping not having isolation valves that allow for the replacement of the PLB. The lack of isolation valves requires the system to be drained and valves installed prior to bridge replacement.

- Gate D11 has two fixed walkway foundations, and one rotunda foundation that will need to be upgraded to meet seismic code. There is limited area to expand the foundations due to interference from other buildings and utilities resulting in changes to design and construction.

- Gate B10 foundation is surrounded by industrial wastewater system lines that will need to be relocated prior to adding a new foundation that meets current seismic code. Three manholes (two 48 inch and one 60 inch) will be installed to meet drainage requirements. These modifications to design and construction were a result of differing site conditions. Additionally, an abandoned fuel line will need to be remediated and removed prior to any foundation work.

- Gate C9 currently has all the 400Hz aircraft power system routed along the fixed walk - way which will have to be re-routed prior to replacing the PLB. This bridge has three foundations that will need to be upgraded to meet the seismic requirements.

- Gate C18 has two fixed walkway sections with three individual foundations that will need to be modified to meet current seismic code. Differing site conditions, utility conflicts, and seismic upgrade requirements resulted in design and construction changes.

Scope of Work

(1) Design services for this scope of work will be provided under existing indefinite delivery, indefinite quantity (IDIQ) design services contract.
(2) Purchase and installation of new PLBs, associated fixed walkway, and related components at Gates B10, C9, C11, C18, D4, and D11 along with necessary architectural, electrical, data, and mechanical infrastructure upgrades to meet new PLB standards and current code requirements. Three of the nine PLB's have already been replaced – S6, S11, and C15.
(3) Port Construction Services will perform work associated with preparing the foundations upgrade or replacement and provide construction management services for PLB installations at all gates.
(4) The new bridges will be connected to the Port's Facility Monitoring System so any malfunction that shuts the bridge down will be promptly reported to Maintenance for faster response.

Schedule

Replacement Schedule:
1. 4Q 2019: D4 & B10
2. 1Q 2020: D11
3. 4Q 2020: C11 & C18
4. 1Q 2021: C9

*This schedule is tentative and can change due to changing conditions and priorities.

Activity	
Commission design authorization	2018 Quarter 1
Design start	2018 Quarter 2
Commission construction authorization	2018 Quarter 1
Construction start	2018 Quarter 4
In-use date	2021 Quarter 1

Cost Breakdown	This Request	Total Project
Design	$500,000	$2,100,000
Construction	$2,500,000	$10,900,000
Total	$3,000,000	$13,000,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1 – Complete only the bridges that the current funding allows (7 bridges of 9 planned)

Cost Implications: $0, No additional funds would be required.

Pros:

(1) This alternative minimizes the capital input by only replacing 7 of the 9 planned bridges.

Cons:

(1) This alternative would significantly degrade the quality of passenger experience at Sea-Tac.
(2) This alternative would potentially lead to airlines insisting on processing departing passengers in severely congested hold rooms on other concourses already being used for other flights.
(3) This alternative does not provide reliable gate capacity for the increasing number of flights.
(4) This alternative does not give airlines, tenants, and passengers a reliable gate system to provide customer service and process guest for arrivals and departures.
(5) This alternative does not address the need to replace the aging bridges that could lead to a significant failure causing increased cost and downtime to replace.
(6) This alternative does not address the need to update the bridge foundations to meet the current seismic regulations.

This is not the recommended alternative.

Alternative 2 – Delay replacement of the two (2) planned bridges to a later project.

Cost Implications: $3,000,000 plus escalation costs added to a future project to re-start the replacement effort. Replacement timeline would be pushed out approximately 1.5 years for a new project to be created and approved.

Pros:

(1) This alternative delays the capital requirement.

Cons:

(1) This alternative will delay the replacement of the walk ways and bridges that have been identified as critical.
(2) This alternative does allow for efficient use of PCS construction crews during the dry season for foundation work.
(3) This alternative carries a risk of a premature failure of a bridge leading to extended closure time and increased cost for expedited replacement.
(4) This alternative does not provide reliable gate capacity for the increasing number of flights.
(5) This alternative does not give airlines, tenants, and passengers a reliable gate system to provide customer service and process guest for arrivals and departures.
(6) This alternative does not address the need to replace the aging bridges that could lead to a significant failure causing increased cost and downtime to replace.
(7) This alternative will increase the cost of future replacement projects.

This is not the recommended alternative.

Alternative 3 – Increase the funding to complete the scope of work for all nine bridges.

Cost Implications: $3,000,000

Pros:

(1) Complete the planned bridge replacements and upgrade the foundations to meet the seismic code.
(2) Relocate added equipment from the bridge to a permanent location and off the bridge structure.
(3) The replaced bridge will have a new service life.
(4) This alternative will give the airlines, tenants, and passengers a reliable gate system to provide customer service and process guest for arrival and departures.
(5) This alternative will keep the bridge replacement on the existing timeline.
(6) This alternative allows for construction flexibility with the PCS crews to complete the more complicated foundation work.

Cons:

(1) None

This is the recommended alternative.

FINANCIAL IMPLICATIONS

The Passenger Loading Bridges Project CIP #C800793 is included in the 2019-2023 capital budget and plan of finance with a budget of $10,000,000. A budget increase of $3,000,000 was transferred from the Aeronautical Reserve CIP C800753 resulting in zero net change to the Aviation capital budget. The funding sources would be the Airport Development Fund and revenue bonds. This project was approved by the airlines through a Majority-in-Interest (MII) vote in 2017. Due to the cost increase, the project will require additional MII approval.

Cost Estimate/Authorization Summary	Capital	Expense	Total
COST ESTIMATE			
Original estimate	$10,000,000	$0	$10,000,000
Current change	$3,000,000	$0	$3,000,000
Revised estimate	$13,000,000	$0	$13,000,000
AUTHORIZATION			
Previous authorizations	$10,000,000	$0	$10,000,000
Current request for authorization	$3,000,000	$0	$3,000,000
Total authorizations, including this request	$13,000,000	$0	$13,000,000
Remaining amount to be authorized	$0	$0	$0

Annual Budget Status and Source of Funds

Financial Analysis and Summary

Project cost for analysis	$13,000,000
Business Unit (BU)	Passenger Loading Bridges
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase
IRR/NPV (if relevant)	N/A
CPE Impact	$0.04 in 2022

Future Revenues and Expenses (Total cost of ownership)

This is a renewal and replacement program that replaces existing equipment that is old and dated. Replacement of the equipment will require a similar level of maintenance and an anticipated reduced level of repairs and does not have a material impact on current Aviation Maintenance O&M costs.

ADDITIONAL BACKGROUND

PLBs were historically predominantly owned by airlines. Over the past fifteen years or so, the Port has increasingly taken over ownership of PLBs when they needed to be replaced to provide a consistent level of maintenance and level of service for all PLBs. Currently, Alaska is the only

airline owning PLBs at Sea-Tac. Upon the completion of this project and the North Satellite Expansion project, the Port will own and maintain all the PLBs at Sea-Tac.

ATTACHMENTS TO THIS REQUEST

(1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

February 27, 2018 – The Commission approved $7,700,000 for the design, construction, and purchase of PLBS at gates C15, C9, D11, C11, C18, S6, D4, and the fixed walkways at C9, D11, C18, and D4.

February 28, 2017 – The Commission approved $2,300,000 for the design, construction, and purchase of PLBs at gates S11 and B10 and the fixed walkway at S11.