Port of Seattle

COMMISSION AGENDA MEMORANDUM

ACTION ITEM

Item No. 4a

Date of Meeting October 24, 2017

DATE: October 5, 2017

TO: Dave Soike, Interim Executive Director

FROM: Wendy Reiter, Director Aviation Security
Wayne Grotheer, Director Aviation Project Management

SUBJECT: Airport Terminal Safety Enhancements and Security Improvements: (CIP #C800862)

Amount of this request: $6,218,000
Total estimated project cost: $10,568,000

ACTION REQUESTED

Request Commission authorization to (1) complete design and prepare construction documents for Airport Terminal Safety Enhancements and Security Improvements project and (2) advertise, award, and execute construction contract(s) for only Phase I of the project for an additional $6,218,000 for a total authorization of $6,288,000.

EXECUTIVE SUMMARY

The Terminal Safety Enhancements and Security Improvements project (TSE) is being implemented in two phases and as separate projects given the value in protecting any person within the terminal and using the sky bridges.

Phase 1 will shatterproof vulnerable landside windows of the Main Terminal and sky bridges from the Parking Garage to the Terminal to reduce potential injuries from flying glass to all occupants (passengers, public, tenant workers and Port employees) within the Terminal in the event of a catastrophic window breaking event. Staff is only requesting authorization for this phase of the project.

Phase 2, to be authorized in early 2018, will enhance security by installing bollards on the Arrivals and Departure drives' sidewalks and in the garage at the entrance to each sky bridge. In an effort to effectively and more efficiently utilize capital funds, phase 2 will investigate adding necessary Americans with Disability Act (ADA) access ramp improvements along both drives concurrent with the bollard installation. If the ADA scope is added to this project, it will advance scope currently planned for a future project.

JUSTIFICATION

Shatter-proofing the windows determined to be vulnerable on the landside of the terminal and sky bridges has been identified as a key element and action to improve safety and to reduce

potential injuries in the event of a catastrophic event that projects glass into the terminal or sky bridges at the airport. Staff is requesting the single authorization for design and construction to expedite providing safer facilities that require minimal design effort prior to advertising for construction.

DETAILS

The U.S. General Services Administration (GSA) has classification guidelines that provide several levels for enhancing the performance of existing non-shatterproof glazing or window systems to reduce the hazard of glass projecting into the terminal and sky bridges in the event of a catastrophic event. This guideline takes into account the breakage mode of the glazing unit and the distance of fragment penetration into the interior space. The shatter-proofing system meets classification Level 2 or better (which is considered no hazard for occupants). Glazing must also meet UL752–Bullet Resistant Glazing and UL972-Burglary Resistant standards.

A requirement of installing the window safety film is installing an impact protection adhesive applied to the existing window gasket to help bond the film with the glass/frame. For aesthetics this adhesive is covered with a metal cap profile. Similar window treatment systems are currently in use or are being considered at a number of other major U.S. Airports.

Scope of Work

Phase 1 work will install a shatter-proofing system to vulnerable landside windows of the Main Terminal and sky bridges along the upper and lower airport drives to achieve a Level 2 Security Glazing Standard.

Phase 1 scope

(1) Clean and prepare windows for Plastic Safety Film
(2) Install window film and anchor to window frame

Small Business

In partnership with the Port's small business group, project team staff is coordinating efforts through PortGen outreach activities to promote the TSE project to small and historically underutilized businesses.

Schedule for Phase 1 of TSE Project

Activity for Phase 1 of TSE

Design start	2017 Quarter 4
Construction start	2018 Quarter 1
In-use date	2018 Quarter 2

Cost Breakdown for Phase 1 of TSE	This Request	Total Project Phase 1
Design	$914,000	$984,000

Construction	$5,304,000	$5,304,000
Total	$6,218,000	$6,288,000

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Three options were considered as follows:

Alternative 1 –Leave All Windows Untreated

Cost Implications: $ 0

Pros:

(1) No capital investment and available funds could be spent on other projects.

Cons:

(1) Main Terminal and sky bridge windows remain untreated and vulnerable to a projecting-glass-window-shattering event that could result in significant injuries.
(2) Does not achieve objective of improving the safety of passengers or occupants of the terminal and could be perceived as not valuing people's safety.

This is not the recommended alternative.

Alternative 2 – Replace vulnerable landside windows of the Main Terminal and sky bridges with tempered/laminated (Shatterproof) glass.

Cost Implications: $30,547,000

Pros:

(1) Increases safety of travelers by replacing existing windows with tempered/laminated glass that provides the best protection in a blast, high wind, or earthquake. The tempered glass would just crack and be retained within the window frame.
(2) Would not require windows be retreated when shatter-proofing system reaches its service life of 10-15 years.

Cons:

(1) Would require significant capital investment and would take well over a year to replace.
(2) Would likely require that the Main Terminal building envelope be updated to the most current building and energy codes (Note: The cost associated with updating to code is not captured in cost implications and would likely greatly exceed the cost of just replacing windows), upgrading Main Terminal to current building energy code is outside project scope.

This is not the recommended alternative.

Alternative 3 – Install Shatter-Proofing System to vulnerable landside windows of the Main Terminal and sky bridges from Parking Garage to the Terminal.

Cost Implications: $6,288,000

Pros:

(1) Installing a window shatter-proofing system that is clear and chemically adhered to the interior of each window, then restrained along window frame to ensure the damaged glass is retained with the frame.
(2) Immediately addresses safety concern of glass projecting into terminal during a blast, high-wind, or earthquake event.
(3) Terminal windows can be upgraded to tempered glass when impacted by other projects or when replacement is required.

Cons:

(1) The window treatment has an average service life of 10-15 years; the lower limit of the service life is for windows exposed to direct sun. Once service life is reached the existing treatment would need to be removed and a replacement system installed.

This is the recommended alternative.

FINANCIAL IMPLICATIONS

Cost Estimate/Authorization Summary

	Capital	Expense	Total
COST ESTIMATE			
Original estimate	$9,854,000	$0	$9,854,000
Cost increase	$714,000	$0	$714,000
Revised estimate	$10,568,000	$0	$10,568,000
AUTHORIZATION			
Previous authorizations	$70,000	$0	$70,000
Current request for authorization	$6,218,000	$0	$6,218,000
Total authorizations, including this request	$6,288,000	$0	$6,288,000
Remaining amount to be authorized	$4,280,000	$0	$4,280,000

Annual Budget Status and Source of Funds

This project was included in the 2017 – 2021 capital budget and plan of finance with a budget of $9.854 million. The cost increase is due to adding scope for the sky bridges. The budget increase will be transferred from the Aeronautical Allowance CIP (C800753) resulting in no net change to the Aviation capital budget. The funding source will be the Airport Development Fund and future short-term revenue bonds. This project will be subject to airline review through a Majority-in-Interest vote, scheduled for November, 2017.

Financial Analysis and Summary

Project cost for analysis	$6,218,000 Phase I
Business Unit (BU)	Terminal Building
Effect on business performance (NOI after depreciation)	NOI after depreciation will increase
IRR/NPV (if relevant)	N/A
CPE Impact	$0.03 in 2018

Future Revenues and Expenses (Total cost of ownership)

The preferred alternative of installing a shatter-proofing window system has a lower initial capital cost and expected service life (10-15 years) than replacing all Main Terminal and sky bridge windows with tempered/laminated (Shatterproof) glass.

When windows are damaged and replaced they will be replaced with tempered/laminated glass. Future glass replacements will be more costly than current practice, with the addition of the laminated component.

ATTACHMENTS TO THIS REQUEST

(1) Presentation slides

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

None