PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 6b

Date of Meeting May 26, 2015

DATE: May 19, 2015

TO: Ted Fick, Chief Executive Officer

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

SUBJECT: Concourse C Roof Replacement Project (CIP #C800702)

Amount of This Request:	$874,000	**Source of Funds:**	Airport Development Fund and Future Bonds
Est. Total Project Cost:	$5,596,000		
Est. State and Local Taxes:	$359,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to execute a consultant contract and prepare design and construction bid documents for the replacement of the Concourse C Roof at Seattle-Tacoma International Airport for an amount not to exceed $874,000 of a total estimated project cost of $5,596,000.

SYNOPSIS

This project will remove and replace the current roofing system on Concourse C of the main terminal building at the Airport. The portions of the terminal roof being replaced were installed in 1991 and are beyond their useful life expectancy. Warranties on existing roofs have expired and testing of roof membranes by Airport maintenance staff indicates the membranes are deteriorating.

This project was included in the 2015-2019 capital budget and plan of finance with a budget of $3,820,000. At the completion of project definition, the cost estimate was increased by $1,776,000 to $5,596,000 for two reasons: 1) more skylight panels needing replacement, and 2) the use of an outside design consultant. An on-site analysis completed during project definition determined that 140 deteriorating skylight panels needed replacement, 100 more than first assumed from a similar project on Concourse D. This increased costs by $1,511,000. Previous projects were able to use an in-house expert to complete design. The use of an outside design consultant rather than previously assumed in-house expertise for design has also increased costs by $265,000.

This is the fifth project in a series of roofing projects that replace roofing systems in a sequence that accomplishes the task in a prioritized manner over the next several years. Staff expects to

seek Commission authorization next year for construction authorization of this Concourse C roof. Next year staff also will request design authorization for the next roofing project, which will be Concourse B. This will complete a majority of the re-roofing elements contained in the original plan.

BACKGROUND

The first phase of the current cycle of completed roof replacements, which began in 2010, included the south end of the Main Terminal in 2011. The second phase of the cycle included the Fire Station in 2012 and the north end of the Main Terminal in 2013. The third phase of the cycle of roof replacement projects at the Airport included the Concourse D roof, which was replaced in 2014. The fourth phase originally included some cargo and hanger buildings that may be affected by the Sustainable Airport Master Plan (SAMP). As the Master Plan progresses, the scope and timing of these projects will be re-evaluated.

PROJECT JUSTIFICATION AND DETAILS

Maintaining Airport roofing systems supports the Port's objective to provide safe and functional facilities. As a critical system, the Concourse C roof must be replaced as it ages. The current roofing system on Concourse C has reached the end of its dependable, leak-free, life span, with several leaks occurring yearly. Between 2012 and 2014, more than 55 work orders were generated requiring a maintenance response to resolve a roofing system leak. When new leaks emerge, they must be corrected on an emergency basis in order to preserve underlying infrastructure and provide good customer service. Delaying repairs until leaks require emergency attention tends to be more expensive due to scheduling pressures. In addition, repairing damage from leaks inside the terminal can be extensive and expensive. This can result in customer service impacts as portions of the facility become impaired while leaks are addressed. Slips and falls as a result of water remaining on the walking surface can result in injuries to the traveling public as well. Proceeding with replacement of the Concourse C roof will preserve the Airport's infrastructure investments and support an outstanding customer experience for travelers and tenants.

Project Objectives

This project will remove and replace existing roof systems on Concourse C of the Airport.

Scope of Work

Remove and replace the existing roof system on Concourse C at the Airport; install a new elastomeric roofing system; ladders and fall protection; and replace and refurbish the existing skylight window/walls. The Concourse C roof system is approximately 83,000 square feet.

Schedule

Commission Authorization to Design:	2nd Quarter 2015
Commission Authorization for Construction:	1st Quarter 2016
Issue Notice to Proceed	2nd Quarter 2016
Construction Complete	4th Quarter 2016

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	$3,820,000	$0	$3,820,000
Current Budget Increase	$1,776,000		$1,776,000
Revised Budget	$5,596,000	$0	$5,596,000
Previous Authorizations	$25,000	$0	$25,000
Current request for authorization	$849,000	$0	$849,000
Total Authorizations, including this request	$874,000	$0	$874,000
Remaining budget to be authorized	$4,697,000	$0	$4,697,000
Total Estimated Project Cost	$5,596,000	$0	$5,596,000

Project Cost Breakdown

	This Request	Total Project
Design Phase	$874,000	$874,000
Construction Phase	$0	$4,363,000
State & Local Taxes (estimated)	$0	$359,000
Total	$874,000	$5,596,000

Budget Status and Source of Funds

The Concourse C Roof Replacement Project (CIP #C800702) is included in the 2015-2019 capital budget and plan of finance with a budget of $3,820,000. The project budget was increased to $5,596,000 due primarily to the greater number of skylight panels that will now require replacement rather than refurbishment as determined by a more detailed analysis completed in the project definition phase of the project (from approximately 40 to more than 140). The use of an outside design consultant rather than in-house design services has increased costs as well. The budget increase will be transferred from the Aeronautical Allowance CIP (C800404) resulting in no net change to the airport's capital budget.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	$5,596,000
Business Unit (BU)	Terminal
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	$.02 increase in 2017

Lifecycle Cost and Savings

The new roof system is not expected to have significant repair costs for the first 15 years. Pre-planned preventive maintenance tasks, and therefore costs, will be consistent with the current maintenance program. Unplanned reactive maintenance call-outs, and those costs, to repair roof leaks should decrease in future years. Unplanned responses to leaks on Concourse C have resulted in approximately $48,000 in additional expense costs since 2012 for this current roofing system. Without replacement, it is anticipated that these costs will climb over time.

STRATEGIES AND OBJECTIVES

This project supports the Port's Century Agenda objective of meeting the region's air transportation needs at the Airport for the next 25 years. The Airport must maintain its existing facilities to accommodate current as well as future airline tenants and needs.

Replacing the most distressed Airport roofs in a timely fashion as they deteriorate supports the objectives identified in the Aviation Division's Strategy of operating a World Class International Airport by: ensuring safe and secure operation; meeting the needs of our tenants and the region's economy; and managing our assets to minimize the long-term total cost of ownership.

The Project Manager and the Office of Social Responsibility will work together to maximize small business opportunities for this project.

TRIPLE BOTTOM LINE

Economic Development

This roof replacement project represents an investment in our current facilities and supports the long-term vitality of the Airport, airlines and Airport tenants.

Environmental Responsibility

The new roof systems will have a solar reflective index that exceeds .80. This index level is an industry standard for white reflective roofing systems and the value required to obtain the Leadership in Energy & Environmental Design (LEED) new construction Credit 7.2. The new

roofing systems will also be Energy Star rated. The insulating value of the new roof systems will be greater than that of the existing roofing systems. By replacing the roof systems and preventing damage to the underlying building systems, the life of the existing building systems will be prolonged. Roof materials may be sourced locally from the Pacific Northwest. Roofing systems replaced will use materials exceeding LEED requirements. Opportunities will also be investigated to recycle the existing roof and associated components.

Community Benefits

Replacing the roofing systems will prevent water leak damage to other building systems, prevent disruption of Airport operations, and improve customer service.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Continue to patch and repair the leaks.

Total Cost: The average cost per year over the last three years for all C Concourse leak activity was approximately $23,000. Repair costs can vary widely however, depending on the failure mode, and are difficult to predict. This is a short-term strategy only. The eventual failure of the roof would severely impact the building, its occupants, and airport operations.

Pros:

- Defers capital costs to a later date and allows funds to be used for other purposes.

Cons:

- Risk continued retrogressive deterioration throughout the roof system.
- The number and frequency of leaks will increase causing customer service problems.
- This alternative increases maintenance and emergency repair response and costs, due to the continual patching of the exiting roof system, and possible ceiling, floor, and equipment damage caused by the leaks.
- This also increases potential liability should passengers slip and fall.
- The Concourse C roof has deteriorated to the point where with each new rainy season, new leaks are encountered. Maintenance responds and attempts to assess and mitigate the leaks. In this reactive state however, customer service is negatively impacted.
- This alternative would lead to conditions the tenants would not find acceptable or meet the terms of the leases.
- Indefinite deferral leads to the risk of catastrophic failure.
- Deferring the project results in the risk of price escalation. Volatility of commodity pricing can result in fairly large swings, year to year in material costs in this type of construction.

  This is not the recommended alternative.

Alternative 2) – Install a roofing system with a very long life - 30 years or longer.

Capital cost: $6,160,000 (30 year roofing only. No structural increases have been determined.)

Pros:

- A roofing system with a longer life would require fewer replacements for a given period of time.

Cons:

- During the next 30 years as air traffic continues to rise there is potential that the footprint of Concourse C will change requiring the roof to be replaced or modified. Thus the Port would not likely see the benefit of a longer life roofing system.
- A roofing system with a longer life (50 year) would require significantly more structure be added to support the system and increase the capital construction cost a minimum of two times over the cost to roof with an elastomeric roofing system.

This is not the recommended alternative.

Alternative 3) – Replace the roofing system using an elastomeric roofing system with a 15 year warranty.

Capital cost: $5,596,000

Pros:

- Allows the Port to provide safe and functional facilities.
- Roofs are critical systems to the integrity of the buildings. The roofing system being replaced has reached the end of its dependable leak-free life span.
- Reduces the risk of creating emergency hazardous situations where leaks increase in number and frequency.
- Avoid the risk of unknown price escalation in future years.
- Supports the known purpose for the Concourse while avoiding longer life systems that may or may not remain in place in the future. Limits the exposure to demolishing an asset that still has useful life.

Cons:

- Requires capital spending now.

This is the recommended alternative.

ATTACHMENTS TO THIS REQUEST

- Computer slide presentation of the Airport Roof Map

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- June 10, 2014 – the Commission authorized design funds for the 2014-2015 Roof Replacement project.
- April 1, 2014 – the Commission authorized a budget increase of $219,000 and execution of a major public works construction contract with the low responsive and responsible bidder for the Concourse D roof replacement.
- January 28, 2014 – the Commission authorized construction funds for the Concourse D roof replacement.
- July 9, 2013 – the Commission authorized construction funds for the North End Main terminal roof replacement.
- January 24, 2013 – the Commission authorized construction funds for the Fire Station roof replacement.
- July 26, 2011 – the Commission authorized design funds for the second phase of the Airport re-roofing program including design of the Fire Station and North End Main Terminal roofing systems.
- November 30, 2010 – the Commission authorized construction funds for the South End Main terminal roof replacement.
- April 27, 2010 – the Commission approved design funds for the South End Main terminal roof replacement.
- September 22, 2009 – the Commission was briefed on the facility renewal project that was necessary in future years. The Airport re-roofing program was included in the presentation.