PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 4b

Date of Meeting February 9, 2016

DATE: February 2, 2016

TO: Ted Fick, Chief Executive Officer

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

SUBJECT: Alaska Hangar One Roof Replacement (CIP #C800637)

Amount of This Request:	$1,569,000	**Source of Funds:**	Airport Development Fund
Est. Total Project Cost:	$1,927,000		
Est. State and Local Taxes:	$134,000		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to advertise, award, and execute a major public works contract to re-roof two buildings: the Alaska Hangar One and an associated maintenance building, at Seattle-Tacoma International Airport for an amount not to exceed $1,569,000 out of an estimated project cost of $1,927,000.

SYNOPSIS

This project will remove and replace the current roofing system on the Port-owned Alaska Hangar One and an associated maintenance building at the Airport in order to avoid leaks that cause damage to the underlying infrastructure, equipment, and interior facilities. The roof systems being replaced on each building were installed in 1980 or earlier. The existing roofs are deteriorating and their useful lives have expired.

This is the fourth of a series of necessary design and construction steps to accomplish reroofing the Airport facilities over the next several years. The replacement roof systems will meet the new building codes related to energy efficiency. Staff expects to seek Commission authorization annually over the next two years as part of the Airport campus-wide long-term roofing maintenance program.

BACKGROUND

The first phase of the current cycle of completed roof replacements at the Airport was 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 was the Concourse D roof in 2014.

The Alaska Hangar One and associated maintenance building were originally built by Alaska Airlines in 1966. Ownership of these buildings was transferred to the Port at the end of the long-term ground lease in 2007. Until ownership was transferred, the Port was not responsible for maintaining the roofs.

The intention is to maintain these buildings in a leasable condition in their current function for the foreseeable future. Per the Sustainable Airport Master Plan (SAMP), the Alaska Hangar One and associated maintenance building will continue to be used for their intended purposes for at least another ten years.

Originally this project included two air cargo buildings located mid-field in addition to the Alaska Hangar One and associated maintenance building. After reviewing the Sustainable Airport Master Plan (SAMP), staff determined that the two cargo buildings should be removed from the scope of this project as their useful lives would not warrant the investment.

PROJECT JUSTIFICATION AND DETAILS

The Port's responsibility to provide safe and functional facilities translates to maintaining the Airport's roofing systems so they are leak free. The roofs on the Alaska Hangar One and associated maintenance building are critical systems to the occupancy of the buildings. As the roofs age and reach a deteriorated state, they must be replaced. These roofing systems have reached the end of their dependable leak-free life span. When roofs fail they can create an operational emergency for tenant occupants and a liability for the Airport.

Due to changing safety regulations, fall protection installation is now required to safely perform maintenance work on the roofs. Regular maintenance on key portions of these roofs is not possible without fall protection, which was not part of the original building construction.

Project Objectives

This project will provide new roof systems on each of the two buildings.

Scope of Work

Remove and replace the existing roof system on the Alaska Hangar One and replace with a new roofing system designed to meet current energy code requirements. Install new roofing system over the existing metal roof on the maintenance building associated with the Alaska Hangar One building. Install fall protection where necessary on the building roofs.

Schedule

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	$5,007,000	$0	$5,007,000
Expensed design costs for eliminated scope	$(95,000)	$95,000	$0
Budget Reductions	$(2,985,000)	$0	$(2,985,000)
Revised Budget	$1,927,000	$95,000	$2,022,000
Previous Authorizations	$358,000	$95,000	$453,000
Current request for authorization	$1,569,000	$0	$1,569,000
Total Authorizations, including this request	$1,927,000	$95,000	$2,022,000
Remaining budget to be authorized	$0	$0	$0
Total Estimated Project Cost	$1,927,000	$95,000	$2,022,000

Project Cost Breakdown	This Request	Total Project
Design Phase	$0	$453,000
Construction Phase	$1,435,000	$1,435,000
Sales Tax	$134,000	$134,000
Total	$1,569,000	$2,022,000

Budget Status and Source of Funds

The Alaska Hangar One Roof Replacement Project (CIP #C800637) is included in the 2016-2020 capital budget and plan of finance with a budget of $1,927,000. A budget decrease of $3,080,000 was transferred to the Aeronautical Allowance CIP 800404. Design was performed for roofs that will no longer be replaced. The cost of these designs, $95,000, will be expensed. The funding source will be the Airport Development Fund.

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	$2,022,000
Business Unit (BU)	Airfield Commercial Area
Effect on business performance	NOI after depreciation will decrease
IRR/NPV	N/A
CPE Impact	None

Lifecycle Cost and Savings

The existing roofing systems have far surpassed their life expectancy of 15 to 20 years. While these buildings and roofs were being maintained by the airlines, patches and fixes were made to extend the life of the roofs. Past performance of each roof is noted below.

- The Alaska Hangar
  - Original life expectancy 20 years
  - Has been in use for 40 years
- Associated maintenance building
  - Original life expectancy 30 years
  - Has been in use for 40 years

The new roof systems are not expected to have significant repair costs for up to 15 years. Preventive maintenance costs will be consistent with the current maintenance program.

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 by maintaining its existing facilities to accommodate current as well as future airline tenants and needs.

This project supports the Port's Century Agenda strategy to be the greenest and most energy-efficient port in North America by constructing new energy efficient roofs. The new roof systems will have a solar reflective index that exceeds .80, which is the value required to obtain Leadership in Energy & Environmental Design (LEED) New Construction Credit 7.2 which is intended to fulfill the heat island effect credit. This will reduce air conditioning loads and save electricity. 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.

The project manager will coordinate with the small business program manager to maximize the participation of qualified small business firms, in accordance with Resolution No. 3618.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Install fall protection only on the Alaska Hangar One and associated maintenance building roofs to enable routine maintenance and repair as needed (not recommended).

Cost for a Small Project to Install Fall Protection Only	$	505,000
Routine Maintenance Cost Per Year on Existing Roof	$	4,000
Years Buildings Will Be In Use Per the SAMP		x 10
Cost for 10 Years of Maintenance	$	40,000
Alternative 1 Total Project and Maintenance Cost	$	545,000
Cost to Date / To be expensed	$	155,000
Alternative 1 Total Cost with Cost to Date	$	700,000
Cost to Repair Roof or Damaged Facilities and Equipment	Undetermined, based on magnitude of event	

Pros:

- Allows for the safe repair and maintenance of the building roof and equipment installed on the roof.
- Reduces the amount of funding expended.

Cons:

- Provides poor level of service for the tenant and does not represent landlord best practice.
- Does not replace roofs that are beyond their useful lives.
- Increases the risk of roof failure and resulting water leak and the cost to repair.
- Exposes the Port to the cost of repair and/or replacement of damaged tenant equipment or facilities.
- Reduces the Port's responsibility to provide safe occupy-able facilities.
- The Port's knowledge of existing conditions may cause issues with claims that may occur as the result of roof failure damage.

Since the roofing is well beyond its serviceable life expectancy, the roofing will continue to fail outside of repaired areas and water will potentially have paths to migrate into the facility. This leaves the Port at risk for damages that may occur to Alaska's equipment, aircraft, or materials. If we only install fall protection and do not reroof, there will be the potential for both maintenance cost and Small Works repair costs. If the failures are large enough, the Port will have to initiate a Small Works Project in lieu of utilizing maintenance personnel to perform repairs. This is a high risk that is difficult to quantify due to the uncertainty of the frequency of failure, the scope of failure, and the variety of damage that may occur to the tenant's property. It is difficult to predict with any certainty when the maintenance costs will become small works repairs, but this shift will add soft costs and contractor overhead and profit to the projected costs.

This is not the recommended alternative.

Alternative 2) – Install fall protection, invest in an up-front Small Works repair contract and then repair roofs as needed (not recommended).

Fall Protection Small Project	$	505,000
Up Front Roof Repair Small Project	$	155,000
Total for Fall Protection and Repair Project	$	660,000
Maintenance Cost Per Year on Existing Roof	$	4,000
Years Buildings Will Be In Use Per the SAMP		x10
Cost for 10 Years of Maintenance	$	40,000
Alternative 2 Total Cost	$	700,000
Cost to Date / To be expensed	$	155,000
Alternative 2 w/ Cost to Date	$	855,000

Cost to Repair Roof or Damaged Facilities and Equipment	Undetermined, based on magnitude of event

Pros:

- Allows for the safe maintenance of the building roof and for equipment installed on the roof.
- Reduces the amount of funding expended.
- Spending up front funds on roof repair will mitigate leaks for a short period of time.

Cons:

- Provides poor level of service for the tenant and does not represent landlord best practice.
- Does not address the need for a full roof replacement.
- Despite the extensive repairs, the risk still exists that leaks could occur, and be difficult to repair.
- Repairs may not be effective. Repairs will introduce more seams and joints in the roofing material that are more prone to future leaks.
- Leaves the Port at risk for damages that may occur to Alaska's equipment, aircraft, or materials.
- The Port's knowledge of existing conditions may cause issues with claims that may occur as the result of roof failure damage.

Installing fall protection and not re-roofing leaves the potential for both maintenance cost and repair costs. If the roof failures are large enough, the Port will have to bid out a contract to complete repairs rather than using Maintenance personnel, which would add cost. The risk is difficult to quantify due to the uncertainty of the frequency of failure, the scope of failure, and the variety of damage that may occur to the tenant's property.

Potential future expenditures are not quantified in the estimate for this alternative.

This is not the recommended alternative.

Alternative 3) Install 30 year metal roof.

Design	$	895,000
Construction	$	3,590,000
Sales Tax	$	430,000
Total Project Cost (Includes Cost to Date)	$	4,915,000
Roof Inspection / Maintenance Cost Per Year	$	4,000
Duration Buildings Will Be In Use Per the SAMP		x10

Cost for 10 Years of Roof Inspection / Maintenance	$	40,000
Total Cost for Replacement and Maintenance	$	4,955,000

Pros:

- Allows for a durable steel roof replacement that will provide the most reliable facility for the customer.
- Reduces risk and minimizes the cost of roof repairs going forward for the foreseeable life of the roof.
- By performing the capital improvement, the cost of the project will be amortized over the life of the facility, reducing the incremental cost experienced by the customer in 2016.

Cons:

- The overall cost of the project is the largest of the alternatives.
- This project would consume capital funds that could possibly be utilized on projects with a faster payback.
- Requires gutters and downspouts that require additional plumbing into the drainage system, which means digging up pavement to get to the existing system.
- Existing membrane roof design would need to be replaced with a new metal roof design. Project would be delayed one additional year at minimum.
- This building could be displaced by SAMP.

This is not the recommended alternative.

Alternative 4) – Replace both roofs and install fall protection (recommended).

Total Project Cost (Includes Cost to Date)	$	1,927,000
Roof Inspection / Maintenance Cost Per Year	$	4,000
Years Buildings Will Be In Use Per the SAMP		x10
Cost for 10 Years of Roof Inspection / Maintenance	$	40,000
Total Cost for Replacement and Maintenance	$	1,967,000

Pros:

- Provides good level of service for the tenant and follows landlord best practice.
- Allows for the full roof replacement, which will provide the most reliable facility for the customer.
- Provides for the viability of the facility for the foreseeable future.
- Based on information from planning staff, this building is likely to remain in operation for a minimum of 8 to 10 years.
- This project would provide for a warranted roof that will minimize the cost of roof repairs going forward for the foreseeable life of the roof.
- Performing the capital improvement, the cost of the project will be amortized over the life of the facility, reducing the incremental cost experienced by the customer in 2016.

Cons:

- The overall cost of the project is larger than alternatives 1 and 2, but both of those have significant unknown future maintenance costs.
- This project would consume capital funds that could possibly be utilized on other projects.

This is the recommended alternative.

ATTACHMENTS TO THIS REQUEST

- Map showing building location

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- May 26, 2015 – the Commission authorized design funds for the Concourse C Roof Replacement project.
- June 10, 2014 – the Commission authorized design funds for the 2014-2015 Roof Replacement project (now called Alaska Hangar One 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 design funds for the Concourse D roof replacement.
- January 8, 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 programs including design of the Fire Station and North End Main Terminal roofing systems.
- November 30, 2010 – the Commission authorized construction funds for the first phase of the Airport re-roofing program.
- April 27, 2010 – the Commission approved design funds for the first phase of the Airport re-roofing program.
- 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.