

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**

**Item No.** 5b

**Date of Meeting** January 24, 2012

**DATE:** January 12, 2012

**TO:** Tay Yoshitani, Chief Executive Officer

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

**SUBJECT:** Fire Station Roof Replacement Project at Seattle-Tacoma International Airport  
(CIP #C800459)

**Amount of This Request:** \$901,000

**Source of Funds:** Airport Development Fund  
and Existing Revenue Bond  
Proceeds

**Total Project Budget:** \$4,770,000

**Jobs Created:** 20

**State and Local Taxes Paid:** \$67,000

**ACTION REQUESTED:**

Request Commission authorization for the Chief Executive Officer to advertise for construction bids and award and execute a contract to replace the roofing system on the fire station at Seattle-Tacoma International Airport (Airport). This authorization is for \$901,000 of a total estimated re-roofing project cost of \$4,770,000.

**SYNOPSIS:**

This memorandum requests authorization to proceed with the advertisement for construction bids, and award and execution of the contract that would remove and replace the current roofing system on the fire station in order to avoid leaks that cause damage to the underlying infrastructure, equipment, and interior facilities. The roof being replaced was installed in 1980 and is beyond its useful life expectancy. This is one of a series of necessary progressive construction steps to accomplish re-roofing of the Airport facilities over the next 6-10 years (see attached map). Staff expects to seek Commission authorization for similar work in each of the coming years.

**BACKGROUND:**

In 1991, the Airport began a major terminal facility re-roofing program that was completed in 1997. Since 1997, certain Airport roofs have been replaced on a project- or roof-specific basis. The first phase of the cycle of roof replacements that are now complete included sections M-1, M-2, M-10, M-12, MP-2 and MP-3 on the south end of the main terminal.

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This project is the second phase of the cycle of roof replacements and includes the fire station roof scheduled for construction in 2012 which is the subject of this request, and the main terminal sections A, B, C, M-3, M-4, M-5, M-6, M-7, M-8, M-9, MP-1, MP-4, MP-5, and MP-6, which are scheduled for construction in 2013. Staff will return later this year to request additional project authorization and funding for the main terminal sections (see attached map).

The Airport's roof replacement program has been prioritized and phased over the next 6-10 years by a team comprised of engineering, maintenance, and project management staff. The roofing program was triggered by leaks and the discovery of fractured roof membranes. Replacement reduces the potential for facility damage and liability risks associated with roof leaks. This is necessary in order to provide safe and reliable facilities to our employees, business partners, tenants, and the traveling public.

The ability to eliminate leaks by re-roofing will mitigate the cost of leak investigation, maintenance and repairs associated with responding to and locating the root cause of the roof leaks. Tracking leaks and making repairs is labor-intensive and does not always solve the problem. When the roof systems are in a fractured and deteriorated state, more leaks can be created by walking on the roof looking for the original problem. This tracking work can take anywhere from days to months as this effort is weather-dependent and success cannot be verified until the next heavy rain.

### **PROJECT JUSTIFICATION:**

#### ***Project Objectives:***

This phase of the project will remove and replace the existing roof system on the Fire Station, eliminating costly leak repair and potential damage to existing infrastructure.

### **PROJECT SCOPE OF WORK AND SCHEDULE:**

#### ***Scope of Work:***

Remove and replace existing roof system on the fire station and install a new 65 millimeter elastomeric roofing system.

The fire station roof system is approximately 29,000 square feet.

#### ***Schedule:***

- Request authorization to advertise for bids (fire station) January 2012
- Fire station complete October 2012
- Request authorization to advertise for bids (terminal) January 2013
- Project completion November 2013

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### **FINANCIAL IMPLICATIONS:**

<b><u>Budget/Authorization Summary:</u></b>	
Original Budget	\$4,770,000
Budget Increase	0
Budget Transfers	0
Revised Budget	\$4,770,000
Previous Authorizations	\$ 200,000
Current Request for Authorization	\$ 901,000
Total Authorizations, including this request	\$1,101,000
Remaining Budget to be Authorized	\$3,669,000

<b><u>Project Cost Breakdown:</u></b>	<b><u>This Request:</u></b>	<b><u>Total Project:</u></b>
Construction Costs	\$734,000	\$3,607,000
Sales Tax	\$ 67,000	\$ 340,000
In-house Design		\$ 120,000
Aviation PMG and other soft costs	\$100,000	\$ 703,000
Total	\$901,000	\$4,770,000

### **Budget Status and Source of Funds:**

This project, CIP #C800459, is included in the 2012 – 2016 capital budget and plan of finance. The funding source for this project will be the Airport Development Fund and existing revenue bonds. The airline representatives reviewed this project in August 2011; a Majority-In-Interest vote is pending. We anticipate no issues with the approval of this project.

### **Financial Analysis and Summary:**

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Renewal & Replacement
<b>Risk adjusted Discount rate</b>	N/A
<b>Key risk factors</b>	N/A
<b>Project cost for analysis</b>	\$4,770,000
<b>Business Unit (BU)</b>	Airfield and Terminal
<b>Effect on business performance</b>	NOI after depreciation will increase
<b>IRR/NPV</b>	As a cost recovery project, traditional financial analysis measures such as net present value (NPV) and internal rate of return (IRR) are not meaningful.

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<b>Cost Per Enplanement (CPE) Impact</b>	Will increase CPE approximately \$.02 in 2014, but no change to business plan forecast as this project was included.
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### **ENVIRONMENT AND SUSTAINABILITY:**

The new roof will be Energy Star rated and have a minimum solar reflective index that exceeds 78, which is the value required to obtain the LEED Credit NC7.2. This will reduce air conditioning loads and save energy. The insulating value of the new roof will be greater than that of the existing roof. By replacing the roof and preventing damage to the underlying building systems, the life of the existing building systems will be prolonged.

### **STRATEGIC OBJECTIVES:**

#### **Ensure Airport and Seaport Vitality**

This project supports the Port-wide strategic objective of Ensuring Airport and Seaport Vitality. This project will maximize facility and asset utilization by replacing the Airport's roof systems before they fail through a systematic and timely roof replacement program. The project will reduce risk and liability issues, and safeguard the integrity of the building envelope and underlying infrastructure from water infiltration due to failing roof systems.

### **BUSINESS PLAN OBJECTIVES:**

Replacing the most distressed Airport roofs in order of importance supports the objectives identified in the Aviation Division's Strategy of operating a World Class International Airport by:

- Ensuring safe and secure operations
- Meeting needs of our tenants, passengers and the region's economy
- Managing our assets to minimize the long-term total cost of ownership

### **TRIPLE BOTTOM LINE SUMMARY:**

This roof replacement project represents an investment in our current facility and supports the long-term vitality of the Airport, businesses within the Airport, and the traveling public. Installation of new Energy Star roofing system will reduce the energy demand of the Airport through insulating against heat loss. Replacing the roof will prevent water leak damage to other building systems, disruption of Airport operations, and will prevent perceptions of poor customer service.

### **ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:**

Alternative 1: Develop a systematic replacement program for the Airport's roof systems. Phase the replacement program over multiple years, which allows the Airport to sustain serviceable roof systems and provide safe and productive environments for our business partners and passengers. Through roof inspection and analysis, the second phase of the roof replacement program has identified 167,000 square feet of roof on the north end of the main terminal and the fire station in need of replacement. Design for both the north end main terminal and fire station

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are underway with actual roof replacement to be accomplished in 2012 and 2013. The rest of this prioritized replacement program would be accomplished over the next ten years and be approved on a project-by-project basis. This alternative requires securing necessary approvals and funding for each specific phase of the roof replacement program. **This is the recommended alternative.**

Alternative 2: Install a green roof system. Green roofs are complete roof systems comprised of vegetation, soil, drainage and waterproof membrane, requiring specific additional structural integrity not currently in place as part of the Airport structure. This alternative would create an environment that would attract birds and other wildlife, increase bird strike hazards, and escalate nuisance-wildlife control. Installing a green roof would be in direct conflict with the Airport's Wildlife Hazard Mitigation and Wildlife Conservation Program and the Federal Aviation Administration (FAA) approved Airport Certification Manual. This is not the recommended alternative.

Some airports have begun to use green roof on new construction (thereby avoiding the extensive redesign and structural strengthening retrofit issues for existing structures) using plants that do not attract birds or wildlife. Staff will examine recent airport green roof developments more thoroughly and determine potential applicability for smaller or pilot-scale projects at the Airport that do not require structural strengthening to do so.

Alternative 3: Continue to patch and repair the leaks risking continued deterioration throughout the entire roof system (terminal and concourses). This alternative increases maintenance and emergency repair response and costs, not only due to the continual patching of the existing roof system but also due to ceiling, floor, and equipment damage caused by the leaks. This also increases liability should customers slip and fall. This is not the recommended alternative.

### **OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:**

Roof Replacement Planning Map.

### **PREVIOUS COMMISSION ACTIONS:**

On September 22, 2009, the Commission was briefed on facility renewal projects that were necessary in future years. The Airport re-roofing program was included in the presentation.

On April 27, 2010, the Commission voted to approve design funds for the first phase of the Airport re-roofing program.

On November 30, 2010, the Commission voted to authorize construction funds for the first phase of the Airport re-roofing program.

On July 26, 2011, the Commission voted to authorize design funds for the second phase of the Airport re-roofing program.