

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

**COMMISSION AGENDA**

**Item No.** 6a

**Date of Meeting** April 27, 2010

**DATE:** April 9, 2010

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

**FROM:** M. Luisa Bangs, Senior Maintenance Manager, Aviation Maintenance  
Wayne Grotheer, Director Aviation Capital Improvement Program

**SUBJECT:** Main Terminal South End Roof Replacement (CIP # C800360).

**This Request:** \$120,000

**Source of Funds:** Airport Development Fund

**Total Project Budget:** \$2,640,000

**ACTION REQUESTED:**

Request Commission authorization for the Chief Executive Officer to prepare design and construction bid documents for the replacement of approximately 90,000 square feet of roof systems located on the south end of the Main Terminal at Seattle-Tacoma International Airport (Airport). This authorization is for \$120,000 of a total estimated project cost of \$2,640,000 (CIP # C800360).

**SYNOPSIS:**

This memorandum requests authorization to proceed with the design that would remove and replace the current roofing system on the south end of the Main Terminal in order to avoid leaks that cause damage to the underlying infrastructure, equipment, and interior facilities. Portions of the roof being replaced were installed in 1993, 1994 and 1996 and will be at or beyond their useful life expectancy when replacement takes place. The airlines have approved this project.

**BACKGROUND:**

In 1991, the Airport began a major Terminal Facility re-roofing program that was completed in 1997. Since 1997, many Airport roofs have been replaced on a project/roof specific basis.

This project is initiating the next cycle of roof replacements. The Airport's current roofs have a 15 year life expectancy of which a large percentage have expired or will expire shortly.

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. This first phase of

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the program was triggered by leaks and the discovery of fractured roof membranes over the last several years. 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 business partners, tenants, and the traveling public.

The ability to eliminate leaks by reroofing will mitigate the cost of leak investigation, maintenance and repairs associated with responding to and “tracking down” 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 are 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 DESCRIPTION/SCOPE OF WORK:**

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

This project will remove and replace the existing roof system at the south end of the Main Terminal, eliminating costly leak repair and potential damage to existing infrastructure.

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

Remove and replace existing roof system and install a new 65 millimeter elastomeric roofing system on the south end of the Main Terminal, sections: M-1, M-2, M-10, M-12, MP-2 and MP-3 (see attached map), which is approximately 90,000 square feet.

### **STRATEGIC OBJECTIVES:**

This project supports the Port-wide strategic objective of Ensuring Airport and Seaport Vitality. We will maximize facility and asset utilization by replacing the Airport’s roof systems before they fail through a systemic and timely roof replacement program. We 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.

### **FINANCIAL IMPLICATIONS:**

#### **Budget/Authorization Summary**

Original Budget	\$2,640,000
Budget Increase	\$ 0
Budget Transfers	\$ 0
Revised Budget	\$2,640,000
Previous Authorizations	\$ 0

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Current request for authorization	\$ 120,000
Total Authorizations, including this request	\$ 120,000
Remaining budget to be authorized	\$2,520,000

<b><u>Project Cost Breakdown</u></b>	<b><u>This Request</u></b>	<b><u>Total Project</u></b>
Construction costs		\$1,992,000
Sales tax		\$188,000
In-house design	\$79,000	
Aviation PMG and other soft costs	\$41,000	\$460,000
Total	\$120,000	\$2,640,000

### **Source of Funds:**

This project, CIP # C800360, is included in the 2010 – 2014 capital budget and plan of finance as a business plan prospective project. The funding source for this project will be the Airport Development Fund. The airline representatives reviewed this project in February 2010, voiced positive support, and voted favorably through a Majority-In-Interest vote in March 2010. In February, the airlines were made aware of upcoming roof replacements in future years that will be voted then on a project-by-project basis.

### **Financial Analysis Summary**

CIP Category	Renewal/Enhancement
Project Type	Renewal & Replacement
Risk adjusted Discount Rate	N/A
Key risk factors	N/A
Project cost for analysis	\$2,640,000
Business Unit (BU)	Terminal
Effect on Business Performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	\$0.01 in 2012 but no change compared to business plan forecast as this project was included.

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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### **ECONOMIC IMPACTS:**

This project does not create any incremental economic impacts apart from supporting the existing substantial economic impacts of the Airport.

### **ENVIRONMENTAL SUSTAINABILITY/COMMUNITY BENEFITS:**

The new roof will 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 new roofing systems will also be Energy Star rated. The insulating value of the new roof will be greater than that of the existing roof, because of new energy requirements. By replacing the roof and preventing damage to the underlying building systems, the life of the existing building systems will be prolonged.

### **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.

### **PROJECT SCHEDULE:**

The following is a list of key milestone dates for the Main Terminal South End Roof Replacement:

- Request for Commission Authorization for Design April 2010
- Request for Commission Authorization to Advertise October 2010
- Request for an Authorization to Award the Contract (if needed) March 2011
- Project Completion November 2011

### **ALTERNATIVES CONSIDERED/RECOMMENDED ACTION:**

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 first phase of the roof replacement program has identified 90,000 square feet of roof at the south end of the Main Terminal. This phase is intended to be designed in 2010 with actual roof replacement to be accomplished 2011. 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 process/alternative requires securing

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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 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 FAA approved Airport Certification Manual. This is not the recommended alternative.

Alternative 3: Continue to patch and repair the leaks risking continued retrogressive 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.

### **ATTACHMENTS:**

Roof Replacement Planning Map.

### **PREVIOUS COMMISSION ACTION:**

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.