

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 6e
Date of Meeting November 19, 2013

DATE: November 11, 2013
TO: Tay Yoshitani, Chief Executive Officer
FROM: David Soike, Director, Aviation Facilities and Capital Program
Wayne Grotheer, Director, Aviation Project Management Group
SUBJECT: Vertical Conveyance Modernization, Aero Phase 1 (CIP #C800251) and Aero Phase 2 (CIP #C800375) at Seattle-Tacoma International Airport

Amount of This Request:	\$ 11,090,400	Source of Funds:	Existing Revenue Bonds and Future Revenue Bonds
Est. Total Project Cost:	\$ 24,556,408		
Est. State and Local Taxes:	\$ 1,441,800		

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to: (1) adjust scope to reallocate the various elevators and escalators between Vertical Conveyance Modernization, Aero Phase 1 and Phase 2 CIPs to best address operational concerns and coordinate with the NorthSTAR program; (2) combine both Vertical Conveyance Modernization Aero Phase 1 and Aero Phase 2 CIPs into a single CIP; and (3) advertise for bids and execute construction contracts for the Vertical Conveyance Modernization, Aero Phase 1 including associated regulated materials abatement and removal for a project total of \$14,999,000. The combined project total will be \$24,556,408.

SYNOPSIS

The Airport has developed a renewal and replacement program for both the elevators and escalators throughout the main terminal and satellites. Many of the elevators and escalators are over 40 years old and are at the end of their service lives. The Vertical Conveyance Modernization Aero projects will update old elevators and escalators over a two-year period.

Passengers will benefit from this project by using faster, more reliable elevators and escalators. A year ago, the Commission authorized the design and regulated materials abatement for the Vertical Conveyance Modernization, Aero Phase 1 project. Concurrently, the Commission authorized design and abatement for the Vertical Conveyance Modernization, Aero Phase 2 project. Subsequent to those authorizations, two elevators and four escalators at the North Satellite, one elevator and four escalators at the end of Concourse C, along with associated design funds, were transferred to the NorthSTAR program in order to gain construction

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efficiencies. Both of the Vertical Conveyance CIPs are included in the 2014 – 2018 capital budget and plan of finance.

The transfer of the above cited units to the NorthSTAR program, design delays resulting from technical difficulties associated with the design of the two new elevators at South Satellite, and ongoing operational/maintenance concerns necessitated a re-alignment of Aero Phase 1 project elements. Combining the Aero Phase I and Aero Phase II CIPs into one CIP will facilitate ongoing efficiencies in the management of this program.

BACKGROUND

The existing elevators included in this project were installed in the 1960's and 1970's and the existing escalators were installed in 1970 and upgraded in 1990. Due to their age and technology, the controls, drives, and door actuators of these elevators and escalators have become uneconomical to maintain. Two elevators in this project (SSAF and MT-2) are currently out of service and cannot be repaired. The unavailability of the freight elevator (SSAF) is causing problems such as having to move concessions goods through smaller passenger elevators.

Installation of hydraulic oil cooling packages will improve the reliability of the existing hydraulic elevators by eliminating or decreasing outages due to overheating, thus improving the Airport's experience of passengers who are unable to use the stairs or escalators.

Below is an updated listing of elevators and escalators in this authorization request:

Elevator #	Location	Action	Year Installed
SSAF	Freight Elevator at SSAT	Modernize	1970
MT-2	Passenger elevator in Main Terminal	Modernize	1970
MT-3	Public elevator to Police Department stops at ramp, ticketing and floors 2, 3, and 4.	Modernize	1964
MT-4	Police Service elevator, stops at ramp, ticketing, floor 2, 3, and 4	Modernize	1964
MT-5	Police service elevator, stops at ramp, ticketing, and floors 2, 3, & 4	Modernize	1964
MT-6	Passenger elevator in Main Terminal	Modernize	1970
MT-7	Passenger elevator in Main Terminal	Modernize	1970
Twelve hydraulic elevators	B, J, K, L, Q, D1, MT-8, MT-9, MT-20, MT-30, MT-40, MT-50	Add hydraulic oil cooling packages	Various
Escalator#			
601, 602, 611 & 612	North end of Main Terminal, serving Sky Bridge #6	Modernize	1970

The table below lists the elevators and escalators originally in Aero Phase 1 and Phase 2 from December 11, 2012, Commission memoranda and their current alignment:

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Elevator #	Location	Original Phase	Current Alignment
SSAF	Freight Elevator at SSAT	Phase 1	Phase 1
MT-2	Passenger elevator in Main Terminal	Phase 1	Phase 1
MT-3	Public elevator to Police Department stops at ramp, ticketing and floors 2, 3, and 4.	Phase 2	Phase 1
MT-4	Police Service elevator, stops at ramp, ticketing, floor 2, 3, and 4	Phase 2	Phase 1
MT-5	Police service elevator, stops at ramp, ticketing, and floors 2, 3, & 4	Phase 2	Phase 1
MT-6	Passenger elevator in Main Terminal	Phase 1	Phase 1
MT-7	Passenger elevator in Main Terminal	Phase 1	Phase 1
SSB	Passenger elevator at SSAT, serves STS, Ramp & FIS	Phase 1	Phase 2
SSC	Passenger elevator at SSAT, serves STS, Ramp, FIS and Concourse	Phase 1	Phase 2
SSM	New passenger elevator at SSAT, serving STS, and Concourse	Phase 1	Phase 2
SSN	New passenger elevator at SSAT, serving STS, and Concourse	Phase 1	Phase 2
NSCF	Freight elevator at North Satellite	Phase 1	NorthSTAR
C4	Passenger elevator at end of Concourse C, serving STS Transit Station	Phase 1	NorthSTAR
Eleven Hydraulic Elevators	B, J, K, L, D1, MT-8, MT-9, MT-20, MT-30, MT-40, MT-50. Add hydraulic oil cooling packages.	Phase 1	Phase 1, added a 12 th elevator "Q"
Escalators#			
601, 602, 611 & 612	North end of Main Terminal, serving Sky Bridge #6	Phase 2	Phase 1
C-1 thru C-4	Concourse C, ticketing to STS Station	Phase 2	NorthSTAR
NS-1 thru NS-4	North Satellite, STS to Concourse	Phase 2	NorthSTAR

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PROJECT JUSTIFICATION AND DETAILS

The work planned under this project represents a critical component in the improvement of the vertical conveyance system throughout the Airport. This project will provide complete modernization of seven elevators, four escalators and the installation of hydraulic oil cooling packages for 12 hydraulic elevators in Phase 1, and the construction of two new elevators and complete the modernization of two elevators in Phase 2.

Project Objectives

- Provide a safe and reliable delivery route for concessions products at the South Satellite.
- Improve overall system reliability and performance by providing efficient microprocessor logic for elevator dispatch and individual motor control.
- Replace aging components to ensure 20-plus years of reliable service without the need for additional investments other than normal maintenance costs.
- Provide firefighters' operation to comply with current life/safety code requirements.
- Upgrade existing car and hoist way door equipment to provide reliable operation.
- Upgrade elevator car and corridor pushbuttons and signal fixtures to comply with current requirements of the Americans with Disabilities Act (ADA).
- Upgrade existing building conditions in the vicinity of the elevators to current national, state and city elevator safety codes and building code requirements.
- Remove regulated materials via Port or contracted crews.
- Work with building officials to accommodate code required upgrades to structural seismic and shaft wall fire rating performance criteria.
- Provide components that reduce overall energy consumption.
- Connect to the Port elevator/escalator monitoring system, LiftNet, for quick response in case of failure.
- Improve reliability to handle current and future passenger loads.

Scope of Work

Develop infrastructure to modernize seven existing elevators and four escalators and retrofit twelve hydraulic elevators with hydraulic oil cooling systems in Phase 1; develop infrastructure to modernize two existing elevators and the construction of two new elevators in Phase 2 . Infrastructure development will, at a minimum include:

- 1) Site preparations for installation of hydraulic oil/chilled water cooling systems.
- 2) Removal of regulated materials as required.
- 3) Installation of electrical power and control systems.
- 4) Installation of communication system.
- 5) Structural, electrical and mechanical revisions to the base building.
- 6) Commissioning of elevator and escalator systems.
- 7) Testing of installed elevator and escalator systems.
- 8) Closeout of completed project.

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Schedule – Phase 1

- Authorize design – original scope October 2011
- Authorize design – amended scope December 2012
- Complete design September 2013
- Authorize Construction Contract November 2013
- Advertise for Construction December 2013
- Construction Start May 2014
- Construction Complete May 2016

Schedule – Phase 2

- Authorize design – original scope December 2012
- Complete design – revised scope April 2014
- Authorize Construction Contract May 2014
- Advertise for Construction May 2014
- Construction Start August 2014
- Construction Complete October 2016

FINANCIAL IMPLICATIONS

Combined Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$29,894,000	\$2,283,000	\$32,177,000
Previous budget and scope changes	\$3,719,020	\$250,000	\$3,969,020
Previous budget transfer to NorthSTAR	(\$11,276,401)	(\$800,000)	(\$12,076,401)
Current budget increase	\$486,789		\$486,789
Revised budget	\$22,823,408	\$1,733,000	\$24,556,408
Previous Authorizations	\$6,066,000	\$1,346,850	\$7,412,850
Authorization transferred to NorthSTAR	(\$1,904,500)	(\$200,000)	(\$2,104,500)
Current request for authorization	\$11,090,400	\$0	\$11,090,400
Total Authorizations, including this request	\$15,251,900	\$1,146,850	\$16,398,750
Remaining budget to be authorized	\$7,571,508	\$586,150	8,157,658
Total Estimated Project Cost	\$22,823,408	\$1,733,000	\$24,556,408

Project Cost Breakdown

	This Request	Total Project
Construction	\$7,754,800	\$15,824,224
Construction Management	\$1,612,290	\$2,477,090
Design	\$0	\$2,561,145
Project Management	\$865,210	\$2,121,249
Permitting	\$40,100	\$130,900
State & Local Taxes (estimated)	\$818,000	\$1,441,800
Total	\$11,090,400	\$24,556,408

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Budget Status and Source of Funds

This project (CIP #C800251) was included in the 2014-2018 capital budget and plan of finance with a budget of \$13,502,211. A budget increase of \$486,789 is due to the addition of one additional hydraulic elevator oil cooling system as well as updated program support costs. The funding sources will include existing revenue bonds and future revenue bonds. As explained in connection with the 2014 – 2018 plan of finance, The Port plans to issue revenue bonds in 2014 to fund a number of projects included in the 2014-2018 capital budget.

Vertical Conveyance Modernization Aero, Phase 2 (CIP #C800375) is also included in the 2014-2018 capital budget and plan of finance with a budget of \$8,834,408. This project will also be funded by a combination of existing and future revenue bonds.

Expense funds will be used for the regulated materials management major construction contract, support/monitoring work performed by Port Construction Services, and the necessary non-warranty maintenance activity during the twelve-month warranty period for the seven elevators and four elevators.

Financial Analysis and Summary

CIP Category	Renewal/Enhancement
Project Type	Infrastructure Upgrade
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$24,556,408
Business Unit (BU)	Terminal Building cost center
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	CPE will increase by \$.09 by 2016, but no change to business plan forecast as this project was included.

Lifecycle Cost and Savings

From a financial perspective, the Port will experience ongoing maintenance and periodic component renewal. However, these are normal operations and maintenance costs, which are expected to be offset to some degree by reduced repairs on an emergency and/or urgent repair basis to aging existing vertical conveyance equipment.

The primary benefit of the elevators in this project will be realized by inbound and outbound passengers who are not able to use escalators. There will be increased availability of elevators for these passengers.

This project is in alignment with the Port's goal of improving the long-term sustainability of its facilities and operations. This project will provide a generally positive effect on the environment to the extent that modernized elevators and escalators will reduce the Airport's reliance on older and less energy efficient vertical conveyances.

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STRATEGIES AND OBJECTIVES

This project contributes to accommodating the Port's Century Agenda Goal to meet the region's air transportation needs at Sea-Tac Airport for the next 25 years. The project provides enhanced capacity and flexibility in critical terminal vertical circulation infrastructure, complementing the recently completed Terminal Escalator Modernization (44 escalators) project.

TRIPLE BOTTOM LINE

Economic Development

This project will increase the long-term ability of the Airport to serve the airline industry's future passenger growth. This project improves the efficiency of the existing systems and adds long-term reliability before major component replacement is required.

The project manager will work with the Office of Social Responsibility to determine small business participation opportunities, in accordance with the small business resolution 3618.

The Commission previously authorized execution of a project labor agreement for the project.

Environmental Responsibility

The project demonstrates environmental sustainability by improving existing Port assets to extend their life and better utilizing existing resources. In addition, the modernized escalators will have the ability to go into sleep mode, further reducing energy demand during non-peak passenger times.

Community Benefits

This project will increase the capacity of future Airlines growth. Long-term vitality of the Airport benefits the regional economy, the local environment, and nearby communities.

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Do nothing. This would not address the Airport's urgent need to return inoperable elevators to service, and would continue placing increased demands on the remaining operating elevators and escalators as well as inconveniencing the traveling public. This is not the recommended alternative.

Alternative 2) – Repair/modernize only those elevators that are inoperable plus those elevators for which parts are no longer available. This alternative only delays the inevitable modernization of the remaining elevators and escalators and exposes the Airport to costly emergency and/or urgent repairs when breakdowns do occur. This is not the recommended alternative.

Alternative 3) – Perform the modernizations to the elevators and escalators, upgrade the service life of the vertical circulation components to realize the benefits of reliable equipment and the energy savings resulting from the solid state controls and escalator sleep mode operations, and be assured of the availability of maintenance and repair parts for the next foreseeable future. **This is the recommended alternative.**

ATTACHMENTS TO THIS REQUEST

- Diagram of elevators and escalators in this project.

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PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- On August 6, 2013, The Commission authorized the execution of project labor agreements for seven projects including the Vertical Conveyance Modernization, Aero Phase 1 project.
- December 11, 2012 – the Commission authorized \$1,625,000 for design, Vertical Conveyance Modernization Project, Aero Phase 1.
- December 11, 2012 – the Commission authorized \$2,796,000 for design, Vertical Conveyance Modernization Project, Aero Phase 2.
- October 25, 2011 – the Commission authorized \$2,991,850 for design and regulated materials management and abatement (CIP #C800251).