

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA

Item No. 6b

ACTION ITEM

Date of Meeting November 6, 2012

DATE: October 29, 2012

TO: Tay Yoshitani, Chief Executive Officer

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

SUBJECT: North Satellite Refurbish Baggage System (CIP #C800555)

Amount of This Request: \$3,760,000

Source of Funds: Airport Development Fund,
Future Revenue Bonds

Est. State & Local Taxes: \$1,374,000

Est. Jobs Created: N/A

Total Project Cost: \$22,000,000

ACTION REQUESTED:

Request Commission authorization for the Chief Executive Officer to proceed with the North Satellite Refurbish Baggage System project; direct staff to prepare design documents; and use Port crews to support site investigation needed to develop the contract documents. The total amount of this request is \$3,760,000, and the total projected cost is \$22,000,000.

SYNOPSIS:

This baggage system is now being used by United Airlines, but, as part of the Airline Realignment, Alaska Air Group (AAG) will displace United and move to the North Satellite (NSAT). This project will refurbish existing baggage systems in support of AAG's expanding operations at NSAT and continued use of Concourse D. AAG's baggage volumes are an estimated five times greater than United's requirements. The work will extend the service life for portions of the C92 systems, C88 North Satellite systems, and C88 tunnel systems. This project is a component of the North Sea-Tac Airport Renovation (NorthSTAR) program and is included in the 2013-2017 capital budget and plan of finance.

The project will replace aging conveyor belts, motors, drives, and controls of the existing systems, as required to improve reliability and full functionality. The project will speed up the tunnel conveyors, if further analysis during design shows that this would provide significant operational benefits. To minimize project costs and component replacements in refurbishing the systems, the Port and AAG worked together to develop the design criteria and clear metrics to determine whether components need replacement. Risk and lifecycle cost analyses will be developed using maintenance data. Airport staff and representatives from AAG collaborated and

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refined the scope of the project during the planning phase and will continue to do so during the design phase.

BACKGROUND:

As part of the Airline Realignment, United Airlines' relocation from the North Satellite to Concourse A, AAG's baggage handling consultant evaluated the existing systems and conditions and prepared a detailed analysis of each system's performance requirements to meet future baggage volumes. These volumes are based on AAG's future growth projections. The scope of work planned under this project is a result of AAG's previous study and Port staff input. It represents a critical component in providing improved baggage handling systems for AAG. AAG prefers to continue all baggage makeup operations on the C92 system under Concourse D to allow for early completion of the North Satellite baggage refurbishment prior to its use. The C88 system will be shut down during construction to allow for early completion of the refurbishment.

The typical (or standard) design life of a baggage system is 15 years. The current C88 tunnel systems and C88 North Satellite systems are nearly 25 years old, and the current C92 system is nearly 20 years old. The longevity of the current system can be attributed to: 1) the current running speed of the conveyors is relatively slow, resulting in minimal wear on the conveyor components; 2) the current low demand on the system, is approximately 3,000 bags per day on a system designed for up to 15,000 bags per day; and 3) the maintenance program of the existing system is proactive and extensive.

PROJECT JUSTIFICATION:

Once AAG's relocation to the North Satellite is complete, the volume of AAG's projected baggage will tax these systems. The conveyor speed may be increased, which will increase the wear and tear on the conveyor components. The baggage volume on the systems will be increased, which will increase the running time as well as the resistance on the motors. Finally, the operating time of the systems will be increased, which will decrease the available maintenance operation window.

Port Maintenance has statistical data metrics that tie passenger traffic to critical failure of conveyors. Although the data cannot quantify impacts to airline operations, it shows that with increasing bag traffic, there is increased critical failure of components. Currently, at peak loads the system has a critical failure once every three days. This peak load is AAG's baseline. If refurbishment of the conveyors is not completed before the increased demand, it is reasonable to expect there will continue to be a critical failure at least once every three days at baseline levels, with an increased frequency of critical failures during AAG's peak loads.

Another problem addressed in this project is the congestion of the C1 sortation loops. Currently, all transfer bags are conveyed through the central C1 sortation loops. These loops get congested and may cause delivery times to increase during peak operations. The proposed mini-sort system will read bags at the C92-TX1 transfer input belt and divert most of them to the appropriate sortation systems before they enter the C1 loops, creating baggage sortation efficiencies.

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- Construction Start September 2013
- Construction End October 2014

FINANCIAL IMPLICATIONS:

Budget/Authorization Summary:	Capital	Expense	Total Project
Original Budget	\$22,000,000	\$0	\$22,000,000
Revised Budget	\$0	\$0	\$0
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$3,760,000	\$0	\$3,760,000
Total Authorizations, including this request	\$3,760,000	\$0	\$3,760,000
Remaining budget to be authorized	\$18,240,000	\$0	\$18,240,000

Project Cost Breakdown:	This Request	Total Project
Construction Costs	\$0	\$14,463,000
Port furnished equipment	\$0	\$0
Sales tax	\$0	\$1,374,000
Outside professional services	\$2,169,000	\$2,169,000
Aviation PMG and other soft costs	\$1,591,000	\$3,994,000
Total	\$3,760,000	\$22,000,000

Budget Status and Source of Funds:

This project, CIP #C800555, is included in the 2013-2017 capital budget and plan of finance. Funding for the project will include existing revenue bonds and future bonds. As discussed at the plan of finance briefing on October 23, 2012, the Port plans to issue revenue bonds in 2013 or 2014 to fund a number of projects in the 2013 – 2017 capital budget.

Financial Analysis and Summary

<i>CIP Category</i>	Renewal/Enhancement
Project Type	Terminal Infrastructure
Risk adjusted Discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$22,000,000
Business Unit (BU)	Terminal
Effect on business performance	NOI after depreciation will increase
IRR/NPV	N/A
CPE Impact	\$0.11 increase in 2015

Lifecycle Cost and Savings

The addition of the mini-sort system will increase the amount of equipment that must be maintained and repaired. As such, it is estimated that the additional annual costs for maintenance

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and repair of the conveyor systems will increase by an estimated \$48,000 annually, including labor and materials.

STRATEGIC OBJECTIVES:

This project contributes to the Port's Century Agenda Goal to "Meet the region's air transportation needs at Sea-Tac Airport for the next 25 years."

ENVIRONMENTAL SUSTAINABILITY:

This project demonstrates environmental sustainability by improving existing Port assets and better utilizing existing resources. This project will utilize Energy Star and systems/equipment with increased efficiencies, resulting in less demand on Port utilities.

BUSINESS PLAN OBJECTIVES:

The anticipated growth in domestic and international enplanements will require additional capacity in baggage processing for all airlines. This supports the Aviation Division's strategic goal of "Operating a world-class international airport by anticipating and meeting the needs of our tenants, passengers, and the region's economy."

ALTERNATIVES CONSIDERED AND THEIR IMPLICATIONS:

Alternative 1 - This alternative involves a four-bay North Satellite expansion that increases the number of gates from 15 to 19. In this alternative, AAG would take over all 11 existing baggage sortation piers on the apron level. This would provide 66 cart positions of the 80 necessary to support today's operation levels. The remaining 14 carts would be made-up on two new flat plate make-up devices located in the building expansion footprint. *This is not the recommended alternative.*

Alternative 2 – This alternative involves using the existing building footprint to maximize baggage operations in the North Satellite. All existing conveyors in the North Satellite would be demolished and replaced with new main lines, manual encode, recirculation, and eight new flat plate make-up units to support 80 cart positions necessary for both low and high growth. The existing pilot's lounge would be demolished to accommodate all necessary make-ups. *This is not the recommended alternative.*

Alternative 3 – This alternative uses an efficient cost approach for the baggage handling system as a result of the AAG's relocation plan. The work is limited to refurbishment of the baggage handling system to increase system reliability. Complete refurbishment of the North Satellite tunnel conveyors will ensure reliability for the major portion of Alaska's sortation system. In this alternative, AAG would take over all 15 existing North Satellite gates and utilize all 11 existing baggage sortation piers on the apron level. This would provide 66 cart positions of the 80 necessary to support today's operation levels. The remaining 14 cart positions would be located in Concourse D using three existing sortation piers. **This is the recommended alternative.**

OTHER DOCUMENTS ASSOCIATED WITH THIS REQUEST:

Airport Overall Baggage System Map

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PREVIOUS COMMISSION ACTIONS OR BRIEFINGS:

June 26, 2012 - The Port Commission was briefed on the North STAR program.

April 10, 2012 - The Commission authorized the execution of consultant contracts for the NorthSTAR program, including design and construction support services; program management services; and the completion of site surveys for regulated materials management, in the amount of \$1,200,000.