

PORT OF SEATTLE
MEMORANDUM

COMMISSION AGENDA
ACTION ITEM

Item No. 6b
Date of Meeting September 10, 2013

DATE: August 30, 2013
TO: Tay Yoshitani, Chief Executive Officer
FROM: Dave Soike, Director, Aviation Facilities and Capital Program
Wendy Reiter, Director, Aviation Security and Emergency Preparedness
SUBJECT: Checked Baggage Recapitalization/Optimization Project Funding (C800612)

Amount of This Request:	\$15,000,000	Source of Funds:	Airport Development Fund, TSA Federal Funding
Est. Total Project Cost:	\$286,000,000 to \$317,000,000		
Est. State and Local Taxes:	TBD	Est. Jobs Created:	TBD

ACTION REQUESTED

Request Commission authorization for the Chief Executive Officer to (1) execute an Other Transaction Agreement (OTA) with the Transportation Security Administration (TSA) for reimbursable costs for design and construction for the Checked Baggage Recapitalization/Optimization Project; (2) authorize \$15,000,000 to continue from 30% to 100% design; and (3) execute consultant service agreements for program management (including project management, cost/schedule controls, constructability reviews) support services. The total multi-phased project cost over approximately ten years is estimated to be \$286,000,000 to \$317,000,000.

SYNOPSIS

Execution of an OTA with the TSA is the culmination of over a year's coordination between the TSA and the Port. The two agencies have identified a plan to reconfigure the baggage system to meet both the TSA's and the Airport's needs. The TSA benefits by making its portion of the baggage system more efficient, reducing maintenance costs, and improving working conditions (safety and comfort) for federal employees. The Airport benefits in the long-term by having created a long-term vision of how the overall baggage system could flexibly grow to meet the long range capacity of the Airport where the number of enplaned passengers will ultimately double over the next two to three decades.

The long-term plan to carefully reconfigure the Airport's baggage system is named "optimization" in federal terms. The TSA has committed \$93,220,422 toward the optimization program which will lower TSA annual operating costs while improving the effectiveness of its

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checked baggage security system. The TSA funding will reimburse a significant portion of the Airport design and construction program over the coming years. It is expected the full TSA commitment will be expended on the Airport's baggage optimization program.

The total duration for the multi-phased program will be approximately 10 years. This includes both the design and construction phases. The design will involve airline input and will be carefully phased to minimize operational disruption to airline customers.

The airlines will provide a technical representative who will work with the Airport design team to assure airline input is included within designs, phasing plans, and construction activities. This optimization project is listed within the proposed airline lease agreement (SLOA III) as pre-approved to a \$40 million level to keep design moving forward. The agreement is nearing culmination. Also per the agreement, the Airlines will have an opportunity for majority-in-interest (MII) vote on the construction project as is typical of major aeronautical projects at the Airport.

The TSA commitment of \$93,220,422 in federal reimbursement funds will partially defray the overall cost of the program, which is estimated between \$286,000,000 and \$317,000,000. A more accurate cost estimate will be available as design progresses. No construction will begin until after 100% of the design is completed. The Airport expects to use the TSA funds over the next 5 plus years.

TSA's funding is already authorized and appropriated and is held within the existing TSA budget. The funds will be available to support this project after Congressional notification. Congressional notification is an annual process where the TSA provides notice of every project over \$1 million that the TSA plans to fund in the coming years so that Congressional members are aware of pending spending within their districts. The Western Region of TSA includes our Seattle Airport. This month the Western Region will provide project notices that include various baggage projects at up to 10 different airports across the western states. The combined value of those projects may range between \$150 to 200 million. Our Airport is expected to have the largest commitment of reimbursement funds within the Western Region.

This baggage project was one of several listed within the preliminary business plan presented to the Commission on August 20, 2013. Port staff will periodically return to the Commission to provide budgeting and progress updates and to request future authorizations of phased construction projects as each nears design completion and approaches bidding.

The following is a breakdown of the OTA and Memorandum of Agreement (MOA):

Agreement	Amount
Recapitalization/Optimization Design OTA	\$ 5,671,476
Optimization Construction OTA	\$ 80,532,247
Existing Baggage In-Line Screening MOA	\$ 7,016,699
Total TSA Federal Reimbursement	\$ 93,220,422

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BACKGROUND

The TSA has near-term challenges with checked baggage handling, and the Airport has both near-term and long-term challenges. TSA's challenge is imminent and financially driven because their costs are too high at airports across the country. The TSA financial challenges at the Airport are driven by three factors: (1) the Explosive Detection System (EDS) machines, which were installed after September 11, 2001, are very expensive to maintain and are approaching the end of their design life so their reliability will soon decrease; (2) the TSA inspection facilities are spread in six areas across the Airport, which does not allow efficient staffing; and (3) TSA employee-injury and safe-working-condition issues have arisen due to existing work areas that are confined and non-air-conditioned. These financially driven problems are exacerbated by the continuing federal budget pressures.

The Airport's near-term challenge is that a few of the existing separate baggage handling systems, that are literally built immediately around the aging EDS machines, are reaching their operational capacity maximums due to year-over-year passenger growth or because of relocating large peak baggage loads onto certain systems. While this is important, the Airport's long-term challenge, which is far more consequential, is that the existing separate baggage systems cannot be grown to effectively handle the loads that the Airport will have to handle in the future. The Airport handles 33 million annual passengers (MAP), but it must continue to operate in an efficient manner all the way to the Airport's maximum capacity of 60 MAP. Twice the baggage load is a huge stretch for separate systems, some of which are now struggling under current peak loads.

The baggage optimization design and construction plan uses the available TSA funding to solve TSA's near-term problems by aggregating their inspection facilities from six locations to one under a baggage systems optimization multi-year program. Optimization makes significant progress toward building a single baggage processing facility that benefits TSA's short-term needs and allows the Airport to make great headway toward reconfiguring its baggage system to effectively allow it to expand efficiently to 45 MAP, and eventually 60 MAP in 25+ years.

Currently, the Airport baggage system is not a single system, but rather many separate systems that bags must transfer between. Separate systems were the best way to rapidly increase security after September 11th, and those separate systems were designed to include a nominal amount of passenger growth. In addition, as specific airline needs emerged over the ensuing years, or as airlines were relocated, the separate systems have been modified to meet the carriers' specific operating needs. Although various baggage projects have occurred to meet operating needs over the years, the systems continue to have limited capacity to meet both near- and long-term growth needs of the Airport overall.

Parts of the Airport baggage system controls and software are aging and certain systems are experiencing problems at peak loads, such as mis-tracked bags. The Airport has a clear need to both reinvest in the baggage system to meet current demands, and also to meet medium-term and longer-term demands. Medium-term demands include being able to handle 50 percent more travelers in a decade and thus grow to 45 MAP. The work of the 30% design has focused on preparing designs and associated cost estimates to reach the 45 MAP horizon. Longer-term demands include being able to handle nearly 100 percent growth, thus growing to 60 MAP which

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is the expected top-end limit of the Airport based on both airfield and landside capacities. The design has also focused on building in easy growth capability into the plan. Thus, inherent in the 30% design is the ability to reach 60 MAP with minimal changes to the TSA security scanning and search areas. Published Federal Aviation Administration growth rates indicate the Airport will reach its top-end limit (maximum operating capacity) sometime between two to three decades from now.

PROJECT SCOPE OF WORK

Project Objectives to finalize 30% to 100% design

- Replace TSA EDS equipment that has reached the end of its useful life
- Meet TSA federal mandates for Electronic Baggage Screening Program as identified under current Programming Guidelines Design Standards (PGDS) version 4.1
- Leverage federal improvements to optimize and reconfigure baggage system to provide expandable capacity to meet long-term growth needs at the Airport
- Perform full design for all construction projects
- Minimize operational impacts to airline and airport operations
- Incorporate sustainability, including energy efficiency, into designs

Design Development (30%) to Construction Documents (100%)

- Detailed design drawings refinement
- ROM construction and O&M cost estimates refinements
- Program schedule update
- Updated indication of equipment type
- Provide QA/QC of drawings before issuing to the Port
- 70% design submittals (plans and technical specifications)
- Review draft technical specifications
- Confirm drawings are progressing and in compliance with the Port's CAD and AFUS Standards Manual and the Aviation Consultants' and Contractors' User Guide to the Port of Seattle's Drafting Standards
- Update design simulation
- Review Port provided 'Regulated Materials Good Faith Surveys' and incorporate into documents
- 70% design review comment reconciliation with Port stakeholders
- Approval/rejections and submittal comments
- Provide written response to design document review comments and requests for information within seven (7) calendar days of receipt.
- Interlocal Design Team/TSA meeting 100% design submittals (plans and technical specifications)
- 100% design review comment reconciliation with Port stakeholders
- Approval/rejections and submittal comments: Provide written response to design document review within seven (7) calendar days of receipt.
- Incorporate any changes to 100% design submittals prior to issuance for bid
- Coordinate with Port for construction schedule baseline

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- Update the expected equipment type and delivery schedule
- Schedule systems integration services from equipment manufacturers/vendors
- Provide input on construction phasing/sequencing
- Provide QA/QC oversight to A/E team for construction documents

Permit/Pre-Bid/Bid Phase

- Review of permit applications with Airport Building Department
- Provide pre-bid technical assistance
- Attend pre-bid walk through
- Coordinate with Port Engineering for clarification on design/construction phasing assumptions
- Provide assistance for compilation of bid documents
- Document field conditions pertaining to the completed design prior to advertisement for bid using the “Plan in Hand Survey” method
- Coordinate any addenda for bid phase
- Submit a final construction bid estimate one week prior to the advertisement of bids
- Provide timely response through the Port to all questions from potential bidders
- Maintain and provide the Port with a written log of questions from potential bidders and responses provided from the Consultant
- Prepare addendum or clarification documents and drawings as directed by the Port
- Prepare revised cost estimates associated with addenda or clarifications
- Attend pre-bid conferences and inspection tours if requested by the Port
- Update, monitor, and analyze schedules as needed

FINANCIAL IMPLICATIONS

Budget/Authorization Summary

	Capital	Expense	Total Project
Original Budget	\$4,850,000	\$150,000	\$5,000,000
Previous Authorizations	\$4,850,000	\$150,000	\$5,000,000
Current request for authorization	\$15,000,000	\$0	\$15,000,000
Total Authorizations, including this request	\$19,850,000	\$150,000	\$20,000,000
Remaining budget to be authorized	TBD	TBD	TBD
Total Estimated Project Cost	\$286,000,000 to \$317,000,000	TBD	TBD

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<i>Project Cost Breakdown</i>	This Request	Total Project
Construction	\$0	TBD
Construction Management	\$500,000	TBD
Design	\$12,000,000	TBD
Project Management	\$2,500,000	TBD
Permitting	\$0	TBD
State & Local Taxes (estimated)	TBD	TBD
Total	\$15,000,000	\$286,000,000 to \$317,000,000

Budget Status and Source of Funds

This project, C800612, was not included in the 2013 – 2017 capital budget and plan of finance because the TSA had not reviewed and responded to project proposals before annual Airport budgeting was finalized. The initial \$5 million and this additional \$15 million will be transferred from the aeronautical allowance CIP (C800404) resulting in no net change to the 2013 – 2017 capital budget. The estimated total cost will be incorporated into the 2014 capital plan and plan of finance. The funding sources will include the Airport Development Fund, TSA funding (\$93,220,422) and future revenue bonds.

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The TSA is committed to providing the funding noted earlier. That federal funding is already authorized and appropriated, and it is held within the existing TSA budget. While the funding level for our Airport is high, which is a strong indicator of commitment, the TSA is also working in a similar manner with many other airports to upgrade and consolidate their EDS and employee areas. The nationwide effort is another indication of the TSA's strong commitment to this national security improvement program. Our Airport has a long and successful history in working with the TSA, and in conducting work in a manner to meet federal guidelines in order to be reimbursed. The Airport recently invoiced the TSA under the current design agreement, and we have already received reimbursements from the TSA.

Financial Analysis and Summary

CIP Category	Renewal/replacement
Project Type	Renewal/replacement
Risk adjusted discount rate	N/A
Key risk factors	N/A
Project cost for analysis	\$224 million (total less \$93 million from TSA)
Business Unit (BU)	Terminal, Baggage Handling Systems
Effect on business performance	N/A
IRR/NPV	N/A
CPE Impact*	2014: 0.00 2015: 0.05 2016: 0.05 2017: 0.34 2018: 0.33 2019: 0.64 2023: 0.88

The CPE impact related to Baggage Optimization would be additional, but already budgeted allowances for future projects may be able to cover much of the CPE impacts depending upon other future capital project decisions.

Lifecycle Cost and Savings

Under the optimization program, the number of bag scanning machines would be reduced from today's 27 EDS at 33 MAP to the following, which would result in reduced energy demand for conditioned space, mechanical and electrical systems, and power to run the system. Currently, the projected number of EDS for future growth at the Airport is as follows:

- 11 EDS at 45 MAP
- 15 EDS at 60 MAP

STRATEGIES AND OBJECTIVES

This project supports the Commission's Century Agenda objective of meeting the region's air transportation needs at the Airport for the next 25 years.

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TRIPLE BOTTOM LINE

Economic Development

Currently, there is a unique opportunity with TSA reimbursing the Airport for \$93,220,422:

- This project will modernize Airport baggage systems, allowing the Airport to grow efficiently and foster business and leisure travel.
- Under optimization, TSA costs are reduced.
- New system under optimization would allow for all airline growth and moves in the future

Environmental Responsibility

Optimization allows for fewer machines, which results in decreases to energy demand at the Airport. It also allows for opportunities to improve controls and add high efficiency conveyor components for additional energy savings. The design will provide opportunities to reduce Airport lifecycle costs, improve operational efficiency, shorten passenger connecting time between flights, and minimize energy consumption.

In the past 10 years, the baggage industry has made major strides in energy efficiency and green technologies. These efficiencies can save upwards of 30 percent in energy consumption. These energy savings are based on high-efficiency drives, improved belting materials, and smarter control algorithms. For example, using variable frequency drives eliminates the use of high-maintenance clutch brake drive systems for energy and labor savings. High-efficiency gear boxes will further decrease energy consumption as well as lengthen replacement intervals further reducing our environmental footprint. Smart controls will increase operational efficiency by starting conveyors and subsystems only when needed. By using higher efficiency motors, energy consumption can be reduced by two methods; first by reducing energy consumption with higher output torques and second by giving the ability to size smaller motors to run larger conveyor subsystems.

Community Benefits

- Increased reliability and decreases in the instances of missed bags would improve customer service with the Airlines
- New system under optimization would meet region's transportation needs at Sea-Tac as the Airport continues to grow

ALTERNATIVES AND IMPLICATIONS CONSIDERED

Alternative 1) – Proceed with a recapitalization program. This involves replacing existing EDS equipment with new and adding equipment as necessary without changing baggage conveyance or configurations. It will result in an additional square footage of the building footprint and reduction in the number of operating Airline gates. Current baggage throughput and capacity will remain the same until 45 MAP. This alternative does not meet the post-45 MAP capacity, and in order to meet additional capacity, an optimization program would need to be enacted. **This is not the recommended alternative.**

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Alternative 2) – Proceed with an optimization program. The Airport will utilize the available TSA funding to solve their near-term problems by consolidating their inspection facilities to a single baggage handling system, which were previously six separate systems. Optimization would accommodate the Airport’s near and long-term baggage handling systems’ challenges, as well as meeting the anticipated capacity requirements for 45 MAP, and ultimately 60 MAP in 25+ years. **This is the recommended alternative.**

ATTACHMENTS TO THIS REQUEST

- None.

PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

- August 20, 2013 - The optimization baggage project was one of several listed within the preliminary Business and Capital Plan briefing on the 2014 budget.
- August 20, 2013 - Commission briefing for follow-up questions and answers on the baggage optimization program at the Airport
- August 6, 2013 - Commission briefing on the near-term and long-term challenges related to handling checked baggage at the Airport.
- January 22, 2013 – The Commission authorized \$5,000,000 for staff to begin design, to take design to 30%, and to enter into an agreement to allow reimbursement from the federal government to the Port for eligible elements of the 30% design work.
- January 8, 2013 – Baggage Systems briefing.
- August 14, 2012 – Baggage system recapitalization/optimization was noted in the 2013 Business Plan and Capital Briefing as a significant capital project not included in 2013-17 capital program.
- August 7, 2012 – Baggage system recapitalization/optimization was referenced as one of the drivers for the need to develop an Airport Sustainability Master Plan.
- June 26, 2012 – The Airport’s baggage systems were discussed during a briefing on Terminal Development Challenges.
- May 10, 2012 – TSA’s interest in a national recapitalization/optimization plan for all baggage screening operations was referenced in a design authorization request for the C60 – C61 Baggage Handling System Modifications Project.