



**COMMISSION
AGENDA MEMORANDUM**

Item No. 7e

BRIEFING ITEM

Date of Meeting October 25, 2016

DATE: October 18, 2016

TO: Ted Fick, Chief Executive Officer

FROM: Jeffrey Brown, Director, Aviation Facilities and Capital Program
Wendy Reiter, Director, Aviation Security, Airfield Security
Wayne Grotheer, Director, Aviation Project Management Group

SUBJECT: Baggage Optimization Project Update

EXECUTIVE SUMMARY

The Baggage Optimization project increases screening capacity for greater baggage volumes, increases flexibility to allow bags to be checked in anywhere in ticketing and be conveyed to any makeup device, meets a minimum-connect-time goal, and increases energy efficiency. The project was scoped in 2012 to accommodate 45 Million Annual Passengers (MAP) which was projected to be an adequate level through 2027 based on growth projections at that time. Due to unprecedented growth at the Airport, we now expect to hit 45 MAP this year, more than ten years earlier than anticipated. Fortunately the project was designed to be expanded to handle larger volumes in the future, but we now need to expand immediately. Commission authorization will be sought later this year to increase the project scope to design and construct the new system capacity beyond 45 MAP.

A major project risk includes low contractor interest and inflated pricing as contractors have many other projects to pursue. The project team has held two contractor informational meetings and will hold two pre-bid meetings prior to bid opening. By advertising in the fall of 2016, the project will become one of the first large baggage projects currently known in the U.S. to seek contractors. Approximately 10-12 other large baggage projects of similar size and scope are to be advertised throughout the U.S. over the upcoming years.

BAGGAGE OPTIMIZATION PROJECT UPDATE

This project will occur in four phases. Project Phase 1 was advertised for bids on October 13, 2016 and will begin construction in the second quarter of 2017.

Small business goals were also evaluated and set for the Phase 1 construction contract. The Small Contractors and Suppliers requirement is 5%, the Small Business Enterprise goal is 10%, and the total requirement/goal is 15%. (Percentages of total bid amount.)

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This project is currently within the allocated budget to provide the 45 MAP system as currently scoped; however, growth rates exceeding forecasts at the time of the Baggage Optimization scoping require expanding to project scope to provide a 60 MAP system. A rough order of magnitude (ROM) cost estimate has been prepared by the designer to provide a system that will serve between 60 and 66 MAP. The total ROM estimate is \$136,000,000. The ROM estimate was prepared to include:

1. Ticketing mainlines
2. Sortation mainlines
3. EDS Shunts
4. Additional Baggage Inspection Tables in Central Screening area
5. Additional conveyor queues in Central Screening area
6. Two South Satellite make-up devices and associated sortation lines
7. Two new outbound make-up devices in International Arrivals Facility

The ROM estimate does not include:

1. No refurbishment of existing makeup units is included in the Baggage Optimization project.
2. This scope of work will address added makeup to maximize within available space, but the system will still have a shortage of 27 cart positions. This scope will add two makeup devices in the new International Arrivals Facility and two makeup devices in the South Satellite. Utilizing the South Satellite make-ups will require installation of a feed line in South Satellite tunnel- currently a separate Status 2 project and not included in this estimate (\$14 million).
3. No early bag storage is included in this scope of work.
4. No RFID technology is included in this scope of work.
5. This scope of work does not include inbound baggage or claim devices.
6. This scope of work does not modify the current C92 system.
7. This scope of work does not include demolition at South Satellite or IAF screening.

The decision to expand beyond 45 MAP is not critical to Phase 1 construction, but is critical to subsequent phases and needs to be determined in Q2 2017.

PROCUREMENT EXCELLENCE

The project team had worked with the Procurement Excellence team to develop a total cost of ownership (TCO) bid adjustment for three components of the Phase 1 baggage system. The objective was that determining lowest bid amount would include adjustments to bid amounts to offset increased upfront costs of lower TCO equipment. The original outcome of the TCO analysis included adjustments which were less than 2% of the Phase 1 engineer's estimate for any given component. The total value of the analyzed components was close to 5% of the engineer's estimated bid amount. Staff consensus was that the bid adjustment would negatively affect bidder interest and may not be developed sufficiently for use in public works bidding. Because the adjustments were low relative to the estimated bid amount, the risk of

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chilling bidder interest and resulting inflated bid amounts outweighed the potential realized cost savings. However, the project team will continue to develop the TCO adjustments for possible use during the Phase 2 construction procurement. These adjustments will not be used for the Phase 1 construction contract procurement.

SCHEDULE AND BUDGET

The Baggage Optimization Phase 1 permitting documents were reviewed and prepared for advertisement on schedule. The design was reviewed by the Airport Building Department and Central Procurement Office. Comments from these reviews have been received and incorporated into the final design where appropriate.

The current schedule shows the project occurring in four phases. Phase 1 advertised for bids on October 13, 2016. Project bids will be due December 13, 2016.

Demolition for the pre-work needed before the start of Phase 1 construction will begin in October. Initial Phase 1 pre-work includes the construction of a make-up unit as well as an odd-size baggage screening device. When complete, this pre-work will save the project five months of time within the schedule, as well as utilize Port Construction Services, Port Maintenance, and small businesses.

Phase 1 Beneficial Occupancy is scheduled for Q2, 2019. The overall project is currently scheduled for the final phase to obtain Beneficial Occupancy Q4, 2023. The Checked Baggage Optimization project is on schedule to complete the original scope on time.

The budget summary for the project to date is as follows:

Total Project Budget	\$ 319,050,000
Total TSA Contribution	\$ 93,220,422
Total Commission Authorization to Date	\$ 135,375,000
Amount Spent to Date (as of 10-4-16)	\$ 17,627,471
TSA Design Reimbursement to Date (as of 10-4-16)	\$ 5,671,476

The Checked Baggage Optimization project is on budget as originally scoped.

ADDITIONAL BACKGROUND

The highly utilized and aging baggage conveyor system is one of the most complex systems in the Airport. All baggage screening systems were modified in rapid fashion immediately after the events of September 11, 2001; however, there are remaining portions of the systems that are over 25 years old.

In its current state, the Airport system is not a single system, but rather many separate systems that bags must manually transfer between. After the events of September 11, modifying the separate systems was the best way to rapidly increase security. At the time, each separate

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system was designed to include a nominal amount of passenger growth. Over the ensuing years as specific airline needs emerged or as airlines were relocated, the separate systems have been updated to meet the carriers' specific operating needs. Although various baggage projects have been implemented to address operating needs over the years, the systems continue to have limited capacity to meet both near and long-term growth needs of the Airport.

The Airport is faced with three problems: 1) the existing separate systems have major subsystems, such as controls, that are aging and must be replaced; 2) there is limited ability for the current systems to be expanded in their current configuration to adequately meet growing passenger demands; and 3) separate systems lack interconnectivity between ticket counters and all of the aircraft gates. The Airport is expected to see continual passenger growth and is faced with a major and near-term baggage systems challenge due to both the need for and complexity of keeping existing system operations on-going during construction, and major space constraints on expanding the systems' capacity to meet future growth.

Although the challenge is large, the Airport is fortunate that the Transportation Security Administration (TSA) has decided to invest to improve their operations at Sea-Tac. Having multiple screening systems in six locations results in the TSA having higher operating costs than what they will have with a consolidated baggage system. Therefore, the Baggage Optimization project is designing the new system to accommodate Port of Seattle needs for operational flexibility while meeting the TSA needs for modern baggage screening equipment and reduced operating costs for baggage screening. Airport and TSA staffs have been working cooperatively during design and the TSA has approved the final design of the optimized system.

Longer-term demands on the Airport's baggage program include the ability to handle approximately 60 million annual passengers (MAP). The results of the Sustainable Airport Master Plan (SAMP) are not yet available; however, the baggage design team is engaged and working with the SAMP team. Should the SAMP result in a recommendation for a new north terminal, additional baggage system improvements beyond the current scope of this Baggage Optimization project will be required. If there is a new north terminal, we would expect that new terminal would have its own baggage screening system, with interconnections between the new one and the current one for transfer baggage, since the baggage transport distances from another terminal to/from the central baggage screening location are too great to have central baggage screening for the entire Airport and meet airline operational needs. The design has therefore focused on capability to readily enable adding to the current design target of supporting 45 MAP. Thus inherent in the overall design is the flexibility for later projects to add additional conveyor and equipment to increase the capacity of the centralized TSA security screening and search areas. SAMP may also provide relief by providing additional new space for baggage facilities in future remote concourses, thereby relieving pressure within the constrained footprint of the existing terminal baggage area.

ATTACHMENTS TO THIS BRIEFING

Presentation slides

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PREVIOUS COMMISSION ACTIONS OR BRIEFINGS

July 12, 2016 – Commission Authorization to advertise for construction Phase 1.

June 28, 2016 – Baggage Quarter 2 Briefing.

May 17, 2016 – Baggage Quarter 1 Briefing.

March 8, 2016 – Commission authorized the Chief Executive Officer to amend the Baggage Optimization Design Services contract.

January 12, 2016 – Commission authorized the Chief Executive Officer to advertise, award, and execute a major public works contract for the C60 Interim Baggage Handling System Project in the amount of \$9,823,000.

December 4, 2015 – The Commissioners authorized design for the work elements in the C60 Interim Baggage System Project; use of Port crews to self-perform work; purchase equipment for various work elements; amend the BNP Handling System Design Indefinite Design Indefinite Quantity (IDIQ) contract by \$3,500,000; and execute a contract to provide proprietary software services for the integration of upper and lower level controls and software programming on the baggage handling systems, campus wide.

June 23, 2015 – Checked Baggage Optimization Project Briefing.

September 10, 2013 – The Commission authorized the execution of an Other Transaction Agreement (OTA) with TSA for reimbursable costs for design; construction, and to authorize \$15 million to continue from 30% to 100% design; and execute a consultant service agreement for program management support services.

August 20, 2013 – Response to questions from Commissioners asked during August 6, 2013 Commission Meeting.

August 6, 2013 – The Commission was briefed on the near-term and long-term challenges related to handling checked baggage at the Airport.

January 22, 2013 – The Commission authorized \$5 million for staff to begin design through 30%, and to enter into an agreement to allow reimbursement from the federal government to the Port for eligible elements of the 30% design effort.

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.