



SEATTLE-TACOMA INTERNATIONAL AIRPORT

Seattle, Washington

Baggage Optimization Project

Port Of Seattle | 2012 – Projected Completion 2024

The Port of Seattle has retained BNP Associates, Inc. as the Prime Consultant and Designer of Record to develop Design Drawings for the Checked Baggage Inspection System Program at the Seattle-Tacoma International Airport (Sea-Tac). The program includes an overall replacement of the entire baggage handling system. This project has a very complex phasing plan that does not affect the airlines during the project construction period. BNP was commissioned to provide a Pre-Design Preliminary Analysis Report, an incremental development plan for the next 15+ years and a growth from 37 million annual passengers (MAP) to 66 MAP and a long-term planning development strategy for the airport needs. BNP was retained to continue to develop the preferred concept with direction and input from the Port of Seattle, the Airlines and the TSA.

As part of the initial design effort, a flight schedule analysis was performed and refined to identify the corresponding baggage screening throughput requirements for Sea-Tac. The analysis utilized the then-current passenger volume of 37 MAP through Sea-Tac and, based upon the PGDS v5.0 guidelines and growth projections identified by the Port of Seattle, TSA, and FAA, identified the requirements for 45 MAP and 66 MAP. As discussed during the concept design review meetings, the system analyses were performed with the assumption that CTX 9800 / CTX 9800 DSi EDS machines would be installed and be capable of screening bags at 684 bags per hour per machine.

The Checked Baggage Inspection System (CBIS) optimization design consolidates the six-independent screening and baggage handling systems into a single centralized CBIS and Checked Baggage Reconciliation Area (CBRA) located in the middle of the existing terminal and a new common use baggage sortation system. The area identified for this concept includes 21,000 square feet of the existing basement level and 28,000 square feet of the existing apron level, with the necessity to construct a building extension for an additional 3,800 square feet.

The CBIS was designed to integrate up to four pods of four EDS machines each, for a total buildout of 16 EDS machines - sufficient to accommodate the calculated 45 MAP requirements of 11 EDS machines by year 2027 as well as future expansion to 66 MAP that would require 16 EDS machines. Our design required relocation of existing tenants and facility and designing them new spaces during construction. As part of the optimized system, the design team implemented additional functionality to decrease in-system transit times, decrease congestion in the bagroom, decrease apron level cart traffic and cart transit times, increase make-up presentation, increase reliability and capacity, eliminating signal point of failures and plan future right of ways for ease of expansion in a rapidly growing airport. The design team has also investigated the practicality and cost benefit of a common use inbound system, early bag storage and alternate technologies that may be useful in improving the system's performance and longevity.

Phase 1 of construction completed in 2019; the construction of the overall system is anticipated to complete in 2024.



ASSOCIATES, INC.

BNP PROJECT TEAM

David Mecartney, Principal
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Jimmy Royston, Project Manager

BHS CONSTRUCTION AMOUNT

\$575+ Million

REFERENCE

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SCOPE OF SERVICES

Airport-Wide Capacity Study
(Projected Growth Analysis)
Conceptual Design
Design Development
Contract Documents
Bidding and Procurement
Construction Administration
Testing/ Commissioning