



Dallas/Fort Worth International Airport Terminal Renewal & Improvement Program



DALLAS/FORT WORTH
INTERNATIONAL AIRPORT

Client Name: URS Corporation / DFW Airport

Date Started: October 2009

Date Completed: January 2011

Dallas/Fort Worth International Airport (DFW) is undertaking an extensive \$1.9B terminal renewal program to update the four original terminals (A, B, C, and E). While 70% of the effort involves “back of the house” updates to mechanical, electrical, etc., the passenger processing areas will also be renovated to improve passenger flows and support demand for the next 15-20 years.

TransSolutions was enlisted to perform simulation modeling to determine sizing and facility requirements for the passenger processing areas in the renovated terminals, including options for additional gates for the primary carrier. Performance metrics were established to determine Level of Service (LOS) and capacity of the following areas in all four terminals:

- Passenger check-in / ticketing – recommended numbers of agent positions, bag drop positions, and self service devices (kiosks) for all 11 check-in lobbies
- Security Screening Checkpoints (SSCP) – recommended number of lanes for 12 checkpoints, including temporary checkpoints during construction
- Elevator/escalator vertical conveyance – recommended numbers of elevators and sizes throughout the four terminals
- Baggage claim – determined capacity and LOS of all bag claim areas

In addition, TransSolutions performed extensive roadway/curbside analyses for Terminal E, including the proposed ultimate design as well as construction phasing. Approximately one-third of the terminal will be closed for renovation during each phase of the three-year construction project, yet the terminal roadways and curbsides will still be supporting 100% vehicle demand. TransSolutions’ analyses was a powerful tool to collaboratively develop, analyze, and recommend solutions with various Airport business units, including Customer Service, Parking, Transportation, and Public Safety.

Throughout the project, TransSolutions worked closely with the carriers, architects, and Transportation Security Administration (TSA), in addition to the Airport staff. Construction phasing was also a concern as individual SSCPs would be closed for sequential phases over the seven-year period. TransSolutions evaluated the capacity, queues, and wait times for each major construction period to determine if temporary SSCP lanes would need to be added to accommodate demand during particular construction periods.

Finally, changes and updates to terminal parking garages are being considered. TransSolutions was asked to perform several versions of passenger flows to ensure that vertical circulation capacity being proposed would be sufficient along with adjacent terminal entry/vertical circulation facilities.

Statistics were reported on passenger wait times, queue lengths, and associated level of service (LOS), vehicle delays and congestions, and curbside LOS. For areas that LOS was unacceptable, the required number of resources need to meet the performance criteria was determined. This detailed analysis had a significant impact in helping the project stakeholders assess the operational viability of the chosen design and gave them confidence that the terminal and roadway would provide passengers with the desired LOS.