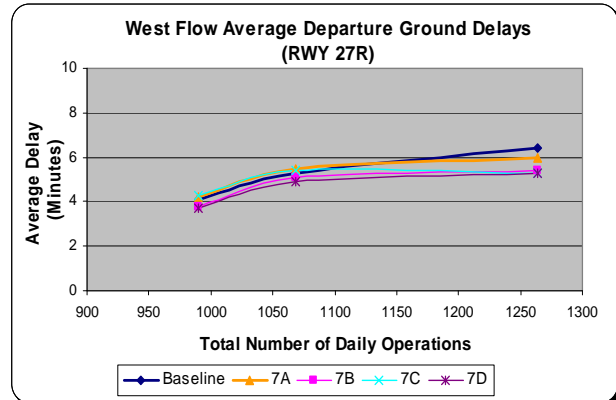


## Airfield Modifications Simulation Analysis



*Proposed Airfield Modifications at Fort Lauderdale International Airport*



*Resulting Departure Ground Delays at FLL for West Flow Scenarios*

**Client Name:** Reynolds, Smith & Hills, contractor to Broward County Aviation Department

**Date Started:** August 2007

**Date Completed:** November 2007

Due to greater than projected passenger growth at Fort Lauderdale-Hollywood International Airport (FLL), Broward County Aviation Department (BCAD) had proposed several taxiway improvements near Runway 9L/27R to reduce congestion and aircraft delays. As requested by BCAD and Reynolds, Smith & Hills (RS&H), TransSolutions simulated and analyzed the FLL airfield movement with proposed taxiway improvements for three demand levels to quantify the benefit of each proposed taxiway improvement. The results from TransSolutions' analysis were used in the benefit-cost analysis performed by RS&H in order to make an informed decision concerning which taxiway improvements would be constructed.

TransSolutions collected data on aircraft pushback times, taxi speeds and flows, landing and takeoff rolls, runway interoperability times, and overall airport operations. This data, along with earliness and lateness data obtained from the Bureau of Transportation Statistics and discussions with FLL Air Traffic Control personnel were used to develop a full understanding of the operations and issues that the airport faces in trying to mitigate congestion and delays.

With this information, TransSolutions updated a SIMMOD simulation model of the existing FLL runway and taxiway network used in a previous analysis. This baseline model was then modified to reflect seven airfield improvement scenarios – consisting of either additional high-speed runway exits to reduce runway occupancy time for arriving aircraft or of taxiway extension near the departure queue to allow more flexibility when staging departing aircraft. The delays from these seven scenarios were then compared to the delays of the baseline model in the benefit-cost analysis.

Based on the analysis, BCAD is pursuing one or more of the high-speed exit improvements and a taxiway extension near the departure queue. All improvements being pursued provide FLL an increase in capacity and reduction in delays, and provide the control tower increased flexibility when staging aircraft for departure.