



Project Summary

Texas Department of Transportation

0-6265: Landside Freight Access to Airports - Challenges & Solutions

Background

Airports and air freight transportation will play an increasingly important role in the economic health and prosperity of the Texas economy. In turn, landside freight access to airports will become increasingly important to the Texas economy as the adequacy and efficiency of such access impacts freight operations and thus the economic viability of individual airports. Past research has focused on airport access for air travelers rather than freight. There is a need for a comprehensive, up-to-date, and detailed assessment of current and future freight access issues and needs at all significant Texas airports.

The primary objective of this research was to conduct a series of case studies involving Texas airports with current or potential freight activity and identify a set of relevant best practices that can be applied at other airports around the state or nation.

What the Researchers Did

Researchers conducted a thorough qualitative and quantitative literature review, which yielded a significant amount of data related to airside freight movement to and from Texas airports. Through the literature review the research team determined that there has not been a significant amount of research performed directly related to landside freight access to airports.

The research team performed case studies at ten airports – nine in Texas and one in Oklahoma – using the following categories:

- Large Metro – Inner City/Surface Street Access,
- Large Metro – Urban Fringe/Direct Freeway Access,
- Dedicated Freight,
- Small Metro, and
- General Aviation.

The case studies included interviews with public and private sector stakeholders, such as local government planners and engineers, airport directors/managers, Texas Department of Transportation (TxDOT) staff, and shipping company representatives. Researchers interviewed additional stakeholders from agencies that were not part of the case studies. Interviewees provided valuable insight into field conditions, procedures, and practices based upon their perspectives and experiences, which were incorporated into case study investigations and helped develop a list of best practices. These best practices include solutions to planning and roadway issues that airports, local agencies, and TxDOT can use to improve landside freight access to airports.

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What They Found

Freight activity levels and types of landside freight access vary among Texas airports. The three busiest freight activity airports (Dallas-Fort Worth, Houston George Bush Intercontinental, and Fort Worth Alliance) handle approximately 75 percent of the total air freight traffic in the state. Any airport, regardless of its location or relative level of freight activity, is likely to need to address a number of the issues identified through the case studies and interviews. The case studies, which included at least one airport in each category, identified the following best practices overall:

- Include all stakeholders early in airport freight center development or expansion.
- Consider landside access when locating airside facilities, particular at general aviation airports. Planning for future freight activity should address future plans and needs in master plan updates.
- Design directional signage so that it is clear, easily visible, precise, unambiguous, strategically located, and adequate but not redundant in number to provide optimal wayfinding.
- For freight center development, allow sufficient space for on-site truck maneuvers as well as parking for tractors and trailers.
- Provide separate freight vehicle access to minimize comingling with passenger traffic and resulting conflicts.
- Employ intersection geometrics sufficient to accommodate long-wheelbase trucks.
- Minimize distances between nearest controlled-access highways and freight centers, and select connection routing with minimal incompatible land uses.
- Address intersection and access management issues when improving the existing roadway network.
- Identify all potential funding sources when improving freight access, including public-private partnerships.

What This Means

Agencies with transportation planning responsibilities, including airports, can apply best practices documented through this research and thereby improve landside freight access in several ways. Improved landside freight access to airports is not a “one size fits all” situation. Airports and transportation agencies must select the best practices that can address their specific concerns. For example, a particular airport may determine that only one issue, such as wayfinding, is what it needs to address. Several examples in the case studies and best practices provide interested parties with real-world applications of successful treatments.

Use of the best practices identified through this research when improving landside freight access at airports will improve freight movement efficiency and benefit the well-being of the general public.

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