

0-6851: Strategies for Managing Freight Traffic through Urban Areas

Background

Most urban areas around the country are facing serious mobility challenges, including an increase in travel demand, limited capital improvement resources, and a need to improve safety. Texas is seeing unprecedented urban traffic growth. Increasing traffic is generally a good sign of improving economic health, but the limits to urban highway capacity can often hinder freight movement through urban areas and freight deliveries to and from production sites within the cities. This project examined the potential of implementing several proven strategies for managing freight movement in specific urban areas through the use of advanced transportation modeling tools and other evaluation methods.

What the Researchers Did

Researchers conducted an extensive literature review of the characteristics of urban freight movement and the impacts of freight movements on congestion. The literature review provided a shortlist of freight management strategies that were feasible and could be implemented within Texas. Freight management strategies considered included:

- Land- and route-based strategies.
- Time of day strategies.
- Intelligent transportation systems and active traffic management strategies.
- Land use practices and policies promoting/facilitating freight movement.

Once identified, specific freight management strategies were analyzed based on the applicability of each urban area. To assess the impacts, researchers developed simulation-based regional models of each urban area to determine the impacts on congestion and travel time. Researchers also developed three specific guidelines:

- Modeling guidelines.
- Selection and deployment characteristics.
- Policy implications.

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What They Found

The strategies that were most applicable based on the urban areas analyzed include:

- **Dallas Fort-Worth Region:** freight advanced traveler information systems for incident management, off-peak freight incentive on managed lanes (TEXpress), and smart truck parking.
- **Houston:** freight advanced traveler information systems for incident management, off-peak freight incentive on high-occupancy toll lanes, freight bypass designation, and grade separation.
- **El Paso:** dedicated/exclusive truck lanes and incident management using advanced traveler information systems.
- **Austin:** advanced traveler information systems and freight signal priority.
- **Binational:** truck route diversion, geometric design and operational improvements, and designated truck routes.

What This Means

While not a substitute for large capacity expansion projects, freight management strategies can be cost-effective methods to prolong the life and maximize the efficiency of the infrastructure, postponing the need for major expansion projects. Some freight management strategies can be flexible enough to be implemented under temporary conditions in work zones and later incorporated into the permanent operational infrastructure of a facility. Incorporation of these strategies along with other solutions can improve the ability of the Texas freight system to perform until more capacity can be built or freight shifted to alternative modes of transport.

For More Information

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