Project Summary

Texas Department of Transportation

0-5345: Regional Public Transportation Solutions for Intercity Commute Traffic

Background

Texas' growing population and expanding urban areas, as well as new legislation at the federal and state levels, are presenting new challenges and new opportunities for public transit services in the state. Many travel distances for commutes, medical care, education and social services, and other purposes are extending beyond traditional transit service areas. New transit funding programs require coordination among transit, human service, and workforce interests.

This project, involving researchers from four Texas universities developed recommendations, methodologies, and guidelines for regional transit coordination in Texas. The research focused on three topics:

- transit coordination guidelines,
- analysis of Medical Transportation Program (MTP) service data, and
- analysis of travel demand along intercity corridors.

What the Researchers Did

Texas Southern University/Texas Transportation Institute. Researchers reviewed prior studies on transit operations and coordination, public transit agency plans, and the regional transit coordination plans that were developed by 24 Texas regions in 2006. Additional information was obtained through interviews of transit agency staff, both in Texas and elsewhere in the United States. This information was used to develop guidelines for providing better coordinated, more integrated public transportation across regions. The resulting guidebook describes tools, strategies, and organizational structures that are working in communities across America. The researchers also described some of the best practices in deploying transit traveler information systems.

Prairie View A&M University. Researchers used information from TxDOT's Medical Transportation System database to model demand for non-emergency medical trips using a Geographic Information System (GIS). A user friendly web page was developed to allow users to sort and view medical trip data by origin and destination. The information can then be used to better understand several aspects of MTP transportation services.

Texas State University. Researchers used data from the U.S. 2000 Census and from travel surveys conducted by TTI to develop a GIS-based analysis of travel needs along the Austin-San Antonio corridor. Commute volumes and patterns were analyzed for five counties – Williamson, Travis, Hays, Comal, and Bexar. Researchers focused on traffic patterns that crossed city and county boundaries.

Research Performed by:

Texas Southern University (TSU)

Prairie View A&M University (PVAM)

Texas State University-San Marcos (TSUSM)

Texas Transportation Institute (TTI),
The Texas A&M University System

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Researchers also reviewed the transportation demand estimation methods used in four representative coordinated public transportation plans (out of the 24 regional plans developed in Texas). Based on the methods used in these plans, plus Texas State's GIS-based method, researchers developed recommendations for estimating regional intercity travel demand.

What They Found

Regional transit coordination arrangements were found in three basic configurations:

- New regional transit entity. Some areas have established a regional transit service organization encompassing multiple counties and cities, sometimes meshing transit services that were originally provided by multiple transit providers.
- Umbrella agency. These regions create an organizational entity responsible for coordinating the services provided by its member agencies. Transit providers under the umbrella agency maintain their own operations, and they are represented on and financially contribute to the umbrella agency.
- Joint or coordination agreements. Member agencies in these regions remain autonomous while agreeing to coordinate certain aspects of service and/or operations. As one example, the Greyhound intercity bus company has developed guidelines and agreements for interlining its service with local transit services.

The GIS-based systems developed by both Prairie View A&M University and Texas State University proved to be effective tools for analyzing the travel patterns of Medicaid-related trips and commuter trips, respectively. The Texas State University analysis discovered that commute flows between urban and rural areas in the five-county Austin-San Antonio region account for about 20 percent of the total commute traffic, and inter-county commute accounts for 13 percent of the total commute traffic.

What This Means

Public transportation entities around the nation are forging partnerships that facilitate travel for transit riders across large metropolitan areas beyond historical geographic, jurisdictional, or political boundaries.

The guidebook developed as a product of this study includes an overview of transit coordination options, recommendations for developing coordination plans, recommendations for coordinating transit provider information, and descriptions of the GIS methods developed for analyzing regional transit demands for commute and non-emergency medical trips.

Key recommendations in the guidebook include the following:

- When beginning any coordination effort, define the desired outcome. Describe service, efficiency, and cost-effectiveness goals and determine how coordination among transit stakeholders can help achieve improvements.
- Involve as many stakeholders as possible throughout the process, to maximize potential resources and to build support in the community.
- Implement new systems and services gradually, making sure each new "phase" works smoothly before moving on.

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