

Focus on Research

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"Focus on Research updates engineers and technicians on items of interest upcoming in active TxDOT research projects."

TRANSBORDER Database Created as a Tool for Planning

Many changes are expected in border transportation patterns as a result of both the North American Free Trade Agreement and the International Surface Transportation Efficiency Act (ISTEA) of 1991. The latter, in particular, encourages changes in transportation modes, especially for commercial traffic. Therefore, a dynamic and binational transportation planning approach is needed, one that consistently monitors traffic levels and economic indicators within the border region. Implementation of this approach requires availability of a comprehensive, binational database, updated continuously as new data become available and as new issues are identified.

Project 7-2932, *Texas-Mexico Border: Transportation Planning Guidelines and Automated Database*, furnishes to TxDOT up-to-date, conveniently reduced data on transportation-related topics. This database, called TRANSBORDER, contains information sufficient for regional transportation planning studies as well as background information for more detailed studies. Researchers first identified and then prioritized critical issues that may require TxDOT attention. Data analysis is also part of the project scope. The scope of the data analysis has been altered to emphasize commodity flow and de-emphasize traffic forecasts at the Texas-Mexico border, unreliable because of the devaluation of the peso. Mexican commerce data have provided information regarding commodity origins and destinations and surface transport modes.

Currently, researchers are writing three project reports, whose topics are:

- ◆ The database developed
- ◆ Data analysis
- ◆ A summary of findings

The first of these reports will contain information related to data sources, as well as explanations of data collection procedures. Data limitations and reliability, as well as any caveats regarding data use, are emphasized in this report. The second report will discuss the results of data analyses, especially the assessment of trade and traffic forecasts and of current modal split. The executive summary will emphasize the effects of peso devaluation on transborder traffic and the role of Texas as a transportation corridor for NAFTA commerce.

This project started in September 1994 and ended in August 1995.

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A New Focus in TxDOT Research

Research Management Committees (RMCs)

Effective June 1, 1995

RMC 1	Management and Policy
RMC 2	Multimodal Transportation
RMC 3	ROW, Hydraulics, and Environmental Conservation
RMC 4	Roadway Planning and Design
RMC 5	Structures
RMC 6	Pavements
RMC 7	Materials
RMC 8	Construction and Maintenance
RMC 9	Traffic Operations

Distress Models for Rigid Pavements

TxDOT needs distress models related to rigid pavements for TxDOT's pavement management information system (PMIS). Implementation of the formal PMIS will take place in two stages, the first addressing the statewide system and the second addressing the district level.

The objectives of Project 7-1908, *Texas Pavement Management System*, are to:

- ◆ Develop appropriate rigid pavement models for use in the Texas PMIS regarding:

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- ◇ Pavement performance
- ◇ Preventive maintenance
- ◇ Rehabilitation, heavy rehabilitation, and reconstruction treatments
- ◆ Investigate the feasibility of

Meeting the Demands for Traffic Forecasting

Passage of the CAAA and ISTEA increased both the demands and the complexity of the transportation planning process. Consequently, there is a growing need for urban, intercity, and intermodal traffic forecasts to support transportation planning activities. As a result of a previous project (0-1235, *Improving Transportation Planning Techniques*), significantly better planning methods are now available to TxDOT. Timely implementation of these methods will require additional training, technical support, and probably refinement.

Project 0-1478, *Implementation of Transportation Planning Methods*, will:

- ◆ Provide TxDOT staff with classroom and on-the-job training
- ◆ Refine methods and procedures as a result of in-use experience
- ◆ Document in-use planning and traffic-forecasting procedures

Three tangible benefits are expected from this project:

- ◆ Implementation of transportation-planning procedures developed under Project 0-1235
- ◆ Integration of these procedures into day-to-day TxDOT operations
- ◆ Training of TxDOT staff in use of these procedures.

Procedures have been developed to estimate demographic data using TRIPCALS software, and the software is being modified to output productions and attractions in the format required for input to TRANPLAN. Development is nearing completion of the standard mode choice model for the TxDOT travel forecasting system. Work has also been done to reconcile FHWA's HPMS traffic forecast projection requirements with TxDOT practices.

Project 0-1478 started in September 1994 and ended in August 1995.

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expanding the SHRP database to include additional pavement sections; this would give Texas a self-contained database for future PMIS efforts

- ◆ After an analysis of structural data, produce structural performance models for rigid pavements for use in the Texas PMIS
- ◆ Assimilate information regarding environmental and weather factors and their impact on rigid pavement performance in Texas

Guidelines developed during this project will be useful if Texas decides to systematically collect deflection data on rigid pavements. Right now, coefficients for the PMIS performance curves continue to be updated and forwarded to TxDOT for immediate implementation in the TACS tables. Additional coefficient updates will be provided as improved models are developed that take into account environmental and structural variables. An interim report (1908-3) makes recommendations regarding the usefulness of FWD PMIS data collection on rigid pavements in Texas; it also recommends an optimum sample size for collection and estimates the cost of the collection effort. This project started in January 1992 and ended in August 1995.

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Focus on Research

The purpose of *Focus on Research* is to update engineers and technicians on items of interest in active or upcoming projects. The contents of the various articles do not necessarily reflect the official views of the FHWA or TxDOT.

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