

**JUST THE FACTS**

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## CHARACTERIZATION AND DEVELOPMENT OF TRUCK LOAD SPECTRA AND GROWTH FACTORS FOR CURRENT AND FUTURE PAVEMENT DESIGN PRACTICES IN LOUISIANA

### PROBLEM

The Louisiana Department of Transportation and Development (LA DOTD) currently collects traffic data from various available sources (static weight stations, automatic vehicle classifiers, weigh-in-motion sensors). This data must be converted to equivalent single axle loads (ESALs) for use in the current AASHTO 1993 pavement design procedure. The conversion involves application of appropriate equivalency factors. The new Mechanistic-Empirical (M-E) Pavement Design Guide, developed under NCHRP 1-37A, deviates from the practice of using ESALs to one relying on axle weight frequency by axle type. It requires information on the full array of axle weights, spacing, and types actually collected on the road, along with hourly,

monthly, annual, and seasonal traffic variations.

### OBJECTIVES

This study will evaluate Louisiana's current traffic characterization techniques for their use in pavement design, develop traffic load spectra from available truck traffic data sources, update Louisiana's load equivalency factors, and make recommendations for Louisiana's future implementation of the M-E pavement design guide.

improved. The researchers will obtain the traffic data currently collected and stored in Louisiana, and adjacent states if



### SPECIAL POINTS OF INTEREST:

- **Problem addressed**
- **Objectives of research**
- **Methodology used**
- **Implementation Potential**

### METHODOLOGY

After a thorough review of current traffic data collection practices from within and outside of LA DOTD, including interview of personnel from other state agencies and FHWA, the researchers will assess current traffic data collection processes and identify areas that need to be

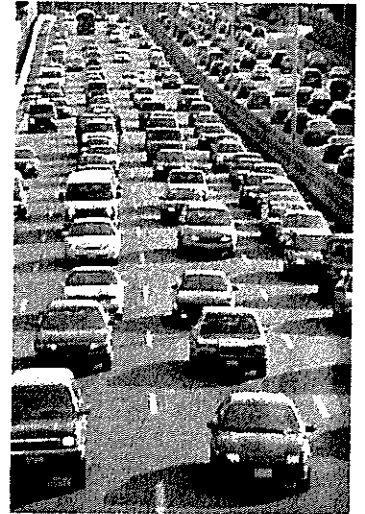
needed, and evaluate its quality and sufficiency for current and future design procedures. Problematic issues will be documented, and recommendations for corrective action will be made accordingly.

The aforementioned assessment and evaluation will form the basis for developing a strategic plan to implement the M-E pavement design guidelines. This plan will propose the optimal means by which LA DOTD can transition from its current traffic data collection system to a new system that adequately supports the M-E pavement design

guide. The plan will provide methods for improving traffic data collection techniques and focus particular attention on those aspects of traffic data collection that relate to estimating axle weights.

At this stage, an interim report will be prepared and stakeholder feedback will be solicited. Based on feedback and available data, traffic load spectra, growth factors, and other parameters will be developed for use as primary M-E pavement design inputs. Corresponding updates to Louisiana's load equivalency factor tables will also be developed.

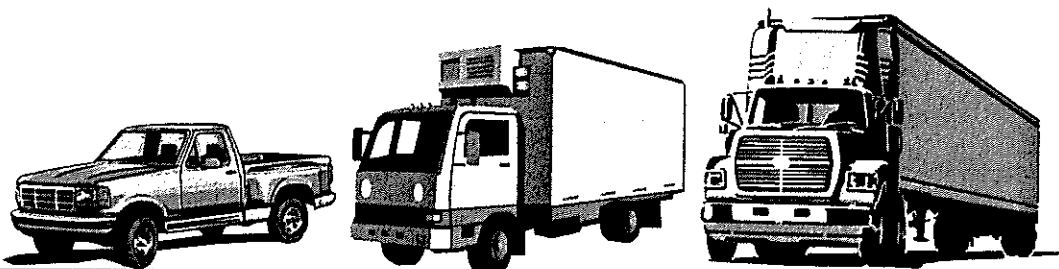
A final report documenting the entire research effort will be prepared. The final report will incorporate responses to stakeholder questions and concerns posed after release of the interim report. The final report will provide a tabular summary of load spectra figures, growth factors, and other relevant parameters. The tabular summary will be accompanied by a full outline of the methods used to develop the information. A final presentation of findings and training sessions for LA DOTD employees will be provided as needed.



### IMPLEMENTATION POTENTIAL

Through this research, a strategic plan for Louisiana implementation of the M-E pavement design guidelines will be produced. A tabular summary of load spectra figures, growth factors, and other relevant parameters will be provided.

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ESAL or Load Spectra ?