

# FACT SHEET



## RESEARCH PROJECT TITLE

*Development of Index Based Pavement Performance Models for Pavement Management System (PMS) of LADOTD*

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## STUDY TIMELINE

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## Louisiana Transportation Research Center

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## DOTD Evaluates and Integrates Pavement Management System Performance to Yield Savings

July 2015

### WHAT WAS THE PROBLEM?

A research study was initiated by the Louisiana Department of Transportation and Development (DOTD) in conjunction with the Federal Highway Administration (FHWA) to evaluate the overall performance and effectiveness of DOTD's Pavement Management System (PMS).

### WHAT WAS DONE?

In order to evaluate and potentially improve PMS operations, a two-phase research study was initiated. The objective of the overall study was to find the most cost-effective way to incorporate PMS into DOTD's regular operations and make PMS information available in a usable format for DOTD personnel. This objective would be accomplished by (1) identifying the needs of PMS users at DOTD, (2) establishing a uniform roadway identification system acceptable to all PMS users, and (3) evaluating/updating the existing pavement performance and treatment selection models.

During the first phase of the study, a review of current practices was conducted, including the highway classification system, location reference systems, distress data collection and storage, deduct points/distress indices, and remaining service-life calculations. A detailed survey of all district engineers and other departmental engineers was conducted to establish user needs. The survey addressed issues including types and accessibility of reports, the utility of PMS outputs, and the degree to which PMS users understand the benefits and potential cost savings associated with effective use of PMS data.

During the second phase of the study, a comprehensive evaluation of DOTD's pavement performance and treatment selection models was conducted using current and historical pavement distress data. Statistical analyses were used to generate models for prediction of pavement condition and evaluation of treatment performance.

### WHY SHOULD YOU DO IT?

Pavement performance and treatment selection models were established or updated for most distress types and then recommended for use. Prediction of Louisiana's pavement network condition has been greatly improved since the new models were programmed into the DOTD PMS database. Recommendations from this study have also led to improved communication regarding the use of PMS information.

### WHAT ARE POTENTIAL FISCAL IMPACTS?

The selection of pavement treatments based on pavement distress data and treatment selection models will facilitate the most cost-effective pavement treatment/preservation actions. Application of appropriate treatment typically extends the service life of a pavement; however, inappropriate treatment (e.g., cosmetic surface repair over a damaged pavement structure) can be a waste of maintenance funds. The use of calibrated pavement performance and treatment selection models should result in making the right repair on the right road at the right time.