

## **Expanding the Concept of Comprehensive Area Ratio Parameter to the South-Central States: Towards Simplifying the Structural Evaluation of Flexible Pavements at the Network Level Dataset**

Dataset available at: [https://digitalcommons.lsu.edu/transet\\_data/119](https://digitalcommons.lsu.edu/transet_data/119)

(This dataset supports report **Expanding the Concept of Comprehensive Area Ratio Parameter to the South-Central States: Towards Simplifying the Structural Evaluation of Flexible Pavements at the Network Level**)

This U.S. Department of Transportation-funded dataset is preserved by the Transportation Consortium of South-Central States (TRAN-SET) in the LSU Digital Commons Repository (<https://digitalcommons.lsu.edu>), and is available at [https://digitalcommons.lsu.edu/transet\\_data/119](https://digitalcommons.lsu.edu/transet_data/119)

The related final report **Expanding the Concept of Comprehensive Area Ratio Parameter to the South-Central States: Towards Simplifying the Structural Evaluation of Flexible Pavements at the Network Level**, is available from the National Transportation Library's Digital Repository at <https://rosap.ntl.bts.gov/view/dot/61759>.

### **Metadata from the LSU Digital Commons Repository record:**

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Abstract: The surface deflection bowl data collected through falling weight deflectometer (FWD) test is utilized by highway agencies in assessing the performance of the flexible pavement. However, a robust method to evaluate pavement sections utilizing FWD data from all the sensors is seldom developed. There is always a need for DOTs and highway agencies to have a simplified procedure, which can be directly implemented in agencies' databases. This study focuses on expanding and validating the concept of previously developed area ratio parameters towards the pavement section of South-Central States (Arkansas, Louisiana, New Mexico, Oklahoma, and Texas) in effectively analyzing the pavement performances. Simulation-based deflections are utilized to develop enhanced deflection-based parameters and to reduce the need for extensive FWD testing in the field. Ninety-seven pavement sections in these states are considered to implement and validate simplified procedures that will be readily available to various transportation agencies to evaluate their pavement conditions at the network level. Due to this purpose, a pavement ranking chart is proposed for the five South-Central states, which categorizes the pavement section into very good, good, fair, and poor pavement sections. Eventually, load-induced effects concerning developed parameters are effectively analyzed to predict the remaining service life of the flexible pavement structures. The developed methodologies will be helpful for DOTs and highway agencies to carry out the rehabilitation and maintenance work in time and estimate the budget required in these procedures.

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**Dataset description:**

This dataset contains 1 file collection described below.

**Dataset.zip:**

- Texas\_FWD Deflection.xlsx
- Oklahoma\_FWD Deflection.xlsx
- New Mexico\_FWD Deflection.xlsx
- Louisiana\_FWD Deflection.xlsx
- Arkansas\_FWD Deflection.xlsx

**File Type Descriptions:**

- The .xlsx and .xls file types are Microsoft Excel files, which can be opened with Excel, and other free available software, such as OpenRefine.

**National Transportation Library (NTL) Curation Note:**

As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (<https://ntl.bts.gov/public-access>) Section 7.4.2 Data, the NTL staff has performed *NO* additional curation actions on this dataset. NTL staff last accessed this dataset at [https://digitalcommons.lsu.edu/transet\\_data/119](https://digitalcommons.lsu.edu/transet_data/119) on 2022-05-23. If, in the future, you have trouble accessing this dataset at the host repository, please email [NTLDataCurator@dot.gov](mailto:NTLDataCurator@dot.gov) describing your problem. NTL staff will do its best to assist you at that time.