Research Project Title

RES2023-26: Field Performance Testing and Evaluation of the Constructed Inverted Pavements in Tennessee

Purpose of the Project

Tennessee Department of Transportation (TDOT) has long been trying to evaluate and adopt inverted pavement technology due to its significant cost benefits. TDOT wanted to use the inverted pavement on more than three projects in the past several years. However, the push has not gone beyond the letting stage due to a lack of confidence. The University of Tennessee, Knoxville, **recently conducted a TDOT research project (RES2020-12)** addressing inverted pavement. Based on the test section in the Vulcan Materials Company in Knoxville, the inverted pavement structure outperformed the conventional flexible pavement under the same loading, temperature, and environmental conditions after a two-year service for the heavy trucks.

Scope and Significance

The scope of work includes:
- Complete a periodical pavement condition survey.
- Evaluation of the physical properties of test sections by Falling Weight Deflectometer;
- Determination of the pavement profile and riding quality;
- Perform a cost-benefit analysis of inverted pavements compared to conventional flexible
- pavements under the same traffic level.

Expected Outcomes

The primary objective of this proposed research is to monitor and evaluate the short- and long-term performance, longevity, and cost-effectiveness of the inverted and conventional pavement test sections in Chattanooga as an alternative pavement structure in the state of Tennessee.

Time Period

October 2022 – October 2023

Contact Information

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