

Research Project Title

Evaluating the Performance of Inverted Pavements in Tennessee

Purpose of the Project

The primary objective of this proposed research is to conduct long time evaluation of the performance, longevity and cost-effectiveness of inverted pavements as an alternative pavement structure in the state of Tennessee for State Industrial Access projects. The evaluation will be performed in comparison to flexible and rigid pavements with the same traffic level. Findings will be used to validate the method, construction and maintenance procedures that work for TDOT. The purpose of the project is to: 1) evaluate the usage and spread of inverted pavements in the USA using a survey; 2) monitor the short- and long-term performance of inverted pavements in Tennessee; 3) provide to TDOT recommendations on inverted pavements best practices and life-cycle cost analysis.

Scope and Significance

The scope of the research project includes: 1) Complete a synthesis of literature review and state DOT survey on the design, construction, and rehabilitation methods of inverted pavements in the US, especially in the Southeastern region; 2) Identify potential and economic feasibility of inverted pavement projects in Tennessee; 3) Conduct field testing and long-term field performance monitoring of the inverted pavement project; 4) Perform a cost-benefit analysis of inverted pavements in comparison to conventional flexible pavements under the same traffic level.

Expected Outcomes

The following are expected outcomes of this research project:

1. Provide inverted pavement design method and construction technology;
2. Pavement distresses will be significantly reduced, and pavement performance will be improved, which will result in enhanced public satisfaction through a better pavement condition;
3. Service life of the state industrial access pavements can be significantly extended;
4. Significant cost savings due to the adoption of the innovative pavement design techniques.

Time Period

The time period for the project is from April 15, 2020 to November 30, 2020.

Contact Information

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