

Project Capsule

25-1P



April 2025

Development of a Database for Successfully Performing Pavement Sections in Louisiana

PROBLEM

Louisiana Transportation Research Center (LTRC) is frequently tasked with conducting forensic investigations of asphalt concrete (AC) pavement sections that have failed to meet performance expectations. However, thus far there have been limited efforts to identify and extract insights from pavement sections that have consistently surpassed expectations over an extended period of time.

Across Louisiana, there are AC pavements constructed more than 15 years ago that continue to provide excellent service to the public (see Figure 1). Drawing lessons from these successful AC pavements will not only leverage past experiences to educate the next generation of DOTD pavement engineers; it will also assist current decision makers in making more informed choices regarding pavement design and material selection for ongoing projects. Identifying, documenting, and analyzing successful AC pavements with extended lifespans could greatly assist DOTD pavement engineers in identifying optimal practices for constructing durable AC pavements in the future.

OBJECTIVE

The objective of this project is to document and analyze successful AC pavements with extended lifespans in Louisiana. By analyzing the characteristics of such pavements, researchers can identify the best practices that contribute to their extended lifespans. By understanding specific conditions in Louisiana, such as climate, soil types, and traffic loads, researchers can tailor pavement design recommendations to optimize durability and longevity.



Figure 1. One example of a successfully performing pavement section: overlay of US 165 in Monroe, Louisiana, with an ADT of approximately 40,000

Start Date

May 1, 2025

Duration

36 months

Funding

SPR: TT-Fed/TT-Reg - 5

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METHODOLOGY

The proposed research will be conducted by completing the following five tasks:

- Task 1 – Selection of successful AC pavement sections
- Task 2 – Historical review of each selected pavement section
- Task 3 – Laboratory and field testing
- Task 4 – Data analysis
- Task 5 – Database development and Final Report preparation

IMPLEMENTATION POTENTIAL

Identifying the design, construction, and material characteristics that contribute to the extended lifespans of successful AC pavements will enable DOTD pavement engineers to propose strategies to enhance the durability of AC pavements by integrating these attributes into standard practice. By recognizing and incorporating these attributes, the overall performance of AC pavements in Louisiana can be enhanced for future projects.