



Project Number

BDX93

Project Manager

James Greene
FDOT Materials Office

Principal Investigator

Jim W. Hall
Applied Research Associates, Inc.

Florida Department of Transportation Research

Improvement of Widening Joint Design and Construction Practices for Flexible Pavements

December 2015

Current Situation

Existing roads are widened for several reasons, primarily to respond to increased traffic volumes or to improve safety. The success of a road widening project depends on many factors, not least of which are the joint design and construction methods; however, few guidelines exist statewide, or even nationwide, for assisting designers in selecting appropriate roadway widening techniques. Current Florida Department of Transportation (FDOT) specifications provide a basic framework for widening flexible pavements, but it does not address alternative construction techniques and treatments used in current practice for constructing more durable longitudinal joints.



An inadequate joint between old and new asphalt on a widened road can become a site of deterioration requiring premature maintenance.

Research Objectives

In this project, researchers identified factors which impact the performance of flexible asphalt road widening with a focus on longitudinal joints between the existing pavement and the new lane widening pavement.

Project Activities

In a review of the existing literature, the researchers cataloged a variety of practices and guidance about the design and construction of widening joints. The reviewed studies covered practices in a number of states.

A questionnaire was developed and distributed to a number of organizations concerned with highway widening, including state highway agencies, research centers, and private companies. The goal of the questionnaire was to determine what practices were currently in use in the field. Twenty responses were received. Generally, organizations reported positive experiences with lane widening and joint designs. Questions were included about reasons for widening projects, general experience with joint designs, problems reported for widening joints, sources of joint designs, quality control, related construction issues, and more.

Based on practices identified in the literature and responses to the questionnaire, detailed recommendations were made for longitudinal joint design and construction.

Project Benefits

Better guidance on joint design and construction techniques for widening projects can lead to improved performance of widened roads, resulting in reduced maintenance activities and costs.

For more information, please see dot.state.fl.us/research-center