ArDOT TRC TRANSPORTATION RESEARCH COMMITTEE

RESEARCH PROBLEM STATEMENT

DATE:	09/07/2018	PROJECT AREA:	Pavements

TITLE: Enhancing High Friction Surface Treatments in Arkansas

PROBLEM STATEMENT:

High Friction Surface Treatments (HFST) are used to increase surface friction on a roadway for spot applications. Traditionally, they have been used in areas that are either existing or potentially high crash areas. However, there are several outstanding questions in Arkansas about HFST. These questions revolve around two areas: project selection and performance testing. In terms of project selection, there could be additional considerations to just crash rates when determining where to place HFST. Other considerations could include geometry, hydrology, or traffic level. In terms of performance testing, a measure of performance other than just mineral composition (such as calcined bauxite) would allow for a greater range of aggregates to be considered for HFST. Another consideration of performance testing is the ability to better predict long term performance of HFST in the lab. Therefore, there is a need to consider both project selection and performance testing of HFST in order to enhance the use of HFST in Arkansas.

OBJECTIVES:

There are two objectives to this study. First, a comprehensive analysis of considerations other than crash rates will be analyzed across the state to determine the optimal location for HFSTs. This could include geometry, hydrology, and traffic. Second, either a single or suite of performance tests will be identified to better quantify performance, both for material acceptance and long-term field performance, for HFST.

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

There will be two forms of research implementation. First, the current decision tree of when to apply HFST will be modified to include, at a minimum, geometric, hydraulic, and traffic considerations along with crash rates. Second, the special provision for HFST will be fully evaluated and updated, with a focus on aggregate acceptance and long-term performance testing. An example of return on investment is if just one lane mile of road was treated with HFST instead of being realigned, it would save approximately $824,000.

Estimated Project Duration: 24 **Months**

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Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
6 / 7		