

RESEARCH PROBLEM STATEMENT

DATE: 09/20/2019	PROJECT AREA: Materials
TITLE: Correlating Aggregate Types with Pavement Durability	
PROBLEM STATEMENT: The choice of aggregate type to be used in a pavement is primarily driven cost, and cost is heavily dependent on what is available in the area of the project. As the state has variable subsurface geology, there are many aggregate types that end up in our roadway (namely sandstone, limestone, and granite). Though treated in the Arkansas Specifications with equity, these aggregate types have very different properties, especially in regards to strength. For example, some districts have reported durability issues with roadways that were constructed using sandstone aggregate. This may be due to the low strength and durability of the aggregate. Determining the effects of aggregate choice on roadway projects will result in better decision making when developing life cycle cost analyses and choosing aggregate sources.	
OBJECTIVES: The objective of this project would be to determine the exact effect that aggregate type has on the durability of a roadway.	
FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT: Determining the effect of aggregate choice on roadway durability will result in better decision making and more accurate life cycle analyses. As aggregate choice is currently more driven by cost, this project aims to provide more insight into the longevity of a pavement based on this choice. With more insight into this longevity question, choosing a more expensive but stronger aggregate may prove to be more cost effective than choosing the initially cheaper aggregate by reducing maintenance costs over the lifetime of the pavement.	
Estimated Project Duration: 24 Months	
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Standing Subcommittee
Ranking

Advisory Council
Ranking

Statement Combined with
Statement Number(s)