

RESEARCH PROBLEM STATEMENT

DATE: 09/15/2020	PROJECT AREA: Design
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TITLE: Load Testing for Posted Bridges

PROBLEM STATEMENT:

There have been several bridges recently in Arkansas which have required load posting because of the load rating of the structure. This prevents certain traffic from utilizing the bridges and can result in costly delays if industrial traffic has to be re-routed. The AASHTO Manual for Bridge Evaluation has provisions to allow bridges to serve loads above their load rating if a load test is performed. Load tests are relatively rare but can be a more accurate way of appraising the actual load carrying capacity of the bridge. The typical method for these load tests is to drive heavily loaded trucks onto the bridge at locations which create maximum force effects. The response of the bridge is measured by monitoring deflections and strains. This can be combined with data on the bridge materials from cores and/or initial construction data. ARDOT bridge staff expressed interest in doing this sort of load testing, apparently it has not been done in the state before. This project could provide testing services on bridges identified with the help of the Bridge Division and also report the methods and procedures used if future testing was required.

- OBJECTIVES:**
- 1) Review best procedures for load testing of bridges and develop the needed measurement equipment
 - 2) Select suitable bridges for load testing with the help of ARDOT's Bridge Division
 - 3) Perform a bridge analysis to determine the adequate load level for the test
 - 4) Acquire material samples/original plans to determine the strengths of the bridge deck and superstructure
 - 5) Perform load tests while measuring the response of the structure
 - 6) Final report with recommendations for future load tests

FORM OF RESEARCH IMPLEMENTATION AND RETURN ON INVESTMENT:

The project will provide ARDOT with load tests on selected bridges in state that can be used for posting safe loads. The project will also result in a procedure which can be used on future bridge tests.

Estimated Project Duration: 24 Months

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Standing Subcommittee Ranking	Advisory Council Ranking	Statement Combined with Statement Number(s)
<u>3/4</u>	<u>15</u>	<u> </u>