Arkansas State Highway and Transportation Department
Transportation Research Committee

RESEARCH PROBLEM STATEMENT

DATE: 08/27/2010 **PROJECT AREA:** Maintenance

TITLE: Automated Bridge Deicing System

PROBLEM STATEMENT:

In some regions of the state during winter weather events icing conditions exist on some bridges well before frozen precipitation begins to accumulate on the surrounding roadways. The challenge to District management is to react quickly enough when ice begins to form on the bridges when the majority of the road network in the District is still clear.

At this time, some Districts patrol problem routes during winter weather events and have personnel report back when conditions warrant and crews are recalled to begin treatment of roads and bridges.

An automated deicing system would enable District management to react quickly by treating a bridge deck before ice begins to form. A weather station and the deicing system equipment could be retrofitted to an existing bridge to apply a chemical treatment when conditions warrant to inhibit the formation of ice.

OBJECTIVES:

This study would install an off the shelf weather station and deicing system on a bridge that has a history of icing before the surrounding pavement. Another weather station would be installed on a nearby bridge to act as the control for the study. The weather stations would provide real time weather information, pavement and subgrade temperatures and road surface state (dry, wet, chemical wet, ice or snow). The objective would be to examine the effectiveness and/or feasibility of the deicing system as a preemptive treatment on bridge decks as part of the District's maintenance strategies during winter weather events.

Form of Research Implementation:

The results of the study would indicate the feasibility of the use of weather stations and deicing systems to assist the Districts with their overall maintenance strategy during winter weather.

Total Estimated Cost and Project Duration: **$** 125,000 **and** 24 **months.**

PREPARED BY: G. Bennett **and**

AGENCY: AHTD Maintenance

PHONE: 569-2426 **REVIEWER:** E.C. Wright-Kehner

ADVISORY COUNCIL RANKING	TRC RANKING	Statement Combined with Statement Number(s)
9		