ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
TRANSPORTATION RESEARCH COMMITTEE

RESEARCH PROBLEM STATEMENT

DATE: 09/12/2016  PROJECT AREA: Special Projects

TITLE: Use of Fixed-wing Unmanned Aerial Vehicles for AHTD procedures

PROBLEM STATEMENT:
Historically, the Arkansas State Highway and Transportation Department (AHTD) has used full-sized fixed-wing aircraft to obtain aerial photogrammetry. While for large area projects these full-sized aircraft are effective, new technological advances and recent changes in Federal Aviation (FAA) regulations have made Unmanned Aerial Vehicles (UAV) a more viable option for smaller projects. Current UAVs on the market make carrying out aerial photography and even Real-Time Kinematic (RTK) surveying for small area projects; it’s a process that can be completed quickly. The use of fixed-wing UAVs could be beneficial to many Divisions/Sections within AHTD. The Planning Division could benefit from interchange/corridor observation. The Surveys Division could quickly fill in missing aerial photography or areas that may have changed since the original photography was flown. The Construction could benefit by being able to have quick updates on active construction project progress.

OBJECTIVES:
The objective of this project is to determine the viability of using a fixed-wing UAV for AHTD procedures and applications. This UAV could be used to provide regular updates of high-profile projects for AHTD such as the I-30 Crossing project.

FORM OF RESEARCH IMPLEMENTATION:
The completion of this project will provide AHTD with a complete system that can quickly provide aerial photography and surveying data of transportation attributes.

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Estimated Project Duration: 24

Standing Subcommittee Ranking: 2
Advisory Council Ranking: 1
Statement Combined with Statement Number(s): 1,38