SPR RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER:
03416

PROJECT TITLE
Pavement Management System Review

CO-PRINCIPAL INVESTIGATORS:
David P. Hale, Ph.D.
Director, Enterprise Integration Lab and MIS Programs
The University of Alabama
Voice: 205.348.8909   Email: dhale@cba.ua.edu

Shane Sharpe, Ph.D.
Associate Professor and the Thomas Endowed Fellow
Area of Management Information Systems
The University of Alabama
Voice: 205.348.9851   Email: ssharpe@cba.ua.edu

Daniel S. Turner, Ph.D.
Professor and Director
University Transportation Center for Alabama
The University of Alabama
Voice: 205.348.9925   Email: dturner@coe.eng.ua.edu

Jay K. Lindly, Ph.D.
Associate Professor
Department of Civil & Environmental Engineering
The University of Alabama
Voice: 205.348.1725   Email: jlindly@coe.eng.ua.edu

PROJECT OBJECTIVE
This project will review the practices of the Alabama Department of Transportation (ALDOT) in collecting and using pavement condition data to estimate future pavement conditions, and in allocating funding for maintenance, rehabilitation and replacement. Portions of the existing system have been in place since the 1980s, data collection methods have changed, and analysis procedures have migrated. This project will assess the current system and recommend changes to provide a comprehensive pavement management system for ALDOT.

PROJECT ABSTRACT
ALDOT collects, transforms and disseminates pavement condition attributes for all state-owned highways. This data is used to develop pavement condition rating values, which are the basis for the Preliminary Prioritization Report (PPR). GASB 34 requirements added an additional use for pavement data, as part of ALDOT’s comprehensive asset management system.
Pavement condition data was initially collected manually, then via video through contracted services. The types and amounts of data collected by these two methods are different, and the correlation between the two data sets is unknown.

This project is being conducted to assess the current national state of practice, to identify the data items and data quality necessary for pavement condition determination in Alabama, and to outline models that can perform that determination. In effect, this amounts to a review and upgrade of ALDOT pavement management system technology.

PROJECT TASK DESCRIPTIONS:
1. Kickoff meeting
2. Document existing data and data uses
3. Assess leading practices
4. Assess data quality
5. Perform field verification
6. Develop implementation work plan
7. Develop project deliverables
8. Deploy project deliverables
9. Perform project post-mortem
10. Document process, results, and future work

MILESTONES:
Task 1: month 1
Task 2: months 2 – 5.5
Task 3: months 2 – 6.5
Task 4: months 3 – 6
Task 5: months 6 – 9
Task 6: months 8 – 9.5
Task 7: months 9.5 – 13.5
Task 8: months 13 – 15.8
Task 9: months 14.5 – 16
Task 10: months 16 – 17

FUNDING AGENCY: This is a 17-month project; Alabama Department of Transportation, State Planning and Research (SPR) funds $239,936

STUDENT INVOLVEMENT:
This project will engage two graduate students and multiple undergraduates.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project is a continuation of a series of projects that will develop and deploy ALDOT’s asset management system:
• UTCA Project 01459: “ALDOT and GASB 34 - Phase I” (completed)
• UTCA Project 02114: “GIS-Resource Allocation Visualization” (completed)
• UTCA Project 02411: “GASB 34 Compliance - Phase II.” (completed)
• UTCA Project 03112: “Bridge Decay/Maintenance Forecasting” (underway)
• UTCA Project 03416: “Pavement Condition Management System” (awarded)
• UTCA Project 03417: “GASB 34 Compliance - Road Condition Rating” (awarded)
• UTCA Project 03418: “GASB 34 Compliance – Bridge Condition Rating” (awarded)
• UTCA Project 03419: “Transportation Network Planning: Data, Analysis, and Visualization” (awarded)

TRB KEYWORDS:
GASB 34, asset management, management information system, information resource information system, pavement management system, pavement condition rating