PROJECT NUMBER: 07110

PROJECT TITLE: Alabama Freight Congestion

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PROJECT OBJECTIVES: The project takes the first steps toward developing a strategy to identify, anticipate, and mitigate freight bottlenecks on Alabama’s Interstate system.

PROJECT ABSTRACT: The project begins by downloading and verifying truck data from all Alabama Department of Transportation (ALDOT) Interstate traffic count stations. Next, the investigators will produce a GIS-based map of the system, showing projected volumes, current capacities, and individual entrances/exits. Finally, the research team will analyze and model the freight bottlenecks in Alabama, supply specific recommendations to mitigate them, and devise a methodology for conducting additional studies to mitigate freight bottlenecks on Alabama’s Interstates.

PROJECT TASK DESCRIPTIONS:
Task 1 - Obtain Interstate Truck Counts: ALDOT Transportation Planning Bureau personnel will make appropriate data available to the researchers.
Task 2 - Verify Count Accuracy: ALDOT truck count/classification accuracy will be verified at approximately eight locations with human counts, camera machine vision, and radar detection.
Task 3 - Hot Spot Visualization: A multi-layered, multi-colored GIS map will show current and projected truck freight congestion on Alabama’s Interstate highway system.
Task 4 - Identify Congestion Areas: GIS and operational-and-safety-related experience from ALDOT, ATA, DPS, and other agencies will be used to identify spots for analysis.
Task 5 - Model Areas of Concern: Researchers will apply traffic analysis tools (e.g. forecasting, Highway Capacity Manual, and simulation) to three to five areas of concern to identify operational characteristics of hot spots and examine potential mitigation measures.
Task 6 - Site Recommendations: A list of suggested treatments to the truck congestion locations will be prepared for ALDOT.
Task 7 - Final Report:
MILESTONES AND DATES:
Task 1: Jan - Jun 2007
Task 2: Apr - Aug 2007
Task 3: May - Sep 2007
Task 4: Aug - Oct 2007
Task 5: Oct ‘07 - Feb ‘08
Task 6: Feb - Apr 2007
Task 7: Apr - May 2007

TOTAL BUDGET:
17 month project; UTCA funding $93,573; matching from SPR project.

STUDENT INVOLVEMENT:
A funded graduate student in Civil Engineering is included as part of the team.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
The project directly supports the management of traffic flow and mitigation of congestion theme of UTCA. In particular, it builds upon the accomplishments displayed under Project 04116 and Project 06112, which were devoted to increasing the ITS capabilities of UTCA.

TECHNOLOGY TRANSFER ACTIVITIES:
This project supports the UTCA Technology Transfer goal through its potential for developing methodologies and results that may be applicable to other agencies. Results will be disseminated to a national audience through conferences, presentations, and journal articles as appropriate.

POTENTIAL BENEFITS OF THE PROJECT:
The project will position UTCA researchers to contribute to national congested-related research. The findings associated with the project’s activities will enhance the understanding of congestion in Alabama and will be transferable and of interest to other researchers.

TRB KEYWORDS:
congestion, traffic flow, bottlenecks, freight, trucks