UTC PROJECT DESCRIPTION

PROJECT NUMBER:
07304

PROJECT TITLE:
Modeling Truck Traffic Volume Growth Congestion

PRINCIPAL INVESTIGATOR:
Gregory A. Harris, P.E.
Director of the Alabama Technology Network
University of Alabama in Huntsville
Huntsville, AL 35899
256-824-6060; 256-824-6970 - fax
harrisg@email.uah.edu

PROJECT OBJECTIVE:
Heavy vehicles, 18 wheel trucks, are the backbone of the logistics and economic success of industry in the United States. National projections are that freight shipments will double in the next ten years. The objective of this project is to investigate the impact that doubling of trucks will have on the Alabama road system. The results of this project will be the identification of congestion chokepoints within Alabama as well as a listing of high priority capacity improvements needed to ensure the continued mobility of the state highway infrastructure system.

PROJECT ABSTRACT:
Modeling of the statewide transportation system is an important element in the understanding of issues and programming of funds to thwart potential congestion. As Alabama is growing in manufacturing, the number of heavy vehicles will continue to rise, straining our already limited infrastructure. This project looks to improve existing modeling tools and develop future forecasts of roadway demand to peer into the future of the highway infrastructure in Alabama. This will involve modeling future growth scenarios and analyzing the traffic congestion arising from the scenarios. The results from the successful completion of this project will be a report identifying key congestion chokepoints and the creation of a modeling tool that can be used effectively to examine alternative scenarios in the future.

PROJECT TASK DESCRIPTIONS:
This is a multi-phased project. The specific tasks in the project are:
1. Update the TRANPLAN and ATIM models to the current traffic data and infrastructure networks.
2. Use ALDOT traffic counts for validation of the model to current conditions.
3. Develop a list of feasible economic scenarios to run as projections through the ATIM.
4. Design and implement a seamless interface between TRANPLAN and ATIM.
5. Run the ATIM to generate the impact of increasing truck traffic.
6. Analyze the output and develop conclusions.
7. Write and deliver the report.
PROJECT MILESTONES:
Project Startup – January 1, 2007
Task 1 complete – June 30, 2007
Task 2 complete – July 31, 2007
Task 3 complete – June 30, 2007
Task 4 complete – February 28, 2008
Task 5 complete – April 30, 2008
Task 6 complete – May 31, 2008
Task 7 and Project Complete – June 30, 2008

BUDGET:
Eighteen month project; UTCA $97,121; total budget $196,125.

STUDENT INVOLVEMENT:
This project will involve faculty and staff from different departments on the UAH campus, including staff members who have not previously been affiliated with the UTCA. In addition, students hired to work on this project will be sought from underrepresented groups if possible.

RELATIONSHIP TO OTHER PROJECTS:
This project is not directly related to other research currently being funded by the UTCA. However, this project will build upon work previously funded by the US Department of Transportation on an examination of current state of Alabama's transportation infrastructure and on improvements to statewide intermodal forecasting techniques.

TECHNOLOGY TRANSFER:
Technology transfer goals of this project include the publication of a final report, presentation at a future UTCA Symposium, and presentations at meeting with the Alabama Transportation Planners Association (ATPA) and the Alabama Department of Transportation (ALDOT).

POTENTIAL BENEFITS OF THE PROJECT:
Significant project benefits will be obtained from the successful completion of this work. First, an understanding of the congestion expected on the highways in Alabama is important to understanding the steps necessary to mitigate future issues. Second, continued work on the transportation analysis and planning tools will establish the modeling approach and system knowledge as a major contributor in forecasting congestion and highway bottlenecks, not just in Alabama but with the ability to extend the knowledge to other states. More accurate planning data from new freight planning methods will significantly improve the ability to plan for transportation infrastructure solutions. Access to better data will be fully realized through the application of simulation and modeling tools to evaluate how the transportation flows react over time. The integrated TRANPLAN and Alabama Transportation Infrastructure Model (ATIM) will add significant capability in the analysis of proposed transportation solutions.

TRB KEYWORDS:
Freight Modeling, Forecasting, Truck Traffic, Congestion