PROJECT NUMBER: 01105

PROJECT TITLE: Enhancement to Emergency Evacuation Procedures

PRINCIPAL INVESTIGATORS:
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PROJECT OBJECTIVES:
1. Review and evaluate current emergency evacuation procedures in Alabama.
2. Make recommendations for the use of advanced technologies during extreme events.
3. Present results to Alabama Emergency Management and Alabama Department of Transportation personnel.

PROJECT ABSTRACT:
An increasing percentage of our expanding population lives close to the Gulf of Mexico making them susceptible to tropical storms, hurricanes, and other extreme events. Despite the decline in large losses of life from hurricanes, the typical death rate per hurricane in the United States is on the rise. Furthermore, the potential risk for a catastrophic loss is real and may increase as a result of inadequate evacuation infrastructure and evacuation planning. The specific objective of this study is to review and evaluate the current procedures for emergency evacuation in Alabama, and make recommendations for the use of advanced technologies such as ITS and GPS to enhance the existing methodology for evacuation during an extreme event.

PROJECT TASK DESCRIPTIONS, MILESTONES AND DATES:
1. Form Advisory Committee (Feb 1, 2001)
2. Review Current Procedures by Alabama EMA and ALDOT (May 1, 2001)
3) Review FEMA-coordinated efforts between states (Jun 15, 2001)
4) Identify Alabama’s infrastructure needs with respect to new technologies such as ITS, GIS, and GPS (Jul 15, 2001)
5) Identify potential uses of ITS for evacuation during extreme events (Sep 1, 2001)
6) Identify potential uses of GIS/GPS (Sep 1, 2001)
7) Simulate and optimize traffic patterns (Nov 1, 2001)
8) Make recommendations for development of real-time evacuation system (Dec 1, 2001)
9) Prepare final report (Dec 30, 2001)
10) Technology transfer (Dec 30, 2001)

TOTAL BUDGET:
One-year project: UTCA $54,198; total budget $110,648.

STUDENT INVOLVEMENT:
Two graduate student research assistants and two undergraduate students will work on this project.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project is related to the following UTCA projects.
a) UTCA Project 00103- Evaluation of ITS Initiative in Alabama – PI John McFadden
b) UTCA Project 00102 - Potential Applications of Video for Traffic Management and Safety in Alabama – PI John McFadden, Co-PI Andrew Graettinger
c) UTCA Project 99115 - Use of GIS/GPS to Improve Crash Location Data – PI Andrew Graettinger.

TECHNOLOGY TRANSFER ACTIVITIES:
A final report will be prepared and presentations made to local and state transportation officials.

POTENTIAL BENEFITS OF THE PROJECT:
This project will provide a series of recommendations to State emergency management personnel as well as to the ALDOT. Strengths and weaknesses of the current evacuation plan will be identified. The potential use of ITS in conjunction with GPS and GIS will also be determined. The recommendations will be aimed at enhancing the evacuation procedures during severe events, thereby allowing for better management of traffic, which will lead to improved safety for the citizens in the coastal regions of the State. The technology transfer activities will promote discussions between the involved agencies and members of organizations like the Southeastern Virtual Consortium for Extreme Event Research (SEVEER) that have the potential of providing benefits to all of the southeastern states. In addition, transportation expertise in the State will be enhanced by disseminating the findings of this study via reports, university classes and interaction with state transportation and safety professionals.

TRB KEYWORDS:
Intelligent Transportation Systems, emergency evacuation, extreme events, hurricane, tornado, flood, Geographic Information System, Global Positioning System.