UTC PROJECT DESCRIPTION

PROJECT NUMBER:
00107

PROJECT TITLE:
Development of a Short Course for Enhancements to the Design of Work Zones

PRINCIPAL INVESTIGATOR:
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PROJECT OBJECTIVE:
The project objective is to evaluate work zone safety in the state of Alabama by analyzing computerized crash data and then performing site visits to a sample of work zone crash sites. The work will be documented in a final report and in completion of short course materials describing current work zone problems and suggested technical solutions.

PROJECT ABSTRACT:
The project will involve an evaluation of work zone safety in the state of Alabama. The analysis will include data collection and analysis via the Critical Analysis Reporting Environment (CARE). CARE is a software system designed to provide individual decision-makers direct access to crash and incident information within the traffic and aviation safety communities. Five years of crash data will be analyzed and correlated to such parameters as functional class of facility, speed, weather, and geometric characteristics of the crash location. Certain work zone crash sites will be selected for site visits and additional analysis of such parameters as traffic control plan and interviews with construction personnel. The project will also include preparing a final report and short course materials based on the study findings to disseminate this information to transportation professionals.

PROJECT TASK DESCRIPTIONS:
Task 1. A Literature Review will be conducted to review work zone safety trends.
Task 2. Data Collection consisting of data mined from the CARE system and data from site visits to selected work zone crash sites.
Task 3. Data Analysis will be conducted to determine the factors that are highly correlated with work zone crashes.
Task 4. Short Course Materials will be developed.
MILESTONES AND DATES:
Task 3. June 1, 2000 – October 30, 2000
Task 5. December 1, 2000 – December 31, 2000

TOTAL BUDGET:
One-year project: UTCA $50,118; total budget $100,025.

STUDENT INVOLVEMENT:
Two undergraduate students will be extracting data from the CARE database. Two
graduate students will be aiding faculty in analyzing data, site visits, short course material
preparation, and final report preparation. It is expected that one M.S. thesis will result
from the project.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
No other UTCA research project specifically addresses work zones. However, Project
99113 - "Data Mining and Visualization of the Alabama Accident Database" by Conerly
is working to extend the capabilities of the CARE system to include more sophisticated
statistical analyses of the Alabama crash database. The "work zone" project personnel
will be interested in the enhanced database search capabilities resulting from the "data
mining" project. Project 99238 - "A Crash Reduction Strategy: Training Transportation
Safety Professionals in Alabama to Manage Drivers with Diminished Capabilities" by
Owsley may also produce results which will reduce all crashes in Alabama, including
work zones.

TECHNOLOGY TRANSFER ACTIVITIES:
The final report and short course material preparation constitute technology transfer
activities. The researchers also plan to publish articles from the research.

POTENTIAL BENEFITS OF THE PROJECT:
Potential benefits include a reduction in the approximately 2,500 crashes and 25 deaths
yearly in work zones in Alabama. The project should also serve to build ties between
UTCA and the Alabama Roadbuilders Association, which has a special interest in work
zone crashes.

TRB KEYWORDS:
Transportation, safety, crashes, work zone.