SPR PROJECT DESCRIPTION

PROJECT NUMBER: 00465

PROJECT TITLE:
Identification of Potential Enhancements for Work Zone Safety

PRINCIPAL INVESTIGATOR:
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PROJECT OBJECTIVE:
This project is a study to perform basic research concerning work zone speeds, vehicular
time headways, and enforcement effectiveness at highway construction sites. The goal of
the research is to produce recommendations for potential safety enhancements to work
zones.

PROJECT ABSTRACT:
While much work has been done to reduce the number of crashes in work zones, basic
data is still required to form a rationale for improving work zone design and
implementing appropriate controls. The existing data is often inadequate, and relies on
police accident reports that are limited in scope and susceptible to human error. This
research will provide for the collection of additional data such as:
• Speeds of vehicles traveling through work zones
• Effectiveness of speed controlling mechanisms at work zones
• Time headways and spacing between vehicles in work zones
• Impact of late merging on congestion
• Differences in speed, headway, etc. when comparing periods of construction activity to
  periods of inactivity.

Based upon analysis of this data, recommendations will be made to enhance safety in
work zones.

PROJECT TASK DESCRIPTIONS:
1) Conduct literature review
2) Evaluate work zone accidents using CARE database
3) Interview ALDOT construction engineers and contractors
4) Collect data using video
5) Analyze collected data
6) Formulate recommendations
7) Prepare final report

MILESTONES AND DATES:
Start tasks 1-3 – Jan 2, 2001
Start task 4 – April 2001
Start task 5 – September 2001
Start tasks 6-7 – November 2001

TOTAL BUDGET:
One-year project: ALDOT (SPR funds) $58,827; total budget $113,909.

STUDENT INVOLVEMENT:
Two graduate students and two undergraduate students will contribute to the research effort.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
UTCA’s first zone project (00107, Development of a Short Course for Enhancements to the Design of Work Zones) will be completed in the early spring of 2001. It assessed the work zone crash situation in Alabama and characterized. The results indicate that excessive speed and underestimation of stopping distance are the principal components of work zone crashes. The second project (described here) will extend those findings by quantifying speeds and headways for a variety of work zones conditions.

TECHNOLOGY TRANSFER ACTIVITIES:
In addition to the final report, the researchers anticipate publishing results in a Transportation Research Record and presenting the results at Auburn University’s Annual Transportation Conference.

POTENTIAL BENEFITS OF THE PROJECT:
This project has the potential benefit of providing recommendations that could lead to the reduction of work zone crashes, providing decreases in injuries/fatalities and property damage as well as a reduction in traffic delay associated with such accidents.

TRB KEYWORDS:
Work zone, safety, speed, headway, video.