SPR RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER:
04407

PROJECT TITLE:

PRINCIPAL INVESTIGATORS:
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OBJECTIVE:
The project will develop a Traffic Signal Design & Timing Manual and an online Guide, specific to the Alabama Department of Transportation (ALDOT) that will help standardize traffic signal design within the state and assist the Design and Maintenance Bureaus, and Division engineers in reducing time spent reviewing and correcting signal plans. It will provide guidance to ALDOT personnel and consultants on signal timing principles, standards, and safety.

ABSTRACT:
The project will assist ALDOT in streamlining the plan preparation and review process, establish standards for signal design, and provide guidance to designers and maintenance personnel in setting signal timings. The main deliverables of the proposed project are:
• A Statewide Traffic Signal Design and Timing Manual,
• A computer-based guide for ALDOT personnel for developing signal design plans and checking plans submitted by consultants and others (i.e., local jurisdictions), and
• A set of Traffic Signal Design and Timing training courses.

TASK DESCRIPTIONS:
1. Perform a review of relevant literature.
2. Establish a Steering Committee.
3. Review existing ALDOT traffic signal design and timing info.
4. Prepare manual outline and present it to the Steering Committee.
5. Prepare a draft manual and submit is to the Steering Committee.
6. Finalize the manual and develop computer-based guide.
7. Develop and conduct training courses.
8. Submit final report to ALDOT.

MILESTONES AND DATES
1. Dec 2003-June 2004
2. Dec-Mar 2004
3. Dec 2003-Sep 2004
4. Mar-Sep 2004
5. Mar-Dec 2004
6. June-Dec 2004
7. June-Dec 2004
8. Sep-Dec 2004

YEARLY AND TOTAL BUDGET:
One-year project; ALDOT State Research & Planning (SPR) funds $126,602

STUDENT INVOLVEMENT
Two graduate students will be involved in this project.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project builds on the success of the Traffic Signal Design the ALDOT Way seminar conducted by the UTCA Tech Transfer Program (project 03217) during Fall 2003.

TECHNOLOGY TRANSFER ACTIVITIES:
This is inherently a technology transfer project. It includes the development of design standards, signal timing guidelines, on-line guide for designers, and training sessions.

POTENTIAL BENEFITS OF THE PROJECT:
Upon completion of the project, ALDOT will have tools to ensure that all signal designs submitted to the State conform to a standard format, and that all necessary information is included and presented in a manner that streamlines the review process. In particular, the manual and guide would serve as a standard for ALDOT and its consultants at the beginning of the signal design process. The project will reduce the number of revisions required throughout the process as well as reduce design costs (less design/revision time, easier checking, smoother PS&E review process, etc.). Finally, the proposed manual and guide will be useful resources to those who develop and maintain signal timings in the field, ensuring that all timings conform to State standards. A broader benefit will also result, because most municipalities rely on ALDOT design standards for their own signals. These design guidelines would likely be adopted statewide and could provide the above benefits well beyond the network of State highways.

TRB KEY WORDS:
traffic signals, signal, timing, operations, design, streamlining, training