SPR RESEARCH PROJECT DESCRIPTION

PROJECT NUMBER:
06406

PROJECT TITLE:
Air Quality of Freeway Service Patrol Programs

PRINCIPAL INVESTIGATOR:
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PROJECT OBJECTIVE:
The objective of the project is to assess air quality benefits attributable to freeway service patrol programs. In particular, the study will use data associated with the Alabama Service Patrol Program (A.S.A.P.) and the Birmingham, Alabama region to investigate the relationship between incident management and air quality. This research will be integrated into the benefits portion of an overall cost/benefits analysis being conducted at Auburn University.

PROJECT ABSTRACT:
A preliminary review of published literature indicates that while service patrols are provided in most large metropolitan areas across U.S., only a few of these have undertaken such a comprehensive evaluation. The evaluations that have been published indicate a wide range of benefit-cost ratios, from 2:1 to 36:1. However, these studies have also quantified a wide range of benefits, including reductions in delay and travel time, safety benefits in the form of secondary crash reductions, and environmental benefits through reduced air pollution, in addition to those directly received by those served. Relevant air quality and traffic simulation models will be identified and utilized to examine various incident management scenarios to assess the air quality benefits of freeway service patrol programs.

Task Descriptions: In order to achieve the proposed objective of the project, the following tasks are proposed:

Task 1 – Review Relevant Literature
Task 2 – Identify Appropriate Modeling Paradigm.
Task 3 – Model Air Quality Improvements
Task 4 – Findings
Task 5 – Assist in Integration of Air Quality Benefits
Task 6 – Develop Final Report
Task 7 – Investigate Technology Transfer Opportunities
MILESTONES AND DATES
This project will begin in May 2006 and run through August 2007.
Task 1: May-Aug 2006
Task 2: May-Aug 2006
Task 3: Sep 2006-Mar 2007
Task 4: Mar-May 2007
Task 5: Apr-Jul 2006
Task 7: July-Aug 2007

BUDGET:
This is a one-year project that will expend $32,722 of SPR funds through a subcontract with Auburn University.

STUDENT INVOLVEMENT:
This project will involve a graduate student in support research.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
The project is related to UTCA Project 00108 “Air Quality Aspects of Traffic Management,” and Project 00466 “Data for MOBILE-6 Air Quality Conformity.”

TECHNOLOGY TRANSFER:
At least one article or conference presentation is expected to result from the project.

POTENTIAL BENEFITS OF THE PROJECT:
The immediate benefit of the project will be air quality benefit analyses supplied to inform the overall benefits portion of an overall cost/benefits analysis of A.S.A.P. being conducted at Auburn University. The A.S.A.P. program is currently funded under the federally-administered Congestion Mitigation and Air Quality (CMAQ) program. Birmingham receives CMAQ funding based on its designation as an ozone “non-attainment area.” Service patrol programs such as A.S.A.P. are eligible for CMAQ funding under the assumption that their role in clearing incident-related congestion contributes to the mitigation of traffic-induced air pollution. The CMAQ funds, however, come with the restriction that they can only be used to fund program operations for three years. At this point in time, ALDOT is currently investigating appropriate funding sources to continue the A.S.A.P. program (e.g., maintenance funds).

TRB KEYWORDS:
Air Quality, Incident Management, Congestion