HPP PROJECT DESCRIPTION

PROJECT NUMBER: 00117

PROJECT TITLE: Development of a Bridge Replacement Guide for County Engineers – Phase 2

PRINCIPAL INVESTIGATORS:
Michael H. Triche
Civil & Environmental Engineering
University of Alabama
(205) 348-5834
mtriche@coe.eng.ua.edu

James Richardson
Civil & Environmental Engineering
University of Alabama
(205) 348-1708
jrichardson@coe.eng.ua.edu

PROJECT OBJECTIVE:
The objective of this project is to complete the preparation of a simple guide to assist county engineers in selecting appropriate bridge types for replacement projects. In Phase 1 of the project data was collected and analyzed for the current Alabama bridge population. That work has been completed. Phase 2 will concentrate upon determining the content of the Guide, writing a draft of it, conducting a stakeholder review of the draft, and producing a final version.

PROJECT ABSTRACT:
Over one-third of bridges on county roads in Alabama are structurally deficient or functionally obsolete, and bridge replacement funds are scarce. Guidelines are needed to help County Engineers select the best bridge design for a particular site based upon span length, terrain, hydraulic considerations and similar factors. This study is aimed at providing such information to county engineers in the form of a bridge replacement guide document. It is being developed by researchers from the University of Alabama based a literature survey and surveys of transportation engineers across the State.

PROJECT TASK DESCRIPTIONS, MILESTONES AND DATES:
Tasks completed during Phase 1:
1) Form advisory committee
2) Obtain preliminary data
3) Analyze bridge database
4) Review bridge replacement policies and procedures
Tasks to be completed in Phase 2:
1) College bridge lifecycle cost data (Jul – Dec 2000)
2) Analyze bridge cost data (Nov 2000 – Feb 2001)
3) Write draft of Bridge Replacement Guide (Feb-Apr 2001)
4) Review by advisory committee (Apr 2001)
5) Revise draft until accepted by advisory committee (May – Aug 2001)
6) Print and distribute Bridge Replacement guide (Dec 2001)
7) Prepare project final report (Dec 2001)

TOTAL BUDGET:
Phase 2 is a one-year project: other (HPP) $50,635; total budget $101,722.

STUDENT INVOLVEMENT:
Two MS level students and several undergraduate students will work on Phase 2 of the project.

RELATIONSHIP TO OTHER RESEARCH PROJECTS:
This project is a direct extension of UTCA project 99101, “Development of a Bridge Replacement Guide for County Engineers,” which was conducted by the same researchers as the current project. Additionally, UTCA project 00219, “Local Roads Bridge Replacement Prioritization Database” may produce information that can be used on this project.

TECHNOLOGY TRANSFER ACTIVITIES:
The “Bridge Replacement Guide for County Engineers” will be provided to the Alabama County Engineers Association (ACEA) for immediate implementation. A presentation will be made at the ACEA Annual Meeting to explain the content of the Guide, and it is anticipated that some of the findings will be presented at other technical meetings and published in the ASCE Bridge Journal.

POTENTIAL BENEFITS OF THE PROJECT:
The difficult problem faced by county engineers is that there are too many bridges to fix and too few funds to fix them all immediately. The best approach appears to be in optimizing resources, i.e., devote resources to those bridges that serve the highest need, and select bridge types and materials that represent the very best lifetime cost-effectiveness. The Bridge Replacement Guide for County Engineers will go a long way toward meeting the part of that statement.

TRB KEYWORDS:
Bridge management, bridge maintenance, bridge replacement, bridge selection.