**NCHRP Project 08-36**

**Proposed Research Problem Statement**

**Title** -I**ssues with using asset management models in determining appropriate levels of investment between major asset groups.**

**Background**– A great deal of work has been done to develop and promote asset management concepts and techniques for both highway and transit assets, yet there has been little success in developing acceptable tools that will balance investment between different asset groups.  This study proposal seeks to assess the reasons why quantitative methods of allocating funds across asset groups developed so far have not been successfully integrated into State DOT decision processes. It is hoped that by shedding light on the reasons why these methods have not been adopted, of the development of more useful asset management based tools can result.

The study would consist of a two-stage survey of State DOTs and how they have used asset management tools in determining the investment levels between pavements, bridges, ITS and transit investments for their programs over the past five years.  The first stage of the survey would identify those State DOTs that have tried to integrate asset management models into determining investment levels between different asset groups.  This survey stage would also identify reasons why State DOTs may have not tried these techniques.  The second survey stage would focus on those that have tried asset management models and would seek to identify the difficulties that they experienced. Survey respondents who were particularly responsive to the survey and demonstrated significant knowledge of the issue may also be subject to the second survey. The time period chosen for the study is important, as it encompasses the economic downturn and the severe revenue constraints that all states have experienced and endured. The study should be able to identify the most critical criteria that drove the decisions to balance investment between different assets by examining how states dealt programmatically with the recession.

**Statement of Urgency**– There is continuing interest in developing quantitative asset management models for use in balancing the investment levels between major asset groups for both State DOTs as well as transit providers (See TCRP E-09, “State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit” [forthcoming]). However, despite these efforts there are very few, if any reported instances of where the model results are actually implemented into an approved investment program. It is the intent of this study to shed a formal light on why these models have not been successfully used so that future research can either accommodate identified shortcomings or the role of the models in the overall investment program development process can be better defined.

**Project Objective(s)** - The survey is intended to provide a description of the major concerns that State DOTs have had in using quantitative based asset management models to balance investment levels between major asset groups (example --- pavement versus bridge investments). The study should also provide insights into how many State DOTs are using asset management tools as part of their capital program development processes. From this research, a better understanding of the current and future role of asset management models in balancing State DOT programs would be gained.

**Relationship to Existing Body of Knowledge**-  This project is different from existing research in to asset management models in that it seeks to uncover the issues and concerns that State DOTs have had in trying to implement the results of these models in balancing their investment programs. This proposal therefore compliments existing research, such as NCHRP 08-36, TASK 112 “Cross Mode Project Prioritization” and NCHRP 08-36, Task 115 “Application of Fair Division, Data Envelopment Analysis, and Conjoint Analysis Techniques to Funding Decisions at the Program and Project/Activity Level” and TCRP E-09 “State of Good Repair: Prioritizing the Rehabilitation and Replacement of Existing Capital Assets and Evaluating the Implications for Transit” (forthcoming).

**List of Anticipated Work Tasks**

*Task 1.* Meet with the NCHRP project panel via teleconference to discuss the work plan, design of the survey to be conducted and other details of the project’s technical scope, and significant opportunities for panel-member contributions to the research. Prepare Technical Memorandum 1 (TM1) documenting the meeting and decisions made.

*Note: The NCHRP project panel may be able to provide suggestions and assistance in refining the scope of the survey.*

*Task 2.* Conduct a survey of state DOTs, (a) identify which states have tried to use quantitative based asset management models to balance investments between differing major asset groups, and (b) identify management’s perceptions of the use of quantitative based asset management models in determining investment levels for different asset groups used in these agencies. Prepare a technical memorandum (TM2) presenting the survey plan and survey instrument. Respond to NCHRP comments on TM2 in preparing the final survey instrument and plan. Meet with the NCHRP project panel via teleconference to present preliminary results from the survey and to discuss next steps.

Task 3. Conduct a second, much smaller but more detailed survey of the respondents from the first survey who have either indicated that they have tried to use quantitative asset management models in balancing investment levels between major asset groups or were complete in their responses to the first survey in the reasons that they have chosen not to use such models. Prepare a technical memorandum (TM3) presenting the second survey’s plan and survey instrument. Respond to NCHRP comments on TM3 in preparing the final survey instrument and plan. Meet with the NCHRP project panel via teleconference to present preliminary results from the second survey and to discuss the steps needed to complete Task 4.

*Task 4*. Prepare a report documenting the research and presenting the results of preceding tasks. Deliver a draft report to NCHRP for review by the project panel. Respond to project panel comments and revise the draft as appropriate to prepare a final project report.

**Estimate of Funds Needed**

$55,000

**Estimate of Time Needed to Complete the Research**

The project will be completed within 9 months.

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