

COUNTY BRIDGE MANAGEMENT REQUIREMENTS

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ABSTRACT

This paper describes elements that will be important to counties as State Departments of Transportation develop and implement their Bridge Management Systems. Elements defined include:

- Ability to analyze, optimize, and prioritize by bridge ownership jurisdictions;
- Direct accesses by local governments to the state managed system, as "co-users;"
- Ability to accept several data input methods;
- Ability to perform optimization by several subsets such as type of jurisdiction, various geographic boundaries, and individual ownership jurisdiction;
- Need for states to work closely with their local governments as the system is developed; and
- Have early and meaningful dialogue with local governments related to both the development and use of the system is the most important element.

INTRODUCTION

This paper describes elements that will be important to counties as state departments of transportation (DOTs) develop the Bridge Management Systems (BMS) required by the Intermodal Surface Transportation and Efficiency Act (ISTEA). It is difficult to define specifics important to counties throughout the country because: the size and capabilities vary dramatically around the country; historical relationships with state DOTs vary greatly around the country; and responsibilities for bridges, bridge inspections and BMS vary around the country. I concluded that the most appropriate message I could give is to define the three most important elements. Like the old bromide in real estate, "Location, Location, Location," the most important element in the relationships of counties and departments of transportation is "Dialogue, Dialogue, Dialogue." The few specific elements I mention will be biased, based on my experience in a large urban county and a small rural developing county in Minnesota, the responsibilities for bridges that exist in Minnesota, and the emerging transportation programming processes that are being implemented due to ISTEA.

My remarks are organized on the three theme elements of this conference: data needs/data collection, data analysis, and decision support. However, I want to center on Decision Support because I believe that is where the issue will focus.

DATA NEEDS AND DATA COLLECTION PRACTICES

More data are needed because of element-level approach. Experience to date with Pontis suggests that it should not seriously increase data collection efforts. However, if it is a problem for some counties, it may be possible to use current National Bridge Inventory (NBI) System type of data with fuzzy logic to approximate results from element-level inspections.

DATA ANALYSIS PROCEDURES

Type and scope of analysis are the biggest changes from current NBIS and are what makes it a true management system. The outputs of this analysis can be valuable tools for counties in managing their bridge systems. I believe that in all but perhaps the largest jurisdictions, counties are comfortable with state DOTs establishing these analysis procedures because of their greater expertise and resources.

DECISION SUPPORT

Decision Support, which is the outcome of the Data Analysis and how it is used, is the area that requires the most attention and dialogue between State DOTs and local jurisdictions. In Minnesota, for example, 4,600 of the 19,500 bridges in the State are under Minnesota Department of Transportation (MnDOT) jurisdiction. If the BMS is not of practical use and value to local government, three-fourths of the bridges in Minnesota will not benefit from an effective BMS. Local governments will respond in one of two ways: larger units might develop their own systems to be of practical value, and smaller units will collect data (because it is required) but ignore the decision support of the system.

If a BMS is not of practical use to counties, I do not believe it would be because of technical disagreements, because counties generally look to their state DOT as the technical expert. I think it would be because the state DOT failed to adequately address "Service Support" and inter-jurisdictional issues. Examples:

- Some counties may wish to be interactive "co-users" of the system so they can develop various "what if" scenarios for their system;
- Many other counties may prefer to only receive a standard "update" of their system on a periodic basis;
- Probably all counties would want the state DOT to provide a consultative service for help in analyzing the various system outputs--almost a mentor role by the DOT; and
- Counties would look to the state DOT to provide adequate training to county personnel, not only for data collection but also for use of the system results.

In addition, counties would expect to play a role in establishing how the optimization models would be used in prioritizing bridges across jurisdictional lines in establishing State Transportation Improvement Programs (STIPS) under the ISTEA requirements. There must be satisfaction that the BMS provides a relatively level playing field among the various levels of government for competing for federal and state funds. To be of value for network-level decisions, particularly related to major rehabilitation or replacement, I believe it is essential that any BMS must provide decision support information for almost any subset of the total network. Examples are ownership jurisdiction, Metropolitan Planning Organization (MPO) boundaries, and any other geographic boundaries that might be used for program development purposes. Because of ISTEA, several other management systems also will play a role in development

of a total capital program, particularly pavement management, congestion management, and safety management. While it is doubtful that these systems can or should be fully integrated, common items such as methodology for use cost estimating should be consistent across all systems, and common databases should be used to the maximum extent possible.

MINNESOTA CONSULTATIVE PROCESS

The MnDOT has been an active participant in the development and testing of the Pontis system. They have decided to use the Pontis system. I do not believe any county in Minnesota will argue with their doing so. The bulk of the technical development work is done. Now comes implementation. MnDOT has recently organized a task force to develop and resolve implementation issues that I hope will include many items I've described. This task force is both internal and external to MnDOT and involves representatives from programming, State Aid, information policy, traffic, Federal Highway Administration (FHWA), MPO and regional development commissions, urban and rural counties and cities. I am excited about this approach and believe it will result in a BMS that will be of value to all bridge jurisdictions in Minnesota. Paul Kivisto is the MnDOT Bridge Management Engineer and is in charge of this process.

SUMMARY

Timely and constant dialogue with counties and cities is required for a BMS to reach its intended potential in any state.