



RESEARCH PROJECT CAPSULE [21-5SS]

November 2020

TECHNOLOGY TRANSFER PROGRAM

Determining the True Cost and Benefit for Collecting and Maintaining Non-road and Non-bridge Asset Data

JUST THE FACTS:

Start Date:
November 1, 2020

Duration:
15 months

End Date:
January 31, 2022

Funding:
SPR: TT-Fed/TT-Reg - 5

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POINTS OF INTEREST:

*Problem Addressed / Objective of
Research / Methodology Used /
Implementation Potential*

PROBLEM

State departments of transportation have, in the recent past, prepared Transportation Asset Management Plans as directed by the Federal Highway Administration (FHWA), covering the National Highway System and the bridges on that system. Major elements of the data collection for these Asset Management Plans are the Highway Performance Monitoring System (HPMS) and the National Bridge Inventory (NBI) file. The use of Asset Management Plans for the highway system was first promulgated by MAP-21, which changed the emphasis from "Worst first" to "Preservation first" as the underlying rationale for allocating scarce resources to the nation's transportation systems. As stated in 23 CFR Part 515.5, "Asset management means a strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on both engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the life cycle of the assets at minimum practicable cost."

However, recent discussions in the transportation profession have recommended extending the principle of asset management planning to most or all of the assets of each state that are used to provide transportation. These assets could include intelligent transportation systems hardware and software, traffic signals, buildings (such as those used for administration and operation of the state transportation system), walking trails, culverts, roadway lighting, signage, etc. However, in this instance, only roadside assets are being considered.

Asset management plans require data to support them. These data include a systematic inventory of the assets themselves, their current condition, risks associated with the future of these assets, and the level of use made of the assets. Such data collection would need to be undertaken on probably a daily basis to provide a means to update the database and make it useful. Such data collection and analysis incur significant costs and may require a dedicated staff to maintain the data and use the analysis. This research is to identify the costs of such data collection, analysis, and planning and also the benefits to the state by collecting and analyzing the data.

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OBJECTIVE

The primary objective of this research is to identify the non-road, non-bridge assets that are candidates for inclusion in an internal asset management plan for the Louisiana Department of Transportation and Development (DOTD), determine the costs of data collection and maintenance associated with each asset class considered, and then determine the benefits of data collection and maintenance for each asset class.

METHODOLOGY

To achieve the objectives of this study, the following tasks will be completed. A literature review will be conducted in the area of Asset Management Planning (AMP) for transportation. This is a relatively new field in transportation literature; therefore, it is anticipated that this review will rely heavily on the experience of various states and also some other countries, as well as recent conferences. Following the literature review, the research team will compile a list of non-road, non-bridge asset classes that are candidates for inclusion in an expanded list of assets to be measured and maintained. Next, the team will review current asset databases already in the possession of DOTD that may be useful for the purposes of asset management planning. Following the database review, information will be compiled on each asset management planning task for the asset classes previously identified. The team will explore the costs that will likely be involved in the initial start-up process for an AMP. The benefits of collecting data for each asset class will then be identified. Lastly, a final report and technical summary will be prepared.

IMPLEMENTATION POTENTIAL

Because of the interest of DOTD in the outcome of this research as well as the concerns expressed widely throughout the profession by other DOTs and by the federal and national agencies, the implementation of the results of this project seem to be virtually certain. The results could be used for the development of future TAMPs for the state of Louisiana, and similar procedures are likely to be adopted by other state DOTs as well as by various nations overseas that have also identified asset management planning as a major issue of importance.