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TRANSPORTATION ASSET MANAGEMENT RECOMMENDATIONS MEMO

January 2017



MEMORANDUM

To: Transportation Committee

From: CMAP staff

Date: January 12, 2017

Re: ON TO 2050 Transportation Asset Management Recommendations

Transportation Asset Management (TAM) is a process to minimize the life-cycle asset costs necessary to attain performance goals. TAM was identified early in the ON TO 2050 process as a mechanism to strategically invest in transportation, consistent with CMAP's broad goals. During the development of ON TO 2050, staff investigated TAM to determine its applicability to transportation planning in the CMAP region. This memo summarizes that work and lays out recommended actions for ON TO 2050 implementation.

Implementation of TAM is already under way. The Moving Ahead for Progress in the 21st Century (MAP-21) transportation bill, passed in 2012, instituted TAM requirements for state departments of transportation (for the National Highway System, regardless of jurisdiction) and transit agencies. MAP-21 strategically integrates TAM into a performance management framework. In addition, local agencies have been increasingly adopting TAM, particularly for pavement management. CMAP found, in its 2016 *Municipal Plans, Programs, and Operations Survey*, that 46% of municipalities have implemented pavement management systems, though the measures, processes, and program decision criteria vary substantially from one municipality to the next. So ON TO 2050's role in TAM will be supportive and complementary of existing efforts. ON TO 2050 will recommend expansion of TAM in the region.

Earlier Work.

In support of developing asset management recommendations, CMAP has prepared the following materials:

- *Municipal surveys*. CMAP included questions regarding pavement management systems in the 2012 and 2016 municipal surveys.
- *Setting Pavement Condition Targets*. Planning Information Forum Meeting Notes. September, 2015.
- *Asset Management Strategy Paper: Introduction*. Memo to Transportation Committee. March, 2016.

- *State of Practice, Policy Options, and MPO Role*. Memo to Transportation Committee. November, 2016
- *Transportation Asset Management: Update on Final Federal Rulemaking*. Memo to Transportation Committee. November, 2016.
- *Performance Measures and Target-Setting*. Memo to Transportation Committee. March, 2017.
- *Pavement Data Collection and Pilot Pavement Management Program for Northeastern Illinois*. Request for Informational Presentation. August, 2017.

In addition, CMAP staff has been meeting with county engineers and sub-regional Councils of Mayors to discuss pavement management activities.

Summary of Findings

Transportation asset management can make scarce transportation dollars go further. In particular, when applied to pavement management systems, asset management principles can economize investments. Given the widespread need for efficiencies in pavement management, and given the extensive literature supporting pavement management, focusing regional TAM activities on pavement management presents an opportunity. The “right treatment, to the right pavement, at the right time” can extend the useful life of pavements and improve condition ratings.¹

MAP-21 and FAST Act regulations will require the development of TAM plans for IDOT and the transit agencies. These TAM plans will be integrated with established performance measures and adopted targets. There are extensive rules guiding the development of these plans, so regional involvement in these plans will be supportive, but not central. On the other hand, CMAP may play a more crucial role for developing new TAM plans and improving existing TAM plans among local communities to extend state-of-the-art asset management to more communities.

TAM plans have been used effectively by some local agencies for multiple needs. For example, deployment of pavement management systems have been used to economize overall pavement management expenditures. But pavement management plans have also provided convincing arguments to decision makers of the need to devote more funding to pavement maintenance to prevent long-term declines in pavement conditions.

Asset management principles are broadly supported in the transportation community. Nevertheless, issues remain. First, pavement management systems have not been developed for all communities. Approximately half of municipalities in the CMAP region have pavement management systems. Additional economies can be gained by extending pavement management processes to more communities.

Second, among communities with pavement management systems, the systems may not be utilized to their full potential. While the state state-of-the-practice is to use benefit-cost analysis to minimize life-cycle costs to achieve desired pavement performance targets, many

¹ IDOT. Bureau of Design and Environment Manual. Chapter 52. Pavement Preservation.

communities with pavement management systems still revert to “worst first” or other sub-optimal decision criteria. Additional economies can be gained by improving pavement management process to improve decision criteria when the systems are updated. In some cases, asset management systems can help decision makers build a case for the new revenues needed to improve system conditions.

Third, there are data gaps and problems with regard to regional pavement information. While IDOT collects pavement data for the National Highway System, there is limited pavement data for the remainder of the federal-aid system, consisting of collector streets and minor arterial highways. Furthermore, there is no uniformly adopted measure of pavement condition within the region. And among vendors reporting the same measure, differences exist in the methods for calculating and reporting those measures, though the seriousness of these variations is not established. More uniformity in data collection and analysis may help decision-makers understand and prioritize pavement conditions.

ON TO 2050 Recommendations

ON TO 2050 support of asset management is recommended. Asset management can be used to minimize costs by prioritizing preventive maintenance treatments to extend the useful life of capital assets, including freshwater, wastewater, signals and communications, vehicles, transit facilities and equipment, and pavements. CMAP has federally-established roles supporting TAM plans developed by IDOT and the transit agencies. Among other potential applications for regional priorities, developing and improving pavement management systems for local agencies most closely align with CMAP’s regional role, available resources, and regional needs.

The following are CMAP actions to implement proposed ON TO 2050 TAM recommendations:

- Support IDOT and transit agency TAM plan development. Among other activities, this will include review and approval of regional transit asset condition targets. For highways, this will include continued work with IDOT and local agencies to appropriately define the National Highway System, on which IDOT’s TAM plan will be focused.
- In a new initiative, facilitate new and expanded pavement management plans for local agencies. Among other activities, this will include providing information and encouragement for communities to develop or improve pavement management systems. This may also include a pilot program to demonstrate best practices for local agencies in pavement management system development and improvement, moving more agencies to a system that minimizes life-cycle costs. Also explore strengthening IDOT policies to facilitate asset management by local agencies.
- Explore ways to move pavement management systems toward more uniform data collection and analysis procedures in the region. This will include exploring the feasibility of data sharing, perhaps facilitated by counties. This is also expected to result in the first region-wide federal-aid pavement condition data system for roadways not on the National Highway System, as required by recently approved Surface Transportation Program agreements.

Action requested: Discussion