U.S. Department of Transportation
Federal Transit Administration
Transit Asset Management Newsletter
Summer 2016

The purpose of FTA's Transit Asset Management (TAM) newsletter is twofold: to keep you up to date on our office's asset-management initiatives (as a complement to our web site and e-mail alerts), and to create a forum for communication for all of us in the industry to share information, so that we can learn from each other.

The topic for the next edition is TAM at small providers. Please share any useful processes that your agency has adopted or let us know if there is any related topic that you would like to know more about. Email us:

TAMNews@dot.gov

The TAM rule making process is currently in the comment review stage, as shown in the diagram above.

Asset Management Business Practices

Transit Asset Management is the coordinated lifecycle activity of a transit based organization to realize value from its assets.[1] *This issue of TAMNews describes how the Massachusetts Bay Transportation Authority (MBTA) has integrated asset management business practices into both day-to-day operations and executive level decision making.*

Events that bring transit asset management (TAM) to the forefront of the public consciousness are a rarity, but one such event was a series of blizzards in February 2015 that practically shut down the city of Boston for several weeks. During the record setting month, severe delays and service interruptions plagued the transit system and generated a public outcry. As a legacy system, the MBTA has long known the importance of a well-developed asset management practice, and the brutal winter of 2015 drove that point home, pushing TAM into the public eye. But saying that one bad winter instigated the development of a new asset management system would be a great disservice to decades of effort by dedicated staff.

TAM at the MBTA

MBTA's current asset management practice can be traced back to a 1999 state of good repair study whose that established a database of major assets. This effort was spearheaded by the General Manager's office, which sought to improve investment by establishing a predictable funding stream and financial management practices. The study resulted in a database on major assets like rolling stock, track, power, buildings, structures and signaling. The database continued to evolve as the budget office sought more accurate data to predict the cost of maintaining and replacing assets. Those cost predictions were used to estimate the amount of funding needed to bring all assets

[1] *Where an "asset" is an "item, thing, or entity that has potential or actual value to an organization" (ISO 55000:2014).*

Resources:

- MBTA TAM Lessons Learned Presentation
- MassDOT Draft CIP 2017-2021
- MassDOT Project Selection Advisory Council
- MBTA Performance Dashboard

Information about the Proposed Transit Asset Management Rule:

- FTA TAM and SGR Homepage
- Webinar Series FAQ
- TAM NPRM & NTD Guidance Crosswalk
- Recording of NPRM Webinar 10/29/2015
- Fact Sheet: TAM in MAP-21

into a state of good repair, and identify ways to close the gap between that level of funding and the amount of funding received.

In 2014, the MBTA published its TAM Plan, which was the next critical step in the development of the asset management system. Motivated in part by MAP-21, this plan provided a road map to formalize the many ongoing asset management practices—many of which, like keeping bridge condition data, were not even thought of as asset management practices. As MBTA staff note, asset management is not a specific activity, but a set of coordinated practices. The 2014 plan recognized this, and rather than trying to create something called "asset management," it highlighted the ways that asset management was already being done, and the ways it could be formalized and improved.

Relationship of SGR and TAM:

Helping transit agencies maintain bus and rail systems in a state of good repair is one of FTA's highest priorities. TAM practices create a framework to preserve and expand transit investments. These TAM processes help agencies reach and maintain a state of good repair for their assets. Having well maintained, reliable transit assets (e.g., track, signal systems, vehicles and stations) will help ensure safe, dependable and accessible transit services.

At its heart, the plan was a gap analysis, which resulted in a maturity level score for different aspects of asset management. First, the plan analyzed the status of current asset management practices at the MBTA and compared it to the agency's asset management goals, which were established as a part of the same process. Establishing the state of asset management at MBTA was a multi-faceted process. The agency formed multiple committees of expert personnel nominated by management, to examine specific aspects of the agency's practices. The committees led an internal outreach effort, which began with surveys of staff about day-to-day operations. The surveys helped identify the most knowledgeable individuals, who later participated in more in-depth interviews that further detailed asset management-related

State of Good Repair Grants (5337)

With an estimated 40 percent of buses and 25 percent of U.S. rail transit assets considered to be in marginal or poor condition, helping transit agencies maintain bus and rail systems in a state of good repair remains an FTA priority. The FAST Act increased annual funding for FTA's State of Good Repair (5337) program for rail from $2.1 billion to $2.5 billion.

Fact Sheet

SGR Grant Program Guidance and Application Instructions

activities. The staff leading the analysis made site visits when possible to verify the results from the surveys. MBTA used the resulting maturity level scores and the agency's asset management goals and priorities to develop a set of concrete steps to reach those goals (see Figure 1).

Responding to Disruption

The asset management activities, culminating with the goals and objectives from the 2014 TAM plan, put MBTA in a better position to respond to the weaknesses that the repeated storms exposed. The associated publicity prompted several changes to the agency's asset management practices, the creation of the Fiscal Management Control Board (FMCB), and a new focus on transparency and communication with customers.

FMCB approves operations and capital budgets based on transparent, data-driven criteria that support the agency's long term financial and management goals. This board consolidates responsibilities previously held by several different offices at MassDOT and MBTA—the creation of the board was a part of a broader restructuring effort aimed at improving decision-making at MBTA. The evaluation criteria that the FMCB uses to rate proposed projects reflect MassDOT policy and its project selection criteria. Projects across modes are now weighed against one another rate proposed projects reflect MassDOT policy and

Figure 1: MBTA asset management goals and objectives from 2014 TAM Plan

Goals	Objectives
Policy: Provide agency-wide direction and leadership to increase the MBTA's asset management maturity	Provide clear leadership and direction regarding the agency's asset management strategy and expected outcomes Establish vision of and provide support for an asset management culture Increase the agency's overall asset management maturity
People: Establish asset management culture and support through talent management practices	Improve asset management knowledge sharing within the agency Improve asset management documentation practices
Tools: Provide infrastructure and tools to support data-driven decision-making for asset management	Implement the business processes, supporting systems, and data integration to provide the data and information required to inform decision-making
Business Practices: Manage whole lifecycle costs, risks, and performance to achieve cost savings, improve service reliability, and contribute to customer safety	Reduce/eliminate corrective maintenance actions by asset type Minimize asset-related service disruptions Maximize asset availability

its project selection criteria. Projects across modes are now weighed against one another based on the strength of the business case for them – a measurement of how effectively it promotes the transportation system performance targets per dollar spent. Rather than a protracted debate about project value or politically motivated project selection, the FMCB evaluates expenditures based on their impact on system performance and customer experience. Naturally, there must be trade-offs between investments, but the FMCB uses a data-driven process with clear justifications for expenditures.

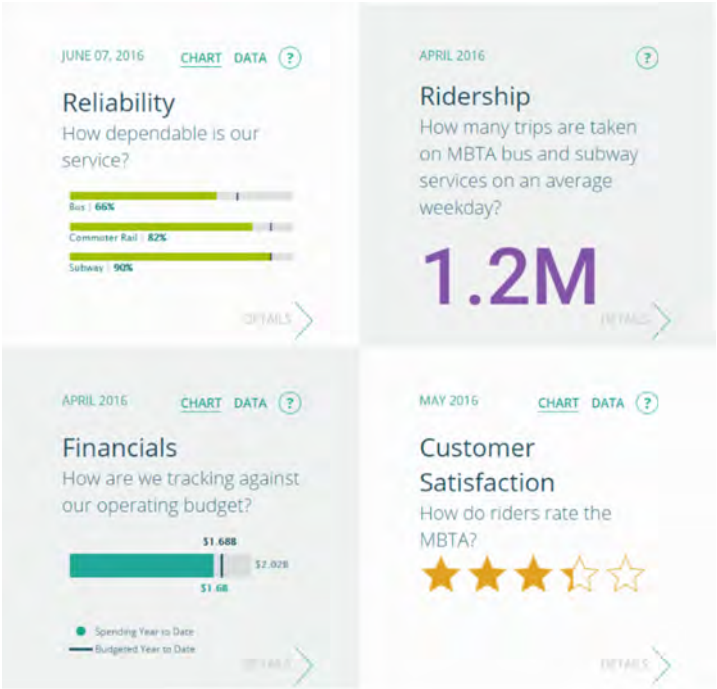
The newly instituted procedures for funding projects are reflected clearly in the draft CIP for FY2017-2021, which prioritizes reliability, asset management, and SGR over modernization and system expansion (see Figure 2). The CIP clearly shows that the agency recognizes the importance of asset management and has integrated it into not only agency practices, but also into business processes at the state DOT level.

MBTA has also created new, user-friendly tools for customers to learn about and provide input on the agency's service. The most high-profile of these tools is the performance dashboard, a website with continually updated information about system reliability, ridership, financials, and customer satisfaction. One of the main purposes of the dashboard is to allow customers to understand the MBTA's performance and gauge the impact of the FMCB.

An Ongoing Process

The Engineering and Maintenance Division is pioneering new business processes that promote more effective asset management. An example of this is changing the responsibility of the chief

Figure 3: Screenshot of the Performance Dashboard



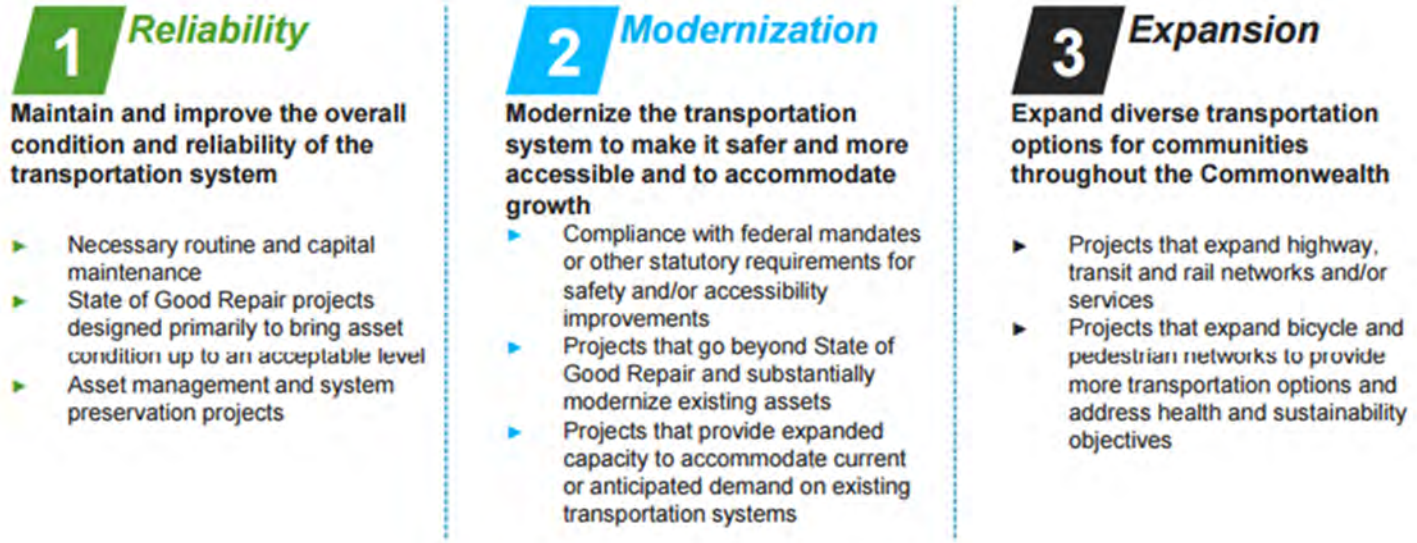


Figure 2: Funding prioritization from MassDOT's FY2017-2021 draft CIP

engineer to not only oversee design and construction, but to also be responsible for maintenance. Integration like this typifies the new systems engineering approach to asset management and its relationship to the assets lifecycle (see Figure 4).

The successes and lessons learned from these changes will be applied throughout the agency to improve asset management practices, system performance and an overall better service to the customer.

While MBTA has made tremendous strides in TAM through organizational changes, agency staff is the first to say the process is ongoing. The personnel, data, and organizational structure that have been and continue to be developed are assets just as much as a bus or subway car. System performance will continue to improve as asset management principles are further integrated into the operations and organizational culture.

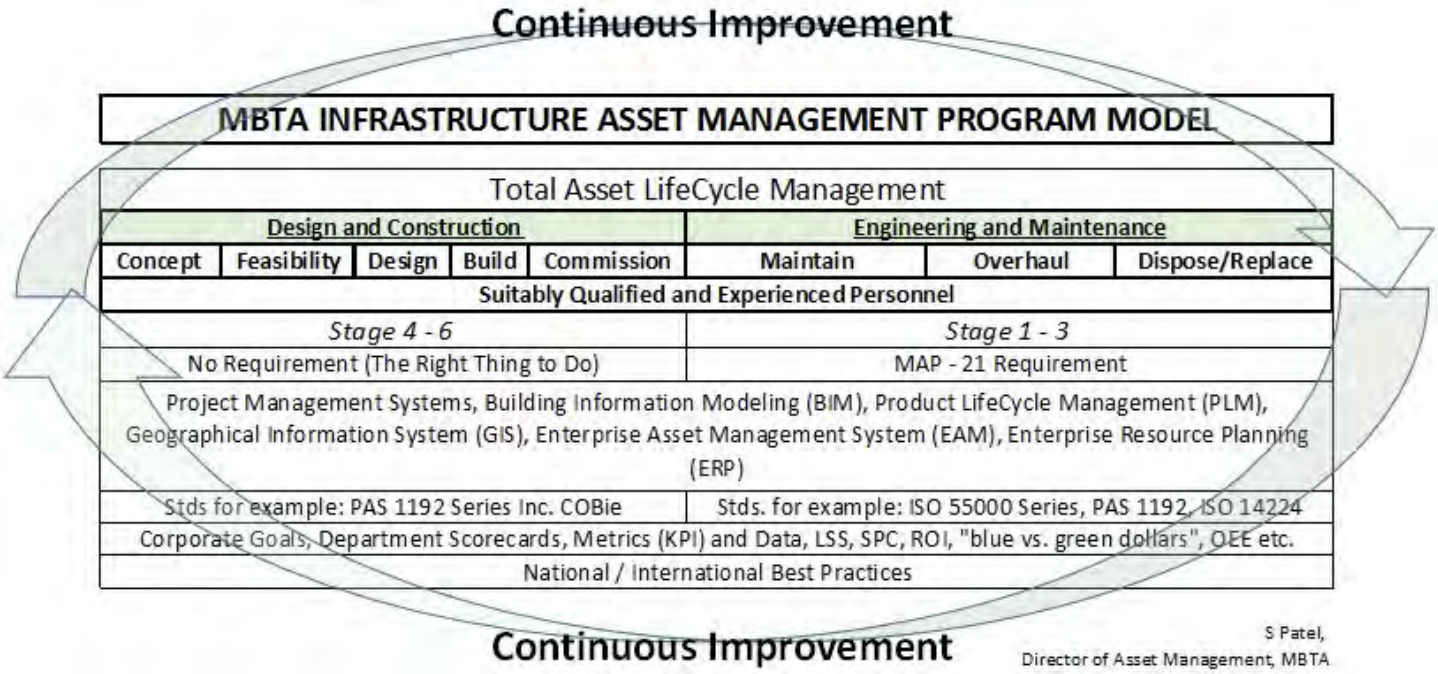



Figure 4: the MBTA's model for its asset management process