TRANSIT ASSET MANAGEMENT

Fall 2023 Discussion Forum

Setting TAM Performance Targets

U.S. Department of Transportation
Federal Transit Administration

Overview

The Federal Transit Administration (FTA) Transit Asset Management (TAM) Program organizes discussion forums to support professional capacity building for transit agency staff. Discussion forums bring together a small group of transit professionals to engage virtually on topics that go beyond the requirements in the TAM Rule (49 CFR 625).

The Fall 2023 Discussion Forum focused on considerations for setting TAM performance targets. Participants were transit agency staff who manage transit assets or otherwise contribute to fleet management planning and related practices. The goals of this discussion forum were to:

1. Promote peer-to-peer education and collaboration around effective practices in setting required TAM performance targets;
2. Support transit agencies with understanding how target setting can meet broader agency goals related to maintenance cost and risk management; and
3. Support agencies with aligning their TAM performance targets with agency goals beyond traditional TAM planning.

This document highlights the main successes and challenges in setting TAM performance targets as described by participants and summarizes perspectives shared during the facilitated discussion.

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TAM Performance Targets

There are four minimum performance targets that agencies must set:

- **Rolling Stock** includes bus or rail vehicles, measured as % meeting or exceeding useful life benchmark (ULB).
- **Equipment** includes non-revenue service vehicles, measured as % meeting or exceeding ULB.
- **Facilities** rated as being in a state of good repair backlog if rated less than 3.0 on the Transit Economic Requirements Model (TERM) Scale.
- **Infrastructure** includes fixed rail guideways, measured as % of track segments with performance restrictions.

Participants

Name	Agency	City and State
Bryan Redmond	Metropolitan Transportation Commission (MTC)	San Francisco, CA
David Mulenga	Santa Clara Valley Transportation Authority (VTA)	San Jose, CA
Vivian Wei	Sound Transit	Seattle, WA
Nadir Senad	Bay Area Rapid Transit (BART)	San Francisco, CA
Wale Soile	Dallas Area Rapid Transit (DART)	Dallas, TX
Nancy Sanchez	Lower Rio Grande Valley Development Council	Weslaco, TX
Joachim Bean	Ohio Department of Transportation	Columbus, OH
Shana Thompson	Birmingham Jefferson County Transit Authority (BJCTA MAX)	Birmingham, AL
Christopher Ingram	Charlotte Area Transit System (CATS)	Charlotte, NC

Successes and Challenges

Participants provided short introductions to their agencies and experiences with setting TAM performance targets. They identified several agency-specific successes and challenges with setting TAM performance targets. Areas of success for some agencies were challenges for other agencies.

Identified Successes

- **Good data repositories enable data driven performance target setting.** Collecting data for many years can help agencies better understand how their data is trending before they set the performance targets.
- **Internal collaboration** helps TAM managers set performance targets that the operations team and asset owners can also agree on, which helps them successfully achieve those targets going forward.
- **Implementing risk assessments** when managing multiple agencies in a group plan can help understand agencies that may have excessive vehicle utilization, financial problems, or other issues, and specifically analyze those agencies to help them better achieve their performance targets.
- **Strategic replacement of revenue vehicles helps set performance targets.** Agencies that have made progress in replacing vehicles and retiring legacy vehicles are able to successfully meet performance goals for revenue vehicles.

Identified Challenges

- **Determining the ULB for non-revenue vehicles is challenging.** Due to the variety of non-revenue vehicles in an agency, it can be difficult to set a ULB determination for the entire asset type. Some agencies have approached this problem by incorporating weighted averages into their calculations to account for vehicles with high mileage.
- **The target for miles of track under performance restriction is difficult to set.** For some agencies, this can be a somewhat ad-hoc target. There are often unforeseen and unavoidable circumstances that come up which make it difficult to set a target for this category.
- **TAM targets are often set based on expected performance.** TAM Performance targets are typically set to reflect an asset's expected future performance, rather than goals that are aspirational for the agency. Additionally, some agencies noted that TAM targets are often siloed from other agency-wide targets.

- **Gaps in the data.** Siloed information can make collecting the data needed to successfully set TAM performance targets difficult. Without a good data repository, it is much more difficult to assess trends.

Summary of Discussion

Q1: What methods does your agency use to set the TAM performance targets it sets each year?

Agencies use a variety of methods to set performance targets depending on what performance target they are assessing. Most participants agreed that **revenue vehicles** are the easiest target to measure due to those vehicles being replaced on a relatively consistent basis. Many agencies agreed that **setting targets for service vehicles** can be difficult because many fleets have older vehicles that also have a relatively low mileage. When defining the ULB, it can be hard to account for these two variables while also communicating to management the appropriate time to replace a vehicle, or when it is still appropriate to keep an older vehicle running. Some agencies have approached this challenge by attempting to base their ULB on the mileage of the vehicle, or adding weights to the calculation.

To set **track infrastructure performance targets**, one agency began coordinating with their operations control center to receive monthly reports about the status of the track slow zones. Additionally, they coordinated with operations to measure the distance along the track. After accumulating a repository of data, the TAM manager was able to propose reasonable performance targets that the operations team was able to agree on. Additionally, one agency is incorporating any planned maintenance in the coming year to raise or lower their track performance targets accordingly.

Some agencies indicated that it was difficult to incorporate unpredictable events, such as when there is a hit to the traction power feed. In those instances, the agencies generally log what has caused the subsequent slow zone. However, predicting these events is difficult and can lead to inconsistencies with track performance targets. Some agencies try to adjust for this by incorporating factors such as age of the fixed guideway and its components that might eventually lead to a slow zone.

One agency responsible for a group plan has incorporated a **risk assessment score** to help them better assess the agencies that they are responsible for. This score incorporates a variety of data points that the agency receives from their group plan members on a consistent basis, such as safety metrics, finances, and spare ratio to determine which agencies might be at higher risk for coming in below the set performance standards. The score is primarily used to assess the **rolling stock performance targets**. Many agencies also have goals to replace all legacy vehicles by a certain timeframe, which has helped them with meeting performance goals for revenue vehicles.

Q2: How could your agency adjust their TAM performance targets to meet broader agency goals?

Some agencies are attempting to align their TAM performance metrics with broader agency goals, however the majority of agencies do not tie their TAM targets to larger agency goals. For those instances where agencies are considering other goals, one agency has a goal to reduce overall greenhouse gas emissions in their strategic plan. They described how the TAM performance metrics align with those goals, mostly due to the replacement of vehicles. However, they noted that they are primarily setting TAM performance metrics based on ULB after they determine when specific vehicles in their fleet will be replaced, so while the two goals do align, the outcomes are not necessarily because of one another.

Another agency uses the facility target to inform investment decisions. This allows the agency to better understand which facilities need upgrades by looking first at the overall TERM rating for the facility, then looking at individual asset classes of facilities that have a low (below 3) TERM rating. The agency indicated interest in doing something similar with infrastructure but found it more challenging to look at each asset class within that system.

The participants also noted that TAM goals could be used to successfully acquire additional capital funding for specific assets. If specific areas being tracked by TAM are consistently underperforming, then this could be a way to signal to management that additional capital investment is needed in that area. By consistently tracking data related to assets for the TAM plan, agencies were also able to use this data for additional goals related to the state of good repair of their assets.

Q3: What additional performance targets is your agency setting?

In addition to the required TAM performance targets, transit agencies are setting additional goals related to asset management. For revenue vehicles, one agency is trying to increase their mean time between failures, and the mean time between service affecting failures. They are also trying to increase the throughput to 30 trains per hour going through the system, which can sometimes impact the other metrics.

Other agencies are looking at more closely aligning their TAM plan to their Public Transportation Agency Safety Plans (PTASP). They look at different facility components such as pavement quality, security systems, passenger waiting areas, which are incorporated into a facility assessment. Information from these assessments also goes into the PTASP. In some cases, agencies have looked at factors in the facility such as cleanliness, elevators/escalators out of service, and fare gate availability as metrics in both their TAM plans and their PTASPs. By seeing where metrics overlap, agencies can be more coordinated in their efforts to complete various goals associated with both asset management and broader agency goals as a whole.

Related Resources

Grant Programs

- FTA Buses and Bus Facilities Program
  - https://www.transit.dot.gov/bus-program

Reference Documents

- Performance Management Webpage
  - https://www.transit.dot.gov/PerformanceManagement
- Performance Measures
  - https://www.transit.dot.gov/PerformanceManagement#Performance%20Measures
- Target Setting
  - https://www.transit.dot.gov/PerformanceManagement#Target%20Setting
- TAM Performance Measures Fact Sheet
  - https://www.transit.dot.gov/TAM/FTAOutreachMaterials/perfmsrFS

Tools and Calculators

- Performance Measures Tool
  - https://www.transit.dot.gov/PerformanceManagement#Performance%20Measures%20Tool
- TSI Course on Performance Measures and Setting Targets
  - https://www.transit.dot.gov/TAM/Outreach#Training