



TECHNICAL MEMORANDUM

DATE: March 7, 2024
TO: Boston Region Metropolitan Planning Organization
FROM: Sam Taylor, Metropolitan Planning Organization Staff
RE: Transit Asset Management Targets, SFY 2024

Through its federal Transit Asset Management (TAM) rule,¹ the Federal Transit Administration (FTA) requires transit agencies, metropolitan planning organizations (MPO), and state agencies to collaborate to achieve and maintain a state of good repair for transit systems. Any transit providers that receive federal funds must establish targets each year for federally required TAM performance measures. These measures relate to the condition of transit assets in four categories: rolling stock, nonrevenue service vehicles, facilities, and rail fixed guideway infrastructure. Meanwhile, FTA requires MPOs to set regional performance targets for these TAM measures in coordination with transit and state agencies. This memorandum proposes updates to the Boston Region MPO's existing set of TAM performance targets, which the MPO last updated in March 2023.

MPO staff recommends that the MPO vote to adopt the proposed updates to its regional TAM targets presented in this memorandum at its March 7, 2024, meeting. These proposed updated targets are based on state fiscal year (SFY) 2024 (July 2023 to June 2024) targets set by the Massachusetts Bay Transportation Authority (MBTA), the MetroWest Regional Transit Authority (MWRTA), and the Cape Ann Transportation Authority (CATA).

1 TAM REQUIREMENTS

The FTA's TAM rule requires applicable transit providers to carry out several activities to achieve and maintain a state of good repair for their assets:

- develop and implement a TAM plan, and update this plan at least once every four years²

¹ 49 Code of Federal Regulations (CFR) Part 625.

² The MBTA, CATA, and MWRTA adopted their first plans in 2018 and updated them in 2022.

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- conduct transit asset inventories and condition assessments, and report inventory and condition information to the National Transit Database (NTD) annually
- develop annual performance targets for TAM performance measures
- report targets and prior year performance to the NTD annually

MPOs also have TAM responsibilities, which are defined by the FTA’s TAM Rule and the Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning rule, which sets requirements for MPO planning processes.³ MPO TAM responsibilities include

- developing targets for TAM performance measures for metropolitan regions, in coordination with transit agencies and state departments of transportation;
- reporting these targets in the Long-Range Transportation Plan (LRTP), along with progress made toward meeting these targets compared to past performance or baseline data; and
- describing in the Transportation Improvement Program (TIP), to the maximum extent practicable, how projects programmed in the TIP will achieve performance targets identified in the LRTP.

2 TAM PERFORMANCE MEASURES

The TAM Rule specifies four performance measures, which apply to four TAM asset categories: rolling stock (vehicles that provide passenger service), equipment (nonrevenue service vehicles), facilities, and infrastructure (rail fixed guideway systems). Table 1 describes these measures.

**Table 1
TAM Performance Measures by Asset Category**

| Asset Category | Relevant Assets | Measure | Measure Type | Desired Direction |
|-----------------------|---|--|---------------------|--------------------------|
| Rolling Stock | Buses, vans, and sedans; light and heavy rail cars; commuter rail cars and locomotives; ferry boats | Percentage of revenue vehicles that have met or exceeded their ULB | Age-based | Minimize percentage |

³ The Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning rule is documented in 23 CFR Parts 450 and 771 and 49 CFR Part 613.

| | | | | |
|----------------|--|---|-------------------|---------------------|
| Equipment | Service support, maintenance, and other nonrevenue vehicles | Percentage of vehicles that have met or exceeded their ULB | Age-based | Minimize percentage |
| Facilities | Passenger stations and stops, parking facilities, administration and maintenance facilities* | Percentage of assets with condition rating lower than 3.0 on FTA TERM Scale | Condition-based | Minimize percentage |
| Infrastructure | Rail fixed guideway systems | Percentage of track segments with performance (speed) restrictions, by mode | Performance-based | Minimize percentage |

* Stops that meet the threshold for a passenger facility are listed in the FTA’s TAM Facility Performance Measure Reporting Guidebook, available at <https://www.transit.dot.gov/regulations-and-guidance/asset-management/tam-facility-performance-measure-reporting-guidebook>.
 FTA = Federal Transit Administration. TAM = Transit Asset Management. TERM = Transit Economic Requirements Model. ULB = Useful Life Benchmark.

Two definitions apply to these performance measures:

- **Useful Life Benchmark (ULB)**—“The expected life cycle of a capital asset for a particular transit provider’s operating environment, or the acceptable period of use in service for a particular transit provider’s operating environment.”⁴ For example, FTA’s default ULB for a bus is 14 years.⁵
- **FTA Transit Economic Requirements Model (TERM) Scale**—A five category rating system used in FTA’s TERM to describe asset condition, with a rating of 5 reflecting the best conditions.⁶

Information about the Boston Region MPO’s past TAM targets, which reflect targets provided by the MBTA, MWRTA, and CATA, can be accessed via the Performance-based Planning and Programming page on the MPO website (www.bostonmpo.org/performance).

⁴ FTA. Performance Management. July 13, 2023. Accessed February 14, 2024, at <http://www.transit.dot.gov/PerformanceManagement>

⁵ FTA. Default Useful Life Benchmark Cheat Sheet. October 25, 2021. Accessed February 14, 2024, at <https://www.transit.dot.gov/TAM/ULBcheatsheet>.

⁶ FTA. Performance Management.

3 SFY 2024 TAM PERFORMANCE TARGETS

3.1 Process

The MBTA, MWRTA, and CATA have developed a set of SFY 2024 TAM targets that account for recent asset inventory and condition data and these agencies' expectations of the effects that capital investment will have on asset procurement and improvement in SFY 2024. When setting targets, each agency has the discretion to use FTA-identified default ULBs for vehicles or to adjust ULBs with approval from the FTA. The MBTA has used FTA default ULBs for all vehicle types except for paratransit autos and vans, and some articulated buses, which are measured using MBTA-defined ULBs. The MWRTA uses FTA default ULBs for vans and equipment vehicles (excluding automobiles) and uses ULBs from the Massachusetts Department of Transportation's Fully Accessible Vehicle Guide for its cutaway vehicles and automobiles.⁷ CATA uses useful life criteria as defined in FTA Circular 5010.1E (Award Management Requirements) for ULB values for its vehicles.⁸

MPO staff used these SFY 2024 MBTA, CATA, and MWRTA targets to propose an updated set of TAM targets for the Boston region, which are shown in Tables 2 through 5. These performance values and targets may also reflect some recent updates to data or the reclassification of assets into different categories. MPO staff notes that the required TAM performance measures focus on specific proxies for transit asset state of good repair, as noted in the Measure Type column in Table 1. These proxies may not reflect asset condition or performance or do so in a comprehensive way.

FTA will neither penalize transit agencies or MPOs for not achieving regional TAM targets nor reward these entities for attaining them. FTA will review how the MPO is incorporating performance-based planning and programming practices, including those related to TAM, into its planning process during quadrennial certification reviews.

3.2 Proposed Targets

Table 2 describes SFY 2023 performance and SFY 2024 targets for transit rolling stock. The performance measure that applies to these assets is the percentage of vehicles that have met or exceeded their ULB.

⁷ Massachusetts Department of Transportation. MassDOT Fully Accessible Vehicle Guide: An Overview of Accessible Vehicle Specifications. September 2023. Accessed January 26, 2024, at <https://www.mass.gov/doc/massdot-fully-accessible-vehicle-guide-0/download>.

⁸ FTA. FTA C 5010.E "Award Management Requirements." July 16, 2018. Accessed February 14, 2024, at <https://www.transit.dot.gov/regulations-and-guidance/fta-circulars/award-management-requirements-circular-50101e>.

Table 2
SFY 2023 Performance and SFY 2024 Targets for Rolling Stock, by Agency

| | | SFY 2023 Performance (as of 6/30/2023) | | | SFY 2024 Targets (as of 6/30/2024) |
|--------|----------------------------------|---|--------------------------|---------------------------|---------------------------------------|
| Agency | Asset Type | Number of Vehicles | Number of Vehicles ≥ ULB | Percent of Vehicles ≥ ULB | Target Percent of Vehicles ≥ ULB |
| MBTA | Articulated Buses | 118 | 25 | 21% | 24% |
| MBTA | Buses | 879 | 259 | 29% | 26% |
| MBTA | Light Rail Vehicles ^a | 200 | 81 | 41% | 41% |
| MBTA | Vintage Trolleys ^b | 6 | 6 | 100% | 100% |
| MBTA | Heavy Rail Vehicles ^c | 392 | 118 | 30% | 29% |
| MBTA | Commuter Rail Locomotives | 83 | 19 | 23% | 23% |
| MBTA | Commuter Rail Coaches | 399 | 30 | 8% | 7% |
| MBTA | Ferry Boats | 4 | 0 | 0% | 0% |
| MBTA | Paratransit Automobiles | 304 | 0 | 0% | 0% |
| MBTA | Paratransit Vans ^d | 399 | 0 | 0% | 25% |
| CATA | Buses and Trolleys | 12 | 5 | 42% | 39% |
| CATA | Cutaway Vehicles ^e | 22 | 9 | 41% | 44% |
| MWRTA | Automobiles | 2 | 2 | 100% | 100% |
| MWRTA | Cutaway Vehicles ^f | 106 | 22 | 21% | 21% |
| MWRTA | Vans ^g | 6 | 0 | 0% | 0% |

^a MBTA Light Rail targets for SFY 2024 are more relaxed than those of SFY 2023 to account for an error made in 2023 when calculating the ULB for Type 7 Green Line cars.

^b MBTA vintage trolleys are used on the Ashmont-Mattapan High Speed Line.
^c The targets account for Red and Orange Line vehicle delivery.
^d The target accounts for approximately one-quarter of the paratransit vans reaching their useful life during FY24. Due to lower ridership during the COVID-19 pandemic and vehicle mileage, the expected useful life of these vehicles is longer than the FTA-defined ULB.
^e The NTD defines a cutaway vehicle as a vehicle in which a bus body is mounted on a van or light-duty truck chassis, which may be reinforced or extended. CATA uses these vehicles to provide fixed route and demand response service.
^f MWRTA uses cutaway vehicles to provide fixed route and demand response service.
^g MWRTA's vans are used to provide demand response service.
 CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority.
 MWRTA = MetroWest Regional Transit Authority. NTD = National Transit Database. SFY = State Fiscal Year. ULB = Useful Life Benchmark.
 Source: CATA, MBTA, MWRTA, and Boston Region MPO Staff.

Table 3 describes SFY 2023 performance and SFY 2024 targets for transit agency equipment, which refers to service support, maintenance, and other nonrevenue vehicles. MPO staff has aggregated targets for nonrevenue vehicle subtypes for each of the three transit agencies. The performance measure that applies to these assets is the percentage of vehicles that have met or exceeded their ULB.

Table 3
SFY 2023 Performance and SFY 2024 Targets
for Equipment (Nonrevenue Vehicles), by Agency

| | | SFY 2023 Performance (as of 6/30/2023) | | | SFY 2024 Targets (as of 6/30/2024) |
|--------|---------------|---|--------------------------|---------------------------|---------------------------------------|
| Agency | Asset Type | Number of Vehicles | Number of Vehicles ≥ ULB | Percent of Vehicles ≥ ULB | Target Percent of Vehicles ≥ ULB |
| MBTA | All Equipment | 1,443 | 707 | 49% | 51% |
| CATA | All Equipment | 3 | 3 | 100% | 100% |
| MWRTA | All Equipment | 10 | 5 | 50% | 50% |

CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority.
 MWRTA = MetroWest Regional Transit Authority. SFY = State Fiscal Year Revenue Year. ULB = Useful Life Benchmark.
 Source: CATA, MBTA, MWRTA, and Boston Region MPO Staff.

Table 4 describes SFY 2023 performance and SFY 2024 targets for passenger facilities, such as stations and parking facilities, and administrative and maintenance facilities. The performance measure that applies to these assets is

the percentage of facilities that have an FTA TERM scale score, which is a composite score based on assessments of facility components, of less than three. Facilities with scores below this threshold are considered to be in marginal or poor condition. A facility’s composite score is not a measure of the facility’s safety or operational performance.

Table 4
SFY 2023 Performance and SFY 2024 Targets
for Facilities, by Agency

| | | SFY 2023 Performance (as of 6/30/2023) | | | SFY 2024 Performance (as of 6/30/2024) |
|--------|--|---|---------------------|---------------------------------------|---|
| Agency | Asset Type | Number | Percent | Target Percent of Facilities < 3.0 | |
| | | of Facilities | of Facilities < 3.0 | | |
| MBTA | Passenger/ Parking Facilities ^a | 392 | 10 | 3% | 3% |
| MBTA | Administrative/ Maintenance Facilities ^b | 330 | 75 | 23% | 23% |
| CATA | Administrative/Maintenance Facilities | 1 | 0 | 0% | 0% |
| MWRTA | Administrative/Maintenance Facilities | 1 | 0 | 0% | 0% |

^a The MBTA reports performance targets for facilities with a baseline consistent assessment and continues to undertake visual condition assessments for all facilities.

^b The FY23 inventory shows a decrease in overall number of administrative/maintenance facilities from previous years due to the removal of assets that have no building/structure, have been demolished, or are redundant to other inventories (e.g., signal housing is included in the MBTA signal asset inventory). CATA = Cape Ann Transportation Authority. MBTA = Massachusetts Bay Transportation Authority. MWRTA = MetroWest Regional Transit Authority. SFY = State Fiscal Year. Source: CATA, MBTA, MWRTA, and Boston Region MPO Staff.

Table 5 describes SFY 2023 performance and SFY 2024 targets for infrastructure, specifically rail fixed guideway. The MBTA is the only transit agency in the Boston region with this asset type. The performance measure that applies to these assets is the percentage of track that is subject to performance (speed) restrictions. The MBTA samples the share of track segments with speed restrictions throughout the year.

**Table 5
SFY 2023 Performance and SFY 2024
Targets for Infrastructure (Fixed Guideway), MBTA**

| Asset Type | SFY 2023 Performance (as of 6/30/2023) | | | SFY 2024 Targets (as of 6/30/2024) |
|---|---|---|--|---|
| | Number of Miles | Number of Miles with Performance Restrictions | Percent of Miles with Performance Restrictions | Target Percent of Miles with Performance Restrictions |
| MBTA Light Rail Fixed Guideway ^a | 60 | 4 | 7% | 16% |
| MBTA Heavy Rail Fixed Guideway ^a | 77 | 10 | 13% | 17% |
| MBTA Commuter Rail Fixed Guideway | 641 | 21 | 3% | 4% |

Note: For this performance measure, the term “miles” refers to “directional route miles,” which represents the miles managed and maintained by the MBTA with respect to each direction of travel (for example, northbound and southbound), and excludes nonrevenue tracks such as yards, turnarounds, and storage tracks. The baseline and target percentages represent the percentage of annual average revenue track miles with performance restrictions from the total revenue miles.

^a The MBTA is pursuing an aggressive program to improve track condition and reduce performance restrictions across the transit system, much of which will not be complete until after FY 2024.

MBTA = Massachusetts Bay Transportation Authority. SFY = State Fiscal Year.

Source: CATA, MBTA, MWRTA, and Boston Region MPO Staff.

3.3 Summary of Performance and Proposed Target Changes

While the three regional transit authorities in the Boston region submit slightly different performance targets based on their assets, there are some common trends and notable differences to report. There were no meaningful changes in Equipment and Facilities performance between 2022 and 2023, and as such, the targets remain similar in these areas. Fixed guideway infrastructure performance worsened at MBTA, due to strategic implementations of slow zones and corrective action plans on its heavy rail and light rail tracks in response to a 2022 Safety Management Inspection. And rolling stock targets reflect aging vehicle fleets in some categories, such as MBTA’s articulated buses and paratransit

vans, while reflecting planned investments and the introduction of new vehicles in certain categories, such as MBTA's heavy rail cars on the Red and Orange lines.

4 REQUESTED ACTION AND NEXT STEPS

MPO staff recommends that the Boston Region MPO vote to adopt this set of SFY 2024 TAM performance targets for the Boston region. Should the MPO select this approach, staff will present and describe these targets in the performance chapter of the FFYs 2025–29 TIP document. In addition, MPOs are federally required to review their TAM performance targets when updating their LRTP. Going forward, the MPO will work with transit agencies and the Massachusetts Department of Transportation to use TAM performance measures and targets to monitor the condition of transit assets in the region, and to consider what effect the transit programs and projects proposed for the MPO's TIP will have on future transit state of good repair.

The Boston Region Metropolitan Planning Organization (MPO) operates its programs, services, and activities in compliance with federal nondiscrimination laws including Title VI of the Civil Rights Act of 1964 (Title VI), the Civil Rights Restoration Act of 1987, and related statutes and regulations. Title VI prohibits discrimination in federally assisted programs and requires that no person in the United States of America shall, on the grounds of race, color, or national origin (including limited English proficiency), be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination under any program or activity that receives federal assistance. Related federal nondiscrimination laws administered by the Federal Highway Administration, Federal Transit Administration, or both, prohibit discrimination on the basis of age, sex, and disability. The Boston Region MPO considers these protected populations in its Title VI Programs, consistent with federal interpretation and administration. In addition, the Boston Region MPO provides meaningful access to its programs, services, and activities to individuals with limited English proficiency, in compliance with U.S. Department of Transportation policy and guidance on federal Executive Order 13166.

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A complaint form and additional information can be obtained by contacting the MPO or at http://www.bostonmpo.org/mpo_non_discrimination.

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Boston Region MPO
10 Park Plaza, Suite 2150
Boston, MA 02116
civilrights@ctps.org

By Telephone:

857.702.3700 (voice)

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