



TECHNICAL MEMORANDUM

DATE: February 20, 2025
TO: Boston Region Metropolitan Planning Organization
FROM: Sam Taylor, MPO Staff
RE: Transit Safety Performance Targets

Metropolitan planning organizations (MPO) are federally required to set transit safety performance measure targets for their regions. MPOs set targets in coordination with transit and state agencies to manage safety risks on transit systems. This memorandum summarizes the most recent set of transit safety targets set by the Massachusetts Bay Transportation Authority (MBTA), the Cape Ann Transportation Authority (CATA), and the MetroWest Regional Transit Authority (MWRTA). Boston Region MPO staff proposes that the MPO board adopt these targets as presented for the Boston region at the February 20, 2025, MPO meeting.

1 TRANSIT SAFETY PERFORMANCE OVERVIEW

The Federal Transit Administration's Public Transportation Agency Safety Plan final rule identifies safety performance measurement as a key component of safety management processes.¹ It defines measures in five areas—fatalities, injuries, transit worker safety, safety events, and system reliability.

Table 1 describes the performance measures for which targets and performance are reported in this memo. For all measures except for the system reliability measure, the goal is to minimize the value.

¹ 49 CFR 673

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**Table 1
Federally Required Transit Safety Performance Measures**

Measure Category	Measure	Desired Direction
Safety Events	Total number of reportable safety events by mode	Decrease
Safety Events	Rate of safety events per total VRM by mode	Decrease
Safety Events	Collision Rate by mode (new)	Decrease
Safety Events	Pedestrian Collision Rate by mode (new)	Decrease
Safety Events	Vehicular Collision Rate by mode (new)	Decrease
Fatalities	Total number of reportable fatalities by mode	Decrease
Fatalities	Fatality rate per total VRM by mode	Decrease
Injuries	Total number of reportable injuries by mode	Decrease
Injuries	Injury rate per total VRM by mode	Decrease
Transit Worker Safety	Transit Worker Fatality Rate by mode (new)	Decrease
Transit Worker Safety	Transit Worker Injury Rate by mode (new)	Decrease
Transit Worker Safety	Assaults on Transit Workers by mode (new)	Decrease
Transit Worker Safety	Rate of Assaults on Transit Workers by mode (new)	Decrease
System Reliability	Mean distance between major mechanical failures by mode	Increase

VRM = Vehicle Revenue Miles.
 Source: Federal Transit Administration, "Safety Performance Targets Guide," accessed February 4, 2025, <https://www.transit.dot.gov/sites/fta.dot.gov/files/2024-11/SPTs-Guide-v3-11-06-2024.pdf>.

2 BOSTON REGION TRANSIT AGENCIES’ SAFETY TARGETS

To meet federal transit safety requirements, the Boston Region MPO coordinates with the MBTA, CATA, and MWRTA. As previously mentioned, the Federal Transit Administration gives transit agencies flexibility when developing targets for their specific service areas. The MBTA, CATA, and MWRTA systems have distinct operating contexts, and each agency has taken a somewhat different approach to setting targets, so their targets are presented separately. MPO staff recommends adopting these transit agencies’ safety targets as presented, as they reflect each agency’s understanding of the factors that will affect safety outcomes in their service areas.

2.1 MBTA Safety Targets

The MBTA monitors performance and sets federally required targets for four modes: heavy rail (Red, Orange, and Blue Lines), light rail (Green Line and the Mattapan High Speed Line), bus, and The RIDE paratransit system. Its commuter rail network and ferry service are not subject to these Federal Transit

Administrations requirements and are addressed outside of the Public Transportation Agency Safety Plans process.

MBTA Fatalities and Injuries

Table 2 shows past averages for the federally required transit safety measures of fatalities, fatality rate, injuries, and injury rate for MBTA heavy rail, light rail, bus, and The RIDE, based on data provided by the MBTA. These averages reflect safety data from Calendar Years (CY) 2021 to 2023, which were the most recent data available at the time of performance target development.

**Table 2
MBTA—Performance on Fatalities and Injuries (CYs 2021–23 Averages)**

MBTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Heavy Rail	0.67	0.03	184	9.5
Light Rail	0.33	0.06	97	17.0
Bus	0	0	309	14.3
The RIDE	0	0	26	3.0

Note: All rates per 1,000,000 Vehicle Revenue Miles.
CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority. N/A = Not Available.
Source: 2024 Transit Safety Plan, MBTA.

Given past trends and current efforts to reduce fatalities and injuries, the MBTA established the following performance targets for CY 2025. MBTA fatality and injury performance targets are shown in Table 3.

- **Fatalities and Fatality Rates:** The MBTA notes that fatality rates vary across modes due to the distinct operating environments and the inherent safety risk exposure associated with each mode. The MBTA is committed to reducing the number of fatalities across its system to zero and continues to invest in proactive solutions to achieve this goal.
- **Injuries and Injury Rates:** The MBTA developed its targets for CY 2025 for these two injury measures by assuming a two percent decrease in the injury rate per vehicle-miles traveled from the CYs 2021–23 average.

**Table 3
MBTA CY 2025 Performance Targets on Fatalities and Injuries**

MBTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Heavy Rail	0	0	180	9.31
Light Rail	0	0	95	16.7
Bus	0	0	303	14.0
The RIDE	0	0	25	3

Note: All rates are per 1,000,000 Vehicle Revenue Miles.
 CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority.
 Source: 2024 Transit Safety Plan, MBTA.

MBTA Transit Worker Safety

Beginning in 2025, MBTA must track and set targets on aspects of transit worker safety, including transit worker fatality rate, transit worker injury rate, number of assaults on transit workers, and rates of assaults on transit workers. Transit worker fatalities are a subset of overall fatalities, and transit worker injuries are a subset of overall injuries, narrowed to include all transit workers as defined by the National Transit Database (NTD).² In addition, assaults on transit workers are counted as defined by NTD.³ All performance measures involving rates are calculated per one million Vehicle Revenue Miles (VRM).

Table 4 shows average annual performance for transit worker safety categories by mode for CYs 2021–23.

² Federal Transit Administration, “National Transit Database (NTD) Glossary,” accessed February 4, 2025, <https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary#T>.
³ Federal Transit Administration, “Assault on a Transit Worker Overview,” accessed February 4, 2025, https://www.transit.dot.gov/sites/fta.dot.gov/files/2024-05/Assault-on-a-Transit-Worker-Overview_0.pdf.

**Table 4
MBTA Performance on Transit Worker Safety (CYs 2021–23 Averages)**

MBTA Mode	Average Fatality Rate	Average Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Heavy Rail	0	3.09	47	1.52
Light Rail	0	10.8	27	5.26
Bus	0	10.1	239	4.85
The RIDE	0	1	4	0

Note: All rates are per 1,000,000 Vehicle Revenue Miles.
CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority.
Source: 2024 Transit Safety Plan, MBTA.

Table 5 shows the MBTA’s inaugural targets for the transit worker safety categories. The MBTA targets aim for a two percent decrease in the rate of assaults on transit workers and rate of transit worker injuries per one million VRM. And the fatality rate target is zero, which is equal to the three-year average performance.

**Table 5
MBTA CY 2025 Transit Worker Safety Performance Targets**

MBTA Mode	Average Fatality Rate	Average Transit Worker Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Heavy Rail	0	3.03	28	1.49
Light Rail	0	10.6	29	5.15
Bus	0	9.94	103	4.75
The RIDE	0	1	1	0

Note: All rates are per 1,000,000 Vehicle Revenue Miles.
CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority.
Source: 2024 Transit Safety Plan, MBTA.

MBTA—Events and Reliability

Along with setting targets, MBTA has reported past performance on the following measures: average collision rate, collision rates involving pedestrians and vehicles, average annual safety events, average safety event rate, and average system reliability. System reliability is a measure of the average number of mechanical failures per VRM. All rates are calculated per one million VRM.

The MBTA has set targets on annual numbers of safety events and a safety event rate per one million VRM. The safety event rate target aims for a two percent reduction from the three-year average rate shown in Table 6.

The targets for System Reliability are a measure of the mean number of miles between major mechanical failures by mode. The System Reliability targets for CY 2025 are identical to those for Heavy Rail, Bus, and The Ride in CY 2024. The light rail target for CY 2025 is slightly greater than that of CY 2024.

**Table 6
MBTA Performance on Safety Events and Reliability
(CYs 2021–23 Averages)**

MBTA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles)
Heavy Rail	0.52	0.38	0	29	1.52	N/A
Light Rail	2.81	0.94	3.27	30	5.26	N/A
Bus	4.45	1.65	59	105	4.85	N/A
The RIDE	3	0	2	29	3.23	N/A

Note: All rates per 1,000,000 Vehicle Revenue Miles.
CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority. N/A = Not Available.
Source: 2024 Transit Safety Plan, MBTA.

Beginning in 2025, MBTA must set targets on rates of collisions, collision rates involving pedestrians, and collision rates involving vehicles. All targets for events and reliability, including the inaugural targets for average collision rate, average pedestrian collision rate, and average vehicular collision rate, are shown in Table 7. All rates are set per one million VRM.

The targets for rates of collision-related measures shown in Table 7 aim for a two percent reduction from the three-year average rates per VRM for light rail and bus. Heavy rail targets aim for a two percent reduction from its three-year average performance with the exception of vehicular collision rates, since the three-year average is zero. The collision-related targets for The RIDE remain equal to its three-year average performance.

**Table 7
MBTA CY 2025 Events and Reliability Performance Targets**

MBTA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles)
Heavy Rail	0.51	0.37	0	28	1.49	49,000
Light Rail	2.75	0.92	3.2	29	5.15	8,216
Bus	4.36	1.62	57.8	103	4.75	28,500
The RIDE	3	0	2	28	3	25,900

Note: All rates per 1,000,000 Vehicle Revenue Miles.
 CY = Calendar Year. MBTA = Massachusetts Bay Transportation Authority.
 Source: 2024 Transit Safety Plan, MBTA.

2.2 CATA Safety Targets

CATA monitors performance and sets federally required targets for its fixed-route bus service and demand response service. CATA has established targets for CY 2025; all rate targets are calculated per one hundred thousand VRM.

CATA Fatalities and Injuries

Table 8 shows past averages for the measures of fatalities, fatality rate, injuries, and injury rate for CATA’s fixed-route and demand response services. The table provides CYs 2020–24 averages for fatalities, injury and safety event measures, and system reliability measures.

**Table 8
CATA Performance on Fatalities and Injuries (CYs 2020–24 Averages)**

CATA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Fixed-Route Bus	0	0	0	0
Demand Response	0	0	0	0

Note: All rates are per 100,000 Vehicle Revenue Miles.
 CATA = Cape Ann Transportation Authority. CY = Calendar Year.
 Source: Cape Ann Transportation Authority.

With no reportable fatalities or injuries over the past five years, CATA has set targets of zero for all related measures for CY 2025. Table 9 provides a summary of the performance targets on fatalities and injuries.

Table 9
CATA CY 2025 Performance Targets on Fatalities and Injuries

CATA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Fixed-Route Bus	0	0	0	0
Demand Response	0	0	0	0

Note: All rates are per 100,000 Vehicle Revenue Miles.
CATA = Cape Ann Transportation Authority. CY = Calendar Year.
Source: Cape Ann Transportation Authority.

CATA Transit Worker Safety

Beginning in 2025, CATA must track and set targets on aspects of transit worker safety, including transit worker fatality rate, transit worker injury rate, number of assaults on transit workers, and rates of assaults on transit workers. Transit worker fatalities are a subset of overall fatalities, and transit worker injuries are a subset of overall injuries, narrowed to include all transit workers as defined by NTD.⁴ In addition, assaults on transit workers are counted as defined by NTD.⁵ Past performance is shown in Table 10.

Table 10
CATA Performance on Transit Worker Safety (CYs 2020–24 Averages)

CATA Mode	Average Fatality Rate	Average Transit Worker Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Fixed-Route Bus	0	0	0	0
Demand Response	0	0	0	0

Note: All rates are per 100,000 Vehicle Revenue Miles.
CATA = Cape Ann Transportation Authority. CY = Calendar Year.
Source: Cape Ann Transportation Authority.

With no transit worker safety fatalities, injuries, nor assaults, inaugural targets for CY 2025 are set to zero. Table 11 shows the CATA’s inaugural targets for transit worker safety categories by mode.

⁴ Federal Transit Administration, “National Transit Database (NTD) Glossary,” accessed February 4, 2025, <https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary#T>.
⁵ Federal Transit Administration, “Assault on a Transit Worker Overview,” accessed February 4, 2025, https://www.transit.dot.gov/sites/fta.dot.gov/files/2024-05/Assault-on-a-Transit-Worker-Overview_0.pdf.

**Table 11
CATA CY 2025 Transit Worker Safety Performance Targets**

CATA Mode	Average Fatality Rate	Average Transit Worker Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Fixed-Route Bus	0	0	0	0
Demand Response	0	0	0	0

Note: All rates are per 100,000 Vehicle Revenue Miles.
 CATA = Cape Ann Transportation Authority. CY = Calendar Year.
 Source: Cape Ann Transportation Authority.

CATA Events and Reliability

Along with setting targets, CATA has reported past performance on the following measures: average collision rate, collision rates involving pedestrians, collision rates involving vehicles, average annual safety events, average safety event rate, and average system reliability. System reliability is a measure of the average number of mechanical failures per VRM. All rates are calculated per 100,000 VRM. Events and reliability targets are shown in Table 12.

**Table 12
CATA Performance on Events and Reliability (CYs 2020–24 Averages)**

CATA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles)
Fixed-Route Bus	2.36	0	2.36	2.2	0.61	117,129
Demand Response	2.41	0	2.41	1	0.58	156,199

Note: All rates are per 100,000 Vehicle Revenue Miles.
 CATA = Cape Ann Transportation Authority. CY = Calendar Year.
 Source: Cape Ann Transportation Authority.

Beginning in 2025, CATA must set targets on rates of collisions, collision rates involving pedestrians, and collision rates involving vehicles. All target rates are set per 100,000 VRM. In addition, CATA has set targets on annual numbers of safety events and a safety event rate per 100,000 VRM. All targets for events and reliability, including the inaugural targets for average collision rate, average pedestrian collision rate, and average vehicular collision rate, are shown in Table 13.

CATA’s collision rate target aims for modest improvement, down to two collisions per 100,000 VRM. CATA safety event and safety event rate targets aim for

modest reductions from its five-year average performance. CATA’s system reliability targets aim for significant improvements for demand response service, but a loosening of the targets as compared to the five-year average for fixed-route service.

**Table 13
CATA CY 2025 Events and Reliability Performance Targets**

CATA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles)
Fixed-Route Bus	2.0	0	0	2	0.5	96,775
Demand Response	2.0	0	0	1	0.5	203,908

Note: All rates are per 100,000 Vehicle Revenue Miles.
 CATA = Cape Ann Transportation Authority. CY = Calendar Year.
 Source: Cape Ann Transportation Authority.

2.3 MWRTA Safety Targets

MWRTA monitors performance and sets federally required targets for its fixed-route bus service and its demand response service. MWRTA has established targets for CY 2025; all rate targets are calculated per one hundred thousand VRM.

MWRTA Fatalities and Injuries

Table 14 shows past averages for the measures of fatalities, fatality rate, injuries, and injury rate for MWRTA’s fixed-route and demand response services.

**Table 14
MWRTA Performance on Fatalities and Injuries (CYs 2020–24 Averages)**

MWRTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Fixed-Route Bus	0	0	1.0	0.09
Demand Response	0	0	0.6	0.07

Note: All rates are 100,000 Vehicle Revenue Miles.
 CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
 Source: MetroWest Regional Transit Authority.

MWRTA set targets of zero fatalities and less than one injury per 100,000 VRM. MWRTA set more conservative injury targets than past performance to account for increased encouragement to report injuries. Table 15 provides a summary of the performance targets on fatalities and injuries.

Table 15
MWRTA CY 2025 Performance Targets on Fatalities and Injuries

MWRTA Mode	Average Fatalities	Average Fatality Rate	Average Injuries	Average Injury Rate
Fixed-Route Bus	0	0	9	0.8
Demand Response	0	0	7	0.7

Note: All rates are 100,000 Vehicle Revenue Miles.
CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
Source: MetroWest Regional Transit Authority.

MWRTA Transit Worker Safety

Beginning in 2025, MWRTA must track and set targets on aspects of transit worker safety, including transit worker fatality rate, transit worker injury rate, number of assaults on transit workers, and rates of assaults on transit workers. Transit worker fatalities are a subset of overall fatalities, and transit worker injuries are a subset of overall injuries, narrowed to include all transit workers as defined by NTD.⁶ Assaults on transit workers are counted as defined by NTD.⁷ Past performance is shown in Table 16.

Table 16
MWRTA Performance on Transit Worker Safety (CYs 2020–24 Averages)

MWRTA Mode	Average Fatality Rate	Average Transit Worker Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Fixed-Route Bus	0	0.02	0	0
Demand Response	0	0	0	0

Note: All rates are 100,000 Vehicle Revenue Miles.
CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
Source: MetroWest Regional Transit Authority.

With zero transit worker fatalities in the past five years, MWRTA has set its fatality rate target to zero. In addition, MWRTA has set transit worker injury and transit worker assault rates at less than one injury and less than one assault per 100,000 VRM for both its fixed-route and demand response services. MWRTA set more conservative transit worker injury and transit worker assault targets than past performance to account for increased encouragement to report incidents.

⁶ Federal Transit Administration, “National Transit Database (NTD) Glossary,” accessed February 4, 2025, <https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary#T>.
⁷ Federal Transit Administration, “Assault on a Transit Worker Overview,” accessed February 4, 2025, https://www.transit.dot.gov/sites/fta.dot.gov/files/2024-05/Assault-on-a-Transit-Worker-Overview_0.pdf.

Table 17 shows the MWRTA’s inaugural targets for transit worker safety categories by mode.

**Table 17
MWRTA CY 2025 Transit Worker Safety Performance Targets**

MWRTA Mode	Average Fatality Rate	Average Transit Worker Injury Rate	Average Assaults on Transit Workers	Assault on Transit Worker Rate
Fixed-Route Bus	0	0.44	6	0.53
Demand Response	0	0.5	5	0.5

Note: All rates are per 100,000 Vehicle Revenue Miles.
 CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
 Source: MetroWest Regional Transit Authority.

MWRTA Events and Reliability

Along with setting targets, MWRTA has reported past performance on the following measures: average collision rate, collision rates involving pedestrians, collision rates involving vehicles, average annual safety events, average safety event rate, and average system reliability. System reliability is a measure of the average number of mechanical failures per VRM. All rates are calculated per 100,000 VRM. Events and reliability targets are shown in Table 18.

**Table 18
MWRTA Performance on Events and Reliability (CYs 2020–24 Averages)**

MWRTA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles) ^a
Fixed-Route Bus	0.07	0	0.07	1.2	0.11	171,428
Demand Response	0.02	0	0.02	0.8	0.10	112,346

Note: All rates are per 100,000 Vehicle Revenue Miles.
^a Average System Reliability includes data from CYs 2020–23 only.
 CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
 Source: MetroWest Regional Transit Authority.

Beginning in 2025, MWRTA must set targets on rates of collisions, collision rates involving pedestrians, and collision rates involving vehicles. All rates are set per 100,000 VRM. In addition, the MWRTA has set targets on annual numbers of safety events and safety event rates per 100,000 VRM for each mode.

MWRTA has set its pedestrian and vehicular collision rates for both modes to less than 0.5 collisions per 100,000 VRM both fixed-route and demand response service. MWRTA has set targets on collision-related, safety event, and system reliability targets that are more conservative than past performance to account for increased encouragement to report incidents.

All targets for events and reliability are shown in Table 19.

**Table 19
MWRTA CY 2025 Events and Reliability Performance Targets**

MWRTA Mode	Average Collision Rate	Average Pedestrian Collision Rate	Average Vehicular Collision Rate	Average Safety Events	Average Safety Event Rate	Average System Reliability (miles)
Fixed-Route Bus	6	0.08	0.44	9	0.8	75,000
Demand Response	4	0.1	0.5	7	0.7	75,000

Note: All rates are per 100,000 Vehicle Revenue Miles.
CY = Calendar Year. MWRTA = Metrowest Regional Transit Authority.
Source: MetroWest Regional Transit Authority.

3 REQUESTED ACTIONS AND NEXT STEPS

Each agency’s set of targets reflects its operating context and anticipated safety-related investments, policies, and safety management activities. Should the MPO adopt this set of transit agency targets as its regional targets, staff will present and describe these targets in the performance chapters of the FFYs 2026–30 Transportation Improvement Program (TIP) document. Going forward, the MPO will work with transit agencies and MassDOT to use transit performance measures and targets to monitor transit safety outcomes in the region, and to consider what effect the transit programs and projects proposed for the MPO’s TIP will have on safety outcomes on the region’s transit systems.

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