



**Massachusetts Bay
Transportation Authority**

Safety Update

Fiscal and Management Control Board

February 8, 2021

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MBTA's Safety Performance Measures and Targets

Safety Performance Targets

Safety performance targets based on the safety performance measures established under the National Public Transportation Safety Plan.

Mode of Transit Service	Fatalities (Total)	Fatalities (Rate per 1 million revenue miles)	Injuries (Total)	Injuries (Rate per 1 million revenue miles)	Safety Events (Total)	Safety Events (Rate per 1 million revenue miles)	System Reliability (Revenue miles traveled per major mechanical failure)
Heavy Rail	0	0	221	9.45	24	1.00	47,000
Light Rail	0	0	100	17.25	34	5.83	7,000
Bus	0	0	367	15.50	142	6.00	18,000
The RIDE	0	0	36	2.30	37	2.22	66,000

Mandated Performance Targets - Fatalities

A fatality meets the threshold for reporting if it occurs on our property and is confirmed within 30 days.

Fatalities – Total				
	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Heavy Rail	0	0	Move to zero	0
Light Rail	0	0	Move to zero	0
Bus	1	0	Move to zero	2
The RIDE	0	0	Move to zero	0

Per FTA guidance, this metric excludes fatalities related to suicide or trespassing.



Mandated Performance Targets - Injuries

An injury (of customer, employee, or member of the public) meets the threshold for reporting if it requires transport away from the scene for medical attention for one or more persons.

NTD Reportable Injuries – Rate per million vehicle revenue miles				
	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Heavy Rail	9.95	9.45	5% reduction	6.03
Light Rail	18.16	17.25	5% reduction	9.62
Bus	16.31	15.5	5% reduction	10.35
The RIDE	2.43	2.3	5% reduction	Pending

Per FTA guidance, this metric excludes injuries related to assault and other security related injuries.



Mandated Performance Targets – System Reliability

Reliability is measured as the mean distance between major mechanical failure by mode. Major mechanical system failures prevent a vehicle from completing or starting up a scheduled revenue trip because actual movement is limited or because of safety concerns.

System Reliability - Revenue miles traveled per major mechanical failure				
	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Heavy Rail	49,732	47,000	Improvement over 2019 performance with move toward 3 year avg.	47,567
Light Rail	7,660	7,000	Improvement over 2019 performance with move toward 3 year avg.	8,021
Bus	19,451	18,000	12% improvement over 2019 performance	33,874
The RIDE	66,134	66,000	Improvement over 2019 performance with move toward 3 year avg.	Pending



Mandated Performance Targets – NTD Reportable Safety Events

An event is considered a **safety event** if it meets the reporting thresholds for collisions, derailments, fire, hazardous material spill, act of nature (Act of God), evacuation, or Other Safety Occurrence Not Otherwise Classified occurring on a transit right-of-way, in a transit revenue facility, in a transit maintenance facility, or involving a transit revenue vehicle and meeting a NTD Major event threshold.

NTD Reportable Safety Events – Rate per million vehicle revenue miles

	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Heavy Rail	1.06	1	5% reduction	0.71
Light Rail	6.13	5.83	5% reduction	5.26
Bus	6.32	6	5% reduction	3.83
The RIDE	2.34	2.22	5% reduction	Pending



Additional Measures and Targets (not required by FTA)

Rail - Additional Metrics and Targets				
	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Customer Injuries (per million trips)	1.3	1.2	5% reduction	2.59
Main Line Train Derailments (total)	5	3	Reduce to 2017 performance	5
Yard Train Derailments (total)	9	9	Reduce to average	7
Collisions (per million revenue miles)	1.8	1.7	5% reduction or	1.36
Reportable Fire/Smoke Incidents (total)	194	170	5% reduction from 2019 performance	158

Additional Measures and Targets (not required by FTA)

Bus - Additional Metrics and Targets				
	3 Year Average (2017-2019)	Annual Performance Target	Basis for Proposed Target	2020 Performance
Customer Injuries (per million trips)	2.5	2.4	5% reduction from average	2.72
Collisions (per million revenue miles)	87.5	87.5	Reduce to average	56.73
Reportable Fire/Smoke Incidents (total)	24	15	5% reduction from 2019 performance	15



Conclusion

- Continue to analyze data trends to identify underperforming areas and improve system performance
- Promote proactive hazard identification by employees and continued State of Good Repair Improvements to reduce customer injuries
- Additional focus on infrastructure improvements, yard maintenance, and operator training to reduce derailments
- Continue weekly safety review meetings and post-event After Action reviews to ensure that concerns are addressed and mitigations are identified in a timely manner

