



**Massachusetts Bay  
Transportation Authority**

# Safety Update

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Fiscal and Management Control Board

April 26, 2021

Ronald Ester, Chief Safety Officer

# 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 – Rate per million vehicle revenue miles			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Heavy Rail	0	Move to zero	0
Light Rail	0	Move to zero	0
Bus	0	Move to zero	0
Contracted Bus			0
The RIDE	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			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Heavy Rail	9.45	5% reduction	8.46
Light Rail	17.25	5% reduction	16.14
Bus	15.5	5% reduction	9.40
Contracted Bus			0
The RIDE	2.3	5% reduction	3.92

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			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Heavy Rail	47,000	Improvement over 2019 performance with move toward 3 year avg.	52,509
Light Rail	7,000	Improvement over 2019 performance with move toward 3 year avg.	8,963
Bus	18,000	12% improvement over 2019 performance	29,162
Contracted Bus			Pending
The RIDE	66,000	Improvement over 2019 performance with move toward 3 year avg.	62,032



# 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			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Heavy Rail	1	5% reduction	1.10
Light Rail	5.83	5% reduction	2.93
Bus	6	5% reduction	3.08
Contracted Bus			0
The RIDE	2.22	5% reduction	1.74

# Additional Measures and Targets (not required by FTA)

Transit Rail - Additional Metrics and Targets			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Customer Injuries (per million trips)	1.33	5% reduction	5.48
Main Line Train Derailments (total)	3	Reduce to 2017 performance	1
Yard Train Derailments (total)	10	Reduce to average	2
Collisions (per million revenue miles)	1.72	5% reduction	1.91
Reportable Fire/Smoke Incidents (total)	170	5% reduction from 2019 performance	53

# Additional Measures and Targets (not required by FTA)

Commuter Rail - Performance Metrics		
	CY20 – Q1 Performance	CY21 – Q1 Performance
Fatalities (per million revenue miles)*	0	0
Reportable Injuries (per million revenue miles)	3.45	2.25
Reportable Customer Injuries (per million revenue miles)	1.38	0.32
Reportable Incidents (per million revenue miles)	0	0.97
Reportable Derailments (total)	1	0
Reportable Rules Violations (per million revenue miles)	0	0.64

Metrics are in conformance with FRA Reporting Requirements.

\*Excludes fatalities related to suicide and trespassing





# Additional Measures and Targets (not required by FTA)

Bus - Additional Metrics and Targets			
	Annual Performance Target	Basis for Target	CY21 - Q1 Performance
Customer Injuries (per million trips)	2.39	5% reduction from average	3.00
Collisions (per million revenue miles)	87.5	Reduce to average	49.91
Reportable Fire/Smoke Incidents (total)	15	5% reduction from 2019 performance	1



# Additional Measures and Targets (not required by FTA)

Ferry - Performance Metrics		
	CY20 – Q1 Performance	CY21 – Q1 Performance
Fatalities (per million revenue miles)*	0	0
Reportable Injuries (per million revenue miles)	0	0
Safety Events (per million revenue miles)	0	0



# Conclusion

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- Operational Departments and Safety meet weekly to review safety performance data and develop mitigations for areas of concern
- Additional customer campaigns are being developed to focus on reducing customer injuries
- Safety continues educating workforce on SMS through training and events including the SMS Symposium
- Also promoting Employee Hazard Reporting through improvements to the Safety Hotline and rollout of Safety Communications Boards

