



**Massachusetts Bay  
Transportation Authority**

# **Safety Data Analysis Report Sept 2022**

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Ronald Ester  
*Chief Safety Officer*

# BUS

## SAFETY PERFORMANCE INDICATORS

Bus - Safety Performance Indicators																			
Bus	2021 Monthly Target	Sep-21	Oct-21	Nov-21	Dec-21	2021 Target	2021 Total	2022 Monthly Target	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	2022 Target	2022 YTD
Fatalities - Total <sup>1</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTD Reportable Safety Events - Total <sup>2</sup>	12	10	7	2	13	142	89	10	8	4	7	7	8	6	8	12	11	120	71
NTD Reportable Safety Events - Rate per million revenue miles	6.00	5.33	3.46	1.02	6.65	6.00	3.71	5.21	4.26	2.37	3.63	3.83	4.35	3.26	4.45	6.35	6.50	5.21	4.34
NTD Reportable Injuries - Total <sup>2</sup>	31	26	20	20	35	367	264	27	18	21	19	21	18	22	19	28	35	324	201
NTD Reportable Injuries - Rate per million revenue miles	15.50	13.86	9.90	10.22	17.90	15.50	11.01	14.00	9.59	12.42	9.86	11.50	9.80	11.95	10.57	14.83	20.69	14.00	12.27
Customer Injuries - Rate per million passenger trips	2.95	3.31	2.62	2.23	4.71	2.95	2.99	2.93	2.18	3.30	2.74	2.57	2.29	2.16	1.96	2.12	4.07	2.93	2.61
Collisions - Rate per million revenue miles	85.63	73.02	60.37	58.27	64.44	85.63	58.60	57.42	74.58	79.83	77.88	63.51	81.08	65.75	60.09	81.54	90.43	57.42	74.86
with Vehicle - Rate per million revenue miles	N/A	59.16	48.00	47.53	48.59	N/A	45.08	44.18	59.66	61.50	60.75	53.11	64.21	52.71	46.74	65.13	72.70	44.18	59.54
with Object - Rate per million revenue miles	N/A	9.59	9.40	9.71	11.25	N/A	9.93	9.73	11.72	14.78	13.50	7.67	14.15	9.78	11.13	11.65	13.00	9.73	11.91
with Person - Rate per million revenue miles	N/A	1.07	2.47	1.02	1.53	N/A	1.54	1.51	0.53	1.77	2.08	1.10	1.09	1.09	1.11	1.59	2.96	1.51	1.47
with T Vehicle - Rate per million revenue miles	N/A	3.20	0.49	0.00	3.07	N/A	2.04	2.00	2.66	1.77	1.56	1.64	1.63	2.17	1.11	3.18	1.77	2.00	1.95
Reportable Smoke/Fire Incidents	1	1	1	3	2	15	16	1	1	0	0	1	2	0	3	2.00	1	15	10
Mean Miles between Mechanical Failures	18,000	29,301	26,073	22,281	31,775	18,000	28,638	25,000	18,531	22,047	26,099	25,623	25,199	27,128	23,317	17,374	16,595	25,000	22,602



# RAIL

## SAFETY PERFORMANCE INDICATORS - HEAVY RAIL

Heavy Rail - Safety Performance Indicators																			
Heavy Rail	2021 Monthly Target	Sep-21	Oct-21	Nov-21	Dec-21	2021 Target	2021 Total	2022 Monthly Target	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	2022 Target	2022 YTD
Fatalities - Total <sup>1</sup>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	3
NTD Reportable Safety Events - Total <sup>2</sup>	2	3	1	3	2	24	24	2	0	3	1	2	5	2	2	3	4	24	22
NTD Reportable Safety Events - Rate per million revenue miles	1.00	1.62	0.52	1.63	1.04	1.00	1.09	1.00	0.00	1.78	0.52	1.09	2.75	1.18	1.31	2.17	3.23	1.00	1.47
NTD Reportable Injuries - Total <sup>2</sup>	18	13	25	19	17	221	184	16	23	18	18	23	17	16	14	11	17	195	157
NTD Reportable Injuries - Rate per million revenue miles	9.45	7.02	13.12	10.34	8.87	9.45	8.39	8.46	12.54	10.66	9.32	12.56	9.36	9.42	9.14	7.96	13.75	8.46	10.50
Mainline Revenue Train Derailments	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Mainline Non-Revenue Train Derailments	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	1
Yard Derailments	0	0	0	0	0	4	3	0	0	0	1	0	0	0	0	0	0	3	1
Maintenance Vehicle Derailments	0	0	1	0	1	7	4	0	0	1	0	0	3	0	0	3	1	5	8
Mean Miles between Mechanical Failures	47,000	40,399	29,975	39,987	42,484	47,000	44,617	47,500	26,193	33,891	43,898	51,980	73,942	66,535	41,019	44,136	50,554	47,500	43,109

<sup>1</sup>In accordance with FTA performance target guidance, trespasser and suicide related fatalities are excluded from fatality counts

<sup>2</sup>In accordance with FTA performance target guidance, security related events (including suicides/attempted suicides) are excluded from the safety events total



# RAIL

## SAFETY PERFORMANCE INDICATORS – LIGHT RAIL

Light Rail	2021 Monthly Target	Sep-21	Oct-21	Nov-21	Dec-21	2021 Target	2021 Total	2022 Monthly Target	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	2022 Target	2022 YTD
Fatalities - Total <sup>1</sup>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTD Reportable Safety Events - Total <sup>2</sup>	3	0	1	1	2	34	17	2	3	3	4	2	2	5	1	5	3	31	28
NTD Reportable Safety Events - Rate per million revenue miles	5.83	0.00	2.10	2.07	3.99	5.83	3.21	5.58	6.27	6.79	8.05	4.16	4.10	10.30	2.05	9.94	5.67	5.58	6.38
NTD Reportable Injuries - Total <sup>2</sup>	8	5	5	4	5	100	88	7	5	10	7	5	11	12	9	8	9	84	76
NTD Reportable Injuries - Rate per million revenue miles	17.25	10.94	10.52	8.29	9.97	17.25	16.60	14.70	10.45	22.64	14.09	10.41	22.57	24.71	18.44	15.91	17.01	14.70	17.31
Mainline Revenue Train Derailments	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	1
Mainline Non-Revenue Train Derailments	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0
Yard Derailments	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	4	0
Maintenance Vehicle Derailments	0	0	0	1	0	2	1	0	1	0	2	1	1	0	0	0	0	1	5
Mean Miles between Mechanical Failures	7,000	7,308	7,516	8,393	7,817	7,000	7,780	7,500	7,329	5,311	7,558	9,806	8,150	6,302	6,187	5,898	6,146	7,500	6,885
Green Line	2021 Monthly Target	Sep-21	Oct-21	Nov-21	Dec-21	2021 Target	2021 Total	2022 Monthly Target	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	2022 Target	2022 YTD
Customer Injuries - Rate per million passenger trips	4.23	1.69	1.60	1.55	1.56	4.23	3.53	3.48	2.00	3.00	2.21	1.70	4.38	1.77	1.35	3.85	2.55	3.48	2.53
Collisions - Rate per million revenue miles	6.65	2.19	2.10	4.14	7.98	6.65	4.53	4.44	6.27	11.32	6.04	6.24	2.05	10.30	0.00	7.95	1.89	4.44	5.69
with Vehicle - Rate per million revenue miles	N/A	2.19	0.00	0.00	3.99	N/A	1.70	1.66	4.18	9.06	4.03	4.16	2.05	4.12	0.00	1.99	1.89	1.66	3.42
with Object - Rate per million revenue miles	N/A	0.00	2.10	2.07	0.00	N/A	0.75	0.74	0.00	0.00	0.00	2.08	0.00	0.00	0.00	1.99	0.00	0.74	0.46
with Person - Rate per million revenue miles	N/A	0.00	0.00	2.07	0.00	N/A	0.94	0.92	0.00	0.00	0.00	0.00	0.00	2.06	2.05	3.98	0.00	0.92	0.91
with T Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	3.99	N/A	1.13	1.11	2.09	2.26	2.01	0.00	0.00	4.12	0.00	0.00	0.00	1.11	1.14
Reportable Smoke/Fire Incidents	4	1	0	7	5	45	34	3	3	8	4	2	2	2	3	3	1	33	28

<sup>1</sup>In accordance with FTA performance target guidance, trespasser and suicide related fatalities are excluded from fatality counts

<sup>2</sup>In accordance with FTA performance target guidance, security related events (including suicides/attempted suicides) are excluded from the safety events total



# FIRE/SMOKE

## CODE 1'S CONT'D

Septmeber Total Reportable Incidents - IGNITED MATERIAL						
Ignited Material Type	Red	Orange	Green	Blue	Bus	TOTAL
Code 1, Other	0	0	0	0	1	1
Debris - Trash	2	0	0	0	0	2
Infrastructure - Electrical	0	1	0	0	0	1
Infrastructure - Rail Tie(s)	0	0	0	1	0	1
Vegetation - Other	0	1	0	0	0	1
Vehicle - Brakes/Wheels	0	0	1	0	0	1
<b>TOTAL</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>7</b>



# SAFETY HOTLINE REPORTING SYSTEM

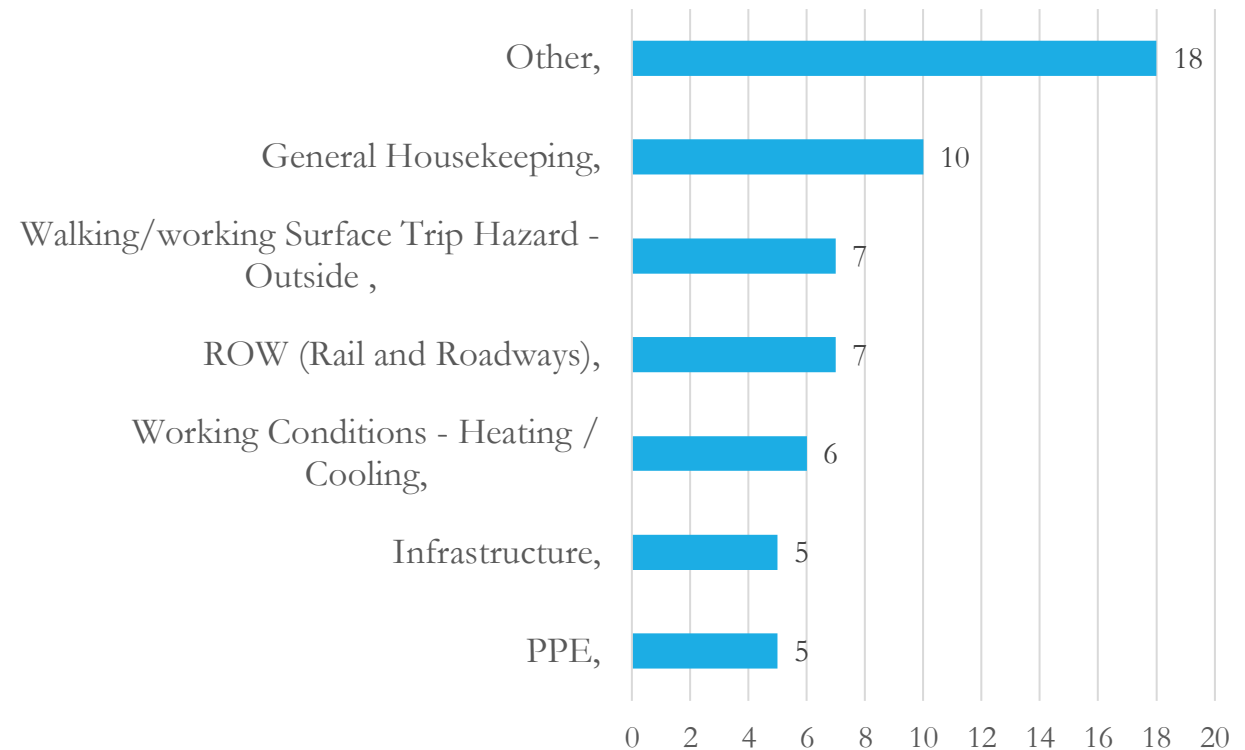
## Safety Hotline Reporting Options

- Safety Hotline: (617) 222-SAFE/7233
- Safety Notification email:  
[SafetyNotification@mbta.com](mailto:SafetyNotification@mbta.com)
- Direct reporting to an MBTA Safety official
- Submitting Form B by email, to an MBTA Safety official, or by fax: (617) 222-5127

Month	Total Reports	Closed
July 2022	35	28
August 2022	31	17
September 2022	23	12
<b>Total</b>	<b>89</b>	<b>57</b>

As of 10/14/2022

Safety Hotline Reports by Hazard Types (3 or more):  
Past 3 months



# SAFETY INITIATIVES

## SMS FUNDAMENTALS COURSE

### SMS Fundamentals Course

Announced in April 2021, the MBTA SMS Fundamentals Course, which is the baseline Safety Management System introduction for the MBTA Workforce has been released to all MBTA employees via the MassDOT LearningHub. The course objectives include defining SMS, reviewing SMS roles and responsibilities, identifying and reporting hazards, and how safety reports are managed. Below are the MBTA wide completion percentages and course completion by month.

