



**Massachusetts Bay
Transportation Authority**

Safety Data Report August 2022

Ronald Ester
Chief Safety Officer

DRAFT – For Discussion and Policy Purposes Only

SAFETY PERFORMANCE INDICATORS



See Notes

Bus - Safety Performance Indicators																			
Bus	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Fatalities - Total ¹	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTD Reportable Safety Events - Total ²	12	9	10	7	2	13	142	89	10	8	4	7	7	8	6	8	12	120	60
NTD Reportable Safety Events - Rate per million revenue miles	6.00	4.29	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	5.21	4.09
NTD Reportable Injuries - Total ²	31	25	26	20	20	35	367	264	27	18	21	19	21	18	22	19	28	324	166
NTD Reportable Injuries - Rate per million revenue miles	15.50	11.93	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	14.00	11.30
Customer Injuries - Rate per million passenger trips	2.95	2.40	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	2.93	2.40
Collisions - Rate per million revenue miles	85.63	59.18	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	57.42	73.07
with Vehicle - Rate per million revenue miles	N/A	46.29	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	44.18	58.02
with Object - Rate per million revenue miles	N/A	8.59	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	9.73	11.78
with Person - Rate per million revenue miles	N/A	3.34	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	1.51	1.29
with T Vehicle - Rate per million revenue miles	N/A	0.95	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	2.00	1.97
Reportable Smoke/Fire Incidents	1	2	1	1	3	2	15	16	1	1	0	0	1	2	0	3	2.00	15	9
Mean Miles between Mechanical Failures	18,000	23,284	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	25,000	22,602



CUSTOMER INJURIES BY GARAGE



See Notes

Bus Customer Injuries Transported by Garage (# of Injuries)			
Location (Garage)	22-August	21-August	2021 Average
Arborway	2	0	1.8
Bennett	3	3	1.6
Cabot/Albany	4	4	6.4
Charlestown/Fellsway	2	1	2.3
Lynn	1	2	.7
Quincy	0	1	.8
Southampton	3	3	2
TOTAL	15	14	15.5

Compared to the previous year, **GREEN** text identifies garages with a decrease in customer injury numbers, while **RED** text identifies garages with an increased number of customer injuries.



[Back to INDEX](#)

BUS COLLISIONS breakdown

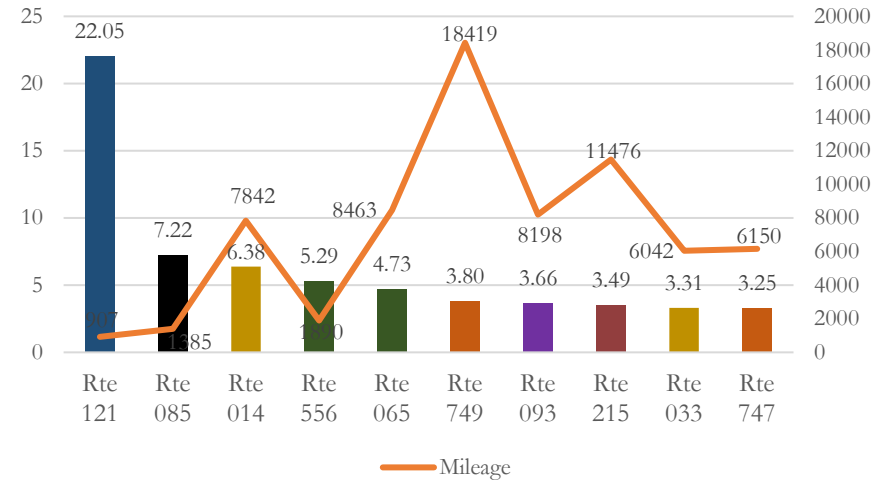


Top 10 Locations with Highest # of Collisions Past 12 Months by Type

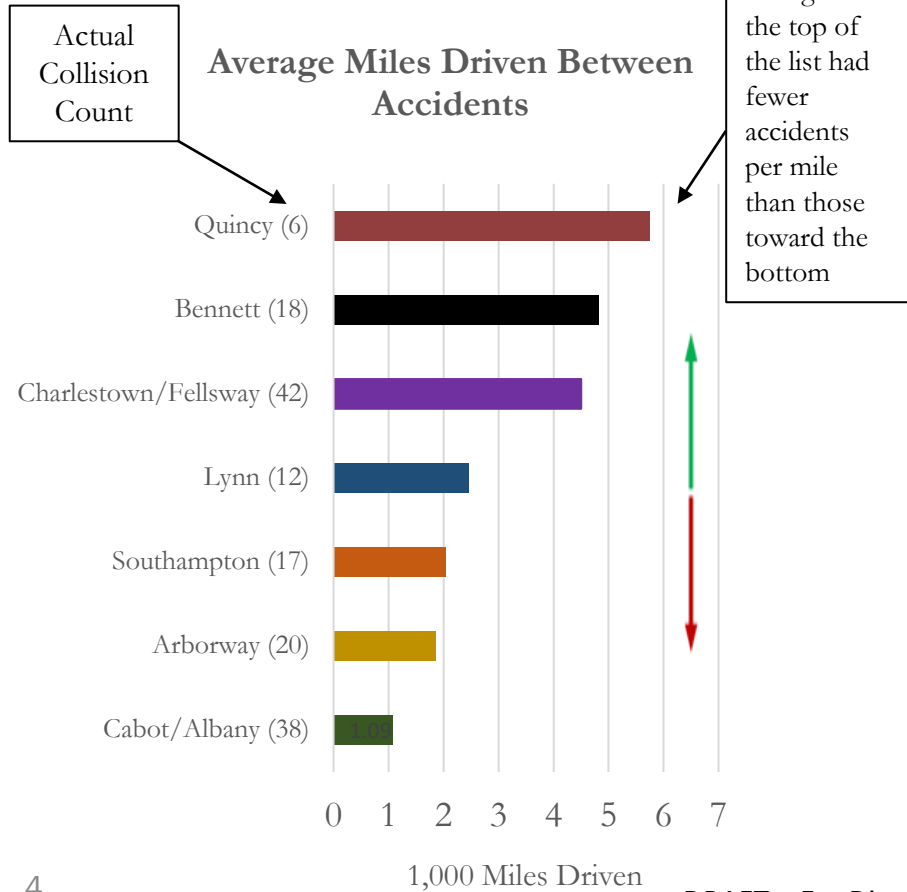
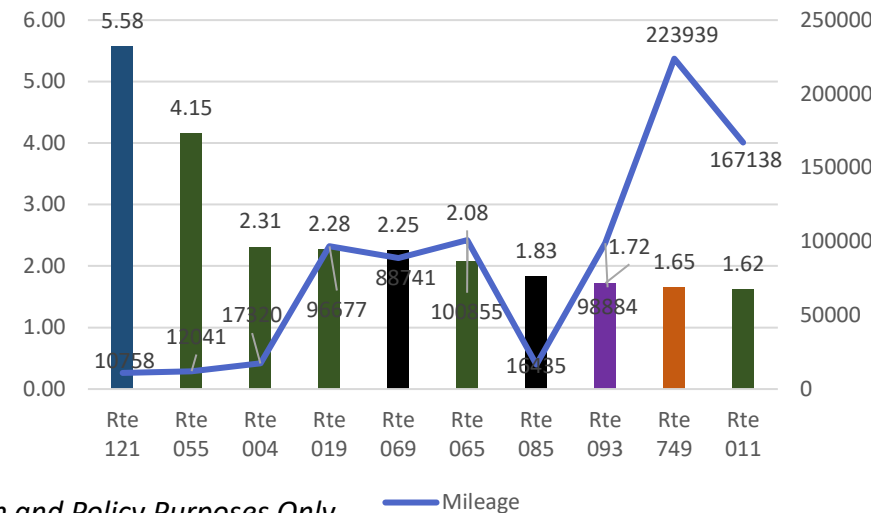
See Notes

CabotAlbany - Bus Garage	14
Collision - with Object	8
Collision - with T Vehicle	6
Nubian Station	12
Collision - with Object	5
Collision - with Person	2
Collision - with T Vehicle	2
Collision - with Vehicle	2
Collision - with Bicyclist	1
Ashmont Station	8
Collision - with Vehicle	5
Collision - with Object	2
Collision - with T Vehicle	1
Haymarket Station	7
Collision - with Vehicle	5
Collision - with Object	1
Collision - with T Vehicle	1
Fields Corner Station @ Red Line	5
Collision - with Object	4
Collision - with Vehicle	1
Ruggles Sta - Upper Level	5
Collision - with Object	2
Collision - with Vehicle	2
Collision - with T Vehicle	1
Washington St @ Tufts Med Ctr	5
Collision - with Vehicle	3
Collision - with Bicyclist	1
Collision - with Object	1
Wellington Station Busway	4
Collision - with Vehicle	3
Collision - with Object	1
Temple Pl @ Washington St	4
Collision - with Vehicle	3
Collision - with T Vehicle	1
Warren St @ ML King Blvd	4
Collision - with Vehicle	4

Top 10 Routes with Highest # of Collisions
Per 10K Miles - August 2022



Top 10 Routes with Highest # of Collisions
Per 10K Miles - Past 12 Months



SAFETY PERFORMANCE INDICATORS - Heavy Rail

Heavy Rail - Safety Performance Indicators																			
Heavy Rail	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Fatalities - Total ¹	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
NTD Reportable Safety Events - Total ²	2	2	3	1	3	2	24	24	2	0	3	1	2	5	2	2	3	24	18
NTD Reportable Safety Events - Rate per million revenue miles	1.00	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	1.00	1.31
NTD Reportable Injuries - Total ²	18	12	13	25	19	17	221	184	16	23	18	18	23	17	16	14	11	195	140
NTD Reportable Injuries - Rate per million revenue miles	9.45	6.02	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	8.46	10.21
Mainline Revenue Train Derailments	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
Mainline Non-Revenue Train Derailments	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Yard Derailments	0	0	0	0	0	0	4	3	0	0	1	0	0	0	0	0	0	3	1
Maintenance Vehicle Derailments	0	0	0	1	0	1	7	4	0	0	1	0	3	0	0	3	5	7	
Mean Miles between Mechanical Failures	47,000	51,118	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	47,500	43,109

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

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



SAFETY PERFORMANCE INDICATORS – Heavy Rail CONT'D

See Notes

Orange Line	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Customer Injuries - Rate per million passenger trips	2.99	2.20	1.52	4.95	3.09	2.53	2.99	3.12	3.06	1.57	3.25	3.02	3.39	2.94	1.80	2.27	0.00	3.06	2.36
Collisions - Rate per million revenue miles	0.77	3.54	2.01	2.12	0.00	2.13	0.77	2.32	2.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.27	0.00
with Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
with Object - Rate per million revenue miles	N/A	1.77	0.00	0.00	0.00	2.13	N/A	0.71	0.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.7	0.00
with Person - Rate per million revenue miles	N/A	1.77	2.01	2.12	0.00	0.00	N/A	1.61	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.57	0.00
with T Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
Reportable Smoke/Fire Incidents	5	1	2	0	3	2	56	29	2	1	5	2	7	2	1	5	1	28	24
Red Line	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Customer Injuries - Rate per million passenger trips	4.36	2.33	1.98	1.79	3.55	1.89	4.36	3.05	3.01	5.75	3.99	2.51	3.15	1.76	1.75	1.54	2.71	3.01	2.71
Collisions - Rate per million revenue miles	0.48	0.00	0.00	0.00	2.85	0.91	0.48	0.90	0.88	1.88	0.00	0.84	0.00	0.00	1.89	0.00	0.00	0.88	0.58
with Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
with Object - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.33	0.32	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.32	0.12
with Person - Rate per million revenue miles	N/A	0.00	0.00	0.00	2.85	0.00	N/A	0.41	0.4	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.4	0.23
with T Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.91	N/A	0.16	0.16	0.00	0.00	0.84	0.00	0.00	0.94	0.00	0.00	0.16	0.23
Reportable Smoke/Fire Incidents	5	6	3	5	4	5	63	71	5	6	11	5	5	0	5	2	3	70	37
Blue Line	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Customer Injuries - Rate per million passenger trips	1.02	0.00	0.00	2.65	1.07	3.52	1.02	1.07	1.05	3.88	0.00	0.00	1.01	0.00	1.79	0.00	1.76	1.05	1.02
Collisions - Rate per million revenue miles	0.21	2.74	0.00	0.00	0.00	0.00	0.21	0.73	0.72	6.03	0.00	2.79	0.00	4.69	0.00	0.00	0.00	0.72	1.65
with Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
with Object - Rate per million revenue miles	N/A	2.74	0.00	0.00	0.00	0.00	N/A	0.49	0.48	6.03	0.00	0.00	0.00	4.69	0.00	0.00	0.00	0.48	1.24
with Person - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.24	0.24	0.00	0.00	2.79	0.00	0.00	0.00	0.00	0.00	0.24	0.41
with T Vehicle - Rate per million revenue miles	N/A	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00
Reportable Smoke/Fire Incidents	1	0	0	0	0	1	6	11	1	0	0	0	1	0	2	0	0	11	3

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

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

total

DRAFT – For Discussion and Policy Purposes Only



[Back to INDEX](#)

SAFETY PERFORMANCE INDICATORS – Light Rail

See Notes

Light Rail - Safety Performance Indicators																			
Light Rail	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Fatalities - Total ¹	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NTD Reportable Safety Events - Total ²	3	5	0	1	1	2	34	17	2	3	3	4	2	2	5	1	5	31	25
NTD Reportable Safety Events - Rate per million revenue miles	5.83	11.67	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	5.58	6.47
NTD Reportable Injuries - Total ²	8	4	5	5	4	5	100	88	7	5	10	7	5	11	12	9	8	84	67
NTD Reportable Injuries - Rate per million revenue miles	17.25	9.33	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	14.70	17.35
Mainline Revenue Train Derailments	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0
Mainline Non-Revenue Train Derailments	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
Yard Derailments	0	1	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	4	0
Maintenance Vehicle Derailments	0	0	0	0	1	0	2	1	0	1	0	2	1	1	0	0	0	1	5
Mean Miles between Mechanical Failures	7,000	6,077	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	7,500	6,885
Green Line	2021 Monthly Target	Aug-21	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	2022 Target	2022 YTD
Customer Injuries - Rate per million passenger trips	4.23	1.60	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	3.48	2.53
Collisions - Rate per million revenue miles	6.65	4.67	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	4.44	6.22
with Vehicle - Rate per million revenue miles	N/A	0.00	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	1.66	3.63
with Object - Rate per million revenue miles	N/A	0.00	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	0.74	0.52
with Person - Rate per million revenue miles	N/A	4.67	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	0.92	1.04
with T Vehicle - Rate per million revenue miles	N/A	0.00	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	1.11	1.29
Reportable Smoke/Fire Incidents	4	2	1	0	7	5	45	34	3	3	8	4	2	2	2	3	3	33	27

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

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



COLLISIONS REVENUE VEHICLES



In August 2022,
there were **three (3)**
Revenue Vehicle Collisions

- **Train v Person (2)**
- **Train v Object (1)**
- **Train v Vehicle (1)**

	Jan-August 20	Jan-August 21	Jan-August 22
Collision – with Object	6	11	6
Collision – with Person	14	17	6
Collision – Train on Train	1	3	3
Collision – with T Vehicle	1	2	3
Collision – with Vehicle	5	7	13
Grand Total	27	40	31



FIRE/SMOKE CODE 1's

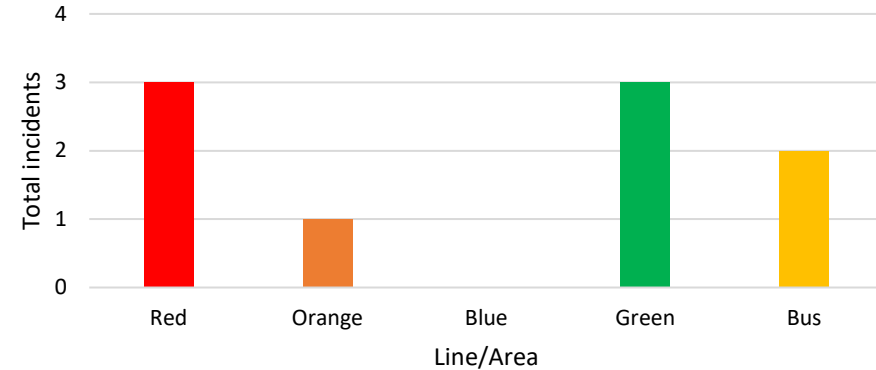
Code 1 Reportable Incidents

- fire/smoke with 1 or more injuries requiring transport
OR
- fire/smoke that requires suppression but not evacuation
OR
- fire/smoke with an evacuation onto the ROW

Code 1 Non-Reportable Incidents

- fire/smoke with **NO** injury transport, suppression or evacuation

TOTAL REPORTABLE INCIDENTS - August 2022



August Total Code 1: Fire/Smoke Incidents		
NTD Criteria	Non-Reportable	Reportable
Rail	9	7
Bus	10	2
August Total Incident	19	9
2021 Total Monthly Avg	17.7	12.8

August Total Reportable Incidents - AREA		
	Aug-22	Aug-21
Red	3	6
Orange	1	1
Blue	0	0
Green	3	2
Bus	2	2
TOTAL	9	11



FIRE/SMOKE

Code 1's cont'd

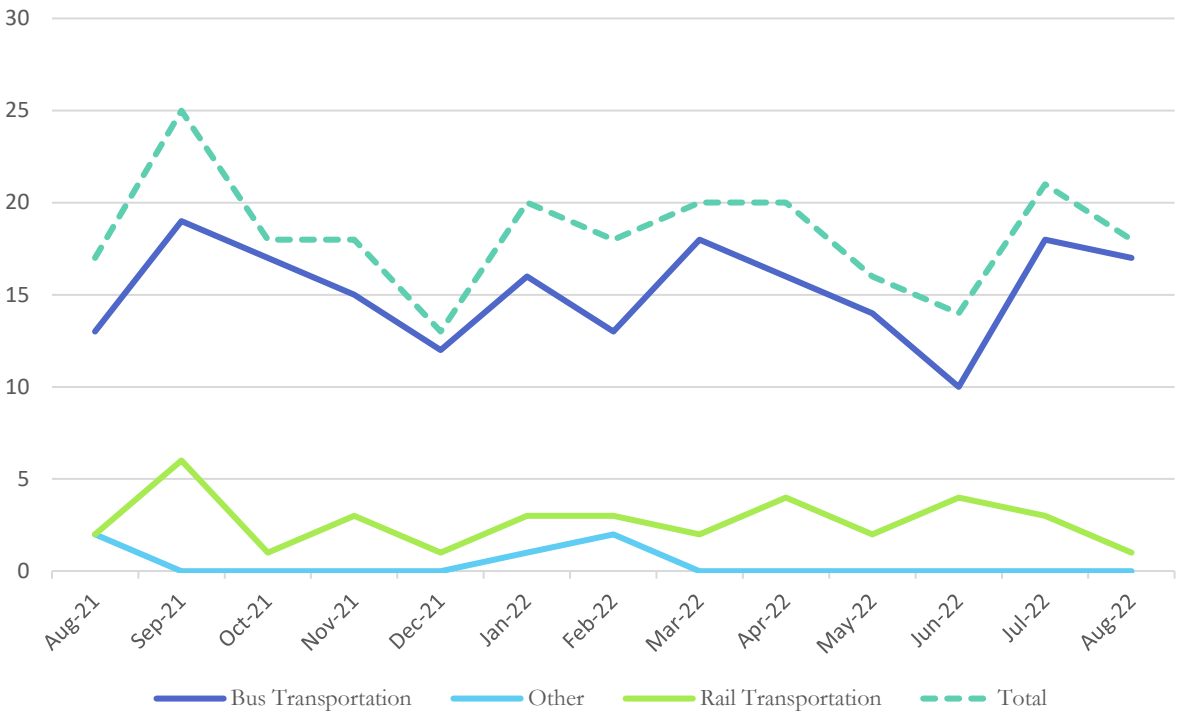
August Total Reportable Incidents - IGNITED MATERIAL						
Ignited Material Type	Red	Orange	Green	Blue	Bus	TOTAL
Debris - Trash	2	1	0	0	0	3
Infrastructure - 3rd Rail / OCS	1	0	0	0	0	1
Vegetation - Other	0	0	3	0	1	4
Vehicle - Propulsion / Truck	0	0	0	0	1	1
TOTAL	3	1	3	0	2	9



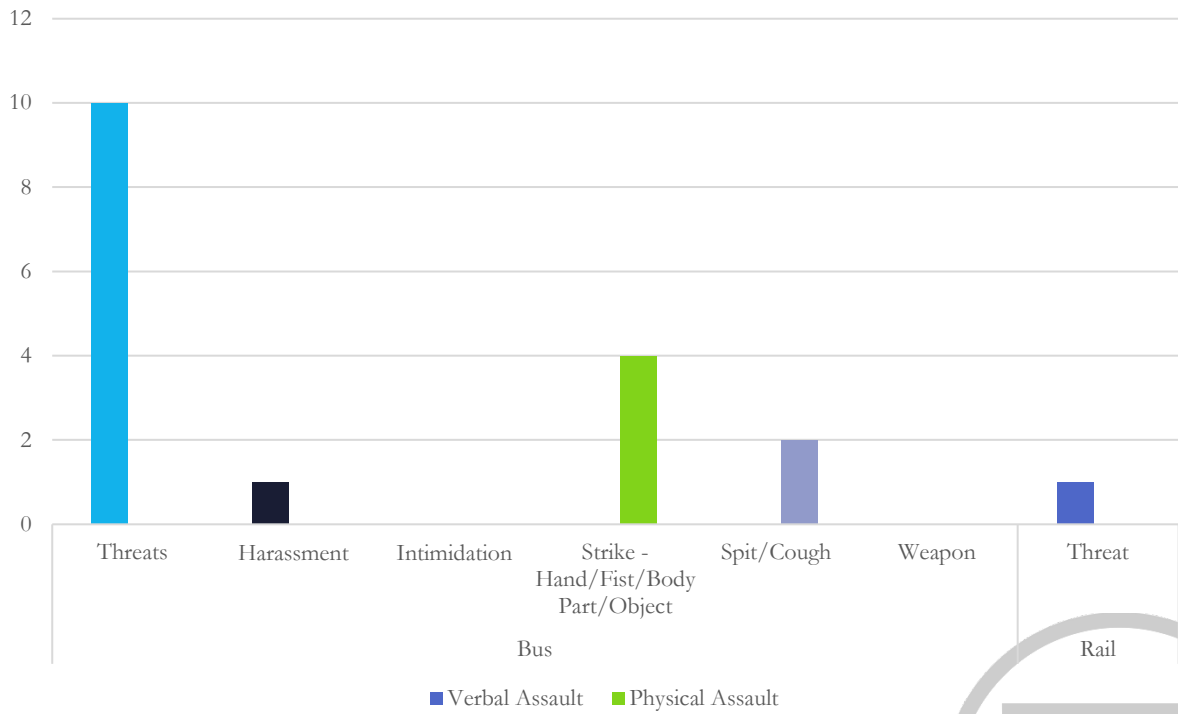
EMPLOYEE INJURIES

Employee Assaults

Past 13 Months Employee Assaults by Mode



August 2022 Employee Assaults by Mode and Type



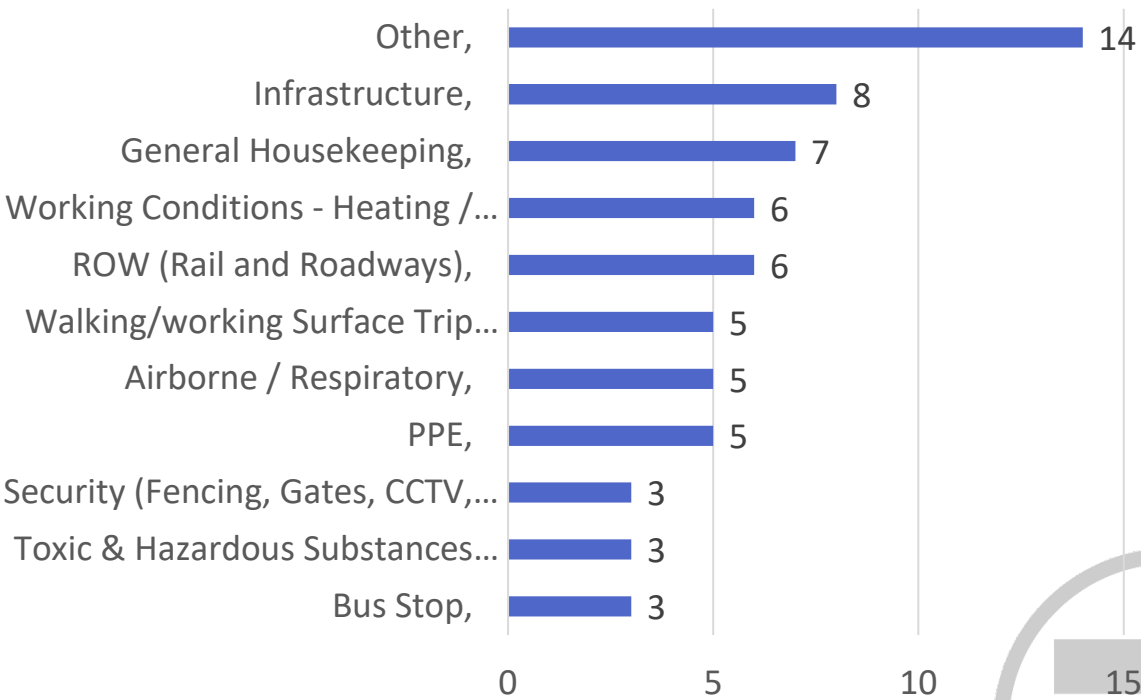
SAFETY HOTLINE REPORTING SYSTEM

Safety Hotline Reporting Options

- Safety Hotline: (617) 222-SAFE/7233
- Safety Notification email: 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
June 2022	19	13
July 2022	35	27
August 2022	30	12
Total	84	52

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



SAFETY HOTLINE

EXAMPLE REPORTS



Below are examples of MBTA Safety Hotline reports received and investigated in August 2022.

- **REPORT – There is an odd toxic smell in the Reservoir Supt. Office.**

Complete – The contractor mentioned this probably happened due to the work being immediately adjacent to an air intake. Going forward, the Contractor will be providing fans to eliminate (or greatly minimize) fume intake and rapidly disperse same.

- **REPORT – New hires who are not ROW certified in an energized yard for Heavy Rail Workforce Assessments at the Cabot Yard.**

Complete - OCC Training requested to do a Safety Risk Assessment on the Heavy Rail Workforce Assessment Process. The assessment will be canceled until further notice.

- **REPORT – Northern Tree needs clarification about PPE on ROW. They carry a gas-operated Backpack Sprayer over safety vests, which cover “X” on the back of the safety vest.**

Complete - The contractor purchased reflective tapes and put them on their equipment (ensure to avoid covering the exhaust area.) A consultant had been assigned to develop a policy to standardize the PPE used on the ROW.



[Back to INDEX](#)

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.

Overall Course Completion

