



## The Massachusetts Bay Transportation Authority

Corrective Action Plan (CAP)

FTA-23-12-MBTA-  
CAT4-1

### BACKGROUND

**Overview:** FTA issued Special Directive 22-12 to require the Massachusetts Bay Transportation Authority (MBTA) to address findings documented in FTA's Safety Management Inspection (SMI) report released on August 31, 2022. Conducted between April 14 and June 30, 2022, FTA's SMI reviewed the MBTA rail transit system management, operations, and maintenance programs. This Special Directive identifies seven (7) findings requiring action that the MBTA must take to improve MBTA's management of its operating and maintenance policies, monitoring of rail transit operations, quality assurance/quality control (QA/QC) capabilities, and training and procedures.

### PURPOSE

This Corrective Action Plan has been developed to address **Special Directive No. 22-12, Category 4: Operating Conditions and Policies, Procedures, and Training**

#### FTA Finding

CAP 1:

##### Operating conditions and policies, procedures, and training

- Finding 1: Documented operating and maintenance rules and procedures are not implemented as required.

CAP 2:

##### Operating conditions and policies, procedures, and training

- MBTA does not monitor operations, including the conditions of the operating environment, to identify the reasons for deviations between formal, established standards, rules and procedures, and actual operations and maintenance practices.

#### FTA Required Action

CAP 1:

- 1.A: Each operating and maintenance department must establish a group to review department-wide information on levels of non-compliance with key rules and procedures critical to the safety of activities performed by the department.
- 1.B: Each department must establish and act on a prioritized list of most frequently violated rules and procedures with the most significant potential safety consequences.
- 1.C: Each department must develop and implement approaches, which could include audits, use of checklists and guides, campaigns, and training, to improve compliance.
- 1.D: Each department must report to the Safety Department monthly on its compliance with identified key rules and procedures critical to the safety of activities performed by the department.
- 1.E: The Safety Department must review and audit these reports and compile a monthly compliance report for MBTA's executive leadership team.
- 1.F: Each department must continue to review safety data to assess effectiveness of actions and to improve compliance with safety rules and procedures.

CAP 2:

- MBTA must develop, document, and communicate a mechanism to monitor operations, and provide training to stakeholder safety and operating personnel on this mechanism, to enable the analysis and understanding of situations of non-compliance.

### ANALYSIS AND RECOMMENDATIONS

#### Analysis

CAP 1:

- The MBTA has several documents/repositories that encompass the rules, procedures, and policies for safety-critical activities for both Operations and Maintenance, including the ROW Safety Rulebook; MBTA Operations Rulebook; Safety Rules Compliance Program (SRCP) Manual; MBTA Safety Plan and PPE Program; various departmental Standard Operating Procedures (SOPs) and Authority-wide policies, stored and available on T-



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stop. The governance for reviewing, updating, and approving these documents/repositories varies across the departments.

- The MBTA holds many meetings related to Safety, rules compliance, event investigations and operations. These meetings have varying levels of participants, reporting, governance and structure.
- The SRCP audits show high levels of compliance with rules, procedures, and policies for safety-critical activities. Rules noncompliance, however, seems to be a component in accidents/issues at the MBTA.
- Noncompliance with operating rules and procedures can be related to a myriad of causes but it is not currently well understood collectively at the MBTA. To assess those causes and revise rules and procedures to improve compliance will require the MBTA to formalize the process for rules/procedure review and revision.

#### CAP 2:

- The MBTA has experienced decreased operational resources which has created an environment that allowed informal practices to develop while completing work on the ROW. These informal practices have not been reviewed for safety, nor formalized into official rules, procedures, or policies.
- The MBTA needs to analyze the information gathered by the SRCP, as well as other sources of data and information across the authority, to understand if and why there is any deviation from the established rules and the actual operating conditions to improve safety on the ROW, monitor performance and improve compliance with official rules, procedures or policies.

### Recommendations

#### CAP 1:

- MBTA will complete the steps required to operationalize a strong rule review process and feedback loop that will enable the MBTA to evaluate and update rules in keeping with the dynamic nature of our operating environment. The rules review process will allow for the review and revision of any rules, procedures and policies for safety critical activities for Operations and Maintenance related to identified trends in non-compliance.
- MBTA will review the Safety Rules Compliance Program (SRCP) for deficiencies and areas of improvement.
- MBTA will assess the governance for SRCP, rules, policies and procedures and revise if needed.
- MBTA will develop an improved SRCP that meets industry standards and incorporates industry best practices to create an SRCP that fosters improved rules and policy compliance and provides increased transparency on safety compliance for Executive leadership.
- The MBTA will establish a streamlined but comprehensive data channel from SRCP to Rules Assessment and Review working groups to analyze deviations in compliance from our established standards that govern the operating environment.
- The MBTA will use the compliance data to monitor operations, identify trends and make decisions regarding potential revisions to rules, procedures and policies with a goal of continuous improvement to meet safe standards of practice.


### ACTION PLAN

**Description:** Accomplished under original CAPs 1 & 2:

- MBTA developed and mapped a process to monitor the conditions of our operating environment which will keep operating Departments, the Safety Department and senior leadership informed and aware of the status of compliance, as well as any trends on non-compliance.
- MBTA developed a tool that will aid in evaluation of any rules, procedures and policies for Operations and Maintenance activities for safety critical activities.
- MBTA created working groups of all levels of employees, to assist in assessing and reviewing the most frequently violated rules.
- MBTA compiled a list of key rules and identified those most frequently-violated, based on progressive discipline.

Next steps under this CAP include:

- Implementing a PPE compliance pilot to establish and test the process/mechanism

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- Formalizing the process by developing the data flows to support trend identification, modifying the duties of the SRCPSC and creating a feedback loop to the operating departments
- Assessing existing meeting structure and how it will work with the SRCP and working group meetings
- Assessing governance for rules, policies and procedures
- Reviewing the SRCP
- Revising the SRCP, as needed
- Establishing positions to support administration of RCPs, Working Groups

The process allows for the analysis and understanding of non-compliance, by improving our view of compliance, revising the duties of the SRCP Steering committee (SRCPSC) and establishing Rules assessment and review working groups to review data on noncompliance, establishing a regular rule review cycle and evaluating available data to capture reasons for deviations and act upon those reasons.

## PLAN STRUCTURE

#	Actionable Items	Description	Responsible Party <sup>1</sup>	Est Start <sup>2</sup>	Est End <sup>3</sup>
<b>PPE Compliance Pilot</b>					
1	Set goal outcomes and measures for pilot	Determine and align upon measurable desired outcomes from PPE pilot and broader rules review process and governance	QCO Safety Exec leadership	8/1/2023	9/15/2023
2	Catalog current available data sources for PPE compliance	List data sources (i.e. RCP 101, RCP 041, employee injuries, Safety observations, capital programs QA data, eBuilder daily reports, NCRs). Identify SMEs, identify data location and provide status. Gain access to data.	Ops Analytics	8/1/2023	9/15/2023
3	Review & assess data sets	Ingest data, evaluate what data is telling us, review for compatibility/format/records.	Ops Analytics	8/30/2023	9/29/2023
4a	Mockup possible data visualizations and review with key stakeholders	Based on data review and assessment, develop a wireframe for possible data visualization/dashboards to check with non-data expert stakeholders that it is fit for purpose	Ops Analytics, QCO	8/25/2023	10/6/2023
4b	Perform Gap Analysis on data	Determine if MBTA has all the data we need to identify trends in compliance; determine what data is missing/incomplete.	Ops Analytics	9/25/2023	10/6/2023
5	Develop data to demonstrate PPE compliance	Using standard data science practices, develop data flows, identify KPIs, build a concept dashboard/report, socialize with people; get feedback; refine report and the process; improve data; add data as more becomes available, incorporate analysis.	Ops Analytics QCO	9/15/2023	12/1/2023
5a	Build dashboard/reporting on PPE compliance.	Building off the existing PPE compliance dashboard, incorporate additional data points to gain a wider view of PPE compliance. Include information about the number of people on the ROW on day and night orders.	Ops Analytics	9/18/2023	10/20/2023
5b	Socialize the dashboard/reporting	Present to SRCPSC (or appropriate organizational body), Exec Leadership and	QCO Safety	10/23/2023	11/17/2023

<sup>1</sup> In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

<sup>2</sup> Est Start – Estimated Start Date

<sup>3</sup> Est End Estimated Completion Date



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		Chiefs of E&M, Capital, Construction Logistics, Operations – get feedback for improvements.	Ops Analytics		
5c	Improve dashboard	Make changes, as needed, to improve DB. Identify any additional data needed.	Ops Analytics	11/20/2023	12/1/2023
6	Establish feedback loop to Depts	Establish process for informing depts about PPE compliance, present use of dashboards, request comments or ideas for areas of improvement.	Ops Analytics SRCP committee QCO	10/23/2023	11/17/2023
7	Assess effectiveness of pilot	Continue publishing the dashboard/reporting monthly. Evaluate metrics for improvement with PPE compliance. Continue to improve data and dashboard.	Safety Operations QCO	12/1/2023	8/16/2024
8	Feedback into the overall compliance process	Develop lessons learned from pilot. Any steps missing from process? What kind of resourcing and timelines are realistic to achieve desired outcomes	Safety QCO Ops Analytics	12/1/2023	1/31/2024

### Mechanism to Monitor Operations Rules Compliance (Steps to Support operationalization)

9a	Determine prioritized rules categories for establishing compliance monitoring for select key rules.	Establish and align with end users on a sequence of thematic compliance areas to cultivate data flows based on an agreed upon prioritization framework (e.g. high risk of non-compliance, hypothesis of frequent non-compliance, etc)	Operations Safety QCO Ops Analytics	9/11/2023	11/22/2023
9b	Set goals and objectives	Determine and align upon measurable desired outcomes for rules compliance: KPIs	Operations Safety QCO Ops Analytics	9/11/2023	12/29/2023
9c	Set cadence for review of progress toward goals	Determine level of compliance/improvements MBTA wants to achieve at a regular cadence (i.e. 1 year later, 2 years later)	Operations Safety QCO Ops Analytics	9/11/2023	12/29/2023
10	Catalog current available data sources for compliance	List data sources, identify SMEs, identify data location and provide status. Gain access to data.	Ops Analytics	10/24/2023	12/22/2023
11	Review & assess data sets	Ingest data, evaluate what data is telling us, review for compatibility/format/records.	Ops Analytics	11/6/2023	1/5/2024
12	Perform Gap Analysis on data	Determine if MBTA has all the data we need to identify trends in compliance; determine what data is missing/incomplete.	Ops Analytics	1/8/2024	2/1/2024
13	Compile currently available data into dashboard and reports & identify trends	Update dashboard to show current view of thematic compliance within Operations at the MBTA	Ops Analytics	10/24/2023	2/1/2024
14	Data Transformation	Using standard data science practices, develop data flows, identify KPIs, build concept dashboards/reports, socialize with people; get feedback; refine report and the process;	Ops Analytics QCO	2/1/2024	1/31/2025

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		improve data; add data as more becomes available, incorporate analysis.			
14a	Cultivate Data flows	Using available data, simplify datasets and optimize most used queries	Ops Analytics	2/1/2024	4/5/2024
14b	Confirm report/dashboard KPIs	Confirm what are the appropriate KPIs for each reporting/dashboard (i.e. If injuries go over XXX/week, flips to red; iterate)	Operations Ops Analytics QCO Safety	2/1/2024	3/1/2024
14c	Build initial dashboard prototype	Identify size of the world (i.e. # of people on the ROW), visualize the data; set cadence for updating. Mock-up of dashboards.	Ops Analytics	2/12/2024	3/11/2024
14d	Present & review dashboard with end users and frontline workers	Socialize the dashboards – does it tell us what we need to know about compliance? How can it be improved? Are there elements that are not being captured correctly?	Ops Analytics QCO	3/11/2024	4/12/2024
14e	Produce & distribute reporting to end users and frontline workers	Socialize the reporting – is it usable for Departments to improve compliance?	Ops Analytics QCO	3/11/2024	4/12/2024
14f	Provide feedback on dashboard/reporting	Review dashboard/reporting for usefulness; sanity check; how can it be improved?	Safety SRCPSC Operations Front line workers	4/12/2024	4/26/2024
14g	Socialize lessons learned from PPE compliance pilot; assess mechanism for improvement	Use any lessons learned from PPE compliance pilot to inform the dashboards and reporting for other thematic compliance areas (e.g. Operator behavior, ROW safety, etc...).	Ops Analytics SRCP committee QCO	1/15/2024	5/9/2024
14h	Improve dashboard	Use feedback from 14e to improve; continue assessment through the length of the pilot; feedback loop to the front-line workers as compliance improves or declines.	Ops Analytics QCO	4/12/2024	1/3/2025
14i	Improve reporting	Use feedback from 14f to improve; continue assessment through the length of the pilot; feedback loop to the front-line workers as compliance improves or declines.	Ops Analytics QCO	4/12/2024	1/3/2025
14j	Continue developing data flows, add to reporting	As data flows mature/become available, add to dashboard/reporting.	Ops Analytics	4/12/2024	1/3/2025
15	Provide updated current reporting to SRCP steering committee	Establish cadence for updates to compliance dashboard. Submit updated compliance report to SRCPSC on monthly basis.	Ops Analytics	2/5/2024	3/7/2025
16	Assess meeting structure, cadence and purpose	Assess existing meeting structure for SRCP, Safety, event investigation and any meetings that lead to root cause determination or Rules/policy/procedure revision. Determine how they will work with the SRCP and working group meetings	Operations Safety QCO	10/24/2023	1/24/2024




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17	Mapping the existing rules governance	Assess how rules, policies, procedures are currently revised; Rules – via SO; policies – Administration’s Policy WG; procedures – each dept owns/updates their SOPs	Operations QCO	10/24/2023	1/24/2024
18	Formalize process to inform Dept when trends are identified, both positive and negative	SRCPSC to inform operating departments if trends are identified. Establish process for report/email from SRCP committee to Chief of Dept w/ trends. Plan on monthly feedback report for both positive (no trends identified, all RCPs completed etc…) or negative (trend of non-compliance identified, recommend actions to be undertaken etc…).	SRCPSC QCO	10/24/2023	6/7/2024
19	Report to exec leadership (GM & DGM)	Establish method to report to executives (i.e. revise/add compliance to SDAR); report when Areas do not complete the required # of RCP audits; report positive and negative trends.	SRCPSC Safety Ops Analytics QCO	10/24/2023	6/7/2024
20	Establish method for determining root cause for non-compliance	Establish process for determining/investigating root cause for non-compliance of non-major safety events; incorporate root causes identified by incident/event investigation.	SRCPSC Safety Ops Analytics QCO	12/8/2023	2/7/2024
21	Analyze data monthly	On a monthly basis, review notable safety events, assess contributing factors and create matrix to enable analysis to identify commonalities, to link to root causes. Continue throughout the pilot on a monthly cadence. Submit monthly.	Ops Analytics Lean Team	2/7/2024	2/7/2025
22	Assess workforce to support root cause analysis/investigations	Perform staffing analysis to identify # of employees needed whose roles and responsibilities include investigation for minor events/identified trends in non-compliance; consider a group in alignment with Safety for SMS & event investigation. Coordinate with work underway with SD 22-9 and 22-10.	Lean Team HR QCO	2/7/2024	5/9/2024
23	Establish process for referral to Working group responsible for rules assessment. RAWG	Establish process for SRCPSC to refer issues to Rules working group. Four WGs were established March 2023 and continue meeting regularly.	Operations SRCPSC QCO	12/8/2023	3/8/2024
24	Revise charter for RAWG	Update charter to reflect purposed of RAWG. Include process for referral to RRWG when RAWG recommends any revisions, including a feedback loop to the RAWG and front-line workers from the RRWG.	Operations QCO	10/24/2023	12/8/2023
25	Update the rosters	Revise four RAWG rosters to reflect shift to front line workers.	Operations QCO	10/24/2023	12/8/2023
26	Hold RAWG workshops	Establish cadence/series of workshops for 4 RAWGs; workshops to review top 3-5 most frequently violated rules, delve into root cause.	Operations QCO	10/9/2023	12/8/2023
27	Establish cadence of future meetings	Use results of workshop to determine appropriate cadence for RAWGs.	Operations QCO	10/24/2023	12/8/2023

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28	Establish process to refer rules changes to Rules Review Working Group (RRWG)	Develop process to refer rules that require revision to RRWG, including a feedback loop to RAWG that recommended the revision.	Operations Lean Team QCO	12/8/2023	3/8/2024
29	Establish administrative support for RAWG & RRWG	Identify staff/position to support RAWG & RRWG. Perform staffing analysis to determine if additional staff should be hired. Coordinate with work under SD 22-9 and SD 22-10.	Lean Team HR QCO	2/7/2024	5/9/2024
30	Revise charter for RRWG	Update charter to reflect any change in purpose of RRWG.	Operations QCO	11/7/2023	12/8/2023
31	Create a recommended governance hierarchy for rules, policies, procedures	Establish who is signatory(s); what is hierarchy; connect to a role not a person; establish 'if I want to change something, who reviews, who approves.'	QCO Administration Document Management Operations	1/24/2024	6/7/2024
<b>Safety Rules Compliance Program (SRCP) Review/Update</b>					
32	Review Safety Rules Compliance Program (SRCP)	Review MBTA's SRCP with consultant support.	Safety QCO Operations	9/1/2023	2/23/2024
32a	Evaluate compliance best practices	Transit & other (i.e. aviation, manufacturing) industry best practices for rules compliance	Safety QCO Operations	9/1/2023	11/10/2023
32b	Review SRCP manual & documents	Review SRCP manual, RCP forms, cadence of audits	Safety QCO Operations	9/1/2023	12/8/2023
32c	Evaluate current SRCP governance	Map who has the authority to ensure RCP requirements are met; who is accountable when areas do not comply with required cadence. Who reports and monitors on cadence. Evaluate composition of SRCP committee.	Safety QCO Operations	11/13/2023	2/23/2024
33	Gap assessment	Determine what is missing from our program and what is not aligned with a best practice.	Safety QCO Operations	2/26/2024	3/8/2024
34	Evaluate creating digital forms	Quantify what it would take to convert all RCP forms from paper to digital (automated/knock) and what digital equipment would be needed by folks who perform audits. Assess potential benefits (i.e. data in real time, increase # of audits performed)	Safety QCO Operations	10/2/2023	11/10/2023
35	Pilot of digitized forms	Select a HR line to pilot digital RCPs. Give appropriate employees digital device with the application; choose which (if not all) RCPs will be performed digitally. Run pilot for 120 days, evaluate with feedback from employees and revise as needed.	Safety QCO Operations	11/10/2023	3/28/2024

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36	Recommend changes to SRCP	Recommend revisions to components of SRCP programs, potentially including duties and composition of SRCP committee; RCP forms and procedures; methods of administering audits; cadence of audits; scheduling of audits; appropriate governance	Safety QCO Operations	3/28/2024	5/24/2024
37	Feedback loop for recommended changes to SRCP	Socialize proposed changes with impacted departments; gather feedback from employees performing audits, as well as those reviewing outputs and identifying trends	QCO	5/27/2024	7/26/2024
38	Assess administrative support personnel for SRCP	Labor model for personnel required to support SRCP across the authority; hire as needed	Lean Team QCO	5/27/2024	7/26/2024
39	Revise SRCP	Revise SRCP manual, audit forms and processes as needed	Operations QCO	7/27/2024	10/25/2024
40	Develop training materials for revised materials	Develop LMS module; practical training elements as needed. Coordinate with efforts under SD 22-9.	Training	10/27/2024	12/10/2024
41	Training of personnel	Train impacted employees, in phases. Coordinate with training with ongoing work under 22-12 CAP 4.	Training	12/10/2024	3/28/2025
42	CAP verification	Perform verification activities.	QCO	3/27/2024	8/25/2025

## COMPLETION DOCUMENTATION

### Performance Metrics

- Reduction in non-compliance demonstrated through improved compliance rates (acceptable thresholds to be established during CAP implementation)
- Consistent SRCP implementation throughout the entire MBTA by December 31, 2025
- Reduction in safety incidents and reportable NTD injuries and safety events related to non-compliance (acceptable thresholds to be established during CAP)
- Consistent SRCP implementation in operations at the MBTA by March 15, 2024
- Anticipated CAP completion by June 30, 2025

### Verification

Overview: The strategy to verify completion of the required work will be through establishing existence of the following:

- Rules Assessment Working Group (RCWG)
- Rules Review Working Groups (RRWG)
- PPE Compliance dashboard
- Monthly reporting/dashboard for Safety and Executive Leadership
- Formalized feedback loops to Departments and front-line workers
- Revised Safety Rules Compliance Program





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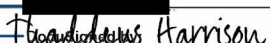
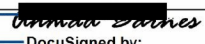
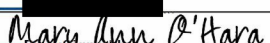

- Distribution of revised SRCP documentation to all departments
- SOPs to carry out SRCP audits
- Regular audits in accordance with SOPs
- Improved Violations and Compliance Dashboards
- Process for rules review; thresholds and cadence

**BUDGET/COST ESTIMATE**
**Overview:**

<i>Segment Code</i>	<i>Cost Estimate</i>
PS/Consultant support	\$3M (already on board)
Administrative staff support for SRCP (1 FTE, Dep Dir of Admin in Ops, 3 years)	\$750,000
Administrative support for RAWG, RRWG (1 FTE, Dep Dir of Admin in Ops, 3 years)	\$750,000
30% Contingency	n/a
<b>Total</b>	<b>\$1,500,000</b>

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**CORRECTIVE ACTION PLAN COMMITMENT**

Responsible Parties			
Department <sup>4</sup>	Name	email	Signature
E&M	Joseph Cheever	[REDACTED]	 DocuSigned by: [REDACTED]
Vehicle Maintenance	Steve Hicks	[REDACTED]	 DocuSigned by: [REDACTED]
Training	Frenia Hunter	[REDACTED]	 DocuSigned by: [REDACTED]
Rail Transportation	Patrick Richmond	[REDACTED]	 DocuSigned by: [REDACTED]
OCC	Thaddeus Harrison	[REDACTED]	 DocuSigned by: [REDACTED]
Labor Relations	Ahmad Barnes	[REDACTED]	 DocuSigned by: [REDACTED]
Finance	Mary Ann O'Hara	[REDACTED]	 DocuSigned by: [REDACTED]
Capital Planning	Jillian Linnell	[REDACTED]	 DocuSigned by: [REDACTED]

**Executive Leadership of Responsible Parties**

DocuSigned by:  
  
 [REDACTED] 8/25/2023

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**Meredith Sandberg**  
 MBTA Acting Chief of Quality, Compliance, and Oversight Date

DocuSigned by:  
  
 [REDACTED] 8/28/2023

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**David Panagore**  
 MBTA Chief Administrative Officer Date

DocuSigned by:  
  
 [REDACTED] 8/25/2023

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**Erik Stoothoff**  
 MBTA Acting Chief Operating Officer Date

<sup>4</sup> Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.



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**Executive Leadership of Responsible Parties**

DocuSigned by:

*Ronald Ester*

8/28/2023

**Ronald Ester**  
*MBTA Chief Safety Officer*

Date

DocuSigned by:

*Phillip Eng*

8/28/2023

**Phillip Eng**  
*MBTA General Manager & CEO*

Date