



The Massachusetts Bay Transportation Authority

Corrective Action Plan (CAP)

**FTA 23-10-MBTA-
CAT2-2R**

BACKGROUND

Overview: FTA issues Special Directive 22-10 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 six findings requiring action that the MBTA must take to enhance and expedite implementation of the agency's SMS, including the development of procedures, safety management training, safety risk assessment, and safety assurance activities to build the organization's capability to identify safety concerns and to prioritize action to mitigate safety risk.

PURPOSE

This Corrective Action Plan has been developed to address **Category 2 – Prioritization of safety management information**

FTA Findings

Prioritization of safety management information

- Finding 2: MBTA executive leadership does not receive prioritized and actionable information related to safety risks or shortcomings in safety risk mitigations.
- Finding 3: MBTA Executive Management does not consistently ensure its decisions related to safety risks are based on safety data analysis or documented facts.

FTA Required Action

MBTA leadership must:

- 2.1 Work with safety and operating department leads (including maintenance and engineering departments) to define explicit criteria for prioritizing safety risks.
 - 2.2 Include explicit safety risk acceptance criteria into its Agency Safety Plan and/or reference documents.
 - 2.3 Work with MBTA's Safety Department and operating department leads (including maintenance and engineering departments) to define how safety information must be presented to MBTA leadership in a prioritized and actionable manner.
 - 2.4 Require, and provide means for, operating department leads (including maintenance and engineering departments) to elevate proposed safety risk mitigations, including their status, that require MBTA leadership approval for resourcing. This must include safety risk mitigations deemed ineffective or inappropriate and that require executive level decision regarding the redirection of, or additional, resourcing.
- 3.A MBTA must map its safety data flows and supporting processes.
 - 3.B MBTA must establish explicit accountabilities and responsibilities for safety data flows as a component of safety information management (collection, analysis, communication, storage, and retrieval of safety data).
 - 3.C MBTA must provide formal training in safety information management to relevant personnel.
 - 3.D MBTA must demonstrate that its executive management uses and promotes the usage of safety data analysis and/or documented facts in decision-making related to safety risk.

ANALYSIS AND RECOMMENDATIONS

Analysis

- MBTA's SMS Transit Safety Plan ("TSP") currently outlines its approach to safety risk analysis, risk mitigation, and risk acceptance criteria. Departments use the information within the TSP as instructions to assess issues and develop actionable information, as well as prioritize, mitigate, and escalate safety information for events that qualify



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for SRM workshops. Despite expanded application of the formal risk management process, there is variability in how these tools are used throughout the departments to classify, mitigate, and elevate safety information for issues and events not scheduled for SRM workshops, thereby preventing executive leadership from receiving the necessary information to effectively prioritize resources.

- As outlined in the TSP, MBTA collects safety data from a variety of sources and analyzes the data to determine trends, patterns, and areas of poor performance. Results are presented to management and senior leadership on a recurring basis. Risk mitigations are designed and implemented and tracked to completion. A safety assurance process ensures the mitigations are effective, and if not, re-evaluated, with new mitigations developed. Application of this process to all safety risks assessed outside of the scheduled safety risk management workshops is inconsistent and not well understood. Safety's data products, such as the SDAR are detailed and capture key performance information, but lack a feedback loop from executive management to improve reporting and trend identification.

Recommendations

- Create a standardized process for analyzing and presenting safety risks to MBTA's executive leadership, explicitly addressing actionable safety information, prioritization, and escalation guidelines. Review and revise the current safety risk assessment process to ensure ease of use, understanding, and effective implementation throughout the safety committees and working groups. Review and revise training to ensure all affected parties are familiar with the safety risk analysis process, risk acceptance criteria, and escalation procedure.
- MBTA will revise the safety risk management and safety risk assessment processes to define accountabilities and responsibilities for each group and/or person(s). The MBTA will train personnel in the safety data management system to ensure comprehension and its proper, consist application. The result of these improvements, actionable and prioritized safety risks based on documented facts and analysis, will be presented to the executive leadership to inform and support their safety risk management decisions.

ACTION PLAN

Description: MBTA has onboarded a consulting firm to assist with a comprehensive review of the existing safety risk assessment process to develop explicit and formal provisions to ensure actionable safety information, prioritization, and escalation of safety risks. MBTA has selected Origami as the SMS data platform to replace IndustrySafe, and throughout the response to 22-10 will implement/customize elements of the Origami software to support MBTA safety-related business needs.

PLAN STRUCTURE

#	Actionable Items	Description	Responsible Party ¹	Est Start ²	Est End ³
1	Establish CAP Advisory Group	Establish an advisory group of internal stakeholders to review and guide implementation of the corrective action plan.	QCOO: Katie Choe Safety: Ronald Ester	10/17/22	10/30/22 [A]
2	Strategic Planning Session	Conduct a strategic planning session for SD 22-10 Finding 2 CAP implementation with the advisory group identified in Actionable Item #1.	QCOO: Katie Choe Safety: Ronald Ester GM: Lynsey Heffernan	11/1/22	12/19/22 [A]

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

² Est Start – Estimated Start Date

³ Est End Estimated Completion Date



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3	Procure Consulting Services	Issue RFP or Task Order for consulting services to evaluate the safety risk management process and incorporate changes into the Transit Safety Plan.	QCOO: Katie Choe Safety: Michael Catsos	11/16/22	12/22/22 [A]
4	Onboard Consultant	Onboard selected consultant.	QCOO: Katie Choe	12/23/22	2/17/23 [A]
5	Perform Data Inventory	Perform a comprehensive review of existing sources of safety data across the MBTA, including the basis for integration into Safety's SMS database. Consult with Office of Performance Management and Innovation (OPMI), OCC, Rail Transportation, Vehicle Maintenance, and Engineering & Maintenance.	Safety: Michael Catsos Operations: Jeff Gonville	11/22/22	1/3/23 [A]
6	Map Data Flow and Process	Develop an overall map of safety data sources, flows, and supporting processes, including all data types and processes necessary to support the SMS. Present results of this exercise to executive management for input and guidance; document and submit meeting notes.	Safety: Michael Catsos	1/4/23	2/9/23 [A]
7	Assess SMS Database Gap	In consultation with Civix, review the data flow and process map to identify gaps where the SMS database currently may not be configured to support effective safety data management.	Safety: Michael Catsos	2/10/23	3/16/23 [A]
8	Plan Pilot Project(s)	Plan pilot project(s) that will apply risk escalation and safety information elevation principles to focused safety areas and issues. The planning of the pilot project(s) will occur concurrently with – and in the same vein as - AIs 9-11 and lay out the implementation plan to enact the pilot project(s) upon completion of these items. Input from other MBTA Groups (e.g. E&M, Ops) will be included in the planning once an appropriate pilot(s) is identified.	Safety: SMS Lead SMS Steering Committee E&M Operations	9/15/23	2/7/24
9	Evaluate and Reconfigure Data Flows	Evaluate submitted safety data flows and reconfigure them as necessary to meet a structure that reflects the desired, streamlined approach to SMS the 23-10 CAPs will achieve. Include evaluation and reconfiguration of responsibilities for action steps in the data flows. Incorporate changes as necessary to address pending FTA comments on AI 6 and AI 7 provided under the original CAP. Develop SOPs for data flows.	Safety: SMS Lead	10/13/23	12/13/23
10	Establish Data Flow Training Materials	Develop training materials geared towards the specific roles associated with the established data flows. Use outputs of AI 9 to identify training needs and use SOPs to develop training materials.	Safety: SMS Lead	12/13/23	1/10/24



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11	Train Responsible Parties for Data Flows	<p>Communicate – via updated trainings developed in AI 10 – responsibilities and expectations of each responsible party identified in AI 9.</p> <p>Required Action 3B: Establish Safety Data Flow Responsibilities</p> <p>Required Action 3C: Train Safety Information Management</p>	Safety: SMS Lead L&D/Training	1/11/24	2/7/24
12	Initiate, Workshop, and Establish Safety Risk Tiers for Pilot Project(s)	<p>Progress the pilot project(s) to establish corresponding safety risk tiers by first initiating and workshopping the proposed tiers with other MBTA Groups (e.g. E&M, Ops). This activity will occur simultaneously with – and in the same vein as - AIs 13-15.</p>	Safety: SMS Lead E&M Operations	2/8/24	3/21/24
13	Initiate Safety Risk Tiers Development	<p>Use information on flows of hazard and risk information from AI 9 to help define proposed tiers of safety risks in each division with examples to reinforce the categories (high/serious/medium/low). These draft risk tiers will be used as an input to the following AI.</p>	Safety: SMS Lead	2/8/24	2/22/24
14	Workshop Safety Risks Tiers	<p>Hold a workshop with representatives from E&M, Ops, and Safety to review, discuss, and advise on the proposed tiers of safety risks developed in AI 13.</p>	Safety: SMS Lead E&M Operations	2/23/24	3/7/24
15	Establish Safety Risk Tiers	<p>Define explicit criteria for safety risk categories and resulting prioritization in applicable plans (e.g., Agency Safety Plan) by using feedback received from stakeholders in AI 14.</p> <p>Required Action 2.1: Define Explicit Criteria for Safety Risk Prioritization</p> <p>Require Action 2.2: Update Safety Plans with Explicit Criteria</p>	Safety: SMS Lead	3/8/24	4/10/24
16	Incorporate Risk Tiers into Risk Software	<p>Integrate risk tiers defined in AI 15 into Origami for implementation as part of the impending reporting rollout.</p>	Safety: SMS Lead	4/11/24	6/7/24
17	Initiate, Workshop, and Establish Elevation Risk Criteria for Pilot Project(s)	<p>Progress the pilot project(s) to establish corresponding elevation risk criteria by first initiating and workshopping the proposed criteria with other MBTA Groups (e.g. E&M, Ops). This activity will occur in the same vein as AIs 18-20.</p>	Safety: SMS Lead E&M Operations	3/22/24	5/20/24
18	Initiate Safety Information Elevation Criteria	<p>Build on AI 15 of this CAP to draft proposed criteria for elevation of safety information, using Safety leadership's input on the end result to guide the process. These draft elevation criteria will be used as an input to the following AI.</p>	Safety: SMS Lead	4/11/24	5/2/24



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19	Workshop Safety Information Elevation Criteria	<p>Hold a workshop series with representatives from E&M, Ops, Safety, and executive leadership to review, discuss, and advise on the proposed criteria for elevation of safety information developed in AI 18.</p> <p>Workshops to be held either by data product (SDAR consumers) or safety committee tiers (BARC, SARC, etc.).</p>	Safety: SMS Lead E&M Operations	5/3/24	5/22/24
20	Establish Safety Information Elevation Criteria	<p>Define explicit criteria for elevation of safety information through the management structure in a prioritized and actionable manner and document it in applicable plans (e.g., TSP) by using feedback received from stakeholders in AI 19.</p> <p>Required Action 2.3: Define Safety Information Presentation</p>	Safety: SMS Lead	5/23/24	8/8/24
21	Incorporate Risk Tiers and Elevation Criteria for Pilot Project(s)	Integrate pilot project(s)' risk tiers defined in AI 12 and elevation criteria defined in AI 17 into Origami for implementation.	Safety: SMS Lead	6/10/24	7/9/24
22	Incorporate Elevation Criteria into Risk Software	Integrate elevation criteria defined in AI 20 into Origami for implementation as part of the impending reporting rollout.	Safety: SMS Lead	8/9/24	10/24/24
23	Initiate Automated Reporting	Continue development of the risk tiers and elevation criteria implemented into Origami in AI 21 for pilot project(s) by initiating an iterative approach to creating automated and filterable safety data reports that identify the highest risk criteria items.	Safety: SMS Lead	10/25/24	11/14/24
24	Complete Automated Reporting	Expand automated and filterable safety data reporting into the risk management software at all levels of management review by utilizing information on risk tiers and elevation criteria implemented into Origami in AIs 16 and 22, respectively.	Safety: SMS Lead	11/15/24	12/27/24
25	Provide Management Training on Risk Elevation and Software Use	<p>Provide training to the required tiers of management for safety information elevation and use of the risk management software.</p> <p>Required Action 2.4: Resourcing for Risk Mitigations</p>	Safety: SMS Lead HR	11/15/24	1/15/25



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26	Track Data Analysis	Track safety data analysis usage over the course of a few months, comparing current status against findings from the gap analysis performed under SD 23-10, CAP 1. Required Action 3D: Data-Supported Decision Making	Safety: SMS Lead	12/30/24	5/14/25
27	CAP Verification		QCOO Safety	1/29/25	6/12/25

COMPLETION DOCUMENTATION

Performance Metrics

- Actionable and prioritized information related to safety risks and safety risk mitigations
- SMS database SRM and SA modules are customized to mirror MBTA program requirements
- Management meetings and decisions incorporate risk-driven discussions of safety issues

Verification

- Verification for ensuring completion of the required activities will include:
 - Explicit safety risk acceptance criteria and prioritization of safety risks are defined in Transit Safety Plan
 - Safety information presented to MBTA leadership is in a prioritized and actionable manner using an approved format
 - Operating department leads use the procedure to elevate proposed safety risk mitigations and status, including mitigations deemed ineffective, to the appropriate levels for resourcing decisions
 - Training is completed by the appropriate personnel

BUDGET/COST ESTIMATE

Overview: Costs for this corrective action plan include consulting services to support a comprehensive review of the safety risk management process, development of new training materials, and implementation of new training.

Segment Code	Cost Estimate (\$)
Consulting services for safety program review and update	100,000
Development of new and revised virtual training materials	100,000
30% Contingency	60,000
Total	260,000



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CORRECTIVE ACTION PLAN COMMITMENT

Responsible Parties

Department⁴	Name	E-mail	Signature
Safety	Michael Catsos <i>Director of SMS and Safety Oversight</i>	[Redacted]	DocuSigned by: <i>Michael Catsos</i> P8538893750044B...
Operations	Erik Stoothoff <i>Acting Chief Operating Officer</i>	[Redacted]	DocuSigned by: <i>Erik Stoothoff</i> 420D662BD86047B...
Workforce	Ahmad Barnes <i>Chief Workforce Officer</i>	[Redacted]	DocuSigned by: <i>Ahmad Barnes</i> C905D70689224D6...
Finance	Mary Ann O'Hara <i>Chief Financial Officer</i>	[Redacted]	DocuSigned by: <i>Mary Ann O'Hara</i> 3F02AEACAC6884B1...
Information Technology	John Glennon <i>Chief Information Officer</i>	[Redacted]	DocuSigned by: <i>John R. Glennon</i> [Redacted]
Procurement	Jeff Cook <i>Chief Procurement & Contract Administration Officer</i>	[Redacted]	DocuSigned by: <i>Jeff Cook</i> [Redacted]
General Manager's Office	Lynsey Heffernan <i>Assistant General Manager for Policy & Transit Planning</i>	[Redacted]	DocuSigned by: <i>Lynsey Heffernan</i> 68022497BCF94B6...

Executive Leadership of Responsible Parties

DocuSigned by:
Jeffrey D. Gonneville 9/11/2023
Jeffrey D. Gonneville
 MBTA Deputy General Manager Date

DocuSigned by:
David Panagore 9/8/2023
David Panagore
 MBTA Chief Administrative Officer Date

⁴ 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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Meredith Sandberg

9/8/2023

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Meredith Sandberg

MBTA Acting Chief of Quality, Compliance & Oversight

Date

DocuSigned by:

Dennis Lytton

ON BEHALF OF

9/8/2023

20886709438F432

Ronald Ester

MBTA Chief Safety Officer

Date

DocuSigned by:

Phillip Eng

9/11/2023

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Phillip Eng

MBTA General Manager & CEO

Date