



The Massachusetts Bay Transportation Authority

Corrective Action Plan (CAP)

FTA-22-12-MBTA-
CAT4-5

BACKGROUND

Overview: FTA issues 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 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

Operating Conditions and Policies, Procedures, and Training

- Finding 5: MBTA lacks formal resource manuals in key maintenance areas and does not currently provide employees with checklists or other tools to support training and implementation of maintenance rules and procedures.

FTA Required Action

- 5.A: In coordination with required actions already underway to address FTA's Special Directive 22-7, the MBTA must review its existing maintenance rules and procedures; identify opportunities for tools and checklists to support employees in carrying out maintenance rules and procedures; and develop, distribute, maintain, and update these materials.
- 5.B: MBTA must include frontline maintenance personnel in the development evaluation of these tools and checklists.

ANALYSIS AND RECOMMENDATIONS

Analysis

- Reliability Engineering is supporting the implementation of the Asset Management Program through the deployment of Enterprise Asset Management Systems to include prioritization and digitization of Preventative Maintenance Inspections.
- Reliability Engineering is currently working with Engineering & Maintenance and Vehicle Maintenance on the aforementioned effort where Signals digitization has been implemented to a significant degree and efforts for Track, Power and Facilities Maintenance are in planning.
- Reliability Engineering is collecting asset documents at commissioning to support maintenance and training development. Asset Drawings, OEM manuals, and training documents are being collected in cloud storage while a document management system is identified in support of front-line personnel task execution.

Recommendations

- Reliability Engineering will engage in a round of discovery to identify the current status of preventative maintenance inspection tasks in need of digitization and transition them from paper record to digital.
- Establish a central repository of work checklists, training and troubleshooting guides for easier control and reference by the workforce.
- Establish a periodic review cycle of subject documents to ensure continued relevance for the operating environment.



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ACTION PLAN

Description: The MBTA will develop a plan to digitize recording of department preventive maintenance inspections via mobile Enterprise Asset Management Systems. Task references will be compiled in a centralized repository accessible through the mobile hardware. Training will be developed to implement digitization of tasks at all levels of the organization. This action plan will be coordinated with Corrective Action Plans FTA-TRA- 22-4 finding 6; FTA-TRA-22-12, Finding 2, and 4

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 aligned with SD 22-4 CAP 6.	QCOO: Katie Choe OCE: William Boyce	10/6/22	11/30/22
2	Strategic Planning Session	Conduct a strategic planning session for SD 22-12 Finding 5 CAP implementation with the advisory group identified in Actionable Item #1.	QCOO: Katie Choe GM: Lynsey Heffernan	12/1/22	12/15/22
3	Procure Consulting Services	Issue RFP or Task Order for consulting services to support documenting or digitizing maintenance/repair instructions, identify opportunities for checklists and tools and assist with appropriate systems to aggregate and update digital resources.	QCOO: Katie Choe	12/15/22	2/28/23
4	Onboard consultant	Onboard selected consultant	QCOO: Katie Choe	2/28/23	4/30/23
5	Update the E&M PM&I Framework	Catalog the preventive maintenance and inspection procedures performed by E&M departments.	QCOO: Katie Choe E&M: Megan Chann	10/6/22	12/31/22
6	Document maintenance/repair instructions and verification tests	Work with E&M and VM personnel and equipment OEMs to update/determine step by step instructions to be performed for each Safety and System Critical preventive maintenance task performed internally or by vendors and execute plan to transition to digital records.	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks	5/1/23	10/31/23
7	Update EAMS PMI procedures	Incorporate new/updated maintenance/repair procedures and instructions and verification tests into EAMS to better assist frontline personnel and improve record keeping.	E&M: Megan Chann VM: Steve Hicks OCE: Dave Derossette	1/1/23	12/31/23
8	Improve mobile EAMS functionality	Identify mobile EAMS platform functionality improvements to ensure PMI digitization adoption at all levels	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks OCE: Dave Derossette IT: Christine McCarthy	1/31/23	1/31/24

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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9	Conduct Mobile Hardware Utilization Workshop	Engage frontline staff to identify reference material, hardware configuration, and applications needed to improve work efficiency Required action 5 B	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks	5/1/23	8/31/23
10	Develop more comprehensive training for recording digital preventive maintenance inspection tasks in Enterprise Asset Management Systems	Develop training for the various procedures and tasks. Training program should include detailed step by step instructions and verification tests for the procedures/tasks themselves, as well as how to complete these in EAMS using tablets. Training development will incorporate roles and responsibilities and training frequency. Training development will be aligned with requirements established in SD 22-12 CAP 4 .	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks OCE: Dave Derossette	4/1/23	10/1/24
11	Acquire and distribute digital tablets	The MBTA will continue to acquire and distribute tablets for maintenance personnel.	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks IT: Christine McCarthy	10/6/22	6/30/24
12	Implement training	MBTA will implement the new training program to all applicable staff.	E&M: Elizabeth Golding VM: Steve Hicks	7/1/24	ongoing
13	Establish mobile access to central repository documents.	The MBTA will establish mobile access to the central repository of reference documentation to support work force knowledge of current requirements and facilitate periodic documentation review as established by SD 22-12 CAP 3 and referenced in step 9. Required action 5 A	QCOO: Katie Choe OCE: Dave Derossette	8/1/23	6/30/24
14	Establish process for maintenance and training program adjustments and wholesale review	The E&M department will determine a process for approving changes to the maintenance procedures, EAMS software and training program based on feedback from E&M personnel. Additionally, E&M will determine a process and frequency to review these programs in their entirety to ensure they remain effective and up to date as established in SD 22-12 CAP 2 . E&M will maintain performance metrics as a tool to measure success of this action plan and to guide maintenance and training program adjustments.	QCOO: Katie Choe E&M: Megan Chann VM: Steve Hicks OCE: Dave Derossette IT: Christine McCarthy	7/1/23	6/30/24
15	CAP Verification	MBTA departments will evaluate actionable items/deliverables before submission to FTA to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the scope and performance measures.	QCOO: Katie Choe Safety: Ron Ester	Ongoing	

COMPLETION DOCUMENTATION



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Performance Metrics

- The metrics in evaluating the performance of this action plan will be based on the successful completion of the deliverables on or before the determined schedule.
- Ongoing metrics to ensure continued compliance with the action plan include:
 - Percentage of E&M and VM employees equipped with tablets
 - Percentage of E&M and VM employees not in compliance with training requirements
 - E&M and VM employee satisfaction with EAMS and tablet functionality
 - Percentage of maintenance procedures performed according to documented instructions and updated properly to EAMS based on Quality Management audits

Verification

- Documentation for each of the deliverables will be reviewed by MBTA senior leadership. Timelines of submission in relation to project plan will be monitored by the department of Quality Compliance and Oversight.
- Verification of the performance metrics will be monitored by the department of Quality Compliance and Oversight. This will involve audits of tablet uptime and training compliance, conducting of satisfaction and feedback surveys of E&M personnel to measure effectiveness of training, manuals and Trapeze and tablet user experience, and QM audits of completed maintenance work and Trapeze submissions.

BUDGET/COST ESTIMATE

Overview: Procurement of professional services and PPE materials for employees to meet the new standards. The budget values below are estimates that will require further refinement as the work associated with this CAP is developed and implemented.

<i>Segment Code</i>	<i>Cost Estimate</i>
Professional services to support expedited digitization of PMIs	\$1,200,000
Improvement of EAMS Mobile platform functionality	\$1,200,000
Development of training resources	\$800,000
Expansion of EAMS app team support resources (Est. 4 team members annual salaries)	\$771,000
30% Contingency	\$1,560,000
Total	\$6,760,000



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CORRECTIVE ACTION PLAN COMMITMENT

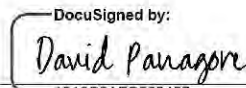
Responsible Parties

Department ⁴	Name	email	Signature DocuSigned by:
Operations	Erik Stoothoff	[REDACTED]	Erik Stoothoff 420D862BD80047B...
E&M	Megan Chann	[REDACTED]	Megan Chann 8F25964BA07B43A...
E&M	Elizabeth Golding	[REDACTED]	Elizabeth Golding E1D9A153E59B45E...
E&M	Christine McCarthy	[REDACTED]	Christine McCarthy C41CF0DB2ABC4D7...
VM	Steve Hicks	[REDACTED]	Steve Hicks 2F672383226B43C...
Office of Chief Engineer	William Boyce	[REDACTED]	Will Boyce CA95BE7DD0A45D...
Office of Chief Engineer	Dave Derosette	[REDACTED]	[REDACTED]
Human Resources	Thomas Wayne	[REDACTED]	Thomas Wayne 06923AF95BBE462...
Finance	Mary Anne O'Hara	[REDACTED]	Mary Anne O'Hara 3F02AECAC6884B1...
Labor Relations	Ahmad Barnes	[REDACTED]	Ahmad Barnes C995D70689224D6...
Procurement	Jeffrey Cook	[REDACTED]	Jeff Cook 802497BCF94B6...
General Manager's Office	Lynsey Heffernan	[REDACTED]	Lynsey Heffernan

Executive Leadership of Responsible Parties

DocuSigned by:

 Jeffrey D. Gonville
 MBTA Deputy General Manager
 12/29/2022
 Date

DocuSigned by:

 David Panagore
 MBTA Chief Administrative Officer
 December 21, 2022
 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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Executive Leadership of Responsible Parties

DocuSigned by:

Katie J. Choe

December 22, 2022

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Katie Choe

MBTA Chief of Quality, Compliance, and Oversight

Date

DocuSigned by:

Ronald Ester

12/30/2022

30C28E08E237430...

Ronald Ester

MBTA Chief Safety Officer

Date

DocuSigned by:

Steve Poftak

December 19, 2022

86BCDDC7491D4D5...

Steve Poftak

MBTA General Manager

Date