



ANNUAL REPORT ON THE SAFETY OF THE WMATA RAIL SYSTEM IN 2023





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# LETTER FROM THE WMSC CHAIR

**The Washington Metrorail Safety Commission (WMSC) continued its important oversight work in 2023 to help the Washington Metropolitan Area Transit Authority's Metrorail system (Metrorail) achieve substantial safety improvements through ongoing collaboration, safety audits, inspections, safety certification oversight, and safety event investigations.**



The WMSC's ongoing robust safety oversight helped ensure that Metrorail properly completed its safety certification process to open Potomac Yard Station and to begin Automatic Door Operations (ADO) on the Red Line, a feature that had not been regularly used since 2009. The safety certification process is designed to identify and mitigate hazards early in a project's lifecycle and is required prior to new assets and systems being put into service.

In 2023 the WMSC continued our work on the important issue of the 7000 Series railcars, including serving as a party to the accident investigation led by the National Transportation Safety Board (NTSB) to determine the cause of an October 12, 2021, Blue Line train derailment. In January 2024, the WMSC issued an order requiring Metrorail to develop a corrective action plan to address NTSB safety recommendation R-23-28.

Ongoing communication and cooperation between the WMSC and Metrorail led to timely remediation of several safety concerns. For example, after the WMSC observed and communicated safety concerns regarding improper roadway worker protection, radio communication protocol and exercise control issues to Metrorail following a full-scale emergency exercise at Wheaton Station on February 26, 2023, WMSC personnel observed procedural improvements during the subsequent exercise at Capitol South Station on September 17, 2023. These exercises simulate real-world events and provide the opportunity for local emergency responders and Metrorail personnel to practice their response in a controlled setting.

We also continue our proactive safety oversight work throughout the Metrorail system through inspections, safety audits and other activities. In 2023, the WMSC issued three audit reports and conducted work on four additional safety audits to be issued in 2024. These audits identify positive practices and opportunities for safety improvement that the WMSC requires Metrorail to address to ensure that Metrorail is following its safety management system commitments specified in its Public Transportation Agency Safety Plan.

In 2023 the WMSC approved for closure 55 corrective action plans (CAPs) designed to address safety concerns identified during WMSC oversight activities. Each Metrorail actionable item completed during implementation of a CAP improves the system's safety. The WMSC continues to monitor the effectiveness of these safety mitigations even after a CAP is closed.

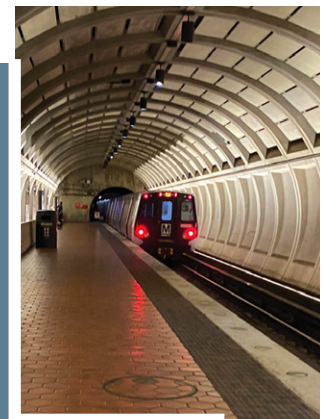
I would like to thank the Mayor of Washington, D.C., the governors of Maryland and Virginia, the D.C. Council, the Maryland and Virginia General Assemblies, Congress, and the officials in numerous local and federal agencies, including the Federal Transit Administration (FTA), who continue to be crucial partners in this oversight and continuous safety improvement effort.

On the following pages we detail the status of Metrorail safety in 2023, describe our ongoing strategies for ensuring that Metrorail continuously improves its safety, outline where Metrorail stands, and discuss future work.

Sincerely,

A handwritten signature in black ink that reads "Christopher A. Hart".

Christopher A. Hart, Chair



# WMSC COMMISSIONERS AND CEO



**CHRISTOPHER HART**  
(District of Columbia),  
Chair



**ROBERT LAUBY**  
(Commonwealth of Virginia)  
Vice Chair



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**JENNIFER DEBRUHL**  
(Commonwealth of Virginia -  
Alternate)



**DAVID L. MAYER, PHD**  
CEO





# EXECUTIVE SUMMARY

**U**nder the oversight of the Washington Metrorail Safety Commission (WMSC), the Washington Metropolitan Area Transit Authority (WMATA) is working towards Metrorail safety improvements that will provide for even higher levels of safety for riders and employees.

This annual status report on the safety of the WMATA Rail System in 2023 outlines WMSC directives and on-going investigations as well as the status of Metrorail’s Corrective Action Plans (CAPs) that are in progress and Metrorail’s other progress towards ensuring continuous safety improvement.

As its State Safety Oversight Agency (SSOA), the WMSC plays a significant role in driving Metrorail safety improvements through audits, safety event investigations, inspections, and oversight of CAPs, safety certification and emergency management. The WMSC’s enforcement action, when necessary, includes steps such as directives and orders. The WMSC’s priority is the safety of riders, workers and all others who depend on the WMATA Rail System’s safe maintenance and operations.

### Derailment Investigation, 7000 Series Railcars

The WMSC continued active oversight work in 2023 related to Metrorail’s 7000 Series railcars and the NTSB investigation into the October 12, 2021, derailment of a Blue Line train between Rosslyn and Arlington Cemetery stations.

When the NTSB released its report in January 2024, it issued a safety recommendation to WMATA to implement processes and resources to expand the role of trend analysis in identifying and mitigating safety risks (R-23-28) and to the WMSC to develop and implement a program to support and monitor the Washington Metropolitan Area Transit Authority’s use of trend analysis within its safety management system (R-23-29).

The WMSC acted on this responsibility in January 2024 by issuing an **order** requiring Metrorail to develop and implement a corrective action plan to address NTSB Safety Recommendation R-23-28. Throughout 2023, the WMSC team participated alongside NTSB personnel and the other parties in all aspects of the investigation. The WMSC remains committed to overseeing Metrorail’s corrective action plan process designed to implement processes and resources to expand the role of trend analysis in identifying and mitigating safety risks.

The WMSC continues to oversee WMATA’s Return to Service Plan for 7000 Series railcars. As 2023 concluded, Metrorail was measuring wheelsets at a 30-day frequency. Metrorail continues to proactively identify evidence of wheel migration on railcars. In 2023 Metrorail developed a wheelset replacement program with specifications that better align with industry standards, and began to build replacement wheelsets using these specifications. Metrorail has successfully tested the first of these wheelsets and in 2024 expects to install these improved wheelsets on more railcars.

### Train Operator Certification

Following safety concerns identified during safety event investigations that demonstrated personnel not carrying out Metrorail’s safety requirements that certification is designed to validate, creating risks of collision and other safety issues, the WMSC reviewed Metrorail records and gathered information through investigative interviews. This review showed Metrorail was assigning personnel to operate trains who have not met these safety requirements.

This led the WMSC to review certification records for other train operators and communicate the deficiencies and omissions found in the train operator certification process to Metrorail management multiple times during 2023, and again in 2024.

The WMSC issued an order regarding Metrorail's noncompliance with its train operator certification requirements in February 2024.

### WMSC Safety Audits of Metrorail

The WMSC completed three audit reports in 2023 and conducted work on four other audits to be published in 2024. These audits identify positive practices, such as Metrorail's structural rehabilitation work on the Yellow Line, and areas requiring improvement such as Metrorail's need to track and mitigate hazards in accordance with its safety requirements, and the need for effective fall protection to ensure workers are safe.

For each audit finding, Metrorail is required to develop and implement a corrective action plan that addresses the finding and thereby improves the safety of the Metrorail system. The audits issued in 2023 were:

- Audit of Internal Safety Review Program
- Audit of Structures Program
- Audit of Roadway Maintenance Machines Program

### Corrective Action Plan (CAP) Development and Implementation

Metrorail has outlined and followed through on plans to address specific safety issues identified in recent years, which led to the closure of 55 corrective action plans in 2023. This is in addition to other safety issues Metrorail addressed through the WMSC's inspections, investigations and other oversight processes, and those actions Metrorail took as a result of safety assurance measures required under its Public Transportation Agency Safety Plan (PTASP).

### Metrorail's Safety Certification: Opening of Potomac Yard Station, Work on Automatic Door Operation and Automatic Train Operation

The WMSC oversees Metrorail's safety certification process which is designed to identify and mitigate hazards to provide for the highest practicable level of safety. This Metrorail process must be completed prior to new assets and systems being put into service.

In May 2023, Metrorail met the requirements of its Safety and Security Certification Program Plan to identify and mitigate hazards related to the Potomac Yard infill station on the Blue and Yellow lines, leading to the WMSC's concurrence that Metrorail met those requirements. Metrorail opened the station on May 19, 2023. The WMSC's concurrence was required because the project was selected by the WMSC for in-depth review of Metrorail's safety certification.

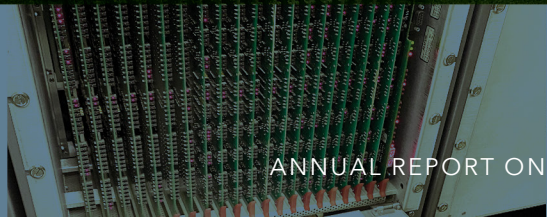
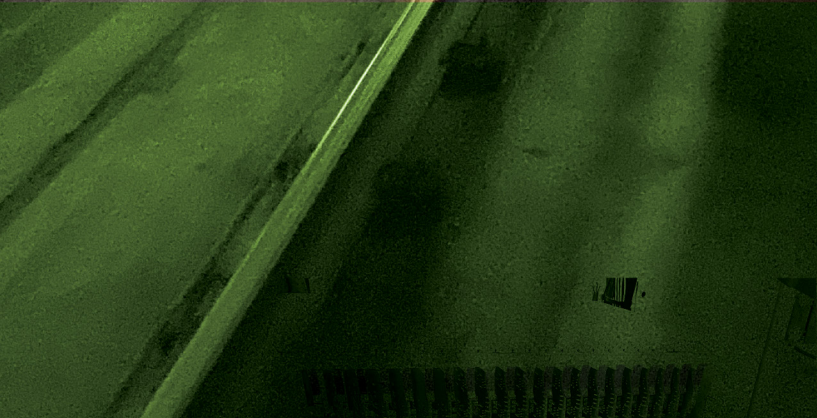
The WMSC issued an order regarding Metrorail's noncompliance with its train operator certification requirements in February 2024.

Another such project whose safety certification is under the WMSC's in-depth review is Metrorail's work on Automatic Door Operation and Automatic Train Operation. Due to the WMSC's oversight, Metrorail in summer 2023 began to change its approach to match Metrorail's safety certification requirements and industry practices for systems engineering. Due to these improvements driven by the WMSC, Metrorail developed its first concept of operations for its Automatic Door Operation system, and began work on similar engineering requirements for its Automatic

Train Operation system. Metrorail also in 2023 conducted some inspection and test activities, and provided Automatic Door Operation training to Red Line train operators. Metrorail completed the required safety mitigations and other steps for Red Line Automatic Door Operation, leading to the WMSC's concurrence with Metrorail's Temporary Use Notice and to Metrorail activating Automatic Door Operation on the Red Line in late 2023. Metrorail continued work into 2024 on these projects.

### Public Transportation Agency Safety Plan (PTASP) Implementation

In accordance with federal regulation and the WMSC Program Standard, Metrorail's Public Transportation Agency Safety Plan (PTASP) requires a Safety Management System (SMS) approach that involves personnel at all levels. This includes specific commitments related to safety promotion, safety policy, safety assurance, and safety risk management. The WMSC oversees Metrorail's annual updates to its PTASP, and assesses Metrorail's compliance with its commitments through ongoing inspections, audits, and other oversight. Metrorail is still working to implement elements of these safety commitments and to implement improvements to its safety culture as part of its continuous safety improvement.



## INTRODUCTION



# INTRODUCTION

**The Washington Metrorail Safety Commission (WMSC) is committed to the safety of every person who interacts with the Metrorail system including riders, employees, contractors and first responders. This annual status report on the safety of the WMATA Rail System gives a high-level snapshot of Metrorail’s performance in 2023.**

To help guide continued progress toward making Metrorail the safest possible system, and as required by law, this report is provided to the Administrator of the Federal Transit Administration, the Governor of Virginia, the Governor of Maryland, the Mayor of the District of Columbia, the Chairman of the D.C. Council, the President of the Maryland Senate, the Speaker of the Maryland House of Delegates, the President of the Virginia Senate, the Speaker of the Virginia House of Delegates, WMATA’s General Manager, and each member of the WMATA Board.

The report is also published at [WMSC.gov](https://www.wmsc.gov) to provide an opportunity for the public to understand the independent safety oversight efforts of the WMSC, and the progress Metrorail has made on instituting the federally mandated top-to-bottom Safety Management System (SMS). Additional information about the WMSC’s work, including audit reports, inspection reports, official actions, investigation reports, and public meetings is also available at [WMSC.gov](https://www.wmsc.gov).

## 2021 Blue Line Derailment Investigation Completed

The WMSC continued active oversight work in 2023 related to Metrorail’s 7000 Series railcars and the National Transportation Safety Board (NTSB) investigation into the October 12, 2021 derailment of a Blue Line train between Rosslyn and Arlington Cemetery stations.

The investigative work concluded in 2023, and, on January 4, 2024, the NTSB released its final report on the investigation (dated December 2023).

In Rail Investigation Report RIR-23-15, the NTSB found that “The derailment occurred because the wheels of one wheelset had migrated outward on their axle, resulting in a width larger than the design specification. The wheel migration happened over time, eventually causing the wheelset to exceed its maximum design width. When this wheelset traveled over a turnout (a type of special track

work that allows a train to change tracks), the out-of-specification wheelset width caused a wheel to leave the rail, derailing a railcar.”

During the more than two-year investigation, and as part of other oversight activities, the WMSC has required Metrorail to address safety issues identified following the derailment, including:

- Safe return to service of each 7000 Series railcar
- Emergency response program deficiencies identified by the WMSC
- Agency Safety Plan improvements
- Findings and corrective action plans related to safety promotion, safety assurance, and safety risk management
- Improving compliance with safety certification requirements
- Use of available safety data to proactively identify and mitigate negative safety trends





Due to the WMSC's oversight, Metrorail has established a Vehicle-Track Working Group and is now utilizing VTI data and making safety improvements to track inspection practices, track infrastructure, and vehicles.

When the NTSB released its report in January 2024, it issued a safety recommendation to WMATA to implement processes and resources to expand the role of trend analysis in identifying and mitigating safety risks (R-23-28) and to the WMSC to develop and implement a program to support and monitor the Washington Metropolitan Area Transit Authority's use of trend analysis within its safety management system (R-23-29).

When the NTSB issues a safety recommendation to Metrorail, the WMSC Program Standard and federal regulation provide that the WMSC will determine whether a Metrorail corrective action plan is required. The WMSC determined that a CAP was required and issued an order on January 17, 2024, requiring Metrorail to develop and carry out a corrective action plan to address NTSB safety recommendation R-23-28 to WMATA to implement processes and resources to expand the role of trend analysis in identifying and mitigating safety risks. Issuance of this order is part of the WMSC's implementation of NTSB safety recommendation R-23-29 to the WMSC to ensure that Metrorail implements the safety improvements recommended to WMATA.

WMSC commissioners voted to adopt the NTSB report on January 23, 2024, as provided for in the WMSC Program Standard.

## 7000 Series Railcar Return to Service

The WMSC issued orders in October and December 2021 requiring Metrorail to ensure that each 7000 Series railcar was safely returned to service.

The WMSC oversaw Metrorail's development of its return to service plans by ensuring that they were based on safety data, including Metrorail's development of revisions to its return to service plan in 2023. The WMSC continues to oversee Metrorail's implementation of such plans.

Metrorail's 2023 revisions continue the use of improved measurement tools and practices, improved internal oversight, and improved data collection practices

developed due to the WMSC's oversight. These practices are successfully detecting wheel migration on railcar axles so that cars demonstrating such migration can be removed from service.

In mid-2023, Metrorail developed a wheelset replacement program that includes improved wheelset assembly specifications to better align with industry standards for railcars of the size and weight of the 7000 Series.



Due to the WMSC's oversight, Metrorail has established a Vehicle-Track Working Group and is now utilizing VTI data.

Metrorail subsequently began to build replacement wheelsets under the new specifications. These specifications include a higher interference fit and press tonnage than Metrorail's previous wheelset specifications.

Based on the successful testing of the first of these wheelsets in 2024, Metrorail plans to move from inspections every 30 days of back-to-back and journal bearing gaps on 7000 Series railcars built under previous specifications to inspections every 60 days.

Metrorail is continuing to identify evidence of wheel migration on the railcars that have not yet been modified. As these wheelsets are identified, they are removed from service until the wheelset design changes to better match industry standards can be implemented. The WMSC is continuing to review data related to these wheelsets.

Under its return to service plan, Metrorail is also implementing other safety improvements. Due to the WMSC's oversight, Metrorail is now utilizing Vehicle-Track Interaction data from 7000 Series railcars to identify track locations requiring safety adjustments. This includes utilizing this data after an increase in identified wheel migration in late 2023 to determine adjustments were required in early 2024 at specific locations on the Orange Line.

Metrorail progressed work in 2023 on a study of restraining rails and guarded turnouts, leading to a final report in 2024. Metrorail is also working on a study of its rail frogs, and plans to procure different types of frogs for an in-service

evaluation of possible changes to the type of frog used at switches. The next phase of work involves installing different frog types for study in the Metrorail operating environment.

### Red Signal Overruns

Metrorail reported nine red signal overruns in 2023, an increase from eight in 2022, and five in 2021. As of March 1, 2024, there have been four such events reported in 2024.

Of the 2023 events, eight occurred while train operators were operating trains and one occurred as an equipment operator, with six years of experience, was operating a maintenance vehicle. All train operators involved in these red signal overrun events were new operators, with experience ranging from two weeks to about eight months. During the investigations of these red signal overruns, the WMSC and Metrorail investigators identified that three of the eight train operators had never operated from the rail yard to the mainline alone prior to the overrun events they were involved in. These investigations showed a lack of territory familiarization and physical characteristics training and qualification requirements contributed to these red signal overrun events. Metrorail is currently implementing CAP C-0183 regarding territory familiarization and physical characteristics training and assessment. This CAP was created to address the WMSC's **2022 rail operations audit**

These investigations showed a lack of territory familiarization and physical characteristics training and qualification requirements contributed to these red signal overrun events.

finding that Metrorail creates safety risks by not requiring and conducting territory familiarization and physical characteristics training, and not assessing knowledge of physical characteristics prior to assigning operations personnel work on a line, in a terminal or in a yard.

In accordance with the WMSC Program Standard, each red signal overrun investigation leads to a final safety event investigation report. The adopted reports describing details of each event, associated corrective actions for that specific event, and other related actions such as findings and directives, are available at [WMSC.gov](https://www.wmsc.gov).

### Potomac Yard Station

On May 19, 2023, Metrorail opened its 98th station, Potomac Yard Station. The infill station was constructed between two existing stations, Braddock Road and Ronald Reagan Washington National Airport, on the Blue and Yellow lines in Alexandria, Virginia. The extensive project included the construction of new tracks and associated systems.

The WMSC oversaw Metrorail's safety certification process for the station and associated systems on an ongoing basis in the years leading up to Metrorail completing the steps required under Metrorail's safety certification process to safely open the station. The safety certification process is a



critical element of Metrorail's safety management system. Consistently identifying hazards and mitigating the likelihood and severity of those hazards in a systematic way as documented in Metrorail's policy and procedures is what provides for the overall safety of the Metrorail system.

The WMSC's oversight work included field observations, document and data review, and regular meetings with Metrorail. The WMSC identified and communicated hazards so that Metrorail could address them in a timely manner.

Metrorail completed its safety certification requirements, and the WMSC concurred that Metrorail had met those safety requirements. Metrorail opened Potomac Yards Station on May 19, 2023.

## Audits

In accordance with the WMSC Compact and federal regulation, the WMSC audits all aspects of Metrorail's Public Transportation Agency Safety Plan over a three-year period. The WMSC is currently conducting its second triennial cycle of these safety audits.

These safety audits involve extensive reviews of documents, data, and recordings, as well as in-depth interviews with Metrorail frontline and managerial personnel. In addition, audit work includes on-site inspections and observations. The purpose of this audit work is to review Metrorail's policies and procedures and Metrorail's compliance with its policies, procedures or other requirements, and to identify positive practices to be maintained, and opportunities for improvement that the WMSC then requires Metrorail to address to improve the safety of riders and personnel.

The WMSC provides a draft report for each audit to Metrorail for a 30-day technical review, and the WMSC incorporates any subsequent information provided, as

appropriate, prior to issuing a final report to Metrorail. The WMSC then publishes the final report at [WMSC.gov](https://www.wmsc.gov).

After the WMSC issues a finding, Metrorail must develop a Corrective Action Plan (CAP) with actionable items to resolve the issue and reduce the risk of future safety events. As part of the CAP process, Metrorail may take interim steps to mitigate the risk and improve safety as it develops and implements more permanent solutions.

These audits take time to complete, consequently some audits were initiated in 2022 and published in 2023, and other

audits initiated in 2023 were published in 2024. Because the WMSC audits specific functional areas separately during each triennial cycle to provide the required level of review, audit work is conducted on a continuous basis, therefore, there is always audit work in progress.

The WMSC provides the three-year audit schedule to WMATA at the start of each triennial audit cycle, schedules these audits in advance, and provides that schedule to WMATA each time it is updated.

The audits issued, initiated, and completed in 2023 demonstrate that while there have been substantive improvements, there are areas where Metrorail is not meeting its own written requirements, including as it relates to tracking and mitigating hazards, does not have adequate procedures, processes or requirements, and does not have adequate training, coordination and supervision.

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### ➤ REVENUE VEHICLE (RAILCAR) PROGRAM - MAY 21, 2024

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Work on this **audit** was conducted in 2023, and the final report was published in May 2024.

**SCOPE:** This audit assessed Metrorail's maintenance and engineering practices related to railcars, those vehicles designed to carry customers (Metrorail also refers to these as Class 1 vehicles). The audit also included associated shop

equipment such as railcar movers. The report includes seven findings and three recommendations.

#### Examples of positive practices identified included:

- Under the WMSC's orders related to the safe return to service of each 7000 Series railcar, Metrorail developed a digital indicator gauge along with associated procedures for performing accurate back-to-back measurements.
- Under the WMSC's oversight, Metrorail has made upgrades to its Vehicle-Track Interaction systems in place on some 7000 Series railcars to resume system functionality by upgrading 3G cellular communication systems to 4G systems. As part of Metrorail's return to service plan, Metrorail is now analyzing Vehicle Track Interaction (VTI) data on a regular basis, leading to actions to improve safety in the system.



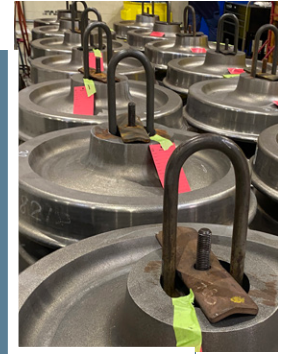
#### FINDINGS:

- **Finding 1:** Metrorail is not carrying out railcar maintenance and inspection tasks as specified by its procedures.
- **Finding 2:** Metrorail is training railcar personnel on outdated procedures.
- **Finding 3:** Metrorail is not meeting life-safety and occupational safety and health requirements in railcar maintenance facilities.
- **Finding 4:** Metrorail is not identifying and mitigating hazards related to railcars and railcar personnel.
- **Finding 5:** Metrorail is not following its operational certification requirements for Car Maintenance Road Mechanics.
- **Finding 6:** Metrorail is not following industry standard electrostatic discharge protection practices for railcar components.
- **Finding 7:** Metrorail is using equipment that is not calibrated in accordance with its policies and procedures, including for inspection and maintenance of components with a direct impact on safety.

#### RECOMMENDATIONS:

- **Recommendation 1:** Metrorail is not tracking the shelf life of railcar parts that decay over time and therefore have a limited shelf life.

- **Recommendation 2:** Metrorail could improve the effectiveness of its maintenance tasks by proactively providing training records to supervisors of employees newly assigned to their shift or location.
- **Recommendation 3:** Metrorail should update its railcar maintenance staffing assessment to account for current facilities, railcars, maintenance requirements, and other operational changes.



All CAPs related to this audit are in development.

#### ➤ POWER SYSTEMS PROGRAMS – FEBRUARY 7, 2024

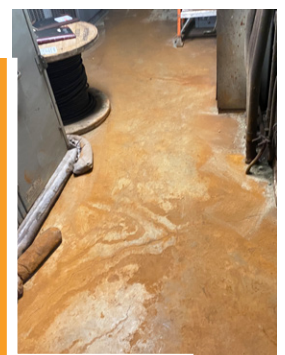
Work on this **audit** was conducted in 2023. In 2024, the WMSC considered Metrorail's response to the draft report and then issued the final report.

**SCOPE:** This audit assessed Metrorail's power systems, both those that Metrorail designates as high-voltage and those that Metrorail designates as low-voltage. This includes all aspects from the utility connection through and including the wayside cables that connect to the third rail, as well as the negative return system.

The report includes three findings and three existing corrective action plans identified during the audit that required modifications.

#### Examples of positive practices identified included:

- Metrorail has consolidated Preventive Maintenance Instructions (PMIs) to manufacturer specific PMIs, improving document control and making it easier for frontline workers to use and follow. Previously, there were over 40 PMIs, some of which contributed to confusion about the required procedures for different types of similar equipment.





- Comprehensive job safety briefings, personal protective equipment compliance checks and Roadway Worker Protection certification checks were conducted prior to all onsite work observed by the WMSC. All personnel were in compliance, demonstrating effective supervisory oversight and safety promotion related to personal safety.

### FINDINGS:

- **Finding 1:** Metrorail is not consistently identifying, addressing, and preventing water intrusion in power rooms.
- **Finding 2:** Metrorail is not ensuring that adequate egress paths and signage are maintained for Power facilities.
- **Finding 3:** Metrorail Office of Power personnel are performing maintenance work using torque wrenches that are out of calibration.

— Metrorail’s timely action to address this finding during the auditing process led to the finding being closed prior to the issuance of the audit report. The coordination between the WMSC and Metrorail from identification to

effective mitigation is an example of the impact of the WMSC’s oversight and of Metrorail’s ability to act on the issues the WMSC communicates during the auditing process.



### CAPs Requiring Modification Based on Power Audit Work:

#### • C-0154

- **2021 finding:** Traction Power Maintenance employees do not get all required information and training to maintain equipment that they are directed to work on, and there is no process in place to ensure that personnel are trained on specific equipment prior to working on that equipment.
- During this audit, the WMSC found that Metrorail is not adequately training personnel on new power equipment that personnel are being assigned to work on. The previous CAP deliverables addressed “training” but did not account for updates to those trainings that would capture new equipment.
- Modifications to the existing CAP included establishing a process to set and document training requirements for each new type of equipment, and to develop and implement a process to ensure that personnel are only assigned to work on equipment that they have been fully and properly trained to work on.

#### • C-0155

- **2021 finding:** Metrorail is not effectively identifying, tracking and mitigating hazards related to high voltage and traction power.
- During this audit, the WMSC found that the CAP being implemented only applied to high voltage personnel (Power department since been combined to include low voltage and low voltage personnel). The WMSC identified that the safety management

system awareness training for high voltage personnel did not result in personnel becoming familiar with hazard identification and hazard management.

- Modifications to the existing CAP included training to ensure all Power personnel are familiar with hazard identification and hazard management, and the addition of actionable items that demonstrate that training was effective and demonstrates that the Safety Management System (SMS) was implemented as specified in WMATA's Agency Safety Plan and Power department manuals.

### • C-0157

- **2021 finding:** The latest as-built schematics are not available in each traction power facility, as required by the TRPM-1000 and Metrorail preventive maintenance instructions.
- During this audit, the WMSC found that Metrorail is identifying locations with missing or outdated as-built schematics through inspection, however, only some inspections submitted to the WMSC listed corresponding work orders to address those deficiencies.
- Metrorail has submitted a CAP modification to include full review of all rooms, recording of the necessary as-built schematics, printing the necessary materials, and posting at the rooms.

As of March 15, 2024, all remaining CAPs related to this audit are open.

## ➤ AUTOMATIC TRAIN CONTROL (ATC) AND SIGNALS PROGRAM - JANUARY 18, 2024



Work on this **audit** was conducted in 2023. The final report was published in January 2024.

**SCOPE:** This audit assessed automatic train control and signaling facilities, equipment, systems, and software on both mainline and in yards such as but not limited to remote terminal units (RTU); train control rooms (TCR) and constituent parts; communication lines, devices, and any associated cabling; and the Advanced Information Management (AIM) system. The audit objectives include the assessment of inspection, maintenance, and engineering practices and procedures, and associated training for purposes of compliance with applicable plans, policies, regulations, and industry best practices.

The audit includes five findings and three recommendations.

### Examples of positive practices identified included:

- Following the WMSC's August 2022 Train Control Room order and finding, Metrorail has improved conditions in some Train Control Rooms.
- Metrorail has developed and begun offering refresher training for AA, A, and B ATC mechanics.

Metrorail has developed and is carrying out on-the-job training on specific switches and track circuits as committed to in CAP C-0112.

- Metrorail has developed and is carrying out on-the-job training on specific switches and track circuits as committed to in CAP C-0112.

### FINDINGS:

- **Finding 1:** Metrorail ATC Maintenance personnel do not have a uniform understanding of Metrorail procedures, which leads to inadequate completion of safety tasks, such as inspections and handling of vital systems, that are required to ensure that track circuits and other elements of the ATC system function properly as required to prevent train collisions and to provide other designed safety protections.
- **Finding 2:** Metrorail does not review, analyze, and act upon available safety data about the health and functionality of the Automatic Train Control system and subsystems as required by Metrorail's Agency Safety Plan. Therefore, Metrorail's ATC Engineering cannot reliably or proactively determine whether or not the ATC system and subsystems are or will be functioning as designed to provide for the safety of riders and workers.

- **Finding 3:** Metrorail is putting its personnel at risk due to health hazards such as damaged and repositioned materials marked as containing asbestos that are not being identified and managed as required by its Agency Safety Plan.
- **Finding 4:** Metrorail is not systematically identifying, tracking, and mitigating hazards related to automatic train control and signaling as required by its Agency Safety Plan.
- **Finding 5:** Metrorail is not maintaining its books of plans in accordance with its requirements.

### RECOMMENDATIONS:

- **Recommendation 1:** Metrorail has not determined the required staffing for ATC and Signals.
- **Recommendation 2:** Metrorail does not ensure that lessons learned from prior projects are consistently shared with all relevant personnel responsible for ATC and Signals.



- **Recommendation 3:** Metrorail does not have a procedure for the removal of hang tags in Train Control Rooms that indicate temporary modifications. This has led to many rooms having such “temporary” hang tags in place for decades.

As of March 15, 2024, all CAPs related to this audit are open.

### ➤ ROADWAY MAINTENANCE MACHINES PROGRAM - OCTOBER 18, 2023

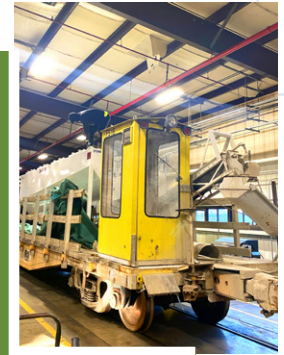
**SCOPE:** This **audit** assessed Metrorail roadway maintenance machine (RMM) inspection, maintenance, and engineering practices and procedures, and associated training for purposes of compliance with applicable plans, policies, regulations, and industry best practices. This audit also assessed closed corrective action plans that were issued as part of the WMSC’s first Roadway Maintenance Machine Audit that was issued on March 9, 2021.

#### Examples of positive practices identified included:

- Metrorail identified in December 2021, and has since been taking steps to address, a safety issue related to

brake beams on Plasser RMMs, primarily Prime Movers.

- Metrorail has improved the information flow to mechanics regarding the defects reported on equipment that is brought in for corrective maintenance.



#### The four audit findings were:

- **Finding 1:** Metrorail does not ensure the use of adequate fall protection when working on or around RMMs.
- **Finding 2:** Metrorail is not effectively tracking and mitigating hazards related to RMM maintenance and operations in accordance with its PTASP.
- **Finding 3:** Metrorail has not documented its practices regarding adjustments to its contractor RMM inspection procedures.
- **Finding 4:** Metrorail does not have a process and assigned resources to inspect and maintain the hi-rail gear on hi-rail vehicles owned by WMATA as required to ensure the vehicles’ safe operation.

#### The six recommendations were:

- **Recommendation 1:** Metrorail has the opportunity to more effectively collect and proactively utilize reliability data to ensure safe and effective operations.
- **Recommendation 2:** Metrorail can improve safety and reliability by documenting and formalizing a process for starting and checking equipment on a regular basis that is not being regularly used.
- **Recommendation 3:** Metrorail is utilizing back-to-back gauges for RMM wheelsets that it has determined are insufficient to accurately make such a measurement on other rail vehicles.
- **Recommendation 4:** Metrorail has not implemented a documented process for decommissioning RMMs, including process to ensure that vehicles to be decommissioned are no longer needed to carry out work activities and that those vehicles are properly and safely disposed of.
- **Recommendation 5:** Metrorail can improve the effectiveness of training and available operational manuals by providing a consistent, complete format that

documents operational restrictions and allows personnel to identify where to look for such information, and by incorporating these improvements into a recurring troubleshooting training.

- **Recommendation 6:** Metrorail has an opportunity to improve safety through effective interdepartmental coordination to fully utilize available safety data, technology, and contracts.

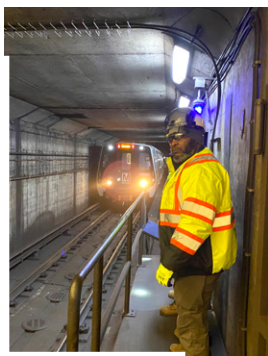
As of March 15, 2024, all CAPs related to this audit are open with scheduled dates for completion between September 2024 and December 2025.

### ➤ STRUCTURES PROGRAM - JULY 25, 2023

**SCOPE:** This **audit** assessed Metrorail’s structural inspections, maintenance, and engineering practices and procedures, and associated training for purposes of compliance with applicable plans, policies, regulations, and industry best practices. The WMSC focused primarily on the above objectives in relation to tunnels and ancillary rooms, structures-related capital projects such as the Yellow Line Tunnel and Bridge Rehabilitation Project, as well as closed corrective action plans that were issued as part of the Audit of Elevated Structures, Inspection, Maintenance and Repair issued in January 2021.

#### Examples of positive practices identified included:

- WMATA is beginning to provide improved training to structural repairers, starting with a fence repair class that, at the time of this audit, had been provided to 92% of structural repairers.
- Metrorail was carrying out important structural rehabilitation work on the Yellow Line to improve the integrity of the Metrorail system.



#### The two audit findings were:

- **Finding 1:** Metrorail is not carrying out the safety risk management, safety assurance and safety promotion for the structures program required by Metrorail’s Agency Safety Plan to ensure safe and effective structural engineering, maintenance, and operation.

- **Finding 2:** Metrorail’s Structures Maintenance and Inspections department has not formalized and documented its on-the-job training process for structural inspection.

As of March 15, 2024, all CAPs related to this audit are open with scheduled dates for completion in September 2024 and April 2025.

### ➤ INTERNAL SAFETY REVIEW PROGRAM - JANUARY 4, 2023

**SCOPE:** This **audit** assessed Metrorail’s internal safety review audit practices and procedures, and associated training, for purposes of compliance with applicable Metrorail plans and policies, regulations, and industry best practices. Internal safety reviews are a part of Metrorail’s continuous improvement process required by the WMSC Program Standard.



#### Examples of positive practices identified included:

- Metrorail’s internal safety reviews effectively identify issues that must be addressed.
- Internal safety reviews are conducted by a department outside of the reporting structure for operational departments.
- QICO utilizes subject matter experts as part of internal safety review teams and to review iCAPA deliverables and closure requests.
- QICO typically hold individual briefing regarding the findings of each internal safety review with the relevant senior vice president(s) responsible for the area.
- iCAPA deliverables and other items are tracked on schedules for each responsible department. These have continued to be distributed, even if on a reduced frequency, during reduced staffing within QICO.

#### The three audit findings were:

- **Finding 1:** Findings from the internal safety review program are not yet systematically incorporated into Metrorail’s Safety Management System (SMS) as specified in Metrorail’s PTASP.



- **Finding 2:** Metrorail has not yet implemented training requirements in system safety, hazard management and SMS training for personnel responsible for internal safety reviews as required by the WMSC Program Standard.
- **Finding 3:** Metrorail does not have a process for, and has not conducted or scheduled, a triennial internal safety review of its internal safety review program as required by the WMSC Program Standard.

All CAPs related to this audit are open with scheduled dates for completion between August and October 2024.

### Audit Report in Development

The WMSC conducted on-site activities (interviews and field observations) for a safety audit of Metrorail’s Roadway Worker Protection (RWP) program beginning in late 2023. The audit process continued into 2024.

### Other Findings, Orders and Directives

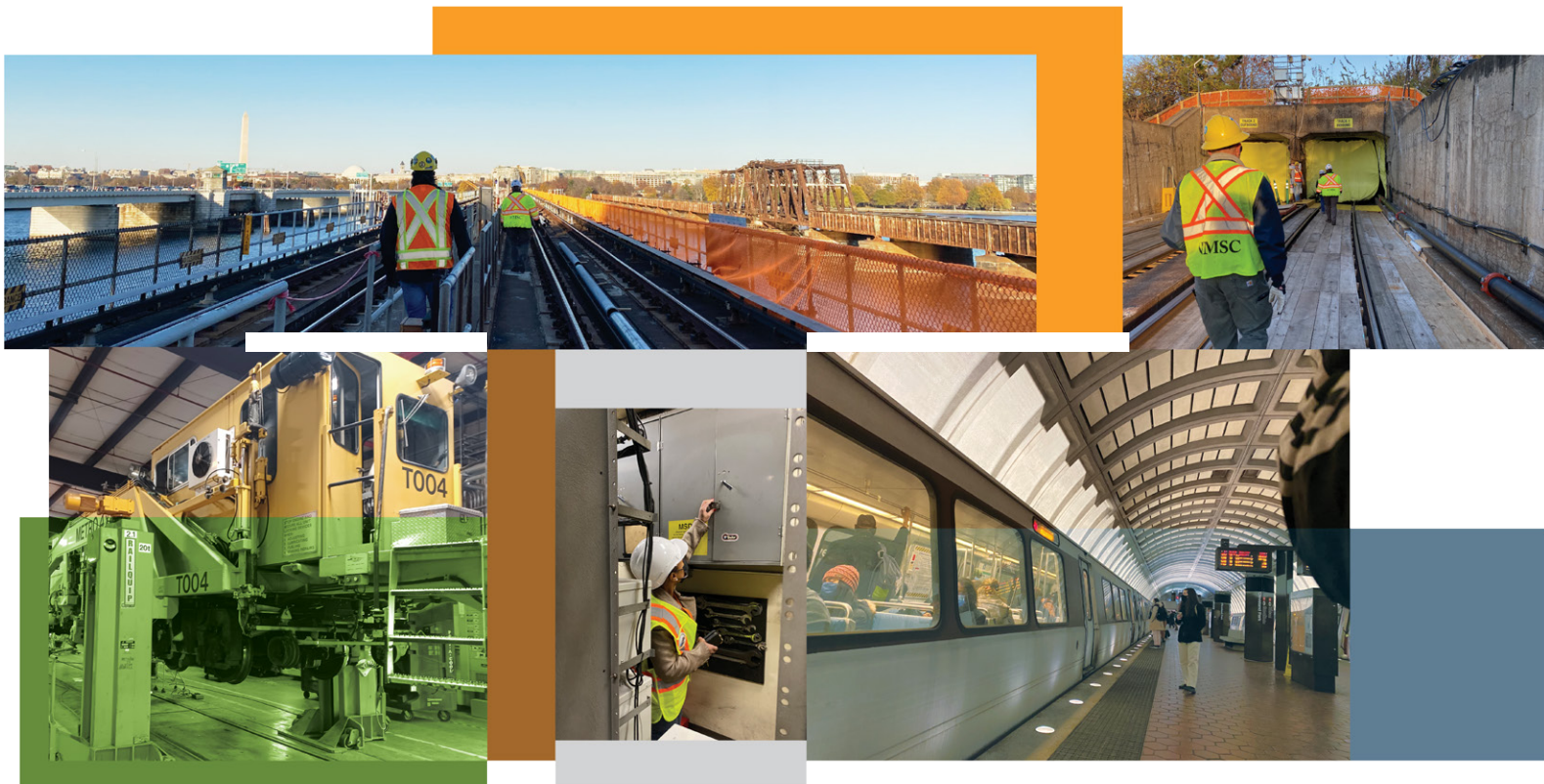
#### ➔ TRAIN OPERATOR CERTIFICATION ORDER

WMSC investigation into several safety events and other issues that the WMSC identified through oversight activities and communicated to Metrorail management multiple times during 2023, and again in 2024, led to the WMSC issuing an order on February 28, 2024, regarding Metrorail’s noncompliance with its train operator requirements.

The WMSC identified deviation from Metrorail’s train operator certification procedures and requirements designed to ensure that train operators have the required safety and operational skills to safely operate trains. The WMSC reviewed certification records for train operators, including records for newly certified operators and for train operators who were recertified (this recertification process includes all personnel in positions that require train operator certification such as train operators, rail supervisors and interlocking operators). The WMSC also reviewed current 2023 train operator certification records for railcar maintenance road mechanics, who are required by Metrorail to maintain this certification due to their responsibilities, which include operating trains. Our review found deficiencies and omissions in the train operator certification process.

Following the WMSC’s continuous communication to Metrorail regarding these issues, Metrorail began to develop plans for future, long-term improvement, but had not taken steps to address the current use of operators who were not properly certified in accordance with Metrorail’s safety requirements.

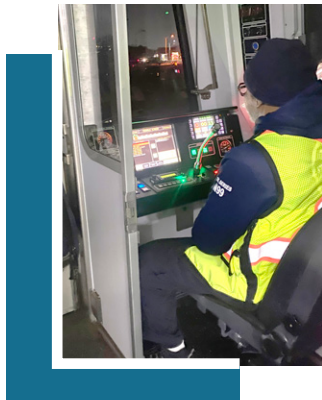
Metrorail was not consistently and reliably following the safety training requirements of its Public Transportation Agency Safety Plan (PTASP) and Performance Standardization Program that Metrorail has developed to provide for the safety of Metrorail riders and personnel.





Metro rail allowed these operators who were not properly certified to operate trains.

**The order included two findings:**



**1.** Metro rail is not performing its train operator certification activities reliably and consistently in accordance with its safety requirements specified in its Agency Safety Plan and the associated Performance Standardization Program Manual.

**2.** Metro rail is not conducting retraining of personnel who do not pass certification exams as required by its Performance Standardization Program Manual, and is not consistently retesting these personnel as specified in its safety procedures.

**The WMSC ordered WMATA Metro rail to:**

**1.** Within 30 days of the issuance of this order, complete a review of the certification records of each current Metro rail employee designated as having a current train operator certification, identify those employees whose records do not support such a certification (exceeded time, tasks not attempted, etc.), and provide the WMSC with the results of the review. These results must include, at minimum, the job code and title, certification status, and information present or missing for each employee.

- 2.** Within 90 days of the issuance of this order, schedule and properly conduct full certification exams for each of those active employees identified as not having the required certification records. These certifications may begin immediately as Metro rail identifies each employee designated as having a current train operator certification whose records do not support such a certification. Metro rail shall not allow any individual not properly certified as a train operator to work in a role requiring such certification after 91 days after the issuance of this order.
- 3.** Within 30 days of the issuance of this order, develop corrective action plans in accordance with the requirements of WMSC Program Standard Section 9.C, and subsequently implement the plans, to address the following findings.

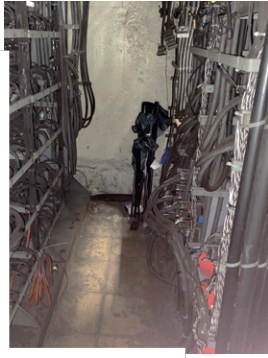
At the time this report was drafted, Metro rail had provided its responses at the 30-day deadline. The CAP development process is ongoing.

**➔ NTSB SAFETY RECOMMENDATION R-23-28**

As mentioned earlier in the report, work on the NTSB investigation into the October 12, 2021, Blue Line train derailment largely concluded in 2023. This led to the NTSB releasing its investigation report, dated December 2023, in January 2024. On January 17, 2024, the WMSC issued an **order** requiring Metro rail to develop a corrective action plan to address National Transportation Safety Board Safety Recommendation R-23-28.

Metrorail submitted four corrective action plans. After Metrorail incorporated feedback from the WMSC, the CAPs were approved for implementation. As with every CAP, the WMSC will continue to monitor Metrorail's progress through completion and even after implementation through regular oversight activities.

### ➔ AUTOMATIC TRAIN CONTROL ROOMS



The WMSC continues to closely monitor WMATA's progress regarding our **August 4, 2022 order** regarding Metrorail's ineffective and insufficient Automatic Train Control (ATC) Train Control Room inspection, maintenance and cleaning program.

The order required WMATA to document and complete ATC quarterly inspections for each train control room as specified in the procedure and resume, complete and document its special safety inspections of each train control room as specified by the initial schedule submitted to the WMSC. Minimum corrective actions include training ATC personnel to properly complete all inspections and maintenance and ensuring these activities are properly carried out.

Our most recent ATC audit, conducted in 2023 (final report issued January 2024), demonstrated that Metrorail has made progress in some areas, but hazards persist. The WMSC found that Metrorail is putting its personnel at risk due to health hazards such as damaged and repositioned materials marked as containing asbestos that are not being identified and managed as required by its Agency Safety Plan.

### ➔ IMPROPER POWER RESTORATION



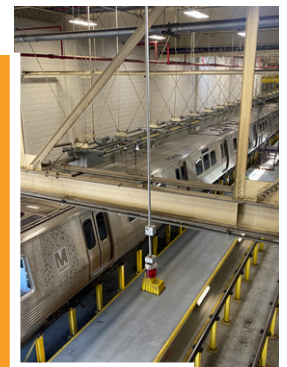
On May 17, 2022, the WMSC issued an order regarding Metrorail's improper power restoration and insufficient training and supervisory oversight. The WMSC found that Metrorail was putting people at risk of serious injury

or death due to the repeated bypassing of redundancies built into the power restoration process for safety, and insufficient available information to ensure continuous safety improvement.

The WMSC continues to monitor WMATA's implementation of CAP C-0212, which builds upon a previous CAP (C-0037), created to address the **2020 WMSC finding** that third rail power restoration is routinely rushed by ROCC management with focus on restoring train service rather than a focus on following safety procedures. CAP C-0212 is scheduled for completion in August 2024.

### ➔ 7000 SERIES RAILCARS

As mentioned earlier in this report, in December 2021, the WMSC issued an **order** requiring Metrorail to keep all 7000 Series railcars out of passenger service until Metrorail developed and the WMSC had no technical objections to a revised return to service plan for 7000 Series railcars. Metrorail continues to implement the latest version of this plan, including its new wheelset replacement program. The WMSC is overseeing these safety improvements.



### ➔ YELLOW LINE HOT SPOT

The WMSC identified safety concerns for roadway workers and other individuals on the right of way in portions of the Yellow Line tunnel between L'Enfant Plaza Station and the bridge over the Potomac River. These safety concerns include limited visibility for roadway workers of oncoming trains, and obstructed safety walks that are used by riders during some emergency evacuations and by Metrorail personnel to reach stranded trains and for other purposes. The WMSC directed Metrorail to designate the area as a hot spot until Metrorail assessed the area and determined its proper roadway worker protection program designation. On September 16, 2023, Metrorail implemented Permanent Order (PO) 23-25, designating areas on Track 1 and Track 2 as "hot spots" requiring foul time or greater protection for wayside personnel to safely traverse.

## Corrective Action Plans

After the WMSC issues findings, Metrorail must develop and implement Corrective Action Plans (CAPs) to resolve the issues and reduce the risk of future safety events.

In 2023, WMATA completed development of, and the WMSC approved for implementation, a total of 29 corrective action plans: 24 corrective action plans to address findings, 4 corrective action plans in response to recommendations from WMSC audit reports, and 1 corrective action plan in response to a 2022 order regarding Metrorail's ATC Room Inspection, Maintenance and Cleaning Program.

Metrorail submits proposed CAPs to the WMSC for approval so the WMSC can ensure that the plans, when fully and properly implemented, will address the finding. In the event any adjustments to the plans are needed, Metrorail submits proposed modifications to the WMSC for review and approval.

The WMSC approved 55 CAPs for closure in 2023, including those related to life-safety issues, training, document control, and fitness for duty.

### Examples of CAPs Closed in 2023

CAP C-0159 was created to address a finding from the 2021 High Voltage Traction Power Audit that Metrorail risks equipment quality and availability issues that impact operational safety due to gaps in materials tracking, storage, and procurement practices. This CAP was approved for closure by the WMSC after WMATA submitted evidence that they conducted a visual assessment of current parts, equipment and materials locations, and resources, developed a process to assess and identify all power parts and materials, conducted an inventory of all parts and submitted records showing reconciliation of electronic and physical inventories.

C-0123 was created to address the 2021 Audit of Fitness for Duty Programs finding that not all safety sensitive employee positions have fully documented and up to date physical and medical requirements. Under this CAP, WMATA updated all job descriptions and documented processes including identifying physical requirements for each position. Also, related to the fitness for duty audit, C-0125 addressed the finding that WMATA does not have written criteria for post incident drug and alcohol testing and does not consistently implement post-event testing. WMATA created an Incidental Testing Matrix on safety-related events requiring post-incident/incident testing and associated

guidance and a process that provides real-time accident information to WMATA's Office of Occupational Health and Wellness to ensure the appropriate type of test is administered. At the time of this report, the WMSC had begun work on an audit of Metrorail's fitness for duty and occupational health programs as part of the WMSC's second triennial audit cycle.

In our 2020 audit of Metrorail's Rail Operations Control Center (now the Metrorail Integrated Command and Communications Center or MICC), the WMSC found that Metrorail does not record all critical ROCC communications, limiting the lessons that can be learned from safety events. CAP C-0051, created to address this finding, was closed after Metrorail submitted evidence and the WMSC verified through onsite observation that recording devices and updated software were installed to fill identified gaps. These technologies were incorporated in the design of the MICC, which opened for operation in October 2023.

### Ongoing CAP Implementation and Oversight

The WMSC continues oversight and monitoring activities throughout the life of the CAP and even after CAPs have been closed. For example, CAP C-0171 was created to address the 2022 emergency management and fire life safety audit finding that emergency equipment in station medical cabinets was



expired and covered in dirt. Assessments carried out as part of Metrorail's implementation of the corrective actions the WMSC required of Metrorail found that the contamination of these medical cabinets included elevated levels of lead. The WMSC continues to closely monitor WMATA's progress on addressing this hazard through our oversight work.

The WMSC is monitoring Metrorail's Rail Traffic Controller staffing levels. In January 2024, Metrorail reported having 44 rail traffic controllers. At that time, Metrorail had 8 trainees, and other individuals who were expected to start training in the spring. Metrorail is making adjustments to its current pilot training course that 4 trainees are participating in, and expects to use the improved course for the next training class. Metrorail also has vacancies in supervisory positions for the rail controllers that it is working to fill. We appreciate Metrorail's ongoing effort to maintain its

recruitment efforts established due to CAPs C-0055, C-0056, C-0057 to address WMSC findings from the 2020 Rail Operations Control Center audit. We remain focused on Metrorail meeting its staffing requirements to provide for the safest operation of the rail system.

CAP-0183, which remains open, was developed to address the finding that Metrorail created safety risks by not requiring and conducting territory familiarization and physical characteristics training and not assessing knowledge of physical characteristics prior to assigning operations personnel work on a line, in a terminal or in a yard. As part of the WMSC's CAP oversight activities, the WMSC found several instances where work on the actionable items required under this CAP had not progressed in adherence with WMATA's established timeline. Through ongoing communication and meetings with Metrorail, the WMSC requested additional updates to ensure Metrorail continued to make progress on this work. Metrorail submitted and the WMSC approved a CAP modification that includes the implementation of a pilot for a new Rail Vehicle Operator Physical Characteristics Familiarization Program. This CAP is scheduled for completion in September 2025.

### CAP Modifications and Closure Requests

When Metrorail submits requests for CAP closure, the WMSC reviews supporting documentation provided by WMATA and conducts oversight activities to ensure that each aspect of the CAP has been carried out and addresses the finding it was created to remedy.

Once the WMSC approves a CAP for implementation, Metrorail must carry out the plan. When the plan is complete, Metrorail submits a detailed request to close the corrective action plan including evidence of completion for WMSC review. The WMSC monitors implementation of the corrective action plan and closes the corrective action plan once WMATA has shown that it has been fully completed. Corrective action plan closures show that WMATA is following through with its plans and commitments to improve identified deficiencies within the Metrorail system.

There are instances when the WMSC's oversight activities conducted to verify implementation of a CAP lead to rejection of Metrorail's request for closure. For example, during onsite verification activities related to CAP C-0170, WMSC personnel determined that reports from Department of Safety inspections of Fire Life Safety (FLS) assets had not been tracked and addressed, including items identified at Morgan Boulevard Station more than a year earlier that had not been resolved and that did not have work order numbers associated with them for further tracking or correction. Therefore, the WMSC required Metrorail to provide two additional months of complete FLS Asset SAFE Inspection Tool Reports as documentation and evidence of implementation.

The WMSC conducted another verification inspection, this time by reviewing Metrorail's maintenance management system (Maximo) data. This review of work orders demonstrated that identified fire-life safety

issues were still not being fully tracked and addressed. Therefore, the WMSC declined closure and directed Metrorail to provide a modification request for the CAP with new actionable items, which the WMSC reviewed and approved for implementation. The new action items include updating the Fire Life Safety (FLS) Asset Inspection

The WMSC monitors implementation of the corrective action plan and closes the corrective action plan once WMATA has shown that it has been fully completed.



Procedure and six additional months of FLS Asset Inspection Tool reporting. These eight action items (1 revised, 7 new) have scheduled dates of completion between August 2024 and April 2025.

After a CAP closure request is rejected, Metrorail must then take additional steps to demonstrate implementation, which may include modifications.

In some cases, as provided in the WMSC Program Standard, Section 9.C.4, CAP Modifications, the WMSC may identify existing corrective action plans that require modifications. Modifications may include schedule changes and substantive changes, such as the addition of actionable items necessary to ensure the safety improvement is effectively implemented. All modifications must be approved by the WMSC before they take effect.

For example, as mentioned earlier in the report, during the course of the power programs audit, issued in February 2024, the WMSC identified deficiencies closely related to open corrective action plans (C-0154, C-0155, C-0157) created to address 2021 Audit of High Voltage and Traction Power findings, and determined they could be addressed through the CAP modification process. Metrorail developed revised corrective action plans, and the WMSC approved those corrective action plans for implementation.

The WMSC continues its oversight to ensure that the plans remain implemented and effective as intended, in accordance with WMATA's responsibility to maintain safety improvements long-term. Implementing and completing a corrective action plan is a demonstration of continuous safety improvement, as each corrective action plan helps to make Metrorail safer.

A full list of CAPs Metrorail is working to complete can be found on our website at [WMSC.gov](https://www.wmata.gov/wmcs).

## Safety Events

Overall, Metrorail reported 859 total safety events to the WMSC in 2023. The WMSC Program Standard defines events that are formally reportable to the WMSC as either an accident, incident, or occurrence. Investigations are required to be conducted on events that may have broader safety implications, and the WMSC Program Standard requires that certain investigations be documented in a final



*\*Excluding O-24 (security) and O-25 (other noteworthy) events.*

report for WMSC adoption. These requirements are based on FTA regulations and WMSC operational experience.

In 2023 the WMSC adopted 56 final safety event investigation reports. Some of the most common safety events to occur were related to minor injuries, station overruns, collisions and improper roadway protection. Notable safety events in 2023 included a February 26 improper roadway worker protection event at Wheaton Station, identified due to the WMSC's independent oversight, that led Metrorail to revise and improve safety practices during emergency exercises. Examples of other safety events investigated by the WMSC are detailed below.

Overall, Metrorail reported 859 total safety events to the WMSC in 2023.

### Improper Roadway Worker Protection Events

The WMSC has identified several safety concerns related to Metrorail's Roadway Worker Protection (RWP) program and the program's implementation, including noncompliance with established procedures. There were 51 improper roadway worker protection safety events requiring final investigation reports in 2023. This is an increase from the 40 improper RWP events that required final investigation reports last year. The increase was due in part to increased reporting and identification.

**Some of the serious safety events and near misses that occurred in or led to final investigation reports adopted in 2023 include:**

- **W-0234 – Improper Roadway Worker Protection – February 26, 2023** – During a full-scale emergency exercise at Wheaton Station, a Rail Supervisor who was part of the exercise entered the adjacent active passenger track (which was not part of the exercise) without required roadway worker protection. This meant that a train could have struck the Rail Supervisor. WMSC staff on site identified this possible improper roadway worker protection and communicated it to Metrorail personnel. Further investigation determined that the Rail Supervisor had actually entered track 1 at the direction of the exercise Rail Traffic Controller without required protection in place.
- **W-0217 – Red Signal Overrun, Improper Movement – Smithsonian Station – December 6, 2022** – An Automatic Train Control Maintenance crew was conducting an interlocking inspection with local control of the Smithsonian Interlocking and associated signals. The Train Operator passed a red signal without the required authorization from the Rail Operations Control Center and continued on.

During an investigative interview, the Train Operator stated that during training they did not practice the procedures for passing red signals. This is another example of the deficiencies that exist in Metrorail’s train operator training and certification that led to the February 28, 2024, order regarding Metrorail’s noncompliance with train operator certification requirements.

Throughout 2023, the WMSC communicated RWP-related concerns to Metrorail. This included oversight of changes Metrorail planned to its program. This WMSC oversight led to Metrorail reassessing its plans. Further, the WMSC conducted an audit of Metrorail’s Roadway Worker Protection Program that included on-site activities in December 2023. Audit work, described in more detail above, continued into 2024.

The WMSC is carefully monitoring changes Metrorail may make to its RWP program, while also continuing to oversee Metrorail’s implementation of WMATA’s current safety requirements.

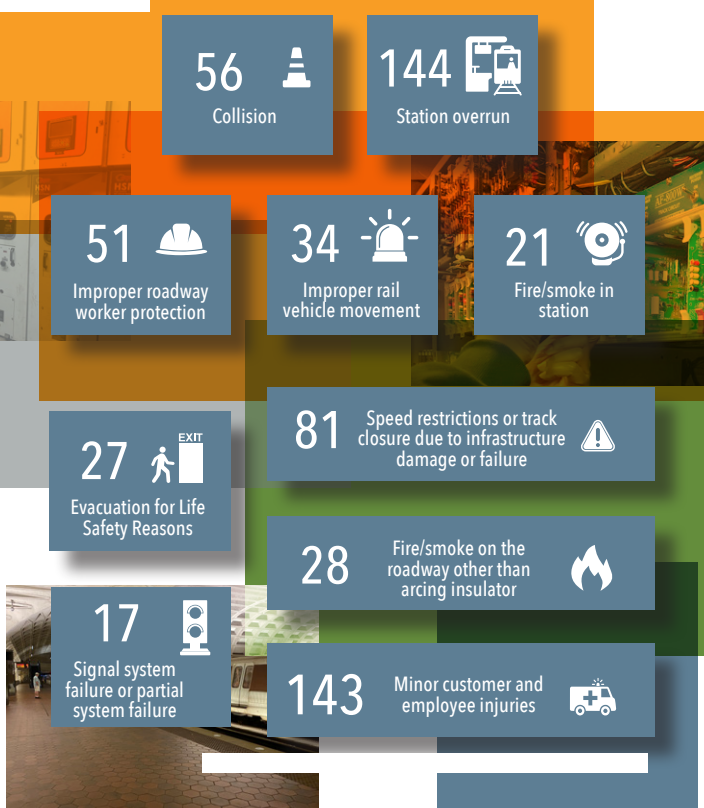
**Culture of Non-Compliance**

During safety event investigations, the WMSC identified that Metrorail was deviating from its train operator certification procedures and requirements that Metrorail has designed to ensure that train operators have the required safety and operational skills to safely operate trains. This led the WMSC to review certification records for other train operators. The WMSC communicated identified issues to Metrorail throughout 2023 and into 2024. As mentioned earlier in this report, on February 28, 2024, the WMSC issued an **order** to Metrorail regarding Metrorail’s noncompliance with its train operator certification requirements.

For example, in Investigation **W-0232**, a Train Operator improperly moved their train against the normal flow of traffic without required permission or protections against collision during a smoke event at Shaw-Howard U. Station. Metrorail as an organization did not identify this improper train movement that created a risk of collision. The WMSC informed Metrorail of this improper movement and initiated the investigation of the improper movement.

The investigation demonstrated that Metrorail had certified this new Train Operator despite the operator not completing Metrorail’s documented safety requirements.

**Some of the Most Common Safety Events of 2023**



Another example of Metrorail operations personnel not adhering to Metrorail’s documented safety requirements is Investigation **W-0248**. During this event, a Metrorail Office of Rail Transportation Supervisor was seriously injured after deliberately exiting a Green Line train from the rear bulkhead door at Congress Heights Station, contrary to Metrorail safety procedures. The Supervisor’s accounts of the event in their initial report and in subsequent statements conflicted with each other, with available data, and with other investigative interviews.

### Events with Radio Communications Systems Deficiencies

Several safety event investigations demonstrated deficiencies in Metrorail’s radio communications systems that resulted in personnel experiencing difficulties transmitting and receiving critical information during

emergencies. During some events, personnel relied on cellphones. Utilizing these methods led to ineffective information sharing, confusion, slower response time and the inability to record and review pertinent conversations and information needed to conduct thorough investigations.

Some examples include investigations **W-0203** and **W-0246**. In W-0203, an evacuation for life safety reasons due to a shooting at L’Enfant Plaza Station, it became necessary for requests from the On-Scene Commander in the field to personnel in the ROCC to be funneled through the Mission Assurance Coordinator in the ROCC due to radio transmission issues. In W-0246, an evacuation for life safety reasons event at Pentagon City Station due to a fire in the station, MTPD personnel experienced radio communication challenges and noted that it became necessary to use cellphones to communicate during this event due to poor radio transmission quality.



Metrorail is implementing the corrective action plans it developed and the WMSC approved to address the WMSC’s 2022 **communications systems audit’s** nine findings and two recommendations, with expected completion dates in 2024 and 2025.

### Findings included:

- **Finding 1:** Metrorail does not have adequate supervisory oversight and safety promotion to ensure that approved preventative maintenance inspections (PMI) are properly completed to ensure the safety of the rail system. Communications personnel are not using correct and current forms and processes necessary to ensure that safety-critical communications systems are appropriately and safely maintained.
- **Finding 2:** Metrorail does not have sufficiently detailed instructions and procedures specifying how to inspect and maintain each communications asset. For some assets, there are no instructions or procedures at all.
- **Finding 3:** Metrorail is closing preventative maintenance work orders without correcting known deficiencies, which does not comply with its Systems Maintenance (SMNT) Maintenance Control Policy.

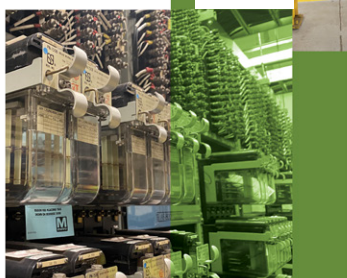
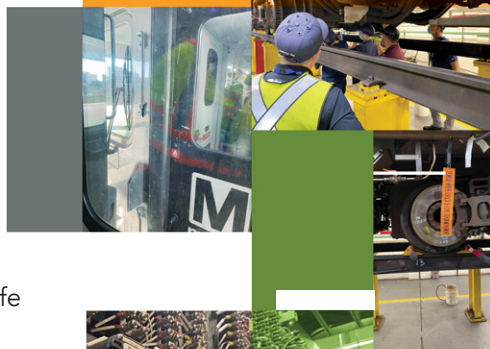
### Customer Evacuation for Life Safety Reasons

There were 27 evacuation for life safety reasons event reports adopted in 2023.

For example, on **March 21, 2023**, passengers were evacuated from a train at Union Station due to a fire intentionally set by a rider aboard

the train. The investigation (W-0239) identified deficiencies related to Metrorail’s response to this event including the Rail Operations Control Center Rail Traffic Controller initially instructing the operator to continue in service with an active fire reported aboard the train, not immediately evacuating customers from that train, not notifying the ROCC fire liaison, and not requesting Fire Department assistance.

These events and other issues identified through the WMSC’s oversight activities are examples that demonstrate the importance of the WMSC’s robust independent oversight to oversight to Metrorail’s continuous safety improvement.





For a full list of safety event investigations, visit [WMSC.gov](https://www.wmasc.gov).

## Public Transportation Agency Safety Plan (PTASP)

As required by the WMSC Program Standard and Federal Transit Administration (FTA) regulations, WMATA's Public Transportation Agency Safety Plan (PTASP) includes Metrorail's commitment to, and process for sustaining, a Safety Management System (SMS). This is a proactive, data driven approach to safety management emphasizing continuous improvement through commitments from each member of the organization.

The Public Transportation Agency Safety Plan is subject to regular updates as part of continuous safety improvement. The WMSC Program Standard and federal regulation require Metrorail to update its PTASP at least annually. The WMSC approved Metrorail's third annual revision of its PTASP in 2023 as required. This approved version was released on December 31, 2023.

WMSC staff provided detailed feedback to Metrorail regarding its proposed 2023 revisions before Metrorail

presented its revisions to its board of directors. The WMSC Board considered and approved the revision on October 24, 2023.

The 2023 revisions to WMATA's PTASP included organizational changes, including moving multiple departments to report to different executive leaders. In the revision, Metrorail committed to continuing to improve its safety committees and to better incorporating them into its overall safety management process. The WMSC ensured that Metrorail incorporated the requirements of the Infrastructure Investment and Jobs Act, including that Metrorail maintain a Pandemic Response Plan that meets the requirements for 49 U.S.C § 5329 (d)(1)(D). The revision also includes updates to reflect the ongoing development of the WMSC's risk-based inspection program, prompted in part by the FTA's Special Directives issued in October 2022 as required by federal law to the WMSC and other SSOAs

The WMSC oversees Metrorail's implementation of its PTASP through our audits, inspections, and other oversight.

## CONCLUSION

Metrorail continues to progress toward a safer system under the oversight of the WMSC. The WMSC's work in 2023 identified positive practices, and led to Metrorail implementing new safety improvements, many of which are described above. The seven audits the WMSC conducted work on in 2023, the WMSC's regular inspections, the WMSC's oversight of Metrorail's safety certification, and the WMSC's other work such as oversight of Metrorail's 7000 Series Return to Service Plan also identified areas where safety improvements are required for Metrorail to meet its documented commitments to safety.

The WMSC is overseeing Metrorail's work related to its RWP program and safety management system (SMS) implementation. The WMSC is proactively monitoring and communicating with WMATA regarding Metrorail's safety certification work on the new 8000 Series Railcars, automated wayside inspection system (AWIS), and automatic train operations and automatic door operations projects, so that the WMSC is able to provide timely concurrence when Metrorail has met its requirements.

The WMSC is continuing to provide close monitoring and oversight of WMATA's corrective action plans. Metrorail's commitment to creating and implementing systemic corrective action plans required by the WMSC, and sustaining adherence to those improved changes, are critical to the safety of the WMATA Rail System in the future.

Safety is a never-ending journey towards continuous improvement, not something that is achieved on a particular day. The WMSC is committed to providing effective oversight and collaboration to Metrorail along this journey. In 2024, the WMSC is continuing its safety oversight work focused on the safety of riders, workers and first responders.

Metrorail continues to progress toward a safer system under the oversight of the WMSC.



# APPENDIX A

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF MARCH 1, 2024

CAP ID	FINDING/RECOMMENDATION	EXPECTED COMPLETION	SOURCE
NTSB R-8-004-A	Promptly implement appropriate technology that will automatically alert wayside workers of approaching trains and will automatically alert train operators when approaching areas with workers on or near the tracks.	12/31/22	Safety Directive 16-2 (12/15/2015)
WMSC-20-C0042	WMATA employees are not consistently following RWP Rule 5.12 for equipment calibration.	07/14/23	RWP Audit (6/18/2020)
WMSC-20-C0049	ROCC management contributes to a chaotic environment. Use of profanities, threats and racial, sexual or other forms of harassment are regular features of the control centers environment, which makes it difficult for controllers to do their jobs and drives low morals and significant turnover.	12/15/23	ROCC Audit (9/8/2020)
WMSC-20-C0056	Metrorail's ROCC recruitment and retention approach is failing. Some controller trainees have left the ROCC immediately after or shortly after the training course, which is scheduled to last nine months.	02/16/24	ROCC Audit (9/8/2020)
WMSC-20-C0059	WMATA has failed to regularly update the Rail Operations Control Center Procedures Manual.	09/13/24	ROCC Audit (9/8/2020)
WMSC-20-C0068	WMATA does not have a standardized training program for personnel working at desks such as the MOC or ROIC.	03/15/24	ROCC Audit (9/8/2020)
WMSC-20-C0070	Metrorail puts the integrity of safety event investigation at risk by not following procedures requiring proper chain of custody and control of evidence as outlined in SOP 800-01 and Policy/Instruction 10.4/1, not following procedures requiring direct access for investigators to all information, recordings and other evidence that is potentially relevant to the investigation, and not fully training all personnel on the steps they are required to take when a safety event occurs.	10/24/24	WMSC Directive (10/20/2020)
WMSC-21-C0072	WMATA does not have load ratings for its bridges and aerial structures.	04/14/23	Elevated Structures Audit (1/25/2021)
WMSC-21-C0083	Ten Metrorail structures have steel rocker bearings, which created a seismic risk in the event of an earthquake other seismic events.	11/14/25	Elevated Structures Audit (1/25/2021)
WMSC-21-C0084	Metrorail is not following and does not have effective safety certification and acceptance procedures for new RMMs. There is no Metrorail-wide safety certification procedure to implement the SSCP.	07/19/24	Roadway Maintenance Machine (RMM) Audit (3/9/2021)
WMSC-21-C0098	Several Metrorail preventive maintenance instructions do not include acceptable tolerances for required measurements.	06/06/25	Roadway Maintenance Machine (RMM) Audit (3/9/2021)
WMSC-21-C0099	A lack of an Intrusion Detection Warning (IDW) system where WMATA's own criteria require it.	04/07/28	WMSC Directive (3/31/2021)
WMSC-21-C0100	Metrorail is not maintaining a fully functioning radio communications system in all rail yards and shops.	10/30/26	WMSC Directive (4/30/2021)
WMSC-21-C0101	Metrorail does not have, provide training on, or otherwise follow specific rules related to rail vehicle and switch movement in non-signalized territory. Further, Metrorail provides no controls on or oversight of movement in dark territory.	05/03/24	WMSC Directive (4/30/2021)
WMSC-21-C0118	Metrorail does not consistently follow its safety certification process, which leads to project activation and use without proper hazard identification and mitigation, putting Metrorail customers, personnel and first responders at risk.	04/05/24	WMSC Directive (8/13/2021)
WMSC-21-C0120	Metrorail ignores the minimum daily release period (rest period) requirements in its Fatigue Risk Management Policy.	07/18/25	Fitness for Duty Audit (8/31/2021)
WMSC-21-C0121	There is not adequate access to, documentation of, or compilation of data for WMATA to assess compliance with its hours of service requirements.	10/25/24	Fitness for Duty Audit (8/31/2021)
WMSC-21-C0129	WMATA does not have a documented procedure for and training to carry out fitness for duty checks prior to or during shifts on a regular basis for all covered employees as specified in the APTA fitness for Duty Standard.	04/25/25	Fitness for Duty Audit (8/31/2021)
WMSC-21-C0130	Metrorail does not collect fitness for duty data in a manner that allows for identification, tracking and trending of issues.	08/23/24	Fitness for Duty Audit (8/31/2021)
WMSC-21-C0131	Metrorail is not providing medical oversight of contractors and does not include any requirement in contracts that contractors meet WMATA medical, fatigue or hours of service standards.	12/19/25	Fitness for Duty Audit (8/31/2021)
WMSC-21-C0134	Metrorail's 6000-Series rehabilitation program, including coupler overhaul work, was implemented by CMOR, CENV and CMNT without safety certification and approvals required by WMATA's SSCPP.	11/29/24	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0136	6000 Series cars that underwent rehabilitation were put into service without SAFE approval.	11/29/24	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0137	Metrorail removed the coupler overhaul from the 6000 Series SMP process without documenting that change or completing a review of that change by the SCRC.	11/29/24	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0139	The 7000 Series rehabilitation and subsystems overhaul program is being developed without full SAFE coordination, involvement or approval.	03/14/25	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)

# APPENDIX A

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF MARCH 1, 2024

CAP ID	FINDING/RECOMMENDATION	EXPECTED COMPLETION	SOURCE
WMSC-21-C0143	Metrorail does not consistently follow a standard process to address wheels out-of-round, to prevent cars with wheels out-of-round from operating, and to identify and address the root causes of wheels out-of-round.	05/29/26	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0144	Metrorail does not clearly define the proper use of engineering modification instructions (EMIs), service bulletins (SBs), and other railcar engineering change documents.	02/22/24	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0146	Metrorail railcars do not include inward-and outward-facing audio and image recorders in all operating compartments.	08/19/26	Revenue Vehicle (Railcar) Programs Audit (9/14/2021)
WMSC-21-C0150	Metrorail is not complying with its safety certification and approval requirements that are specified in its SSCPP before installing and placing traction power systems into service.	04/05/24	High Voltage Traction Power Audit (10/27/2021)
WMSC-21-C0151	Metrorail is not documenting, tracking and conducting all preventive maintenance inspections that are required by WMATA policy, manuals and instruction.	07/12/24	High Voltage Traction Power Audit (10/27/2021)
WMSC-21-C0154	Traction Power Maintenance employees do not get all required information and training to maintain equipment that they are directed to work on, and there is no process in place to ensure that personnel are trained on specific equipment prior to working on that equipment.	02/13/26	High Voltage Traction Power Audit (10/27/2021)
WMSC-21-C0155	Metrorail is not effectively identifying, tracking and mitigating hazards related to high voltage and traction power.	04/18/25	High Voltage Traction Power Audit (10/27/2021)
WMSC-21-C0156	Metrorail is behind schedule on its floating slab testing to monitor for deterioration due to stray current.	01/17/25	High Voltage Traction Power Audit (10/27/2021)
WMSC-21-C0157	The latest as-built schematics are not available in each traction power facility, as required by the TRPM-1000 and Metrorail preventive maintenance instructions.	08/15/25	High Voltage Traction Power Audit (10/27/2021)
WMSC-22-C0162	Metrorail does not consistently follow the incident command system (ICS) structure and has procedures that do not comply with National Incident Management System (NIMS)/ICS requirements such as the use of plain language. Further, Metrorail's training requirements are insufficient to prepare personnel to respond to and/or manage emergencies within the NIMS/ICS framework. These deficiencies have contributed to ineffective and improper emergency response and emergency management.	01/17/25	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0164	MTPD personnel routinely enter the roadway despite not having RWP qualifications required by Metrorail rules and procedures, exposing themselves and others to the risk of serious injury or death.	02/16/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0165	MTPD general orders do not reflect current operational realities and procedures, and areas for improvement from prior events are not effectively communicated to frontline MTPD personnel.	12/01/23	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0166	Metrorail's calls to public safety answering points (911 call centers) are inconsistent, incomplete and contribute to delayed or ineffective emergency response.	06/07/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0167	Metrorail has not clearly defined and communicated the authority and duties of its Fire Marshal and any other fire prevention roles or positions, and does not have effective continuity plans in the event the Fire Marshal is unavailable.	12/14/22	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0168	Metrorail does not ensure that experts in fire and life safety are included in and have a documented role in Metrorail project development, planning, review and approvals, which contributes to hazards being introduced into the Metrorail system or hazards being allowed to continue to exist without adequate mitigation.	01/10/25	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0169	There is inadequate coordination among organizational units charged with developing, inspecting and maintaining critical fire and life safety assets, and there is no unified process to identify, prioritize and address fire and life safety risks.	04/12/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0170	Metrorail does not routinely conduct hazard assessments to evaluate and prioritize fire and life safety and emergency management issues. Further, Metrorail has not established a fire and life safety and emergency management hazard identification, tracking and open item resolution process for prioritizing and implementing safety improvements.	08/11/23	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0171	Emergency equipment in station medical cabinets is expired and covered in dirt. There is no inspection procedure or responsible party assigned to inspect and maintain this safety equipment.	10/25/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0173	The exit stairwell from Rosslyn Station is not protected from obstructions, which creates a risk that the hatch will not be able to be opened in an emergency, trapping customers inside.	04/17/26	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0174	Metrorail does not consistently inspect and maintain current certification status of all fire extinguishers, particularly those on the roadway.	10/13/23	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0175	Metrorail does not consistently perform or document all elements of its Fire & Intrusion Alarm System Inspection Preventive Maintenance Instructions.	09/22/23	Emergency Management and Fire Life Safety Programs (2/22/22)

# APPENDIX A

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF MARCH 1, 2024

CAP ID	FINDING/RECOMMENDATION	EXPECTED COMPLETION	SOURCE
WMSC-22-C0176	Metrorail has opportunities to improve and expand training and training coordination related to fire and life safety and emergency management.	03/15/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0177	MTPD does not have a useable incident checklist for emergencies.	09/20/23	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0178	Metrorail fire and life safety signage is not consistent throughout the system.	09/27/24	Emergency Management and Fire Life Safety Programs (2/22/22)
WMSC-22-C0181	Elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals.	10/25/24	Rail Operations (4/7/22)
WMSC-22-C0182	Metrorail does not effectively identify, track, communicate and address operational hazards as required by its Agency Safety Plan.	06/27/25	Rail Operations (4/7/22)
WMSC-22-C0183	Metrorail creates safety risks by not requiring and conducting territory familiarization and physical characteristics training, and not assessing knowledge of physical characteristics prior to assigning operations personnel work on a line, in a terminal or in a yard.	10/25/24	Rail Operations (4/7/22)
WMSC-22-C0184	Metrorail has inadequate internal communication, coordination and processes to effectively manage change as required by its PTASP, the WMSC and the FTA.	10/25/24	Rail Operations (4/7/22)
WMSC-22-C0185	Metrorail is not effectively training and certifying personnel authorized to operate trains on all active railcar fleets.	10/27/23	Rail Operations (4/7/22)
WMSC-22-C0189	Metrorail does not ensure personnel serving as on-the-job training instructors, including those personnel described as line platform instructors (LPIs), are effective and have specific training and direction on what to teach and how to assess their assigned students.	07/25/25	Rail Operations (4/7/22)
WMSC-22-C0193	With frequent modifications due to temporary and permanent orders, and outdated versions of Metrorail's rulebook being distributed to personnel when hard copies are available, the latest Metrorail rules are not easily accessible to train operators. This creates document control issues and makes a rule requiring personnel to carry the latest version of the Metrorail Safety Rules and Procedures Handbook (MSRPH) unrealistic.	11/03/23	Rail Operations (4/7/22)
WMSC-22-C0195	Metrorail operations departments do not have effective processes to consider and act upon safety input from employees at all levels of the organization.	11/29/24	Rail Operations (4/7/22)
WMSC-22-C0199	Metrorail has not developed and implemented a comprehensive water intrusion and remediation program covering stations, elevators and escalators, which contributes to damage and deterioration of structures and other assets, to electrical hazards and to other safety risks.	11/29/24	Station Maint., Elevator/ Escalator Audit (5/25/22)
WMSC-22-C0201	Metrorail is not ensuring that ELES personnel work only on the specific types of equipment that they are trained to inspect, maintain, and repair.	01/12/24	Station Maint., Elevator/ Escalator Audit (5/25/22)
WMSC-22-C0204	Metrorail does not ensure that ELES personnel sign in on log books as required by WMATA SOP to ensure their safety.	09/08/23	Station Maint., Elevator/ Escalator Audit (5/25/22)
WMSC-22-C0207	ELES Supervisors are not completing all aspects of required QA checks.	02/16/24	Station Maint., Elevator/ Escalator Audit (5/25/22)
WMSC-22-C0210	Metrorail has an opportunity to improve data collection and analysis necessary under its Public Transportation Agency Safety Plan (PTASP) by providing more PLNT and ELES personnel with improved, formal training on the use of Metrorail's maintenance management information system (Maximo).	02/24/23	Station Maint., Elevator/ Escalator Audit (5/25/22)
WMSC-22-C0212	This CAP builds on C-0037, which was originally issued on May 12, 2020: Third rail power restoration is routinely rushed by ROCC management with a focus on restoring train service rather than a focus on following safety procedures.	08/23/24	Improper Power Restoration Order (5/17/2022)
WMSC-22-C0213	Metrorail has an ineffective and insufficient inspection, maintenance and cleaning program for Automatic Train Control equipment, particularly including a lack of required tools, procedural compliance, and supervisory oversight for care of vital equipment housed in train control rooms, and is not maintaining the structural integrity of these ancillary rooms.	07/17/26	ATC Room inspection, maintenance and cleaning program (8/4/2022)
WMSC-22-C0214	Metrorail does not have adequate supervisory oversight and safety promotion to ensure that approved preventative maintenance inspections (PMI) are properly completed to ensure the safety of the rail system. Communications personnel are not using correct and current forms and processes necessary to ensure that safety-critical communications systems are appropriately and safely maintained.	03/14/25	Communications Systems (9/29/2022)
WMSC-22-C0217	Metrorail personnel are not effectively communicating, responding to and identifying issues related to trouble calls pertaining to communications systems. Metrorail closes communications related "corrective maintenance" (repair) tickets without effectively identifying, documenting and addressing issues.	04/15/26	Communications Systems (9/29/2022)
WMSC-22-C0218	Metrorail hazard logs are not being kept or maintained.	11/15/24	Communications Systems (9/29/2022)
WMSC-22-C0219	Metrorail has insufficient training for communications personnel, including on-the-job training (OJT) that SMNT itself describes as deficient, and a lack of requirements to ensure that personnel only work on equipment they are trained on and capable of maintaining as required by the PTASP.	06/06/25	Communications Systems (9/29/2022)

# APPENDIX A

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF MARCH 1, 2024

CAP ID	FINDING/RECOMMENDATION	EXPECTED COMPLETION	SOURCE
WMSC-22-C0220	Metrorail does not have schematics, manuals, and other materials in each Communications Room required by Metrorail's Communications Room Bi-weekly Cleaning and Inspection PMI.	06/28/24	Communications Systems (9/29/2022)
WMSC-22-C0221	Metrorail lacks the safety assurance and safety promotion activities required to ensure that only current and calibrated radios are in use as required by Metrorail instruction and procedure, creating a risk that this safety equipment will not properly function when needed.	07/12/24	Communications Systems (9/29/2022)
WMSC-22-C0222	Metrorail communications rooms have signs of recurring water, dirt and dust intrusion. Metrorail is also improperly storing equipment in these rooms. Components in these rooms therefore may not function as required for the safety of riders, workers and first responders.	10/25/24	Communications Systems (9/29/2022)
WMSC-22-C0224	Some job descriptions have not been updated since the 1970s and 1980s and do not reflect current job responsibilities and necessary qualifications.	03/15/24	Communications Systems (9/29/2022)
WMSC-22-C0225	Metrorail's organizational structure prevents Metrorail from effectively ensuring that its track is maintained in a state of good repair as specified by Metrorail policies, procedures and standards.	02/28/25	Track Maintenance and Training (12/14/2022)
WMSC-22-C0226	Metrorail is not maintaining track infrastructure in rail yards in accordance with TRST-1000 requirements and related standards. This has introduced operational hazards.	09/20/24	Track Maintenance and Training (12/14/2022)
WMSC-22-C0227	Metrorail is not meeting its training requirements and there are inconsistencies in on-the-job training documentation for TRST personnel.	06/21/24	Track Maintenance and Training (12/14/2022)
WMSC-22-C0228	WMATA is not ensuring that personnel wear the proper personal protective equipment as required by its Hot Work Program Manual.	12/15/23	Track Maintenance and Training (12/14/2022)
WMSC-22-C0230	Metrorail lacks the capability to complete required rail grinding activities across the system to ensure safe operations.	06/13/25	Track Maintenance and Training (12/14/2022)
WMSC-22-C0231	WMATA does not ensure excess hazardous materials are properly labeled, stored and disposed of.	08/30/24	Track Maintenance and Training (12/14/2022)
WMSC-22-C0232	WMATA does not have a weed spraying program consistent with industry standards.	09/06/24	Track Maintenance and Training (12/14/2022)
WMSC-23-C0235	Findings from the internal safety review program are not yet systematically incorporated into Metrorail's Safety Management System (SMS) as specified in Metrorail's PTASP.	08/30/24	Internal Safety Review Program (1/4/2023)
WMSC-23-C0236	Metrorail has not yet implemented training requirements in system safety, hazard management and SMS training for personnel responsible for internal safety reviews as required by the WMSC Program Standard.	10/25/24	Internal Safety Review Program (1/4/2023)
WMSC-23-C0237	Metrorail does not have a process for, and has not conducted or scheduled, a triennial internal safety review of its internal safety review program as required by the WMSC Program Standard.	10/18/24	Internal Safety Review Program (1/4/2023)
WMSC-23-C0238	Metrorail is not carrying out the safety risk management, safety assurance and safety promotion for the structures program required by Metrorail's Agency Safety Plan to ensure safe and effective structural engineering, maintenance, and operation.	04/18/25	Structures Program (7/25/2023)
WMSC-23-C0239	Metrorail's Structures Maintenance and Inspections department has not formalized and documented its on-the-job training process for structural inspection.	09/13/24	Structures Program (7/25/2023)
WMSC-23-C0240	Metrorail does not ensure the use of adequate fall protection when working on or around RMM.	08/22/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0241	Metrorail is not effectively tracking and mitigating hazards related to RMM maintenance and operations in accordance with its PTASP.	12/12/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0242	Metrorail has not documented its practices regarding adjustments to its contractor RMM inspection procedures.	06/20/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0243	Metrorail does not have a process and assigned resources to inspect and maintain the hi-rail gear on hi-rail vehicles owned by WMATA as required to ensure the vehicles' safe operation.	03/14/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0244	Metrorail is not reviewing its RMM-related procedures as required.	07/18/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0245	Metrorail has the opportunity to more effectively collect and proactively utilize reliability data to ensure safe and effective operations.	04/16/25	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0246	Metrorail can improve safety and reliability by documenting and formalizing a process for starting and checking equipment on a regular basis that is not being regularly used.	09/06/24	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0248	Metrorail has not implemented a documented process for decommissioning RMMs, including a process to ensure that vehicles to be decommissioned are no longer needed to carry out work activities and that those vehicles are properly and safely disposed of.	09/13/24	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0249	Metrorail can improve the effectiveness of training and available operational manuals by providing a consistent, complete format that documents operational restrictions and allows personnel to identify where to look for such information, and by incorporating these improvements into a recurring troubleshooting training.	3/8/2025	Roadway Maintenance Machines (10/18/2023)
WMSC-23-C0250	Metrorail has an opportunity to improve safety through effective interdepartmental coordination to fully utilize available safety data, technology, and contracts.	02/07/25	Roadway Maintenance Machines (10/18/2023)

# APPENDIX B

## FINAL SAFETY EVENT INVESTIGATION REPORTS ADOPTED

BY THE WMSC  
IN 2023

Each final safety event investigation report adopted by the WMSC is available at [WMSC.gov/reports](https://www.wmsc.gov/reports).

Report Number	Date of Adoption	Report Title	Report Number	Date of Adoption	Report Title
<b>W-0195</b>	January 24, 2023	Evacuation for Life Safety Reasons at Dupont Circle Station	<b>W-0209</b>	March 7, 2023	Collision Friendship Heights Station
<b>W-0196</b>	January 24, 2023	Evacuation for Life Safety Reasons near Medical Center Station	<b>W-0210</b>	April 11, 2023	Derailment at Greenbelt Rail Yard
<b>W-0197</b>	January 24, 2023	Evacuation for Life Safety Reasons at Eastern Market Circle Station	<b>W-0211</b>	April 11, 2023	Evacuation for Life Safety Reasons of Gallery Place Station
<b>W-0198</b>	January 24, 2023	Evacuation for Life Safety Reasons at Rhode Island Ave-Brentwood Station	<b>W-0212</b>	April 11, 2023	Evacuation for Life Safety Reasons of Southern Avenue Station
<b>W-0199</b>	January 24, 2023	Collision at Foggy Bottom Station	<b>W-0213</b>	April 11, 2023	Evacuation for Life Safety Reasons at Pentagon City Station
<b>W-0200</b>	January 24, 2023	Evacuation for Life Safety Reasons at Carmen Turner Facility	<b>W-0214</b>	April 11, 2023	Evacuation for Life Safety Reasons of Metro Center Station
<b>W-0201</b>	March 7, 2023	Evacuation for Life Safety Reasons of Court House Station	<b>W-0215</b>	April 11, 2023	Evacuation for Life Safety Reasons of Benning Road Station
<b>W-0202</b>	March 7, 2023	Evacuation for Life Safety Reasons of Friendship Heights	<b>W-0216</b>	April 11, 2023	Collision at Anacostia Station
<b>W-0203</b>	March 7, 2023	Evacuation for Life Safety Reasons of L'Enfant Plaza Station	<b>W-0217</b>	May 16, 2023	Red Signal Overrun, Improper Movement at Smithsonian Station
<b>W-0204</b>	March 7, 2023	Evacuation for Life Safety Reasons of Suitland Station	<b>W-0218</b>	May 16, 2023	Collision at New Carrollton Rail Yard
<b>W-0205</b>	March 7, 2023	Evacuation for Life Safety Reasons of Forest Glen Station	<b>W-0219</b>	May 16, 2023	Collision at Alexandria Rail Yard
<b>W-0206</b>	March 7, 2023	Derailment Yellow Line	<b>W-0220</b>	May 16, 2023	Evacuation for Life Safety Reasons at Alexandria Rail Yard
<b>W-0207</b>	March 7, 2023	Derailment near Potomac Yard Station	<b>W-0221</b>	May 16, 2023	Evacuation for Life Safety Reasons at Woodley Park Station
<b>W-0208</b>	March 7, 2023	Collision Wheaton Station	<b>W-0222</b>	May 16, 2023	Evacuation for Life Safety Reasons at Gallery Place-Chinatown Station

## FINAL SAFETY EVENT INVESTIGATION REPORTS ADOPTED

BY THE WMSC  
IN 2023

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Report Number	Date of Adoption	Report Title	Report Number	Date of Adoption	Report Title
<b>W-0223</b>	May 16, 2023	Evacuation for Life Safety Reasons at Spring Hill Station	<b>W-0237</b>	August 8, 2023	Evacuation for Life Safety Reasons at Dulles Rail Yard
<b>W-0224</b>	May 16, 2023	Serious Injury at Medical Center Station	<b>W-0238</b>	August 8, 2023	Evacuation for Life Safety Reasons at Potomac Avenue Station
<b>W-0225</b>	May 16, 2023	Serious Injury at Anacostia Station	<b>W-0239</b>	August 8, 2023	Evacuation for Life Safety Reasons at Union Station
<b>W-0226</b>	May 16, 2023	Serious Injury at Braddock Road Station	<b>W-0240</b>	August 8, 2023	Evacuation for Life Safety Reasons at Rosslyn Station
<b>W-0227</b>	June 13, 2023	Evacuation for Life Safety Reasons at Rosslyn Station	<b>W-0241</b>	August 8, 2023	Evacuation for Life Safety Reasons at L'Enfant Plaza Station
<b>W-0228</b>	June 13, 2023	Evacuation for Life Safety Reasons at Van Ness-UDC	<b>W-0242</b>	October 24, 2023	Serious Injury at New Carrollton Yard
<b>W-0229</b>	June 13, 2023	Evacuation for Life Safety Reasons at Capitol South Station	<b>W-0243</b>	October 24, 2023	Serious Injury at Potomac Yard Station
<b>W-0230</b>	June 13, 2023	Evacuation for Life Safety Reasons at Georgia Ave-Petworth Station	<b>W-0244</b>	October 24, 2023	Evacuation for Life Safety Reasons at Fort Totten Station
<b>W-0231</b>	June 13, 2023	Evacuation for Life Safety Reasons at Mt. Vernon Sq Station	<b>W-0245</b>	October 24, 2023	Evacuation for Life Safety Reasons at Crystal City Station
<b>W-0232</b>	August 8, 2023	Evacuation for Life Safety Reasons, Improper Train Movement at Shaw-Howard University and Green Line	<b>W-0246</b>	October 24, 2023	Evacuation for Life Safety Reasons at Pentagon City Station
<b>W-0233</b>	August 8, 2023	Station Overrun, Unresponsive Operator of Train Stopped for Extended Period Between Stations, Operator Removed for Use of Alcohol on Blue Line	<b>W-0247</b>	October 24, 2023	Evacuation for Life Safety Reason at Greenbelt Rail Yard
<b>W-0234</b>	August 8, 2023	Improper Roadway Worker Protection at Wheaton Station	<b>W-0248</b>	December 12, 2023	Serious Injury at Congress Heights Station
<b>W-0235</b>	August 8, 2023	Evacuation for Life Safety Reasons at Clarendon Station	<b>W-0249</b>	December 12, 2023	Serious Injury at McLean Station
<b>W-0236</b>	August 8, 2023	Collision at Crystal City Station	<b>W-0250</b>	December 12, 2023	Collision at Gallery Place-Chinatown Station



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