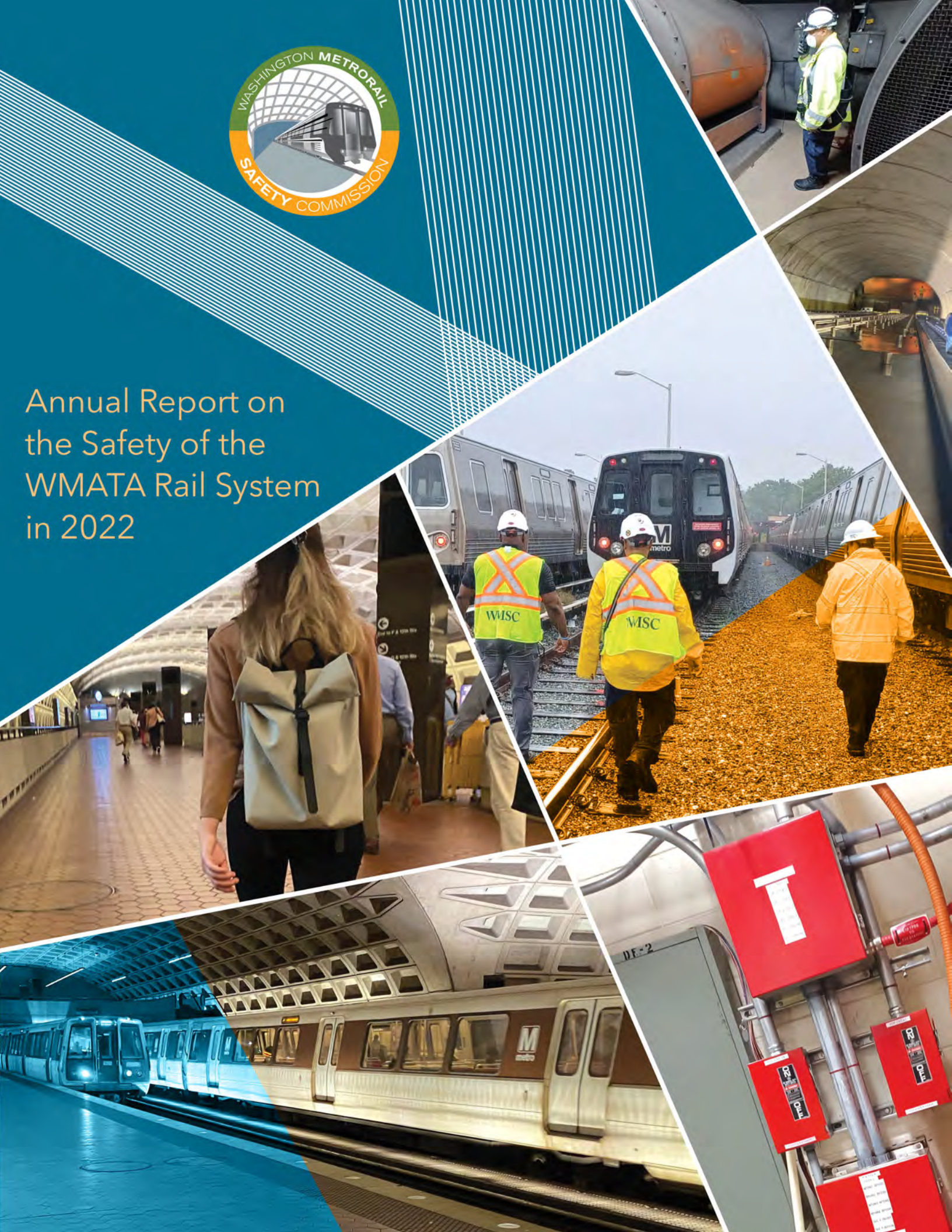




# Annual Report on the Safety of the WMATA Rail System in 2022



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# LETTER FROM THE WMSC CHAIR

The Washington Metrorail Safety Commission (WMSC) continued its important oversight work in 2022 and is driving the Washington Metropolitan Area Transit Authority's Metrorail system toward substantial safety improvements through ongoing collaboration, safety audits, inspections, and safety event investigations.

The WMSC's ongoing robust safety oversight led to the issuance of two WMSC orders in 2022. One order, prompted by WMSC investigations, inspections, corrective action plan oversight, and other oversight activities, addressed Metrorail's improper power restoration; and the second order, also prompted by WMSC inspections, corrective action plan oversight and other oversight activities, addressed Metrorail's ineffective and insufficient Automatic Train Control Room inspection, maintenance and cleaning program.

As the WMSC continues our work on the 7000 Series railcars, including serving as a party to the NTSB-led investigation into an October 12, 2021, Blue Line train derailment, we also continue our proactive safety oversight work throughout the Metrorail system through inspections, safety audits and other activities. In 2022, the WMSC issued five audit reports and conducted work on two additional safety audits that will be issued in 2023. These audits identify safety deficiencies that Metrorail is required to address through corrective action plans (CAPs).

Metrorail also completed implementation in 2022 of 55 CAPs that improved the Metrorail system by addressing safety issues.

It is important for Metrorail to create a culture in which employees at every level understand the importance of adherence to organizational policies and procedures and their roles and responsibilities in maintaining a safe work environment and continuously improving the safety of the system.

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

On the following pages we detail the status of Metrorail safety in 2022, describe our ongoing strategies for ensuring that Metrorail continuously improves its safety, outline where Metrorail stands, and discuss future work.

Sincerely,



Christopher A. Hart, Chair



COMMISSIONERS AND CEO



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



**MICHAEL RUSH**  
(Commonwealth of Virginia)  
Vice Chair



**DEBRA FARRAR-DYKE**  
(State of Maryland)  
Secretary-Treasurer



**ROBERT BOBB**  
(District of Columbia)



**ROBERT LAUBY**  
(Commonwealth of Virginia)



**SUHAIR AL KHATIB**  
(State of Maryland)



**DAVID L. MAYER, PHD**  
CEO





## EXECUTIVE SUMMARY

Under 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 2022 outlines WMSC directives and on-going investigations as well as the status of Metrorail's outstanding Corrective Action Plans (CAPs) 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 issues directives and orders or takes other enforcement action when necessary. The WMSC's priority is the safety of riders, workers and all others who depend on the system's proper maintenance and operations.

The WMSC acted on this responsibility in May 2022 by issuing an order regarding Metrorail's improper power restoration and insufficient training and supervisory oversight. Metrorail was putting people at risk of serious injury or death due to the repeated bypassing of redundancies built into the process for safety, and insufficient available information to ensure continuous safety improvement. In August 2022 the WMSC issued an order requiring Metrorail to develop and implement a corrective action plan addressing Metrorail's ineffective and insufficient inspection, maintenance, and cleaning program for Automatic Train Control (ATC) equipment. These ATC deficiencies were found during an inspection conducted as part of the WMSC's ongoing oversight activities.

The WMSC remains an active party to the National Transportation Safety Board (NTSB) investigation into the October 12, 2021, Blue Line train derailment and is overseeing WMATA's Return to Service Plan for 7000 Series railcars. Throughout 2022, the WMSC team participated alongside NTSB personnel and the other parties in all aspects of the NTSB investigation.

The WMSC completed five audit reports in 2022 and conducted work on two other audits to be published in 2023. One such audit issued in 2022, Rail Operations, found that elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals. 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 2022 were:

- Emergency Management and Fire and Life Safety Programs
- Rail Operations
- Station Maintenance, Elevators and Escalators
- Communications Systems
- Track Maintenance and Training

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 2022. 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).

**The WMSC’s Rail Operations Audit found that elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals.**

The WMSC also oversees WMATA’s safety certification process which is designed to identify and mitigate hazards to provide for the highest practicable level of safety. Metrorail must carry out its safety certification process before placing new system elements into service. For example, Metrorail carried out this process for Silver Line Phase 2, which opened for passenger service on November 15, 2022, following WMSC concurrence that Metrorail has met the requirements of WMATA’s Safety and Security Certification Program Plan

(SSCPP) and Metrorail’s other written safety commitments. These commitments under the SSCPP are one element of Metrorail’s Public Transportation Agency Safety Plan

(PTASP). The PTASP, requires a Safety Management System (SMS) approach that involves personnel at all levels and is focused on safety promotion, safety policy, safety assurance, and safety risk management.



# 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 2022.

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://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://wmsc.gov).

## 7000 SERIES RAILCARS

The WMSC is continuing our active involvement as a party to the in the National Transportation Safety Board (NTSB) investigation into the October 12, 2021, derailment and customer evacuation of a 7000 Series train on the Blue Line.

In October 2021 and again in December 2021 Metrorail placed 7000 Series railcars into passenger service that did not meet Metrorail's inspection criteria. In October 2021, the WMSC communicated this to Metrorail, and later ordered Metrorail to remove 7000 Series railcars from passenger service until it developed and implemented a plan to provide for the safe return to passenger service of each railcar. In December 2021, the WMSC communicated to Metrorail that it placed railcars into passenger service that did not meet the inspection criteria specified by Metrorail's plan, and Metrorail stated it would temporarily remove 7000 Series railcars from passenger service.

The WMSC followed up on that Metrorail commitment with an order issued later on December 29, 2021 requiring Metrorail to keep all 7000 Series railcars out of passenger service until Metrorail provided a revised return to service plan describing the specific additional protections and internal oversight Metrorail would carry out to ensure that any asset that fails a safety-critical inspection, the specific additional protections and internal oversight Metrorail will carry out to ensure that no alternative procedures or practices are introduced outside of the official RTS plan; revised inspection frequency and any other criteria based on all available data; and the WMSC notified WMATA that the WMSC had no technical objection to the revised plan and Metrorail implements such plan.

Following the December 29, 2021 order, Metrorail did not develop a revised return to service plan for several months.

In 2022 Metrorail developed and implemented 7000 Series railcar return to service plans in which the WMSC identified several instances of safety process failure, or in which WMATA identified these failures and communicated them to the WMSC. Full investigation and corrective action or mitigation of these failures only occurred at the WMSC's direction.







Starting in approximately March 2022, Metrorail began to develop a proposed revision to its return to service plan. The WMSC continued daily interactions with Metrorail staff, and additional meetings regarding specific items that Metrorail requested discussion about. The WMSC provided iterative feedback on these items as part of the WMSC's ongoing collaborative approach.

The WMSC identified that Metrorail did not have the data to support, and had not completed safety certification of, elements of its initial plans, particularly elements Metrorail was drafting that were for potential phases beyond the initial return to service of an initial set of railcars.

On May 19, 2022, Metrorail submitted a revised return to service plan and the WMSC communicated that it had no technical objections to the safety plan. Ongoing communication and information sharing allowed the WMSC to provide its acceptance of Metrorail's revised 7000 Series Return to Service Plan on the same day the plan was received. Metrorail committed to following all aspects of its plan including frequent back-to-back inspections in Metrorail shops, careful control of the railcars, determining the required number of personnel across the Metrorail organization to execute this plan properly, training all these personnel, and the necessary IT changes to carry out this plan. The revised plan also laid out additional internal Metrorail protections and improved Metrorail procedures.

The WMSC's work in 2022 ensured that Metrorail developed and implemented 7000 Series railcar return to service plans that, based on the available safety data, provided for the safety of riders and workers. When the WMSC independently identified that Metrorail was not following its plan, the WMSC communicated this to Metrorail for Metrorail to address.

In several instances in which the WMSC identified safety process failures under Metrorail's return to service plan, or in which WMATA identified these failures and communicated them to the WMSC, full investigation and corrective action or mitigation only occurred at the WMSC's insistence and direction.

WMSC staff conducted observations of the various training activities geared towards training a critical number of rail car mechanics, supervisors, rail quality specialists, and rail operations personnel, and other WMATA personnel having responsibilities in carrying out the back-to-back manual inspections of 7000 series railcars, and in ensuring no 7000 series railcar is released for service unless it has met the carefully assembled inspection criteria to ensure no wheel migration has occurred.

As an example of the WMSC's oversight, on June 29, 2022, our review of documentation demonstrated that Metrorail was not following requirements of its plan that it had set to ensure safety. This included Metrorail not keeping up with data collection in its centralized

maintenance management system as specified in its return to service plan to ensure that only railcars that had passed required inspections were put into passenger service. After the WMSC raised this issue, Metrorail briefly stopped using the 7000 Series railcars for passenger service to ensure that any railcars in passenger service met all of Metrorail's safety requirements.

On September 2, 2022, Metrorail provided a revised 7000 Series railcar return to service plan. The WMSC communicated that same day that we had no technical objections to this revised plan. This version of the plan allowed for trains on the Yellow and Green Lines where Metrorail had collected safety data, and on the Red Line with Metrorail committing to continued careful monitoring of tracks, vehicles and other systems. The revision included a metered increase in the number of trains in service. Metrorail did not utilize all 7000 Series trains it specified could be used daily for service under this plan. The WMSC continued to conduct oversight of Metrorail's implementation of its plan, and communicated to Metrorail when the WMSC identified safety gaps.

The WMSC continued this clear, transparent communication with Metrorail based on available safety data such as known measurement exceedances on dozens of 7000 Series railcars and the lack of data at that time related to a subset of railcars with axles assembled using older specifications. Metrorail submitted plan revisions in late September and early October that were not based on that available safety data.

Metrorail eventually developed a Return to Service Plan revision submitted on October 25, 2022 that aligned with the available safety data, and the WMSC provided our no technical objection that same day. This plan provided the safety steps for Metrorail to operate all 7000 Series railcars in passenger service in all parts of the Metrorail system.

**Metrorail developed a Return to Service Plan revision submitted on October 25, 2022 that aligned with the available safety data, and the WMSC provided our no technical objection that same day.**

The WMSC continues to oversee Metrorail's implementation of the plan, and communicates issues as they are identified. The WMSC continues to follow a data-driven approach and continues to emphasize to Metrorail WMATA's own commitments in

its Public Transportation Agency Safety Plan and the safety management system laid out in that plan, which relies upon data to mitigate known hazards and risks.

## SILVER LINE PHASE 2

The WMSC conducted its work to oversee Metrorail's and Metropolitan Washington Airports Authority's (MWAA) Silver Line Phase 2 safety certification process on an ongoing basis starting in 2019. This work included field observations, document and data review, and regular meetings with Metrorail.

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. To achieve this Metrorail must actually carry out all



elements of its safety requirements without bypassing any part of this holistic safety process.

The WMSC clearly and quickly communicated all issues that the WMSC found, allowing Metrorail and MWAA to address those safety issues that we identified in a timely fashion. Our work ensured that Metrorail developed and implemented mitigations for hazards that either the WMSC or WMATA had identified as required by its safety certification processes and procedures prior to opening the line, making Silver Line Phase 2 safer for riders, workers and first responders. Required mitigations for the Silver Line Phase 2 to open included permanent, long-term fixes, as well as short-term temporary mitigations.



Hazards and deficiencies identified by the WMSC include those related to fire and life safety, an inoperable public address system, high vegetation growing in and around tracks, and

**Hazards and deficiencies identified by the WMSC include those related to fire and life safety, an inoperable public address system, high vegetation growing in and around tracks, and items related to wayside and maintenance facilities.**

items related to wayside and maintenance facilities. The WMSC also communicated to WMATA the need for analysis of emergency evacuation from a train consist in the case of an emergency or derailment on different track configurations present on the extension. This analysis and additional testing resulted in Metrorail developing and implementing a new design for its emergency egress boards that are used to provide stability for passengers evacuating a train onto the roadway.

Once Metrorail completed the safety mitigations that Metrorail had identified as required to mitigate known hazards, the WMSC provided Metrorail with our concurrence with Metrorail's safety certification process on November 10, 2022.



The WMSC is continuing to monitor Metrorail's implementation of mitigations designated as part of Metrorail's Silver Line Phase 2 safety certification. This includes, for example, spot checking the installation of updated emergency evacuation boards on railcars, and spot-checking operational restrictions on ladders and other systems in the rail yard that require additional work before they can be used safely.

## AUDITS

The WMSC audits each element of Metrorail's Public Transportation Agency Safety Plan at least once every three years. During 2022, the WMSC concluded its first triennial cycle of safety audits, completing auditing of all elements

of Metrorail's PTASP and began the next three-year cycle of audits.

These safety audits are based on information gathered through extensive reviews of documents, data, and recordings and in-depth interviews with

Metrorail frontline and managerial personnel. The purpose of this audit work is to review Metrorail's compliance with its policies, procedures or other requirements, and to identify deficiencies and hazards to improve the safety of riders and personnel. The WMSC also highlights positive practices that are identified in each audit. Drafts of each audit report are provided to WMATA for a 30-day technical review, and the WMSC incorporates any subsequent information provided in that review, as appropriate, prior to issuing a final report to WMATA and publishing the final report at [wmata.wmasc.gov](https://wmata.wmasc.gov).

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. Because the WMSC audits on a continuous basis by

auditing specific functional areas separately over that time to provide the required level of detailed review, there is always audit work in progress.

The WMSC schedules these audits in advance and provides that schedule to WMATA each time it is updated. The audit schedule may be adjusted based on issues identified through the WMSC's other oversight work.

In addition to extensive document and data review, audit work includes on-site inspections and observations and interviews with Metrorail personnel.

These audits take time to complete, consequently the reports of some audits initiated in 2021 were published in 2022, and the internal safety review program audit initiated in 2022 was published in early 2023.

The audits completed in 2022 demonstrate that while there have been substantive improvements, there are areas where Metrorail is not meeting its own written requirements, does not have adequate procedures, processes or requirements, and does not have adequate training, coordination and supervision.

Findings from these audits include that elements of Metrorail have a culture that accepts non-compliance with written operational rules, instructions, and manuals.

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

**SCOPE:** This audit assessed Metrorail's audit practices and procedures, and associated training, for purposes of compliance with applicable Metrorail plans and policies, regulations, and industry best practices.

The three audit findings included:

- 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.
- 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.
- 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.

### TRACK MAINTENANCE AND TRAINING - DECEMBER 14, 2022

**SCOPE:** This audit assessed Metrorail's track inspection, maintenance, engineering, operational practices and procedures. Track maintenance included components and physical assets such as running rails, fasteners, ballast, ties, floating slab, grout pads, yard switches, equipment used to maintain track (but this audit excluded roadway maintenance machines), and third rail.

The eight findings included:

- 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.





- Metrorail is not maintaining track infrastructure in rail yards in accordance with TRST-1000 requirements and related standards. This has introduced operational hazards.
- Metrorail is not meeting its training requirements and there are inconsistencies in on-the-job training documentation for TRST personnel.

The two recommendations included:

- Creating and implementing a planned, proactive, ongoing ballast renewal program would improve the condition of track infrastructure.
- Metrorail can ensure the safety of the system and quality of materials installed on the roadway by conducting lifecycle monitoring of reserve rail components stored in maintenance yards.

## COMMUNICATIONS SYSTEMS - SEPTEMBER 29, 2022

**SCOPE:** This audit assessed Metrorail’s communications systems, including radio communications and other related equipment, as well as associated maintenance, training and engineering. Metrorail’s communications systems, such as radios and radio

infrastructure and public address systems, play a critical role in safe operations, emergency response, and numerous specific processes and procedures required to ensure the safety of Metrorail riders, workers and first responders.

The nine audit findings included that:

- 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.
- 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.
- Metrorail is closing preventative maintenance work orders without correcting known deficiencies, which does not comply with its Systems Maintenance (SMNT) Maintenance Control Policy.

The two recommendations included:

- There is no comprehensive plan to maintain staffing of existing positions at all grades through timely hiring practices.
- Some job descriptions have not been updated since the 1970s and 1980s and do not reflect current job responsibilities and necessary qualifications.

### STATION MAINTENANCE, ELEVATORS AND ESCALATORS - MAY 25, 2022

**SCOPE:** This audit assessed Metrorail's station, elevator and escalator inspections, maintenance, operational practices and procedures and associated training.

The nine audit findings included:

- 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.
- Metrorail does not consistently communicate and follow its procedures governing change management and requiring interdepartmental coordination.
- Metrorail is not ensuring that ELES personnel work only on the specific types of equipment that they are trained to inspect, maintain, and repair.

The four recommendations included:

- Metrorail has an opportunity to improve safety by ensuring an adequate number of trained personnel are available to perform tasks that are assigned to Plant Maintenance.
- Metrorail has effective training instructors for ELES personnel, however their experience does not match the written requirements for the positions.

### RAIL OPERATIONS - APRIL 7, 2022

**SCOPE:** This audit assessed Metrorail's rail operations and the personnel directly involved in railcar (Class 1 vehicle) movements both on mainline and in rail yards, as well as station managers and station operations. This includes interlocking operators, train operators, station managers, rail supervisors, and other associated management, training and quality assurance personnel and practices.

The 14 audit findings included that:

- Elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals.
- Metrorail does not effectively identify, track, communicate and address operational hazards as required by its Agency Safety Plan.
- 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.

The four recommendations included:

- Metrorail operations departments do not have effective processes to consider and act upon safety input from employees at all levels of the organization.
- Metrorail has an opportunity to improve training by assigning dedicated instructors to each division.

## EMERGENCY MANAGEMENT AND FIRE AND LIFE SAFETY PROGRAMS - FEBRUARY 22, 2022

**SCOPE:** This audit assessed Metrorail's programs, procedures and equipment related to emergency management and fire and life safety.

The 14 audit findings included:

- 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.

- Metrorail created and implemented an "Incident Management Official" (IMO) position without documented training, responsibilities, communication or coordination, and without adequate staffing to ensure other emergency management and preparedness activities were not interrupted.
- 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.

The five recommendations included:

- Metrorail has opportunities to improve and expand training and training coordination related to fire and life safety and emergency management.
- MTPD does not have a usable incident checklist for emergencies.

## FUTURE AUDIT WORK

The WMSC's first triennial cycle of safety audits concluded in 2022, completing auditing of all elements of Metrorail's Public Transit Agency Safety Plan. The WMSC began its second triennial cycle with the track maintenance and training audit issued in December 2022 and will continue to conduct these audits on an ongoing basis as specified in the WMSC Program Standard.

## OTHER FINDINGS AND DIRECTIVES

### IMPROPER POWER RESTORATION

WMSC investigation into several safety events and other issues that the WMSC identified through oversight activities from March to May 2022 led to the WMSC issuing **an order** on May 17, 2022 regarding Metrorail's improper power restoration and insufficient training and supervisory oversight.

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.

WMATA implemented a new Power Desk in March 2022 despite concerns raised by the WMSC and WMATA frontline employees concerning procedures, training and workload requirements. Deviations from safety requirements occurred both prior to Metrorail's implementation of a new Power Desk and after Metrorail launched the new desk, which was intended to prevent these deviations. This included the initial circumstances identified by the WMSC in a May 12, 2020 finding,

**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.**

additional circumstances the WMSC identified beginning in January 2021 that circumvented interim safety procedures, and new circumstances the WMSC identified under the new Power Desk that launched in March 2022.

For example, on April 26, 2022, Metrorail skipped specific safety steps required by its safe power restoration procedures as Metrorail personnel in the field and in the Rail Operations Control Center (ROCC) were preparing to restore traction power to multiple locations for the start of passenger service. During this event a tag was turned in before workers cleared the roadway, Power Desk personnel were working to restore power in at least 12 locations over a 17-minute span and restored power without the required confirmations.

During other safety event investigation, the WMSC identified confusion, ineffective checklist, missing records, and procedural noncompliance across departments, in addition to issues related to staffing, workload and fatigue related to the new Power Desk and power restoration procedures.





Despite these safety deficiencies, and the serious safety events that occurred, Metrorail submitted documentation to the WMSC on April 27, 2022, of a vote by the Safety Certification Review Committee (SCRC) approving a final Power Desk Safety Certification Verification Report (SSCVR) stating that Metrorail had properly carried out its safety certification for the Power Desk. Metrorail also submitted a CAP closure request for C-0037 on April 29, 2022, stating that they had successfully implemented corrective actions to prevent these very safety failures.

Based on the demonstrated safety issues, the WMSC denied Metrorail's CAP closure request, required Metrorail to submit a revised corrective action plan that addressed the additional safety issues that the WMSC had identified, ordered Metrorail to restart and properly conduct its safety certification process, and ordered Metrorail to provide for the safety of personnel on the roadway by reducing the number of work locations requiring power de-energization and energization to no more than 10 per shift per Power Desk Operations

Desk until such time as Metrorail implemented specific interim safety mitigations.

The new corrective action plan is C-0212, which encompasses the items identified in the order and the outstanding items from C-0037.

C-0212 includes that Metrorail will make software system upgrades, comply with Metrorail's Fatigue, a Risk Management Policies, have a safety management system (SMS) implementation plan for Power Desk personnel, and restart and properly conduct its safety certification process. This CAP is due for completion in February 2024.

## AUTOMATIC TRAIN CONTROL ROOMS

On August 4, 2022 the WMSC issued **an order** requiring Metrorail to develop and implement a corrective action plan in accordance with the requirements of the WMSC Program Standard addressing the WMSC's finding that 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 the train control rooms, and is not maintaining the structural integrity of these ancillary rooms.





During an inspection conducted as part of the WMSC's ongoing oversight activities, on March 28, 2022, the WMSC identified urgent safety concerns in the Friendship Heights Station Train Control Room (TCR).

Although Metrorail procedures require weekly cleaning of each train control room, the WMSC found the Friendship Heights Station Train Control Room and its equipment covered in dust and other debris.

The deteriorating ceiling in this room, including exposed rusting rebar and other materials, appeared to be at least one source of this debris. This ceiling deterioration exposed the room to the floor above where there is an AC Switchboard Mechanical Equipment room. The train control room also had water leaks, some of which were being caught by buckets placed by Metrorail personnel, and other evidence of water intrusion. Metrorail had placed plastic over some equipment at some point in the past due to water leaks onto the equipment, but that plastic sheeting had deteriorated and was not an effective permanent mitigation. Air conditioning duct work was also deteriorated.

The WMSC communicated these urgent safety concerns to Metrorail and required Metrorail to take immediate required actions to address the safety concerns, including protecting the train control equipment, measuring

air and environmental quality, cleaning the room and equipment, conducting preventive maintenance inspections in the room, identifying and addressing the source(s) of water intrusion, and addressing the ceiling deterioration in the room.

**The WMSC found the Friendship Heights Station Train Control Room, and its equipment covered in dust and other debris.**

WMATA completed most of the initial required actions, however WMSC follow up demonstrated that Metrorail did not follow through on all safety

commitments, including not continuing and completing special safety inspections of all train control rooms and not beginning similar special inspections of other similar rooms.

Upon the WMSC raising concerns, Metrorail stated that it would schedule and complete these special safety inspections and provided a planned schedule of inspections for the remaining train control rooms that committed to resuming these inspections on August 9, 2022, and completing the special inspection of all train control rooms (and reinspection of some TCRs inspected in April and May) by mid-September 2022. Metrorail also committed to later conducting these safety inspections of similar rooms such as Traction Power Substations and Communications Rooms. Rail Infrastructure Maintenance and Engineering (RIME) stated that it had not taken any additional action to ensure inspections are conducted according to procedures and that safety issues are properly



documented, communicated and resolved. This was despite the WMSC's inspections and records reviews and Metrorail's safety department initial special inspections, identifying safety issues and problems that had not been addressed as required by Metrorail procedures.

The order required WMATA to document and complete ATC quarterly inspections for each train control room as specified in Metrorail's procedure, and to resume, complete and document its special safety inspections of each train control room as specified by the 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.

## 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.

Metrorail submits proposed CAPs to the WMSC for review 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 2022, including those related to life-safety issues, training, document control, engineering change procedures and fatigue risk management.

**The WMSC approved 55 CAPs for closure in 2022, including those related to life-safety issues, training, document control, engineering change procedures and fatigue risk management.**

CAPs C-0008-A and C-0008-B were created to address a finding the WMSC reissued in September 2019 (previous

FTA finding), that Metrorail does not currently have an effective hours of service policy and required WMATA to develop such a policy as part of an overall fatigue management program. Under C-0008-A WMATA's Fatigue Management Policy/Instruction was revised and under C-0008-B those revisions were implemented. The revised policies included WMATA's Policy/Instruction 10.6, Fatigue Risk Management Policy and 10.7/1, Hours of Service Limitations for Prevention of Fatigue. This included a 12 hour per shift limit for ROCC Controllers. Implementation included training on new requirements and establishing performance measures to evaluate the new policy's impact on reducing fatigue risk.



Also related to the CAPs mentioned above is C-0055, that was created to address a finding from the WMSC's 2020 ROCC audit that WMATA does not always follow or clearly define its fatigue risk management procedures for the Rail Operations Control Center, including those limiting the length of controller shifts. Metrorail's CAP included ensuring that hours of service, required rest periods, and related policies are followed and that those requirements are clearly communicated to all staff and management. This CAP was approved for closure by the WMSC after WMATA submitted evidence that it conducted fatigue, schedule, and staffing level assessments, trained personnel on the related policies and showed compliance with those policies.

The WMSC continues oversight and monitoring activities even after CAPs have been closed. For example, the 2020 ROCC audit also found that a high rate of staff turnover in the Rail Operations Control Center contributes to staffing challenges and a lack of positive institutional knowledge that can contribute to safety challenges. The CAP to address this deficiency, C-0057, was closed after WMATA demonstrated that it created and implemented an exit interview process and conducted a retention assessment to identify ways to retain personnel. Continuous monitoring of ROCC staffing levels by the WMSC found that in 2022 the ROCC was not maintaining the appropriate staffing levels. Metrorail has said it would require more than 60 certified rail traffic controllers to provide a fully professionalized

control center environment. As of February 2023, Metrorail has fewer than the minimal 42 controllers WMATA stated were necessary to cover all required shifts. Metrorail also has mid-level managerial vacancies that it is in the process of filling in the control center. The WMSC has identified and raised this safety concern regarding inadequate staffing to Metrorail as part of other oversight activities, has increased the frequency of discussions with an expanded group of ROCC leadership, and has again elevated this safety issue to the Chief Safety Officer and General Manager.

In some cases, the WMSC cannot close CAPs as requested by Metrorail because the WMSC's oversight demonstrates that Metrorail's work is incomplete. As described above, for example, the WMSC rejected WMATA's request in spring 2022 to close CAP C-0037 related to improper power restoration. The WMSC's oversight and verification activities demonstrated safety issues remained. Metrorail submitted revised CAP C-0212 committing to safety improvements and took other steps required by the WMSC's order described above to improve safety. Metrorail is scheduled to complete implementation of all steps of C-0212 in February 2024.

In addition to developing 54 corrective action plans in 2022 to address findings from WMSC audit reports, WMATA developed 17 corrective action plans in response to WMSC audit recommendations. In 2022, the WMSC also required Metrorail to develop two



other corrective action plans in response to findings discovered during other oversight activities concerning Train Control Rooms and improper power restoration described above.

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. 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. The WMSC closed 55 corrective action plans in 2022. Corrective action plans closures show that WMATA is following through with its plans and commitments to improve identified deficiencies within the Metrorail system.

Even after corrective action plans are closed, 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.

## SAFETY EVENTS

Overall, Metrorail reported 760 total safety events to the WMSC in 2022. The WMSC Program Standard defines events that are 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 report for WMSC adoption. These requirements are experience.

The WMSC adopted 55 final investigation reports in 2022. Some of these reports related to safety events that occurred in 2021. Investigations into remaining

safety events from 2022 will be completed in 2023. Notable safety events in 2022 included a December 6 red signal overrun event at Smithsonian Station that, due to the WMSC's independent oversight, led to the identification of Metrorail's non-compliance with its safety training requirements, and to Metrorail beginning to address these safety deficiencies.

Other investigations included improper roadway worker protection, evacuations for life safety reasons, and collisions, some of which are highlighted below. Complete final safety event investigation reports are available at [WMSC.gov/reports](https://www.wmata.gov/reports).

### Evacuation for Life Safety Reasons

There were 25 evacuations for life safety reasons in 2022.

### Some of the Most Common Safety Events





For example, Metrorail evacuated riders from stations and Red Line trains and later had to make extensive repairs in the area between Woodley Park-Zoo/Adams Morgan and Dupont Circle stations due to electrical arcing from wall-mounted cables that began late on July 30, 2022, and continued for more than six hours.

The event demonstrated gaps in Metrorail's emergency preparedness, incident response, and coordination processes and systems. These included Metrorail's lack of a systemic approach to ensure timely understanding of the event as it unfolded that is necessary to ensure successful implementation of an effective, unified, and coordinated response. Assumptions made that were contrary to available information, specifically repeated descriptions of the event as an arcing insulator, extended the duration and likely increased the severity of this event. In addition to the passenger train in the area of smoke during this event and passengers evacuated from another train and Dupont Circle Station due to smoke that entered the station from the tunnel, the event caused significant damage, in part due to its duration, which led to an extended period required to make repairs.

Deficiencies in WMATA's response to the event included:

- Not correctly identifying the location of the fire alarm, which was in the tunnel, not the station
- Metrorail did not identify that the down track circuit and the fire alarm were related

- Contrary to Metrorail policy, a train with passengers aboard was used for an inspection
- Metrorail assumed the event was arcing insulator which prolonged the response, and led to greater damage
- ROCC's operational leader did not remain in their position as required
- Metrorail dispatched personnel responsible for non-third-rail power, who initially could not de-energize power

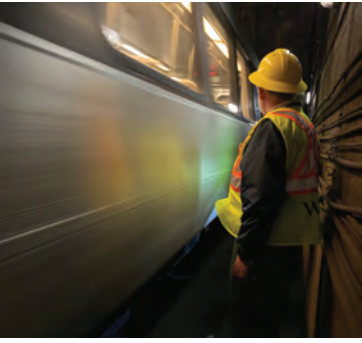
## Improper Roadway Worker Protection Events

The WMSC has identified several safety concerns related to Metrorail's Roadway Worker Protection (RWP)

program and the program's implementation, including repeated issues with performance, fatigue, training and adherence to established procedures. There were 40 improper roadway worker protection safety events requiring

final investigation reports in 2022, with some adopted by WMSC Commissioners in 2022 and others in early 2023. This is an increase from the 26 improper RWP events that required final investigation reports last year. The increase was due in part to increased reporting and identification, including due to Metrorail's corrective actions to increase its operational safety oversight of personnel.

**These serious safety events and near misses include trains passing roadway workers at excessive speeds.**



These serious safety events and near misses include:

- Passing roadway workers at excessive speeds
  - ◆ **W-0196 - Medical Center - July 16, 2022** - A track inspection crew on the Red Line had to unexpectedly rush out of the way of a speeding train on July 16, 2022. The speed was contrary to Metrorail’s roadway worker protection (RWP) rules. This event was a near miss of a collision and/or fatalities.
- Improper Advanced Mobile Flagging
  - ◆ **W-0185 - King Street - June 24, 2022** - A Yellow Line train departed King Street Station after receiving conflicting instructions from the Advance Mobile Flagger (AMF) on the platform and from the ROCC Rail Traffic Controller while a work crew under Foul Time Protection was on the roadway.
  - ◆ **W-0184 - King Street June 15, 2022** - An Advance Mobile Flagger (AMF) at King Street Station did not brief three train operators that personnel were on the roadway, resulting in a near miss involving one of the trains.
- Improperly accessing the roadway
  - ◆ **W-0182 – Metro Center - May 3, 2022** - A Red Line train came upon a work crew without warning. The Metrorail track inspection crew had entered the roadway without permission or protection to continue a track inspection.
  - ◆ **W-0175 - Improper Roadway Worker Protection - near Stadium-Armory Station -April 25, 2022** - Metrorail

**There were 40 improper roadway worker protection safety events requiring final investigation reports in 2022.**

Controller improperly issued a “red tag” and a Traction Power Roadway Worker In Charge (RWIC) improperly accepted that “red tag” even though the work crew had not

“hot sticked” to confirm that power was correctly de-energized in the work area. The RWIC had not received permission from a Rail Traffic Controller to access the roadway to conduct hot sticking.

Metrorail continues work to implement corrective action plans related to the WMSC’s Roadway Worker Protection (RWP) and Training Audit issued in June 2020, related to operational compliance corrective action plans from the Rail Operations Audit issued in April 2022, and related to investigations such as those noted above. WMATA is in the process of a complete overhaul of its RWP Program. The WMSC is carefully monitoring changes Metrorail may make, while also continuing to oversee Metrorail’s implementation of WMATA’s current safety requirements.

Office of Emergency Preparedness (OEP) and MTPD personnel entered the roadway without permission and without roadway worker protection in place while trains were moving through the area.

- ◆ **W-0172 - Shaw-Howard U Station - February 17, 2022** - Contrary to Metrorail policy, a MTPD Officer fouled the track without requesting permission and Foul Time protection from the ROCC while attempting to retrieve a rider’s cellphone that had fallen onto the track bed.

- Improper issuance and acceptance of “red tag”

- ◆ **W-0174 - near Greenbelt Station - April 3, 2022** - A Metrorail Power Desk



In the summer of 2022, for example, the WMSC's independent oversight identified that Metrorail's Safety Department had granted the highest level of Roadway Worker Protection qualification, Level 4, to individuals in the Safety Department's Office of Emergency Preparedness who did not meet Metrorail's written requirements for this qualification. The training and experience of individuals granted an RWP Level 4 qualification is particularly important because it permits an individual to act as a Roadway Worker In Charge, the person responsible for the safety and protection of all other individuals in the work group.

Metrorail told the WMSC in September 2022 that a waiver had been issued, however, WMATA was unable to provide such a waiver when requested by the WMSC. Still, Metrorail had issued RWP level 4 qualifications to individuals who had not previously had experience as RWP-qualified personnel.

Due to the WMSC's oversight and further data requests and review, Metrorail developed a permanent order that provided specific mitigations required before specific personnel are permitted to obtain a Level 4 qualification without meeting Metrorail's usual requirements.

Separately, Metrorail changed rules in November 2022 related to certain specific elements of roadway worker protection – changes intended to improve safety. Metrorail conducted a safety standdown on the new rules prior to

implementation. However, the WMSC identified in January 2023 that Metrorail had continued to provide training and testing to personnel for several months based on the prior rules, which introduced safety risk. After the WMSC identified and communicated this issue, Metrorail began in a timely fashion to take steps to correct this safety issue. Specifically, Metrorail responded as required, stopped utilizing outdated training, began to take steps toward providing current training to all relevant personnel including the more than 700 people Metrorail qualified on incorrect rules and procedures, and later provided updates on this progress.

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 continuous safety.

## 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 implementation of 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 intended as a living document, subject to regular updates as part of continuous safety improvement. Metrorail completed the second annual revision of its PTASP in 2022 as required. WMSC staff provided detailed feedback to Metrorail regarding its proposed 2022 revisions before Metrorail presented its revisions to its board of directors. The WMSC Board considered and approved the revision on November 15, 2022.

The 2022 revisions to WMATA's PTASP included the incorporation of new regulatory requirements such as a joint labor-management safety committee, as well as adjustments to planned SMS implementation timelines and tasks. The WMSC assessed this revision in accordance with WMSC processes utilizing an FTA-recommended checklist and the WMSC's experience and expertise. The WMSC is focused on ensuring that Metrorail is proactive, acts on, tracks and investigates hazards and risks as required by the SMS approach, and allows easy reporting of concerns from frontline workers, along with providing proper feedback and protections for those reports.

The WMSC will continue to oversee implementation of the PTASP through regular oversight work including inspections, audits, and investigations.

## CONCLUSION

Metrorail has made significant progress in some areas under the oversight of the WMSC, and is required to continue to make progress in many other areas due to the WMSC's oversight and the commitments WMATA has made in its PTASP.

In 2022, the WMSC's five published audits, regular inspections, and oversight of Metrorail's 7000 Series Return to Service Plan and safety certification process identified areas where safety improvements are required for Metrorail to meet its documented commitments to safety. The WMSC's oversight work also identified positive practices, and led to Metrorail implementing new safety improvements, many of which are described above. Safety is not something that is achieved on a particular day; rather, safety is a journey of continual improvement.

In 2023, the WMSC is continuing its safety oversight work with a continued focus on the safety of riders, workers and first responders. This work includes overseeing Metrorail's adherence to its safety certification process, its 7000 Series Railcar Return to Service Plan, and the rollout of a safety management system (SMS) approach that is required to achieve and maintain a positive safety culture. Metrorail's commitment to identifying, developing, and systemically implementing safety improvements, and to sustaining those improvements, is critical to the safety of the WMATA Rail System.



## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF  
MAY 1, 2023

CAP ID	CAP COMPLETION DATE (EXPECTED CAP COMPLETION DATE)	FINDING/RECOMMENDATION
NTSB R-8-004-A	12/31/22	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.
WMSC-19-C0026	04/14/23	WMATA does not conduct annual culvert inspections as specified in Section 105.1 of the TRST-1000.
WMSC-20-C0042	07/14/23	WMATA employees are not consistently following RWP Rule 5.12 for equipment calibration.
WMSC-20-C0049	12/01/23	ROCC management contributes to a chaotic environment. Use of profanities, threats and racial, sexual or other forms of harrasment 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.
WMSC-20-C0051	11/17/23	Metrorail does not record all critical ROCC communications, limiting the lessons that can be learned from safety events.
WMSC-20-C0052	08/28/24	There is no consistent, clear, concise, immediate and reliable Metrorail communication process for safety-critical information between Metrorail personnel and fire liaison.
WMSC-20-C0056	08/30/24	Metrorail's ROCC recruitment and retention approach is failing. Some controller trainees have left the ROCC immediately after or shortly after the Metrorail's training course, which is scheduled to last nine months.
WMSC-20-C0059	03/14/25	WMATA has failed to regularly update the Rail Operations Control Center Procedures Manual.
WMSC-20-C0060	04/07/23	WMATA has not reviewed SOPs or OAPs on a regular basis.
WMSC-20-C0065	02/17/23	Not all controllers experience emergency drills. If each ROCC controller does not get this experience, it diminishes the value of the drills.
WMSC-20-C0068	03/15/24	WMATA does not have a standardized training program for personnel working at desks such as the MOC or ROIC. Metrorail could not provide any documentation of MOC training materials, a curriculum or a training description. Metrorail provided only a study guide for the ROIC.
WMSC-20-C0070	10/27/23	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.
WMSC-21-C0072	04/14/23	WMATA does not have load ratings for its bridges and aerial structures.
WMSC-21-C0077	04/14/23	Metrorail does not have consistent requirements for refresher or additional training for structures inspection and maintenance teams.
WMSC-21-C0083	03/29/24	Ten Metrorail structures have steel rocker bearings, which created a seismic risk in the event of an earthquake other seismic events.
WMSC-21-C0084	07/19/24	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.
WMSC-21-C0098	06/06/25	Several Metrorail preventive maintenance instructions do not include acceptable tolerances for required measurements.
WMSC-21-C0099	04/07/28	Metrorail lacks an Intrusion Detection Warning (IDW) system where WMATA's criteria require it.
WMSC-21-C0100	10/30/26	Metrorail is not maintaining a fully functioning radio communications system in all rail yards and shops.
WMSC-21-C0101	02/17/23	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.
WMSC-21-C0110	03/17/23	Training and parts needed for maintenance appear to be an afterthought in WMATA procurements.
WMSC-21-C0111	01/12/24	Metrorail does not have adequate replacement parts or materials and has not planned for the obsolescence of critical equipment.
WMSC-21-C0113	09/29/23	Metrorail is not effectively managing turnover, vacancies and experience levels of ATC personnel.
WMSC-21-C0115	08/04/23	Metrorail's written procedures do not reflect changes that employees are being directed to implement.
WMSC-21-C0118	08/11/23	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.
WMSC-21-C0120	07/18/25	Metrorail ignores the minimum daily release period (rest period) requirements in its Fatigue Risk Management Policy.
WMSC-21-C0121	10/25/24	There is not adequate access to, documentation of, or compilation of data for WMATA to assess compliance with its hours of service requirements.
WMSC-21-C0123	12/30/22	Not all safety sensitive employee position have fully documented and up-to-date physical and medical requirements.
WMSC-21-C0124	12/02/22	Many follow up and random drug and alcohol tests required by Metrorail policies and federal regulations were not completed with no documented reason why the tests were missed.
WMSC-21-C0125	12/16/22	WMATA does not have written criteria for post-incident testing and does not consistently implement post-event testing.
WMSC-21-C0129	06/21/24	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.
WMSC-21-C0130	08/23/24	Metrorail does not collect fitness for duty data in a manner that allows for identification, tracking and trending of issues.
WMSC-21-C0131	12/19/25	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.
WMSC-21-C0133	02/17/23	Metrorail does not confirm the accuracy of new hires' self-reported list of prior DOT-covered employers.

## OPEN CORRECTIVE ACTION PLANS (CAPs)

CAP ID	CAP COMPLETION DATE (EXPECTED CAP COMPLETION DATE)	FINDING/RECOMMENDATION
WMSC-21-C0134	08/11/23	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.
WMSC-21-C0136	05/19/23	6000 Series cars that underwent rehabilitation were put into service without SAFE approval.
WMSC-21-C0137	05/19/23	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.
WMSC-21-C0138	09/08/23	Metrorail does not require or receive all necessary OEM documentation, parts or tools.
WMSC-21-C0139	01/15/25	The 7000 Series rehabilitation and subsystems overhaul program is being developed without full SAFE coordination, involvement or approval.
WMSC-21-C0142	09/29/23	Metrorail does not have a systematic process to ensure that mechanics and engineers are trained for the specific tasks they are assigned to perform.
WMSC-21-C0143	02/25/26	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.
WMSC-21-C0144	03/24/23	Metrorail does not clearly define the proper use of engineering modification instructions (EMIs), service bulletins (SBs), and other railcar engineering change documents.
WMSC-21-C0145	05/24/23	Metrorail utilizes multiple versions of the same inspection form that do not all include the same pass/fail criteria.
WMSC-21-C0146	02/05/27	Metrorail railcars do not include inward-and outward-facing audio and image recorders in all operating compartments.
WMSC-21-C0147	06/30/23	Part numbers are not being consistently entered in Maximo Work Orders for 7000 Series railcars.
WMSC-21-C0149	03/24/23	WMATA has not fully implemented sufficient protections against the unauthorized movement of trains with zero speed commands.
WMSC-21-C0150	08/11/23	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.
WMSC-21-C0151	07/12/24	Metrorail is not documenting, tracking and conducting all preventive maintenance inspections that are required by WMATA policy, manuals and instruction.
WMSC-21-C0154	05/12/23	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.
WMSC-21-C0155	09/30/22	Metrorail is not effectively identifying, tracking and mitigating hazards related to high voltage and traction power.
WMSC-21-C0156	04/24/26	Metrorail is behind schedule on its floating slab testing to monitor for deterioration due to stray current.
WMSC-21-C0157	03/24/23	The latest as-built schematics are not available in each traction power facility, as required by the TRPM-1000 and Metrorail preventive maintenance instructions.
WMSC-21-C0159	05/26/23	Metrorail risks equipment quality and availability issues that impact operational safety due to gaps in materials tracking, storage, and procurement practices.
WMSC-21-C0161	12/30/22	Some WMATA job descriptions have not been reviewed in more than 30 years.
WMSC-22-C0162	01/17/25	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.
WMSC-22-C0163	08/11/23	Metrorail created and implemented an "Incident Management Official" (IMO) position without documented training, responsibilities, communication or coordination, and without adequate staffing to ensure other emergency management and preparedness activities were not interrupted.
WMSC-22-C0164	02/16/24	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.
WMSC-22-C0165	12/01/23	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.
WMSC-22-C0166	04/05/24	Metrorail's calls to public safety answering points (911 call centers) are inconsistent, incomplete and contribute to delayed or ineffective emergency response.
WMSC-22-C0167	12/14/22	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.
WMSC-22-C0168	10/18/24	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.
WMSC-22-C0169	04/12/24	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.
WMSC-22-C0170	08/11/23	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.

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF  
MAY 1, 2023

CAP ID	CAP COMPLETION DATE (EXPECTED CAP COMPLETION DATE)	FINDING/RECOMMENDATION
WMSC-22-C0171	10/20/23	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.
WMSC-22-C0172	04/07/23	Metrorail does not conduct systematic underground inspections to ensure safe egress and fire and life safety response, and has set minimum tunnel emergency lighting levels that are not compliant with NFPA minimum standards.
WMSC-22-C0173	04/17/26	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.
WMSC-22-C0174	10/13/23	Metrorail does not consistently inspect and maintain current certification status of all fire extinguishers, particularly those on the roadway.
WMSC-22-C0175	09/22/23	Metrorail does not consistently perform or document all elements of its Fire & Intrusion Alarm System Inspection Preventive Maintenance Instructions.
WMSC-22-C0176	03/15/24	Metrorail has opportunities to improve and expand training and training coordination related to fire and life safety and emergency management.
WMSC-22-C0177	09/20/23	MTPD does not have a useable incident checklist for emergencies.
WMSC-22-C0178	09/27/24	Metrorail fire and life safety signage is not consistent throughout the system.
WMSC-22-C0179	05/26/23	Metrorail's organizational structure contributes to mismatches between fire and life safety and emergency management personnel and their responsibilities.
WMSC-22-C0180	04/14/23	Metrorail does not assess and communicate radio system outages to MTPD officers.
WMSC-22-C0181	10/25/24	Elements of Metrorail have a culture that accepts noncompliance with written operational rules, instructions, and manuals.
WMSC-22-C0182	08/16/24	Metrorail does not effectively identify, track, communicate and address operational hazards as required by its Agency Safety Plan.
WMSC-22-C0183	10/25/24	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.
WMSC-22-C0184	10/25/24	Metrorail has inadequate internal communication, coordination and processes to effectively manage change as required by its PTASP, the WMSC and the FTA.
WMSC-22-C0185	10/27/23	Metrorail is not effectively training and certifying personnel authorized to operate trains on all active railcar fleets.
WMSC-22-C0187	08/25/23	Metrorail has not documented procedures for terminal supervisors, and has not established the effective formal training for terminal supervisors needed to safely perform their duties.
WMSC-22-C0188	05/05/23	Metrorail does not have documented criteria to determine student proficiency in practical demonstrations of safety critical operational tasks.
WMSC-22-C0189	07/25/25	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.
WMSC-22-C0190	04/07/23	Metrorail does not provide safety oversight of all safety equipment that is or may be past its calibration date that may be in use by operations personnel.
WMSC-22-C0191	08/18/23	Some RTRA QA/QC audits contain conclusions that do not match actual conditions. RTRA's QA/QC procedures do not include complete work instructions for all audits or specific instructions for removing personnel from service.
WMSC-22-C0192	06/16/23	Metrorail closes internal corrective actions and identified issues, including those related to RTRA QA/QC audits, without fully identifying or completing required improvements or changes.
WMSC-22-C0193	11/03/23	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.
WMSC-22-C0194	12/16/22	Metrorail does not conduct effective oversight of training instructors.
WMSC-22-C0195	11/29/24	Metrorail operations departments do not have effective processes to consider and act upon safety input from employees at all levels of the organization.
WMSC-22-C0196	07/11/23	Metrorail has an opportunity to improve training by assigning dedicated instructors to each division.
WMSC-22-C0198	09/22/23	Metrorail has an opportunity to improve the integrity of its certification process by establishing a procedure providing for QA/QC personnel to be certified by an entity other than their own colleagues.
WMSC-22-C0199	11/29/24	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.
WMSC-22-C0200	02/17/23	Metrorail does not consistently communicate and follow its procedures governing change management and requiring interdepartmental coordination.
WMSC-22-C0201	01/12/24	Metrorail is not ensuring that ELES personnel work only on the specific types of equipment that they are trained to inspect, maintain, and repair.
WMSC-22-C0202	06/23/23	Metrorail has not reviewed its ELES standard operating procedures on a regular basis as required by WMATA policy, and has conflicting procedures for elevator and escalator employees.
WMSC-22-C0203	09/29/23	Metrorail does not clearly define what helpers (entry-level ELES personnel) are authorized to do or prohibited from doing, including whether helpers are permitted to work alone and any restrictions required to ensure that work is done safely.
WMSC-22-C0204	09/08/23	Metrorail does not ensure that ELES personnel sign in on log books as required by WMATA SOP to ensure their safety.

## OPEN CORRECTIVE ACTION PLANS (CAPs)

AS OF  
MAY 1, 2023

CAP ID	CAP COMPLETION DATE (EXPECTED CAP COMPLETION DATE)	FINDING/RECOMMENDATION
WMSC-22-C0205	04/28/23	Metrorail has not maintained a formalized, documented training process for ELES mentors (on-the-job training instructors) who play a key role in the training of entry-level ELES personnel.
WMSC-22-C0206	04/28/23	Metrorail began new inspections referred to as "visual" or "routine" ELES inspections prior to finalizing, communicating and formally implementing an effective procedure.
WMSC-22-C0207	09/08/23	ELES Supervisors are not completing all aspects of required QA checks.
WMSC-22-C0210	02/24/23	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).
WMSC-22-C0212	02/16/24	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.
WMSC-22-C0213	07/17/26	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.
WMSC-22-C0214	03/14/25	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.
WMSC-22-C0215	05/09/25	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.
WMSC-22-C0216	11/01/24	Metrorail is closing preventative maintenance work orders without correcting known deficiencies, which does not comply with its Systems Maintenance (SMNT) Maintenance Control Policy.
WMSC-22-C0217	05/02/25	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.
WMSC-22-C0218	11/15/24	Metrorail hazard logs are not being kept or maintained.
WMSC-22-C0219	06/06/25	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.
WMSC-22-C0220	06/28/24	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.
WMSC-22-C0221	02/09/24	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.
WMSC-22-C0222	10/25/24	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.
WMSC-22-C0223	01/05/24	There is no comprehensive plan to maintain staffing of existing positions at all grades through timely hiring practices.
WMSC-22-C0224	03/15/24	Some job descriptions have not been updated since the 1970s and 1980s and do not reflect current job responsibilities and necessary qualifications.
WMSC-22-C0225	02/28/25	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.
WMSC-22-C0226	09/20/24	Metrorail is not maintaining track infrastructure in rail yards in accordance with TRST-1000 requirements and related standards. This has introduced operational hazards.
WMSC-22-C0227	11/17/23	Metrorail is not meeting its training requirements and there are inconsistencies in on-the-job training documentation for TRST personnel.
WMSC-22-C0228	12/15/23	WMATA is not ensuring that personnel wear the proper personal protective equipment as required by its Hot Work Program Manual.
WMSC-22-C0229	12/15/23	Metrorail risks key maintenance work performed on rail lubricators coming to a halt due to insufficient succession planning and training for personnel responsible for ensuring they are properly maintained in accordance with its written procedures.
WMSC-22-C0230	02/07/25	Metrorail lacks the capability to complete required rail grinding activities across the system to ensure safe operations.
WMSC-22-C0231	08/30/24	WMATA does not ensure excess hazardous materials are properly labeled, stored and disposed of.
WMSC-22-C0232	03/29/24	WMATA does not have a weed spraying program consistent with industry standards.
WMSC-22-C0234	10/27/23	Metrorail can ensure the safety of the system and quality of materials installed on the roadway by conducting lifecycle monitoring of reserve rail components stored in maintenance yards.
WMSC-23-C0235	02/16/24	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.
WMSC-23-C0236	10/25/24	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.
WMSC-23-C0237	10/18/24	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.

# APPENDIX B:

## FINAL INVESTIGATION REPORTS ADOPTED

BY THE WMSC  
IN 2022

Complete safety event investigation reports adopted in 2022 are available at [WMSC.gov/reports](https://www.wmsc.gov/reports).

Report Number	Date of Adoption	Report Title	Report Number	Date of Adoption	Report Title
W-0140	January 25, 2022	Red Signal Overrun outside Twinbrook Station	W-0154	March 8, 2022	Evacuation for Life-Safety Reasons at Dunn Loring Station
W-0141	January 25, 2022	Improper Roadway Worker Protection near Twinbrook Station	W-0155	March 8, 2022	Evacuation for Life-Safety Reasons of Pentagon Station
W-0142	January 25, 2022	Improper Roadway Worker Protection near Court House, Rosslyn stations	W-0156	April 12, 2022	Serious Injury at Navy Yard Station
W-0143	January 25, 2022	Evacuation for Life Safety Reasons of Capitol South Station	W-0157	April 12, 2022	Serious Injury at Shady Grove Station
W-0144	January 25, 2022	Evacuation for Life Safety Reasons of Forest Glen Station	W-0158	April 12, 2022	Fatality at Franconia-Springfield
W-0145	January 25, 2022	Improper Vehicle Movement at Medical Center Station	W-0159	April 12, 2022	Evacuation for Life Safety Reasons at Huntington Station
W-0146	March 8, 2022	Train Passed Personnel at Excessive Speed on Red Line	W-0160	April 12, 2022	0160 Evacuation for Life Safety Reasons at Crystal City Station
W-0147	March 8, 2022	Evacuation for Life Safety Reasons on Yellow & Green Line	W-0161	May 24, 2022	Improper Door Operation and Station Overruns at Twinbrook Station
W-0148	March 8, 2022	Derailment near Deanwood Station	W-0162	May 24, 2022	Improper Door Operation at Fort Totten Station
W-0149	March 8, 2022	Collision in Shady Grove Rail Yard	W-0163	May 24, 2022	Improper Movement in area of Suitland Station
W-0150	March 8, 2022	Collision, Evacuation on Blue, Orange and Silver Line tracks	W-0164	May 24, 2022	Improper Roadway Worker Protection on Orange Line
W-0151	March 8, 2022	Improper Movement, Red Signal Overrun in Alexandria Rail Yard	W-0165	May 24, 2022	Collision at Potomac Avenue Station
W-0152	March 8, 2022	Collision in Greenbelt Rail Yard	W-0166	May 24, 2022	Collision at Bethesda Station January 29, 2022
W-0153	March 8, 2022	Improper Movement near Twinbrook Station	W-0167	May 24, 2022	Serious Injury at Carmen Turner Facility

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Report Number	Date of Adoption	Report Title	Report Number	Date of Adoption	Report Title
W-0168	June 28, 2022	Collision at Fort Totten Station	W-0182	September 20, 2022	Improper Roadway Worker Protection near Metro Center Station
W-0169	June 28, 2022	Serious Injury at Potomac Yard Station	W-0183	September 20, 2022	Evaluation for Life Safety Reasons at Franconia-Springfield Station
W-0170	June 28, 2022	Serious Injury at L'Enfant Plaza Station	W-0184	November 15, 2022	Improper Roadway Worker Protection at King Street Station
W-0171	June 28, 2022	Improper Roadway Worker Protection at Rosslyn Station	W-0185	November 15, 2022	Improper Roadway Worker Protection at King Street Station
W-0172	June 28, 2022	Improper Roadway Worker Protection at Shaw-Howard U Station	W-0186	November 15, 2022	Improper Vehicle Movement at McPherson Square Station
W-0173	June 28, 2022	Serious Injury at L'Enfant Plaza Station at L'Enfant Plaza Station	W-0187	November 15, 2022	Serious Injury at Cheverly Station
W-0174	August 9, 2022	Improper Worker Protection near Greenbelt Station	W-0188	November 15, 2022	Fatality near Brookland-CUA Station
W-0175	August 9, 2022	Improper Roadway Worker Protection near Stadium-Armory Station	W-0189	December 13, 2022	Evacuation for Life Safety Reasons at Ballston-MU Station
W-0176	August 9, 2022	Serious Injury at Queenstown Road Repair and Maintenance Supply Storage Facility	W-0190	December 13, 2022	Derailment near New Carrollton Station
W-0177	August 9, 2022	Evacuation for Life-Safety Reasons West Falls Church Yard Building F	W-0191	December 13, 2022	Serious Injury at Largo Town Center Station
W-0178	August 9, 2022	Evacuation for Life-Safety Reasons Pentagon City Station	W-0192	December 13, 2022	Evacuation for Life Safety Reasons at Greenbelt Yard
W-0179	September 20, 2022	Collision at Forest Glen	W-0193	December 13, 2022	Evacuation for Life Safety Reasons at Cleveland Park Station
W-0180	September 20, 2022	Improper Door Operation Stadium-Armory	W-0194	December 13, 2022	Evacuation for Life Safety Reasons at Mount Vernon Square Station
W-0181	September 20, 2022	Improper Door Operation at Judiciary Square			



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