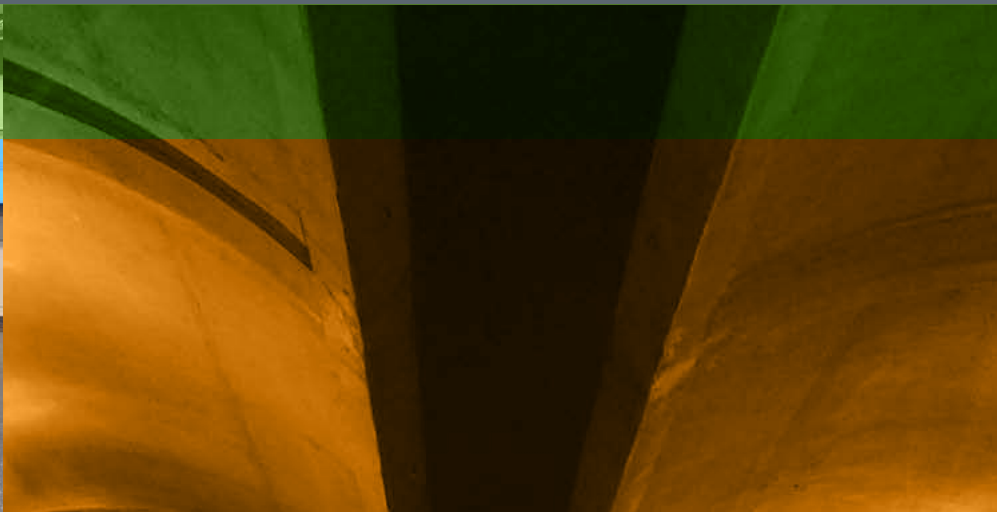
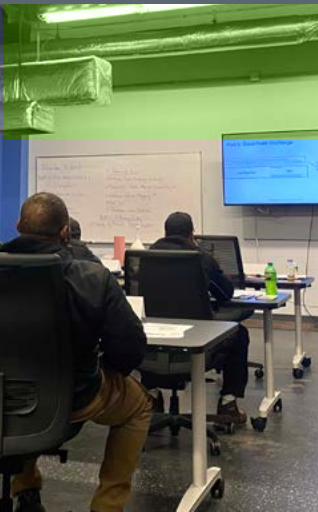




# The Washington Metrorail Safety Commission



## Safety Audit

of the Washington Metropolitan Area Transit Authority

Audit of Roadway Worker Protection Program



Final Report:  
July 31, 2024

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Prepared under the authority of the Washington Metrorail Safety Commission

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# Executive Summary

The Washington Metrorail Safety Commission (WMSC) performed this audit of Washington Metropolitan Area Transit Authority (WMATA) Metrorail's Roadway Worker Protection (RWP) Program through in-depth interviews, observations, and document and data reviews conducted in November and December 2023, with additional follow-up and document reviews in January and February 2024.

Roadway worker protection is the primary method of protecting employees, contractors and, in emergencies, first responders and customers who need to be on or near the roadway and is therefore an essential part of Metrorail's requirements for its personnel.

The audit objectives include the assessment of:

- Metrorail's rules, practices, procedures, policies, and internal oversight of its Roadway Worker Protection Program (applicable to roadway or wayside workers).
- Metrorail's processes for developing and adopting revisions or updates to the Roadway Worker Protection Program.
- Metrorail's training on the Roadway Worker Protection Program.

This audit also reviewed corrective action plans (CAPs) from the WMSC's previous Roadway Worker Protection Audit of June 2020, CAPs related to roadway worker protection, and other relevant oversight activities. The WMSC appreciates the cooperation of Metrorail personnel during this audit.

The audit demonstrates that although Metrorail has established policies and procedures, rules, training, and oversight of its RWP program, there are still deficiencies that put the safety of workers at risk. During this audit WMSC personnel observed unsafe practices contrary to Metrorail policies and procedures at every observation activity conducted.

**The audit demonstrates that although Metrorail has established policies and procedures, rules, training, and oversight of its RWP program, there are still deficiencies that put the safety of workers at risk.**

As further explained in Finding 1, Metrorail is not effectively ensuring that its personnel on and around the roadway are consistently following the Roadway Worker Protection rules designed for their safety. This increases the risk that personnel may be injured or killed. Between 2005 and 2010, eight Metrorail employees were struck and killed by rail vehicles. In the years since, there have been several near-miss collisions with roadway workers, including a 2016 safety event where two Federal Transit Administration (FTA) track inspectors were forced to jump

out of the path of a train traveling at excessive speeds to avoid being hit near Ronald Reagan Washington National Airport Station. Since then, there have been near misses of such events that include workers narrowly escaping a fatal collision, including events that occurred in 2021, 2022, and 2023 that are described in more detail later in this report.

The 12 other findings of this audit are:

- Metrorail is not providing its personnel with up-to-date and accessible information about the locations where additional Roadway Worker Protection is required to prevent serious injury or death.



- Metrorail is not systematically identifying, tracking, and mitigating hazards related to Roadway Worker Protection as required by its Agency Safety Plan.
  - Metrorail is training and qualifying personnel on outdated Roadway Worker Protection-related procedures and rules.
  - Metrorail has no process to ensure that areas requiring additional Roadway Worker Protection are accurately identified on an ongoing basis.
  - Metrorail directs its personnel to use forms of protection without training on the proper use of the protection. Specifically, Metrorail has no training or qualification related to local control. This contributes to an inconsistent application of Roadway Worker Protection rules.
  - Metrorail is not following its existing safety rules and does not have adequate training and supervisory oversight to ensure safe operation under mobile command.
  - Metrorail has no controls to ensure that rules in areas it designates as an 'Authorized Construction Site' provide the same or greater level of protection for roadway workers as those workers have in other parts of the WMATA Rail System.
  - Metrorail is providing RWP qualifications without following the listed requirements for those qualifications.
  - Metrorail is not following its procedures regarding Roadway Worker Protection Training.
  - Metrorail is not providing critical roadway worker-related safety information and training. Instructors do not follow the standardized curriculum and omit materials.
  - Metrorail is providing incorrect information about cardinal rules and incomplete testing for non-English speaking contractors in Roadway Worker Protection Training.
  - Metrorail requires on-the-job Roadway Worker Protection training without outlining the requirements or process for this training.
- This audit also identified positive practices such as Metrorail's RWP training instructors' capabilities, and updated contractor RWP training materials.
- Metrorail is required to propose corrective action plans to address each finding no later than 30 days after the issuance of this report.





## **Background** and Scope

# Background and Scope

**The scope of this audit is Metrorail's safety protections for roadway or wayside workers.**

The scope of this audit is Metrorail's safety protections for roadway or wayside workers, including related rules, practices, procedures, policies, training, and internal oversight, as well as Metrorail's processes for developing and adopting revisions or updates.

The audit is based on the WMATA Public Transportation Agency Safety Plan (PTASP) effective December 31, 2022 (Rev. 3.0), Metrorail's procedures and documentation, and other associated requirements. The specific elements of the Public Transportation Agency Safety Plan covered in this audit are listed in Appendix D.

The WMSC conducted the audit from November 2023 through January 2024, and received follow-up documentation through February 2024.

## Roadway Worker Protection at Metrorail

Metrorail's Roadway Worker Protection Program, policies, and procedures are the primary method of protecting roadway and wayside workers, which include employees, contractors, and—in emergencies—first responders and customers who need to be on or around the tracks.

In 2010, following National Transportation Safety Board (NTSB) investigations into roadway worker fatalities, Metrorail introduced an overhauled Roadway Worker Protection (RWP) Program that included key features of similar programs regulated by the Federal Railroad Administration (FRA). The Federal Railroad Administration (FRA) promulgated its first roadway worker protection requirements in 1996. Metrorail has made adjustments to the RWP program since 2010 as a result of safety events and operational considerations. At the time of this audit, Metrorail's RWP rules were contained in the Metrorail Operating Rulebook dated September 1, 2023.

Metrorail's RWP program lays out a uniform method of establishing on-track protection and other steps including personal protective equipment (PPE) required to mitigate dangers and hazards associated with working on the right of way. Depending on the location and tasks to be performed on the right of way, there are differing levels of protection ranging from the granting of foul time to exclusive track occupancy and to inaccessible track. Each contractor and employee whose responsibilities require them to be on the right of way must be trained and qualified in RWP before entering WMATA's Roadway. The appropriate level of training is determined by the individual's duties. Each level requires a written and practical exam to successfully demonstrate competency. Requalification is required every year.

## Current Organizational Structure

Metrorail's Rail Safety Standards Committee (RSSC), an interdisciplinary committee comprised of representatives of several Metro departments, has responsibility for all rules for the Roadway Worker Protection program. Metrorail rules are adopted by the RSSC, RSSC is led by SAFE Director of the Office of Operating Practices (OOP). OOP, Safety Policy and Promotion, SRM, and Office of Safety Oversight (OSO) in SAFE have responsibilities related to rules implementation and oversight. Training for all personnel at Metrorail for the Roadway Worker Protection Program falls under the Technical Training & Development Department, specifically under Technical Skills Maintenance. This training requirement states that all employees and



contractors who need to access the roadway must “successfully demonstrate competency” via “a written and practical exam” (Metrorail Operating Rule 17.7.3) before “entering WMATA’s roadway” (Metrorail Operating Rules 1.1.11 and 17.7.1) and is also roadway worker protection cardinal rule #1. After the training and exam have been completed successfully (for each level) stickers indicating the qualification level and expiration date are applied to the individual’s WMATA identification also called a “OneBadge.”

Personnel in all Metrorail departments are responsible for implementing Metrorail’s Roadway Worker Protection program. This includes responsibilities for oversight and supervision by management, and the use of these safety processes by all personnel. Therefore, each department with personnel that may access the right of way or who have responsibilities for the safety of such personnel (such as personnel in the control center) have a role in roadway worker protection.

## Metrorail Internal Safety Reviews

As of October 27, 2023, Metrorail reported that it had no internal corrective and preventative action plans (iCAPAs) that were open related to roadway worker protection. Metrorail has closed four iCAPAs since the last related internal audits in 2021 and 2022. The closed iCAPAs were the following:

- QICO-OPMS-21-01: Required Metrorail to develop, revise, and implement documentation to advocate compliance with the SSPP [System Safety Program Plan] and departmental SOPs [standard operating procedures].
- QICO-AMF-22-01: Required Metrorail to identify all core TRST [Track and Structures] oversight functions and develop associated processes and procedures.
- QICO-AMF-22-02: Required Metrorail to revise MSRPH [Metrorail Safety and Rules Procedures Handbook] to remove contradictions that exist within AMF [Advanced Mobile Flagging] procedures and implement processes to ensure all AMFs [Advanced Mobile Flaggers] are compliant with MSRPH requirements.
- QICO-AMF-22-03: Required Metrorail to identify both internal and external customers of MSRPH and create a system to solicit and implement customer feedback.



**Metrorail reported that it had no internal corrective and preventative action plans (iCAPAs) that were open related to roadway worker protection.**



**The WMSC held an exit conference with Metrorail in late January 2024, and reviewed additional documents provided by Metrorail into February 2024.**

## Audit Work

The WMSC received initial documents from Metrorail related to this audit in November 2023, made subsequent document requests, and reviewed the documents provided by Metrorail throughout the course of this audit. The WMSC conducted an entrance conference in December 2023 and conducted observations and interviews with Metrorail personnel in December 2023 and January 2024. The WMSC held an exit conference with Metrorail in late January 2024, and reviewed additional documents provided by Metrorail into February 2024.

Lists of documents reviewed, observation locations, and personnel interviewed for this audit are provided in the appendices.

The WMSC later provided a draft of this report to Metrorail for technical review and incorporated any comments or technical corrections as appropriate.

The WMSC conducted the following activities:

- Obtained and reviewed the most up-to-date plans, policies, and procedures governing the Roadway Worker Protection Program.
- Conducted an entrance conference prior to observation activities to outline the audit process and schedule.
- Conducted interviews of employees from Track and Structures (TRST), Automatic Train Control (ATC), The Office of Power (POWR), The Department of Safety (SAFE), Metro Transit Police Department (MTPD), and Technical Training and Development (TTDV).
- Observed Metrorail personnel conducting the following activities:
  - ◆ Instructing RWP Level 1 Initial Class.
  - ◆ Instructing Contractor RWP Level 1 Initial Class.
  - ◆ Instructing RWP Level 2 Initial Class.
  - ◆ Instructing RWP Level 4 Re-Qualification Class.
- Observed track inspection between Silver Spring and Rhode Island Ave stations.
- Observed ATC interlocking inspection at Herndon Station.
- Observed cable replacement work with Power personnel and contractors at Ronald Reagan Washington National Airport Station.
- Observed RWP setup for a work zone shutdown between Grosvenor-Strathmore and Shady Grove stations.
- Evaluated conformance with established plans and procedures, based upon the above sources of information.
- Conducted an exit conference to explain initial findings and gather additional feedback and information from Metrorail personnel.





What the **WMSC** Found

# What the **WMSC** Found

**The WMSC observed instances of personnel not following rules related to watchman/lookout placement, placing work crews at risk.**

## Assessment of Previous Corrective Action Plans

The following corrective action plans relate to roadway worker protection, which corresponds with the scope of this audit:

### ► **C-0038 (Closed)**

*WMATA employees are not consistently following Roadway Worker Protection Rule 5.13.6 for watchman/lookout placement, placing work crews at risk.*

Metrorail instituted compliance checks and provided compliance evidence to the WMSC, leading to this CAP being closed; however, during this audit, the WMSC observed instances of personnel not following rules related to watchman/lookout placement, placing work crews at risk. Therefore, this audit determined that the correction is not being maintained and additional action is required. (See Finding 1.)

### ► **C-0039 (Closed)**

*SAFE has not conducted the biennial independent audit of RWP described in Section 3.3 of the RWP training SOP, and this audit responsibility is described only in Technical Skills Maintenance Training (TSMT) documentation.*

Metrorail includes its RWP program and related areas within its internal audit cycle and provided the schedule of its 2024-2027 Internal Safety Reviews, which notes RWP scheduled for 2025.

### ► **C-0040 (Closed)**

*RWP classes for Level II and Level IV and the requalification for both do not provide sufficient practical experience or testing to ensure that these workers who are critical to safe operations under RWP rules truly understand the importance and function of key safety equipment.*

During this audit, WMSC personnel observed that although practical exercises and testing are now required due to the corrective action taken by Metrorail as part of this CAP, the practical exams are not being completed consistently by trainees, which can lead to inconsistencies in application in the field. This CAP was fulfilled by instituting a process and procedure; however, the implementation of the process and procedure is incomplete. (See Finding 9.)

### ► **C-0041 (Closed)**

*WMATA employees are not consistently following Personal Protective Equipment (PPE) requirements for personnel entering or traversing WMATA's roadway.*

Metrorail developed a Roadway Safety Compliance checklist for all groups to use when entering the roadway, which requires that PPE is discussed and verified during the Roadway Job Safety Briefing. Metrorail also conducted an awareness campaign of







**The WMSC identified that the process for testing of high-voltage electrical safety gloves has still not been developed.**



PPE requirements. However, during this audit, WMSC personnel observed Metrorail personnel not consistently following these PPE requirements. Other personnel informed the WMSC that they do not always follow these safety requirements. The WMSC informed the Department of Safety of PPE issues during the audit. (See Finding 1.)

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► **C-0042 (Open)**

*WMATA employees are not consistently following RWP Rule 5.12 for equipment calibration.*

At the time of this audit, this CAP remained open and in progress. C-0042 requires Metrorail to review all safety equipment used on the roadway that requires calibration, inspection, or testing, and create a procedure to properly address the calibration for this equipment.

The WMSC reviewed calibration records for the Warning Strobe and Alarm Devices (WSADs) as part of this audit and did not identify further issues. However, during CAP verification document review, the WMSC identified that the process for testing of high-voltage electrical safety gloves has still not been developed. As a result, Metrorail has committed to providing a high-voltage electrical safety glove calibration tracking process by August 2024.

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► **C-0043 (Closed)**

*WMATA does not have a clear definition of a train “in approach” to a foul time area, which leads to inconsistent use of checklists and inconsistent radio communication that could cause a train operator to be unaware of work crews on the tracks ahead.*

Metrorail updated its rules to define “train in approach,” updated its foul time checklist and updated the RWP training curriculum to include these items in the training.

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► **C-0044 (Closed)**

*WMATA’s TSMT department has not reviewed its RWP SOP annually as required.*

Metrorail reviewed the procedure as part of the corrective action plan to address this finding. During this audit, as part of verifying this corrective action plan, the WMSC found that the training department, Technical Skills Maintenance Training (TSMT) which was recently merged with Technical Training and Development (TTDV), had not reviewed its procedure as required since reviewing it to address this CAP. (See Finding 4.)



► **C-0045 (Closed)**

The responsibility for RWP contractor training does not follow the RWP SOP Section 2.2.

Metrorail has created a separate program for RWP contractor training within the Department of Safety. This training includes separate training materials and courses specifically designed for contractors. This audit identified inconsistencies with the contractor training. (See Finding 11.)

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► **C-0046 (Closed)**

*Practical exercises and testing in RWP classes are not standardized, which could lead to workers getting Level II or Level IV certification without proper instruction.*

Metrorail developed an Instructor Guide with examples of practical exercises to properly train personnel, however, during this audit WMSC personnel observed in training courses that although practical exercises have been included in the relevant courses, not all individuals were completing all practical exercises that may be relevant to their job duties and safety on the roadway. (See Finding 9.)

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► **C-0047 (Closed)**

*RWP Instructors are not consistently participating in required three-hour experiential visits in the ROCC as specified in Section 7.5 of the RWP SOP.*

Metrorail personnel had been conducting these visits based on this corrective action beginning in 2021 and provided evidence of such to the WMSC; however, during this audit, WMSC personnel observed that Metrorail is not following its SOP to ensure that its instructors maintain the required understanding of field activities. Metrorail added to its procedures that these activities may be suspended due to the COVID-19 pandemic; however, after the pandemic was declared over and restrictions lifted, there was no formal schedule, tracking, or requirement for these activities to resume. (See Finding 10.)

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► **C-0048 (Closed)**

*WMATA has not submitted the RWP SOP and other relevant material to SAFE and MTPD for review as required.*

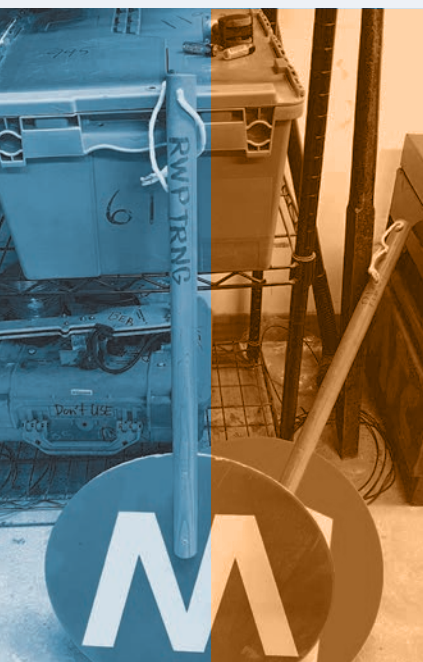
In response to this CAP, Metrorail submitted the Roadway Worker Protection Training Standard Operating Procedures (Revision 14), which included MTPD and SAFE sign-off on the procedure.

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► **C-0164 (Closed after completion of audit)**

*Metro Transit Police Department 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 Metro Transit Police Department created and submitted its own RWP Standard Operating Procedure (MTPD-TA-SOP 001-00). Course content and materials are described as being aligned with the main RWP training content and materials, but these items were still in review during this audit. This was closed in July 2024.

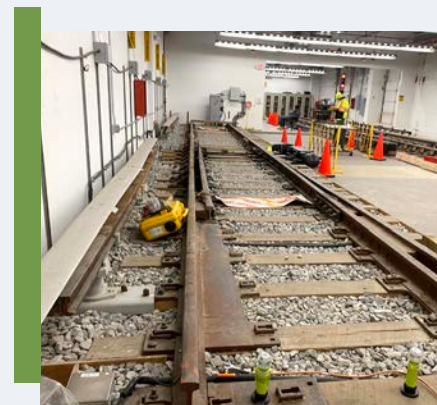
### ► C-0193 (Open)

*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.*

Metrorail issued a Safety Bulletin, B 22-12-B, dated December 14, 2022 advising all personnel that previously printed versions of rulebooks are obsolete and must be removed from Metrorail facilities. The bulletin also advised that current temporary and permanent orders are maintained with the rule books and obsolete orders must be removed from Metrorail facilities. The Department of Safety then completed spot checks to ensure that older rulebooks were removed. However, during this audit, the WMSC identified, through site observations, that RWP instructors were informing personnel to retain no-longer-in-effect rulebooks. (See Finding 4.)

## Positive Practices

- The roadway job safety briefing given in the presence of WMSC personnel at Herndon Station prior to the start of work was conducted in full and the paperwork was accurately completed. Finding 1 of this report identifies inconsistencies with the roadway job safety briefings in other roadway crews.
- Metrorail has sufficient training facilities and indoor and outdoor spaces for conducting practical exercises for training personnel prior to entering the actual roadway.
- Despite previous issues (see open CAP, C-0042), front-line personnel in interviews were aware of the need for Warning Strobe and Alarm Devices (WSADs) to be calibrated and that the calibration must be checked before each use.
- During interviews and observations, the RWP training instructors demonstrated that they were well-versed in the training materials and subject areas.
- Metrorail has created new Contractor RWP training materials including Spanish-language materials. Although some issues were found with this course's materials (see Finding 11 of this report), the detailed work required to build this program specific for contractors and Spanish-speaking workers is acknowledged.



**Metrorail has sufficient training facilities and indoor and outdoor spaces for conducting practical exercises.**

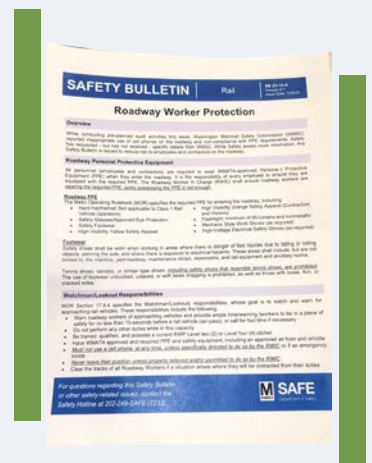


- Metrorail is developing long-term plans to improve training and instruction for roadway workers. Metrorail management responsible for this area stated they wanted the training to be more robust and interactive.

## Immediate Actions and Mitigations During the Audit

During this audit, the WMSC notified Metrorail through discussion, and then in writing on December 13, 2023 of safety concerns related to deviations from Metrorail's safety requirements including improper personal protective equipment, and improper use (or absence of) watchmen/lookouts on December 6, 2023. The details of these issues and events are outlined in Finding 1 of this report.

The WMSC appreciates Metrorail taking initial actions on the feedback from the observations including the issuance of a Safety Bulletin SB-23-12-A, titled "Roadway Worker Protection" (Dated 12/06/2023) to attempt to mitigate the observed safety issues.







## **Findings** and **Minimum** Corrective Actions

**The Metrorail Operating Rulebook replaced the Metrorail Safety Rules and Procedures Handbook.**

Metrorail's rules for its Roadway Worker Protection (RWP) Program are outlined within the Metrorail Operating Rulebook referred to as the "MOR." The MOR replaced the Metrorail Safety Rules and Procedures Handbook (MSRPH) on September 1, 2023 and the MOR was, therefore, in-effect during this audit. MOR rule 1.6.1 states that "All employees of WMATA, regardless of rank or title, shall be knowledgeable of and abide by the rules set forth in this manual as well as rules and procedures contained in documents pertaining to their specific work assignments while working on or traveling within the Metrorail system whether on or off duty."

As outlined below, the WMSC identified multiple instances of nonconformance with Metrorail rules. Metrorail's Office of Operations Safety Oversight conducts inspections and field observations and these reports were included in the WMSC's review. The WMSC appreciates the efforts of this department to provide oversight and awareness of Metrorail's RWP program requirements. However, the identified nonconformances show that further review of, awareness of, and compliance with the rules is necessary.

## Findings and Minimum Corrective Actions

► **Finding 1: Metrorail is not effectively ensuring that its personnel on and around the roadway are consistently following the Roadway Worker Protection rules designed for their safety.**

During field observations for this audit, WMSC personnel identified instances of Metrorail's Roadway Worker Protection requirements not being followed. Metrorail established these rules to protect personnel from injury or death following two National Transportation Safety Board (NTSB) investigations in 2006, one near Dupont Circle and another near Eisenhower Ave. Between 2005 and 2010, eight Metrorail employees were struck and killed by oncoming trains while on the right of way.



The NTSB concluded that the probable cause of the 2006 Dupont Circle and Eisenhower Ave accidents was the failure of the on-track Metrorail employees to maintain an effective lookout for trains and the failure of the train operator to slow or stop the train until the train operator could be certain that the workers ahead were aware of its approach and had moved to a safe area. The NTSB concluded that "Washington Metropolitan Area Transit Authority Metrorail right-of-way rules and procedures did not provide adequate safeguards to protect personnel from approaching trains, that did not ensure that train operators were aware of the wayside work being performed, and that did not adequately provide for reduced train speeds through work areas" contributed to these accidents. (Accident No. DCA-06-FR-005, Railroad Accident Brief NTSB/RAB-08/01; Accident No. DCA-07-FR-004, Railroad Accident Brief NTSB/RAB-08/02).







**Metrorail's RWP Program lays out a uniform method of establishing on-track protection and other steps including personal protective equipment (PPE) required to mitigate hazards associated with working on the Metrorail right of way.**

Metrorail created an RWP program in 2010. Metrorail has made adjustments to the program since that time. Metrorail's RWP Program lays out a uniform method of establishing on-track protection and other steps including personal protective equipment (PPE) required to mitigate hazards associated with working on the Metrorail right of way, such as a person being struck by a rail vehicle or electrocution from the third rail.

In the years since 2010, when the Metrorail RWP program was created, there have been several near-miss collisions with roadway workers, including a 2016 safety event where two Federal Transit Administration (FTA) track inspectors were forced to jump out of the path of a train traveling at excessive speeds to avoid being hit near Ronald Reagan Washington National Airport Station. More recently, there have been additional near misses that include workers narrowly escaping a fatal collision, including events that occurred in 2021, 2022, and 2023. Examples of these near misses are highlighted from WMSC investigation reports as listed below.

- ▶ WMSC Investigation Report **W-0146** covered an event on November 17, 2021, in which track inspectors had to jump out of the way of an oncoming train on the Red Line between Fort Totten and Takoma stations when a train operator, with a Rail Supervisor in the operating cab, operated at full speed (up to 59 mph) despite having been informed that there were personnel on the roadway. The work crew did not have a properly positioned watchman/lookout that is required to provide ample time and warning to be clear of an oncoming train traveling at the highest speed in that area. The RWIC had designated themselves as the dedicated watchman/lookout but was performing other duties and assisting with the inspection
- ▶ WMSC Investigation Report **W-0164** covered an event on January 25, 2022, in which a Metrorail retaining wall inspection crew traversed a "red hot spot" on the Orange Line without the required roadway worker protection necessary to assure their safety from oncoming trains. Data system playback shows that two trains passed the hot spot location during the time the crew was walking in this segment. Neither train operator reported a near miss. The Watchman/Lookout and other members of the work crew also did not report any safety issues.
- ▶ WMSC Investigation Report **W-0175** covered an event on April 25, 2022, in which Metrorail Office of Emergency Preparedness (OEP) and Metro Transit Police Department (MTPD) personnel entered the roadway without permission and without roadway worker protection in place from Stadium-Armory Station while trains were moving through the area. This put the group at risk of being struck by an oncoming train. The operator of that train was permitted to proceed at normal speed because they had not been informed of personnel in the tunnel, and because the AMF had told them the group had not entered the roadway. The RWIC said in an interview that the work crew heard and felt the train approaching after the group was approximately 200 feet into the tunnel.
- ▶ WMSC Investigation Report **W-0182** covered an event on May 3, 2022, in which a Red Line train came upon a work crew without warning. The Metrorail track inspection crew had entered the roadway without permission or protection at Metro Center Station as they attempted to continue a track inspection toward Farragut North Station.



**Practical drift from these critical safety procedures places Metrorail personnel at greater risk of injury or death.**

- ▶ WMSC Investigation Report **W-0184** covered an event on June 15, 2022, where an Advance Mobile Flagger (AMF) at King Street Station, track 2, did not brief three train operators that personnel were on the roadway, resulting in a near miss involving one of the trains.
- ▶ WMSC Investigation Report **W-0287**, found that on April 26, 2023, a work crew on the Yellow Line near Eisenhower Avenue Station reported reaching a place of safety just before the train passed. The RWIC described feeling the wind and vibration and hearing noise and realizing that the train was moving fast and the crew had to quickly get on the safety walk. Metrorail rules require personnel to utilize a “need vs. speed” chart to place a watchman/lookout far enough ahead of the crew that they can reach a place of safety at least 15 seconds before a train traveling at the highest allowed speed in the area passes.

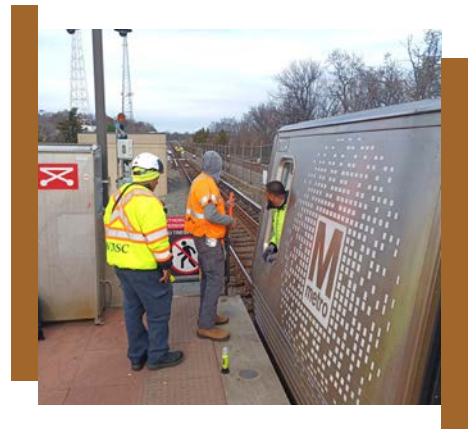
The RWP program includes layers of protection with multiple mitigations required to work in concert to reduce Metrorail’s risk to an acceptable level. Acceptance of routine non-compliance with these requirements, as evidenced by observations and interviews where personnel reported routinely not complying with watchman/lookout, personal protective equipment, and other RWP requirements, leads to further practical drift from these critical safety procedures which places Metrorail personnel at greater risk of injury or death.

The WMSC was accompanied by a Metrorail Department of Safety representative at each of the on-track observation activities. WMSC personnel noted the issues identified during the observations to the Department of Safety representative. Where necessary safety issues were immediately addressed so that the work could continue safely.

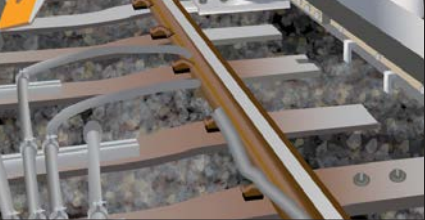
## **Personal Protective Equipment**

**Requirement:** MOR rule 17.11.1 states “WMATA PPE requirements apply to all personnel entering or traversing WMATA’s roadway. All PPE must meet or exceed Occupational Safety and Health Administration (OSHA) standards. OSHA standards are available at [OSHA.gov](https://www.osha.gov).” MOR rule 17.11.2 states “For safety and security reasons, all personnel (employees and contractors) shall wear WMATA approved and required PPE when they enter the roadway.”

Section 17.11.3 requires all personnel to wear, while on the roadway, a hard hat/helmet, safety glasses, safety footwear, and high visibility yellow safety apparel (orange for contractors/visitors) and section 17.22.6(d) states that “In addition to the PPE required, the following equipment is also required when performing the duties of an Advanced Mobile Flagger: WMATA approved flashing amber lantern/E-flare and orange flag; WMATA approved and calibrated working radio; WMATA approved air horn and whistle.” The MOR also specifically states that “18.3.5 Tennis shoes, sandals, or similar type shoes, including safety shoes that resemble tennis shoes, are prohibited.”







Although there are requirements for the types of PPE required while on the roadway, the WMSC witnessed multiple instances of nonconformance with those policies.



**Nonconformance:** Although there are requirements for the types of PPE required while on the roadway, the WMSC witnessed multiple instances of nonconformance with those policies. This included a lack of safety shoes, lack of eye protection, lack of hard hats, and a lack of an air horn where necessary. There was also a lack of understanding by some staff of the exact requirements for PPE as it related to their job duties. Instances of nonconformance to Metrorail's rules were:

- ▶ During the observations conducted on December 4, 5, and 9 of 2023, WMSC personnel observed separate crews not wearing the required safety glasses while on the roadway, specifically on the Red Line between Fort Totten and Brookland stations, near Herndon Station, and between Shady Grove and Grosvenor-Strathmore stations during the weekend shutdown work.
- ▶ During the observation near Herndon Station on December 5, 2023, one member of a track inspection crew passing through the area did not have the proper footwear (wearing instead what appeared to be tennis shoes).
- ▶ During the observation near Herndon Station on December 5, 2023, WMSC personnel observed two track inspection crew members not wearing hard hats.
- ▶ During the observations conducted on December 4, 2023 and December 5, 2023, WMSC personnel observed track inspection crews' watchmen/lookouts without an available air horn.
- ▶ During each of this audit's observations conducted by WMSC personnel, PPE nonconformances were observed. WMSC personnel noted these issues in real-time during the course of observations to the SAFE representative, as well as at the conclusion of each observation.

On February 15, 2022, at Rosslyn Station, an improper roadway worker protection safety event occurred [\(W-0171\)](#). The investigation found that an Office of Rail Transportation (RTRA) supervisor entered the roadway to retrieve an item that had been knocked onto the roadway by a Metro Transit Police Department (MTPD) officer. The supervisor entered the roadway without wearing appropriate personal protective equipment (safety vest) and was also wearing a backpack. Metrorail rules require personnel to wear required personal protective equipment including a safety vest and prohibit the wearing of items such as backpacks on the roadway that pose a snag hazard.

In an Internal Safety Review of the Office of Emergency Preparedness issued on January 23, 2024, Metrorail noted that "during a training course [provided] to Montgomery County Fire and Rescue personnel at the Shady Grove Rail Yard and Montgomery County Public Safety Training Academy on July 26, 2023, instructors did not verify proper eye protection and safety footwear were consistently utilized by participants as required in "Railcar Lifting for Fire Service Instructor Guide..." and during demonstration of Warning Strobe Alarm Device (WSAD) and Hot Stick utilization, the instructor did not provide or demonstrate proper use of high-voltage electrical safety gloves" as required.



**Crews were observed walking side-by-side as a pair, without a watchman/lookout positioned at least 50 feet in advance.**

## **| Watchman/Lookout and Advanced Mobile Flagging**

**Requirement:** MOR rule 17.2 (Roadway Worker Protection Cardinal Rule 4) states “There shall be dedicated Watchman/Lookout any time there is rail vehicle movement within any work zone, or when work is conducted on an “active” revenue track.” MOR rule 17.8.4 requires the watchman/lookout to only perform that duty (Defining a watchman/lookout as “Personnel whose sole duties are to act as an Advanced Mobile Flagger or to watch for approaching rail vehicles.”). In a Mobile Work Crew, “A Watchman/Lookout must be a minimum of 50 feet in advance of the Mobile Work Crew.” (Rule 17.22.2.)

**Nonconformance:** On December 5, 2023, WMSC personnel observed two track inspection crews. One crew was observed on approach to Herndon Station on Track 2 and the other was observed between East Falls Church Station and West Falls Church Station on Track 1. In both observations, two-person crews were observed walking side-by-side next to each other as a pair, without a watchman/lookout positioned at least 50 feet in advance of the mobile work crew as required.

**Requirement:** MOR rules 8.10.1 and 8.10.4 state that train operators entering an Advanced Mobile Flagging-protected area must proceed at half the regulated speed until they reach the next station and are to continuously blow their horns. Rule 8.10.4.2 requires the train operator to “blow the train horn continuously, in short blasts, until they encounter the mobile work crew.”

**Nonconformance:** On December 5, 2023, WMSC personnel observed multiple train operators proceeding through a work zone outside of Herndon Station without sounding horns continuously after being briefed by an Advanced Mobile Flagger. Other instances of noncompliance related to the above mentioned rules include 2023 safety events [W-0296](#) and [W-0297](#). During the first event, W-0296, a Training Instructor, operating an out-of-service train with train operator trainees aboard, was not briefed by an AMF, who had left their post. The train operated at full speed toward a work crew on the roadway and had to initiate emergency braking. During the second safety event, W-0297, a train operator operated their train at excessive speed (up to 47 mph) past a mobile work crew after dropping off a separate mobile work crew onto the roadway. The train operator mistakenly understood the Advanced Mobile Flagger briefing they received to be in regard to the work crew they were transporting to a work location, when it was regarding a crew that was already on the roadway.

**Requirement:** MOR rule 17.8.4(g) states that “The Watchman/Lookout shall never leave their position unless properly relieved and/or permitted to do so by the RWIC [Roadway Worker in Charge].” Rule 17.8.4(h), “A Watchman/Lookout will clear the tracks of all Roadway Workers if a situation arises where they will be distracted from their duties” and Electronic Device Policy – Policy/Instruction: 10.3/7,” which states that in rule 5.04 that “If job-related electronic device use is required to complete work activities, including on the roadway, where RWP certification or escorts are required, the individual must: (1) stop work activities; (2) address all hazards associated with the device use; and (3) use the device only in designated areas or an established safe zone.”





**The work crew did not clear the tracks while the watchman/lookout was using an electronic device.**

**This issue was also cited in safety event investigation W-0146 when a near-miss occurred as a train passed by a work crew at full-speed (59 mph).**

**Nonconformance:** On December 4, 2023, WMSC personnel observed a watchman/lookout on the Red Line between Fort Totten and Brookland stations stopped performing watchman/lookout duties and moved to a place of safety on the roadway to take a phone call. The work crew did not clear the tracks while the watchman/lookout was using an electronic device. Rule 17.8.4.h requires a watchman/lookout to clear the tracks of all roadway workers if a situation arises where they will be distracted from their duties.

**Requirement:** MOR rule 17.22.6 states that Advanced Mobile Flagging Procedures include a requirement that once the rail vehicle is stopped and the rail vehicle operator has initiated and confirmed the train doors have opened on the platform side, the Advanced Mobile Flagger will provide face-to-face instructions to the rail vehicle operator. Advanced Mobile Flaggers shall read the script as follows: "There may be multiple work groups ahead. Proceed at half your regulated speed until you reach the next station. Continuously blow your horn. Reduce speed to 15-mph when observing and passing all work crews. Current AMF procedures govern you." The MOR rule 8.10.4, under Advanced Mobile Flagging Procedures, states "The Rail Vehicle Operator will depart the station at half the regulated speed until the Rail Vehicle Operator reaches the next station, staying alert for multiple work crews."

**Nonconformance:** While conducting observations, WMSC personnel witnessed trains operating at greater than half the regulated speed between stations where mobile work crews were present, and passing work crews at greater than the required 15 mph. WMSC staff reviewed internal Advanced Mobile Flagger inspections conducted by Metrorail personnel between July 2022 and November 2023 that demonstrated that during these inspections it was found that train operators were not maintaining half the regulated speed on 34 occasions out of 163 observations. The Department of Safety noted in one check that in an Advanced Mobile Flagging work zone trains operated as fast as 65 mph when the operator should have been proceeding at or below 33 mph. In the log of that event, the status is simply listed as "Closed" and the Recommended Corrective Action was blank. This issue was also cited in safety event investigation **W-0146** when a near-miss occurred as a train passed by a work crew at full-speed (59 mph) on the Red Line between Fort Totten and Takoma stations on November 17, 2021.

Two other improper roadway worker protection safety events occurred in June of 2022 (**W-0184** and **W-0185**), both occurring at King Street Station, and both identified issues with Advanced Mobile Flaggers (AMF) not properly briefing train operators that personnel were on the roadway. In **W-0184** this resulted in a near miss involving one of the trains.

On March 1, 2024, the Advanced Mobile Flagging procedures were updated to remove the 'half the regulated speed' requirement. This change took effect after the completion of this audit; therefore the assessments of noncompliance reflect the rules in place at the time audit work was conducted.

Interviews identified that the logbook was not being consistently completed. The logbook was also not available for review.



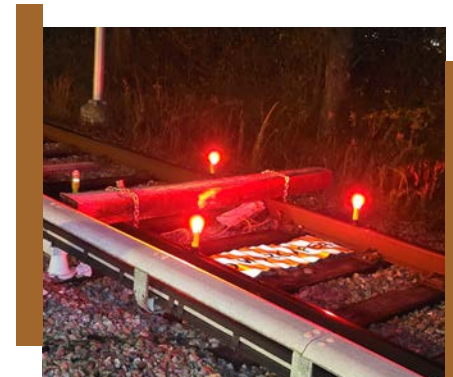
## Roadway Access and Clearing the Roadway

**Requirement:** MOR rule 17.2 (Roadway Worker Protection Cardinal Rule 6) states that “There shall be no clearing of roadway workers or equipment to any track any time.”

**Nonconformance:** On December 5, 2023, WMSC personnel observed a roadway-worker-in-charge allowing their crew to clear to an adjacent track near Herndon Station. The crew was allowed to clear to a storage track which was not in use. Although the adjacent track was a side or storage track, RWP Cardinal Rule 6 does not include any exceptions and uses the word “any” track. This understanding of the rule was confirmed with the Director of the Office of Operating Practices who advised that the crew should not have cleared to the adjacent track as observed.

**Requirement:** MOR rule 17.17.9 states that “Documentation must be recorded on the Foul Time Logbook and communicated to all affected Roadway Workers” and rule 17.21.2 states “Prior to granting authorization, the RWIC of the working limits must: a. Perform a Roadway Job Safety Briefing with the employee-in-charge of the Piggyback Work Crew and the Roadway Workers who were part of the original work group; b. Verify that the employee responsible for protecting the additional work group is qualified as an RWIC; c. Complete a Form O – Joint Occupancy of Working Limits form.”

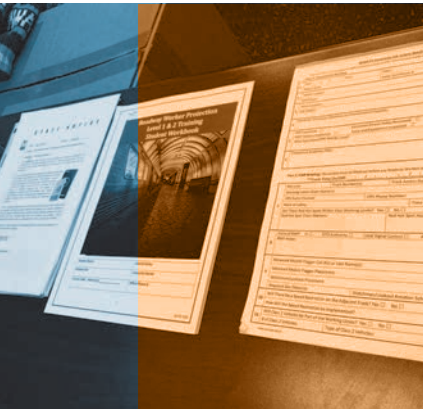
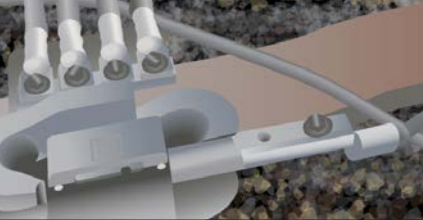
**Nonconformance:** For foul time, personnel must complete a “Foul Time Record and Form O Logbook” which indicates the time of the request, and the time on to and off the tracks. The logbooks are not collected or reviewed for completion by Metrorail personnel. Interviews identified that the logbook was not being consistently completed. The logbook was also not available for review or completion during the December 4, 2023 Red Line track inspection or the shutdown activity near Shady Grove on December 9, 2023.



Other safety events related to improperly accessing the roadway:

- ▶ On February 17, 2022, at Shaw-Howard U Station, an improper roadway worker protection safety event occurred ([W-0172](#)). The investigation found that a work crew had properly obtained permission to enter the roadway and walk each segment from Union Station to Metro Center Station; however, the work crew then continued from Metro Center Station toward Farragut North Station without contacting the Rail Operations Control Center (ROCC) or their Advanced Mobile Flagger (AMF). To conduct such an inspection safely, roadway workers are required to contact both the ROCC and AMF and to receive confirmation it is safe to enter the roadway prior to entering the roadway.
- ▶ On April 25, 2022, near Stadium-Armory Station, an improper roadway worker protection safety event occurred ([W-0175](#)). The investigation found that Metrorail Office of Emergency Preparedness (OEP) and Metro Transit Police Department (MTPD) personnel entered the roadway without permission and without roadway





worker protection in place between Potomac Ave Station and Stadium-Armory Station. The work crew was not using the specified operational radio channel for all communications, and instead used a second set of radios on the MTPD channel for some communications. The work crew also did not use 100 percent repeat back of radio transmissions.

- ▶ On February 26, 2023, at Wheaton Station, an improper roadway worker protection safety event occurred during a full-scale emergency exercise (**W-0234**). The investigation found that a rail supervisor, who was part of the exercise on Track 2, entered the adjacent active passenger track (Track 1, 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 entered Track 1 at the direction of the exercise rail traffic controller without required protection in place.
- ▶ On April 23, 2023, at Congress Heights Station, a serious injury safety event occurred (**W-0248**). The investigation found that an Office of Rail Transportation (RTRA) supervisor was injured after deliberately exiting a Green Line train from the rear bulkhead door, contrary to Metrorail safety procedures. The supervisor intentionally exited a rail car and entered the roadway without the required authorization or roadway worker protection.

## Roadway Job Safety Briefings

**Requirement:** MOR section 17.5.2 requires that the roadway job safety briefing form be completed in full prior to entering the roadway.

**Nonconformance:** The roadway job safety briefing forms reviewed during this audit were missing information, including: the Advanced Mobile Flagging information (ID and Locations); the on and off times; the type of protection; the time of the briefing; the Hot Spots; Red Tag numbers; the place of safety; and the time to reach the place of safety. Some forms were also missing worker signatures that are required by Metrorail for a safety briefing to be completed.

On September 9, 2021, near Court House and Rosslyn stations, an improper roadway worker protection safety event occurred (**W-0142**). The investigation found that the roadway job safety briefing, which was conducted separately with different members of the crew, was not clear on work zone hazards and the work zone's designated working limits. A work crew was on the roadway approximately 3,500 feet beyond their authorized working limits and therefore outside the protected area.

In one internal Metrorail review of the Information Technology department, Metrorail noted that for this specific group "Quality reviewed 18 RJSB forms between 12/19/2022 and 06/20/2023 and noted that all 18 RJSB forms (100%) are not completely filled and are missing required information." A field assessment report compiled by SAFE looking at

Roadway job safety briefing forms reviewed during this audit were missing information including hot spots, red tag numbers, the place of safety, and the time to reach the place of safety.

Identifying as an area for improvement that Metrorail has “no auditing program that examines the effectiveness of our RWP standards.”

Metrorail of Work Planning and Maintenance Improvement activities from October 2023 to December 2023 found that of the three activities observed, none used roadway job safety briefing forms as required and again indicated 100% non-compliance.

The Metrorail Department of Safety's Office of Safety Oversight (OSO) also completes inspections related to RWP. For this audit, the WMSC requested Metrorail “Provide any/all RWP Field Audits or Supervisory Audits/Checks conducted by The Department of Safety for the period of January 1, 2021 to November 1, 2023. Provide the procedure which defines the frequency and scope of such audits.” Metrorail provided a list of 389 completed inspections from June 1, 2022 to May 31, 2023. Metrorail only provided Procedure Number: 4121-3-02/01, Safety Inspections, dated June 8, 2023. The scope of this SOP states that it applies to Safety Department work to ensure Metrorail facilities are equipped with adequate applicable fire prevention systems. This SOP mentions that for the personnel conducting the inspections “All RWP rules and regulations shall be followed as outlined in RWP guidelines,” however it does not cover inspections of RWP compliance, and does not specify the frequency, timing, scope or methodology of any inspections related to RWP. Metrorail provided no procedure to monitor the effectiveness of and compliance with its RWP program.

Metrorail confirmed this gap via gap analysis of Metrorail's program against Federal Railroad Administration on-track safety program requirements for railroads regulated by the FRA, identifying as an area for improvement that Metrorail has “no auditing program that examines the effectiveness of our RWP standards.”

It is positive that Metrorail has identified these gaps, and that it has conducted some inspections, however, as demonstrated by recurring near-misses of collisions and the consistent observations during this audit of noncompliance with safety requirements, the scale of these inspections, departmental supervisory oversight, and any resulting corrective actions have not been sufficient to ensure that rules designed to mitigate the risk of collisions, serious injuries, and fatalities are being implemented as designed.

#### ♦ **Minimum Corrective Action:**

Metrorail must ensure appropriate safety promotion and awareness for personnel to understand the safety implications of unauthorized deviations from documented roadway worker protection requirements. Metrorail must also develop and implement a systematic process that ensures compliance with roadway worker protection rules. This process must incorporate regular RWP rules compliance checks and monitoring on an ongoing basis to check compliance and gather data on compliance by departmental supervisors, managers, the safety department, and other personnel. This process must include data analysis from these RWP safety performance checks, regular identification of trends, identification of and completion of needed corrective action, and ongoing validation and analysis of RWP rule-compliance program effectiveness. An example of such a program can be found in the US Code of Federal Regulations under 49 CFR Section 217.9.





**'Quick Access Guides' or 'Track Access Guides' were not being provided during RWP Training as required.**

► **Finding 2: Metrorail is not providing its personnel with up-to-date and accessible information about the locations where additional Roadway Worker Protection is required to prevent serious injury or death.**

Metrorail is not providing its personnel with a current Quick Access Guide (also referred to as its Track Access Guide) that provides safety information required for job safety briefings and to enable safe access to the roadway. Metrorail personnel rely on outdated information about the locations of "hot spots" where Metrorail has identified additional roadway worker protection is required, such as the use of foul time. This is in addition to the hazard described in Finding 5 regarding Metrorail not identifying hot spots required by its rules.

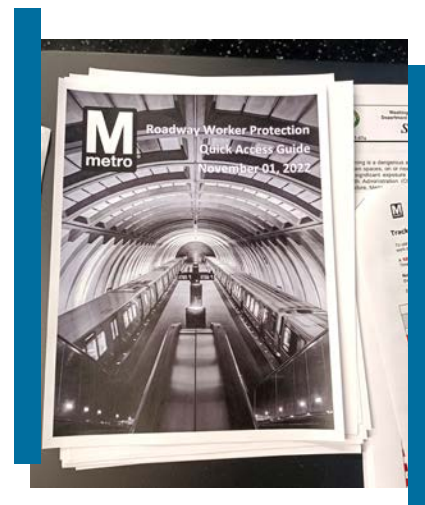
Not keeping this document up to date (also see Finding 5), not providing current safety information to personnel, and the lack of document control puts personnel at risk.

**Requirement:** MOR rule 17.26.3, states "RWICs [Roadway Workers in Charge] shall review the Track Access Guide to determine all Hot Spots contained within their working limits." OPMS-TSMT-101-17, Roadway Worker Protection Training SOP, section 6.5.4, states that "During the initial RWP training, each employee attending will be issued a copy of the current Quick Access Guide. Signing the Class Roster acknowledges receipt of the Quick Access Guide and awareness of how to access the relevant sections of the MSRP Section 5."

**Nonconformance:** At the time of the audit observations, the 'Quick Access Guides' or 'Track Access Guides' were not being provided during RWP Training as required in the RWP training SOP. During the courses observed by WMSC personnel at the Carmen Turner Maintenance and Training Facility on December 6 and 7 of 2023, students requested the current Quick Access guides and were instructed to obtain them from their direct supervisors in contradiction to the RWP training SOP.

Personnel throughout the audit including personnel who were observed in the field, who were observed in training at Carmen Turner Facility, and during interviews, provided varying information on the guide currently in use and had various versions with them. Various versions of the guide including booklets dated August 2022 and earlier were cited by personnel when asked.

One Senior Director within the Department of Safety was not aware that the hot spot information contained in these guides had been removed from the Metrorail Operating Rulebook, and initially believed that the MOR still provided another way to access the relevant information. A January 2023 version stated the system map, which this version of the guide was based on, was last updated in December 2013, despite significant system changes since that time.



In RWP training classes that had the guides present, an 8.5" x 11" unbound copy dated November 2022 was used. Personnel could reference those in the class, but these were also outdated. Personnel were not provided with a copy of the guide for use in the field as required by Metrorail procedure. In addition to other changes, none of these guides referenced Metrorail's current MOR and the guides did not include hot spots specified in Metrorail rules such as no clearance areas at Potomac Yard station and restricted view curves on the Yellow Line (see Finding 5). There are no notes about the unique hazards in the area of Potomac Yard Station due to the deep spaces between grout pads.<sup>1</sup> In addition, the guides had not been updated to include prior changes, such as the restoration of tracks outside of Ronald Reagan National Airport station that had at one time been removed from operation. Some guides personnel were relying upon were missing sections of the rail system such as parts of the Orange Line in Virginia, and the guides did not include the track layout and interlocking at Potomac Yard Station.

♦ **Minimum Corrective Action:**

Metrorail must ensure that only current copies of its Quick Access Guide/Track Access Guide are available and in use and provide this current document to all RWP-qualified personnel. Metrorail must establish a process, such as recording the revision date relied upon, on job safety briefing forms and checking for the presence of a current guide during regular supervisory oversight, to validate that only current safety instructions are being relied upon. Metrorail must ensure that the number of copies printed of each update to its Quick Access Guide/Track Access Guide is sufficient for the number of RWP-qualified personnel.

<sup>1</sup> Grout pads are the additional concrete on which direct fixation track sits. It is the raised rectangular concrete that the tracks are clipped to when not on ballasted roadbed.

**The requirement to have a hazard log for each functional area is included in the current PTASP and has been included in WMATA's previous Safety Plans.**

► **Finding 3: Metrorail is not systematically identifying, tracking, and mitigating hazards related to Roadway Worker Protection as required by its Agency Safety Plan.**

**Requirement:** Metrorail's PTASP (in both Rev. 3.0, in effect during the audit, and the current, Rev. 4.0) states in section 3.1.1 that it will review historical safety performance, current safety performance, and anticipated safety performance to identify hazards. In addition, Metrorail states that it will regularly monitor and collect information from a variety of sources including external agencies, employee safety reporting programs, inspections or audits, investigations, safety committees, safety performance indicators, data analysis, and industry data. The requirement to have a hazard log for each functional area is included in the current PTASP and has been included in WMATA's previous Safety Plans including in section 1.7 of the WMATA Transit Agency Safety Plan, dated October 8, 2020.







**Nonconformance:** In the WMSC's initial document request, the WMSC requested Metrorail to "Provide the roadway/wayside worker protection hazard log as of October 6, 2023. If there are multiple hazard logs that relate to roadway/wayside worker protection provide each log." In a response to a draft of this audit, Metrorail stated that the hazard log submitted to the WMSC in response to this request "does not include hazards outside of the scope of the RWP Program, such as electrical hazards, which are covered under the Electrical Safety Program." Electrical hazards are a part of the RWP training curriculum and directly relates to roadway worker safety. Metrorail did not submit any additional hazard logs related specifically to electrical hazards. On November 6, 2023, Metrorail provided a list of some risks or issues based on the Rail Operations Control Center's feedback or observations in a document titled "ROCC RWP Risk Export." The list included hazards such as signage issues, training deficiencies, and an updated Advanced Mobile Flagging procedure. All of these are hazards related to RWP generally, but they were focused only on the control center personnel and therefore, did not attempt to address all possible hazards related to RWP. Those hazards did not focus on the RWP program. Interviews with personnel from the Office of Operating Practices confirmed that no further hazard log or dashboard existed, and Metrorail had not identified, tracked, or mitigated any other hazards related to Roadway Worker Protection, despite Metrorail working on potential significant changes to its program. These changes were stopped due to gaps in the procedures.

In 2023, Metrorail temporarily halted the roll out of these significant changes because the revisions did not address known hazards. Personnel being trained on these revisions identified safety concerns introduced by the planned changes. WMATA stated to the WMSC that the roll out was also slowed because of the need for additional time for training instructors to become familiar with the new program, (2) updating existing training, and (3) recognizing that a piecemeal approach would be more effective for adult learning. The safety gaps in the procedures made providing the training challenging. Metrorail had not developed the changes based on identification and consideration of each of the hazards that Metrorail's existing rules were designed to mitigate. The need to change these programs at that late stage demonstrates the importance to safety and operational needs of hazard identification, tracking, and mitigation as provided for in Metrorail's Agency Safety Plan.

After this audit's exit conference, Metrorail provided a hazard log (provided on February 20, 2024) related to RWP, which covered certain RWP hazards and potential mitigations for these hazards. While Metrorail has worked to identify hazards related to RWP, the hazard log provided does not meet the requirements listed in Metrorail's Agency Safety Plan. This hazard log included items such as obstruction of places of safety, transfer of authority between roadway workers in charge, watchman/lookout training, delivery of roadway worker protection training, rules governing the use of mobile command, and radio usage. The sources for the hazards were noted as being provided by various departments/working groups within Metrorail based on meeting records (conducted in November and December 2023), which although positive, did not consider all data sources required as identified within Metrorail's PTASP and does not constitute regular monitoring or collection of information.

**Metrorail had not developed the changes based on identification and consideration of each of the hazards that Metrorail's existing rules were designed to mitigate.**

♦ **Minimum Corrective Action:**

Metrorail must ensure that it is identifying, prioritizing, and effectively mitigating hazards related to its Roadway Worker Protection program by implementing its safety management system for these areas as specified in its Agency Safety Plan. This must include implementation of procedures for hazard identification and analysis related to the Roadway Worker Protection Program to ensure the identification of hazards, using all possible data sources to facilitate trend analysis that enables the prevention of recurring incidents. Metrorail must ensure that this trend analysis is being conducted and that mitigations are reviewed for effectiveness on a regular basis. Consistent with Metrorail's requirements, RWP program or rule changes that affect RWP must undergo a hazard analysis that includes review of any prior mitigations that may be affected by such a change.

► **Finding 4: Metrorail is training and qualifying personnel on outdated Roadway Worker Protection-related procedures and rules.**

Metrorail's current rules are in the Metrorail Operating Rulebook. Roadway worker protection qualification tests, instructional materials used in classrooms, training procedures, and other materials submitted by Metrorail and reviewed during this audit referred to outdated and superseded rules that no longer apply.

Some of the supporting procedures that are based on this outdated material are also past-due for review, such as OPMS-TSMT-101-17 (the RWP training SOP), which was last reviewed in 2021.

**Requirement:** The MOR states in the Introduction that "This Metrorail Operating Rulebook supersedes and replaces all previous versions of the Metrorail Safety Rules and Procedures Handbook. This rulebook governs and guides all other rules and procedures and should be adhered to by personnel."

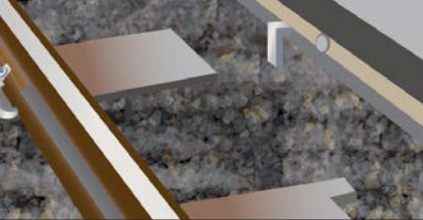
**Nonconformance:** Metrorail released the MOR in September 2023, and it was in-effect during this audit; however, multiple instances of referring to older rules were observed by WMSC personnel.

Examples of this nonconformance observed in practice:

- The current RWP training SOP (OPMS-TSMT-101-17, Roadway Worker Protection Training) references the MSRPH, an outdated rulebook that is no longer in-effect (having been replaced by the MOR in September 2023). This SOP also states "This SOP will be reviewed annually. The training course materials will be reviewed at least once every three years. Changes to the material will follow the guidelines set forth in section 13.4 of this SOP." In this SOP's change record there have been no updates since 2021.

**Qualification tests, instructional materials used in classrooms, training procedures, and other materials submitted by Metrorail and reviewed during this audit referred to outdated and superseded rules that no longer apply.**

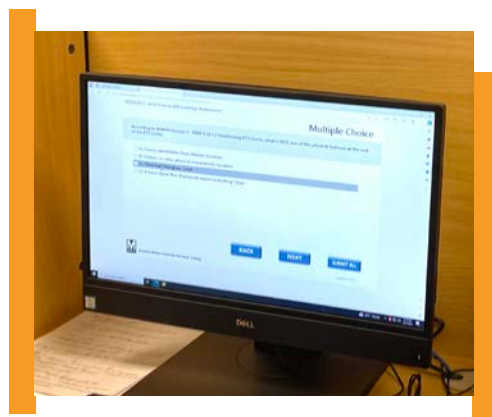




**Metrorail must review and update training materials to eliminate conflicts or outdated information.**



- ▶ On December 7, 2023, WMSC personnel observed, at the Carmen Turner Maintenance and Training Facility, that none of the current computer-based training and testing materials have been updated to reflect the MOR. Students are provided with a crosswalk to compare between the MSRPH and the MOR; however, these are two entirely different sets of rulebooks and the MSRPH is no longer in-effect. After the WMSC identified and communicated this observation to WMATA, Metrorail began to ensure that the computer-based testing materials were updated to reflect the current rules.



- ▶ During the December 7, 2023 observation, RWP training attendees were instructed to maintain their old rulebooks because the prior (then no-longer-in-effect) rules were better laid out with more information, diagrams of the roadway, and included the access guides within them.
- ▶ Classrooms at the Carmen Turner Maintenance and Training Facility contained outdated materials being used for RWP training. This material included the older track access guides and work zone setup diagrams posted in the classroom.

The WMSC acknowledges and appreciates the efforts to correct some of the issues during the audit including removing outdated materials and posters after the issue was brought to Metrorail's attention. The computer-based training materials are in the process of being updated; however, the issues noted still show the need for review and coordination to ensure that personnel are being trained on the current rules. After completion of this audit, WMATA issued SARE-05-0007 'Roadway Worker Protection Training SOP' on June 5, 2024, which significantly updated the previous RWP training SOP referenced in the audit report. This updated SOP references the MOR and no longer references the Metrorail Safety Rules and Procedures Handbook (MSRPH). The issuance of this updated SOP had been required by a previously issued WMSC corrective action plan (C-0164).

#### ♦ **Minimum Corrective Action:**

Metrorail must review and update training materials to eliminate conflicts or outdated information. Metrorail must also ensure that as future rule changes occur, they are coordinated with the training department and incorporated into training and qualification materials concurrent with the new rules in accordance with a documented procedure.

**Metrorail has no process or procedure to identify the hot spots that already exist or that may be introduced due to configuration changes.**

► **Finding 5: Metrorail has no process to ensure that areas requiring additional Roadway Worker Protection are accurately identified on an ongoing basis.**

During this audit, the WMSC requested any existing Metrorail process or procedure to ensure that permanent hot spots are properly identified in accordance with Metrorail rules and then communicated to Metrorail personnel. No such process or procedure was provided.

Prior to this audit, during other oversight activities in spring 2023, the WMSC identified hot spots on the Yellow Line (L Line) that Metrorail had not previously identified and communicated to personnel. This curve that restricts visibility in the area south of L'Enfant Plaza Station has existed since the track segment opened in the 1980s. This was conveyed to Metrorail's Chief Safety Officer on May 5, 2023. Metrorail implemented immediate mitigations as directed, and began a more detailed review.

As a result, on September 16, 2023, Metrorail implemented Permanent Order (PO) 23-25, to "designate specific areas on the L-line between Chain Markers L1 56+50 to L1 72+00 and from Chain Markers L2 59+25 to L2 66+50 as "Hot Spots" due to inadequate sight distance in the curve following tunnel lighting upgrades." This implemented the permanent "hot spot" designation for this pre-existing curved tunnel area with restricted view that was a hazard for roadway workers. This location was not identified and communicated to roadway workers, in part, because Metrorail has no process or procedure to identify the hot spots that already exist or that may be introduced due to configuration changes. Therefore, Metrorail must take systemic steps to determine whether other hot spots requiring additional roadway worker protection exist and to include such areas in Metrorail's track access guides.

**Requirement:** The MOR defines Hot Spots (in its glossary) as "locations on the railroad where additional Roadway Worker Protection is required. These physical locations include a variety of conditions: 1. Curves with limited visibility.; 2. Tunnels with limited and close clearance.; 3. Track locations with heavy outside noise.; 4. Track locations with limited or no clearance.; 5. Bridge locations with limited or no clearance.; 6. Track locations with limited or no visibility due to obstructions.; 7. Weather (i.e. fog, heavy rain, snow, etc.)" MOR rule 17.26.3 also states that "RWICs shall review the Track Access Guide to determine all Hot Spots contained within their working limits."







**Metrorail has no procedure to evaluate the system, including identifying and documenting these Hot Spot conditions throughout the system.**

**Nonconformance:** Metrorail has no procedure to evaluate the system, including identifying and documenting these Hot Spot conditions throughout the system. Therefore, RWIC's may be unaware of identified Hot Spots or Hot Spots that should be so identified. In the past, Metrorail has identified specific areas that were then addressed through directives and orders, for example, Permanent Order (PO) 23-25 noted above. In addition to not receiving a process or procedure after such was requested, the lack of a process or procedure was also confirmed in interviews. In response to a draft of this report and although no written procedure exists regarding evaluation, Metrorail stated it conducted reevaluation of the entire system in 2022 and 2023. During the audit, personnel stated that the focus of that review was whether already identified hot spots needed to remain designated as requiring Foul Time or greater protection for mobile work crews.

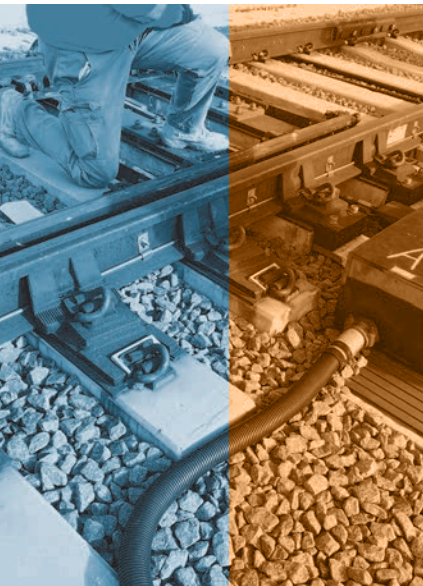
♦ **Minimum Corrective Action:**

Metrorail must conduct a one-time assessment of the Metrorail system as it exists today to determine whether there are any additional hot spot locations that require foul time (or greater protection) in accordance with its rules and procedures. Then, after this one-time assessment, Metrorail must establish and implement a process that evaluates defined configuration changes going forward to determine whether such defined configuration changes resulted in a hot spot. As new hot spots are identified, Metrorail must communicate those to personnel through safety promotion activities and document updates.

► **Finding 6: Metrorail directs its personnel to use forms of protection without training on the proper use of the protection. Specifically, Metrorail has no training or qualification related to local control. This contributes to an inconsistent application of Roadway Worker Protection rules.**

**Requirement:** Local control is defined by the MOR as "A method of establishing exclusive track occupancy working limits using controlled signals that are placed under the exclusive control of Automatic Train Control (ATC) personnel." MOR section 17.19.7 states that "Automatic Train Control Maintenance employees who take local control must be qualified on the operating rules, all operating functions of the local control panel, and the physical characteristics of the interlocking." Several months prior to the audit, Metrorail published Permanent Order 'PO 23-35', containing updates to Local Control operating rules.





**The WMSC requested RWP-related training materials, and, specifically local control training materials; however, Metrorail did not provide any training materials related to local control.**

**Nonconformance:** During onsite observations at Herndon Station, as well as during interviews, personnel stated that Metrorail did not provide training to personnel on the use of local control. Personnel the WMSC spoke to during this audit, who are regularly directed to rely on this form of protection, explained that their understanding of this protection was something they developed on their own. According to these personnel, they typically do not carry out all requirements of Metrorail's rules. This form of protection is briefly referenced in RWP training materials, and instructors state this is taught by ATC personnel. The WMSC requested RWP-related training materials, and, specifically local control training materials; however, Metrorail did not provide any training materials related to local control. An example of the risk associated with this nonconformance is covered by WMSC Investigation Report **W-0298** from June 8, 2023, in which a train was improperly routed by Automatic Train Control Maintenance personnel into an area of track occupied by wayside workers who had been provided foul time protection by a Rail Traffic Controller, after the Automatic Train Control Maintenance (ATCM) Local Control Panel Operator improperly retook local control of an interlocking near Federal Center SW Station. The ROCC notified the RWIC that the ROCC needed control of the interlocking to give Foul Time protection to a Rail Supervisor to retrieve a customer's cell phone from the roadway at L'Enfant Plaza Station, and instructed personnel to standby in a place of safety. Before the Rail Supervisor relinquished Foul Time and before the ROCC gave permission for the ATC crew to take control of the panel and without instruction from the RWIC, the panel operator retook local control and allowed a train to pass through the interlocking, risking collision with the Rail Supervisor.

Further, Metrorail has no such physical characteristics training or qualification program as mentioned in the MOR. Metrorail is required to establish this training for operations personnel under CAP C-0183 and must do the same for personnel using local control.

♦ **Minimum Corrective Action:**

Metrorail must develop a formal training and qualification program for local control that includes processes, standards, training materials, assessments, and a structured on-the-job training program to ensure that personnel including the roadway-worker-in-charge, control panel operator, watchman/lookout, and other personnel in the work crew carry out their safety responsibilities as required. This training must also include physical characteristics of interlockings. Metrorail must ensure that personnel who need to use this protection method are trained in accordance with the new procedure.



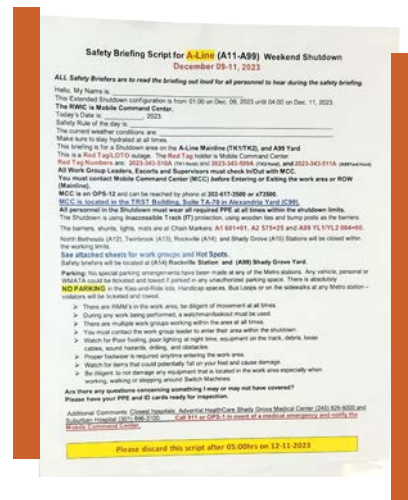
Metrorail has limited procedures on mobile command in the MOR within rule 17.9 and Metrorail stated it did not have other relevant procedures for mobile command.

► **Finding 7: Metrorail is not following its existing safety rules and does not have adequate training and supervisory oversight to ensure safe operation under mobile command.**

Metrorail has limited procedures on mobile command in the MOR within rule 17.9 and Metrorail stated it did not have other relevant procedures for mobile command.

▮ **Hazards in Practice**

Metrorail's rules related to mobile command identify that mobile command is assigned as the roadway-worker-in-charge for an entire shutdown area, yet mobile command does not carry out the safety tasks required of Roadway Workers In Charge by Metrorail rules. This contradiction includes Metrorail not meeting its safety requirement that the roadway-worker-in-charge "will remain within the working limits while Roadway Workers are on the roadway or have an assigned RWIC in their temporary absence" (MOR 17.8.2.3.h), and therefore being unable to carry out other required responsibilities specified in MOR 17.8.2.3 and 17.8.2.4.



Further, MOR rule 17.5.1 requires the roadway job safety briefing to be conducted by the roadway-worker-in-charge. Rule 17.5.2 also references the Mobile Command Center section of the rulebook, which is an off-site location.

▮ **Acting as Control Center Without Training or Procedures**

On June 5, 2023, between East Falls Church and Ballston stations on the Orange and Silver lines a safety event occurred when two roadway maintenance machines (RMM) collided in an area assigned to mobile command (**W-0259**). The investigation found that Metrorail personnel had not communicated or identified that there was a RMM (Swingmaster SM-01) parked in a blind curve. Workers beginning their shift operated another RMM consist (Prime Mover 47 pushing Flat Car 604) into the location and collided resulting in an injury to a mobile flagger. A mobile command supervisor stated that not all equipment movement, status, or location is communicated to mobile command. The probable cause of this collision was "insufficient protections and execution of safety requirements under mobile command, a lack of supervisory oversight, including failure to properly coordinate vehicle movement and storage inside a work zone, and a lack of situational awareness caused by failure to identify and communicate track occupancy and hazards prior to vehicle movement." As an immediate mitigation, Metrorail conducted a safety stand down. The investigation also identified that phone communications to and from mobile command are not recorded. This restricts supervisory oversight and limits the lessons that can be learned from safety events.

The WMSC's observation for this audit also demonstrated improper radio protocols, including improper communication practices for safety-critical information that did not include required repeat backs or identification between mobile command and personnel in the field. In addition, WMSC personnel observed improper use of roadway worker protection such as confusion among foul time, exclusive track occupancy, and

The WMSC's observation for this audit also demonstrated improper radio protocols, including improper communication practices for safety-critical information that did not include required repeat backs or identification between mobile command and personnel in the field.



**Metrorail identified  
similar safety hazards  
in an Internal Safety  
Review.**



inaccessible track processes during work zone setup as vehicles were continuing to move through the work zone boundary. This included incorrectly attempting to reference exclusive track occupancy procedures to access the roadway to set up inaccessible track barriers. Foul time was not used to protect the worker attempting to set up the barrier, creating a risk that the worker could be struck by vehicles moving within or into the work area.

Metrorail identified similar safety hazards in an Internal Safety Review issued on February 7, 2024, covering Work Planning & Maintenance Improvement. WMATA stated that the “Work zone configuration was noncompliant with Metrorail Operating Rulebook.” Specifically stating that the Mobile Command Center established inaccessible track using a physical barrier and additionally used orange cones with red flags which are only to be used when establishing IT with derails.

**Requirement:** The MOR states the following rules for operating under mobile command:

Rule 17.9.1: “The Mobile Command Center may be activated and may function as the RWIC of working limits during extended outages and shutdowns.” Rule 17.8.2.3 responsibilities for the roadway-worker-in-charge include:

- ▶ Rules compliance, oversight, and safety within the working limits, at all times, as per the Metrorail Operating Rulebook, employing sound and safe judgment, including escorting contractors and visitors.
- ▶ Sole responsibility for overseeing set up of all on-track safety protection: exclusive track occupancy, inaccessible track, foul time, and Advanced Mobile Flagging responsibility for overseeing set up of all on-track safety protection: exclusive track occupancy, inaccessible track, foul time, and advanced mobile flagging.
- ▶ Ensures all work zones are set up to provide appropriate level of protection for Roadway Workers.
- ▶ Establish protections within the working limits to provide Ample Time/Warning for workers to move to a place of safety before the arrival of a rail vehicle into their work zone.
- ▶ Ensures all Roadway Workers receive the Roadway Job Safety Briefing prior to entering the roadway.
- ▶ Responsible for all Roadway Workers, communications, and equipment within the specified working limits.

Section 17.5.4 lists the following items which must be included in the roadway job safety briefing:

- ▶ Everyone’s attention and participation.
- ▶ Type of On-Track Protection.
- ▶ Identification of Adjacent Track(s) and Protection being provided on such track(s).
- ▶ Working Limits.
- ▶ Track Designations.



**Mobile command allows job briefings to occur miles away from the job site without the roadway-worker-in-charge seeing the actual work zone or hazards.**



- Track Speeds.
- Predetermined Place of Safety (PPOS).
- Potential distractions.
- Unique workplace hazards.
- Hot Spot Areas (only applicable for Mobile Work Crews).
- Safety Equipment Certification Dates (radios, mats, shunts, gloves, etc.).
- Placement of Watchmen and rotation and relief policy.
- Inspection of watchmen's equipment.
- Review of Policy and Instruction 10.3 (Electronic Device Policy).
- Brief of new arrivals.
- Re-brief when work or situation changes.
- Complete understanding & documentation.
- Good Faith Challenge process.

**Nonconformance:** As witnessed during the December 8, 2023 audit observation near Shady Grove Station, mobile command allows job briefings to occur miles away from the job site without the roadway-worker-in-charge seeing the actual work zone or hazards. Mobile command takes control of large areas, which at times can include multiple stations without methods to keep track of the entire area. In this observation, exclusive track occupancy procedures were used to access and set up inaccessible track protection without utilizing any foul time protection, which does not adhere to Metrorail's rules. Personnel in the field also failed to check safety equipment as required prior to entering the roadway as part of the roadway job safety briefing. Personnel interviewed during the course of the audit stated the rules were not clearly outlined.

In an Internal Safety Review report issued on February 21, 2024, regarding Work Planning & Maintenance Improvement provided to the WMSC, Metrorail's internal reviewers stated that they had conducted three field visits of rail service adjustment work in December 2023 which were all under the control of mobile command. Metrorail noted in their findings that "The MOR Section 17.5.4 requires items to be considered when conducting Roadway Job Safety Briefing," however in all three assessments, no roadway job safety briefing forms were completed, and important RWP-related information was not reviewed as required. This is further evidence that mobile command is not currently implementing proper roadway worker protections.

Office of Operations Safety Oversight personnel noted during this audit's exit conference that based upon this Internal Safety Review and this WMSC finding, there would be an increase in the oversight of mobile command activities.

**This procedure does not ensure that Metrorail maintains at least the same level of roadway worker protection for personnel (employees or contractors) operating in these areas as exist under Metrorail rules.**

♦ **Minimum Corrective Action:**

Metrorail must develop and communicate to personnel specific steps necessary to meet existing Metrorail safety rules in areas assigned to mobile command. Metrorail must establish processes for mobile command that provide at least the level of safety established when areas are governed by rail traffic controllers. This must include determining each specific role, the responsibilities of each role, the training and qualification (including required refresher training and qualification) necessary for each role that provides the necessary ability to effectively and safely carry out those responsibilities (based on technical systems and operational safety requirements), and the supervisory oversight process required both at mobile command and in and around the work area. To ensure the opportunity for effective supervisory oversight, Metrorail must record all phone calls with mobile command and must record ambient audio in the Mobile Command Center.

► **Finding 8: Metrorail has no controls to ensure that rules being applied in areas it designates as an 'Authorized Construction Site' provide the same or greater level of protection for roadway workers as those workers have in other parts of the WMATA Rail System.**

Metrorail provided a procedure for an "authorized construction site" (ACS), where Metrorail turns over certain responsibilities to contractors during the course of a project and Metrorail then states that its roadway worker protection rules are not in-effect for the area covered by the ACS. This procedure does not ensure that Metrorail maintains at least the same level of roadway worker protection for personnel (employees or contractors) operating in these areas as exist under Metrorail rules. Metrorail also regularly conducts its own work, including work involving rail vehicle movement and other hazards, within shutdown areas that are designated in whole or in part as authorized construction sites. Metrorail's contractors similarly use rail vehicles and continue to experience other roadway hazards in these areas, even when passenger trains are not being used.

**Requirement:** Metrorail's standard operating procedure 100-20, Approval Procedures for Authorized Construction Site states that "An 'Authorized Construction Site' is NOT considered the roadway. An Authorized Construction Site (AC Site) is a work area where safety is the full responsibility of the contractor and does not require the contractor to follow Metrorail safety procedures, including use of Metrorail access or safety escorts or support from Metrorail roadway safety personnel, including the RWIC, Watchman/Lookout, and AMF [Advanced Mobile Flagger]."

**Nonconformance:** According to interviews with Metrorail personnel, Metrorail regularly conducts its own work within authorized construction sites, which is separate from the contractor's work and the contractor's responsibility, including work involving rail vehicle movement of roadway maintenance machines and other equipment. This practice does not ensure that Metrorail maintains the same level of roadway worker protection for personnel (employees or contractors) operating in these areas as provided by the MOR.





**Metrorail permits its own work, separate from the contractor within the authorized construction site, without the requirements that those work crews follow its RWP rules and procedures.**

In interviews, Office of Operating Practices personnel acknowledged that Metrorail permits its own work, separate from the contractor within the authorized construction site, without the requirements that those work crews follow its RWP rules and procedures. The personnel acknowledged the deficiencies in the procedure and the need to revise it if Metrorail continues the use of authorized construction sites. However, in response to a draft of this audit report, Metrorail started, “any work taking place within an ACS conducted by WMATA staff is required to be approved by the contractors and is subject to their procedures and oversight.” This transfer of safety responsibility does not align with Metrorail’s duty to ensure a safe working environment for employees and contractors.

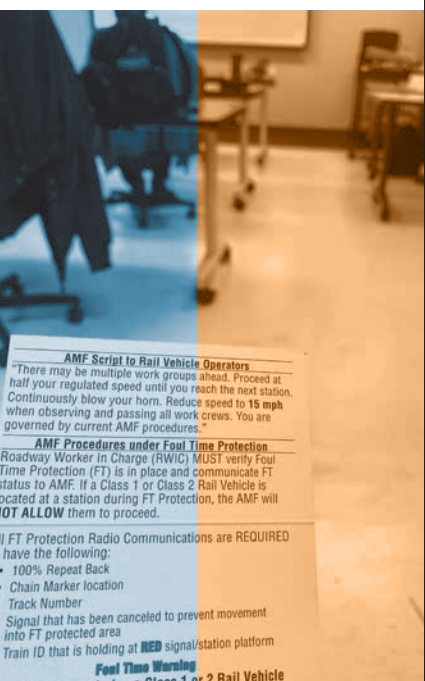
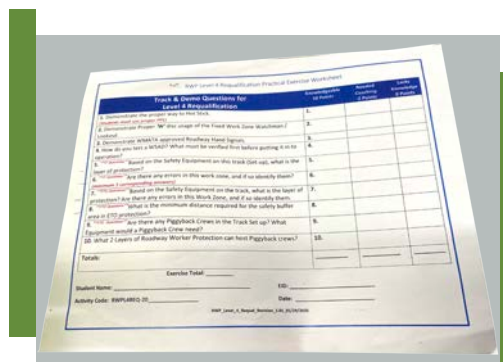
♦ **Minimum Corrective Action:**

Metrorail must update its processes, procedures, requirements, and training related to authorized construction sites to align with its Roadway Worker Protection Program requirements to ensure roadway workers receive the same or greater levels of RWP as they do in the rest of the Metrorail system—for both employees and contractors alike. Metrorail must demonstrate implementation of these procedures.

► **Finding 9: Metrorail is providing RWP qualifications without following the listed requirements for those qualifications.**

**Requirement:** Metrorail Operating Rule 17.7 states requirements for RWP training. Specifically, 17.7.3 states that “all levels require a written and practical exam to successfully demonstrate competency.” Additionally, OPMS-TSMT-101-17 (RWP training SOP) states that “All employees and all contractors who access the Roadway shall be trained and qualified in Roadway Worker Protection before entering WMATA’s

Roadway. The appropriate level of training is determined by the supervisor based on the individual’s duties. Listed below are the three main levels of training for Roadway Worker Protection. All levels require a written and practical exam to successfully demonstrate competency. Requalification is required for all levels.” Section 6.1 of this procedure states that “Participants are required to be trained and evaluated on stepping over the third rail.”



**Practical exams were not completed in full for each trainee. Practical evaluations were given as a classroom activity or told verbally to the trainees.**

**There is no active demonstration requirement for students on the use of the hot stick, shunts, (Level 4 – wood ties, derailer), or a working Warning Strobe and Audible Device (WSAD).**

**Nonconformance:** Although not documented in any curriculum, procedures, or other documents provided during the audit, interviewees stated that there are “Executive” or “Remote” RWP training courses available. In the past, these courses have also been conducted virtually or in an office setting, which does not allow for the completion of the required practical requirements or training on the equipment to be used as outlined in the MOR. Instructors are directed to give the course in less than the required time required by the procedure. In one case, a Level 2 course which should have taken 2 full 8-hour days was concluded in 4 hours. Instructors interviewed as part of this audit stated that they do not cover all the required curriculum when teaching these truncated courses. In response to the draft of this report, Metrorail acknowledged this nonconformance and the associated hazard writing that “past executive RWP Level 1 initial trainings have not consistently included practical exercises demonstrating track and train hazards by stepping over the third rail. Future executive RWP Level 1 initial trainings will consistently offer this training opportunity to all participants in the class.”

Further, during observations of the standard RWP training courses by WMSC personnel on December 7, 2023, practical exams were not completed in full for each trainee. Practical evaluations were given as a classroom activity or told verbally to the trainees. For each trainee’s individual training record, instructors marked that each item was being completed on the form, which was not the case. Courses that require a performance-based practical for advanced mobile flaggers and watchmen/lookouts do not enforce that each attendee demonstrates those practical activities or roles.

Although the courses require active demonstration of the practical requirements, there is no active demonstration requirement for students on the use of the hot stick, shunts, (Level 4 – wood ties, derailer), or a working Warning Strobe and Audible Device (WSAD). Some of the WSADs used for training did not have the proper functionality. Individuals are expected to use this equipment in the roadway without any hands-on training on the device.

These practical assessments must be carried out in full to ensure the real-life applications will be consistent with Metrorail’s requirements.

**Requirement:** RWP Procedure 2710-3-01/00 (contractor roadway worker protection training), section 6.4.9.1 states that “A practical assessment shall be used for participants to demonstrate safe working practices on the roadway. This includes: How to properly cross over the third rail; How to access and egress the roadway; How to access rail equipment; and Demonstration of hand signals (Stop Signal).”

**Nonconformance:** The RWP training instructors stated that the only assessment for Contractor RWP is crossing the third rail. This was also confirmed by WMSC observation of Contractor Roadway Worker Protection training on December 6, 2023. This is contrary to procedure 2710-3-01/00 practical requirements and does not provide the sufficient level of training required for the personnel receiving this course.



**Requirement:** Procedure 2710-3-01/00 (contractor roadway worker protection training), notes in section 6.1.1.2 that “Personnel who attend and pass a CRWP course provided in a language other than English will have an identifiable label on their WMATA OneBadge that indicates they must have a Bilingual Employee In Charge (BEIC) with them while working on WMATA’s roadway.”

**Nonconformance:** Based on document review and interviews during the audit, WMSC personnel learned that an RWP instructor provided a class in English but one of the participants indicated that they could not take or pass the test in English. This should have led to a failure and a re-take of the course in Spanish; however the instructor provided a Spanish test to that student which the student then was able to pass.

As the student passed the Spanish test, their badge should have been marked as “BEIC Required;” however, because this contractor attended an English course, their badging and credentials were not properly marked as such. This improper badging and credentialing creates a risk this individual may not be paired with a BEIC when working on WMATA’s roadway and could result in additional safety risks as a result of not being able to effectively communicate.

♦ **Minimum Corrective Action:**

Metrorail must ensure that required practical exercises are carried out by each individual, regardless of rank or title, prior to designating that individual as qualified under Metrorail’s Roadway Worker Protection Program. Metrorail must develop and implement internal controls, to include compliance checks, to ensure required training and certification activities are completed in full and activities are carried out as required for both English and Spanish RWP qualification. Metrorail must review prior training related to the nonconformances noted above to ensure that individuals without proper qualification are re-trained appropriately.

► **Finding 10: Metrorail is not following its procedures regarding Roadway Worker Protection Training.**

Metrorail’s roadway worker protection training procedure sets requirements for retesting of individuals who do not pass exams, for documentation of records for each training class, and for the supervisory oversight and professional development of training instructors. Observations by WMSC personnel, interviews of Metrorail personnel, and records review demonstrated that Metrorail is not meeting these requirements.

► **Instructor Qualifications**

OPMS-TSMT-101-17, section 6.2 Instructor Qualifications outlines necessary requirements for personnel serving as a Roadway Worker Protection Training (RWPT) Instructor including that they align with the Technical Skills & Maintenance Training (TSMT) SOP. The WMSC found that several of these requirements were not being met.



**Metrorail provided no records indicating that instructor development plans were being completed.**

**Requirement:** Within Metrorail's Procedure 'OPMS-TSMT-101-17 Roadway Worker Protection Training SOP' there are requirements for training instructors to ensure they receive proper feedback, development, and real-world experience to assist with the training. OPMS-TSMT-101-17 section 6.2.4 states that "Each instructor designated to conduct and/or support RWPT will participate in a maintenance or inspection event conducted on WMATA's roadway at least three times per year. Each instructor will annually participate in at least one observation in the Rail Operations Controls Center (ROCC). These events may be suspended due to exigent circumstances beyond WMATA's control, such as a global pandemic. Event participation will be made up when circumstances allow."

**Nonconformance:** Through records review and interviews, the WMSC determined that the required participation of RWP instructors at maintenance or inspection events is not occurring at Metrorail's specified frequency of three times per year. In the procedure, language was added to suspend the activities during the pandemic stating that "These events may be suspended due to exigent circumstances beyond WMATA's control, such as a global pandemic. Event participation will be made up when circumstance allow." However, there was no plan or schedule for these activities to be made up, resume, or to occur at all in 2023. When asked for the documents recording the observations from these events, Metrorail stated that there are none because the observations were not occurring as required by the procedure.

After the WMSC's document requests for this audit, Metrorail conducted some control center observations.

**Requirement:** OPMS-TSMT-101-17, section 6.25: "Each instructor will maintain RWPT [Roadway Worker Protection Training] Level qualification in accordance with the level of training that he or she is required to present."

**Nonconformance:** During observations by WMSC personnel of the RWP training on December 7, 2023, at the Carmen Turner Maintenance and Training Facility and based on documents reviewed, Metrorail was not following the SOP for instructor qualification before training. An RWP instructor with level 2 qualification was witnessed training on all levels, including a level 4 class on the day of the observation.

**Requirement:** OPMS-TSMT-101-17, section 6.2.7: "Each RWPT Instructor will participate in the Instructor Development Plan which is designated to enhance the overall performance of each individual through the use of coaching, observation, and feedback methodologies."

**Nonconformance:** Metrorail provided no records indicating that instructor development plans were being completed. When asked again for the documents through a subsequent document request, Metrorail stated that these items were not available as the observations were not occurring as required by the procedure. In response to the draft of this report, Metrorail acknowledged that it has not been following its procedure. Metrorail stated that it plans to revise the procedure.



**A review of a sampling of Metrorail training files revealed that class records are not being maintained as required by the SOP.**



**Requirement:** OPMS-TSMT-101-17, section 6.2.8: "The RWPT Supervisor will quarterly audit the RWPT team and provide feedback on the observed performance within the classroom and lab environment through the utilization of the Instruction Feedback Form and Instructor Development Plan on delivery tools as provided by Langevin Learning Services."

**Nonconformance:** Metrorail provided records that demonstrated that audits of instructors were inconsistently being conducted. Metrorail responded to the WMSC requests indicating that they were unable to provide the full records related to this requirement.

### **Course Records**

**Requirement:** OPMS-TSMT-101-17, section 6.4.1: "A training record will be maintained of each RWPT course conducted. As a minimum the record will contain the RWP Folder Checklist, Dismissal Form (As Needed), Class Roster with names, payroll numbers and grades for each participant, RWP Badge Sheets, Pre-class enrollment verification form (only applies to Level-4 Initial classes), Pre-Test (only applies to Level-4 Initial), Cardinal Rules Test, General Knowledge Test, Practical Assessment (only applies to Level-4 Initial and Level-4 Requalification), Central Check List only applies to Level-4 Initial), Employee's Practical Exercise (Level-4 Initial), Course Evaluation, Course dates, times and location, Instructors(s) name and payroll number, OJT Verification Checklist (only applies to Level-4 Initial classes)."

**Nonconformance:** A review of a sampling of Metrorail training files revealed that class records are not being maintained as required by the SOP. In each folder reviewed, the WMSC observed missing or incorrect records. The records also indicate that certain training materials are not disseminated to the students. General knowledge tests that were included do not have names on the completed tests to associate them with a student from the class. In another example reviewed, there were only 14 students on daily sign-in sheets for both days of the course, but there were 22 general knowledge and cardinal rules tests included. In another example, the number of students on the sign-in sheet with scores (14) does not align with the number of tests and OneBadge cards (20) included in the folder, indicating more badges were issued than students in the class. The inaccurate records indicate a problem with tracking required information.

### **Retesting Procedures**

**Requirement:** OPMS-TSMT-101-17, section 6.3.2.5.1: "First failure: Employee will be removed from work status and will be permitted to use available annual leave to replace eight hours of pay for each day. Employees must take the next available test after the two-workday waiting period. Employees are encouraged to thoroughly study the course materials."

**Nonconformance:** Based on interviews conducted with RWP Instructors, retesting for RWP was not consistently occurring after the two-workday waiting period as is mandated by the procedure.

♦ **Minimum Corrective Action:**

Metrorail must update its roadway worker protection instructor training procedures to include a process that evaluates the need for procedural changes during exigent circumstances, establish criteria for determining exigent circumstances, and outline procedures for how to return to normal processes after the exigent circumstance has ended. Metrorail must ensure that it follows its Roadway Worker Protection Training procedures (or successor). Metrorail must develop and implement procedures that include internal controls with regard to course records, instructor qualifications, and retesting. Internal controls may include regular, recurring compliance checks or a similar oversight activity.

► **Finding 1 1: Metrorail is not providing critical roadway worker-related safety information and training. Instructors do not follow the standardized curriculum and omit materials.**

**Requirement:** Metrorail procedure OPMS-TSMT-101-17 (RWP training SOP) outlines all requirements of the RWP training courses and the necessary information to be provided in the courses. Section 6.1 of the procedure specifically indicates the subjects that must be discussed. For each course, there are also training materials including PowerPoint presentations, student guides, and other materials to facilitate the training which have been purpose-built for each course. Also, SOP, 2710-3-01/00 (contractor roadway worker protection training), states in section 6.3.3, that "The CRWP training is scheduled for eight (8) hours."

**Nonconformance:** During observations of RWP training courses at the Carmen Turner Maintenance and Training Facility conducted on December 7, 2023, WMSC personnel witnessed training materials and slides being bypassed, and exercises contained in the student material were not completed. Training provided to attendees was not consistent and instructors were observed not using the instructor's guide. The WMSC observed similar practices in a contractor RWP training class.

Instructors interviewed for this audit noted that time constraints placed on the courses affect their actions during the course and the time constraints are not appropriate given the scale of course materials. This in turn leads instructors to omit or skim certain portions of the training. RWP instructors stated that they are only given 4 hours to teach contractor courses, contrary to the SOP stating that the course is designed for 8 hours, which requires instructors to quickly cover materials that are necessary for safety without sufficiently teaching the material.

**WMSC personnel witnessed training materials and slides being bypassed, and exercises contained in the student material were not completed.**





**Cardinal rule #6 should read “There shall be no clearing of roadway workers or equipment to any track any time.” This rule was translated incorrectly in the training materials.**



#### ♦ **Minimum Corrective Action:**

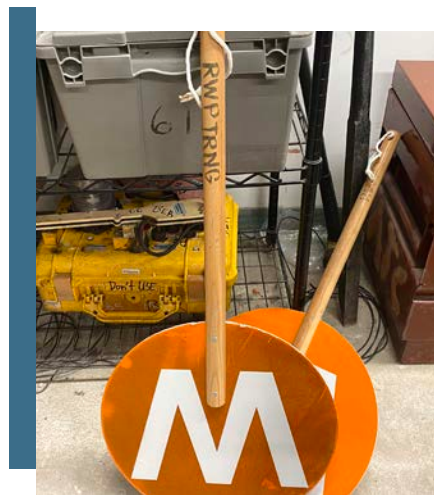
Metrorail must ensure that its intended roadway worker-related safety information and training is provided in a standardized manner to ensure workers receive the necessary training to protect themselves on the roadway. Instructors must follow a standardized curriculum containing the required, current materials. An assessment must be done on the course materials/content to determine the appropriate timeframes necessary for each course offered.

#### ► **Finding 12: Metrorail is providing incorrect information about cardinal rules and incomplete testing for non-English speaking contractors in Roadway Worker Protection Training.**

Key elements of Metrorail’s Spanish-language RWP training are inaccurate or incomplete.

**Requirement:** Metrorail conducts training for all roadway workers including classes offered in Spanish for Spanish-speaking or bilingual contractors. As part of this training, Metrorail uses similar but different training materials from the standard Metrorail employee training. This is outlined in procedure 2710-3-01/00 (contractor roadway worker protection training). The procedure outlines the training, including the cardinal rules. The cardinal rules are defined in section 3.1 as “A list of seven (7) rules within the Metrorail Safety Rules and Procedures Handbook (MSRPH)

established to address significant safety and security risks. Violation of these rules could result in serious or catastrophic damage to property, serious or catastrophic injury or death of individuals, and/or a criminal violation of law. All roadway personnel governed by these rules must ensure full compliance at all times.”



**Nonconformance:** Metrorail emphasizes the cardinal rules, which are now listed in MOR rule 17.2 (procedure 2710-3-01/00 cites to the no-longer-in-effect MSRPH), as vital for roadway worker safety in each training that it provides. These rules are treated as the essential baseline for safety and all trainees must pass a test that is specific to the cardinal rules, which requires a score of 100% to pass. Given the emphasis on these vital rules, it is imperative that correct instruction is provided on them.

Cardinal rule #6 should read “There shall be no clearing of roadway workers or equipment to any track any time.” This rule was translated incorrectly in the training materials provided to the WMSC for review to “No se deberá despejar a los trabajadores de la carretera o equipos de ninguna pista en ningún momento” and later translated differently as “No habrá limpieza de trabajadores o equipos de carreteras en ninguna pista en ningún momento.” Neither of these translations is proper for what Metrorail is attempting to express and the translations actually could be seen as translating to the opposite of the correct translation. Citing this rule differently in different places, along with questionable translations leads to confusion for Spanish-language workers.

Further, the written tests Metrorail provided for review for the Spanish-language qualification program included an incomplete cardinal rules exam that provided the entire answer in a question, then had multiple choice options that included the language listed in the question. It appeared the intent had been to create a blank to be filled in by the correct multiple-choice option, but instead the question was invalid. Metrorail requires a perfect score on the cardinal rules exam due to the importance of these rules to the safety of personnel. Without complete testing on these rules, Metrorail has no assurance that the content of the training was understood.

Although translation is challenging, when providing translated materials Metrorail must use standardized terminology that comports with the terms used in the English rules.

♦ **Minimum Corrective Action:**

Metrorail must develop and implement a process to validate the accuracy and equivalence of non-English language rules, procedures, and training content to be comparable with the English-language Metrorail Operating Rulebook and other relevant rules or procedures. Metrorail must review and update its existing non-English language versions of roadway worker protection rules, procedures, training materials, and testing materials to ensure that personnel participating in these programs receive at least the equivalent safety training and examination as English-speaking personnel.

► **Finding 13: Metrorail requires on-the-job Roadway Worker Protection training without outlining the requirements or process for this training.**

Metrorail requires on-the-job training for Level 4 RWP qualification, the level that permits an individual to act as a roadway-worker-in-charge. However, Metrorail has no process, training or designation for the individuals that oversee this on-the-job training, and there is no review to verify that this has been completed before a Level 4 sticker is issued.

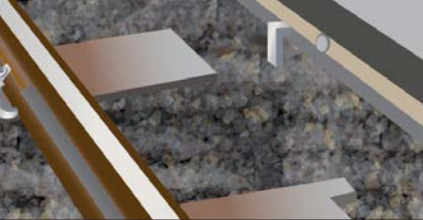
Interviews and document reviews conducted during this audit demonstrate that although on-the-job (OJT) training is a required part of the curriculum for Level 2-qualified roadway workers to obtain Level 4 qualification, Metrorail has no structured program to ensure that OJT is provided consistently and completely.

RWP Level 4 is the highest level of qualification in Metrorail's RWP program and personnel with this qualification are authorized to function as a roadway-worker-in-charge (RWIC). MOR rule 17.8.2 states that roadway-worker-in-charge is "a qualification that allows WMATA personnel to work in any capacity on the roadway and provide RWP safety protections to all personnel on the roadway."

A RWIC's duties include:

- Rules compliance, oversight, and safety within the working limits, at all times, as per the Metrorail Operating Rulebook, employing sound and safe judgement, including escorting contractors and visitors.
- Sole responsibility for overseeing set up of all on-track safety protection: exclusive track occupancy, inaccessible Track, foul time, and advanced mobile flagging.

**Metrorail has no structured program to ensure that OJT is provided consistently and completely.**



**No instructions are provided to the trainers about the content of the on-the-job training.**

- ▶ Ensure all work zones are set up to provide appropriate level of protection for Roadway Workers.
- ▶ Establish protections within the working limits to provide Ample Time/Warning for workers to move to a place of safety before the arrival of a rail vehicle into their work zone.
- ▶ Ensure all Roadway Workers receive the Roadway Job Safety Briefing prior to entering the roadway.

RWP Level 2 personnel working to become Level 4-qualified, must complete RWIC on-the-job-training following successful completion of a 5-day RWP Level 4 course, and passing a written and practical assessment. RWIC candidates are required to have a current RWIC complete the RWP Level 4 OJT Checklist, Version 1, dated 5/31/19 on three occasions within two calendar weeks of course completion. During this process, the RWIC candidate must perform the duties of a RWIC under the supervision of a Level 4 RWIC mentor.

Metrorail has established on-the-job roadway worker protection training as a qualification requirement to ensure that RWIC candidates demonstrate understanding of, adherence to, and implementation of RWP policies and procedures in real-world scenarios beyond classroom instruction or practical exercises. However, the RWIC mentors charged with their supervision and on-the-job training do not receive training or direction before being designated as a mentor.

**Requirement:** Metrorail's procedure OPMS-TSMT-101-17 (RWP training SOP) requires that personnel who are working to obtain a level 4 qualification must complete on-the-job training and a related form while working with a mentor who has previously been qualified for level 4. This exercise is to be completed three times and upon completion, the form is then turned back into the RWP training personnel who document its receipt and grant the level 4 qualification.

**Nonconformance:** During the course of interviews with the Technical Training and Development staff, the WMSC learned that no instructions are provided to the trainers about the content of the on-the-job training. Front-line personnel interviewed for this audit, who previously acted as mentors/trainers indicated they were unaware that they would possibly be assigned to train other personnel and were unaware of their obligations for the trainee. This has led to misunderstandings and inconsistencies among workers regarding the on-the-job training process.

**Requirement:** OPMS-TSMT-101-17 requires that "All Level-4 candidates must be an active RWP Level-2 for 12 months to be eligible for RWP Level-4. Upon completion of the Level-4 class a Level-2 sticker will be applied to the Employee's One-Badge, pending completion of On-the-Job-Training (OJT) and the completion and return to TSMT-RWP the completed OJT form, signed by the Supervisor. If the form is not returned within the two calendar-week period, the Individual will be downgraded to a Level-2. Upon successful completion of the OJT requirement and the return of the OJT form to TSMT-RWP a Level-4 sticker will be applied to the individual's One-Badge."



**There were differing accounts presented of what was to be done to complete the OJT requirements.**

**Nonconformance:** Document reviews conducted during this audit demonstrate that while OJT is a required part of the curriculum for Level 2-qualified roadway workers to obtain Level 4 qualification, Metrorail has no structured program or procedure to ensure that OJT is provided consistently and completely. Through interviews with personnel there were differing accounts presented of what was to be done to complete the OJT requirements.

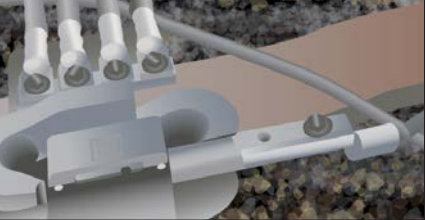
**Requirement:** Metrorail's procedure OPMS-TSMT-101-17 (RWP training SOP), Section 6.3.1.7 Assessment Procedures and Standards states, "Level-4 students will have two calendar-weeks to complete and return to TSMT-RWP a completed Level-4 OJT form." OPMS-TSMT-101-17 also states within section 6.8.2 that "This SOP will be reviewed annually. The training course materials will be reviewed at least once every three years. Changes to the material will follow the guidelines set forth in section 13.4 of this SOP."

**Nonconformance:** As part of this audit, Metrorail provided the WMSC with completed roadway worker protection Level 4 OJT checklists that did not include evidence of document control such as version, effective or revision date. Further, the form contains a box labeled "RWP Quick Access Guide 2018" under the Level 4 evaluation section that is routinely checked. The most current RWP Quick Access Guide available at the time of this audit was dated 2022 (but even this 2022 version of the Quick Access Guide is outdated, see Finding 2.)

Additionally, the time allotted for the RWIC candidate to complete and return the checklist, 21 calendar days, as listed on the form itself, conflicts with the two calendar weeks allotted according to OPMS-TSMT-101-17. In an electronic folder provided for this audit labeled 'JUNE 2023 RWP LEVEL 4 OJT', all RWIC candidates were given handwritten return-by dates that were approximately 6 weeks after the start of their OJT training period.

♦ **Minimum Corrective Action:**

Metrorail must develop and implement RWIC on-the-job training procedures, including as they pertain to OJT mentors and associated forms for roadway worker protection on-the-job training, provide sufficient direction for personnel to both complete and conduct the training, and complete the training for applicable personnel. Such direction must be included in a written procedure.



## Next Steps

Metrorail is required to propose corrective action plans to address each finding no later than 30 days after the issuance of this report. Each proposed CAP must include specific and achievable planned actions to remediate the deficiency, the person responsible for implementation, and the estimated date of completion. Each proposed CAP must be approved by the WMSC prior to Metrorail's implementation.





## Appendices



# Appendices **A, B, C** and **D**

## Appendix A: Interviews

- ♦ Department of Safety
  - Director, Office of Operating Practices
  - Sr. Director Safety Risk Management
- ♦ Track and Structures
  - Emergency Response Team Specialist
- ♦ Office of Power
  - Mechanic AA, Office of Power
  - Mechanic AA, Office of Power
- ♦ Automatic Train Controls
  - Mechanic AA
  - Mechanic AA
- ♦ Metro Transit Police Department
  - Officer
- ♦ Technical Training and Development
  - Sr. Director, Organizational Development
  - Technical Skills Project Coordinator
  - Technical Skills Training Instructor
  - Technical Skills Training Instructor



APPENDIX A: INTERVIEWED

APPENDIX B: OBSERVATIONS

## Appendix B: Observations

- December 4, 2023 – Observed Track Inspections, B04 Rhode Island Ave to B08 Silver Spring
- December 5, 2023 – Observed ATC Interlocking Inspections, N08 Herndon
- December 5, 2023 – Observed Cable Replacement work with Power Personnel, C10 National Airport
- December 6, 2023 – Observed Level 1 RWP and Contractor RWP Level 1 training classes, Carmen Turner Maintenance and Training Facility
- December 7, 2023 – Observed Level 2 and Level 4 RWP Training classes, Carmen Turner Maintenance and Training Facility
- December 8, 2023 – Observed RWP setup for A11 Grosvenor to A15 Shady Grove shutdown

Note: WMSC teams also conducted general system observations while traveling to and from the observation location.

## Appendix C: Documents Reviewed

### ORGANIZATIONAL CHARTS AND DEPARTMENT RESPONSIBILITIES:

- Office of Operating Practices Organizational Chart (no date)
- Certification Status of OOP Staff (10/31/2023)
- Technical Training & Development – Roadway Worker Protection Organizational Chart (10/01/2023)
- MTPD Organizational Chart (no date)
- MTPD Personnel List (10/02/2023)
- Track and Structures Organizational Chart (10/30/2023)
- Metro Integrated Command and Communications Center Organizational Chart (10/15/2023)
- MICC Employee Roster (no date)
- Office of Operations Safety Oversight Organizational Structure (11/21/2023)

### PROCEDURES/POLICIES/MANUALS/FORMS:

- Metrorail Operating Rulebook (09/01/2023)
- MSRPH to MOR Mapping 1-5 Working Document (no date)
- MSRPH to MOR Mapping Document (no date)
- REAM-PRO-P02-00, Certification of WSADs (09/24/2020)
- REAM-PRO-P03-00, Certification of Hand-Held Radios (02/23/2021)
- OPMS-TSMT-101-17, Roadway Worker Protection Training SOP (06/03/2021)
- Permanent Order, PO-23-25, L-Line Hot Spot (08/16/2023)
- Temporary Order, TO-23-22, Contractor Access (07/19/2023)
- Temporary Order, TO-23-06 MSRPH Section 5.9/ RWP SOP 6.5.2-6.5.5 (05/09/2023)
- Form SAFE-SRM-002-00, Foul Time Record (11/01/2022)
- Temporary Order, TO-23-10, Reversion of RWP Exceptions (07/19/2023)
- Form SAFE-SRM-003-00, Form 0 – Joint Occupancy of Working Limits (11/01/2022)
- Form SAFE-SRM-001-00, WMATA Roadway Job Safety Briefing Form (no date)
- TTDV MOR Update Changes Required (08/29/2023)
- TTDV MOR Update Changes Required (08/31/2023)
- TTDV MOR Update Changes Required (08/28/2023)
- TTDV MOR Update Changes Required (09/12/2023)
- Work Instruction 0230-4-01/00, Washington Metropolitan Area Transit Authority (WMATA) Mobile Command Vehicle (11/02/2022)
- Procedure 2710-3-01/00, Contractor Roadway Worker Protection Training (01/03/2023)
- Standard Operating Procedure 100-20, Approval Procedures for Authorized Construction Sites (02/19/2020)



## PROCEDURES/POLICIES/MANUALS/FORMS: (CONTINUED)

- Spanish-Speaking CRWP Tests (no date)
- OPA #22-04, Operating Practices Advisory – Radio Protocols for Requesting, Granting, and Relinquishing Exclusive Track Occupancy (12/02/2022)
- OPA #22-03, Operating Practices Advisory – Review of new ETP Rules and Procedures (10/27/2022)
- OPA #22-05, Operating Practices Advisory – Radio Protocols for Requesting, Granting, and Relinquishing Foul Time (12/02/2022)
- OPA #21-01, Operating Practices Advisory – AMF Protection and Red Hot Spots (12/23/2021)
- OPA #22-01, Operating Practices Advisory – Update to Horn Blast Durations (04/06/2022)



- TRST-COMP-NC RWP, TRST Compliance Branch, Non-Compliance RWP Safety Infractions Form, Rev 2.0 (06/01/2019)
- OBPP-OPMS-TSMT-FRM-RWPCC001, Roadway Safety Compliance Checklist, Version 0 (03/04/2021)
- Document 2700-4-0/00, Track Access Guide (09/11/2023)
- Document 2700-4-0/00, Track Access Guide (03/01/2023)
- Roadway Worker Protection Quick Access Guide 2018 (no date)
- OAGTAG Information (no date)
- Roadway Worker Protection Quick Access Guide (11/01/2022)
- List of Track Access Guide Revisions and Formats (Jan 2021 to Jan 2024)
- Roadway Worker Protection Quick Access Guide (10/01/2023)
- Roadway Worker Protection Quick Access Guide 2022 (08/2022)
- WMATA Public Transportation Agency Safety Plan (12/31/2023)
- Procedure 4200-4-01/00, Department Safety Risk Management SOP Template (07/26/2023)
- RWP Level 4 Requal Practical Assessment Worksheet (05/29/2020)
- Roadway Worker Protection Level 2 Requalification Practical Exercise (no date)
- SOP 4121-3-02/01, Safety Inspections (06/08/2023)
- 4120-4-02/00, Inspection Application Job Aid (09/22/2022)

## TRAINING:

- Contractor RWP Qualifications List (no date)
- RWP One Badge Report (10/04/2023)
- Course Completions List – RWP - 2023 (10/31/2023)
- Course Completions List – RWP - 2022 (no date)
- RWP Staff Transcripts (01/2022 to 10/2023)



## TRAINING: (CONTINUED)

- MTPD RWP Course Completions List (11/06/2023)
- Comms and Signals RWP Level 4 List (no date)
- Power RWP Level 4 List (no date)
- Plant Maintenance RWP Level 4 List (no date)
- Level 1 Spanish RWP PowerPoint (03/23/2023)
- Bi-lingual Worker-in-Charge List (no date)
- RWP Course Completion Data Report (no date)
- RWP Course Completion Data Report with Scores (no date)
- RWP Spanish In-Person Training Class Roster (10/20/2023)
- RWP Spanish In-Person Training Class Roster (10/13/2023)
- RWP Spanish In-Person Training Class Roster (11/03/2023)
- RWP Spanish In-Person Training Class Roster (10/06/2023)
- RWP Spanish In-Person Training Class Roster (01/18/2024)
- Spanish-Speaking CRWP Training List (2023)
- Spanish-Speaking CRWP Training List (2024)
- RWP Class Schedule December 4, 2023, through December 15, 2023 (no date)
- RWP Training Report for September Out of Compliance – Active Status (09/28/2023)
- RWP Training Report for September Out of Compliance – Active Status (07/12/2023)
- RWP Training Report for September Out of Compliance – Active Status (08/25/2023)
- RWP Level 4 Requalification Course Materials – September 2023 courses (no date)
- RWP Level 2 Requalification Course Materials covering September 2023 courses (no date)
- RWP ELM Data – August 1, 2023 to October 1, 2023 (no date)



- RWP Level 4 Initial Course Materials – September 2023 courses (no date)
- RWP Level 4 Requalification Course Materials – August 2023 courses (no date)
- RWP Level 2 Initial Course Materials – August 2023 courses (no date)
- RWP Level 2 Initial Course Materials – September 2023 courses (no date)
- RWP Level 2 Requalification Course Materials – August 2023 courses (no date)
- RWP Level 4 Initial Course Materials – August 2023 courses (no date)

## INSPECTION AND MAINTENANCE:

- RWP Supervisor Evals for Training Instructors (10/01/2022 through 10/01/2023)
- Radio and WSAD August to September Calibration Report (11/08/2023)
- SAFE OSO RWP Inspections List CY2023 (no date)

**INSPECTION AND MAINTENANCE: (CONTINUED)**

- ATC Interlocking Inspections Schedule – December 3, 2023, through December 16, 2023 (no date)
- Power Schedule – December 03, 2023, through December 16, 2023 (11/22/2023)
- TRST Work Schedule – December 04, 2023, through December 11, 2023 (no date)
- Power Cable Division Work Schedule – December 04, 2023, through December 17, 2023 (no date)
- OSO AMF Inspections List - November 2021 through August 2023 (no date)
- OSO Roadway Inspections – February 2021 through April 2022 (no date)

- OSO RWP Inspections – July 2022 through November 2023 with Findings (no date)

**INTERNAL REVIEWS:**

- Internal Safety Review – Operations Management Services (OPMS) (09/30/2020)
- Overview of Internal Corrective and Preventative Actions (iCAPAs) (10/27/2023)
- Internal Review: Engineering & Maintenance – Advanced Mobile Flagger (AMF) Contract Oversight (04/22/2022)
- ROCC RWP Risk Export (10/13/2023)
- RWP Corrective Action Log (2020-2023)
- Internal Safety Review – Working Planning and Maintenance Improvements (Draft) (no date)
- Analysis of Hazards and Controls in Advanced Mobile Flagging (06/08/2023)





## Appendix D: PTASP Elements

### 1. General Requirements

- d. Safety Performance Targets
- e. Development and Implementation of a Safety Management System (SMS)

### 2. Safety Management Policy

- a. Safety Reporting Program
- b. Communication of the Safety Management Policy
- c. Organizational SMS Accountabilities and Responsibilities

### 3. Safety Risk Management

- a. Safety Risk Management (SRM) Process
- b. Ongoing Management of Safety Risk
- e. Roadway Worker Protection
- f. Safety Certification

### 4. Safety Assurance

- a. Performance Monitoring and Measurement
- b. Documentation
- d. Event Reporting and Investigations
- e. Change Management
- f. Corrective Action Plans

### 5. Safety Promotion

- a. Competencies and Training
- b. Safety Communication
- c. Safety Committees
- e. Safety Reporting Program Engagement







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