

**W-0388 Improper Roadway Worker Protection at Shady Grove Station – October 10, 2024****Document Purpose**

This WMSC written report on WMATA Metrorail's safety event investigation and review of Metrorail's findings in accordance with the WMSC Program Standard, in conjunction with the attached Metrorail investigation report that has undergone WMSC staff review, feedback, and Metrorail revision, describes the investigation activities, identifies factors causing or contributing to the accident, and sets forth ongoing, additional, or upcoming corrective actions and further oversight work (such as inspections and audits) as necessary or appropriate. The WMSC's ongoing oversight during the investigative process, including safety event reporting and verification, participation in investigative interviews, data review, consistent communication with the Metrorail investigations team, and feedback on Metrorail's reports leads to further improvements prior to consideration of the reports by WMSC Commissioners for adoption. The WMSC's safety event investigation oversight assures the sufficiency and thoroughness of Metrorail's investigations. The WMSC Commissioners are considering these documents (the WMSC review and Metrorail's investigation report) as a unified item for adoption at the Washington Metrorail Safety Commission meeting on August 5, 2025

WMSC staff recommend adoption of this investigation.

Roadway Worker Protection

The WMSC's audit of Metrorail's Roadway Worker Protection Programs, issued on July 31, 2024, 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. As further explained in Finding 1 of the audit report, 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 events with roadway workers, including an October 2016 safety event during which Federal Transit Administration (FTA) track inspectors were forced to jump out of the path of a train to avoid being hit by the train near Ronald Reagan Washington National Airport. In 2017, Metrorail instituted an additional form of safety protection for Metrorail mobile roadway workers called Advanced Mobile Flagger (AMF). There have been near misses that include workers narrowly escaping a fatal collision, including events that occurred in 2021, 2022, 2023 and as recently as May 2025.

Metrorail developed and the WMSC approved corrective action plans created in accordance with the Program Standard to address the 13 findings of the RWP Audit issued in July 2024. These build on immediate mitigations and initial steps to correct outdated materials and communicate the importance of safety rules that Metrorail took based on the WMSC's communication of safety issues as those issues were observed and validated during the audit process. Corrective action plans associated with the RWP audit have scheduled dates of completion between December 2025 and October 2028. On September 27, 2024, the WMSC issued an order requiring that Metrorail maintain its RWP program as it was written and implemented as of October 1, 2024. Thereafter, Metrorail may propose an annual schedule by which it intends to revise the RWP program and provide the WMSC with the package of revisions and accompanying training materials for WMSC approval. The intended goal here is to create an annual predictable revision cycle, with exceptions



to address safety risks meeting certain conditions, and for any changes resulting from WMSC-required CAPs. Complying with the Order will allow Metrorail to focus on ensuring that employees are properly trained on rules that remain stable and for Metrorail to assess compliance for a reasonable duration of time before additional changes take effect.

In October 2024, the Federal Transit Administration issued 49 CFR Part 671 – Rail Transit Roadway Worker Protection regulation - establishing minimum safety standards for rail transit Roadway Worker Protection (RWP) to ensure the safe operation of rail transit systems and to prevent safety events, fatalities, and injuries to transit workers who may access the roadway in the performance of work. This regulation allows either rail transit agencies, such as Metrorail or state safety oversight agencies such as WMSC to prescribe additional or more stringent operating rules, safety rules, and other special instructions that are consistent based on risk profile of the rail operations. This regulation requires Metrorail to coordinate with the WMSC to establish a WMSC-approved RWP program that meets the requirements of the FTA regulation, by December 2025.

Safety event summary:

On Thursday, October 10, 2024, the Train Operator of Train 101 passed an Advance Mobile Flagger (AMF) at Shady Grove Station, who was positioned at the platform 8-car marker on track 1, without stopping to receive the required safety briefing regarding the presence of personnel on the track ahead, risking collision with roadway workers.

An investigative review of Closed-circuit Television (CCTV) footage showed that the AMF, a contractor, had properly placed amber lanterns at the 8-car marker on tracks 1 and 2, and began flagging duties for an Office of Track and Structures mobile work crew conducting a track inspection between Rockville and Shady Grove stations on track 1. At 12:01 p.m., with the AMF in position at the 8-car marker, Train 101 entered the station's platform limits and continued toward Rockville Station without stopping for the required AMF briefing.

CCTV footage showed that the AMF did not use the proper hand signal to indicate to the Train Operator to slow down or stop their train. Realizing the train was not going to stop, the AMF waved their flag to get the Train Operator's attention. As the train passed, the AMF sounded their air horn to warn roadway workers and at 12:06:03 p.m., transmitted the emergency via radio to the Radio Rail Traffic Controller in the Control Center. The mobile work crew immediately cleared the track to a place of safety. The Train Operator reduced the train's speed when they encountered the roadway workers and then proceeded. At 12:07:16 p.m., over a minute after the emergency radio transmission from the AMF, the Radio Rail Traffic Controller instructed the Train Operator of Train 101 to stop their train. After confirming the mobile work crew was in a place of safety, the Radio Rail Traffic Controller instructed the Train Operator to continue to Rockville Station. A Rail Supervisor took over train operation at Grosvenor-Strathmore Station and removed the Train Operator from service for post-event toxicology testing. During an investigative interview, the Train Operator stated they were rushing and did not notice the amber lantern that was properly placed at the 8-car marker.

Train 101 was removed from service for inspection. There were no injuries or damage reported as a result of this event. This near-miss event was caused by a lack of situational awareness and failure to follow established Metrorail procedures. The Train Operator failed to stop to receive a safety briefing as required by Metrorail SOP 17.22 Advanced Mobile Flagging.

Corrective Actions:



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Office: 202-384-1520 • Website: www.wmsc.gov

As a result of this event, the involved Train Operator received refresher training with an emphasis on Roadway Worker Protection procedures.

Example of related open CAP

- CAP C-0280 addresses the 2024 Roadway Worker Protection audit finding that Metrorail is not effectively ensuring that its personnel on and around the roadway are consistently following the Roadway Worker Protection rules designed for safety. WMATA has submitted deliverables related to the CAP, including a summary report on their review of current internal rules compliance practices in comparison with American Public Transportation Association (APTA) requirements and a sample of three months' worth of evidence of existing RWP Rules Compliance process and results. (Expected completion date October 2026).



Washington Metropolitan Area Transit Authority
Department of Safety
Office of Safety Investigations

FINAL REPORT OF INVESTIGATION A&I E24814

Date of Event:	October 10, 2024
Type of Event:	Improper Roadway Worker Protection (RWP)
Incident Time:	12:06 hours
Location:	Shady Grove Station, Track 1
Time and How received by Safety:	12:13 hours – Safety Information Official (SIO)
Washington Metrorail Safety Commission (WMSC) Notification Time:	13:16 hours
Responding Safety Officers:	None
Rail Vehicle:	Train ID 101 (3285-3284 3267-3268 3195-3194)
Injuries:	None
Damage:	None
Emergency Responders:	None
Safety Universal Data System (SUDS) Number:	20241010#120536MX

Incident Date: 10/10/2024 Time: 12:06 hours
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E24814

Drafted By: SAFE 703 -12/07/2024
Reviewed By: SAFE 707 – 12/09/2024
Approved By: SAFE 707 – 12/09/2024

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Shady Grove Station – Improper Roadway Worker Protection

October 10, 2024
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Abbreviations and Acronyms

AIMS	Advanced Information Management System
AMF	Advanced Mobile Flagger
ARS	Audio Recording System
CCTV	Closed-Circuit Television
CMOR	Office of the Chief Mechanical Officer
IIT	Incident Investigation Team
MICC	Metro Integrated Command and Communications Center
MOR	Metrorail Operating Rulebook
NOAA	National Oceanic and Atmospheric Administration
SIO	Safety Information Official
SMS	Safety Measurement System
SPOTS	Service Performance On-Time System
RJSB	Roadway Job Safety Briefing
RTC	Rail Traffic Controller
RTRA	Office of Rail Transportation
RVO	Rail Vehicle Operator
RWIC	Roadway Worker in Charge
RWP	Roadway Worker Protection
TRST	Office of Track and Structures
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

Executive Summary

**Note that all times listed are approximate and may contain minor variations due to differences between systems of record. **

On Thursday, October 10, 2024, at 11:26 hours, a contractor who is employed with Rail Pros was acting as an Advanced Mobile Flagger (AMF) when they arrived at Shady Grove Station to conduct AMF duties for an Office of Track and Structures (TRST) work crew who were conducting a walking track inspection between Rockville Station and Shady Grove Station on track 1. The Roadway Worker in Charge (RWIC) contacted the Advanced Flagger and confirmed that they were in place at Shady Grove Station, ready to flag on tracks 1 and 2.

Closed-circuit television (CCTV) revealed that the Advanced Flagger placed amber lanterns at the eight-car markers of tracks 1 and 2 as they were setting up for AMF duties. The Advanced Flagger began flagging duties and briefed the departing trains on tracks 1 and 2.

At 12:01 hours, Train ID 101, a six-car consist, entered the platform limits at Shady Grove Station on track 1. The Advanced Flagger remained at the eight-car marker to conduct AMF duties.

When the train departed Shady Grove Station towards Rockville Station, the Rail Vehicle Operator (RVO) of Train ID 101 departed the station without stopping at the eight-car marker to be briefed by the Advanced Flagger. The Advanced Flagger reported an emergency to the Metro Integrated Command and Communications Center (MICC). The TRST mobile work crew overheard the Advanced Flagger's radio transmission and moved to a place of safety. The Radio Rail Traffic Controller (RTC) instructed the RVO of Train ID 101 to stop the train. The Radio RTC confirmed that the mobile work crew was in a place of safety, then granted the RVO of Train ID 101 permission to continue to the next station.

In adherence to Standard Operating Procedure 102-1, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio RTC dispatched a Rail Supervisor to relieve the Rail Vehicle Operator from duty for post-incident testing.

In accordance with the Office of the Chief Mechanical Officer (CMOR) Incident Investigation Team (IIT) Operations Administrative Policy (OAP) 102.06, the Metro Integrated Command and Communications Center (MICC) promptly initiated the removal of Train ID 101 from revenue service for post-incident investigative measures. This action adhered to the Rail Vehicle Event Investigation Policy, ensuring a comprehensive examination of the incident.

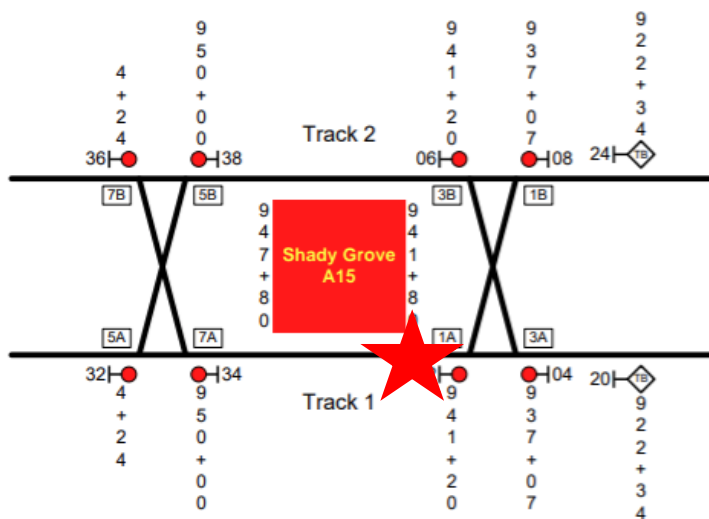
There were no injuries or damage as a result of this event.

The probable cause of the Improper Roadway Worker Protection (RWP) event at Shady Grove Station on October 10, 2024, was a lack of situational awareness and communication. RVO did not observe the Advanced Flagger and did not receive a briefing before departing the station.

Incident Site

Shady Grove Station is an outdoor terminus station with ballasted tracks. There is an interlocking on the inbound and outbound ends of the station.

Field Sketch/Schematics



The above depiction is not to scale.

Purpose and Scope

The purpose of this accident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

Investigative Methods

The investigative methodologies included the following:

- Site assessment through video and document review.
- Formal Interviews – SAFE interviewed two individuals as part of this investigation. The interviews included persons present at, during, and after the incident, those directly involved in the response process, and representatives from the Washington Metrorail Safety Commission (WMSC). SAFE interviewed the following individuals:
 - Advanced Mobile Flagger
 - Rail Vehicle Operator
- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information. Written statements were reviewed from personnel present during the event.
 - RWIC

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- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
 - Metrorail Operating Rulebook (MOR)
 - National Oceanic and Atmospheric Administration (NOAA)
 - RVO Certification
 - RVO 30 Day Work History
 - RVO Written Statement
 - AMF Written Statement
 - AMF 30 Day Work History
 - RWIC Written Statement
 - Roadway Job Safety Briefing (RJSB) Form
- System Data Recording Review – A collection of information contained in Metro Data Recording Systems. This data includes:
 - Audio Recording System (ARS) playback
 - Closed-Circuit Television (CCTV)
 - Service Performance On-Time System (SPOTS)

Investigation

On Thursday, October 10, 2024, at 11:26 hours, a Rail Pros AMF arrived at Shady Grove Station via Train ID 137 on track 1 to conduct AMF duties for a TRST work crew conducting a walking track inspection from Rockville Station to Shady Grove Station. The AMF contacted the RWIC and informed them that they were at Shady Grove Station, tracks 1 and 2 and ready to flag. The closed-circuit television (CCTV) showed that the AMF placed amber lanterns at the eight-car marker on tracks 1 and 2 as they reported for duty. The AMF briefed two trains on track 1 and three trains on track 2 without incident before Train ID 101.

Train ID 101 was in service from Glenmont Station and arrived at Shady Grove Station at 12:01 hours. The CCTV revealed that the train entered the platform limits at Shady Grove Station on track 1 and berthed at the outbound end at the eight-car marker. The AMF remained at the inbound end eight-car marker conducting AMF duties.

During the formal interview, the RVO stated that they did not see the amber lantern at the eight-car marker; they were about to be late leaving the station, so they were focused on leaving on time.

The CCTV revealed that the AMF waved the flag as Train ID 101 departed Shady Grove Station. The RVO of Train ID 101 departed the station without stopping at the eight-car marker to be briefed by the AMF. The AMF reported over the radio, “emergency, emergency, emergency”.

The Radio RTC instructed Train ID 101 to stop. When Train ID 101 stopped, the RVO stated that the lead cab was past the mobile work crew. The Radio RTC instructed the RVO to continue, and they would be relieved by a Rail Supervisor who took over operating the at Grosvenor Station.

The Incident Investigation Team conducted an inspection of the train and provided an analysis, which revealed that Train ID 103 exceeded the RWP speed restriction and topped out at 54 mph while traveling to Rockville Station. After departing Shady Grove Station, the train stopped after traveling 5899 feet in the direction of Rockville Station and resumed operation a few moments later.

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During the informal interview, the TRST RWIC stated that they overheard the AMF's radio transmission and cleared to a place of safety. At 12:12 hours, the Button RTC contacted the Shady Grove Terminal Supervisor to have the next train pick up the mobile work crew from the roadway. At 12:13 hours, the Terminal Supervisor instructed Train ID 103 to pick up personnel at CM A1 904+00.

At 12:15 hours, Train ID 103 departed Shady Grove Station on track 1. At 12:18 hours, the TRST RWIC advised the Radio RTC that the crew was aboard the train and clear from the roadway.

At 12:54 hours, the Operations Manager advised the Rail Pros Supervisor of the Improper RWP event and that the AMF was not properly set up on the platform. However, the CCTV showed that the AMF placed amber lanterns at the eight-car marker on tracks 1 and 2 as they reported for duty at Shady Grove Station. The AMF briefed two trains on track 1 and three trains on track 2 without incident before encountering Train ID 101.

Chronological Event Timeline

A review of ARS playback, i.e., phone and radio communications, revealed the following timeline:

Time	Description
11:26:00 hours	AMF arrived at Shady Grove Station, track 1. (CCTV)
11:26:44 hours	AMF: Contacted the Radio RTC to request permission to go direct with the RWIC. Radio RTC: Granted them permission. [Ops. 1]
11:26:59 hours	AMF: Contacted the RWIC and informed them that they were at Shady Grove Station, at the 8-car marker for tracks 1 and 2 and ready to flag. RWIC: Acknowledged their transmission. [Ops. 1]
12:06:03 hours	AMF: Stated, "Emergency, emergency, emergency" and told the RWIC to stand by and stand clear. [Ops. 1]
12:06:16 hours	AMF: Stated the train did not stop at the 8-car marker. Radio RTC: Asked for the caller's location. AMF: Responded they were at the 8-car marker tracks 1 and 2 at Shady Grove Station. [Ops. 1]
12:06:55 hours	Button RTC: Informed the MICC Operations Manager that the AMF reported they did not brief Train ID 101 before leaving the platform. [Ops. 1 Phone]
12:06:56 hours	Radio RTC: Responded unit calling Central repeat your transmission; what is your emergency? AMF: Responded that they were at Shady Grove Station tracks 1 and 2; the train did not stop to be briefed, and they were trying to reach their RWIC. [Ops. 1]
12:07:16 hours	Radio RTC: Instructed Train ID 101 to stop their train. [Ops. 1]
12:07:31 hours	Train ID 101: Responded to the Radio RTC. Radio RTC: Instructed Train ID 101 to stop their train. [Ops. 1]
12:07:50 hours	MICC Operations Manager: Contacted the SIO and informed them of the possible RWP violation. [Rail 1]
12:08:03 hours	Radio RTC: Contacted the RWIC to advise them that a train was in approach to their location from Shady Grove Station. RWIC: Advised the Radio RTC that the train passed their location. Radio RTC: Acknowledged the transmission and gave Train ID 101 permission to continue and asked Train ID 101 if they saw the AMF. [Ops. 1]

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Time	Description
12:08:27 hours	<u>Train ID 101:</u> Responded that they passed the work crew at 31 mph. <u>Radio RTC:</u> Acknowledged that they passed the work crew at 31 mph but asked the RVO if they saw the AMF at Shady Grove Station. <u>Train ID 101:</u> Responded, "negative Central." [Ops. 1]
12:12:54 hours	<u>Button RTC:</u> Contacted the Shady Grove Terminal to have a train pick up the TRST crew and obtained the RVO's information operating Train ID 101. [Ops. 1 Phone]
12:13:23 hours	<u>Terminal Supervisor:</u> Instructed Train ID 103 to pick up personnel at CM A1 904+00. [SG-YD1 Radio]
12:14:21 hours	<u>SIO:</u> Contacted the MICC Operations Manager to give them an update after viewing the CCTV. [Rail 1]
12:15:23 hours	Train ID 103 departed Shady Grove Station on track 1. [SPOTS]
12:16:47 hours	<u>MICC Operations Manager:</u> Contacted the MICC Assistant Operations Manager and instructed them to have an RTRA Supervisor relieve the RVO of Train ID 101 and contact division management to see what they wanted to do with the RVO. [Rail 1]
12:17:39 hours	<u>MICC Assistant Operations Manager:</u> Contacted the Button RTC and instructed them to have an RTRA Supervisor relieve the RVO of Train ID 101. [Rail 2]
12:18:03 hours	<u>RWIC:</u> Advised the Radio RTC that the crew was aboard the train and clear from the roadway. <u>Radio RTC:</u> Acknowledged the transmission. [Ops. 1]
12:19:00 hours	<u>Radio RTC:</u> Instructed a Rail Supervisor at Grosvenor Station to take over operating Train ID 101. [Ops. 1]
12:22:14 hours	<u>SIO:</u> Contacted the MICC Operations Manager and advised them of another camera angle to view the incident. Also, asked what was being done with the TRST crew and RVO. <u>MICC Operations Manager:</u> Advised the RVO will get relieved at Grosvenor Station and the TRST crew will clear the roadway. [Rail 1]
12:29:25 hours	<u>MICC Operations Manager:</u> Provided the MICC Director with an update on the possible improper RWP at Shady Grove Station. [Rail 1]
12:29:38 hours	<u>MICC Assistant Operations Manager:</u> Contacted Glenmont Division to advise them of the Improper RWP and asked what they wanted to do with the RVO. <u>Glenmont Division:</u> Responded that they would contact their Director for instructions on how to proceed. [Rail 2]
12:37:49 hours	<u>Button RTC:</u> Contacted the MOC desk to obtain the RWIC's information. [Ops. 1 Phone]
12:44:46 hours	<u>MOC Desk:</u> Contacted the MICC Assistant Operations Manager to provide them with the RWIC's and their Superintendent's information. [Rail 2]
12:51:40 hours	<u>MICC Operations Manager:</u> Updated the RWIC's Superintendent about the Improper RWP violation and asked if the TRST crew would be removed from service. <u>TRST Superintendent:</u> Advised the MICC Operations Manager that the TRST crew was being removed from service and would get written statements when they returned to the office. [Rail 1]
12:54:24 hours	<u>MICC Operations Manager:</u> Advised the Rail Pros Supervisor of the Improper RWP event, and that the AMF was not properly set up on the platform. [Rail 2 Phone]

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****Note:** Times above may vary from other systems' timelines based on clock settings and reporting sources.

The Office of Chief Mechanical Officer / Vehicle Monitoring and Diagnostic System (VMDS)

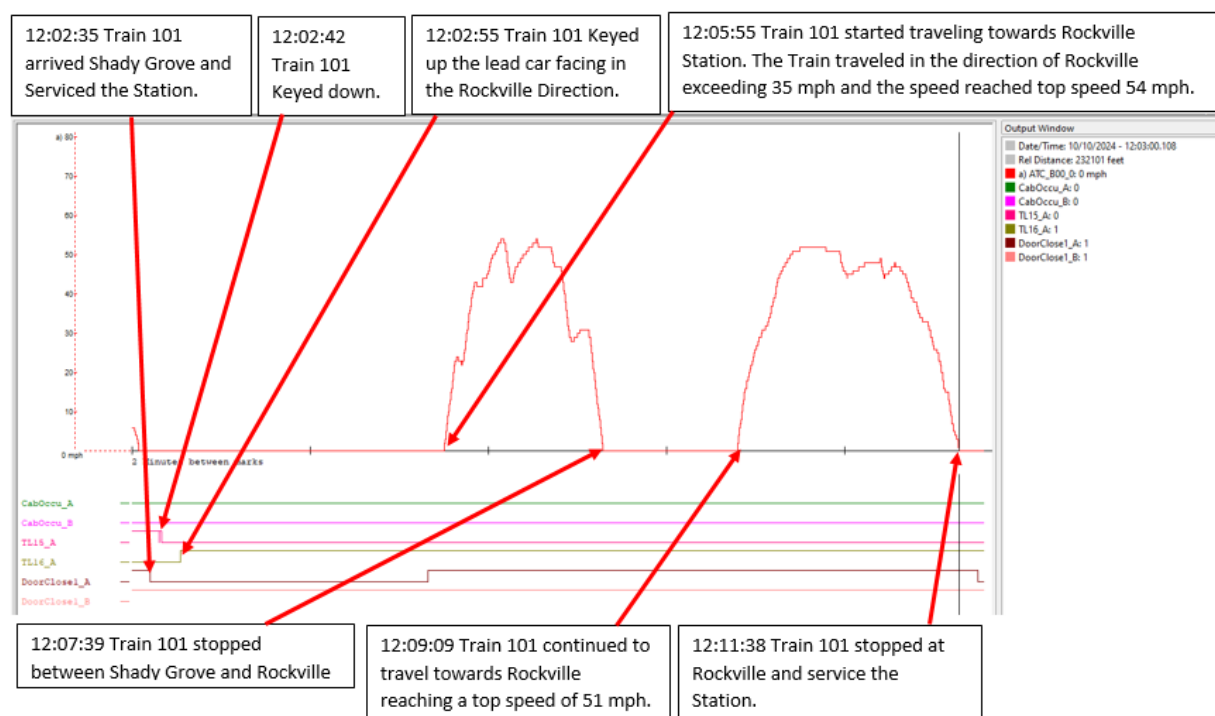
Adopted from Office of Chief Mechanical Officer IIT report with minor formatting and grammatical edits:

Based on the data, Train ID 101 traveled from Shady Grove Station to Rockville, exceeding the RWP speed restriction. Train ID 101 speed topped at 54 mph while traveling to Rockville. The train stopped after traveling 5899 feet in the direction of Rockville and resumed operation a few moments later. No specifics about the AMF or the crew can be provided since these cars are not equipped with CCTV.

Table 1. Description of events.

Time	Description of Events
12:02:35	Train 101 arrived Shady Grove and Serviced the Station.
12:02:42	Train 101 Keyed down.
12:02:55	Train 101 Keyed up the lead car facing in the Rockville Direction.
12:05:55	Train 101 started traveling towards Rockville Station. The Train traveled in the direction of Rockville exceeding 35 mph and the speed reached top speed 54 mph.
12:07:39	Train 101 stopped between Shady Grove and Rockville
12:09:09	Train 101 continued to travel towards Rockville reaching a top speed of 51 mph.
12:11:38	Train 101 stopped at Rockville and service the Station.

Graph. 1. Data Analysis.



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Interview Findings and Written Statements

As part of the investigation launched into the event, SAFE interviewed two people. The interviews identified the following key findings associated with this event. Findings detailed below include reported information from involved personnel and may conflict with other data sources contained in the report.

AMF

- They arrived at Shady Grove and was properly set up to flag.
- They did not have any issues briefing any trains prior to Train ID 101.
- They had all their PPE.
- They noticed the train was not going to stop and waved the flag at the RVO to get them to stop.
- They immediately sounded the air horn and stated, “emergency, emergency, emergency.” via radio.

RVO

- The RVO was trying to leave on time.
- The RVO did not see an amber lantern or the AMF at the eight-car marker.
- The RVO reduced their speed when they noticed the work crew.
- They had passed the work crew when the Radio RTC instructed them to stop.

Weather

On October 10, 2024, at the time of the incident, NOAA recorded the temperature as 61°F, with clear skies, winds 4 mph, and 59% humidity. The weather was not a contributing factor in this incident (Weather source: NOAA) – Location: Rockville, MD.

Related Rules and Procedures

17.22.6 Advanced Mobile Flagging Procedures:

- a. The RWIC will conduct a Roadway Job Safety Briefing prior to entering the roadway and assign the Advanced Mobile Flagger(s) and Watchman/Lookout(s).
- b. The RWIC will contact the Rail Traffic Controller and perform a radio check establishing positive communication.
- c. The Advanced Mobile Flagger is required to follow PPE guidelines per the Minimum PPE Standard for on-track safety.
- d. 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.
- e. Under the direction of the RWIC, the Advanced Mobile Flagger will position themselves at the next station ahead (in the direction the Mobile Work Crew will be walking). Advanced Mobile Flaggers will take their position at the end of the platform (eight (8) car marker or end gate) in the direction the train is traveling, and on the track the Mobile Work Crew is inspecting.
- f. Once the Advanced Mobile Flagger has taken their position on the platform ahead of the Mobile Work Crew, they will turn on and place their flashing amber lantern/E-flare into its base and position it at the end of the platform (eight (8)-car marker or end gate area) in the direction of rail vehicle movement, operations.
- l. As the rail vehicle approaches, the Advanced Mobile Flagger is to present the orange flag toward the Rail Vehicle Operator and confirm the amber lantern/E-flare is visible to ensure the rail vehicle comes to a complete stop at their location.
- m. If the Advanced Mobile Flagger hears multiple horn blasts from a Class 1 rail vehicle, indicating the vehicle is not planning to service the station, the Advanced Mobile Flagger must make every effort, to stop the rail vehicle by continuously displaying a stop hand signal using the orange flag.

- n. If any rail vehicle fails to stop at the Advanced Mobile Flagger's location and is proceeding towards the Mobile Work Crew, the Advanced Mobile Flagger must immediately contact the RWIC and advise them to clear all personnel from the roadway, alerting them to the approaching rail vehicle. If the RWIC does not acknowledge the Advanced Mobile Flagger's alarm to the approaching rail vehicle, the Advanced Mobile Flagger shall warn the Mobile Work Crew utilizing their air horn and whistle in short rapid blasts. The incident must be reported to the Rail Traffic Controller, at the first available opportunity, and an investigation by the Department of Safety shall be completed.

Human Factors

Fatigue

Signs and Symptoms of Fatigue

Rail Vehicle Operator

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No sign of fatigue was indicated by the available data. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The RVO reported feeling fully alert at the time of the incident. The AMF reported experiencing no symptoms of fatigue in the time leading up to the incident.

AMF

We evaluated conditions at the time of the incident to distinguish whether evidence of fatigue was present. No sign of fatigue was indicated by the available data. Video of the incident was reviewed for behaviors suggesting fatigue. No indications of fatigue were evident from the video. The AMF reported feeling fully alert at the time of the incident. The AMF reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk

Rail Vehicle Operator

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The RVO reported keeping a regular sleep schedule in the days leading up to the incident. The RVO worked the day shift in the days leading up to the incident. The RVO was awake for 8 hours at the time of the incident. The RVO reported eight hours of sleep in the 24 hours preceding the incident. The off-duty period was 13.5 hours, which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep to the RVO's usual workday sleep durations. The RVO reported no issues with sleep.

AMF

We evaluated incident data for fatigue risk factors. No significant risk was identified. The incident time of day did not suggest an increased risk of fatigue-related impairment. The AMF reported keeping a regular sleep schedule in the days leading up to the incident. The AMF worked the day shift in the days leading up to the incident. The AMF was awake for 6.1 hours at the time of the incident. The AMF reported nine hours of sleep in the 24 hours preceding the incident. The off-duty period was 14.8 hours which provides an opportunity for 7-9 hours of sleep. This was a comparable amount of sleep as the AMF's usual workday sleep durations. The AMF reported no issues with sleep.

Post-Incident Toxicology Testing

WMATA's Drug and Alcohol Program determined that the Rail Vehicle Operator complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

WMATA's Drug and Alcohol Program determined that the AMF complied with the Drug and Alcohol Policy and Testing Program 7.7.3/6.

Findings

- The AMF was at the eight-car marker conducting flagging duties with all PPE.
- The AMF did not give the RVO the proper hand signals to slow down or stop.
- The AMF waved the flag as Train ID 101 departed Shady Grove Station.
- The AMF had briefed five trains without incident prior to the improper RWP.
- The TRST work crew cleared the roadway because they heard the AMF say, "emergency, emergency, emergency."
- Train ID 101 had passed the work crew when the Radio RTC instructed them to stop.
- The Radio RTC could not quickly identify the AMF that radioed emergency.

Immediate Mitigation to Prevent Recurrence

- The TRST work crew was cleared from the roadway.
- In adherence to Standard Operating Procedure 102-1, which outlines the protocol for Removing an Employee from Service for involvement in an operational safety event, the Radio RTC dispatched a Rail Supervisor to relieve the Rail Vehicle Operator from duty for post-incident testing.

Probable Cause Statement

The probable cause of the Improper Roadway Worker Protection (RWP) event at Shady Grove Station on October 10, 2024, was a lack of situational awareness and communication. RVO did not observe the Advanced Flagger and did not receive a briefing before departing the station.

Recommended Corrective Actions

Corrective Action Code	Description	Responsible Party	Estimated Completion Date
120536_SAFECA PS_RTRA_001	The Rail Vehicle Operator is to attend refresher training with an emphasis on RWP procedures.	RTRA SRC	Completed

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Appendices

Appendix A – Interview Summaries

The below narratives summarize the incident and represent the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

AMF

The AMF is a Rail Pros Contractor who has served as an Advanced Mobile Flagger for 10 months. The AMF is RWP Level 2 certified and must recertify in January 2025. The AMF mentioned feeling fully alert right before the event. The AMF was working daytime shifts leading up to the event. The AMF stated they had no personal circumstances interfering with their opportunity to get good sleep.

The AMF mentioned that they were working their normal work shift on the day of the incident. The AMF mentioned they were conducting AMF duties for a TRST work crew that was conducting a walking track inspection from Rockville to Shady Grove Station on track 1. The AMF stated they conducted a RJSB at Shady Grove Yard before they left. The AMF said when they arrived at Shady Grove Station, they contacted the RWIC and placed the amber lanterns at the eight-car marker and started their AMF duties. The AMF mentioned they place the amber lanterns on the granite edge at the eight-car marker because when they place it at the end gate it is prone to be knocked over into the roadway by the swinging gate.

The AMF said they did not have any issues briefing departing trains upon until Train ID 101. The AMF said they noticed Train ID 101 leaving and when they noticed they were not going to stop they attempting to wave their flag to get the RVO's attention. The AMF then immediate radio, "emergency, emergency, emergency" and sounded the air horn. The AMF attempted several times to tell the Radio RTC their emergency and location.

RVO


The RVO is a WMATA employee with fourteen years of service including five years as a Rail Vehicle Operator. The RVO previously worked as a Bus Operator and Station Manager. The RVO is RWP Level 2 certified and must recertify in January 2025. The RVO last certified as a RVO in May 2024. The RVO reported feeling fully alert leading up to the incident. The RVO was working the Extra Board all their shifts were in the morning.

The RVO stated on the day of the incident they were scheduled to operate Train ID 101 but there was a delay with the train coming into the station. The RVO mentioned when they boarded the train, they were focused on leaving the station on time because they were about to be late. The RVO stated they never saw the amber lantern or the AMF at the eight-car marker. The RVO said proceeded from the station as normal. The RVO said they heard the "emergency, emergency, emergency" on the radio but did not know they were calling because of them. The RVO said when they saw the work crew the reduced their speed and they were in a place of safety. The RVO stated when the Radio RTC instructed them to stop, they had already passed the work crew. The RVO was removed from service at Grosvenor Station.

Appendix B – Roadway Job Safety Briefing

WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.



Part 1: General Job Briefing

1	Date: <u>10/10/24</u>	Time: <u>7:30</u>	RWIC: [REDACTED]
	RWIC Call #: [REDACTED]	RWIC Cell Phone #: [REDACTED]	
2	Safety Contact: <u>4.10</u>		
	RWP Rule: <u>3.15</u>		
3	Work Location: <u>A12-A15 TRK 1</u>		
	Job Task(s): <u>TRK Inspection</u>		
4	Worksite, Electrical, Chemical, or Environmental Hazards: <u>TRIPPING SIGHT</u>		
5	PPE Inspected: <input checked="" type="checkbox"/> Electronic Device Policy Reviewed: <input checked="" type="checkbox"/> Radio Certification Date Inspected: <input checked="" type="checkbox"/> RWP Stickers Inspected: <input checked="" type="checkbox"/> Tools and Equipment Inspected: <input checked="" type="checkbox"/> Radio Checks Performed: <input checked="" type="checkbox"/>		
	What Specialized PPE Will Be Used? <u>Cell Phone</u>		
6	Emergency Response Plan: <u>CALL ROCC</u>		

Part 2: RWP Briefing: This section must be filled out before any Roadway Workers enter the Roadway.

**Track Time On/Off: 9:30/12:13, / / **

7	Rail Line: <u>A</u>	Track Number(s): <u>1</u>	Track Access Guide (TAG) Speed: <u>45</u>
	Working Limits Chain Markers: <u>A1 641+45 - A1 947+30</u>		
	OPS Radio Channel: <u>1</u>	OPS Phone Number: <u>202 962 1546</u>	
	Place of Safety: <u>Fieldside</u>	Time Needed to Reach Place of Safety: <u>15 sec</u>	
	Are There Red Hot Spots Within Your Working Limits? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
	Red Hot Spot Chain Markers: <u>A1 662+00 - 677+00 A1 748+00 - 795+00</u>		Red Hot Spot Hazard(s): <u>Restricted View</u>
8	Form of RWP: IT <input type="checkbox"/> ETO Authority <input type="checkbox"/> Local Signal Control <input type="checkbox"/> AMF <input checked="" type="checkbox"/> FT <input checked="" type="checkbox"/> RWP Notes:		
9	Advanced Mobile Flagger Call #(s) or Last Name(s): [REDACTED] Advanced Mobile Flagger Placement: <u>SCAR MARKER</u> Watchman/Lookout Placement: <u>50 ft</u> Required Site Distance: <u>1/2</u> Watchman/Lookout Rotation Schedule:		
10	Will There be a Speed Restriction on the Adjacent Track? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
	How Will the Speed Restriction be Implemented?		
11	Will Class 2 Vehicles be Part of the Working Limits? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
	# of Class 2 Vehicles:	Type of Class 2 Vehicles:	

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WMATA Roadway Job Safety Briefing Form

This form must be completed legibly and accurately and be retained and made available for inspection for a period of 90 days.

M

Part 2: RWP Briefing, continued:

12	Power Outage: Red Tag <input type="checkbox"/> Supervisory <input type="checkbox"/> Red/Supervisory Tag #: Red/Supervisory Tag Holder: Insulated Mat(s) Color Blue <input type="checkbox"/> Red <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Yellow <input type="checkbox"/> WSAD Certification Due WSAD Serial #/Asset ID WSAD Certification Due WSAD Serial #/Asset ID	Hot Sticking Chain Markers:
Will a Piggyback Crew(s) be Working Within Your Working Limits? Yes <input type="checkbox"/> No <input type="checkbox"/>		
Crew Leader/EIC Call #(s):		Piggyback Work Area Chain Markers:
Piggyback Work Assignment(s):		

Part 3: Good Faith Challenge: The following must be read aloud by the RWIC to the Roadway Workers.
 "WMATA guarantees each Roadway Worker the right to challenge, in good faith, the effectiveness of the Roadway Worker Protection being provided. The Roadway Worker making the challenge, and those that are sympathetic to the challenge, shall remain clear of the roadway until the challenge has been resolved."

RWP Issues:	Worker Name(s):
Was the GFC Issue Resolved? Yes <input type="checkbox"/> No <input type="checkbox"/>	

Part 4: Roadway Worker Acknowledgement
 "I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times."
ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

Roadway Worker Signature	Employee ID #	Roadway Worker Signature	Employee ID #	Crew Leader/EIC Signature	Crew Leader/EIC Employee ID #

Part 5: RWIC Signature(s)

Additional RWIC Comments:			
RWIC Signature:	RWIC Employee ID #:	Date: 10 / 10 / 24	
Relieving RWIC Name:	Relieving RWIC Employee ID #:	Date/Time: / / , :	
Relieving RWIC Signature:	Relieving RWIC Cell Phone #:		

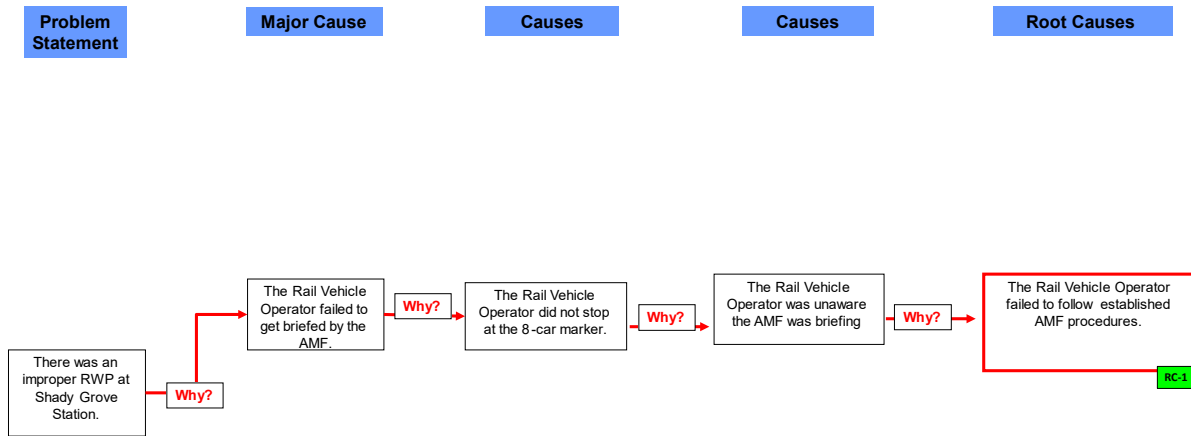
FORM SAFE 500A-003-00

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Appendix C – Why Tree



Root Cause Analysis



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