

Tri-State Oversight Committee



d.



DRPT

Three-Year Safety and Security Review of the Washington Metropolitan Area Transit Authority

Roadway Worker Protection

Element 16 (partial)

Review Conducted: November 2016

Final Report: April 14, 2017

Executive Summary

The Tri-State Oversight Committee's (TOC) Triennial Audit of Roadway Worker Protection (RWP) at the Washington Metropolitan Area Transit Authority (WMATA) identified a number of strengths and deficiencies in communications practices, procedures, recordkeeping, and management activities surrounding WMATA's RWP program. TOC evaluated WMATA's activities in these areas during interviews with frontline and managerial personnel from a range of departments performing training, safety, operations, and maintenance functions.

Many of the issues identified during TOC's audit are consistent with Findings issued by both TOC and the Federal Transit Administration (FTA) following previous reviews. WMATA's RWP program has broadly improved over the past several years. However, opportunities for improvement exist in coordinating RWP activities across multiple departments, ensuring that RWP materials and training content are current and implementing RWP rules in the roadway environment. Findings stemming from this audit do not duplicate existing FTA findings, and corrective actions to resolve issues identified during the audit should not be redundant with ongoing WMATA CAPs to address existing findings.

Audit Findings:

- Finding 1: WMATA's RWP Committee lacks a detailed charter or clearly-defined procedures.
- Finding 2: TSMT RWP instructors receive insufficient time in the field for familiarization activities.
- Finding 3: RWP classes do not include a portion covering WMATA-specific lessons learned.
- Finding 4: SAFE has not conducted the biannual independent audit of RWP described in Section 3.3 of the RWP Training SOP, and this audit responsibility is described only in TSMT documentation.
- Finding 5: The RWPM provides two conflicting timeframes for RWPM updates.
- Finding 6: The RWP Training SOP reflects an outdated version of the SSPP.
- Finding 7: RWP instructors have not clearly provided information on circumstances in which Level 2 personnel can enter the ROW alone.
- Finding 8: The process used by WMATA Human Resources (HR) for defining the RWP certification level required for specific job duties is unclear, and no WMATA department maintains a master list or reference showing all job descriptions with associated RWP certification level requirements.
- Finding 9: Practical evaluation forms for the Level 4 initial training are not consistent with those for Level 4 refresher training.
- Finding 10: Training material is not always updated in a timely manner to reflect Permanent Orders and other rule changes, and TSMT does not maintain a log of rule changes not yet incorporated into training materials.
- Finding 11: Frontline employee RWP Manuals do not contain the most up-to-date rules.

- Finding 12: The WMATA SSPP provides very little information regarding WMATA's RWP program. The SSPP does not reference the TSMT RWP Training SOP or describe MTPD and SAFE responsibilities in administration of the RWP program.
- Finding 13: There are no procedures describing how MTPD RWP training and SAFE contractor RWP training are structured and administered.
- Finding 14: MTPD and SAFE have not been included in the review and update process for the RWP Training SOP.
- Finding 15: Training materials delivered to MTPD officers do not specifically reflect their unique duties and exemptions.
- Finding 16: OEM's tracking matrix for MTPD RWP training is not current and contains inaccuracies.
- Finding 17: RWICs provide abbreviated or incomplete job safety briefings which do not adequately address job and work environment hazards.
- Finding 18: Frontline personnel are largely unaware of maps showing radio dead spots in the Metrorail system.
- Finding 19: CMNT road mechanics do not have a consistent procedure to ensure that a train is immobilized and secured prior to working around it while on the ROW.
- Finding 20: Personnel from various maintenance departments use cell phones to photograph defects while on the roadway, in conflict with WMATA's existing policies for use of electronic devices.
- Finding 21: WMATA's processes for ensuring that Train Operators are informed of work crew locations in the ROW are ineffective, especially in areas where Train Operators are required to switch from one radio channel to another.
- Finding 22: RWP training for MTPD personnel does not include a practical examination component, yet MTPD personnel are awarded the same certification as other WMATA employees.
- Finding 23: The TSMT RWP Training SOP has not been assigned an SOP number.

Introduction

The Federal Transit Administration's (FTA) FTA WMATA Safety Oversight (FWSO) group provides regular oversight of the WMATA Metrorail system. Representatives from the Maryland Department of Transportation (MDOT), the District of Columbia Department of Transportation (DDOT), and the Virginia Department of Rail and Public Transportation (DRPT) comprise the TOC, which has been delegated responsibility for triennial audits and other oversight activities by FWSO under the FWSO Oversight and Surveillance Plan. To comply with State Safety Oversight Final Rule 49 Code of Federal Regulations Part 659 (Part 659), the Federal Transit Administration (FTA) requires states to designate a State Safety Oversight (SSO) agency to administer safety and security programs for rail transit and fixed guideway systems within their jurisdictions. Specifically, 49 CFR Part 659 requires TOC to conduct an on-site safety review of each element of the WMATA System Safety Program Plan (SSPP) at least once every three years. Beginning in 2013,

the TOC has split its Three-Year Safety and Security Review topic areas into separately occurring reviews spread out during a three-year period.

The following report documents the observations and Findings of the TOC's review of RWP, pertaining to portions of Element 16 of the WMATA 2015 SSPP. Generally, this review focused on whether WMATA's practices comply with its own written plans as well as industry standards.

Methodology

In advance of the audit, the TOC requested and reviewed relevant WMATA plans, procedures, records, and reports. The on-site portions of the audit occurred from November 7 to November 10, 2016. TOC interviewed management personnel from Operations Management Services (OPMS), Technical Skills and Maintenance Training (TSMT), the Department of Safety and Environmental Management (SAFE), the Rail Operations Control Center (ROCC), and the Metro Transit Police Department (MTPD) / Office of Emergency Management (OEM) regarding development of the RWP training program, creation of training materials, and tracking of employee training and certifications. In addition, TOC conducted interviews with frontline personnel from Rail Car Maintenance (CMNT), Rail Transportation (RTRA), Automatic Train Control (ATC), Track and Structures (TRST), ROCC, and Power (POWR) regarding RWP training and implementation of the RWP program in the field. TOC representatives reviewed additional documentation provided by WMATA during the on-site portion of the review. The review sought to ensure that RWP training programs are administered in accordance with WMATA policies and procedures and deliver all necessary information to pertinent WMATA employees.

Findings refer to instances of WMATA operating out of compliance with an applicable internal or external written requirement, plan, policy, rule, standard, or procedure. A Finding may also refer to a condition whereby WMATA may technically be conducting business in compliance with existing WMATA, TOC, or FTA requirements, but there is no relevant written plan, policy, or procedure in place, or the existing plan, policy, or procedure is not in accordance with industry best practices such as those promulgated in American Public Transportation Association (APTA) standards.

The TOC would like to thank WMATA personnel for their time, cooperation, and forthrightness throughout the review process.

Current Conditions

OPMS / TSMT

WMATA TSMT, which provides RWP training to WMATA operations and maintenance personnel, is a subgroup within OPMS, the department which holds ownership over WMATA's RWP training program. TSMT's RWP-dedicated staff includes an RWP

Supervisor who reports to the Director of TSMT, seven RWP instructors, a curriculum developer, and an on-the-job training (OJT) training coordinator.

WMATA's RWP Committee oversees the RWP program content, manual, and all training activities. According to TRST representatives, WMATA's RWP Committee currently meets on an ad-hoc basis. Occasionally, rapid response meetings are called to create or address Permanent Orders based on recent occurrences; at the time of the audit, the RWP Committee had not met for several months aside from one emergency meeting to respond to a recent near-miss incident. Meetings are held in person and all approvals are conducted via a vote; changes to the RWP curriculum may only be implemented after an in-person discussion and voting process. There is no RWP Committee charter outlining details of the membership, voting practices, meeting schedules, and other details related to the functioning of the committee.

OPMS is in the process of revising the RWP Manual. All supervisors are notified of changes to the manual via memorandum, although employees are not required to sign off on having received this information. OPMS completed an update of the TSMT RWP Training Standard Operating Procedure (SOP) during the summer of 2016.

At the time of the audit, TSMT personnel were delivering safety stand-down training related to RWP. Safety stand-downs are scheduled to ensure that employees working a variety of shifts will be able to attend; pre-registration is not offered, but employee participation is verified and logged in the Enterprise Learning Management (ELM) system.

OPMS/TSMT database administrators maintain RWP records which are redundant with the ELM for the purpose of generating reports, as the ELM is not effective for generating reports on the training status of employees. Administrators of this database provide reports to TSMT on a regular basis showing all employees who risk falling out of RWP compliance over the next one to six months. TSMT then contacts supervisors to arrange for completion of training. WMATA job descriptions include information on the RWP requirements of each position; while some job descriptions, such as those for Train Operators, specifically identify the RWP certification level required in the position, other job descriptions such as those for general Laborers state only that employees must obtain and maintain RWP certification. WMATA Human Resources (HR) maintains this listing of employee classifications, although personnel in multiple departments were unsure exactly who determines the requirement attached to the job code.

Section 13.2 of the RWP Training SOP states that course materials will be reviewed once every two years. According to TSMT management, training materials are reviewed on an ongoing basis in a semi-formal manner. Substantive changes to the training materials must be reviewed and approved by the RWP Committee.

The RWP Training SOP states that each RWP instructor will participate in a field inspection three times per year. According to TSMT, field inspections are taking place, but are not being tracked in detail. Field inspections serve as both a rule compliance evaluation opportunity and learning experience for instructors.

Assisted by TSMT management, TOC's audit team reviewed a variety of personnel training records pertaining to RWP, including testing and retesting forms, practical exercise checklists, and course sign-in sheets. Retest forms are retained with class attendance and testing forms, and personnel attending refresher or requalification training must arrive with either their existing RWP card or, if the card has been withheld following a failed exam, a retest form which displays the supervisor's signed acknowledgement of the requirement to retest.

Initial Level 4 training includes classroom training and a practical test. The practical assessment of Level 4 initial training includes a caveat describing "showstopper" actions, which, if demonstrated, will lead to immediate failure of the course. While a description of actions to avoid is present within the requalification practical assessment, documentation related to the requalification assessment does not indicate what actions are "showstoppers" and will cause failure when observed by the facilitator.

In addition to speaking with TSMT management for this audit, TOC's audit team conducted interviews with two TSMT RWP instructors. RWP instructors possess Level 4 RWP certification, and teach Level 1, 2, and 4 classes (WMATA previously eliminated the Level 3 RWP certification). Overall, the instructors felt positively about the quality of the RWP curriculum, and believe that RWP rules are generally clear and straightforward to apply in the field. Based on their observations during classes, the instructors did express skepticism that frontline personnel are properly complying with radio protocols for repeat-backs. It should be noted that radio protocol training was added to RWP refresher training courses by order of FWSO in September 2016 and all WMATA personnel are mandated to comply with the protocol communicated in the training sessions.

In describing WMATA's RWP training course delivery, the instructors noted that there is general discussion of "lessons learned" by WMATA personnel in RWP class, but no specific course apportionment looking at lessons learned in the WMATA system. APTA Standard RT-OP-S-016-11, covering RWP Training, instructs agencies to incorporate system-specific lessons learned into RWP training course materials.

TSMT has representatives on the RWP Committee, and instructors provide input on changes to the RWP training program through the TSMT representatives. Instructors are provided with Safety Alerts and Permanent Orders so that RWP-related changes can be incorporated into classroom activities before being formally integrated into RWP training materials. Instructors stated that they typically maintain a folder of relevant supplementary materials and distribute copies to course participants. Interviews with TSMT personnel indicated that training materials are not formally reviewed and updated on a recurring, scheduled basis; changes to the materials are generally implemented by TSMT and reviewed by the RWP Committee only in response to specific incidents. While TSMT management maintain current versions of training materials for distribution to instructors, information on Permanent Orders which impact RWP practices is sometimes not integrated promptly into course materials.

The availability of training, field familiarization, and professional development opportunities for TSMT personnel is somewhat limited. Instructors do not conduct regular, formal field visits for familiarization purposes via a coordinated, department-level program as described in the RWP Training SOP, though some have independently arranged to observe Job Safety Briefings and work activities in the ROW. In certain instances, because roadway observations can require overtime, requests to observe activities in the field have been rejected, though this issue is partly related to the time constraints presented by TSMT's RWP compliance initiatives and is expected to improve in the future.

MTPD / OEM

WMATA OEM administers training to MTPD personnel using TSMT's RWP curriculum. The RWP Training SOP and SSPP do not clearly state that training for MTPD and OEM personnel will be conducted by OEM. Training materials, including presentations, lesson plans, and tests, are provided by TSMT and consistent with materials for training administered to other WMATA personnel.

RWP training for MTPD officers is initially administered as a component of new officer training; all officers receive Level 2 training conducted by OEM, and a small number of personnel receive Level 4 training through classes offered by TSMT; RWP program documentation does not identify which MTPD personnel require Level 4 training. MTPD officers attend in-service job refresher training twice per year, and the required annual RWP recertification is embedded in one of the sessions. MTPD training is administered to personnel in larger blocks, which is why the RWP course for officers was originally partitioned from training for other agency personnel. MTPD does not administer a practical examination during RWP training.

There is no OEM/MTPD SOP describing how the OEM/MTPD training is administered. While OEM implements many components of the TSMT program, the TSMT RWP SOP is largely oriented towards how TSMT administers the program for the rest of WMATA's employees, and not for MTPD/OEM personnel. OEM is not involved in the process of RWP SOP updates conducted by TSMT; the RWP Training SOP states that MTPD will be notified of all changes for review prior to updates being finalized. MTPD/OEM representatives stated that they are not always notified about changes in the RWP curriculum.

OEM is represented on the RWP Committee and participates regularly. OEM reported that it meets with TSMT approximately once per year to discuss updates to RWP training materials. Information pertaining to RWP is communicated to all officers via training bulletins, a process not communicated as part of OPMS's methodology for updating frontline employees on Permanent or Temporary Orders pertaining to Roadway Worker Protection.

MTPD requires checks of officer's RWP credentials before personnel enter the roadway for planned activities, but MTPD personnel rarely enter the ROW in this manner. In

emergency situations, RWP credentials are not checked before officers enter the roadway, and Job Safety Briefings are not conducted. These practices, while understandable, are inconsistent with the essential purpose of TSMT RWP training for ROW access for maintenance and inspection purposes. The deviations in ROW access practices for MTPD personnel are not included in the RWP curriculum. Officers are, however, required to perform proper notifications to ROCC before entering the roadway in an emergency situation, and they do receive training in this aspect of ROW entry.

The audit team reviewed OEM's training matrix containing certification, recertification, and refresher training dates for all MTPD personnel. The dates contained in the matrix appeared to be inaccurate; for example, nearly all personnel had the same date of completion for Level 2 training.

SAFE

SAFE representatives participate in WMATA's RWP Committee. SAFE and OPMS discuss the current state of the RWP program and updates to RWP training in the context of the RWP Committee. SAFE may also follow up on specific concerns related to RWP arising from accident investigation activities or Safety Hotline tips by investigating the relationship between the incident or hazard and the rules established under the RWP program. During Internal Safety and Security Reviews (ISSRs) of RWP conducted every three years, SAFE's ISSR group evaluates the latest version of the curriculum, reviews SOPs, and reviews departmental compliance with RWP procedures. Interviews with TSMT personnel indicated that the biannual SAFE audit of the RWP training program required under Section 3.3 of the RWP Training SOP has not taken place, and SAFE personnel interviewed during the audit did not appear to be aware of this requirement.

SAFE personnel indicated that Good Faith Challenge forms (GFC-10) are rarely provided to SAFE, and stated that most RWP-related disagreements are resolved in the field. Any Good Faith challenge would require the use of this form.

SAFE is responsible for management of RWP training activities for contractors performing work on the WMATA system. There are six RWP instructors within SAFE, along with an Office of Chief Engineer, Infrastructure (CENI) instructor, who are responsible for teaching contractor RWP courses. Instructors are Safety Officers or personnel who spend a substantial amount of time in the field. SAFE's contractor RWP training program is not described in the TSMT RWP Training SOP or any other procedures, although the SSPP does state that SAFE is responsible for issuing RWP training to contractors.

Contractors are required to complete Level 1 RWP training utilizing materials from TSMT's Level 1 training course. Currently, contractors sit for in-person training each year, repeating the full initial class in order to maintain certification; WMATA plans to offer a computer-based refresher course to contractors in the near future, mirroring TSMT requirements for employees. Training is offered in several locations, with the practical component carried out using a mockup of the third rail. Contractors who fail the RWP

course retest according to timelines outlined in the RWP Training SOP and are not allowed enter WMATA ROW until they successfully pass the course.

Contractor personnel are trained before receiving contractor IDs. Contractor training is tracked via an Excel spreadsheet maintained by SAFE, meaning that contractor training cannot be effectively tracked within WMATA's ELM system. SAFE does not track when contractor recertification must be completed, citing the challenge presented by the many contractors who leave WMATA and do not return after completing one-off projects.

SAFE was issued a copy of the 2016 RWP Training SOP when it was released by OPMS. However, SAFE was not contacted by OPMS to participate in the 2016 review and update of the RWP Training SOP; per the SOP, SAFE and MTPD must be consulted on all proposed changes prior to authorization of updates. All training materials are provided by TSMT, so TSMT is responsible for incorporating information on rule changes and permanent orders into contractor RWP materials. SAFE's RWP trainers have not been formally consulted on the ongoing update to the RWP Manual, though they have been consulted on updates to contractor RWP training presentation slides.

ROCC

ROCC managerial personnel described ROCCs' processes for tracking of personnel on the roadway and implementation of other RWP rules. When Controllers are provided with work area limits, they are required to protect the area and document the presence of a work crew on the track. Controllers track the movement of all workers in the WMATA ROW and are responsible for handling requests to enter the roadway. When personnel are present on the track, a "blue block track" is initiated on the AIM schematic to represent their location, with a figure representing the number of personnel in the group and the radio call number of the RWIC. Controllers complete a log of these activities during each shift. According to interviewees, personnel communicating with Controllers are generally familiar with the required information that must be provided to ROCC before entering the ROW.

The ROCC Director is a member of WMATA's RWP Committee, and a designee attends Committee meetings when the Director is not available. ROCC managers have completed recent refresher training regarding Controller activities and ROCC functions; a small portion of this training covered RWP. ROCC managers also maintain an Excel spreadsheet for tracking of Controller RWP certifications.

ROCC managers cited Controller inexperience as the most significant challenge facing ROCC in implementing RWP requirements. Many of WMATA's Controllers were hired within the past several years, and turnover rates in the ROCC have been high. According to ROCC management, controllers conduct field visits for familiarization purposes, though staffing constraints and the demands of the SafeTrack program have made it more challenging for new Controllers to complete familiarization training in the field. As defined in the ROCC Superintendent Performance Plan, all controllers should receive between two and three familiarization tours per year. Additionally, Required Action R-1-3-A from

the 2015 FTA Safety Management Inspection of WMATA mandates that WMATA establish a program to provide ROCC Controllers with mandatory road days for familiarization purposes, and remained open as of December 2016.

Regarding high volumes of radio traffic and challenges tracking the presence of personnel on the roadway, ROCC managers indicated that it is ultimately the responsibility of Train Operators to maintain awareness of crews on the track ahead. While Blue line Train Operators are required to switch radio channels during a complete end-to-end run of the line, ROCC Controllers do not warn Train Operators switching from one radio channel to another of work crews in the territory they have just entered, due to the large number of crews engaged in work throughout the system and number of Train Operators to account for. This gap may leave Train Operators unaware of the presence of work crews in certain portions of the system. According to ROCC management, reductions in late night service and shifting of inspection activities to nighttime could help to reduce the number of individuals on the track during the day to a more manageable level.

According to WMATA's Controllers, most RWP-related non-compliance issues arise when personnel enter or attempt to enter the roadway without requesting permission from ROCC. The Controllers interviewed indicated that these occurrences are relatively rare. In interviews with the TOC audit team, ROCC Controllers indicated that MTPD personnel sometimes do not contact ROCC before entering the roadway, leading to instances where MTPD facilitated evacuation of trains while third rail in the vicinity may still have been energized. Communication between roadway workers and ROCC remains one of the largest RWP-related challenges according to Controllers; while procedures are generally considered effective, compliance with the procedures remains an issue.

Frontline Personnel

TOC's audit team conducted interviews with frontline personnel from POWR, ATC, CMNT, RTRA, and TRST in separate groups. The ATC technicians, TRST inspectors, and POWR personnel interviewed possessed Level 4 certification, while Train Operators and CMNT Road Mechanics interviewed possessed Level 2 certification. Many of the frontline personnel had 10 or more years of experience as WMATA employees.

Dead spots in radio coverage across the system were cited as a significant RWP-related safety concern of frontline employees. These areas are largely known to employees who routinely perform work in the track area. WMATA developed a real-time radio outage map that is posted on WMATA Intranet. The personnel interviewed were not aware of real-time maps produced by WMATA showing gaps in radio coverage. Information sharing regarding radio coverage is largely carried out on an informal basis between frontline employees who work in areas of the system impacted by poor radio coverage.

A high volume of radio traffic presents logistical challenges for frontline maintenance employees. During certain times of day, crews must wait for a substantial period of time before entering the roadway due to radio call volume with ROCC. Some employees interviewed expressed concern that the volume of radio traffic may present challenges

for Train Operators attempting to remember speed restrictions and the location of crews. In a separate interview, Train Operators described varying practices, such as writing down crew locations in order to keep track of large numbers of personnel on the roadway.

The personnel interviewed expressed mixed opinions regarding communication with ROCC. Most employees felt that Controllers possess a fairly strong understanding of RWP rules and work zone setup overall. Some frontline personnel felt that an increased number of mandatory Controller field visits would improve Controller understanding of roadway conditions.

Some employees felt that ROCC sometimes does not prioritize access to the roadway for important tasks. Employees attribute this issue to Controllers' lack of understanding of tasks that need to be completed. Employees stated that because Controllers may not understand all work activities in the ROW, Controllers may be unsure if it is safe to permit maintenance employees to access the ROW at certain times, and error on the side of caution by denying ROW access. One group of employees, when denied access to the roadway to complete a procedure on several different occasions, described misrepresenting the nature of work activities to ROCC in order to successfully gain access to the roadway and complete the procedure. In this instance, the employees who were successfully granted access to the roadway by ROCC for work activities left the area while other employees who were not specifically granted permission to enter the ROW by ROCC continued working. Misleading the ROCC regarding work activities is an improper and unacceptable method for gaining access to the ROW.

Personnel stated that they learn about rule changes and new requirements from supervisors, bulletins, and forums such as safety stand-down meetings. Personnel stated that they bring the RWP manual into the field, but there is no established process to ensure that the manuals include additional information on rule and procedure changes. Several frontline employees reported learning about new procedures for RWP failure and retesting from other employees who had failed rather than dissemination of information on the new rules; changes to RWP testing procedures have not been effectively communicated to WMATA personnel by the entity issuing the changes.

Regarding the recently implemented Permanent Order T-16-07, Introduction of 10 MPH Speed Restriction on Tracks where Workers are Present, TRST inspectors observed that the 10 MPH speed restriction on tracks where workers are present makes detection of certain defects more challenging. This rule, while providing better safety for personnel on the ROW, creates difficulty in detecting some track maintenance issues. Trains traveling at higher speed past track inspectors may cause pumping of the track, lateral movement, and other conditions to become evident, while low speed trains do not.

Some maintenance personnel use cell phones to photograph defects and transmit images to department supervisions, as supervisors require pictures of defects before speed restrictions will be issued; pictures are also helpful for future prioritization of maintenance and tracking conditions over time. This use of cell phones, while potentially effective, currently conflicts with WMATA's policies for use of electronic devices; WMATA personnel

provided documentation of changes to the electronics policy which would permit this behavior, awaiting sign-off by WMATA leadership.

None of the personnel interviewed had issued a Good Faith Challenge, though several personnel had raised issues regarding RWP protection which were immediately resolved by either the RWIC or a Safety Officer and not elevated to the Good Faith Challenge stage.

The employees identified Safety Officers and direct supervisors as individuals they would contact with a proposed improvement for the RWP program or a question regarding implementation of RWP rules. Road Mechanics described implementing, their own RWP safeguards including a process for keying down trains being worked on in the roadway, a non-sanctioned step which is routinely conducted to ensure that trains will not move while Road Mechanics are in the vicinity. This particular safeguard is a potential program improvement and currently is not documented.

According to the frontline employees interviewed, Job Safety Briefings are conducted on a routine basis. These briefings are provided both to WMATA employees and contractors. The content covered during briefings appears to vary in scope and depth. RWP badges are checked before personnel enter the roadway. Several interviewees expressed concern that RWICs are unprepared to provide detailed job safety briefings covering hazards present in the working environment when they are assigned to an area where they normally do not work. This situation arises mostly during overtime assignments when an RWIC can be sent to work any area in the WMATA system, including in unfamiliar areas and with unfamiliar work crews. RWICs do not routinely use resources available to gather advance information on hazards in unfamiliar areas before crews begin work. In addition, in cases RWICs are assigned to unfamiliar areas but supervise crews that are familiar with the area, RWICs tend to provide abbreviated briefings to crews.

Frontline personnel described positive experiences with WMATA's RWP training program. Most felt that instructors were knowledgeable and that training materials including presentations and handouts were effective. Certain personnel expressed frustration at being tested on RWP rules they are not required to carry out during their routine duties. TRST inspectors, for example, are never required to set up work zones, yet are tested on this topic during each RWP training and recertification examination. Certain Level 2 certified employees appeared to be uncertain regarding whether they were permitted to enter the ROW alone under certain circumstances with a Level 2 certification; while the RWPM explains that Level 2 certification does allow for solo ROW entry in limited instances, classroom instruction and RWP training materials may be unclear on this topic.

Findings

Finding 1: WMATA's RWP Committee lacks a detailed charter or clearly-defined procedures.

Section 4.8 of the Roadway Worker Protection Manual (RWPM), which outlines the process for revision of the RWPM, describes the RWP Committee but does not list specific departmental membership, leadership, approval/voting methods, meeting frequency, and other practices. WMATA should expand the existing description within the RWPM or develop a standalone RWP Committee SOP which defines these aspects of committee processes.

Finding 2: TSMT RWP instructors receive insufficient time in the field for familiarization activities.

Per Section 7.4 of the RWP SOP, RWP trainers will participate in a maintenance or inspection event on the roadway at least three times per year. While RWP instructors may occasionally participate in field-based maintenance or inspection events, compliance is inconsistent and is not yet tracked or monitored by TSMT. TSMT should implement a tracking mechanism to ensure that all instructors are able to observe work activities in the field on a routine basis as described in the RWP SOP – at least three times per year.

Finding 3: RWP classes do not include a portion covering WMATA-specific lessons learned.

Though participants may informally discuss experiences in the field, the APTA RWP Program Requirements Rail Standard (APTA RT-OP-S -016-11) states that training programs should include information on lessons learned at the transit agency. TSMT should adapt training materials to incorporate lessons learned derived from WMATA-specific incidents, near-misses, and employee experiences.

Finding 4: SAFE has not conducted the biannual independent audit of RWP described in Section 3.3 of the RWP Training SOP, and this audit responsibility is described only in TSMT documentation.

SAFE involvement in monitoring of the RWP training program is important to ensure that training procedures are carried out effectively. SAFE should either schedule and complete the six-month independent audits as described in the RWP Training SOP or revise the audit timeline in the SOP as deemed necessary to effectively implement the audit program. In addition to noting any change to the audit timeline in the SOP, SAFE should ensure that this audit requirement is fully explained in the SSPP and/or a SAFE policy or procedure.

Finding 5: The RWPM provides two conflicting timeframes for RWPM updates.

As stated in the “Revision and Update of the Roadway Worker Protection Manual” section of the RWPM (page iv), WMATA intends for RWPM reviews to occur every other year. However, in Section 5.3.a of the RWPM it is stated that “The Rule Book Committee shall review bi-annually and revise, as necessary, the modal Rule Book.” WMATA should

revise this portion of the RWPM to indicate biannual or biennial review of the RWPM is required.

Finding 6: The RWP Training SOP reflects an outdated version of the SSPP.

The RWP Training SOP, despite being reviewed and revised in 2016, currently references the 2011 SSPP. WMATA should revise the SOP to either reference general SSPP sections or the current version of the SSPP.

Finding 7: RWP instructors have not clearly provided information on circumstances in which Level 2 personnel can enter the ROW alone.

Many supervisors currently believe that Level 2 personnel may not enter the roadway individually, while RWPM rules allow these workers to enter the roadway alone under certain limited conditions. In interviews, frontline personnel with Level 2 certifications expressed uncertainty regarding whether their RWP training allowed them to enter the roadway alone. WMATA should ensure that training materials and instructors clearly explain the roles and capabilities of Level 2-certified personnel.

Finding 8: The process used by WMATA Human Resources (HR) for defining the RWP certification level required for specific job duties is unclear, and no WMATA department maintains a master list or reference showing all job descriptions with associated RWP certification level requirements.

It is not defined in any of the WMATA documents provided to TOC how WMATA determines which RWP certification level, if any, is needed for particular positions. While HR maintains job descriptions that outline required RWP levels, SAFE and TSMT personnel were not certain who is consulted to develop these requirements. Without a defined process or criteria for classifying positions, WMATA may be unable to ensure that all agency personnel are receiving appropriate levels of training. WMATA should define the process for incorporating RWP requirements into position descriptions and include it in an appropriate WMATA document. WMATA should develop criteria justifying RWP certification levels for all WMATA positions and ensure that HR's RWP classifications are consistent with job duties and safety requirements. WMATA should ensure the responsibility and process for determining training levels is documented in a procedure or plan.

Finding 9: Practical evaluation forms for the Level 4 initial training are not consistent with those for Level 4 refresher training.

The RWP Level 4 initial training practical evaluation includes "showstopper" skills which must be demonstrated correctly to pass the course. However, the requalification evaluation does not indicate that participants will automatically fail the course if they are unable to demonstrate the same critical skills. WMATA should ensure that these forms are consistent and that employees are not allowed to pass requalification practical examinations despite failing a showstopper activity.

Finding 10: Training material is not always updated in a timely manner to reflect Permanent Orders and other rule changes, and TSMT does not maintain a log of rule changes not yet incorporated into training materials.

While it is understandable that the RWP training curriculum cannot be updated with every rule change, a lack of timely updates potentially allows instructors to inadvertently skip instruction on certain changes over time. A log of rule changes which are yet to be included in course materials would benefit both TSMT instructors as well as SAFE and OEM instructors, informing them which memos and orders they must distribute to students in addition to the instructional material. In addition, TSMT management needs to establish a process for providing training instructors with inserts to be included with training materials when a rule is changed in order for them to be able to deliver latest information to students.

Finding 11: Frontline employee RWP Manuals do not contain the most up-to-date rules.

Workers in the field cannot easily carry loose memos and general orders separately from the RWPM. WMATA should consider a method, such as a sticker system or binder format, to ensure that frontline employee RWP manuals are current.

Finding 12: The WMATA SSPP provides very little information regarding WMATA's RWP program. The SSPP does not reference the TSMT RWP Training SOP or describe MTPD and SAFE responsibilities in administration of the RWP program.

Relatively little information regarding RWP training is included in the SSPP. The SSPP should be updated to incorporate additional details of WMATA's RWP program, and should specifically reference the OPMS RWP Training SOP, responsibility for program implementation by MTPD/OEM and SAFE, along with any additional relevant procedures and plans.

Finding 13: There are no procedures describing how MTPD RWP training and SAFE contractor RWP training are structured and administered.

OEM administers RWP training to MTPD personnel. SAFE is charged with RWP training of contractors. While OEM training of MTPD personnel and SAFE training of the contractors mirror most of the TSMT RWP Training SOP, there are several aspects of the RWP training provided by OEM and SAFE that are unique. For example, MTPD does not follow TSMT's test failure protocol or implement the same practical examination requirement, and SAFE requirements for contractor refresher training differs from the refresher training administered by TSMT to WMATA personnel. SAFE reportedly is already formulating an SOP to cover its RWP training practices. Full MTPD and SAFE training practices should be formally documented in the existing RWP Training SOP or new, compatible procedures.

WMATA should either use a training curriculum for training of all WMATA employees that reflects the uniqueness of MTPD and contractor training or develop separate curricula for RWP training of MTPD personnel and contractors.

Finding 14: MTPD and SAFE have not been included in the review and update process for the RWP Training SOP.

MTPD and SAFE were not engaged by OPMS during the update process for the 2016 revision of the RWP Training SOP. Per Section 13.1.5 of the SOP, MTPD and SAFE must be consulted on all proposed changes for review prior to completion of updates.

Finding 15: Training materials delivered to MTPD officers do not specifically reflect their unique duties and exemptions.

As one example, MTPD personnel do not conduct job safety briefings before chasing an assailant onto the ROW. A pattern of nonconformance with one component of the RWP program may lead personnel to neglect other important rules for entering the roadway. WMATA must also clarify what MTPD is not exempt from, including notifying ROCC in all cases prior to entering ROW. Training material delivered to MTPD officers should accurately reflect the circumstances under which MTPD personnel access the roadway.

Finding 16: OEM's tracking matrix for MTPD RWP training is not current and contains inaccuracies.

OEM provided a tracking matrix showing certification, recertification, and refresher training dates for MTPD personnel, but many of the dates appeared to be inaccurate. The meaning of certain dates included in the matrix was unclear based on the format of the document; the matrix included future dates under columns identifying dates of training completion. OEM should refine the tracking matrix format to ensure that the purpose of all data in the matrix is clear, and must ensure that this matrix remains current.

Finding 17: RWICs provide abbreviated or incomplete job safety briefings which do not adequately address job and work environment hazards.

According to frontline personnel, job safety briefings are often short and incomplete when work crews engage in routine activities, a sign of complacency. Interviewees also expressed concern that RWICs are unprepared to provide detailed job safety briefings covering hazards present in the working environment when work crews are working at a site unfamiliar to the RWIC (such as during overtime assignments). RWICs do not use resources available to gather advance information on hazards in unfamiliar areas before crews begin work. A sample of ATC and TSMT Job Safety Briefing Forms and Track Inspection Division Daily Locator Sheets reviewed by the audit team showed that comment sections are often left blank despite forms indicating the existence of hazards in the working environment. Regardless of the routine nature of work being performed in territory that is familiar or unfamiliar to the RWIC, specific job hazards should be explained in detail during each briefing. WMATA should consider reformatting the JSB form to

include a brief comment space for each particular hazard, so that each “yes” has a corresponding explanation of the hazard.

Finding 18: Frontline personnel are largely unaware of maps showing radio dead spots in the Metrorail system.

While WMATA has made improvements to tracking of radio dead spots on a real-time map of the system hosted on the WMATA Intranet site, frontline personnel may not be given or instructed on access to this map for their daily use and planning. Information sharing between employees on radio dead spots is largely informal. WMATA should ensure that all affected personnel are made aware of resources for determining current radio dead spots and mitigating those hazards with use of that information.

Finding 19: CMNT road mechanics do not have a consistent procedure to ensure that a train is immobilized and secured prior to working around it while on the ROW.

Some road mechanics have independently begun keying down trains before working for safety purposes. WMATA should review practices in this area and consider codifying the informal practice or developing a new procedure to prevent unintended train movement while road mechanics are performing work near trains on the roadway. The final decision should be published within the RWPM so that all stakeholders are aware of the procedures being implemented under recovery circumstances.

Finding 20: Personnel from various maintenance departments use cell phones to photograph defects while on the roadway, in conflict with WMATA’s existing policies for use of electronic devices.

Images are transmitted to department supervisors so that defects observed in the field can be evaluated. However, WMATA’s current policy for use of electronic devices prohibits the use of cell phones while on the roadway. WMATA must ensure that the scope of allowable cell phone use is fully documented and defined in applicable policies and rules.

Finding 21: WMATA’s processes for ensuring that Train Operators are informed of work crew locations in the ROW are ineffective, especially in areas where Train Operators are required to switch from one radio channel to another.

As indicated by recent incidents and interviews with frontline WMATA personnel, Train Operators do not effectively maintain awareness of work crew locations during the course of each run. Frontline and managerial personnel attribute this issue to high volumes of radio traffic, large numbers of trains in operation, and the high frequency of work activities requiring ROW access. In areas where Train Operators switch from one radio channel to another, no effective process exists for notifying the Train Operators of work crews present on the roadway. WMATA must develop new processes and communications procedures (possibly through physical means) to ensure that Controllers, Train

Operators, and RWICs coordinate work activities effectively and maintain 100% awareness of work crew locations on the ROW at all times.

Finding 22: RWP training for MTPD personnel does not include a documented practical examination component, yet MTPD personnel are awarded the same certification as other WMATA employees.

MTPD personnel do not complete a full, documented practical RWP examination in the manner of other WMATA employees, a condition which is not described in the TSMT RWP SOP. Since MTPD personnel do not complete the same practical portion of the RWP test, their certification level cannot be considered the same as those who take practical test. The RWP SOP (or a distinct MTPD RWP SOP) should specifically state that MTPD personnel will not take the practical test but still be certified to the same level as other WMATA employees, or MTPD personnel should be certified at a separate RWP certification level unique to MTPD.

Finding 23: The TSMT RWP Training SOP has not been assigned an SOP number.

The RWP Training SOP issued by TRMT must have an SOP number assigned for revisions to be tracked effectively and to ensure that all necessary personnel have access to the most current version of the document.

Persons Interviewed

- [REDACTED] TSMT
- [REDACTED] TSMT
- [REDACTED] ROCC
- [REDACTED] SAFE
- [REDACTED] SAFE
- [REDACTED] TRST
- [REDACTED] TRPM
- [REDACTED] SAFE
- [REDACTED] SAFE
- [REDACTED] OEM
- [REDACTED] OEM
- [REDACTED] MTPD
- [REDACTED] MTPD
- [REDACTED] SAFE
- [REDACTED] SAFE
- Frontline personnel from CMNT, RTRA, ATC, TRST, ROCC, and POWR (names withheld)

Documents Reviewed

- Permanent Order T-16-07: Introduction of 10 MPH Speed Restriction on Tracks where Workers are Present
- Permanent Order T-16-10: Radio Protocols, Modification to General Rule 1.79
- Safety Advisory SA #16-10b: Near Miss Roadway Worker Collision: Hot Spots Require Additional Protection
- 2014 WMATA RWP Manual
- List of RWP Committee Members - 10/6/2016
- Roadway Worker Protection Training Standard Operating Procedures - 6/24/16
- RWP Level 1 Course Syllabus
- RWP Level 2 Course Syllabus
- RWP Level 2 Requalification Course Syllabus
- RWP Level 4 Course Syllabus
- RWP Level 4 Requalification Course Syllabus
- Assorted Tests, Answer Keys, Lesson Plans, Grading Scales, and Class Progress Checklists - RWP Levels 1, 2, and 4 - Certification and Refresher Training
- Roadway Job Safety Briefing Form
- On Track Safety Good Faith Challenge Form
- WMATA ISSR of RWP Training - 7/18/16
- Metrorail Safety Rules and Procedures Handbook (MSRPH)
- RWP Training Report for 9/28/2016 - Out of Compliance
- RWP Training Report for 9/28/2016 - Refresh Due Next 2 Months
- RWP Training Report for 9/28/2016 - Refresh Due Next 6 Months
- RWP Training Report for 9/28/2016 - Requal Due Next 2 Months
- RWP Training Report for 9/28/2016 - Requal Due Next 6 Months
- Graph Out of Compliance Track 6/22/16
- Revised Out of Compliance Track 9/28/16
- RWP Training Metrics August 2016
- RWP Training Metrics July 2016
- Sample ATC and TSMT Job Safety Briefing Forms and Track Inspection Division Daily Locator Sheets