

Safety Directive 16-2
***Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight
Committee to the Washington Metropolitan Area Transit Authority***

UNITED STATES DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

[Safety Directive No. 16-2, Notice No. 1]

Safety Directive Under 49 U.S.C. 5329
**Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight
Committee to the Washington Metropolitan Area Transit Authority**

AGENCY: Federal Transit Administration (FTA), U.S. Department of Transportation (DOT).

SUMMARY: FTA Safety Directive 16-2 requires the Washington Metropolitan Area Transit Authority (WMATA) to take corrective action to resolve open safety findings previously issued by the Tri-State Oversight Committee (TOC). These open findings by the TOC will now be resolved under FTA’s oversight. In the tables attached to this Directive, these open safety findings are grouped into 17 categories, together with explanations of the actions WMATA must take to resolve each of the findings. It should be noted, some of the open findings by the TOC date back to 2008, thus, Safety Directive 16-2 acknowledges a number of instances in which WMATA is already taking action to address certain findings by the TOC. Also, Safety Directive 16-2 acknowledges instances in which WMATA is already taking action to address open TOC findings as part of WMATA’s response to FTA Safety Directive 15-1 (issued June 17, 2015), arising from FTA’s Safety Management Inspection (SMI) of WMATA’s Metrorail system in spring and summer, 2015. Additionally, in a few instances—most notably for safety issues resulting from red signal violations—Safety Directive 16-2 establishes new required actions for resolving open findings by the TOC.

FOR FURTHER INFORMATION CONTACT: For program matters, Sean Thompson, Special Assistant and Director, WMATA Safety Oversight, Office of Transit Oversight and Safety, telephone (202) 366-3616 or Sean.Thompson@dot.gov; For legal matters, Scott Biehl, Senior Counsel, FTA, telephone 202-366-00826 or Scott.Biehl@dot.gov.

SUPPLEMENTARY INFORMATION:

Background

On June 17, 2015, FTA issued Safety Directive 15-1 to WMATA, based a final report on its SMI issued that same date; Safety Directive 15-1 and the SMI outlined 91 required actions WMATA must take to improve the safety of its public transportation operations; of those 91 actions, 78 pertained to the WMATA Metrorail system, and the remainder pertained to WMATA’s Metrobus system.

On September 24, 2015, FTA approved WMATA’s Corrective Action Plan (CAP) to accomplish each and every required action set forth in Safety Directive 15-1. FTA now meets with WMATA on a monthly basis to track, oversee and verify WMATA’s progress in completing the

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required actions under the CAP. With respect to the required actions for the WMATA Metrorail system, FTA is including TOC in the efforts to track and oversee WMATA's progress under the CAP.

On October 9, 2015, U.S. Secretary of Transportation Anthony Foxx directed FTA to take lead responsibility for safety oversight of the WMATA rail system, in accordance with the agency's authority under 49 U.S.C. §§ 5329(f) and (g). This lead responsibility for FTA is temporary, however; it will last only until the District of Columbia, State of Maryland, and Commonwealth of Virginia stand up, and are capable of carrying out, a new State Safety Oversight (SSO) program and a State Safety Oversight Agency (SSOA) compliant with the SSO requirements at 49 U.S.C. § 5329(e). The new SSOA that acts on behalf of the three States must have clear enforcement and investigative authority over the WMATA Metrorail system, including the ability to compel WMATA to take action to address safety concerns. The TOC is working closely with the FTA and three jurisdictions to help establish this new SSOA.

On October 26, 2015, FTA issued Safety Directive 16-1 to the TOC. Safety Directive 16-1 outlines how FTA will exercise leadership over TOC as part of FTA's direct oversight of the safety of the WMATA Metrorail system. Also, Safety Directive 16-1 realigns certain SSO work, such as the performance of triennial reviews, that the TOC continues to carry out, in accordance with its responsibilities under 49 CFR Part 659.

Prior to the issuance of Safety Directive 16-1, the TOC had issued 217 open safety findings calling for WMATA actions to improve the safety of the Metrorail system. In many instances, WMATA has developed or is in the process of carrying out corrective actions to resolve these open findings by the TOC. Since many of these findings relate to safety-critical items or activities, however, the FTA now finds it appropriate to take the lead in enforcing WMATA's implementation of required actions to effectively resolve the TOC safety findings. Also, as appropriate, the FTA is incorporating open TOC safety findings into the oversight process FTA has established to manage WMATA's comprehensive response to Safety Directive 15-1 and the SMI of June 17, 2015.

Open TOC Safety Findings

Over the past several weeks FTA and TOC have worked with one another to take inventory of the 217 open safety findings that TOC has issued to WMATA since 2008. Specifically, FTA and TOC have examined the status of each open safety finding; whether WMATA has formally developed or taken corrective action on that finding, as approved by the TOC; and whether FTA's Safety Directive 15-1 and SMI had a required action that also addressed the open TOC finding or required action. The results of this effort have been documented in a database that links the TOC-approved findings with FTA's findings and required actions, and WMATA's comprehensive CAP, which contains 538 distinct deliverables underway to resolve the required actions under Safety Directive 15-1 and the SMI.

Within this database, FTA has grouped the TOC's open safety findings into subject matter categories (i.e., track, vehicle, signal, roadway worker protection, rules compliance, traction

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power, etc.) and also cross-referenced them by source (accident/incident investigation, TOC triennial review, TOC special study, WMATA internal safety audit, etc.). Analyzing the TOC safety findings by different categories allowed the FTA to better assess conformance to SMI findings, and also to determine if there were specific safety concerns for accident or incident types, system components, or internal WMATA processes that required additional action or greater focus.

FTA then determined the appropriate disposition of each TOC-issued safety finding. FTA developed four major categories to disposition the TOC-issued safety findings for this directive, as follows:

- **Category #1:** The FTA re-issued the TOC safety finding, and directed WMATA to complete the required action previously approved by the TOC. *In these instances, WMATA may re-submit the CAP previously approved by the TOC for acceptance by the FTA. Further, the FTA will coordinate a specific working session with WMATA to complete this transfer; to confirm all WMATA submittals made to TOC or FTA requesting the closeout of open findings; and to verify all deliverable due dates.*
- **Category #2:** The FTA re-issued the TOC safety finding, but required additional or alternate action. *In these instances, WMATA may re-submit the CAP previously approved by the TOC as part of the package for acceptance by the FTA; however, WMATA must also address the additional or alternate action proposed by the FTA to expedite or focus WMATA's response to the safety finding.*
- **Category #3:** The FTA combined two or more TOC-issued safety findings into a single finding, to be addressed by a set of one or more required actions, which include elements of previously TOC-approved required action, but which also include additional actions. *In these instances, WMATA may re-submit the CAPs previously approved by the TOC for the combined safety findings. The FTA will consider these CAPs as part of the package for acceptance; however, WMATA must address all required actions to obtain FTA approval.*
- **Category #4:** The FTA incorporated the TOC-issued safety finding into the SMI corrective action monitoring and verification process. *In these instances, the FTA will integrate the TOC-issued safety finding, and TOC-approved corrective plan, into the monitoring plan for the verification and closeout of the related SMI finding and required action.*

The tables below present the final grouping and disposition of the TOC-issued safety findings. For each required action specified by FTA, outside of the SMI-related findings in Table 17, the FTA directs WMATA to provide the specific action items, milestone schedule, responsible parties, budget, and safety priority rankings needed to address the required action. The FTA will also assign performance measures and verification methods for each required action, for tracking WMATA's progress in addressing each required action, and for ensuring effective corrective action implementation prior to official FTA closeout.

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The FTA will conduct monthly meetings with WMATA and TOC, and will develop CAP verification plans, including heightened inspection activity to ensure that required actions are being implemented by WMATA. Additional FTA inspections will be programmed and conducted, on a proactive and, at times, unannounced basis, to address safety concerns brought to FTA's attention regarding CAP implementation and/or closeout requirements for both the TOC-issued safety findings and the SMI required actions under Safety Directive 15-1.

From time to time, the FTA also may task TOC to track and monitor WMATA's performance in completion of any required action under the CAP or any matter related to an FTA safety directive to WMATA. As available and appropriate, TOC will make its staff and consulting resources available for overseeing WMATA's completion of the required actions.

Directive and Required Actions

In accordance with 49 U.S.C. § 5329 and the authority delegated to the Federal Transit Administrator by the Secretary of Transportation, 49 CFR 1.91, the FTA directs WMATA to manage the TOC-issued safety findings as follows:

- Develop or re-submit, and implement, corrective action plans to address:
 - Table 1: Safety Findings and Required Actions for Automatic Train Control (ATC) Maintenance and Training Issues;
 - Table 2: Safety Findings and Required Actions for Change Management Issues;
 - Table 3: Safety Findings and Required Actions Resulting from Collisions;
 - Table 4: Safety Findings and Required Actions Resulting from Derailments;
 - Table 5: Safety Findings and Required Actions for Emergency Egress Issues;
 - Table 6: Safety Findings and Required Actions for Evacuations;
 - Table 7: Safety Findings and Required Actions for Fires;
 - Table 8: Safety Findings and Required Actions Resulting from Occupational and Shop Safety Compliance Issues;
 - Table 9: Safety Findings and Required Actions Resulting from Other Accidents;
 - Table 10: Safety Findings and Required Actions Resulting from Red Signal Violations;
 - Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection (RWP) Program Implementation Issues;
 - Table 12: Safety Findings and Required Actions Resulting from Issues with Safety Department Procedures and Responsibilities;
 - Table 13: Safety Findings and Required Actions for Structures Maintenance and Training Issues;
 - Table 14: Safety Findings and Required Actions Resulting from Systemwide Maintenance and Vehicle Issues; and
 - Table 15: Safety Findings and Required Actions Resulting from Wrong Side Door Openings.

In addition, the FTA will coordinate with the NTSB to monitor WMATA's action to close out the TOC-issued safety findings relating to NTSB Safety Recommendations identified in Table 16. Finally, the FTA will follow-up with WMATA to track the TOC-issued safety findings

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identified in Table 17 as part of the SMI corrective action plan verification and monitoring activities.

WMATA will have 30 days to respond to FTA's Safety Directive, to provide additional information for consideration, and to propose any equivalent alternate actions for consideration by FTA's Acting Administrator.

Sixty days thereafter, WMATA must submit a tracking matrix to FTA that identifies the specific actions that will be performed to address each required element specified in this Safety Directive; the milestone schedule for completing corrective action; the responsible parties for action and their contact information; and the verification strategy for ensuring the completion of required work.

FTA will review and approve WMATA's work plans, and will monitor the agency's progress in resolving each finding and required action. FTA also will consult with the TOC on review and final approvals for WMATA work plans addressing Metrorail activities.

FTA will conduct monthly meetings with WMATA to review progress until such time as FTA determines that these meetings are no longer needed or may be conducted with less frequency.

Petitions for Relief or Reconsideration

WMATA may petition for special approval to take actions not in accordance with this directive, or may petition for reconsideration. Such petitions must be submitted to the Acting Administrator, who is authorized to dispose of those requests without the necessity of amending this directive. In reviewing any petition for special approval, the Acting Administrator will grant petitions only where WMATA has clearly articulated an alternative action that will provide, in the Acting Administrator's judgment, at least a level of safety equivalent to that provided by compliance with this directive. In reviewing any petition for reconsideration, the Acting Administrator will grant petitions only where WMATA has clearly articulated material facts not in evidence at the time of this directive.

A petition for special approval or for reconsideration must be filed within thirty days from the date of this directive.

Penalties

Any violation of this directive or the terms of any written plan adopted pursuant to this directive to provide alternate protection will be managed in accordance with FTA's authorities under 49 U.S.C. § 5329.

Issued on: December 15, 2015



Therese W. McMillan

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Acting Administrator
Federal Transit Administration
U.S. Department of Transportation

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Table 1: Safety Findings and Required Actions Resulting from Automatic Train Control (ATC) Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-ATC-15-001	2	WMATA is not completing those inspection and testing activities required at infrequent intervals as part of its Automatic Train Control Branch (ATC) Preventive Maintenance (PM) program due to limitations of track access and coordination of shared resources overnight.	WMATA must implement new scheduling methods to prevent ATC maintenance from being routinely deferred; this may include additional track shutdowns during service hours to complete routine safety inspections. WMATA's action to address this finding may be coordinated with WMATA's on-going initiative to address related SMI findings R-3-23-A through R-3-26-A or it may be handled separately for the ATC Branch.	15-289	The Automatic Train Control Branch Preventive Maintenance (PM) Summary 2014 report indicates low completion rates for several PMs with scheduled inspection intervals of one year or greater.
TOC-ATC-15-002	1	The ATC Branch and the Shop and Material Support (SAMS) Group include tools in their tracking lists that are no longer being used, which prevents them from having an accurate understanding of which tools are past due for annual calibration. Also, personnel may not be returning old equipment when they receive new tools.	The ATC Branch and SAMS must conduct a full inventory of ATC tools in order to scrub Maximo and its tracking list of all tools no longer being used. The ATC Branch or SAMS must provide a revised Maximo inventory list with obsolete tools removed and regained calibration compliance. Also, the ATC Branch and SAMS must develop a documented tool distribution control method so that new equipment/tools are not issued until old ones are returned, and the person receiving the old equipment removes it from the inventory and maintenance cycle in Maximo.	15-290	ATC Branch reports of equipment due for calibration contained more than 700 items that were past due, including many that are several years late. Some of these tools were no longer in use.
TOC-ATC-15-003	1	The ATC Preventive Maintenance (PM) Summary 2014 Report does not show that PM was scheduled or completed for Preventive Maintenance Inspections (PMI) 1011B, 1012A, 3002B, or 3013.	WMATA's ATC Branch must meet the PM frequency requirements of ATC-1000 and ATC-3000 standards for the identified PMIs. WMATA's ATC Branch must provide a printout or screenshots showing the tests added to Maximo as well as evidence of appropriate completion as scheduled.	15-291	Some Preventive Maintenance Inspection (PMI) procedures listed in ATC-1000 and ATC-3000 have performance frequency requirements but are not being scheduled or completed, according to ATC PM schedules and reports.

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Table 1: Safety Findings and Required Actions Resulting from Automatic Train Control (ATC) Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-ATC-15-004	1	Pre-printed Data Sheets with checkmarks already added were used for PM 3003.	WMATA's ATC Branch must ensure any electronic copies of the 3003 Interlocking inspection Data Sheet are replaced with blank copies. WMATA's ATC Branch must provide its updated policy as well as a signed memorandum validating that all remaining pre-filled Data Sheets have been destroyed.	15-292	Pre-printed Data Sheets with checkmarks already added were used for PM 3003.
TOC-ATC-15-005	1	Many Data Sheets are not being returned to Field Offices for Supervisor sign-off and entry of defects into Corrective Maintenance (CM) work orders.	WMATA's ATC Branch must enforce a clear method to ensure that personnel turn in copies of their Data Sheets to both Train Control Rooms and Field Offices. The ATC Branch must work with WMATA's Safety and Quality functions to schedule routine audits of Field Office paperwork and Corrective Maintenance work orders.	15-293	Many Data Sheets are not being returned to Field Offices for Supervisor sign-off and entry of defects into Corrective Maintenance (CM) work orders.
TOC-ATC-15-006	1	Supervisor signatures were missing from batches of Data Sheets.	WMATA's ATC management must develop a procedure and conduct quality control spot checks of Supervisors' work to ensure they are fully completing their duties (such as reviewing Data Sheets and adding defects to new work orders).	15-294	Supervisor signatures were missing from batches of Data Sheets.
TOC-ATC-15-007	2	Many procedures described in ATC-1000 and ATC-3000 indicate special tool requirements including a volt-ohm meter, digital multimeter, megohmmeter, oscilloscope, torque wrench, or other testing device, yet data sheets do not contain prompts for tool serial numbers and calibration dates.	WMATA's ATC Branch and/or Chief Engineer of infrastructure (CENI) must add a line for tool serial numbers and calibration dates on all relevant ATC Data Sheets, and specify instructions for including this information. WMATA's ATC Branch and CENI must also update the Special Tools and Equipment section of ATC-1000 and ATC-3000 procedures to clarify tool calibration requirements. This required action should also be coordinated with the training assessment being conducted to address SMI finding R-2-16-A.	15-295	There is no prompt for tool serial numbers and calibration dates on most relevant Data Sheets.

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Table 1: Safety Findings and Required Actions Resulting from Automatic Train Control (ATC) Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-ATC-15-008	1	Supervisors' and managers' Maximo Start Centers (dashboards) only allow queries for inspections three months' past due. Delays in inspections conducted at less frequent intervals such as annual or five-year inspections are not actively tracked.	WMATA must add a Maximo Start Center option to see all past due inspections, and the ATC Branch must regularly assess this information for maintenance scheduling as it currently does on a monthly basis.	15-296	WMATA's ATC Branch is not tracking inspections that are more than three months past due.
TOC-ATC-15-009	1	WMATA's ATC Branch and Maintenance Operations Center (MOC) must establish a consistently applied procedure for opening, documenting, and closing ATC work orders in Maximo.	WMATA's Maintenance Operations Center (MOC) must set a standard protocol for when new work tickets are opened, the level of detail to be included, and whether Controllers should check for existing work orders or always open a new one. ATC must also create a method to regularly query MAXIMO to determine areas or components suffering repeated failures, and describe this method in the Maintenance Control Policy (MCP). WMATA may coordinate this action with initiatives underway to address SMI required action R-4-29-A.	15-297	WMATA's ATC maintenance does not have a consistent process for closing work tickets once investigated, and Maintenance Operations Center (MOC) opening new tickets for each reported issue.
TOC-ATC-15-010	1	The new annual code rate frequency test, developed as part of WMATA's Return to Automatic Train Operations (ATO) program, had not yet been added to Maximo as a regular preventive maintenance inspection.	WMATA must add this new inspection to Maximo for regular scheduling, along with any additional inspections created or increased in frequency as a result of the Return to ATO report.	15-298	The new annual code rate frequency test had not yet been added to Maximo as a regular preventive maintenance inspection.
TOC-ATC-15-011	1	There are no minimum requirements for WMATA ATC Branch Supervisors' quality control spot checks or rule compliance assessments of frontline personnel.	WMATA's ATC Branch must establish requirements in its Maintenance Control Policy (MCP) for quality control spot checks and resulting documentation to be completed by each Supervisor. (Note: This is different than the separate finding (TOC-ATC-15-006) that prescribes spot checks of Supervisor work; this finding relates to Supervisor spot checks of technician work.)	15-299	There are no minimum requirements for WMATA ATC Branch Supervisors' quality control spot checks or rule compliance assessments of frontline personnel.

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Table 1: Safety Findings and Required Actions Resulting from Automatic Train Control (ATC) Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-ATC-15-012	1	There is no correlation between parts numbers stored in Maximo and actual Original Equipment Manufacturer (OEM) part numbers needed for maintenance.	WMATA's ATC Branch must add pictures to part numbers in Maximo, consistently provide training it has developed regarding part numbers, and take other steps to ensure part numbers are easily accessible for maintainers and technicians.	15-300	There is no correlation between parts numbers stored in Maximo and actual Original Equipment Manufacturer (OEM) part numbers needed for maintenance.
TOC-ATC-15-013	2	After initial training for ATC employees, the program is not structured with defined levels of knowledge and feedback to employees for promotion.	WMATA must implement new courses and refresher training to coincide with each mechanic level. WMATA also must provide an approved plan for training of employees before the employees can be allowed to take promotional tests that are tailored for a specific Technician level, including a process to provide feedback on deficiencies for personnel who fail. This required action should also be coordinated with the training assessment being conducted to address SMI finding R-2-16-A.	15-301	After initial training for ATC employees, the program is not structured with defined levels of knowledge and feedback to employees for promotion.

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Table 2: Safety Findings and Required Actions Resulting from Change Management Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-CMT-15-001	1	According to Section 1.6, WMATA's Safety and Security Management Plan (SSMP) for the 7000 series vehicle production and acquisition must be reviewed and updated annually.	WMATA must conduct a review of the SSMP to ensure it reflects current safety certification, testing, acceptance, and auditing practices for the 7000 series fleet construction and delivery, and update the SSMP to reflect current practices, if necessary, based on the results of the review.	15-072	WMATA should update the SSMP as soon as possible reflecting current practices and procedures that WMATA will comply with through the duration of the 7K fleet construction and delivery. WMATA must provide the updated SSMP to TOC for review.
TOC-CMT-15-002	1	Concerns have been identified regarding the level of involvement that WMATA's Safety Department has in overseeing, auditing and monitoring the safety certification process for the production and acquisition of the 7000 series vehicles.	WMATA's Safety Department must perform or oversee audits of the safety and security certification program carried out by the Chief Vehicle Engineering (CENV) as prescribed by the SSMP for the remainder of the project. WMATA must also produce a procedure prescribing how each audit will be completed.	15-073	WMATA should perform audits of 7K safety and security activities as prescribed by the SSMP for the remainder of the project. WMATA should also produce a procedure prescribing how each audit will be completed.
TOC-CMT-15-003	3	WMATA rail maintenance personnel and engineers are managing both the testing and acceptance of the new 7000 series railcars while also maintaining the rest of its vehicle fleet.	WMATA must complete its staffing matrix for the 7000 series acceptance period; its roles and responsibilities matrix, including any committees created; and its training plan to ensure the readiness of WMATA personnel to receive and accept the new vehicles while also maintaining the existing fleet.	15-075 15-076 15-077	WMATA should institute a Rail Activation Committee or similar structure for the duration of the project to ensure that necessary activities throughout WMATA departments are occurring simultaneously with the needs resulting from the schedule for ongoing railcar acceptance WMATA should conduct an analysis of how many trained personnel will be needed to conduct maintenance simultaneously with ongoing acceptance of additional railcars. WMATA should also expedite creation of its own training plan to correspond with the manpower needed based on the analysis.

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Table 2: Safety Findings and Required Actions Resulting from Change Management Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-CMT-15-004	3	WMATA is not following its safety and security certification process as required.	WMATA must ensure that the Safety Certification Review Committee (SCRC) meets and votes as required, and that corrective actions and mitigations developed to address the results of threat and vulnerability analysis are mitigated following the certification process.	15-236	The full Safety Certification Review Committee (SCRC) is not reviewing and voting on safety and security certification acceptance as required in the System Safety Program Plan (SSPP).
				15-079	WMATA did should ensure that CAPs relevant to each finding from the threat and vulnerability assessment are mitigated or have a workaround in place prior to the start of 7K railcar revenue service. WMATA should also consider adding these items to a security Certified Items List as part of the certification verification process.
TOC-CMT-15-005	1	WMATA is not developing Engineering Modification Instructions (EMIs) for all infrastructure-related changes.	WMATA must develop a procedure to ensure infrastructure changes result in Engineering Modification Instructions (EMIs), and that SAFE ensures Site Specific Work Plans (SSWPs) contain EMIs before approving them, when necessary.	15-235	Engineering Modification Instructions do not exist for all infrastructure-related system modifications.
TOC-CMT-15-006	1	WMATA does not have a consistent approach to configuration control of technical documents.	WMATA must implement a program to provide configuration control of the technical documents relating to the WMATA Metrorail infrastructure. WMATA's new Product Life Cycle Management (PLM) program must include and address this requirement.	15-242	There is no system-wide configuration management process.
TOC-CMT-15-007	1	WMATA's Communications Branch (COMM) is not fully involved in Joint Development and Adjacent Construction (JDAC) projects that may negatively impact radio coverage.	WMATA must ensure through JDAC procedures and meeting agendas that all affected WMATA departments, including COMM, have a chance to determine whether proposed development has a less obvious impact on infrastructure and systems.	15-272	WMATA's Communications Branch (COMM) is not fully involved in Joint Development and Adjacent Construction (JDAC) projects that may negatively impact radio coverage.

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Table 2: Safety Findings and Required Actions Resulting from Change Management Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-CMT-15-008	3	WMATA's Safety Department is not as involved in the review of engineering designs or in the change control process as specified in the System Safety Program Plan (SSPP), and the Maintenance Control Policy (MCP) manual is not referenced in the SSPP.	WMATA must ensure the Safety Department's involvement in the review of engineering designs and in the Change Control Board. Also, the System Safety Program Plan (SSPP) must be updated to reference the Maintenance Control Policy (MCP) manual.	15-243	SAFE is not fully involved in design criteria review, although SAFE is a member of the Design Control Board.
				15-252	The Change Control Board charter and formalized procedures do not include SAFE as a representative.
				15-279	The SSPP does not reference the Maintenance Control Process manual.

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Table 3: Safety Findings and Required Actions Resulting from Collisions

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-COL-15-001	3	Train Operators, Yard Operators, and Interlocking Operators are not following critical safety rules governing the safe movement of trains and equipment in rail yards and shops.	WMATA must conduct a system wide audit of revenue and non-revenue train movements in rail yards and shop locations to determine compliance with operating rules. Document results, and action items to address the results, in report for FTA review and approval. Implement required actions, providing FTA with quarterly updates until completion. Results may be integrated into WMATA action to address required actions for FTA's SMI findings R-18 and R-19 regarding rules compliance programs.	14-012	On December 19, 2013, the Yard Operator failed to properly walk around his train to identify any obstructions, and as a result, his train came in contact with an unsecured railing that swung into the dynamic envelop of the train.
				14-013	
				14-071	On July 4 2014, a System Maintenance Power Department employee operating non-revenue vehicle failed to yield right-of-way to rail vehicle in rail yard and collided with revenue train.
				15-060	On July 15, 2014, a Track Repairer performed a pre-trip inspection before leaving New Carrollton yard; however, he failed to note that the flatcar had a defective sideboard, which struck the end gate pole of the platform gate.
				15-110	On January 8 2015, Operator #1 failed to comply with established operating rules in the Metrorail Safety Rules and Procedures Handbook (MSRPH) in regards to making his required safety stop and operating at excessive speed resulting in a collision.
TOC-COL-15-002	1	Corroded hardware caused a section of a metal staircase to fall into the trackbed at Rhode Island Ave Station, where a revenue train struck it.	Provide the FTA with the results of the system wide inspection conducted for all steel staircases, and the annual station inspection report modified to specifically list "stair structure" as an inspection component and "connection hardware" as a sub-component. Also provide report from Maximo documenting completed inspections and repairs for steel staircases in calendar year (CY) 2014 and CY 2015.	14-029	On June 14, 2013, a train contacted metal staircase at Rhode Island Ave.
TOC-COL-15-003	1	Unsecured railing entered dynamic envelop of train in car wash.	Design and install a new railing system that reduces the number of openings and eliminates the ability of the hand rails to swing into the direction of the dynamic envelope of a rail car, in all shop locations and rail facilities to replace the sectional type of railing system currently installed.	14-063	On November 2, 2013, a car cleaner failed to secure a railing gate, resulting in the railing becoming dislodged as train proceeded to be re-positioned on the car wash track.

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Table 3: Safety Findings and Required Actions Resulting from Collisions

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-COL-15-004	3	Metal ceiling tile became loose, detached from ceiling, and fell to the trackbed, where it collided with the collector shoe of a revenue train.	Provide FTA with the results of the push pull tests completed on ceiling panels at Smithsonian, Metro Center, Gallery Plan, Farragut North, Judiciary Square and Union Station to confirm that associated locking clips were fully engaged and securing the panels from falling, as well as the Red Line Ceiling Rehabilitation Quality Control Report developed from the incident, and the new contact specifications established for ceiling tile installation work on the Red Line.	15-058 15-059	On July 10, 2014 a tile fell from the ceiling onto the roadway as the train entered the Smithsonian Station platform; the collector shoe made contact with the tile.
TOC-COL-15-005	1	Equipment Operator was unqualified to perform work assigned.	Conduct assessment of the training provided to Equipment Operators after issues have been identified with their performance, including those that result in suspensions, and develop and implement an approach to ensure their training and qualification prior to return to service.	15-081	On February 7, 2014, two prime movers made contact due to operator error. The Equipment Operator responsible for the collision had a previous accident.
TOC-COL-006	3	Power cable connections are infringing on the dynamic envelop of trains and track equipment.	After completing an inspection to identify and correct any locations with improperly aligned stub-ups and other third rail power boot anomalies, the Office of Transit Structures (TRST) and the Power Branch within the Office of Systems Maintenance (POWR) must conduct an analysis to identify mitigations in place to prevent recurrence of this infringement, and submit to FTA.	15-082 15-022	On May 29, 2014, a collision occurred with a third rail cover when stub-ups were not aligned properly, causing track equipment to make contact. Incident 537, September 9, 2013, red signal overrun, Van Dorn St, Mitigation to prevent re-occurrence 4
TOC-COL-15-007	2	Insufficient visual cues exist to inform flagmen and train operators of the outer fouling limits in rail yards.	For Brentwood rail yard, and all other rail yards, paint stripes on asphalt adjacent to tracks to indicate fouling limits and "No Parking."	15-108	On December 23, 2014, a TRST Flagman lost situational awareness and did not recognize that the truck was fouling the track, and subsequently failed to notify the Equipment Operator to stop.

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Table 4: Safety Findings and Required Actions Resulting from Derailments

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-DRL-15-001	1	A combination of factors led to an increased Lateral over Vertical (L/V) force that caused low speed wheel climb. While WMATA has addressed most of these conditions, most rail fleets still need friction modifiers for dry rail conditions.	WMATA must install wheel flange friction modifiers on most of the remaining fleets, similar to the 5000 series installation.	13-015	On April 6, 2013, train #765 (4060-61/6079-78/4000-01) derailed after passing B99 66 signal lunar, with a right turnout to track #1 exiting Brentwood Yard. A combination of conditions, including dry rail, contributed to wheel climb, which caused this derailment.
TOC-DRL-15-002	3	Tie Crane 07 derailed on a section of track with a suspended joint.	TRST must provide FTA with copies of the reports documenting the results of follow-up inspections conducted to ensure the sufficiency of track ballast.	14-005 14-006	On September 6, 2013, TC07 went over a section of track that had a suspended joint.
TOC-DRL-15-003	3	The Equipment Operator failed to perform a proper pre-inspection and did not notice the improper placement of the rail lift cylinder pin, which dropped down and came into contact with switch D99 heel block, causing the derailment.	WMATA must provide documentation and evidence of training to ensure that Equipment Operators and Supervisors conduct complete pre-trip inspections, and understand proper clamping and operation of the Auto-Lift.	15-054 15-055	On June 14, 2014, a rail lifter derailed at New Carrollton Yard. The Equipment Operator did not notice the improper placement of rail lift cylinder pin, which dropped and caused the derailment.
TOC-DRL-15-004	3	TRST Management failed to effectively communicate to the workforce regarding the defective switch 107 in Shady Grove Yard and the need to keep it clamped. TRST also failed to repair switch 107 when Supervision identified that the switch points were not properly tucked against the associated stock rail.	Provide FTA with the documentation regarding TRST's inspection of all hand throw switches system wide, and evidence regarding the replacement of the switch rod and switch stand at New Carrollton Rail Yard and the repairs at Shady Grove. Also provide evidence that TST repainted hand throw switch targets at A99.	15-111 15-114	On January 21, 2015, in Shady Grove Yard, Prime Mover 36 and Flatcar 475 derailed just south of a hand throw switch. The hand throw switch was not clamped as required by the tag placed on the hand throw switch handle, creating a situation where the switch could be picked and both vehicles derailed.

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Table 5: Safety Findings and Required Actions Resulting from Emergency Egress Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-EGR-15-001	1	Telephones in Areas of Rescue Assistance (AORA) and in the shafts' landings are not subject to regularly scheduled inspections.	WMATA must develop and implement a telephone inspection schedule, procedure, and checklist for inspecting telephones in the AORA and egress shafts.	15-253	Telephones in Areas of Rescue Assistance (AORA) and in the shafts' landings are not subject to regularly scheduled inspections.
TOC-EGR-15-002	3	Emergency egress landings and areas of refuge blocked with debris and/or equipment.	WMATA must address the debris and equipment blocking the emergency access landings and area of rescue assistance identified by the TOC.	15-254	The emergency egress landing immediately off the inbound end of the Rosslyn upper-level platform was blocked by several (at least 20) large bags full of debris that prevented expeditious egress.
			WMATA also must ensure that contractors are briefed on proper safety protocol and that WMATA personnel periodically inspect contractor work on WMATA property.	15-261	The TOC review team observed a large diesel generator at Bethesda adjacent to the roadway, in an Area of Rescue Assistance.
TOC-EGR-15-003	1	Several fire extinguishers in AC and COMM rooms at Ft. Totten and Gallery Place to have out-of-date inspection tags.	WMATA (POWR and the Communications Branch within the Office of Systems Maintenance (COMM)) should add the fire extinguishers in the air conditioning (AC), traction power substation, tie breaker station, and COMM rooms, respectively, to MAXIMO to ensure regular inspections occur.	15-285	The TOC observed several fire extinguishers in AC and COMM rooms at Ft. Totten and Gallery Place to have out-of-date inspection tags.
TOC-EGR-15-004	1	The vast majority of emergency call boxes tested in the field during the audit did not function correctly.	WMATA must perform a technical analysis of its Preventive Maintenance (PM) procedures to see if modifications need to be made in order to correct performance of the call boxes and improve the way technicians verify functionality. PM procedures must include a confirmed and audible connection to the Station Manager as well as rollover to the Rail Operations Control Center (ROCC).	15-286	The vast majority of emergency call boxes tested in the field during the audit did not function correctly.

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Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight Committee to the Washington Metropolitan Area Transit Authority

Table 5: Safety Findings and Required Actions Resulting from Emergency Egress Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-EGR-15-005	1	There were numerous uncovered electrical outlets in stations.	WMATA must submit a schedule with completion dates for implementation of covering electrical outlets. Additionally, the Station Manager's inspection checklist must be revised to include checks for covered electrical outlets and opening work orders for uncovered outlets.	15-287	There were numerous uncovered electrical outlets in stations.
TOC-15-EGR-006	1	WMATA must resolve outstanding issues with the condition of lights and safety features in several stations as identified by the TOC.	WMATA must address the issues with lights, outlets, blocked egress, battery rooms and eye washes, guardrails and ventilation called out on Pages 9-11 of the TOC Three-Year Safety and Security Review: Stations Maintenance Final Report: June 30, 2015.	15-288	TOC observed numerous minor issues during on-site inspections during its review.

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Table 6: Safety Findings and Required Actions Resulting from Evacuations

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-EVC-15-001	1	WMATA must increase lighting levels in the tunnels to support maintenance and emergency operations.	WMATA will begin an annual maintenance program to replace every light and light fixture cover in the tunnels, to include rehabbing covers where appropriate to recycle materials. The campaign will begin in May and will take approximately four years to complete all 88,044 light fixtures in the entire system, using two six-person crews.	15-030	In response to the January 12, 2015 incident near L'Enfant Plaza station, WMATA will begin an annual maintenance program to replace every light and light fixture cover in the tunnels, to include rehabbing covers where appropriate to recycle materials. The campaign will begin in May and will take approximately four years to complete all 88,044 light fixtures in the entire system, using two six-person crews
TOC-EVC-15-002	3	WMATA does not have a policy for managing passenger announcements and checks when a train is instructed to enter a pocket track.	WMATA must develop a procedure to address instructions to be followed when a train must go out of service temporarily to move into a pocket/tail track.	15-064 15-065	On October 4, 2014, a passenger self-evacuation occurred at near Wiehle-Reston East station. The operator was instructed to operate the train into the pocket track. The Train Operator made an announcement and moved the train into the pocket track. Two customers not observed still aboard the train self-evacuated when the train came to a stop in the pocket track. Train Operator (T/O) was reversing ends when he noticed that door#3 on car #3170 was open with the emergency door release handle activated. The Terminal Supervisor (T/S) observed one female and one male customer walking on the roadway and the T/S assisted the customers to the platform.

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Table 7: Safety Findings and Required Actions Resulting from Fires

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-FIR-15-001	1	WMATA must test its ability to acknowledge and investigate fire alarms in the Silver Line stations within 15 seconds as per NFPA requirements.	WMATA must test the applicability of Permanent Order T-13-12, Revision 1, to Standard Operating Procedure (SOP) #8: Fire and Smoke in a Station.	15-043	WMATA did not yet test the applicability of Permanent Order T-13-12, Revision 1, to SOP #8: Fire and Smoke in a Station.
TOC-FIR-15-003	3	The cab heater in the 5000 series vehicles overheats resulting in the potential for fire, smoke and vehicle damage.	The cab heater in the 5000 series vehicles must be re-engineered to ensure its safe performance. WMATA must demonstrate completion of this engineering work, and the successful installation of the modified cab heater components in the 5000 series railcars.	15-222 15-223 15-224 15-225 15-226 15-227	The root cause of this incident was that the trip coil of the cab heater circuit breaker did not trip the circuit breaker and cut off power to the cab heater when the circuit began to overheat, thus causing damage to the cab heater, cab heater circuit, cab console and under console wiring.

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Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight Committee to the Washington Metropolitan Area Transit Authority

Table 8: Safety Findings and Required Actions Resulting from Occupational and Shop Safety Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-OSP-15-001	1	WMATA's hearing conservation program does not meet OSHA requirements.	WMATA must develop and implement a hearing conservation program in compliance with Occupational Safety and Health Administration (OSHA) requirements.	08-005	Develop and fully implement a WMATA Hearing Conservation Program that is compliant with OSHA requirements.
TOC-OSP-15-002	1	WMATA must update its hazard communication procedure to address changed processes and organization, and an update to the 2012 OSHA Hazard Communication rule.	WMATA must revise and update its Hazard Communication Procedure revision, to incorporate existing practices and the requirements of the 2012 OSHA Final Rule. WMATA must also provide a copy of the completed procedure to the FTA.	15-207	Finding of NC 5: The WMATA Hazard Communication Procedure, evaluated as part of the TOC Three-Year Safety and Security Review on Shop Safety and Equipment Inspections, is outdated. The procedure was last revised in 2005, and does not include current practices for accessing Material Safety Data Sheets or current organizational information.
TOC-OSP-15-003	1	WMATA mechanics did not demonstrate strong awareness of how find and use Material Safety Data Sheets (MSDS) in accordance with OSHA Standard 1910.1200, and following WMATA's new process.	WMATA must take steps through training, safety campaigns, demonstrations and toolbox talks with employees to ensure that mechanics can use and access the new MSDS system.	15-208	SAFE will prepare and distribute laminated posters and instruction cards regarding how to access the MSDS online for shop floors and storerooms; SAFE will also work with HR to ensure these materials are include in New Employee Orientation training. SAFE will also audit the availability of this training to make sure new personnel receive it.
TOC-OSP-15-004	1	Battery storage rooms at Alexandria and West Falls Church may require mechanical ventilation.	WMATA must conduct air quality testing in battery storage/charging rooms at Alexandria and West Falls Church to assess the accumulated level of hydrogen gas. WMATA must install mechanical ventilation with exhaust to the outside if the volume of hydrogen gas makes up more than one (1) percent of the total volume of air in the battery room.	15-209	Battery storage rooms at Alexandria and West Falls Church contained vents for natural ventilation but lacked any mechanical ventilation system. WMATA should conduct air quality testing in storage rooms that contain batteries and batteries under charge to determine the accumulated level of hydrogen gas.
TOC-OSP-15-005	1	Records for heavy lifting equipment certification at West Falls Church and Branch Avenue Service and Inspection shops were not available for review.	WMATA must store and maintain shop equipment load testing certification documents at each facility.	15-210	WMATA should store shop equipment load testing certification documents at each facility.

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Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight Committee to the Washington Metropolitan Area Transit Authority

Table 8: Safety Findings and Required Actions Resulting from Occupational and Shop Safety Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-OSP-15-006	1	Incompatible hazardous materials were not stored separately at multiple Service and Inspection shop locations.	WMATA must separate incompatible hazardous materials into their respective compatible flammable storage cabinets, and take steps to ensure continued compliance such as reinstruction of personnel, and emphasis during upcoming Car Maintenance 12-point shop inspections.	15-211	WMATA should separate incompatible hazardous materials into their respective compatible flammable storage cabinets, and take steps to ensure continued compliance such as reinstruction of personnel, and emphasis during upcoming Car Maintenance 12-point shop inspections.
TOC-OSP-15-007	1	Oxygen and acetylene compressed gas cylinders were stored together at some Service and Inspection shop locations.	WMATA must follow its own requirements and separate incompatible flammable gases 20 feet from each other in a protective compressed gas cylinder cage at all its facilities.	15-212	Oxygen and acetylene compressed gas cylinders were stored together at some Service and Inspection shop locations.
TOC-OSP-15-008	1	Evacuation plan maps throughout Service and Inspection facilities are difficult to decipher.	WMATA must update all evacuation plan maps to identify the user's location (i.e. "You are here"), to improve legibility, and identify the meaning of important icons.	15-213	Evacuation plan maps throughout Service and Inspection facilities are difficult to decipher.
TOC-OSP-15-009	1	There were no evacuation plan maps visible in the West Falls Church Yard Service and inspection facility.	WMATA must post evacuation plan maps consistently in all railcar Service and Inspection facilities.	15-214	There were no evacuation plan maps visible in the West Falls Church Yard Service and inspection facility.

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Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight Committee to the Washington Metropolitan Area Transit Authority

Table 9: Safety Findings and Required Actions Resulting from Other Accidents, Incidents and Review Findings

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-OTR-15-001	1	Contact occurred between boom and right-of-way fence due to tight clearance and position of the load.	WMATA must instruct operators to lower the load when it becomes bound and reattach the rail tongs; this will relieve tension.	15-046	One of the contributing factors resulting in contact is the minimal clearance between PB14 boom, end of rail, running rail, and the particular section of fence. The second is the weight adjusting/slack combined with the positioning of the pulled rail in relation to the running rail within a curve.
TOC-OTR-15-002	1	Diverging routes must be communicated to train operators at signals.	WMATA must create a program to install flashing lunar aspects for all diverging routes in the system.	15-047 15-048 15-049 15-050	On May 15, 2014, a train entered the B07 interlocking with the incorrect speed codes. The cause for the incorrect speed commands was improper installation of wiring during installation of an approved Engineering Modification Instruction (EMI). A frequency selection (QR) relay, which controls the transmission of speed commands, was falsely energized. Further investigation of the QR relay installation identified that the relay wiring was installed incorrectly with EMI 210505-B07 Traffic Release Pushbutton Circuit. Also during this incident, an unexpected diverging route (cross-over) complicated incident recognition.
TOC-OTR-15-003	1	Engineering Modification Instructions must be available in the field for production crews.	Production Crews must have Engineering Modification Instructions (EMI) available in the field.		
TOC-OTR-15-004	1	Engineering approvals must be available during commissioning testing.	WMATA must implement an engineering approval process for use during commissioning testing as needed.		
TOC-OTR-15-005	1	WMATA must document the roles and involvement of Automatic Train Control (ATC) Engineering in the EMI process.	WMATA must develop a configuration document to reflect the involvement of ATC Engineering in EMI implementation process.		
TOC-OTR-15-006	1	WMATA must do more to indicate the movements of train in and through car wash facilities	WMATA must install a Train Movement Indication system in all car wash facilities.	12-071	WMATA shall install a Train Movement Indication system in all car wash facilities.
TOC-OTR-15-007	1	WMATA's Station Managers are not consistently aware of procedures for response to intrusion detection alarms triggered by opening of the emergency egress hatches.	WMATA must review and clarify the Station Manager standard operating procedures and training materials pertaining to proper response procedures to intrusion detection alarms.	15-256	Station Managers throughout the review did not seem to be consistently aware of procedures for response to intrusion detection alarms triggered by opening of the emergency egress hatches.

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Table 9: Safety Findings and Required Actions Resulting from Other Accidents, Incidents and Review Findings

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-OTR-15-008	1	WMATA's Office of Plant Maintenance does not have a formal procedure in place requiring the inspections and restoration of equipment used in an emergency or an emergency drill or exercise.	WMATA's Office of Plant Maintenance must implement a procedure to direct its staff to inspect and restore the equipment used during an emergency event or exercise within a given time period following an event, perhaps within 72 hours.	15-257	PLNT does not have formal procedures in place such that, following emergency events, PLNT inspects the equipment used during the event, such as ETECs, emergency egress doors and hatches, and other related equipment to ensure that equipment is stored properly and any defects and restoration necessary due to the event have been addressed.
TOC-OTR-15-009	1	WMATA's Office of Plant Maintenance does not have a formal procedure, separate from the dry standpipe testing procedure, to ensure that dry standpipes are dry after use in testing or an emergency event.	WMATA's Office of Plant Maintenance must PLNT develop a procedure for drying dry standpipes after use, such as testing or an emergency event.	15-258	PLNT does not have a procedure, separate from the dry standpipe testing procedure, to ensure that dry standpipes are dry after use in testing or an emergency event.
TOC-OTR-15-010	1	There is a wide degree of variability in the manner in which Stations Conditions Checklists are completed by Station Managers, leading to defects going unreported.	WMATA should develop a Standard Operating Procedure (SOP) that covers completion of Station Conditions Checklists. Rail Transportation, the Office of Plant Maintenance, and the Power and Communications Branches within the Office of Systems Maintenance, should coordinate their expectations regarding Station Manager checks of stations and document the types of defects to be reported in the Station Conditions SOP.	15-283	RTRA does not appear to have a procedure for station inspections and Station Conditions Checklist completion.
TOC-OTR-15-011	2	The number of required preventive maintenance inspections (PMIs) exceeds the available staff hours in the Communications Branch.	WMATA must conduct a staffing resource assessment to determine appropriate staffing levels in the Communications Branch, and must obtain the additional resources required to complete PMIs and radio maintenance.	15-269	The COMM Branch, especially SAMS and Field Maintenance, are significantly understaffed.

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Table 9: Safety Findings and Required Actions Resulting from Other Accidents, Incidents and Review Findings

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-OTR-15-012	1	WMATA requires its radios to be calibrated biennially; records showed some radios were multiple years out of date.	WMATA must develop a program to ensure portable radios are not used for extended periods beyond calibration. As part of this program, WMATA must implement and/or enforce a program for WMATA departments to notify the Communications Branch when portable or mobile radios are out of service/no longer used and then remove the equipment from MAXIMO.	15-275	MAXIMO records showed numerous radios had outdated calibration dates.
TOC-OTR-15-013	2	Additional personnel are required to at West Falls Church Yard during peak periods to support increased train movement activities.	WMATA must conduct a staffing assessment and increase personnel resources at West Falls Church Yard during peak periods.	15-061 15-062	On August 1, 2014, a train was routed into a work area that had become de-energized because the interlocking operator, distracted by many different calls at once, failed to contact ROCC to inform the controllers that West Falls Church Yard could no longer receive any trains coming from the silver line to store in yard.
TOC-OTR-15-014	1	West Falls Church Yard must develop a scheduling resource document outlining scheduled yard storage activity.	WMATA must develop a scheduling resource document outlining yard storage activity for West Falls Church Yard.		

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Table 10: Safety Findings and Required Actions Resulting from Red Signal Violations

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
(See below.)		Records provided from TOC and WMATA indicate that WMATA experienced 47 red signal overruns between January 1, 2012 and November 2, 2015, with more overruns experienced so far in 2015 than in either of the preceding two years. Therefore, FTA finds that corrective action taken to address TOC findings, including action to retrain operators, distribute maps, engage in safety talks and stand-downs, and modify operating procedures to ensure Rail Traffic Controllers and Rail Supervisors advise Train Operators when they are approaching a red signal, have not reduced the frequency of occurrence. WMATA also completed an extensive study entitled "Investigation and Analysis of WMATA 2014 Red Signal Violation Incidents" to independently evaluate options for corrective action. Given both the pervasiveness and seriousness of this problem, FTA makes the following findings: (see below).	(See below.)	14-027	Red Signal violation on June 2, 2013 at Van Dorn Street
				15-001	Equipment Operator and Flagman failed to follow safety stop procedures on approach to red signal; violation of MSRP Rule 3.37 on September 4, 2013
				15-084	On September 16, 2014, Train Operator overran G05-04 signal red. Train Operator failed to follow the procedure established for departing the Terminal area by checking her signal aspect, switch alignment, speed commands and finally verifying this information with the Terminal Supervisor.
				15-085	On October 30 2014, Train Operator overran a red signal at Braddock Road. The Train Operator was not aware of his speed readouts and moved the train without verifying a lunar signal or contacting ROCC.
				15-117	On January 23, 2015, Train Operator ran red signal. He stated he was rushed, did not read speed commands, and failed to request permission before leaving the terminal.
				15-220	Equipment Operator and Flagman failed to follow standard operating procedures pertaining to vehicle movement on the mainline, resulting in a red signal overrun.
				15-221	The Equipment Operator temporarily lost situational awareness and the Flagman was not familiar with the area.

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Table 10: Safety Findings and Required Actions Resulting from Red Signal Violations

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-RED-15-001	3	WMATA is not providing sufficient oversight regarding train speeds.	While WMATA is completing its program to address FTA's SMI findings R-18 and R-19 (regarding operational testing programs), WMATA must immediately improve its testing and observation of Train and Equipment Operators, including regular review of track circuit downloads for speeding and speed gun testing for manual vehicle operations on the mainline and in yards.	N/A	N/A
TOC-RED-15-002	3	Radio communications must be improved to ensure focused attention on train movements.	While WMATA is completing its program to address FTA's SMI finding R-6 (regarding radio discipline), WMATA must immediately require proper read back from vehicle operators for vehicle movement instructions from ROCC, Interlocking Operators, and Supervisors. Also, for equipment movements, employees piloting equipment must call out the signal aspect and indication ahead on the radio and the vehicle operator must repeat back.	N/A	N/A
TOC-RED-15-003	3	Job briefings for equipment operators and pilots do not always reinforce situational awareness and territory familiarization for the segment of track to be operated over during the shift.	All Equipment Operators and Pilots must include in their job briefing all control points, junctions, stations, restricted sight curves, etc. that will be operated through during their tour of duty.	N/A	N/A

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Table 10: Safety Findings and Required Actions Resulting from Red Signal Violations

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-RED-15-004	3	Train operators are insufficiently familiar with the location of signals on their routes and required train speeds.	WMATA must provide Train Operators and Pilots with physical characteristics training for the lines they operate on and associated yards, including regular familiarization and testing of the rail system to include control points, junctions, stations, restricted sight curves, etc. This training must be provided whenever Rail Operators make a bid to another line, and must emphasize non-standard signal wayside placement and other route irregularities.	N/A	N/A
TOC-RED-15-005	3	Retraining for Train Operators, Equipment Operators and Pilots involved in first-time red signal overruns must be improved.	Operators and Pilots involved with a red signal overrun must be immediately removed from service and retrained. Training must include incident review with field visit to signal location and full physical characteristics re-training for the line on which the red signal overrun occurred.	N/A	N/A

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Table 10: Safety Findings and Required Actions Resulting from Red Signal Violations

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-RED-15-006	3	WMATA should implement the findings of its internal investigation to ensure that Train and Equipment Operators are prepared to approach red signals, have strategies for managing time pressure, and are sufficiently familiar with signal "hot spots" and on-standard locations.	WMATA must develop and conduct an ongoing safety campaign to make employees aware of leading causes of red signal violations, including those identified in the report "Investigation and Analysis of WMATA 2014 Red Signal Violation Incidents." The FTA expects that this campaign would help Train and Equipment Operators enhance their "personal readiness" for train movements through signals and provide strategies for managing pressure and "unintentional" rushing to meet on-time performance demands. This campaign should also emphasize locations of past signal overruns, non-standard signal locations, and signal "hot spots" with limited visibility or unusual approach requirements, and provide training on "attention performance" strategies.	N/A	N/A
TOC-RED-15-007	3	WMATA Train Operators consistently feel pressure to rush through routes and speed up train movements.	WMATA must conduct an assessment of current schedule and headways to ensure realistic operating times so employees aren't speeding and rushing to make time.	N/A	N/A
TOC-RED-15-008	3	Technology options may be available to reduce the occurrences of red signal overruns.	WMATA must complete an assessment of the signal system to identify potential improvements, including a review of track circuit placement in relation to wayside signal location; the use of wayside indications, signs or other systems to highlight track circuits limits for Train Operators; options for speed governors on Class 2 vehicles; the use of automatic trip stops for excessive approaching speeds; and other options.	N/A	N/A

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Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC ID	TOC Finding
RWP-001		a formal equipment inspection and safety briefing procedure for flashbutt welding.	<p>WMATA must develop a Flashbutt Welding Procedure, which, at a minimum, identifies and covers the following:</p> <ul style="list-style-type: none"> a. Site examined for hazards prior to work commencement (flammable hazards, debris, tripping hazards etc.) b. Detailed unit inspection performed and documented c. Inspection of Hydraulic hoses performed and documented d. Signed detailed work briefing e. Emergency plan for tunnel or structure evacuation communicated and documented in Safety Briefing, if applicable f. Minimum to Maximum number of personnel allowed to work in area defined g. Job Specific responsibilities briefed by supervisor for each work assignment before work commencement h. Ensuring that hydraulic hoses are secured away from welding operation and only positioned in area of original weld for profiling after cool off period i. Rail profiling does not commence after welding for a certain time period (cool off period) j. Place rail slag in fire resistance/puncture proof bucket once cooled off k. Require supervisor's primary assignment is to oversee operation (no physical work) l. If using heavy equipment and emergency occurs, equipment is to be placed in a stop/engine off state, vehicle secured (brake applied) and personnel safely exit vehicle and work area, moving away from emergency situation 		contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #1, WMATA does not have a formal equipment inspection and safety briefing procedure for flashbutt welding.

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Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC ID	TOC Finding
TOC-RWP-002	1	Job Hazard Analyses are not always developed for field welding activities.	WMATA must develop a Job Hazard Analysis (JHA) for field welding rail end joints to produce Continuous Welded Rail (CWR) track.	15-092	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #2: Job Hazard Analysis should be developed for field welding activities.
TOC-RWP--003	1	Lessons learned regarding safe field welding protocols have not been shared with employees and contractors.	WMATA must conduct a series of Safety Stand Downs with employees and contractors to emphasize safe welding protocols.	15-093	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #3: Information must be shared with employees and contractors regarding safe welding protocols.
TOC-RWP-004	1	WMATA does not have a formal process for safety certifying equipment before allowing operation on the WMATA system.	WMATA must establish a Safety Certification process for all new Track Equipment, to include but not limited to Prime Movers, Hi-Rail Vehicles, etc. to make sure all safety steps including training are taken before allowing equipment operation.	15-094	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #4: WMATA does not have a formal process for safety certifying equipment before allowing operation on the WMATA system.
TOC-RWP-005	1	Fatigue may have played a role in this accident.	WMATA must continue its fatigue management study and apply results to Track and Structures employees.	15-095	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #5: Fatigue may have played a role in this accident.
TOC-RWP-006	1	Radio communications could have been more effective and professional before and during the emergency evacuation.	WMATA, including ROCC and TRST Management, must review all communications including emergency communications during this accident and develop lessons learned for ROCC and MCC staff with an emphasis on effective and professional communications during emergency situations.	15-096	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #6: Radio communications could have been more effective and professional before and during the emergency evacuation.

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Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC ID	TOC Finding
TOC-RWP-007	1	Clarification is needed regarding roles and responsibilities during emergencies in a work shutdown area.	WMATA must revise SOP #1A "Command, Control and Coordination of Emergencies on the Rail System" to re-define the responsibilities of ROCC and Maintenance Operations Control Center (MOCC) personnel when emergencies occur within a shutdown area.	15-097	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #7: Clarification is needed regarding roles and responsibilities during emergencies in a work shutdown area.
TOC-RWP-008	1	The development and issuance of technical documentation does not appear to be governed by an engineering standard or procedure.	WMATA must develop or update its engineering process for developing, reviewing, approving, issuing and updating technical documentation.	15-098	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #8: The development and issuance of technical documentation does not appear to be governed by an engineering standard or procedure.
TOC-RWP-009	1	WMATA's Safety Department is not required to sign-off of procurements above a specified threshold.	WMATA must develop criteria to ensure the Department of Safety and Environmental Management (SAFE) signs off on Procurement actions above a designated threshold, and Procurement must modify its Procurement Procedures Manual to include criteria for SAFE sign-off.	15-099	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #9: WMATA's Safety Department is not required to sign-off of procurements above a specified threshold.
TOC-RWP-010	1	A standard clause specifying WMATA safety requirements is not included in WMATA safety contract specifications.	WMATA must develop and include in its contract specifications a standard contract clause for safety requirements. WMATA's Safety Department must review WMATA's contract specifications to ensure use and inclusion of this clause.	15-100	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #10: A standard clause specifying WMATA safety requirements is not included in WMATA safety contract specifications.
TOC-RWP-011	1	WMATA has no special campaign and program devoted to "Hot Work."	WMATA must develop a "Hot Work" program.	15-101	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including Finding #11: WMATA has no special campaign and program devoted to "Hot Work."

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Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC ID	TOC Finding
TOC-RWP-012	1	The Safety Department does not have a formal process for reviewing coordinated work plans for shutdowns.	WMATA must develop a formal procedure for the Safety Department to review and approve Coordinated Work Plans (for shutdowns).	15-102	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #12: The Safety Department does not have a formal process for reviewing coordinated work plans for shutdowns.
TOC-RWP-013	1	Not all equipment used in field welding or in support of welding operations is inspected daily.	WMATA must require daily inspection of all equipment, especially hydraulic hoses, on any Prime Mover or track equipment used for welding operations, and this inspection must be documented as part of a vehicle daily inspection checklist.	15-103	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #13: Not all equipment is inspected daily.
TOC-RWP-014	1	WMATA does not always use high temperature equipment for welding operations.	WMATA must require hydraulic hoses for welding and grinding operations that are designed to be used in high temperature environment or install a protective sleeves to prevent mechanical damage to the hoses. If such proper hoses or protective sleeves do not exist, WMATA must find an alternate mitigation against mechanical damage to hoses in welding and grinding operations.	15-104	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including Finding #14: WMATA does not always use high temperature equipment for welding operations.
TOC-RWP-015	1	Air monitoring is not always performed during welding operations.	WMATA must perform appropriate air monitoring during welding operations. Air must be sampled before, during, and following any work to ensure that personnel are not operating in unsafe condition.	15-105	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including Finding #15: Air monitoring is not always performed during welding operations.
TOC-RWP-016	1	WMATA's Safety Department does not always determine which equipment requires safety certification.	WMATA must develop a procedure to ensure that the Safety Department is the final authority on determining which projects should be subject to safety certification. This procedure must be referenced in the Safety and Security Certification Plan and other documents as appropriate.	15-106	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including: Finding #16: WMATA's Safety Department does not always determine which equipment requires safety certification.

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Table 11: Safety Findings and Required Actions Resulting from Roadway Worker Protection Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC ID	TOC Finding
TOC-RWP-017	1	Adequate span of control is not always provided for Roadway Workers in Charge (RWICs); individual territories can be too large and an insufficient number of RWICs may be assigned to a work zone, particularly during shutdowns.	WMATA must develop a policy to require a Roadway Worker In Charge (RWIC) for all work zone activities with one or more working limits, including shutdowns, throughout the time that work zone is in effect. If the geographic area of a work zone does not allow for adequate span of control of a single RWIC, an appropriate number of RWICs who report to lead RWIC, must be used.	15-107	On Sunday morning, October 6, 2013, a contractor was killed and two employees were seriously injured during an evacuation from a work zone related to fire and smoke conditions, stemming from flash butt welding operations. The investigation identified a number of findings, including Finding #17: Adequate span of control is not always provided for Roadway Workers in Charge; individual territories can be too large.
TOC-RWP-018	1	A communication issue as well as complacency led to a RWIC not being informed by the Supervisor of the exact chain markers of the work location.	WMATA must develop a Lesson's Learned document with an emphasis on Work Prep activities, to include ensuring that the person performing the work prep make certain that the RWIC is aware of the correct chain markers in the General Orders and Track Rights System (GOTRS) for their briefing sheet and what is instructed and communicated over the radio is repeated back verbatim.	15-228	A communication issue as well as complacency led to a RWIC not being informed by the Supervisor of the exact chain markers of the work location.
TOC-RWP-019	1	ROCC did not repeat back the chain markers that were listed in GOTRS nor did ROCC catch the discrepancy in the chain markers that PLNT Unit #4426 stated to ROCC on the initial call.	WMATA must develop a training PowerPoint presentation for a supplemental training tool to remind personnel of the RWIC duties and the different ways information is being communicated.	15-230	ROCC did not repeat back the chain markers that were listed in GOTRS nor did ROCC catch the discrepancy in the chain markers that PLNT Unit #4426 stated to ROCC on the initial call.

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Table 12: Safety Finding and Required Action Related to Safety Department Responsibilities Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-SAF-15-001	1	WMATA has not conducted required internal reviews of the Metro Transit Police Department and its own implementation of the System Safety Program Plan.	WMATA must complete the internal safety and security reviews as required.	15-241	WMATA has not conducted internal reviews of the MTPD or SAFE as required in the SSPP.
TOC-SAF-15-002	1	WMATA had not completed safety certification documentation for the Silver Line.	WMATA must complete safety certification activities and requirements for the Silver Line.	15-034	WMATA has yet to certify its deliverables, including Automated Fare Collection, Art-in-Transit, and the ROCC Upgrade
TOC-SAF-15-003	1	WMATA has not documented its process for updating the System Safety Program Plan, including the management of comments.	WMATA must update its System Safety Program Plan, or develop a separate procedure, documenting its approach to updating the System Safety Program Plan (SSPP) and managing comments.	15-234	The SSPP update and comment process, along with responsibility, is not defined in a procedure or the SSPP.
TOC-SAF-15-004	1	Passenger complaints regarding train intercoms are not always reviewed by the Safety Department.	WMATA must review passenger complaints regarding train intercoms as part of its Safety Measurement System	13-060	Process Improvements - Safety Measurement System (CAP not Finding)
TOC-SAF-15-005	1	WMATA's Safety Department does not always notify WMATA's Safety Oversight regarding major testing and commissioning activities for the 7K Fleet.	WMATA's Safety Department must update plans or procedures to ensure that WMATA's Safety Oversight is notified of, and invited to attend, major testing and commissioning activities for the 7K Fleet	15-074	WMATA should a) clarify this statement in the SSMP, and b) issue invitations for TOC attendance at future testing, commissioning, and drills.
TOC-SAF-15-006	1	WMATA or SAFE does not evaluate or inspect contractor equipment used on the Metrorail system.	WMATA's Safety Department must develop, and oversee implementation of, a procedure or process to ensure that all contractor equipment is evaluated or inspected prior to use on the Metrorail system.	13-087	WMATA will develop a procedure to evaluate and/or inspect contractor equipment for use on the rail system to assist in the prevention of accidents.
TOC-SAF-15-007	1	Procurement procedures for addressing safety elements are out-of-date in the SSPP.	WMATA must update its SSPP to accurately document how safety issues, concerns and requirements are managed and addressed in the procurement process.	13-089	WMATA will revise Section 21.2 in the next revisions of the SSPP to accurately reflect the most up-to-date references and procedures.

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Table 12: Safety Finding and Required Action Related to Safety Department Responsibilities Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-SAF-15-008	1	WMATA's policy instruction on the Design Control Board does not explicitly address SAFE's participation as presented in the SSPP, Section 5.4.3.	WMATA must update its policy instruction P/I 4.14/2 to explicitly clarify SAFE's role in the Design Control Board and to ensure consistency with SSPP Section 5.4.3.	15-231	WMATA will modify P/I 4.14/2 (formerly 4.14/1) to formally solidify SAFE's participation in the Design Control Board in accordance with the SSPP, Section 5.4.3.
TOC-SAF-15-009	1	WMATA's Safety Department does not always submit draft and final accident investigation reports on time.	WMATA must make required accident investigation submittals on-time.	15-239	Preliminary and Final Reports are not consistently completed and submitted to TOC on time as prescribed in TOC and WMATA requirements.

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Required Actions to Address Open Safety Findings Issued by the Tri-State Oversight Committee to the Washington Metropolitan Area Transit Authority

Table 13: Safety Findings and Required Actions Resulting from Structures Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-SRT-15-001	1	WMATA's structures division has not been inspecting certain assets as often as required.	WMATA must conduct an assessment to determine which assets, such as escalator shafts, are not being inspected as often as originally required and intended, and then establish and implement a new inspection schedule that includes these assets.	15-302	WMATA's structures division has not been inspecting certain assets as often as required.
TOC-SRT-15-002	1	Information on tunnel leaks is not regularly recorded or acted upon in a timely manner.	WMATA must revise track inspection procedures, documentation, and reporting processes to ensure that leak measuring and monitoring is a routine aspect of inspections in tunnels.	15-303	Information on tunnel leaks is not regularly recorded or acted upon in a timely manner.
TOC-SRT-15-003	1	Structures Maintenance Managers are not documenting quality control checks as required by the Maintenance Control Policy (MCP).	WMATA must update its existing quality control check procedure to make it more specific, including a checklist and specific instructions for Structures Maintenance Managers to conduct spot checks through field verification and to document results or corrective actions that are completed.	15-304	Structures Maintenance Managers are not documenting quality control checks as required by the Maintenance Control Policy (MCP).
TOC-SRT-15-004	1	WMATA requires the Maintenance Control Policy (MCP) to be reviewed annually, though the last update was in February 2013.	WMATA must complete the required MCP revision with full updates to references and procedures as necessary.	15-305	The Maintenance Control Policy (MCP) contains numerous outdated references and procedures.
TOC-SRT-15-005	1	There is not a complete asset list of structures.	WMATA must create a complete asset list of WMATA structures along with details/characteristics relevant to maintenance.	15-306	A partial structures asset list exists in the Maintenance Control Policy, and the Maintenance Plan contains an outdated list from 1979.
TOC-SRT-15-006	1	There is no work order connection between InspectTech findings and MAXIMO entries	WMATA must improve use of the InspectTech program to display the work order ticket number created in MAXIMO or note when no work order is needed, for each deficiency noted in an inspection.	15-307	There is no work order connection between InspectTech findings and MAXIMO entries
TOC-SRT-15-007	1	Defects from structures inspections listed on inspection reports are very general.	WMATA must enhance written inspection procedures to require documentation of all the defects based on location and quantity (possibly as estimated overall linear footage per area of the asset) as a baseline so that the structure conditions can be compared over time and monitored for any deterioration requiring intervention.	15-308	Defects listed on inspection reports are very general.

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Table 13: Safety Findings and Required Actions Resulting from Structures Maintenance and Training Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-SRT-15-008	1	WMATA does not appear to have completed all required technical training for structural maintenance personnel.	WMATA must identify whether training is incomplete due to manpower constraints, the method to track training completion, or other factors; implement a solution to the issue such as additional training staff or use of training reminders in a Learning Management System. WMATA activity for this required action may be incorporated into SMI required actions R-2-16-A through -D.	15-309	WMATA does not appear to have completed all required technical training for structural maintenance personnel.
TOC-SRT-15-009	1	There is no specialized training for inspecting static structures.	WMATA must provide training for structural inspectors in static building inspection, and establish a procedure and guidelines for reporting defects and recommending repairable items specific to static structures. WMATA activity for this required action may be incorporated into SMI required actions R-2-16-A through -D.	15-310	There is no specialized training for inspecting static structures.
TOC-SRT-15-010	1	There are no procedures that define the resources needed per task in structures maintenance.	WMATA must revise existing maintenance procedures or develop new ones to include information about hours and personnel numbers needed, tools, and access requirements.	15-311	There are no procedures that define the resources needed per task in structures maintenance.
TOC-SRT-15-011	1	The Federal Highway Administration (FHWA) condition rating system and software package for bridges is also used for other structures. The general component condition rating guidelines (obtained from the FHWA Coding Guide) are to be used in the evaluation of bridge components. There are no specific definitions or guidelines that correlate to rating the condition for structures other than bridges.	WMATA must establish discrete definitions or guidelines on the rating scale for the condition of structures such as tunnels and passenger stations (all structures other than bridges), and institute software for inspection management that is appropriate for structures other than bridges.	15-312	The FHWA 0-9 condition rating system and software package for bridges is also used for other structures.

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Table 14: Safety Findings and Required Actions Resulting from Systemwide Maintenance and Vehicles Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-SVT-15-001	1	Material Storage Facility (MSF) policy manual does not conform to SSPP requirements.	Establish formal documented policies for safety-critical inventory management methodologies below: a.) Configuration management and document control of all MSF internal documentation, including change control, annual review, and SAFE/MTPD review for compliance with the SSPP and System Emergency Program Plan (SEPP); b.) Internal Controls, including reviews for documentation compliance, updated MSDS processes for MSF warehouse and for supervision and quality assurance, and as pertains to industrial safety assurance per 29 CFR.	14-022	Material Storage Facility (MSF) policy manual was not compliant to WMATA SSPP Section 5.3, "SAFE included in document review"; Section 17, "Configuration Management"; and Section 21, "Procurement"
TOC-SVT-15-002	2	Formal SOPs are needed to document safety-critical tasks and activities performed by maintenance personnel.	WMATA must develop SOPs for maintenance personnel that cover: a.) All interactions with IT, including system failures; b.) Maintenance Engineer position description to cover all of the tasks and activities required; c.) Field relief process for revenue collection items; d.) Job safety analyses for the maintenance engineering staff; e.) Appropriate interactions with MOC (facilities, communications, etc.). This activity must be coordinated with initiatives underway to address SMI Required Action R-4-27-A.	13-053	A WMATA internal safety audit found that not all safety-critical tasks and activities related to system wide maintenance were appropriately documented in standard operating procedures (SOPs).
FTA-SVT-15-003	2	WMATA could potentially store equipment in tail tracks, shortening available track for braking and stopping vehicle movements.	WMATA must formalize in policy or rule its long-standing practice of prohibiting the storage of equipment on tail tracks where incoming outbound trains would enter that track over a switch in the normal position.	14-021	WMATA's Response to FTA Safety Advisory 14-2 highlighted a specific concern regarding whether safe braking calculations covered situations where equipment is stored in tail tracks.
FTA-SVT-15-004	1	Many Communications Technicians have not received classroom training on the 490 MHz radio system.	WMATA must complete required training for Communications Technicians on the 490 MHz radio system.	10-176	Many Communications Technicians have not received classroom training on the 490 MHz radio system.

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Table 14: Safety Findings and Required Actions Resulting from Systemwide Maintenance and Vehicles Issues

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
FTA-SVT-15-005	1	WMATA experienced a broken third rail that resulted in suspended service.	WMATA must conduct follow-up inspection to ensure integrity of repair.	15-083	Third rail fatigued. Temporary, emergency repairs made with third rail clamps.
FTA-SVT-15-006	1	Car Maintenance Job Plans do not have document control features such as revision numbers/dates or managerial approval.	Initiate a document control process to add revision numbers/dates and manager approval of all procedures for Car Maintenance Job Plans.	15-215	Car Maintenance Job Plans do not have document control features such as revision numbers/dates or managerial approval.
FTA-SVT-15-007	1	There was excessive water leaking from the roof in the Alexandria Yard Service and Inspection facility.	Initiate additional, immediate actions to mitigate this hazard such as 1) deploying tarps and funneling to an exterior location, and 2) complete the roof repair/replacement project as soon as possible.	15-216	There was excessive water leaking from the roof in the Alexandria Yard Service and Inspection facility.
FTA-SVT-15-008	1	The Branch Avenue Service and Inspection facility contains a large pressure (hydro-blaster) parts washer that does not have an associated Job Plan for ongoing preventive maintenance safety inspections	WMATA's Office of Plant Maintenance must create a Job Plan inspection procedure and checklist for the large pressure (hydro-blaster) parts washer at Branch Avenue based on the recommendations from the original equipment manufacturer.	15-217	The Branch Avenue Service and Inspection facility contains a large pressure (hydro-blaster) parts washer that does not have an associated Job Plan for ongoing preventive maintenance safety inspections

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Table 15: Safety Findings and Required Actions Resulting from Wrong Side Door Openings

FTA ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
TOC-WSD-15-001	1	Water intruded into door control junction box and was not identified during preventive maintenance.	WMATA's Chief of Vehicle Engineering must revise Preventative Maintenance Inspection (PMI) to reflect integration of car body water accumulation preventative inspection into task no. 40 of the 5000 Series PMI.	15-004	Water intruded into door control junction box; water caused electrical current, which triggered uncommanded door opening. Drainage hole in junction box not sufficiently large to permit proper drainage.
TOC-WSD-15-002	1	Water intruded into the door control junction box beyond design levels.	WMATA's Chief of Vehicle Engineering must evaluate and select a sealant for use to prevent water intrusion within the car body that will affect the door operation components.	15-005	Water intruded into door control junction box; water caused electrical current, which triggered uncommanded door opening.
TOC-WSD-15-003	3	Train Operators errors caused doors to open on the wrong side.	WMATA must evaluate its program for training, observing, supervising, advising and reminding Train Operators of the requirement to comply with SOP 40 Door Operations/Station Servicing Procedure.	15-011	Train Operator error due to inattention; failure to comply with SOP 40, Door Operations/Station Service Procedures.
				15-021	Train Operator error due to inattention; failure to comply with SOP 40, Door Operations/Station Service Procedures.
				15-051	Due to a loss of situational awareness, the Student Operator opened the doors on the wrong side by depressing the right side door open buttons. Line Platform Instructor failed to properly supervise Student Operator by exiting cab while Student Operator performed a safety sensitive function of opening side doors.

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Table 16: NTSB Safety Recommendations Formally Adopted by the TOC

NTSB ID/FTA ID	Category	NTSB Recommendation	FTA Required Action	TOC-ID	TOC Finding
R-08-004/ NTSB- R-8-004	1	Promptly implement appropriate technology that will automatically alert wayside workers of approaching trains and will automatically alert train operators when approaching areas with workers on or near the tracks.	Promptly implement appropriate technology that will automatically alert wayside workers of approaching trains and will automatically alert train operators when approaching areas with workers on or near the tracks.	08-001	Promptly implement appropriate technology that will automatically alert wayside workers of approaching trains and will automatically alert train operators when approaching areas with workers on or near the tracks.
R-10-20/ NTSB- R-10-20	1	Remove all 1000-series railcars as soon as possible and replace them with cars that have crashworthiness collision protection at least comparable to the 6000series railcars.	Remove all 1000-series railcars as soon as possible and replace them with cars that have crashworthiness collision protection at least comparable to the 6000 series railcars.	10-050	Remove all 1000-series railcars as soon as possible and replace them with cars that have crashworthiness collision protection at least comparable to the 6000-series railcars.
R-10-21/ NTSB- R-10-21	1	Ensure that the lead married-pair car set of each train is equipped with an operating onboard event recorder.	Ensure that the lead married-pair car set of each train is equipped with an operating onboard event recorder.	10-051	Ensure that the lead married-pair car set of each train is equipped with an operating onboard event recorder.
R-10-22/ NTSB- R-10-22	1	Develop and implement a program to monitor the performance of onboard event recorders and ensure they are functioning properly.	Develop and implement a program to monitor the performance of onboard event recorders and ensure they are functioning properly.	10-052	Develop and implement a program to monitor the performance of onboard event recorders and ensure they are functioning properly.
R-15-8/ NTSB- R-15-8	1	Assess your subway tunnel ventilation system to verify the state of good repair and compliance with industry best practices and standards, such as those outlined in the National Fire Protection Associations NFPA 130, Standard for Fixed Guideway Transit and Passenger Rail Systems. (Urgent)	Assess your subway tunnel ventilation system to verify the state of good repair and compliance with industry best practices and standards, such as those outlined in the National Fire Protection Associations NFPA 130, Standard for Fixed Guideway Transit and Passenger Rail Systems. (Urgent)	15-017	Assess your subway tunnel ventilation system to verify the state of good repair and compliance with industry best practices and standards, such as those outlined in the National Fire Protection Association's NFPA130, Standard for Fixed Guideway Transit and Passenger Rail Systems.(Urgent)

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Table 16: NTSB Safety Recommendations Formally Adopted by the TOC

NTSB ID/FTA ID	Category	NTSB Recommendation	FTA Required Action	TOC-ID	TOC Finding
R-15-9/ NTSB- R-15-9	1	Develop and implement detailed written tunnel ventilation procedures for operations control center staff that take into account the probable source location of smoke and fire, the location of the train, the best evacuation route, and unique infrastructure features; these procedures should be based on the most effective strategy for fan direction and activation to limit passenger exposure to smoke. (Urgent)	Develop and implement detailed written tunnel ventilation procedures for operations control center staff that take into account the probable source location of smoke and fire, the location of the train, the best evacuation route, and unique infrastructure features; these procedures should be based on the most effective strategy for fan direction and activation to limit passenger exposure to smoke. (Urgent)	15-018	Develop and implement detailed written tunnel ventilation procedures for operations control center staff that take into account the probable source location of smoke and fire, the location of the train, the best evacuation route, and unique infrastructure features; these procedures should be based on the most effective strategy for fan direction and activation to limit passengers' exposure to smoke.(Urgent)
R-15-10/ NTSB- R-15-10	1	As part of the implementation of the procedures developed in response to Safety Recommendation R-15-009, incorporate the use of the procedures into your ongoing training and exercise programs and ensure that operations control center staff and emergency responders have ample opportunities to learn and practice activating ventilation fans. (Urgent)	As part of the implementation of the procedures developed in response to Safety Recommendation R-15-009, incorporate the use of the procedures into your ongoing training and exercise programs and ensure that operations control center staff and emergency responders have ample opportunities to learn and practice activating ventilation fans. (Urgent)	15-019	As part of the implementation of the procedures developed in response to Safety Recommendation R-15-009,incorporate the use of the procedures into your ongoing training and exercise programs and ensure that operations control center staff and emergency responders have ample opportunities to learn and practice activating ventilation fans.(Urgent)
R-15-25/ NTSB- R-15-25	1	Promptly develop and implement a program to ensure that all power cable connector assemblies are properly constructed and installed in accordance with your engineering design specifications, including the weather tight seals that prevent intrusion by contaminants and moisture.	Promptly develop and implement a program to ensure that all power cable connector assemblies are properly constructed and installed in accordance with your engineering design specifications, including the weather tight seals that prevent intrusion by contaminants and moisture.	15-066	Promptly develop and implement a program to ensure that all power cable connector assemblies are properly constructed and installed in accordance with your engineering design specifications, including the weather tight seals that prevent intrusion by contaminants and moisture.

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Table 17: TOC-issued Safety Findings To Be Addressed as Part of the FTA's SMI Monitoring and Verification Activities

FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-1-4-A	4	There is a high level of noise and distraction in the Rail Operations Control Center, and a lack of electronic controls in the Advanced Information Management system to prevent errors.	WMATA must complete its assessment regarding the identification of critical versus non-critical notifications and alarms in the Rail Operations Control Center, and options for removing non-critical notifications must be implemented.	15-032	WMATA must review protocols for responding to alarms in the ROOC.
R-1-4-C	4	There is a high level of noise and distraction in the Rail Operations Control Center, and a lack of electronic controls in the Advanced Information Management system to prevent errors.	Until such time as electronic records of train movement are readily available to on-duty Rail Traffic Controllers, WMATA must ensure that its Rail Traffic Controllers maintain a paper-based record of all mainline train movements, signal by-passes, and unusual movements.	11-125	In the Advanced Information Management (AIM) System visual display, SCADA systems are not properly identified as SCADA, and are compartmentalized.
R-1-6-A	4	Radio discipline is poor.	WMATA must establish and enforce a proper protocol for language and terminology that is used over the radio – to include 100% word-for-word read-back for safety-related instructions and unusual train movements.	15-063 15-229	WMATA must revise Operating Rule 3.67 to reflect the responsibility of ROCC Rail Controllers and Rail Transportation Supervisors to advise Train Operators that they are approaching a signal with a red aspect. WMATA's ROCC will develop a Lesson's Learned for their respective group with an emphasis on repeat backs.
R-1-7-A	4	WMATA's Rail Operations Control Center lacks formal procedures, manuals and checklists	WMATA must establish procedural checklists for Rail Operations Control Center staff to implement the Standard Operating Procedures attached to the Metrorail Safety Rules and Procedures Handbook.	15-271	WMATA's MOC/ROCC does not appear to consistently open corrective maintenance work orders when an associated incident work order is created.
R-1-7-B	4	WMATA's Rail Operations Control Center lacks formal procedures, manuals and checklists	WMATA must enhance RTC reference materials to direct internal operations at the Rail Operations Control Center, including the use of the Advanced Information Management system, visual schematics of WMATA stations and facilities, and internal ROCC administrative policies and procedures.	15-219	Track energized while roadway workers were in the vicinity due to the failure of the Rail Operations Control Center to verify that a tie breaker was ever opened when power was initially de-energized. WMATA's ROCC will develop and issue a "lessons learned" flyer to address power removal.

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Table 17: TOC-issued Safety Findings To Be Addressed as Part of the FTA's SMI Monitoring and Verification Activities

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R-1-14-A	4	While it has improved, the quality of WMATA's radio system is still poor in some locations.	WMATA must expedite activities underway to modify the radio system design to add coverage to the areas that currently are not part of the system design, including tunnel ventilation and fan shafts, safe and refuge areas, and tunnel portals.	15-087	WMATA is currently utilizing a beta program under development, which is displayed in the ROCC on the overview screen to assist in Rail Controller identification of radio outages.
				15-262	WMATA does not have a mechanism to alert personnel of areas with temporarily inoperable radio infrastructure or poor coverage.
				15-264	The trouble reporting process for radio users from external agencies is on an ad hoc basis.
R-1-14-B	4	While it has improved, the quality of WMATA's radio system is still poor in some locations.	WMATA must assess and prioritize for additional radio enhancements not covered by Capital Improvement Plan (CIP) 136.	13-057	WMATA shall continue to investigate and mitigate the 2K, 3K and 5K noise issue associated with the Digital Radio upgrade.
				15-263	WMATA departments do not have a consistent program to ensure personnel are using fully charged radios.
				15-267	Radio trouble tickets do not always include contact information for the person reporting the problem.
				15-273	WMATA's railcar and portable radio communications systems are in need of a comprehensive safety analysis due to reported failures and findings identified throughout this report.
				15-276	WMATA currently does not conduct system-wide radio performance testing on a regularly scheduled basis.
R-2-15-A	4	Maintenance and Operations Departments have not ensured the Roadway Worker Protection training program is being conducted as required. Annual refresher and biennial re-certification requirements for Level II and Level IV are behind schedule.	Each WMATA Department with Roadway Worker Protection-trained and qualified employees must coordinate with Technical Skills & Maintenance Training to get or establish an accurate status on each employee's refresher and requalification training.	13-052	Training programs and documentation are not fully in place for revenue collection staff.

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FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-2-16-A	4	Technical Training for operations and maintenance departments is under-resourced and fractured, currently provided by five different departments and IT, is insufficiently directed and resourced, and relies significantly on on-the-job training which is informal and lacks oversight.	WMATA must conduct a coordinated study to prioritize technical training needs for maintenance personnel, and operations training for Rail Traffic Controller, Train Operators, and Field Supervisors.	12-052	Certain technical training courses for railcar maintenance need revision or development.
				14-038	Training policy and procedures developed by WMATA's Human Resources Training Management Department are not fully documented.
				14-061	Lack of a formal train the trainer program and procedure in Rail Transportation.
				15-274	Mobile and portable radio users throughout WMATA lack adequate training to understand limitations on functionality.
				15-280	PLNT, COMM, and POWR reported that not all employees have received training on new equipment, including new N-Line (Silver Line) assets requiring inspection.
R-2-16-B	4	Technical training for Operations and Maintenance Departments is under-resourced and fractured, currently provided by five different departments and IT, is insufficiently directed and resourced, and relies significantly on on-the-job-training (OJT) which is informal and lacks oversight.	WMATA must evaluate whether re-organization or consolidation of training functions would improve the agency's ability to manage, schedule, budget for, develop, oversee and assess training and ensure that training material remains up-to- date.	14-019	Training policy and procedures are not fully documented and approved, including: SOPs, EOPs, lesson plans/curricula, pass/fail criteria, training requirements by department, recurring/refreshers/re-certification training, training matrix by position and document control-change control-configuration management of training programs and documentation; and WMATA does not always ensure that SAFE & MTPD review all training documentation for compliance with safety and security requirements.
R-2-17-B	4	WMATA does not have a clear strategy for the development or delivery of emergency response training to WMATA's frontline personnel, or for managing the logistical challenges associated with coordinating familiarization training with local emergency responders.	WMATA's Office of Emergency Management must conduct a formal review of all training provided to frontline, supervisory and ROCC personnel regarding the actions required to be performed during an emergency to ensure its conformance with WMATA's emergency plans and the understanding of local jurisdictions as reflected in region-wide emergency operations plans.	15-260	WMATA does not have in writing its protocol for formally notifying local first responder agencies of emergency egress hatches and doors being removed or put back into service.

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FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-2-17-D	4	WMATA does not have a clear strategy for the development or delivery of emergency response training to WMATA's frontline personnel, or for managing the logistical challenges associated with coordinating familiarization training with local emergency responders.	WMATA must review and update its approach to providing familiarization training to local emergency responders, and ensure that emergency responders have ample opportunities to learn and practice activating and using fire life safety equipment and systems, including ventilation fans, fire suppression system, standpipes, communication equipment, and other systems.	15-078	WMATA should publish a familiarization training plan, including a timeline, for first responders and begin implementing it before revenue service begins. Such a plan should also include the revision of future training conducted at the Carmen Turner Facility training lab for new emergency responders to incorporate differences in 7K railcars.
R-2-18-A	4	Rules compliance checks of operational personnel are inconsistent.	WMATA must require Rail Supervisors to complete meaningful rules checks on Train Operators, not just single observation items, unless directed as part of a special emphasis program.	15-238	Rule compliance program information is not used as a source of information in the Safety Measurement System for hazard analysis per System Safety Program Plan Section 9.1.
R-2-18-B	4	Rules compliance checks of operational personnel are inconsistent.	WMATA must establish documentation and a training program to ensure that Rail Supervisors know how to conduct and record meaningful rules checks of Train Operators, and how to discuss results with Train Operators.	14-045	There appears to be a low rate of Train Operator compliance with rules regarding acknowledgement of personnel in the ROW.
R-2-19-B	4	Rail Transportation is not ensuring that field supervisors conduct required rules compliance checks on station managers and train operators.	WMATA must document operational testing requirements and test results to improve the utility of the program as part of a robust testing and observation program.	13-044	WMATA does not appear to be conducting analysis or validation of the rule compliance program effectively as described in its Standard Operating Procedure (SOP).
R-4-27-A	4	Documented maintenance procedures and standard operating procedures are not implemented as required.	For all major departments with inspection and maintenance responsibilities for critical infrastructure, WMATA must establish and/or update a preventive maintenance and inspection testing quality audit process to ensure compliance with established maintenance and testing practices, and to monitor missed or incomplete preventive maintenance activities and/or inspections.	13-017 13-027 13-030 15-118	Maintenance Policy not established for a number of safety-critical areas within WMATA's PLNT Department. Maintenance Policy not established for a number of safety-critical areas in ELES. No official departmental QA/QC/QI policies in place for ELES. QAAW audits of ELES PM indicate a high rate of non-compliance with procedures.

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Table 17: TOC-issued Safety Findings To Be Addressed as Part of the FTA's SMI Monitoring and Verification Activities

FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-4-27-A (continued)		(continued)	(continued)	15-119	ELES preventative maintenance (PM) check sheets are inconsistently completed, with some steps skipped often.
				15-120	Nearly half of monthly ELES PM inspections are not occurring on time.
				15-121	Several escalator units were found to have panel gaps exceeding the 1/8 inch requirement.
				15-122	The required Job Hazard Analysis is frequently not performed by ELES mechanics at the work site.
				15-123	During the observation of elevator PM, the crew disconnected power at the main breaker and began work by removing the motor cover before a lock was later applied by another mechanic.
				15-124	During the observation of an elevator PM inspection, mechanics lacked information on calibration requirements and PM procedures.
				15-125	The open Limited Maintenance (LM) work order list for ELES shows 1,256 being open, some dating back to February 2013.
				15-126	ELES does not have a documented maintenance plan describing the organization, schedules, procedures, and inventory for escalators and elevators
				15-127	There are two versions of the ELES Escalator PM Check Sheet in use. One version includes a procedure for Step Run-in (O&K) as item 18 and the other version does not.
				15-203	Finding of NC 1: PLNT does not have inspection procedures to guide technicians' preventive maintenance inspections.
				15-204	Finding of NC 2: PLNT mechanics use monthly inspection checklists for many inspections that should have been annual, semi-annual, or quarterly inspections.

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FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-4-27-A (continued)		(continued)	(continued)	15-205	Finding of NC 3: CMNT inspections have procedures but no guiding checklists to confirm steps taken or measurements recorded.
				15-206	Finding of NC 4: There is no maintenance plan identifying all assets and their preventive maintenance techniques and procedures.
				15-265	Preventive Maintenance Inspection (PMI) checklists do not always identify the acceptable limits for measurements taken during inspections.
				15-268	There is no consistent process to ensure COMM opens new corrective maintenance work orders for repair actions found during PMIs.
				15-270	There is, in some cases, only a single maintenance procedure to cover inspections of different types of COMM Field Maintenance equipment.
				15-277	The completeness of preventive maintenance inspection checklists varies considerably.
				15-278	MAXIMO showed a backlog in incomplete PMI work orders for COMM Field Maintenance.
				15-281	The WMATA SSPP currently lists COMM as having responsibility for the PROTECT system, but COMM does not fully include PROTECT in its PM process.
				15-284	PLNT, COMM, and POWR do not appear to have established benchmarks for when and how often quality control (QC) checks are performed by front-line supervisors.

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FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-5-34-A	4	Priority maintenance work for Fire/Life Safety (FLS) systems and other critical infrastructure with shared departmental responsibilities for inspection and maintenance is not completed as required.	WMATA must complete its "Fire/Life Safety 1000" maintenance procedure, to clarify roles and responsibilities, and outline expectations regarding how departments should work together to coordinate inspection, maintenance and repair of these system components.	15-033	Implement a quality audit of the ventilation system testing.
				15-218	Finding of CWR 4: Record reviews showed that some issues identified as high-priority by some departments (the users) remained open under other departments' (the maintainers) responsibility for months.
				15-255	PLNT Fire Technicians reported being concerned about the lack of a good process to ensure that SAFE becomes aware of safety issues that the PLNT Fire Technicians identify.
R-5-35-B	4	WMATA must do more to prevent and manage conditions that cause smoke in tunnels.	WMATA must address third rail insulator cleaning and replacement requirements and third rail jumper cable inspection and replacement requirements as part of the "Fire/Life Safety 1000" procedure, or in separate but referenced procedures.	15-026	Install mechanical protection on third rail jumper cables that may be exposed to wear from vibration against other materials.
				15-031	WMATA will establish a dedicated maintenance crew to clean tunnel walkways of any debris or retired equipment left behind in the underground portions of the system that may obstruct non-designated passageways for rail personnel or first responders.
R-5-35-E	4	WMATA must do more to prevent and manage conditions that cause smoke in tunnels.	WMATA must replace all defective power cables that have been identified by traction power inspectors and maintainers.	15-082	Stub-ups were not aligned properly, causing track equipment to make contact.
R-7-40-C	4	WMATA's MMIS, in its current configuration, is cumbersome and challenging to use for many WMATA maintenance employees.	The Information Technology Department must coordinate with the Technical Training Department to ensure the availability of additional training on the use of WMATA's Maintenance Management Information System for WMATA's maintenance departments.	15-266	COMM internally lacks MAXIMO capabilities in the areas of pulling open issues and reporting on maintenance history of specific equipment, among others.

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FTA SMI ID	Category	FTA Finding	FTA Required Action	TOC-ID	TOC Finding
R-7-42-A	4	Proactive safety analysis of information provided by Operating and Maintenance departments is not routinely conducted. This negatively impacts ability of WMATA to provide more support for proficiency testing, conduct more in-depth safety studies, reviews and accident/incident investigations.	WMATA operating and maintenance departments must work together to develop a strategy to more actively analyze, review, and assess rail operations and maintenance data from a safety perspective.	10-304	Data is not currently shared with other departments for analysis and review.
				15-233	Hazardous conditions are not being reported through the hazard management process to be analyzed systematically throughout the agency.
				15-234	Hazards identified during Local Safety Committee meetings are not integrated into the SMS for analysis across locations.
				15-246	There is no consistent methodology for communication of information to or from Local Safety Committee members.
				15-250	There is no methodology or procedure documenting how safety data is collected, analyzed, and how reports are generated.
R-7-42-B	4	Proactive safety analysis of information provided by Operating and Maintenance departments is not routinely conducted. This negatively impacts ability of WMATA to provide more support for proficiency testing, conduct more in-depth safety studies, reviews and accident/incident investigations.	WMATA must work with the Tri-State Oversight Committee and FTA to establish and pilot an enhanced investigation process for rail transit accidents, incidents and safety studies that identify systemic root causes and deficiencies.	15-251	There are no established criteria for when an accident investigation committee should convene.