

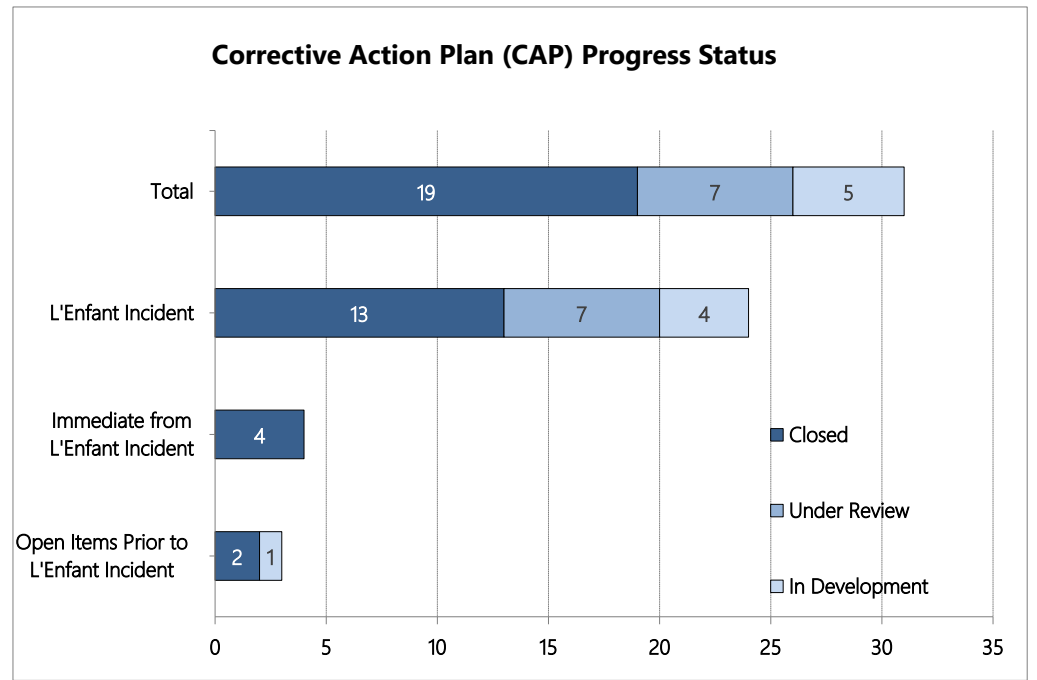


| WMATA Hazard Risk Category* | Description | CAP #s |
|-----------------------------|---|--------|
| I | Unacceptable: The hazard must be mitigated in the most expedient manner possible. | 1 |
| II | Undesirable w/ Executive Safety Committee (ESC) decision required: The hazard must be mitigated. If necessary, the Chief Safety Officer may develop interim mitigations in coordination with the ESC, subject to FTA approval. | 16 |
| III | Acceptable w/ review: The Chief Safety Officer must determine if the hazard is adequately controlled or mitigated as is. | 9 |
| IV | Acceptable w/o review: The hazard does not need immediate mitigation, but corrective actions are monitored. | 5 |

*In accordance with FTA requirements, WMATA's Hazard Risk categories are expressed in terms of severity and probability of occurrence. This is used as a safety management tool for mitigating hazards to the lowest practicable level

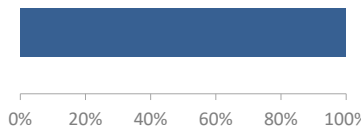
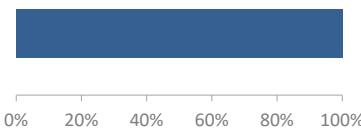
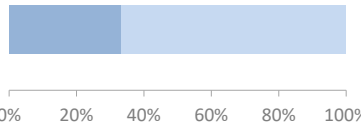
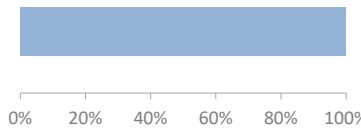
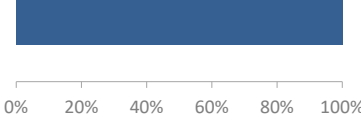
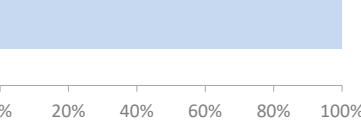
| Metro Actionable Item Status | | |
|--|--|--|
| Closed | Under Review | In Development |

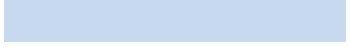

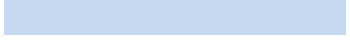
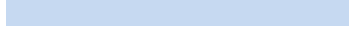
| FTA Status Index | | | |
|------------------|-----------------|----|--------------------------|
| O | Open | UR | Under NTSB Review |
| O/PD | Open / Past Due | AC | Addressing NTSB Comments |
| | | C | Closed |



| NTSB Progress Status | | | | | | | |
|--|--|----------------------------|--------------------------------------|------------|--------------------|------------------------|-----------------------------|
| CAP # | Metro Actionable Items | WMATA Hazard Risk Category | Original Estimate to Request Closure | CAP Status | Total Action Items | Action Items Submitted | Actionable Items Status Bar |
| NTSB Corrective Action Plan (31 CAPs) | | | | | 92 | 62 | 67% |
| Open Items Prior and Immediate to L'Enfant Incident (7 CAPs) | | | | | 7 | 6 | 86% |
| NTSB R-08-004 | Open Items Prior to L'Enfant Incident: • WMATA is developing technology to notify train operators when approaching work areas. | I | December 2017 | O/PD | 3 | 2 | 67% |
| NTSB-R-10-20 | • WMATA removed 1000-series railcars from service as new 7000-series railcars are commissioned and placed in-service. | II | | C | | | |
| NTSB-R-10-22 | • WMATA developed a program to monitor railcar event recorders. • WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | IV | | C | | | |
| NTSB R-15-8 | Immediate from L'Enfant Incident: • WMATA assessed the state of good repair of tunnel ventilation systems in accordance with industry best practices. | II | September 2017 | C | 4 | 4 | 100% |
| NTSB R-15-9 | • WMATA developed operational procedures for tunnel ventilation to provide optimal configuration for smoke emergencies. | II | | C | | | |
| NTSB R-15-10 | • WMATA developed training programs for control center staff on updated ventilation procedures and configurations. | II | | C | | | |
| NTSB R-15-25 | • WMATA inspected all cable connector assemblies for proper construction, including weather-tight seals, & making any necessary repairs. • Finally, WMATA performed a quality assurance audit to review actionable items. | III | | C | | | |
| NTSB twenty-four (24) safety recommendations | | | | | 85 | 56 | 66% |
| NTSB R-16-08 | Review and revise WMATA's tunnel inspection, maintenance, and repair procedures to mitigate water intrusion into tunnels. | II | February 2018 | O/PD | 2 | 0 | 0% |

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|--------------|--|----------------------------|--------------------------------------|------------|--------------------|------------------------|--|
| | <ul style="list-style-type: none"> WMATA is developing maintenance/inspection procedures to identify and mitigate water intrusion into the tunnels. WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | | | | | | |
| NTSB R-16-09 | <p>When the revision of tunnel inspection, maintenance, and repair procedures recommended in Safety Recommendation R-16-08 have been completed, train maintenance employees on the new procedures, and ensure that the procedures are implemented.</p> <ul style="list-style-type: none"> WMATA is developing maintenance/inspection procedures to identify and mitigate water intrusion into the tunnels. WMATA will incorporate a revised tunnel inspection, maintenance, and repair procedures into training curriculum. WMATA will rollout a new curriculum and training program. WMATA will create an audit plan and schedule to verify implementation. WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | II | March 2019 | O/PD | 5 | 0 | <p>0%</p>  <p>0% 20% 40% 60% 80% 100%</p> |
| NTSB R-16-10 | <p>Improve the capacity of tunnel ventilation fans to conform to the requirements of National Fire Protection Association (NFPA) 130.</p> <ul style="list-style-type: none"> WMATA reviewed existing ventilation studies that have been completed and also developed a recommended approach to analyzing the entire underground ventilation system for compliance with NFPA 130. WMATA issued a contract for ventilation analysis. WMATA recommended infrastructure improvements. WMATA developed an action plan for recommended improvements. Finally, WMATA performed a quality assurance audit to review actionable items. | III | September 2021 | C | 5 | 5 | <p>100%</p>  <p>0% 20% 40% 60% 80% 100%</p> |
| NTSB R-16-11 | <p>Develop location-specific emergency ventilation config based on engineering studies of the WMATA tunnel ventilation system.</p> <ul style="list-style-type: none"> WMATA wrote tunnel ventilation procedures in conjunction with NTSB R-15-9. WMATA analyzed potential tunnel ventilation system improvements. WMATA developed location-specific emergency ventilation configurations. Finally, WMATA performed a quality assurance audit to review actionable items. | II | July 2017 | C | 4 | 4 | <p>100%</p>  <p>0% 20% 40% 60% 80% 100%</p> |
| NTSB R-16-12 | <p>Develop and implement procedures for actions to be taken by Rail Operations Control Center (ROCC) personnel when smoke detectors alarm.</p> <ul style="list-style-type: none"> WMATA wrote tunnel ventilation procedures in conjunction with NTSB R-15-9. WMATA set a specific set of steps and responsibilities for smoke detector alarms. Finally, WMATA performed a quality assurance audit to review actionable items. | II | October 2017 | C | 3 | 3 | <p>100%</p>  <p>0% 20% 40% 60% 80% 100%</p> |
| NTSB R-16-13 | <p>Once action to address Safety Recommendation R-16-12 is completed, train all ROCC personnel on the new procedures for responding to smoke alarms. This training should include regular refresher training.</p> | II | May 2018 | C | 4 | 4 | <p>100%</p>  <p>0% 20% 40% 60% 80% 100%</p> |

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|--------------|--|----------------------------|--------------------------------------|------------|--------------------|------------------------|--|
| | <ul style="list-style-type: none"> WMATA developed and implementing procedures for actions to be taken by ROCC personnel when smoke detectors alarm. WMATA incorporated procedures into the ROCC curriculum, to include refresher training. WMATA provided documentation of training. Finally, WMATA performed a quality assurance audit to review actionable items. | | | | | | |
| NTSB R-16-14 | <p>Incorporate smoke alarms in periodic emergency drills and exercises.</p> <ul style="list-style-type: none"> WMATA conducted quarterly emergency drills. WMATA developed a drill and coordination plan for the drill scheduled for October 2016. Finally, WMATA performed a quality assurance audit to review actionable items. | II | December 2016 | C | 3 | 3 | 100%  |
| NTSB R-16-15 | <p>Include in your efficiency testing program (rules compliance testing program) a specific test to ensure appropriate emergency actions are taken by ROCC supervisors and control operators in response to an alarm.</p> <ul style="list-style-type: none"> WMATA conducted efficiency testing. WMATA conducted specific tests for ROCC personnel's response to alarms. Finally, WMATA performed a quality assurance audit to review actionable items. | III | January 2017 | C | 3 | 3 | 100%  |
| NTSB R-16-16 | <p>NTSB R-16-16 - Install and maintain a system that will detect the presence and location of fire and smoke throughout the WMATA tunnel and station network.</p> <ul style="list-style-type: none"> WMATA evaluated and tested potential smoke detection solutions. WMATA will develop an implementation plans for selected smoke detection solution. WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | II | August 2020 | O/PD | 3 | 1 | 33%  |
| NTSB R-16-17 | <p>Develop procedures for regular testing of all smoke detectors.</p> <ul style="list-style-type: none"> WMATA developed procedures for smoke detection systems. WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | III | January 2018 | UR | 2 | 2 | 100%  |
| NTSB R-16-18 | <p>Conduct a risk assessment before any preventive maintenance program is initiated, changed or discontinued.</p> <ul style="list-style-type: none"> WMATA revised System Safety Program Plan (SSPP) to state that changes in preventative maintenance procedures are subject to formal approval. WMATA revised policy instructions to state that changes in preventative maintenance procedures that are subject to formal approval. WMATA reviewed existing policies to identify needs for revision. WMATA developed or revise policies to state that changes in preventative maintenance procedures must be approved as described. Finally, WMATA performed a quality assurance audit to review actionable items. | III | August 2018 | C | 5 | 5 | 100%  |
| NTSB R-16-19 | <p>Ensure that all train operators are trained and regularly tested on the appropriate procedure for emergency shutdown of railcar ventilation.</p> <ul style="list-style-type: none"> WMATA updated procedure for shutting down railcar ventilation. | III | March 2017 | AC | 3 | 0 | 0%  |

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|--------------|---|----------------------------|--------------------------------------|------------|--------------------|------------------------|--|
| | <ul style="list-style-type: none"> WMATA updated the new train operator training curriculum. WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | | | | | | |
| NTSB R-16-20 | <p>Incorporate a specific test in your efficiency testing program to ensure that train operators understand the procedure for emergency shutdown of railcar ventilation.</p> <ul style="list-style-type: none"> WMATA implemented an efficiency testing program for Rail Traffic Controllers (RTCs). WMATA tested train operators in emergency shutdown of railcar ventilation. WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | III | February 2017 | AC | 3 | 0 | 0%  |
| NTSB R-16-21 | <p>Revise Standard Operating Procedure (SOP) #6 to clarify which trains should be stopped until the source of smoke is identified.</p> <ul style="list-style-type: none"> WMATA updated SOP #6 to state all trains that must be stopped in the event of a smoke incident. Finally, WMATA performed a quality assurance audit to review actionable items. | IV | December 2016 | C | 2 | 2 | 100%  |
| NTSB R-16-22 | <p>Revise your SOP to require that: (1) suitably trained, qualified, and properly equipped personnel investigate reports of wayside fire or smoke, and (2) these reports are not investigated using trains with revenue passengers.</p> <ul style="list-style-type: none"> WMATA created procedural checklists. WMATA developed an SOP for smoke investigation. Finally, WMATA performed a quality assurance audit to review actionable items. | IV | February 2017 | C | 3 | 3 | 100%  |
| NTSB R-16-23 | <p>Review and revise as necessary your ROCC emergency response procedures for smoke and fire.</p> <ul style="list-style-type: none"> WMATA developed tunnel ventilation procedures for Operations Control Center staff. WMATA developed procedural checklists for SOPs. WMATA developed drills to assess Metro's response to smoke and fire. WMATA reviewed and revised existing SOPs for ROCC response to fire and smoke emergencies. WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | IV | February 2018 | UR | 5 | 5 | 100%  |
| NTSB R-16-24 | <p>Retrain ROCC supervisors on all standard operating procedures for emergencies.</p> <ul style="list-style-type: none"> WMATA established SOP procedural checklists. WMATA retrained ROCC supervisors on procedural checklists. WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | III | February 2017 | AC | 3 | 0 | 0%  |
| NTSB R-16-25 | <p>Develop and incorporate a comprehensive program for training ROCC control operators in emergency response procedures including regular refresher training.</p> <ul style="list-style-type: none"> WMATA developed annual recertification for RTCs. WMATA updated emergency response training. WMATA is developing and implementing procedures for smoke detector alarms. WMATA is training all ROCC personnel on the new procedures for smoke detector alarms. WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | II | June 2018 | AC | 5 | 0 | 0%  |

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|--------------|---|----------------------------|--------------------------------------|------------|--------------------|------------------------|--|
| NTSB R-16-26 | <p>Conduct regular emergency response drills and develop a program to test the efficiency of the ROCC to ensure that standard operating procedures are properly followed during emergencies.</p> <ul style="list-style-type: none"> • WMATA updated emergency response training. • WMATA conducted drills to assess Metro's response to smoke & fire. • WMATA developed an audit plan to verify compliance with emergency procedures during drills. • WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | II | October 2018 | AC | 4 | 0 | 0%  |
| NTSB R-16-27 | <p>Install line identification and direction signage at tunnel entrances and inside tunnels.</p> <ul style="list-style-type: none"> • WMATA determined appropriate signage locations. • WMATA surveyed tunnels to map proposed locations. • WMATA developed proposed improvements and a tentative implementation plan for jurisdictional review. • WMATA developed and implement a final implementation plan when improvements are accepted by jurisdictional fire chiefs. • Finally, WMATA performed a quality assurance audit to review actionable items. | III | April 2018 | C | 5 | 5 | 100%  |
| NTSB R-16-28 | <p>Implement a regular schedule for the inspection and removal of obstructions from safety walkways and track-bed floors to ensure safe passageways for passengers to use during a tunnel evacuation.</p> <ul style="list-style-type: none"> • WMATA will remove obstructions from safety walkways. • WMATA developed formal written procedures for inspection, reporting, clearing, and recording of obstructions in the roadway and on safety walkways. • WMATA will confirm there is reasonable evidence to support completion of actionable items and performance measures. | II | October 2017 | O/PD | 3 | 1 | 33%  |
| NTSB R-16-29 | <p>Conduct emergency response drills with local emergency response agencies in accordance with NFPA 130, document lessons learned, and develop and implement additional procedures as necessary to effectively respond to emergencies.</p> <ul style="list-style-type: none"> • WMATA conducted quarterly emergency drills. • WMATA outlined the standard approach for documenting drills in accordance with industry guidelines. • Finally, WMATA performed a quality assurance audit to review actionable items. | II | February 2017 | C | 3 | 3 | 100%  |
| NTSB R-16-30 | <p>Revise your standard operating procedures to require that an after-action review be conducted of all emergency responses to events with passenger or employee fatalities, and publish the results, including both the successes and the potential deficiencies of your responses, to help ensure that deficiencies are appropriately remediated.</p> <ul style="list-style-type: none"> • WMATA developed an SOP detailing requirements for performing an After-Action Review (AAR). • Finally, WMATA performed a quality assurance audit to review actionable items. | IV | April 2017 | C | 2 | 2 | 100%  |
| NTSB R-16-31 | <p>Review and revise your quality assurance program to ensure that regular quality assurance audits are included to identify and correct any elements of procedural noncompliance.</p> <ul style="list-style-type: none"> • WMATA developed an overview of the Quality Management System (QMS), quality objectives and | II | May 2017 | C | 5 | 5 | 100%  |

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|-------|---|----------------------------|--------------------------------------|------------|--------------------|------------------------|-----------------------------|
| | <p>guiding principles.</p> <ul style="list-style-type: none"> • WMATA reviewed the existing manual and identify gaps. • WMATA revised manual to incorporate input from gap analysis. • WMATA Implemented updated QMS. • WMATA confirmed there was reasonable evidence to support completion of actionable items and performance measures. | | | | | | |