

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

☐ Action ☒ Information

MEAD Number:
201790

Resolution:
☐ Yes ☒ No

TITLE:

Update on FWSO & NTSB action items

PRESENTATION SUMMARY:

The Department of Safety & Environmental Management (SAFE) will brief the Board on actionable items from the Federal Transportation Administration WMATA Safety Oversight (FWSO) ongoing inspections and subsequent findings and the National Transportation Safety Board (NTSB) open recommendations including those from the L'Enfant Smoke and Arcing Incident of January 2015.

PURPOSE:

The briefing on FTA's FWSO actions and NTSB recommendations provides an update to the Safety Committee on ongoing work activities and deliverables between the FWSO and WMATA as well as the open recommendations of the NTSB. Further, the public report provides transparency to our stakeholders, employees and public in the Washington metropolitan area community.

DESCRIPTION:

WMATA continues to work collaboratively with all external agencies in an effort to strengthen the safety of the system for its employees and public.

Key Highlights:

- There are 1,063 action items that need to be addressed
- 655 of the 1,063 (62%) action items have been submitted to the FTA or NTSB for approval
- 259 actionable items have been closed
- WMATA submitted actions to address the latest FWSO inspection reports, Safety Directives #16-3, and initial responses to #16-4, #16-5, and #16-6
- WMATA submitted to the NTSB on August 18, 2016 the CAPs for the L'Enfant Plaza Metro incident for approval

Background and History:

Following the January 2015 smoke and arcing incident, the NTSB launched an investigation, and the Federal Transit Administration initiated a Safety Management Inspection. Both led to recommendations and required follow up actions by WMATA.

In March, the FTA conducted a Safety Management Inspection which resulted in an issuance of Safety Directive 15-1 (June 2015) identifying areas that required actions to improve safety. The SMI evaluated operations and maintenance of both bus and rail, safety management capabilities and organizational structure, adopting an all-encompassing, safety management system (SMS) approach. WMATA systematically worked to develop corrective action plans (CAPs) for all findings and in September 2015 received FTA's approval of the CAPs as "open and acceptable". WMATA is working to close each of the CAPs and submits weekly deliverables to the FTA towards completion of the CAPs.

On October 9, 2015 FTA (specifically the FTA WMATA Safety Oversight or FWSO) assumed direct oversight of WMATA, exercising its new authority to do so, as established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) in 2012. The same act (and subsequent rulemakings) also codifies a Safety Management System (SMS) framework for safety oversight of all public transit properties, to be managed by each transit property's State Safety Oversight Agency. FWSO and WMATA are collaborating and continue to transition from Tri-State Oversight Committee to FTA oversight. As part of this transition, FWSO has reconciled/consolidated (under Safety Directive 16-2) all open items from the previous oversight, TOC, into 4 categories.

As part of the FTA FWSO oversight role, routine field inspections and triennial audits are occurring as well as a number of safety blitzes that began in April 2016 focused on three areas; track integrity, yard vehicle securement and red signal violations. These safety blitzes resulted in three additional safety directives (#16-4, #16-5, and #16-6) which contain additional findings that WMATA will take action to mitigate.

In regards to the January 2015, L'Enfant Plaza smoke and arcing incident, the NTSB conducted its public Board meeting on May 3, 2016 and approved its official accident report. The report contains 43 findings and 31 total recommendations; 24 to the Authority and the remainder to external agencies. These 24 new recommendations were received on May 23, 2016 which brings the total number of open NTSB recommendations to 31; three prior to the L'Enfant Plaza incident and 28 specific to L'Enfant Plaza incident.

Discussion:

WMATA continues to welcome oversight in an effort to assist in identifying issues as part of the infrastructure rehabilitation and enhancement to safety for our employees and public. Out of the 1,063 actionable items, 259 have been closed which closes 11 CAPs. Another 655 action items have been submitted or over 62% and 408 actionable items are in various stages of progress.

The FTA FWSO continues performing inspections and on-site visits as part of its oversight role. As a result of these inspections, several FTA Safety Directives have been recently issued. Safety Directive #16-3 was responded to in May 2016 addresses

FWSO concerns over a variety of safety issues. Actions taken to address the directive included the first of several safety stand-downs by the General Manager/Chief Executive Officer with over 650 managers to emphasize safety over service; a 2-hour safety stand-down of over 4,000 supervisors, managers and roadway workers; revised and additional thermal testing of the roadway to determine “hot-spots”; speed restrictions in segments of the rail to mitigate amperage draw to inspection of all tunnel areas to identify and mitigate clogged drains, water leaks and mud conditions; and additional emergency drills. In September, WMATA submitted the 30-day response to FTA Safety Directives addressing track integrity, stop signal overrun and vehicle securement taking no exception and is in the process of developing the required corrective action plans which, when final, will be submitted to the FWSO for approval.

On August 18, 2016, WMATA submitted detailed corrective action plans to the NTSB for approval (attached). These CAPs represent the coordinated response to address the 24 recommendations which range from new/revised policies to development of new training and infrastructure improvements. Although WMATA is awaiting NTSB approval of these CAPs, we continue to move forward to closing these and all outstanding findings/recommendations.

FUNDING IMPACT:

Define current or potential funding impact, including source of reimbursable funds.	
Project Manager:	CSO - Pat Lavin
Project Department/Office:	SAFE No impact on funding

TIMELINE:

Previous Actions	<ul style="list-style-type: none"> • Board briefing on February 25, 2016 • Board briefing on May, 2016
Anticipated actions after presentation	<ul style="list-style-type: none"> • Continue to fully implement all NTSB and FTA CAPs • Continue to strengthen safety culture

RECOMMENDATION:

To inform the Board’s Safety Committee of the status of safety actions relative to FTA FWSO and the NTSB.



August 18, 2016

Correspondence@ntsb.gov
National Transportation Safety Board
490 L'Enfant Plaza East, SW
Washington, DC 20594

Chairman Hart:

This letter provides the Washington Metropolitan Area Transit Authority's (WMATA) response to the twenty-four (24) Safety Recommendations issued to the agency by the National Transit Safety Board (NTSB) on May 23, 2016. Detailed below are the specific responses to the 24 recommendations. In addition, please find attached 24 comprehensive Correction Action Plans (CAPs), which further describe the actions being taken, schedules for implementation, and designation of action owners to manage the completion of each recommended action.

R-16-08: Review and revise your tunnel inspection, maintenance, and repair procedures to mitigate water intrusion into tunnels.

- Response: WMATA's maintenance and inspection manuals do not currently contain specific requirements regarding mitigation of water intrusion into tunnels through inspection, maintenance and repair procedures. WMATA will incorporate procedures to address water intrusion into tunnels in the ongoing development of updated maintenance and inspection manuals for critical infrastructure.

(Estimated Completion: 02/07/18 – See attached CAP: NTSB R-16-08)

R-16-09: When the revision of tunnel inspection, maintenance, and repair procedures recommended in Safety Recommendation R-16-08 has been completed, train maintenance employees on the new procedures, and ensure that the procedures are implemented.

- Response: Upon completion of updates to inspection and maintenance manuals under NTSB Recommendation R-16-08, WMATA will develop and implement an updated training program for the affected disciplines to incorporate new procedures for maintenance personnel. Additionally, WMATA will implement an audit schedule to ensure updated procedures are followed and are effective.

(Estimated Completion: 03/28/19 – See attached CAP: NTSB R-16-09)

R-16-10: Improve the capacity of tunnel ventilation fans to conform to the requirements of National Fire Protection Association (NFPA) 130.

- Response: WMATA will conduct a comprehensive, system-wide, study to determine the feasibility, scope, and cost to redesign and upgrade all portions of WMATA's tunnel ventilation system to bring it into conformance with NFPA 130. The results of this analysis will be used to recommend infrastructure improvements to accomplish compliance with NFPA 130. Upon determination of the upgrade requirements, WMATA will develop an action plan to implement improvements.

(Estimated Completion: 09/20/21 – See attached CAP: NTSB R-16-10)

**Washington
Metropolitan Area
Transit Authority**

R-16-11: Develop location-specific emergency ventilation configurations based on engineering studies of the Washington Metropolitan Area Transit Authority tunnel ventilation system.

- Response: WMATA is currently in the process of developing and implementing standardized written procedures to govern ventilation based on engineering studies to improve tunnel ventilation performance. In coordination with these efforts, WMATA will develop location-specific ventilation configurations for use by Rail Operations Control Center (ROCC) staff in the event of smoke/fire incidents.

(Estimated Completion: 07/18/17 – See attached CAP: NTSB R-16-11)

R-16-12: Develop and implement procedures for actions to be taken by Rail Operations Control Center personnel when smoke detectors alarm.

- Response: WMATA is in the process of reviewing, updating and developing new procedures for ROCC staff to undertake for daily operations and some specific scenarios. Through this ongoing process, WMATA will incorporate specific procedures and checklists for ROCC personnel to utilize in the event of a smoke detector alarm.

(Estimated Completion: 10/30/17 – See attached CAP: NTSB R-16-12)

R-16-13: Once action to address Safety Recommendation R-16-12 is completed, train all Rail Operations Control Center personnel on the new procedures for responding to smoke alarms. This training should include regular refresher training.

- Response: Upon implementation of the new and updated procedures, WMATA will train ROCC personnel to ensure consistent and correct response to smoke and fire emergencies. This training program will include requirements for refresher training for ROCC personnel.

(Estimated Completion: 05/30/18 – See attached CAP: NTSB R-16-13)

R-16-14: Incorporate smoke alarms in periodic emergency drills and exercises.

- Response: WMATA's Office of Emergency Management (OEM) has developed a three-year exercise series that consists of quarterly full-scale exercises. The exercise series is compliant with NFPA 130's exercise and drills requirements and each exercise is developed and documented in accordance with Homeland Security Exercise and Evaluation Program (HSEEP) guidance. WMATA utilizes HSEEP guidance in the development of exercise plans, evaluation guides, after action reports, and improvement plans to evaluate, document, and track opportunities for improvement. The entire exercise design process is guided by a cross-functional, multijurisdictional task force made up of representatives from WMATA departments and partner organizations. In coordination with the exercise planning team, WMATA will incorporate smoke alarms into future quarterly exercises and document the inclusion of the smoke alarm in the exercise plan.

(Estimated Completion: 10/31/16 – See attached CAP: NTSB R-16-14)

R-16-15: Include in your efficiency testing program (rules compliance testing program) a specific test to ensure appropriate emergency actions are taken by Rail Operations Control Center supervisors and control operators in response to an alarm.

- Response: WMATA has established a baseline efficiency testing program for ROCC controllers and supervisors. To further develop this program, WMATA will expand it to incorporate a specific test for ROCC personnel to ensure correct

response by operators and controllers to alarms.

(Estimated Completion: 01/24/17 – See attached CAP: NTSB R-16-15)

R-16-16: Install and maintain a system that will detect the presence and location of fire and smoke throughout the Washington Metropolitan Area Transit Authority tunnel and station network.

- Response: WMATA is currently undertaking engineering studies and product testing to identify a suitable solution for sustainable smoke detection in tunnels and underground stations. Upon completion of engineering studies and identification of a suitable solution, WMATA will provide an implementation plan for installation.

(Estimated Completion: 8/31/20 – See attached CAP: NTSB R-16-16)

R-16-17: Develop procedures for regular testing of all smoke detectors.

- Response: WMATA is in the process of reviewing, updating, and developing new inspection and maintenance manuals for critical infrastructure. As part of this ongoing effort, WMATA will incorporate regular inspection, testing and maintenance requirements for all smoke detectors.

(Estimated Completion: 01/29/18 – See attached CAP: NTSB R-16-17)

R-16-18: Conduct a risk assessment before any preventive maintenance program is initiated, changed, or discontinued.

- Response: WMATA will modify the System Safety Program Plan (SSPP) to highlight that changes to preventative maintenance procedures are configuration changes and are subject to approval in accordance with the configuration management process. The section shall also be updated to include hazard analysis in the configuration change process. Configuration management policies and procedures shall be reviewed and modified as needed to recognize that preventative maintenance procedures are engineering documents subject to change control. The inclusion of a hazard analysis in the configuration change process shall also be reflected in these policies and procedures. Operations Administrative Policies (OAP) shall be developed or revised to state that changes in preventative maintenance procedures are configuration changes that must be approved as described in the Section 17.0 of the SSPP.

(Estimated Completion: 08/30/18 – See attached CAP: NTSB R-16-18)

R-16-19: Ensure that all train operators are trained and regularly tested on the appropriate procedure for emergency shutdown of railcar ventilation.

- Response: WMATA will modify existing training programs for train operators to include specific training on railcar ventilation and emergency shutdown procedures. Additionally, WMATA will establish periodic supervisory testing to ensure operators are proficient in railcar ventilation operations.

(Estimated Completion: 03/01/17 – See attached CAP: NTSB R-16-19)

R-16-20: Incorporate a specific test in your efficiency testing program to ensure that train operators understand the procedure for emergency shutdown of railcar ventilation.

- Response: WMATA has established a baseline efficiency testing program for ROCC controllers and supervisors. To further develop this program, WMATA will expand it to include train operators and develop testing requirements and schedules for emergency shutdowns of railcar ventilation.

(Estimated Completion: 02/01/17 – See attached CAP: NTSB R-16-20)

R-16-21: Revise Standard Operating Procedure #6 to clarify which trains should be stopped until the source of smoke is identified.

- Response: WMATA is in the process of reviewing the Metrorail Safety Rules and Procedures Handbook (MSRPH) for revisions and updates, which contains Standard Operating Procedure (SOP) #6. In the process of updating the MSRPH, WMATA will include revisions to SOP #6 to explicitly identify all trains that should be stopped in a smoke incident until the source of smoke is identified. This will include direction for stations containing multiple rail lines or multiple platform levels to specify what should occur on each line and track.
(Estimated Completion: 12/01/16 – See attached CAP: NTSB R-16-21)

R-16-22: Revise your standard operating procedures 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.

- Response: WMATA is currently undertaking a comprehensive review of emergency response procedures used by ROCC and other operational groups. In line with this effort, WMATA will review and revise these procedures to ensure that there are formal requirements for qualification of personnel that are responsible for smoke/fire investigation, and specific prohibition for using revenue vehicles with passengers on board to investigate these incidents.
(Estimated Completion: 02/22/17 – See attached CAP: NTSB R-16-22)

R-16-23: Review and revise as necessary your Rail Operations Control Center emergency response procedures for smoke and fire.

- Response: WMATA is currently undertaking a comprehensive review of emergency response procedures used by ROCC and other operational groups. This effort will address procedures used throughout WMATA to respond to smoke and fire emergencies.
(Estimated Completion: 02/05/18 – See attached CAP: NTSB R-16-23)

R-16-24: Retrain Rail Operations Control Center supervisors on all standard operating procedures for emergencies.

- Response: WMATA will re-train all ROCC supervisors to ensure understanding of all roles, responsibilities, and actions to be taken under existing emergency procedures and associated checklists.
(Estimated Completion: 02/01/17 – See attached CAP: NTSB R-16-24)

R-16-25: Develop and incorporate a comprehensive program for training Rail Operations Control Center control operators in emergency response procedures including regular refresher training.

- Response: WMATA is currently undertaking a comprehensive review and overhaul of training programs for operational personnel. WMATA will incorporate specific training on emergency response procedures and establish refresher training for all ROCC personnel. WMATA incorporate annual re-certification of ROCC personnel.
(Estimated Completion: 06/20/18 – See attached CAP: NTSB R-16-25)

R-16-26: Conduct regular emergency response drills and develop a program to test the efficiency of the Rail Operations Control Center to ensure that standard operating procedures are properly followed during emergencies

- Response: WMATA's OEM has developed a three-year exercise series that consists of quarterly full-scale exercises. The exercise series is compliant with NFPA 130's exercise and drills requirements and each exercise is developed and documented in accordance with HSEEP guidance. WMATA utilizes HSEEP guidance in the development of exercise evaluation guides, after action reports, and improvement plans to evaluate, document, and track opportunities for improvement. The entire exercise design process is guided by a cross-functional, multijurisdictional task force made up of representatives from WMATA departments and partner organizations. ROCC personnel are included in each quarterly exercise. WMATA will provide the schedule for the exercise series to include both completed and proposed quarterly exercise series dates through 2017.

(Estimated Completion: 10/30/18 – See attached CAP: NTSB R-16-26)

R-16-27: Install line identification and direction signage at tunnel entrances and inside tunnels.

- Response: WMATA is coordinating with the Fire Marshall and local jurisdictions to review the existing signage at stations and in tunnels to determine specific improvements for emergency response personnel. Upon completion of this review, WMATA will hire a consultant to conduct an analysis of signage on station tunnel entrances, Right of Way (ROW) tunnel entrances, shafts, and at decision points within tunnels. WMATA Architecture will revise current signage standards to incorporate new signage specifications. Install new signage at identified locations. Conduct a quality assurance inspection to ensure signage is installed per specification.

(Estimated Completion: 04/30/18 – See attached CAP: NTSB R-16-27)

R-16-28: 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.

- Response: WMATA has established regular roadway walking inspections that include identification and documentation of obstructions in the track-bed. WMATA will expand this program to include identification and documentation of obstructions in safety walkways and methods to ensure all identified obstructions are removed for safe egress for passengers in the case of evacuation.

(Estimated Completion: 10/16/17 – See attached CAP: NTSB R-16-28)

R-16-29: Conduct emergency response drills with local emergency response agencies in accordance with National Fire Protection Association (NFPA) 130, document lessons learned, and develop and implement additional procedures as necessary to effectively respond to emergencies.

- Response: WMATA's Office of Emergency Management has developed a three-year exercise series that consists of quarterly full-scale exercises. The exercise series is compliant with NFPA 130's exercise and drills requirements and each exercise is developed and documented in accordance with Homeland Security Exercise and Evaluation Program (HSEEP) guidance. WMATA utilizes HSEEP guidance in the development of exercise evaluation guides, after action reports, and improvement plans to evaluate, document, and track opportunities for improvement. The entire exercise design process is guided by a cross-functional, multijurisdictional task force made up of representatives from WMATA departments and partner organizations. WMATA will provide a memo

outlining compliance with NFPA 130's training and exercise requirements and lessons learned documentation.

(Estimated Completion: 02/22/17 – See attached CAP: NTSB R-16-29)

R-16-30: 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.

- Response: WMATA's OEM will develop a SOP requiring and outlining the process for performing an after-action review and creating an After-Action Report (AAR) following all emergency responses with passenger or employee fatalities. The SOP will identify parties and responsibilities during the review and require the identification of both strengths and potential opportunities for improvement as they relate solely to emergency response activities. The SOP will define a process to allow publishing of results from each after-action review.

(Estimated Completion: 04/26/17 – See attached CAP: NTSB R-16-30)

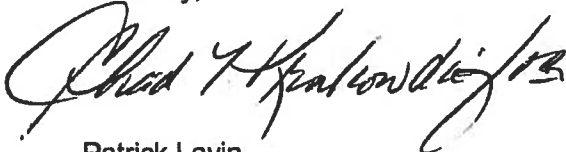
R-16-31: Review and revise your quality assurance program to ensure that regular quality assurance audits are included to identify and correct any elements of procedural noncompliance.

- Response: WMATA is currently undertaking a realignment of quality assurance activities under the Office of Quality and Internal Compliance Operations (QICO). This new office has established an updated business plan/model to move forward within the organization and is continuing development of a comprehensive quality program; including audits, inspections, and independent reviews. QICO will continue implementation of business plan to implement quality assurance audits, inspections, and independent reviews throughout the organization.

(Estimated Completion: 05/08/17 – See attached CAP: NTSB R-16-31)

WMATA appreciates continued support from the NTSB to help improve the safety of our Metrorail system for the benefit of our riders and employees. If you have any questions, please contact me at (202) 962-2297.

Sincerely,



Patrick Lavin
Chief Safety Officer

Enclosure

cc:

Paul Wiedefeld, General Manager and Chief Executive Officer, WMATA
Joseph Leader, Chief Operating Officer, WMATA
Andrew Off, Assistant General Manager Rail Services, WMATA
Angel Peña, Managing Director Quality & Internal Compliance Operations, WMATA

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Washington Metropolitan Area Transit Authority

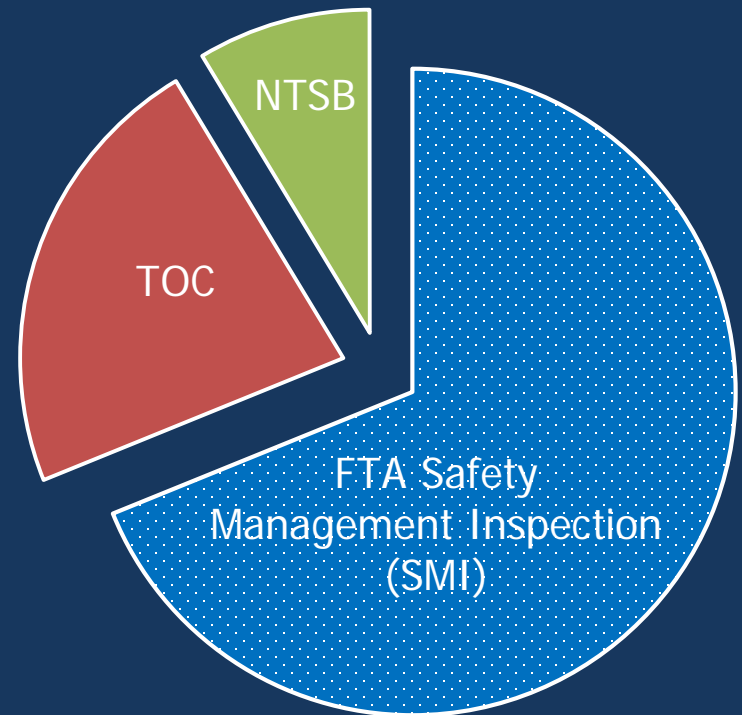
Update on FTA & NTSB Actionable Items

Safety Committee
September 22, 2016



Actionable Items by Source

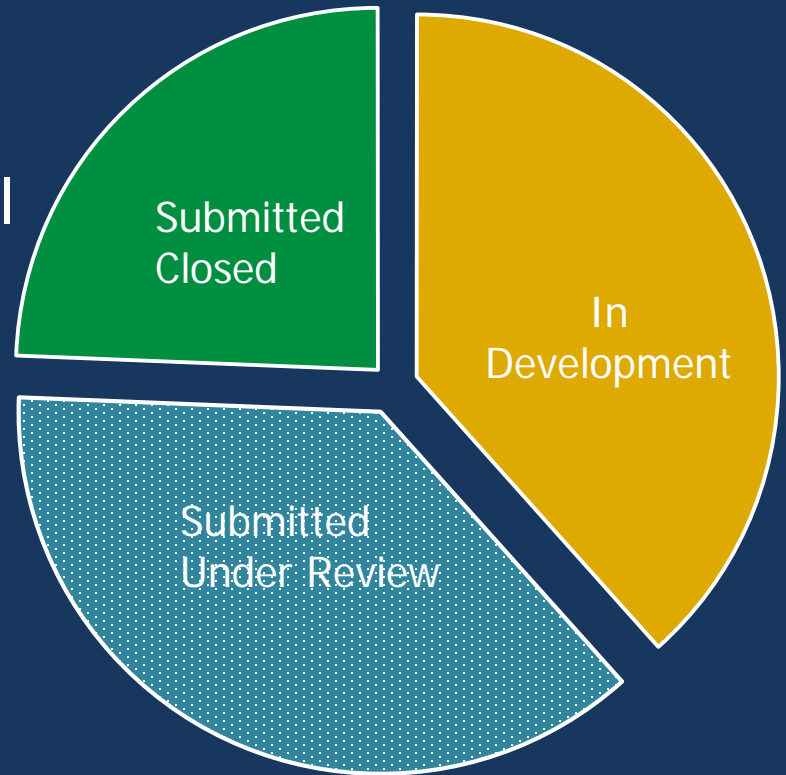
- 1,063 actionable items require WMATA to take corrective actions
- The actions are submitted for review/approval
- FTA and NTSB corrective action plans online
- Monthly report submit to Board Members *



* Report does not currently contain FTA Directives 16-4, 16-5 & 16-6

Disposition of Actionable Items

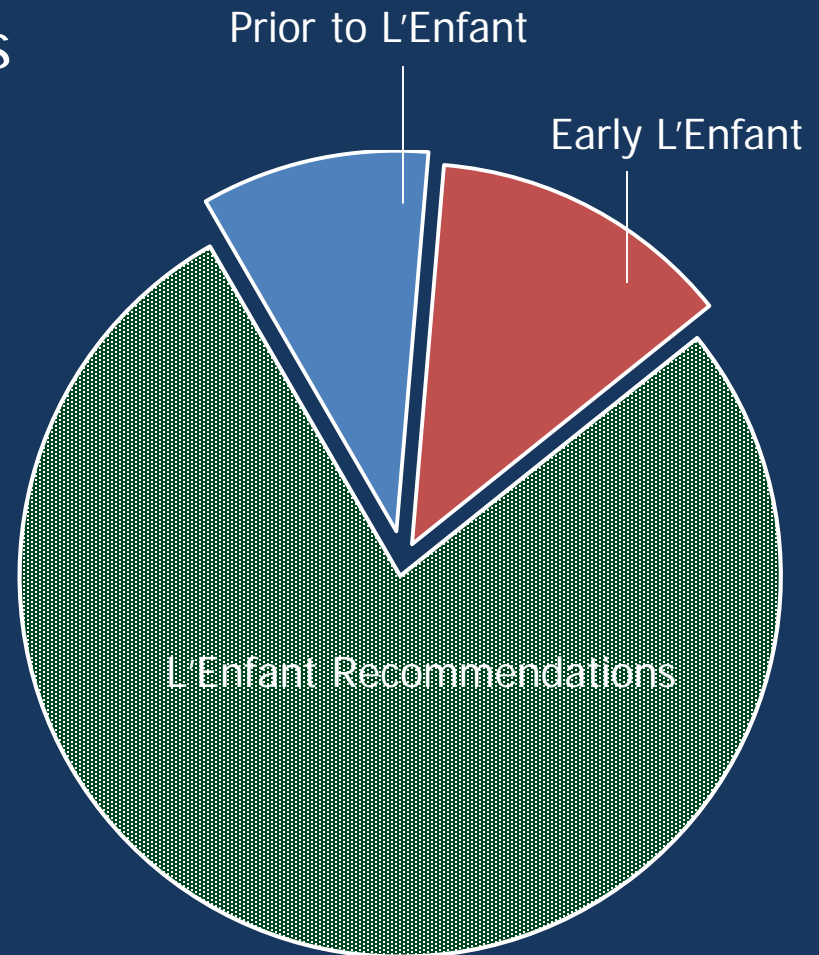
- 1,063 actionable items
 - 655 submitted for approval
 - 396 under review
 - 259 closed
 - 408 in development





NTSB Recommendations

- 31 open NTSB actionable items
 - 3 open and unrelated to L'Enfant incident
 - Wayside worker protection technology (2006 DuPont and Eisenhower R-08-004)
 - Removal 1K railcars (2009 Fort Totten R-10-20)
 - Event recorder validation/analysis (2009 Fort Totten R-10-22)
 - 4 immediate from L'Enfant Plaza Metro incident
 - 24 additional from L'Enfant Plaza Metro incident





NTSB Recommendations

- 4 early recommendations from L'Enfant
 - Tunnel ventilation/State of good repair *
 - Tunnel ventilation procedures
 - Tunnel ventilation procedures training
 - Power cables connectors properly installed
- 24 new recommendations
 - Received May 23, 2016
 - CAPs submitted for approval on August 18, 2016

* Submitted in April for closure



Action Items by Major Groups

- Majority of Action Items are:
 - Infrastructure Maintenance/Reinvestment
 - Supervision/Rules Compliance
 - Training/Re-Training and Certification
 - Fire Life Safety/Emergency Preparedness
 - Operating Procedures/Practices

Next Steps

- Awaiting acceptance from FWSO and NTSB on submitted action items
- Continue working to close actionable items by scheduled date

National Transportation Safety Board (NTSB)
Recommendation Progress Tracker
As of April 16, 2018

WMSA Issue #	Recommendation	Cap No.
I	Underpinning: The hazard must be mitigated in the first specific measure possible.	6
II	Prevention of Recurring Safety Consequences (RSC): Specific measures: The hazard must be mitigated in the first specific measure possible.	18
III	Aspirational: The NTSB Safety Officer must implement the first and most comprehensive measure possible in the first specific measure possible.	7
IV	Aspirational: The NTSB Safety Officer must implement the first and most comprehensive measure possible in the first specific measure possible.	2

In accordance with the recommendations, WMSA's report this category are not required to be implemented. The report this category are not required to be implemented. The report this category are not required to be implemented.

Completed	Open/Recommendation Received	Submitted	In Progress	Not Started
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NTSB #	NTSB Required Action(s)	WMSA's Assigned Risk Category	Date Closed	Action Status	WMSA's Comments
NTSB R-06-061	Review existing and future train equipment with Rail Back Protection.	II	May 2013	Completed	
NTSB R-07-024	Implement AC Procedures to ensure accurate wheel positioning.	II	June 2013	Completed	
NTSB R-07-024	Ensure appropriate coordination between all departments responsible for maintenance and design to resolve issues before new equipment is purchased.	II	October 2013	Completed	
NTSB R-07-024	Establish a single point of responsibility within CSST to track accident investigations and related research.	II	October 2013	Completed	
NTSB R-07-027	Establish written procedures regarding rail operations for night track operations on main, branch, and sidings.	II	October 2013	Completed	
NTSB R-07-028	Review and completed by 2009, the replacement of No. 8 switches to guard track switches.	II	June 2013	Completed	
NTSB R-08-003	Review and update ASHRAE to provide for levels of protection for fire, smoke, and toxic gas.	II	October 2013	Completed	
NTSB R-08-003	Develop a systematic approach to prevent unannounced checks of equipment compliance with National operating and safety rules and standards.	II	November 2012	Completed	
NTSB R-08-003	Perform periodic, formal reviews on the deficiencies identified through the Compliance and Operating Rule Check List data base.	II	November 2012	Completed	
NTSB R-08-004	Provide equipment inspection techniques that will automatically detect visible workers of approaching trains and will automatically halt train operations.	II	November 2012	Completed	
NTSB R-08-006	Safety redundancy of the train control system to prevent track occupancy data on a real time data base to detect loss of data and automatically generating alerts.	II	July 2012	Completed	WMSA is addressing NTSB's comments received on March 15, 2014.