



Safety and Operations Committee

Board Information Item III-A

July 14, 2022

Mid-Year SMS Progress Update

Washington Metropolitan Area Transit Authority

Board Action/Information Summary

☐ Action ☒ Information

MEAD Number:
203378

Resolution:
☐ Yes ☒ No

TITLE:

Safety Management System Semi-Annual Review

PRESENTATION SUMMARY:

This presentation provides a status report on the ongoing efforts to develop and implement an industry-leading Safety Management System (SMS).

PURPOSE:

To keep leadership informed and engaged on the strategy and progress associated with implementing Metro's SMS.

DESCRIPTION:

MITRE is a federally funded, non-profit that specializes in applying data sciences to advance safety in the transportation industry. MITRE has been commissioned to assist Metro with the development and implementation of its Voluntary Safety Reporting Program. **WSP** assists with the revision of the Metro Safety Rules and Procedures Handbook (MSRPH), a part of the SMS strategy.

Key Highlights:

- Rollout of SMS Safety Risk Management continues to expand with the start of implementation in Rail Transportation (RTRA)
- Integration of the Operations Safety Oversight function has been completed, combining three historically siloed teams (Rail, Bus, and Construction)
- The Mission Assurance Coordinator (MAC) function has been established within the Rail Operations Control Center (ROCC) to determine and coordinate appropriate responses to incidents 24/7/365
- Metro's partnership with MITRE has commenced with the planning of a safety culture assessment that will include interviews, focus groups, and survey

Background and History:

In 2016, the Federal Transit Administration (FTA) published 49 CFR Part 670 Public Transportation Safety Program, which states “The FTA has adopted the principles and methods of Safety Management Systems (SMS) as the basis for enhancing the safety of public transportation in the United States.” (49 C.F.R. § 670.3). SMS is a comprehensive, collaborative approach that brings management and labor together to build on the transit industry’s existing safety foundation to continuously improve how safety risks are identified and assessed with mitigating actions taken before an accident or incident occurs.

In July 2018, the FTA published 49 CFR Part 673 Public Transportation Agency Safety Plan. Transit operators that receive federal funds (under the FTA’s Urbanized Area Formula Grants) are required to develop Agency Safety Plans (ASPs) that specify how SMS will be implemented over the course of a three-year period. Metro’s ASP has been approved by the Executive Management Team (EMT), Board of Directors, Washington Metrorail Safety Commission (WMSC), and certified with the FTA.

Discussion:

The Safety Department’s (SAFE) vision is for Metro to become the transit industry leader in safety. SAFE’s mission is to realize this vision by developing and implementing a world-class SMS. SAFE’s strategic roadmap establishes the priorities for accomplishing the mission. Metro’s Agency Safety Plan (ASP) describes how the mission will be executed. There are four components to a robust SMS: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion.

Safety Policy Status

ASP: We started calendar year 2022 with the latest iteration of the ASP taking effect. The ASP is updated annually. The latest revision is currently underway to reflect the progress made, account for lessons learned, and refresh the path forward. The latest iteration will incorporate new requirements from the Infrastructure Investment and Jobs Act (IIJA) and elaborate on the partnership with MITRE, among other improvements.

Policy: Metro’s Safety Policy has been part of the ASP since its inception. The Safety Policy was refreshed and will be proposed as an overall company policy, intended to be signed by the General Manager and included in Metro’s Policy and Instruction Manual. Additionally, a Safety Policy statement has been drafted for promotional purposes that highlights key principles in plain language that is intended to resonate with all employees. The draft Safety Policy statement is currently under review by the Executive Management Team.

Reorganization: The Department of Safety (SAFE) has been reorganizing to align with the SMS strategy and position the department for long-term,

sustained success. An organizational study was completed in February 2021 and implementation of the re-organization commenced shortly thereafter. The original timeline forecasted its completion in the Spring of 2022. However, progress has been slower than expected and completion is now projected for Spring 2023. The challenges with hiring have put the completion of other milestones on the SMS roadmap at risk. SAFE is working closely with Human Capital (HC) to accelerate completion of the SAFE reorganization and alternative options to augment existing resources are being considered.

Framework: A framework for evaluating new technologies that could help Metro manage safety risks is under development. The purpose of the framework is to ensure a standardized, coordinated approach that includes all applicable stakeholders. SAFE will partner with the Department of Information Technology (IT) to determine the optimal approach for implementation.

Safety Risk Management Status

Workplace Safety: Metro hired a Director of Occupational Safety and Health (OSH) to lead the development and implementation of workplace safety programs required by 29 CFR Parts 1910 and 1926. The first program launched was the Hearing Conservation Program, which resulted in the WMSC closing Corrective Action Plan (CAP) TOC-OSP-15-001 on March 4, 2022. An overall strategy has been established that includes concurrently staffing the OSH team while continuing to develop and deliver workplace safety programs. The next priority targeted is electrical safety.

Safety Certification: In August 2021, the WMSC issued finding WMSC-21-C0118 stating that Metro does not consistently follow its safety certification process. A CAP was developed in response and significant progress has been made to improve and integrate safety certification requirements in partnership with Strategy, Planning and Program Management (SPPM), Capital Delivery (CAP-D), and Operations (COO). WMSC leadership publicly recognized the significant improvements to this program during their Commissioners' meeting held on May 24, 2022. In anticipation of supporting Metro's 10-year capital plan, the Safety Certification and Engineering function will continue to add staff and advance integration with key partners to ensure evaluations are conducted and certification requirements are embedded at the beginning of each project's lifecycle.

Metro Safety Standards Manual: Metro's Safety Rules and Procedures Handbook (MSRPH) includes a mix of policy, procedures, and work instructions. SAFE has staffed an Operating Practices team that is refreshing this content in alignment with railroad industry best practices. The goal is to baseline 11 safety standards with procedural material being incorporated into the applicable departments' Standard Operating Procedures (SOPs). Metro's Rail Safety Standards Committee (RSSC) is a cross-functional, governing body that oversees and approves Metro's safety standards. The Washington Metrorail Safety Commission (WMSC) participates on the RSSC as an

observer. The RSSC has approved 9 of 11 proposed safety standards and the remaining two are planned for completion by the end of August. The initial 11 standards comprise the baseline for the new Metro Safety Standards Manual. Each standard has an effective date of July 1, 2023 to accommodate successful implementation (updating SOPs, refreshing training content, communications planning, etc.).

Roadway Worker Protection: The groundwork for a refreshed Roadway Worker Protection (RWP) program that benchmarks railroad industry best practices has been completed and the implementation phase has started. New job safety briefing and joint occupancy templates are being implemented. The new format compels users to answer questions about the inherent risks involved with their work and the mitigations in place to manage them. The new RWP Safety Standard is currently under review by the RSSC. New procedures for how the ROCC grants protection on the roadway are queued for review and approval by the RSSC. The new procedures have been simplified and streamlined, which is expected to improve safety while increasing the amount of wrench time available overnight. Following approval by the RSSC, updated training will be delivered. Implementation is expected to start in September.

Security Risk/Threat Analysis: A complete system-wide Security-focused Threat and Vulnerability Assessment (TVA) to determine the threats, vulnerabilities and consequences to overall systems and properties is scheduled to be completed by the end September 2022. SAFE has initiated targeted discussions with work groups on the threat of power/communications outages, as well as cyberattacks. SAFE's Office of Emergency Preparedness is participating in a working group to develop the Metropolitan Washington Council of Governments (MWCOC) National Capital Regional Threat and Hazard Identification and Risk Assessment (THIRA), which will be completed by the end of September 2022. Metro has applied for new Transit Security Grant Program funding, which will enhance the next three years of planned exercises.

Safety Risk Management: Since completing the pilot in the ROCC, rollout of SMS Safety Risk Management has expanded. The Supply Chain Warehousing and Logistics (SCWL) team within Operations volunteered and recently completed baseline implementation. SAFE has subsequently commenced implementation with RTRA (Train Operators and Stations). The key risks being identified center around the following themes:

- Train Operator Certifications
- Maintaining Headway while accounting for Mobile Work Crews
- Radio Communication System Reliability
- Yard Conditions
- Just Culture
- Assaults

The next step is to analyze these risks to determine priorities and inform mitigation planning. An interactive dashboard will be established to provide

employees with information on the top safety risks, mitigations in work to address them, and metrics that measure progress. Hiring in this area is a top priority, two Senior Safety Risk Management Program Specialists were hired this month. The position of Safety Risk Management Program Specialist has been submitted to HC for posting. Augmenting this team with additional third-party support is also planned to accelerate rollout with the goal of completing implementation across operations by the end of calendar year 2023.

Safety Assurance Status

Operations Safety Oversight: A Director of Operations Safety Oversight (OSO) has been hired, and historically siloed bus, rail, and construction safety teams have been integrated. The OSO function now reports the results of safety oversight inspections daily as part of the Operations Department's operating rhythm, performs targeted data-driven oversight, and continues to standardize their processes, inspections, and other oversight activities. These integration efforts will continue maturing to harmonize auditing, reporting, follow-up, etc. Additionally, OSO is partnering with SAFE's Prevention & Mitigation team and Quality Assurance, Internal Compliance and Oversight (QICO) to align efforts associated with safety reviews, inspections, data sharing, findings, and corrective action follow-up.

Mission Assurance Coordinator and Primary Responder: The Mission Assurance Coordinator (MAC) function has been established in the ROCC as a 24/7/365 position. Although the MAC works in the ROCC, the position represents the Chief Safety Officer for all incidents across within Metro (Rail, Bus, MetroAccess, and all facilities). The MAC assists with properly categorizing the severity of an incident and coordinating the appropriate response. The Primary Responder's mission has been established to provide highly trained and experienced personnel to deploy and assist an Incident Commander. The concept for both positions has proven to be sound as incident management has improved. Both positions are critical functions within the Incident Management Framework that is currently under development and planned for implementation in the Fall of 2022.

Investigations Team: Safety investigations have improved significantly with the incorporation of root cause methodologies to drive effective recommended corrective actions in partnership with COO. Additionally, fatigue modeling and analysis has been incorporated as a standard part of safety investigations. Staffing the investigation team has been a top priority. The remaining investigator positions were recently filled with talent from a variety of backgrounds to include the pharmaceutical industry, law enforcement, military, and the NTSB. The investigation team has been historically focused on rail. Going forward, the approach to safety investigations will be expanded to ensure the same rigor is applied across bus and MetroAccess modes as well.

Incident Management Framework: A project team has been formed within the Office of Emergency Preparedness (OEP) to develop the Incident Management

Framework for implementation in the Fall of 2022. The team is developing the safety standard, operating procedures, and training to ensure Metro manages incidents with urgency, consistency, and flexibility, and that all key players know their roles and responsibilities. The project team will continue to develop the standard, draft operating procedures, and oversee a contract to develop training (computer-based and in-person) that will ensure personnel are trained and prepared to effectively respond to incidents.

Employee Safety Reporting: Metro became the first transit agency to establish a partnership with MITRE in March 2022. MITRE will work with SAFE to assess Metro's Safety Culture, improve voluntary safety reporting, and enhance associated data collection and analysis (metrics). A Joint Labor and Management Safety Committee has been established and kicked off last month. This meets the requirements of the IIJA and will be used to oversee the development of an improved Employee Safety Reporting program.

Safety Promotion Status

Safety Culture Assessment: MITRE and SAFE are partnering on mobilization planning to assess Metro's safety culture, which includes a safety culture survey that will be distributed online and in-person to reach all levels of the organization. Additionally, focus groups will be conducted to provide qualitative insights combined with the quantitative survey results. The survey is scheduled to launch in September and the results will be used to establish Metro's safety culture baseline and inform the overall employee engagement strategy. This iterative approach is expected to be conducted approximately every 24 months to assess progress against MITRE's safety culture maturity model.

SMS Communications, Training, and Engagement Strategy: Cultivating Metro's safety culture is critical for the long-term, sustained success of SMS. A request for proposals to help SAFE establish an effective SMS Communications, Training, and Engagement Strategy is under development. The strategy will be submitted for the Chief Safety Officer's approval and operationalized to commence implementation in calendar year 2023.

Path Forward

A methodical and disciplined approach to the development and implementation of SMS will continue based on project management best practices. Each milestone on the roadmap has an owner who is responsible for developing and maintaining their action plan. A recurring operating rhythm ensures SAFE tracks progress, captures adjustments, and course corrects when needed. The Executive Safety Committee is the overall governing body that oversees Metro's safety performance. Additionally, progress will continue to be reported to the Board's Safety and Operations Committee.

FUNDING IMPACT:

Development and implementation of SMS is accounted for in the budget. This presentation is a report on the progress being made.	
Project Manager:	Theresa Impastato
Project Department/Office:	Department of Safety (SAFE)

TIMELINE:

Previous Actions	As documented in the ASP.
Anticipated actions after presentation	Implementation of SMS throughout Metro is planned as a multi-year process. No change to the timeline is proposed. The Operations Department has been prioritized for baseline implementation.

Safety Management System *Semi-Annual Review*

Safety and Operations Committee
July 14, 2022



SMS Strategy Summary

- Vision
 - Metro is the transit industry leader in safety
- Mission
 - Develop and implement a world-class SMS
- Roadmap
 - Sets the strategic priorities for accomplishing the mission
- Plan
 - Agency Safety Plan describes how those priorities will be achieved

CY2022

Set Foundations

CY2023

Mature & Collaborate

CY2024

Continuously Improve

SMS Roadmap as of 6/21/2022

Safety Policy

- ✓ Agency Safety Plan Approved
- ❑ Establish Safety Policy in Policy Instruction Manual
- ❑ Complete Reorganization of SAFE to align with SMS
- ❑ Partner with COO/IT to develop framework for evaluating technologies

- ❑ Partner with QICO and owners to align agency policies with Just Culture principles
- ❑ Partner with HR to embed safety values & behaviors into performance mgmt. and job descriptions
- ❑ Partner with IT to determine system to support SMS

- ❑ Complete alignment of agency policies with Just Culture principles

- ❑ Initiate Safety Risk Management implementation beyond COO

Assess SMS effectiveness

Mature SMS

Proactive

Safety Risk Mgmt.

- ✓ Develop and initiate Corrective Action Plan to refresh workplace safety programs

- ❑ Introduce Metrorail Safety Standards Manual
- ❑ Partner w/ COO to expand Safety Risk Mgmt. process
- ❑ Launch refreshed Roadway Worker Protection Program

- ✓ Partner with SPPM, CAPD, IT, PRMT and COO to launch implementation of Safety Certification CAP
- ❑ Complete Corporate Risk/Threat Analysis

- ❑ Partner with COO to implement workplace safety programs
- ❑ Complete overhaul of Safety Rules and Procedures
- ❑ Complete SRM rollout w/COO
- ❑ Launch Job Hazard Analysis program

- ❑ Develop Efficiency Testing Program Strategy

- ❑ Incorporate Just Culture principles into investigations

- ❑ Expand safety data sharing across transit industry

- ❑ SMS training delivered to 95% of employees

Reactive

- ❑ Expand Investigations Team Capacity to include Bus and MetroAccess

- ✓ Mature Mission Assurance Coordinator & Primary Responder Functions

- ❑ Develop and start implementation of Employee Safety Reporting Corrective Action Plan

- ❑ Complete overhaul of Employee Safety Reporting Program

- ❑ Partner w/ QICO to align data from SMS with QMS

- ❑ Launch integrated safety inspection system

- ❑ Implement SMS Comms, Training, and Engagement Strategy

- ❑ Expand and advance interactive SMS dashboards

- ❑ Develop initial SMS training for employees and management

- ✓ Develop Operations Safety Oversight

- ❑ Establish Incident Management Framework

- ❑ Partner with MITRE to conduct Safety Culture Assessment
- ❑ Develop SMS Comms, Training and Engagement Strategy

Safety Assurance

Safety Promotion

Status

- ✓ Agency Safety Plan Approved
- Establish Safety Management Policy
- Complete SAFE Reorganization
- Establish Technology Evaluation Framework



Status

- ✓ Initiate Workplace Safety Programs Corrective Action Plan
- ✓ Initiate Safety Certification Corrective Action Plan
- Introduce Metro Safety Standards Manual
- Refresh Roadway Worker Protection Program
- Complete Corporate Risk/Threat Analysis
- Expand Safety Risk Management Process



RTRA Safety Risk Management Status

✓ 1 Brainstorm

What's happened in the past?

What's happening now?

What will happen in the future?

✓ 2 Identify Risks



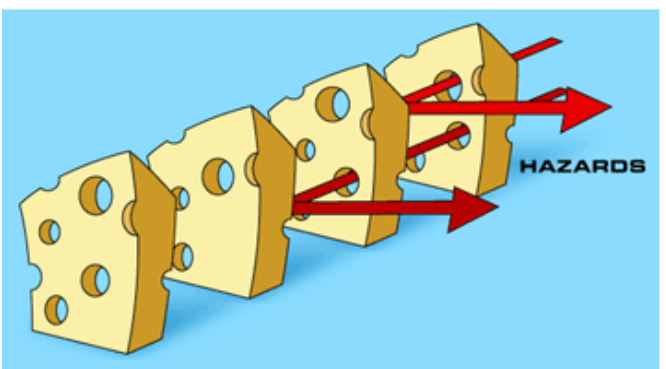
3 Analyze Risks



4 Current Risk Profile

1	2	2	
2		1	
2	2	1	
1	3		

5 Mitigations



6 Future Risk Profile

	1	6	
1	2	7	



RTRA Risks – Key Themes

- Train Operator Certifications
- Mobile Work Crews
- Radio Communications
- Yard Conditions
- Just Culture
- Assaults



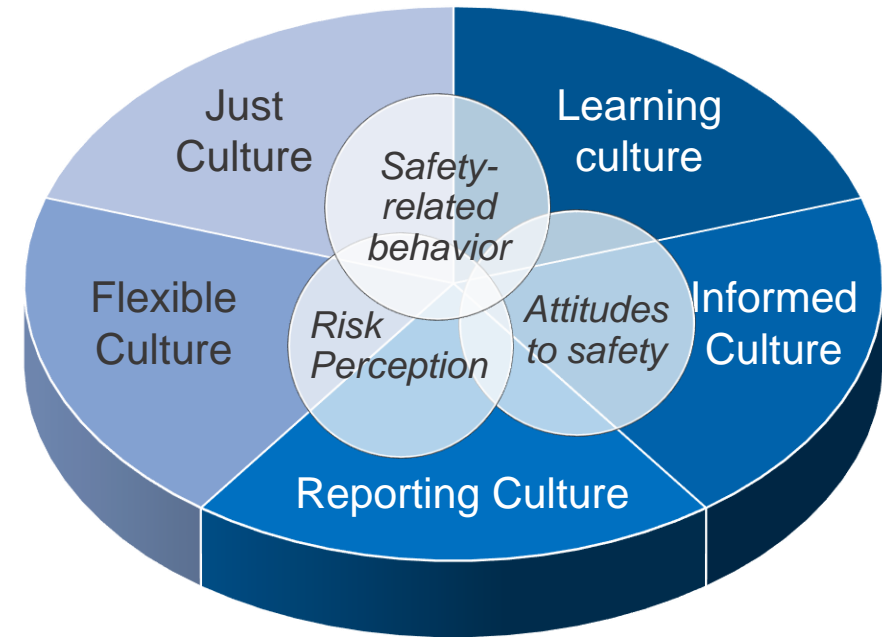
Status

- ✓ Develop operations safety oversight
- ✓ Mature Mission Assurance Coordinator and primary responder functions
- Expand investigations team capacity
- Establish incident management framework
- Develop and Implement Employee Safety Reporting Corrective Action Plan



Status

- Conduct Safety Culture Assessment
- Develop SMS Communications, Training, and Engagement Strategy



Path Forward

- Apply Project Management Approach for SMS
 - Each Roadmap milestone has an owner, action plan
 - SMS operating rhythm tracks progress
 - Executive Safety Committee Oversight
 - Progress reported to Safety and Operations Committee