Motor Carrier Attachment 40

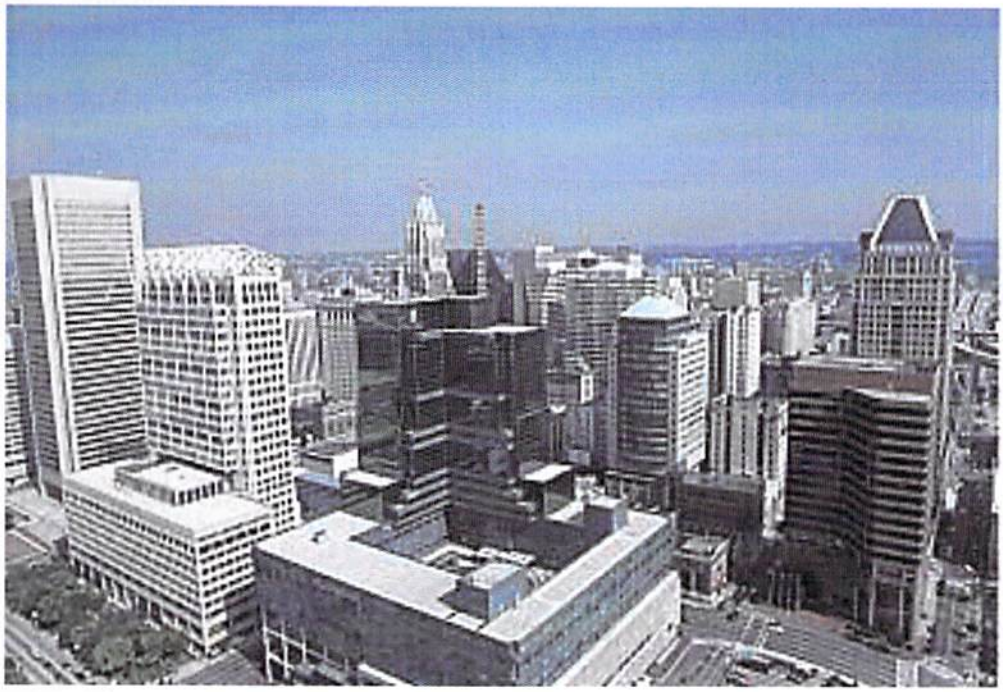
MTA System Safety Program Plan (Excepts)

Baltimore, MD; 11/1/2016

HWY17MH007

(35 pages)

MTA Maryland



Maryland Transit Administration
System Safety Program Plan

JANUARY 2016

Revision Page

Rev. #	Date	Page #	Section	Description
6	12/30/2010	All Pages	All Sections	Revised in entirety to meet new requirements of 49 CFR Part 659
6	12/30/2011	All Pages	All Sections	Changed title of Executive Director, OSQARM, to Chief Safety Officer-OSQARM
6	12/30/2011	All Pages	All Sections	Changed title of Service Quality Division to Office of Service Quality
6	12/30/2011	All Pages	All Sections	Inserted hyperlinks to provide link to documents in ProjectWise
6	12/30/2011	xviii	Front Section	Deleted Acronym List from front section and moved it to Appendix A
6	12/30/2011	3-4 3-19	3	Changed title of Transit Insurance Group to Transit Claims Group
6	12/30/2011	3-4	3	Replaced Figure 3-1, MTA Organizational Structure with updated figure
6	12/30/2011	3-10	3	Corrected the description of Metro track located between Rogers Ave and Reisterstown Road Stations
6	12/30/2011	3-19	3	Provided revised Figure 3-4 with updated OSQARM Organizational Chart
6	12/30/2011	6-1	6	Provided clarification of hazard definition
6	12/30/2011	6-3	6	Inserted reference to MTA Transit Information Services (410-539-5000)
6	12/30/2011	All Pages	9	Deleted reference to MTA Hazard Management Database – All CAP tracking will occur in the Corrective Action Monitoring Log
6	12/30/2011	9-1	9	Inserted reference to OSQARM use of the Geographical Information System (GIS) mapping to identify "hotspots" involving accidents or incidents

Rev. #	Date	Page #	Section	Description
6	12/30/2011	All Pages	10	Section 10 revised in accordance with revised RSOPS and inserted references to new MTA Accident/Incident Investigation Guide, Handbook and SOP
6	12/30/2011	All Pages	11	Deleted Figure 11.1 – Metro Emergency Operating Procedures
6	12/30/2011	15-1	15	Inserted references to ProjectWise description and implementation
6	12/30/2011	17-1	17	Inserted references to ProjectWise description and implementation
6	12/30/2011	19-3	19	Deleted Figure 19.1 – Environmental Policy Statement. Incorporated into text on Page 19-3
6	12/30/2011	A-1	Appendix A	Removed MARC SSPP from Appendix A and provided hyperlink to August 2011 MARC SSPP in ProjectWise in Section 3.0
7	12/31/2012	All Pages	All Sections	Revised document date to December 2012
7	12/31/2012	3-4	3	Replaced Figure 3-1 MTA Organizational Structure with updated figure
7	12/31/2012	3-7	3	Added new section 3.1.2 Operations Control Centers
7	12/31/2012	3-8	3	Revised title of section 3.2.1 to Bus System General Information
7	12/31/2012	3-8	3	Added new section 3.2.2 Bus Fleets Description
7	12/31/2012	3-14	3	Revised title of section 3.4.1 to Light Rail System General Information
7	12/31/2012	3-15	3	Revised title of section 3.4.3 to Light Rail Signal System
7	12/31/2012	3-15	3	Revised title of section 3.5.1 to MARC System General Information

Rev. #	Date	Page #	Section	Description
7	12/31/2012	3-17	3	Revised title of section 3.6 to Paratransit Services
7	12/31/2012	3-19	3	Replaced Figure 3-4 OSQARM and Transit Claims Group Organization Chart with new figure
7	12/31/2012	3-23	3	Added new section 3.10 Modal Safety Committees
7	12/31/2012	3-24	3	Added new section 3.11 Lines of Authority for Safety
7	12/31/2012	4-1	4	Revised title of section 4.0 to Plan Review and Modification
7	12/31/2012	4-1	4	Revised title of section 4.1 to Annual SSPP Review
7	12/31/2012	4-1	4	Deleted reference in section 4.1 Annual SSPP Review to Appendix B SSPP Internal Review Checklist
7	12/31/2012	4-2	4	Added new section 4.3 SSPP Review and Approval by the State Oversight Agency
7	12/31/2012	4-3	4	Added new section 4.4 SSPP Change Management
7	12/31/2012	5-1	5	Revised title of section 5.0 to SSPP Implementation – Tasks and Activities
7	12/31/2012	5-1	5	Added new section 5.1 Overview
7	12/31/2012	5-1	5	Added new section 5.2 System Safety Function
7	12/31/2012	5-3	5	Added new section 5.3 Safety Responsibilities of Other Departments
7	12/31/2012	5-10	5	Added new section 5.4 Safety Task Responsibilities Matrix
7	12/31/2012	6-1	6	Revised title of section 6.1 to Overview

Rev. #	Date	Page #	Section	Description
7	12/31/2012	6-1	6	Revised title of section 6.2 to Hazard Management Process – Activities and Methodology
7	12/31/2012	6-10	6	Revised title of section 6.3 to Coordination with State Safety Oversight (SSO) Agency
7	12/31/2012	9-1	9	Added new section 9.2 MTA Hazard Management Database
7	12/31/2012	10-8	10	Revised title of section 10.5 to MDOT Accident/ Incident Investigation
7	12/31/2012	12-4	12	Revised reference in section 12.2.1 Internal Safety Reviews from Appendix C to Appendix B Internal Safety Review Procedure
7	12/31/2012	12-5	12	Deleted reference in section 12.2.2 Internal Safety Review Schedule to Appendix D
7	12/31/2012	14-1	14	Revised title of section 14.1 to Facilities and Equipment Subject to Inspection
7	12/31/2012	14-1	14	Revised title of section 14.2 to Regular Inspection and Testing
7	12/31/2012	14-3	14	Added new section 14.3 Checklists
7	12/31/2012	14-3	14	Revised title of section 14.4 to General Responsibilities
7	12/31/2012	15-3	15	Added new section 15.3 Checklists
7	12/31/2012	15-3	15	Revised title of section 15.4 to General Responsibilities
7	12/31/2012	B-1	Appendix B	Deleted Appendix B SSPP Internal Review Checklist
7	12/31/2012	C-1	Appendix C	Revised Appendix C title to Appendix B - MTA Internal Safety Review Procedure
7	12/31/2012	D-1	Appendix D	Deleted Appendix D MTA Internal Safety Review Schedule

Rev. #	Date	Page #	Section	Description
8	12/31/2013	vii	Distribution List	Delete J. Benton. Add J. Tebo
8	12/31/2013	All Pages	All Sections	Revised OCC to "CC" and removed location address.
8	12/31/2013	3-4	3	Updated MTA Organizational Chart.
8	12/31/2013	3-6	3	Revised Office of Service Quality to Core Operations/Core Support.
8	12/31/2013	3-18	3	Updated MTA OSQARM Organizational Chart.
8	12/31/13	5-8	5	Added bullet in 5.3.6 regarding new employee safety training.
8	12/31/2013	6-10	6	Revised Section 6.3 in accordance with MDOT and FTA comments to include new criteria for Priority 1 and 2 Hazards.
8	12/31/2013	10-1	10	Updated to describe divisional interdepartmental responsibilities at the scene of an accident.
8	12/31/2013	10-1	10	Added "employees and equipment" to first sentence, second paragraph.

Rev. #	Date	Page #	Section	Description
8	12/31/2013	10-3	10	Added Administrator/Chief Operating Officer/Designee.
8	12/31/2013	10-3	10	Revised title for Senior Deputy Director and Safety Officers.
8	12/31/2013	10-3	10	Added title of Chief Information Officer.
8	12/31/2013	10-7	10	Added text to 10.4 regarding the reporting of near misses.
8	12/31/2013	10-7	10	Revised references to Accident Investigation Board.
8	12/31/2013	10-8	10	Revised wording in last paragraph.
8	12/31/2013	14-1	14	Added language to 13.1 to include the Director Training.
8	12/31/2013	14-2	14	Removed reference to MTA Inspection Program Plan (IPP).
8	12/31/2013	15-3	15	Removed reference to MTA Inspection Program Plan (IPP).
8	12/31/2013	19-2	19	Removed SOP number in Section 19.3.
8	12/31/2013	20-2	20	Revised title of Office of Training and Development to Office of Administrative Training.
8	1/8/2014	11-4	11	Added to include after action reports
8	1/8/2014	11-6	11	Added language to include process of distribution for responsibility of plan revisions
8	1/8/2014	15-1	15	Added list of relevant systems and facilities provided
8	1/8/2014	16-1	16	Revised categories of safety-related work requiring training
9	1/3/2015	3-4	3	Update organization chart

Rev. #	Date	Page #	Section	Description
9	1/3/2015	3-6	3	Added language to include MARC IV cars and paratransit
9	1/3/2015	5-4	5	Revised language of OSQ and STS department responsibility
9	1/3/2015	8-1	8	Added language for a Safety and Security Certification Project Log
9	1/3/2015	14-1	14	Added language to maintenance inspection programs
9	1/3/2015	18-6	18	Removed reference to Physician approved First-aid kits
9	1/3/2015	19-1	19	Revised language for Hazardous Materials Program
9	1/3/2015	10-7	10	Revised language to reflect that all final incident reports are placed in Project Wise.
10	12/30/15	3-4	3	Updated Org. Chart
10	12/30/15	3-16	3	Revised language for Paratransit services
10	12/30/15	7-1	7	Corrected sequence of Elements. Element 7: Safety and Security Certification
10	12/30/15	8-1	8	Corrected sequence of Elements. Element 8: System Modification

DISTRIBUTION LIST

R. Smith	Administrator and CEO, MTA
B. Bridges	Chief Safety Officer, Office of Safety, Quality Assurance, and Risk Management, MTA
MDOT	Rail Safety Oversight, Office of Risk Management and Rail Safety, MDOT
MTA	Global Electronic Distribution

Reviewed by: [redacted] 2/10/16

MTA Chief Safety Officer-Office of Safety, Quality Assurance, and Risk Management — Date

Approved by: [redacted] 2/10/16

MTA Administrator — Date

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APPLICABLE STANDARDS, GUIDELINES AND REFERENCE DOCUMENTS

Reference	Title
15 USC Chapter 53	Toxic Substances Control Act
28 CFR Part 36	Americans with Disabilities Act
29 CFR Part 5	Contract Work Hours and Safety Standards Act
29 CFR Part 1910	Occupational Safety and Health Standards
29 CFR Part 1926	Safety and Health Regulations for Construction
42 USC Chapter 65	Noise Control Act
33 USC Chapter 26	Federal Water Pollution Act (Clean Water Act)
41 CFR Part 60	Equal Employment Opportunity Act
42 USC Chapter 55	National Environmental Policy (National Environmental Protection Act)
42 USC Chapter 82	Solid Waste Disposal (Resource Conservation and Recovery Act)
42 USC Chapter 85	Air Pollution Prevention and Control (Clean Air Act)
42 USC Chapter 103	Comprehensive Environmental Response, Compensation, and Liability Act
42 USC Chapter 116	Emergency Planning and Community Right-to-Know
49 CFR Part 27	Rehabilitation Act
49 CFR Part 29	Drug Free Workplace Requirements
49 CFR Part 37	Transportation Services for Individuals with Disabilities
49 CFR Part 38	Americans with Disabilities Act Accessibility Specifications for Transportation Vehicles
49 CFR Part 213	Track Safety Standards
49 CFR Part 214	Roadway Worker Protection
49 CFR Part 220	Radio Standards and Procedures
49 CFR Part 221	Rear End Marking Devices – Passenger, Commuter and Freight Trains
49 CFR Part 223	Safety Glazing Standards – Locomotives, Passenger Cars and Cabooses
49 CFR Part 225	Railroad Accidents/Incidents; Reports Classification, and Investigation – Train Accidents and Crossing Accidents
49 CFR Part 233	Signal Systems Reporting Requirements
49 CFR Part 238	Passenger Equipment Safety Standards
49 CFR Part 239	Passenger Train Emergency Preparedness
49 CFR Part 633	Federal Transit Administration Regulations for Project Management Oversight
49 CFR Part 653	Prevention of Prohibited Drug Use in Transit Operations
49 CFR Part 654	Prevention of Alcohol Misuse in Transit Operations
49 CFR Part 659	Rail Fixed Guideway Systems; State Safety Oversight
49 CFR Part 661	Buy America Requirements
49 CFR Part 663	Pre-award and Post Delivery Audits of Rolling Stock Purchase
49 CFR Part 665	Bus Testing Requirements
AAR-RP-503	Association of American Railroads (AAR) Locomotive Fueling Interface
ANSI/ASME A17.1	Safety Code for Elevators and Escalators
APTA Bus Safety Management Program	Manual for the Development of Bus Transit System Safety Program Plans
AREMA	American Railway Engineering and Maintenance-of-way Associations Manual for Railway Engineering, 2003 Edition

ASCE 7-98	American Society of Civil Engineers, Minimum Design Loads for Buildings and other Structures
DOD Mil-Std-470	Department of Defense Maintainability Program for Systems and Equipment
DOD Mil-Std-882E	Department of Defense Standard Practice for System Safety
DOD Mil-Std-1472D	Department of Defense Human Engineering Design Criteria for Military Systems, Equipment, and Facilities
DOT-FRA-RRS-22	FRA Guide for Preparing Accident/Incident Reports
DOT-FTA-MA-26-5019-03-01	FTA Public Transportation System Security and Emergency Preparedness Planning Guide
DOT-FTA Guideline	Hazard Analysis Guidelines for Transit Projects
DOT-FHWA	Manual of Uniform Traffic Control Devices
DOT-FTA-90-5006-02-01	FTA Handbook for Transit Safety and Security Certification
Homeland Security Presidential Directive – 3	Homeland Security Advisory System
NFPA 10	Portable Fire Extinguishers
NFPA 13	Installation of Sprinkler Systems
NFPA 14	Installation of Standpipe, Private Hydrants, and Hose Systems
NFPA 70	National Electric Code
NFPA 72	National Fire Alarm Code
NFPA 75	Protection of Information Technology Equipment
NFPA 90A and 90B	Installation of Air-Conditioning and Ventilating and Warm Air Heating and Air-Conditioning Systems
NFPA 91	Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Non-Combustible Particulate Solids
NFPA 101	Life Safety Code
NFPA 110	Emergency and Standby Power Systems
NFPA 130	Standard for Fixed Guideway and Transit Passenger Rail Systems
NFPA 220	Types of Building Construction
NFPA 256	Methods of Fire Tests of Roof Coverings
NFPA 780	Installation of Lightning Protection Systems
NFPA 1221	Installation, Maintenance, and Use of Emergency Services Communications Systems
Latest Revision	Local Jurisdiction Fire and Building Codes
Latest Revision	US DOT Rail Accident Investigation Handbook

1.0 POLICY STATEMENT

It is the mission of the Maryland Transit Administration (MTA) to provide a safe, efficient, reliable transit services with world-class customer services to all MTA customers. Safety is a primary concern in fulfilling this mission and as such, the MTA Administrator is empowered and authorized to design, implement, and administer a comprehensive, integrated, and coordinated System Safety Program. This includes the development and implementation of a specific plan for the identification, prevention, control, and resolution of any unsafe conditions during design, construction, testing, operation, maintenance, and disposition of MTA's operations and services. While authority for the preparation and implementation of this plan is vested first with the MTA Chief Safety Officer-Office of Safety, Quality Assurance, and Risk Management (OSQARM), the MTA Administrator holds ultimate responsibility for the safety of MTA's operations and services.

The System Safety Program Plan (SSPP) has been developed as a means of integrating safety into all MTA operations and services. The System Safety Program establishes mechanisms for identifying and addressing hazards associated with MTA operations and services and provides a means of ensuring that proposed system modifications are implemented with thorough evaluation of their potential effect on safety. The membership, role, and responsibility of the Executive Safety and Security Standing Committee are defined in the SSPP. The Executive Safety and Security Standing Committee has the highest authority as it pertains to resolving issues relating to the hazards management process. Through the use of the SSPP, the MTA builds a basis for achieving an optimal level of safety throughout its operations and services, and develops a basis for an effective safety culture aimed towards reducing "at-risk behavior" and practices.

This proactive approach dictates that MTA Management plan for and design safety, health, and environmental controls into each operation and activity. Management is responsible for the development and maintenance of the working environment and how staff interacts with that environment, and are therefore accountable for developing and implementing appropriate operating systems, procedures, rules, and work practices. This includes monitoring the operations of contracted service providers to ensure their compliance with established rules and procedures.

Success of the System Safety Program is dependent on the involvement of all MTA personnel and departments and as such all personnel and departments have responsibilities under the Program as summarized in the SSPP. All personnel are responsible and accountable for fulfilling and complying with the safety requirements of their positions and all supervisors and managers are responsible and accountable for enforcing the safety requirements pertaining to their employees. All personnel and departments shall support the implementation of the SSPP and System Safety Program and shall provide the continuing support necessary for achievement of program objectives. Each staff member, including contractor staff, is empowered to initiate a work stoppage of any operation where there exists a serious and imminent danger.

Success of the System Safety Program also depends on all employees actively identifying potential hazards and taking into consideration the safety of others, as well as their own while performing the duties of their jobs.

We must appreciate the fact that our decisions and actions often affect the safety of those around us and the safety of other operations. By following the processes described within the SSPP and as dictated by the System Safety Program, the MTA will have continuing opportunities to improve overall performance and safety.

The MTA works with the Maryland Department of Transportation (MDOT), which acts as the State Safety Oversight (SSO) Agency responsible for overseeing the system safety and security aspects of the MTA's light rail and heavy rail operations in accordance with 49 CFR Part 659, Rail Fixed Guideway Systems; State Safety Oversight. The SSPP has been developed to meet the requirements of 49 CFR Part 659, and is reviewed annually and revised as necessary under the direct authority of the MTA Administrator, to ensure it remains accurate, effective, and consistent with MTA Management goals and objectives, as well as compliant with the most current State, Federal, and local regulations and industry guidelines. The SSPP is submitted to MDOT for review and written approval when modified or at MDOT's request.

MTA Administrator: [redacted] **Date:** 2/10/16

2.0 PURPOSE, GOALS, AND OBJECTIVES

The term "system safety" is defined by the United States Department of Transportation (DOT) as "the application of operating, technical and management techniques and principles to the safety aspects of a system throughout its life to reduce hazards to the lowest practical level through the most effective use of available resources." The MTA maintains a thorough and proactive system safety policy consistent with this definition and industry best practices, and is mandated by the Federal Transit Administration (FTA) for its Heavy Rail, Light Rail, Bus, and Paratransit operations to develop, implement, and administer a comprehensive and coordinated System Safety Program. MTA's Maryland Rail Commuter (MARC) services must meet similar requirements under the Federal Railroad Administration (FRA). Acronyms are used extensively throughout this document. A list of acronyms can be found in Appendix A.

The SSPP communicates MTA's specific system safety goals and objectives, and documents and defines the safety responsibilities, activities, and capabilities established by the MTA to promote and improve system safety throughout all operations and services. This includes responsibility for monitoring compliance of all transportation operations and support activities and for reinforcing safe work practices aimed at identifying risks and reducing accidents and incidents. The SSPP describes how accountability for system safety is integrated and shared throughout the organization and establishes mechanisms for ensuring that the safety implications of system modifications are adequately addressed prior to making changes. It also provides a systematic approach and methodology for identifying and resolving hazards in an expedient and cost effective manner, while maintaining the safest possible operating environment for MTA's services.

Further, the SSPP provides the background description, organization, management processes, and descriptions of the operational facilities, systems, and the personnel responsible for providing safe and reliable operations and maintenance of MTA's systems. Finally, the SSPP identifies the relationship and responsibilities between the MTA, State, Federal, and local agencies and organizations that have an impact on transit system safety, and is the primary mechanism through which internal and external safety and regulatory requirements and goals are met.

The SSPP is written in accordance with the guidelines specified in the American Public Transportation Association (APTA) Manual for the Development of Bus Transit System Safety Program Plans, the APTA Manual for the Development of System Safety Program Plans for Commuter Railroads, the FTA requirements of 49 CFR Part 659 Rail Fixed Guideway Systems; State Safety Oversight, and FTA's Resource Toolkit for State Oversight Agencies Implementing 49 CFR Part 659. The Plan also meets the requirements of the Handbook for Transit Safety and Security Certification (document number: FTA-MA-90-5006-02-01).

Covered within the scope of the MTA SSPP, is the requirement that all transit-related activities will include hazard and risk identification and control throughout the planning, design, development, acquisition, modification, operation, maintenance, and disposition of all transit hardware, software, and facilities throughout their life-cycle. The policy, goals, and objectives of MTA's System Safety Program apply to all personnel, divisions, departments, and units of the MTA that contribute to the transit system, as well as work performed by contractors on the system. All MTA employees and contractors are therefore required to adhere to safe work practices when in contact with passengers, other employees, private property, and the general public.

2.1 PURPOSE

The primary purpose of the MTA System Safety Program is to establish formal mechanisms used by MTA employees to:

- Establish system-wide processes whereby hazards and risks associated with the operation of the system are identified and analyzed so that preventive actions may be implemented to eliminate, control, or minimize their impacts
- Establish System Safety Program responsibilities and ensure that tasks are assigned, understood, documented, and tracked in an organized and useful manner
- Implement system safety policies and procedures that can be measured, audited, and evaluated to determine the effectiveness of MTA's System Safety Program and hazard and risk management activities and processes
- Identify hazards and risks associated with MTA operations and services and to eliminate, minimize, or control these hazards and risks
- Satisfy Federal (FRA, FTA, EPA), State (MDOT), Agency (MTA), APTA, and Railroad (Norfolk Southern, CSX, Amtrak) requirements, as applicable.

The System Safety Program is used as a means of proactively preventing injuries, accidents/ incidents, environmental damage, and other losses while concurrently demonstrating MTA's commitment to safety. The SSPP focuses on a process of identifying hazards, assessing the levels of risk, and developing appropriate resolutions prior to the occurrence of an accident/ incident, injury, illness, environmental damage, or other loss. As this hazard and risk identification and resolution process makes up the core of the System Safety Program, it is the intent of the MTA to implement this process for every phase of a project, operation, or system throughout its life-cycle, from conception through operation, and finally through disposition. The extent of this process includes procedures and policies related to other subordinate and supportive aspects of the MTA System Safety Program such as safety and security certification of personnel and equipment, document control, configuration management, quality assurance, operations, maintenance, and training.

The effectiveness of the System Safety Program, the SSPP, and the hazard and risk identification and elimination process is evaluated through internal reviews of MTA's day-to-day operations and activities. The MTA uses internal reviews as a tool to modify safety critical elements and system safety processes on a continuing basis, in turn optimizing operational safety and performance. The reviews are conducted in accordance with industry standard practices and applicable regulations and requirements.

2.2 SCOPE

The MTA System Safety Program and SSPP apply to all organizational units, employees, and contractors affecting, or affected by, MTA operations and services throughout all design, construction, testing, operations, maintenance, and disposition phases. The Program also:

- Charges each Manager and Department with responsibility and accountability for the implementation, enforcement and success of the System Safety Program
- Mandates coordination, integration, communication and cooperation among all personnel and departments relative to matters of safety
- Encompasses all fixed facilities, vehicles, and employee activities, and applies to all who come in contact with the system
- Identifies the relationships and responsibilities with State, Federal, and local agencies and any other organizations that have an impact on operations, (e.g., APTA, FRA, FTA, NTSB, MDOT, NS, Amtrak, and CSX).

It is not possible to address all the specific safety-related responsibilities of personnel and departments in a plan of this type. Relevant documents such as rulebooks, standard operating procedures, plans, and other procedures have therefore been referenced where appropriate in the SSPP and should be reviewed to achieve a complete understanding of the System Safety Program. Although the SSPP applies to all organizational units of the MTA, a separate SSPP has been developed for the MARC rail system for the express purpose of meeting submittal and approval requirements of the FRA. MARC services and operations remain governed by the provisions of the MTA SSPP.

2.3 GOALS

The MTA is committed to ensuring that its operations and equipment are safe and its employees and contractors engage in safe work practices at all times. The MTA has a zero-tolerance policy for non-compliance with the System Safety Program and considers public, employee, and passenger safety to be a paramount consideration in all decisions. As such, the ultimate goal of the MTA System Safety Program is to achieve the highest level of safety for all MTA customers, employees, contractors, and the general public consistent with MTA operating and management goals. The System Safety Program gives direction to all MTA employees and contractors who are involved in activities that provide or support MTA operations and services, and ensures a

constant review of MTA's safety record and practices through quality assurance activities, internal safety reviews, investigations, and daily oversight. The goals of the MTA System Safety Program are as follows:

- Enable MTA employees to identify, eliminate, minimize, and/or control hazards and their associated risks
- Promote a high level of safety awareness among all MTA employees, managers, and contractor personnel
- Make safety a management and work performance indicator in the same way as is productivity and work quality
- Assist in creating a level of safety throughout MTA operations and services that exceeds that of other transit agencies
- Comply with the applicable requirements of regulatory agencies as well as all Federal, State, and local requirements
- Develop a process that maximizes the safety of future operations through the design and procurement process
- Foster the development of a system wide safety program and safety culture
- Utilization of end-of-year reports, MTA STAT, and State STAT to measure and improve accountability.

2.4 OBJECTIVES

Objectives are the quantifiable working elements of the System Safety Program that provide a means of achieving Program goals as well as a method of measuring the effectiveness of MTA safety efforts. The objectives of the MTA System Safety Program are therefore as follows:

- Establish safety policies, procedures, and requirements that integrate safety into MTA processes, decision making, and operations
- Assign responsibilities related to safety policies, procedures, and requirements
- Verify adherence to MTA safety policies, procedures, and requirements
- Thoroughly investigate all accidents/incidents including fires, injuries, and near misses
- Identify, analyze, and resolve all hazards in a timely manner
- Meet or exceed safety requirements in all operations, services, and maintenance activities
- Thoroughly evaluate and verify the operational readiness of new systems
- Minimize system modifications during the operational stage by establishing and utilizing system safety processes from system inception through procurement

- Thoroughly evaluate the safety implications of all proposed system modifications prior to implementation
- Ensure that system modifications do not create new hazards
- Consider safety and security issues as critical elements of all project phases including preliminary engineering, final design, construction, testing, operations, and maintenance.

2.5 MTA MANAGEMENT GOALS AND OBJECTIVES

MTA management goals include:

- Continuing to operate a fiscally responsible public agency utilizing good business principles
- Working with the State, cities, counties, Metropolitan Planning Organizations, and other interested parties in examining transportation corridors, considering land use, economic activity, population patterns, and connections among these three elements and transportation
- Providing safe, secure, and reliable service that protects employees and passengers and minimizes property damage to vehicles and facilities.

MTA management objectives include:

- Implementing the Regional Transit Plan consistent with the input and participation of public and local governments
- Implementing safety and security systems that require safe work habits
- Developing a public transportation educational and marketing program enhanced by market research
- Developing and maintaining a multi-modal transportation system, responsive to public needs, which includes:
  - Maintenance and expansion of the Metro, Light Rail, Local Bus, Commuter Bus, Paratransit, and MARC services
  - Maintaining a comprehensive public transit system that complements other existing public and private transportation systems
  - Working with Federal, State, and local governments to encourage the development of alternatives to single occupant vehicle usage
- Providing safe and secure transit services and facilities free from aggressive, threatening, violent or destructive acts.

The Chief Safety Officer-OSQARM, in coordination with the MTA Administrator and other department managers, has the primary responsibility for monitoring the goals and objectives established by the System Safety Program. MTA's progress towards meeting stated goals and objectives is continually evaluated through an internal safety review process. The Chief Safety Officer-OSQARM is responsible for overseeing the performance of internal safety reviews and reporting findings and proposed corrective actions for identified deficiencies to the MTA Administrator, MTA Executive Management, and the State Safety Oversight Agency (i.e., MDOT) on an annual basis. In addition, the Chief Safety Officer-OSQARM provides input to the MTA Administrator on an on-going basis regarding the status of the MTA System Safety Program and the resolution status of identified hazards and review findings.

3.0 MANAGEMENT STRUCTURE

The MTA, under MDOT, has the authority to furnish public transportation services throughout the State of Maryland including developing and operating transportation services in the city of Baltimore.

The MTA Administrator is empowered and authorized to design, implement, and administer a comprehensive, integrated, and coordinated System Safety Program. This includes the development and implementation of a specific plan for the identification, prevention, control, and resolution of any unsafe conditions during design, construction, testing, operations, maintenance, and disposition of MTA operations and services.

The authority for the preparation of this plan is vested with the Chief Safety Officer-OSQARM, in consultation with the other line managers and the MTA Administrator. All MTA personnel and departments are responsible and will be held accountable for supporting the implementation of the SSPP and System Safety Program, and for providing the continuing support necessary for achievement of SSPP and System Safety Program objectives.

OSQARM serves as a resource for MTA's modal operations and services, which are responsible for the daily oversight, identification, and control of operating and workplace hazards. Responsibilities of the OSQARM also include:

- Performing periodic reviews and updates of the SSPP and other documents developed by the OSQARM
- Developing and maintaining safety related policies, rules, and training programs for the OSQARM
- Coordinating with MDOT and MDOT in the development and implementation of the Rail Safety Oversight Program Standard (RSOPS)
- Providing MDOT notification of the MTA's involvement in any event that has the potential of high media or public interest
- Providing input to each of the modes and departments pertaining to the development of safety requirements in procedures and other departmental documentation
- Coordinating and executing the Internal Safety Review process
- Evaluating safety processes and practices of MTA departments and personnel
- Participating in and overseeing testing programs of new systems and system modifications
- Overseeing and performing safety and security certification programs of new systems and system modifications
- Evaluating proposed system changes and modifications to determine their impact on the safety of MTA operations and services

- Coordinating emergency drills, simulations, table-top exercises, and training exercises
- Developing and implementing loss control and *injury/illness prevention programs*
- Assisting other departments in the development of training lesson plans to ensure safety elements are included
- Responding to emergencies and disasters in accordance with the MTA EPOPs
- Evaluating hazardous material/chemical data from a safety perspective to determine potential hazards prior to its purchase, use in MTA systems or by MTA employees, or storage on MTA properties
- Conducting accident/incident investigations to determine root causes and developing recommendations to mitigate or prevent recurrences
- Participating in and reviewing procurement processes and documents to ensure safety elements are addressed
- Assisting in the evaluation and determination of the need for safety equipment and devices and making recommendations for their implementation
- Acting as an MTA representative at outside safety meetings and seminars
- Ensuring safety information is made available to MTA departments, personnel, contractors, and patrons
- Responding to Maryland/Occupational Safety and Health Administration (M/OSHA) and other regulatory agency citations related to safety and developing corrective action plans as necessary
- Compiling and analyzing accident/incident, injury, illness, and property damage data to identify potential trends and submitting reports to the appropriate regulatory agencies regarding the data
- Assisting in the evaluation and resolution of hazards when departments are unable to achieve resolution through their management structure
- Assisting departments with the development and review of corrective action plans and follow-up activities resulting from the hazard identification and resolution process, accident/incident investigations, employee or passenger complaints, etc. and ensuring proper documentation is maintained.

All personnel are responsible and accountable for fulfilling and complying with the safety requirements of their positions. All department heads, supervisors, and managers are likewise responsible and accountable for enforcing the safety requirements pertaining to their employees. Further, it is the responsibility of all employees to take into consideration the safety of others as well as their own safety when performing their daily duties. All employees are encouraged to identify hazards or potential hazards when performing their jobs. It is the responsibility of all

employees to immediately notify immediate supervision or the OSQARM, according to the appropriate chain of command, when a hazard or potential hazard has been identified.

When an immediate and serious hazard has been identified, all employees have the authority and responsibility to order the cessation of unsafe activities or operations until the hazardous condition is corrected. The identification, analysis, and reporting of identified hazards is further described in Section 5.0 Hazard Management Process of this plan. Additionally, the Chief Safety Officer-OSQARM is empowered to order the cessation of unsafe activities or operations that are evaluated as creating an immediate and serious hazard within the system. The Chief Safety Officer-OSQARM is also empowered to conduct unannounced inspections aimed at identifying and eliminating unsafe practices, operations, and conditions not corrected by immediate management/supervision.

The MTA organization provides for an Administrator who reports to the Maryland Secretary of Transportation. The MTA is comprised of the following organizational partitions:

- Deputy Administrators
- Fair Practices
- Legal Counsel
- Safety, Quality Assurance & Risk Management
- Labor Relations
- Operations
- Finance & Administration
- Planning & Engineering

The organizational structure of the MTA is provided in Figure 3–1.

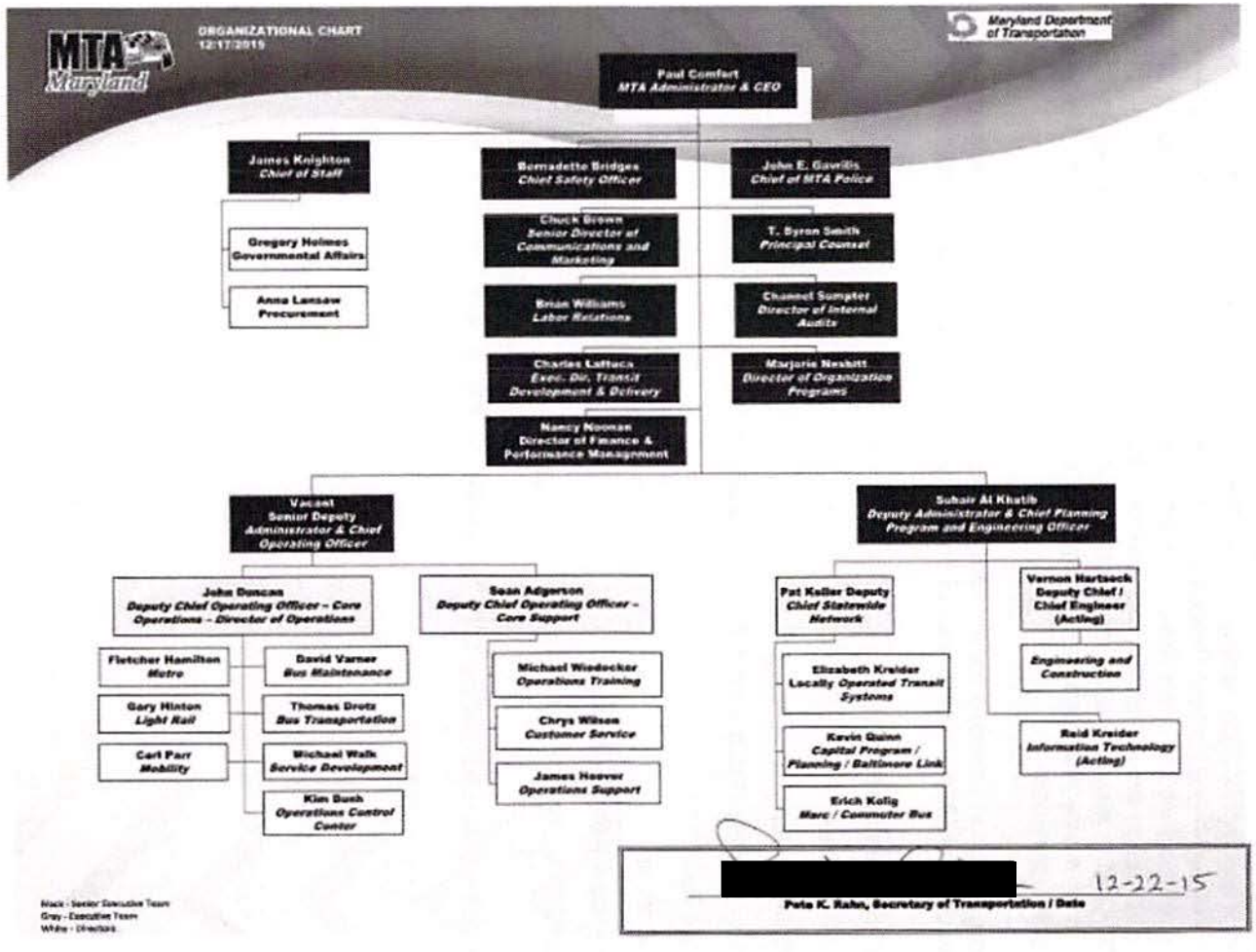

Figure 3-1 - MTA Organizational Structure

3.1 GENERAL OVERVIEW AND MTA HISTORY

The MTA is responsible for the planning, design, construction, operation, and maintenance of a multi-modal transportation system. The MTA procures and maintains a fleet of passenger buses, light rail vehicles (LRVs), heavy rail vehicles, commuter trains, and mobility vehicles to meet its service demands for public transportation services. Additionally, the MTA oversees commuter bus services throughout the State of Maryland. To support these services the MTA employs approximately 3,400 employees.

The combination of these services provides regularly scheduled transit and additional transportation for special events throughout the city of Baltimore and its surrounding areas. The MTA strives to provide adequate accessibility to all areas of the city of Baltimore and surrounding counties, and to and from Washington, DC for both work and non-work activities.

Public bus transportation commenced in Baltimore on March 21, 1948 when the Curtis Bay line converted from rail to bus. In 1961, the Metropolitan Transit Authority was created by the Maryland General Assembly and was empowered in 1962 to regulate all mass transit in Baltimore City and parts of Baltimore County. In 1963 the Metropolitan Transit Authority was empowered to acquire through purchase or condemnation, any mass transit companies that operated within the authority's jurisdiction. Between 1964 and 1967, 125 new air-conditioned General Motors Company buses were added to the fleet for a total of 797 buses. In 1970, the Metropolitan Transit Authority took over the operation of the Baltimore Transit Company, and on July 1, 1971 the Metropolitan Transit Authority was consolidated under the MDOT and its name was changed to the Mass Transit Administration.

In 1973, design work started on the Baltimore Metro Heavy Rail System (Metro), which began service in November of 1983 when Section A of the system opened providing subway service from the Charles Center Station in downtown Baltimore to the Reisterstown Plaza Station in northwest Baltimore. Section B of the system began operation in July of 1987 and provides service from the Reisterstown Plaza Station to the Owings Mills Station. In 1995, Section C of the system was completed and currently provides service between Charles Center and Johns Hopkins Hospital. In 2007 a mid-life overhaul was completed on 100 Metro railcars.

In 1989, groundbreaking ceremonies were held to start construction of the Central Light Rail Line (CLRL), which began limited service in on April 3, 1992. The operating territory of the CLRL extends from the Hunt Valley, MD station (northern terminus) to the Cromwell station in Glen Burnie (southern terminus). This territory also includes two CLRL extensions to Penn Station and the Baltimore Washington International Thurgood Marshall Airport (BWI), as well as the CLRL Maintenance and Operations Control facility located at North Avenue in Baltimore City.

In 1992, the Mass Transit Administration also took over management of MARC services, which had been previously managed as part of a separate MDOT modal administration. In 2001 the Mass Transit Administration was again renamed and is now called the Maryland Transit Administration (MTA).

In 2002, expansion of CLRL operations continued with the construction of a new maintenance facility at the CLRL's Cromwell station located in Glenn Burnie, Maryland. Also the MTA has completed work on a double tracking project of the CLRL system, in which nearly all single-track

rights of way of the CLRL system were expanded to include a parallel double track and Automatic Train Protection.

In addition to the services previously described, the MTA also provides special transportation services to meet the special needs of physically disabled riders as well as contracted Commuter Bus services throughout the State of Maryland.

To date, the MTA employs approximately 3,400 employees. Additionally, the MTA has its own police department, which has sworn police officers who are empowered with the same police powers as the Maryland State Police. The MTA Police also have communication officers, fare inspectors, and security guards.

The MTA maintains an internet site (*http://www.mta.maryland.gov/*), which provides individual modal routes and schedule information. The MTA also maintains an Information Line at (410)-539–5000 or 1-866-RIDE-MTA (743-3682).

3.1.1 Core Operations/Core Support

Core Operations/Core Support (CO/CS) is responsible for managing the safe and efficient operation of Bus, Metro Rail, and Light Rail services. To support this mission, CO/CS monitors the readiness and performance of the MTA's operator team, the functionality of our service equipment, and the safety and cleanliness of our transit facilities and other operating environments.

Strategically, MTA created CO/CS to leverage existing personnel capabilities, new technologies, and new operational measures to improve the continuity of its services, communications within its organization, and with its customers. The goal is to create a new culture of service quality within MTA. CO/CS has refocused MTA's efforts and energies on safety, reliability, efficiency and employee accountability to increase customer satisfaction.

CO/CS created a "Zone Management" concept where service coordination responsibilities are divided into geographic zones and sectors, each overseen by a Zone Manager. The Zone Manager is the on-site authority of any situation across any mode of service. The Zone Manager is empowered to take control of field situations and is responsible for mitigating resolutions to minimize service disruptions across all modes. Zone Managers oversee Service Coordinators that are assigned to sectors in their respective zones. Zone Managers coordinate directly with the Control Centers and ensure that actions required in the field are expeditiously resolved in a manner supporting continuity of service.

CO/CS will also implement the Central Control Center (CCC) concept that will be a keystone component of the new Office of Service Quality and will serve as the nerve center for CO/CS operations. The CCC will consolidate the operations control centers of Bus, Light Rail and Metro Rail organizationally and physically under a single governance structure. It will conduct round-the-clock operations and incorporate new technologies not present in the current operations control centers. It will feature conference facilities, located with the operations floor for use during special events and other operational challenges.

3.1.2 Control Centers

Control Centers (CC) for each mode are currently located in Baltimore City and surrounding areas and contain the necessary systems and the operating personnel to supervise, regulate, and control Bus, Light Rail, and Metro Rail operations. The CC has the capability to monitor and control safe operation of the transit system and to handle any emergency situations that may arise and is continuously attended during all hours of operations. CC personnel monitor train positions, switch positions, signal status and malfunctions, fire and intrusion alarms, traction power systems, and pumping station status.

The CC is equipped with monitoring, control, and communication facilities required to operate a safe and efficient rapid transit system, and to handle emergency situations. A computer system monitors train positions, switch positions, signal status and malfunctions, status of support systems such as ventilation, drainage, fire and intrusion alarms, traction power system status and pumping station alarms. The CC has direct communication via radio, telephon, and/or public address with:

- Train and bus operators and train passengers
- Station attendants and passengers in stations
- MTA Systems Maintenance
- Road, terminal, and yard tower supervisors
- Local fire/rescue communications centers
- MTA and local police.

CC staff has the responsibility for complete control of the Bus, Light Rail, Metro Rail and all facilities necessary to coordinate activities required for correction of an emergency and/or non-routine situation in accordance with established Standard Operating Procedures (SOPs) and Emergency Operating Procedures (EOPs). The CC was updated through the CC Modernization Project, which was completed in 1996.

3.2 MTA BUS SYSTEM DESCRIPTION

The MTA bus system operates and has four division facilities located throughout the city of Baltimore in which operations, administration, and maintenance activities are housed. These divisions include – Bush, Eastern, Kirk, and Northwest.

General repairs and maintenance are performed at all locations, although the major overhaul facility is located at the Bush Division. Routes are modified periodically to adapt to changing needs and to support special services. The MTA periodically procures new buses as existing buses age and as ridership and service areas increase and expand. Technical specifications for passenger coaches incorporate fuel system and emission system features for coaches in the MTA bus fleet. Special safety features will be incorporated in the design of any alternate fuel coaches purchased or leased by MTA in the future.

3.2.1 Bus System General Information

The MTA operates nearly 51 Local Bus lines throughout central Maryland. Many Local Bus lines connect with Light Rail, Metro Rail, and MARC Train service. Local Bus service provides approximately 240,000 rides per day. When riding MTA Local Bus service, customers pay the fare as they board, and exact fare is required. Customers may then ask the operator where to get off or watch/listen for the appropriate stop (touching the yellow strip on the interior of the bus alerts the operator that a customer wants to get off at the next stop). Smoking, eating, drinking, and playing radios or audio devices without earphones are not permitted by law on MTA Local Buses.

3.2.2 Bus Fleets Description

The MTA operates a mixed fleet of approximately 700 transit buses. The fleet consists of 40-foot diesel powered buses, 40-foot hybrid buses, and 60-foot (articulated) hybrid buses. The more fuel efficient hybrid buses comprise one-third of MTA's fleet.

3.3 MTA METRO RAIL SYSTEM DESCRIPTION

The MTA Metro Rail System (Metro Rail) is a 15.5-mile long, 14-station mainline, double track rail system. A one-way trip encompassing the entire system takes approximately 29 minutes to complete.

The Metro Rail system was constructed in three stages. Phase 1, Section A, included the Northwest Line, which extends from the Charles Center Station in downtown Baltimore to the Reisterstown Plaza Station in northwest Baltimore. Section A is 7.55 miles long and was completed in November 1983. It consists of a below-ground section that runs from Charles Center Station to Portal (located between Mondawmin and West Cold Spring Stations). An aerial section runs from the Portal to Reisterstown Plaza Station. Phase 2, Section B, was an extension to the Northwest line that currently runs northwest from the Reisterstown Plaza Station to the Owings Mills Station. Section B is 6 miles long and was completed in July of 1987 and runs completely at grade level from the Reisterstown Plaza Station to the Owings Mills Station.

Phase 3, Section C, was an extension that currently runs from Charles Center to Johns Hopkins Hospital. It is 1.5 miles long, and was completed in 1995. This section is completely underground.

A map of the MTA Metro Rail system is provided in Figure 3-2.