METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

System Safety Program Plan

PREPARED BY: The Office of Safety

January 31, 2018

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Document Change Control	
Changes	**Effective Date**
Original issue	August 1975
Revision 1 constitutes baseline edition and supersedes prior issue.	October 1975
Revision 2 constitutes baseline edition and supersedes prior issue.	February 1977
Revision 3 constitutes baseline edition and supersedes prior issue.	November 1979
Revision 4 constitutes baseline edition, supersedes prior issue, and adds appendices.	February 1991
Revision 5 constitutes baseline edition and supersedes prior issue. References to DSQA are deleted and Rail Services Safety and Training responsibilities are clarified.	October 1991
Revision 6 constitutes baseline edition and supersedes prior issue. References to Configuration Management are deleted and Design review is utilized as a substitute.	August 1991
Revision 7 constitutes baseline edition, supersedes prior issue, and updates Plan in many areas. All appendices have been removed and replaced with a Reference Document List.	October 1993
Revision 8 constitutes baseline edition and supersedes prior issue. Revised to conform to the System Safety Program Standard issued by GDOT as required by FTA Rail State Safety Oversight regulations and to reflect current MARTA organization.	December 1999
Revision 9 constitutes baseline edition and supersedes prior issue. Revised to conform to the Georgia Department of Transportation Rail System Safety Standard as required by FTA Rail State Safety Oversight and as corrective action to GDOT Triennial Audit. This edition incorporates Bus System Safety.	April 2002
Revision 10 is a major revision in terms of content, style, and format. Revision 10 is compliant with the *Georgia Program Standard for Rail Transit Safety and Security Oversight* and the revised Federal Register rule (effective 4/29/2005) *49CFR part 659: Rail FIXED Guideway Systems; State Safety Oversight.*	April 10, 2006
Revision 11 Final includes additional updates to the System Safety Tasks, including information regarding Corrective Action Plan management, MARTA Management Structure, the Safety Task Matrix specifically defining the roles and responsibilities for safety activities across the Authority. Significant organizational changes have been made that affected all areas of the document. All requested revisions and updates received to date have been implemented. All elements have been re-reviewed by the stakeholders in conjunction with the Metropolitan Atlanta Transit Consultants (MATC). Some tasks were migrated to new areas as needed based on new management structure. The Hazard Management section has been updated to include information about the newly revised program including references to a new supplemental document that contains detailed information about the process and implementation. The System Safety Policy was revised to include several of the other safety policies as noted. Information about the System Modification and Configuration Management elements has been updated to reflect the current status of the initiatives. Training information has been updated to reflect current efforts.	April 24, 2008

Document Change Control	
Revision 12 includes updates to reflect the changes in management structure over the past year. Numerous changes were made to the organization, many of which are still developing and communication their specific roles and responsibilities within the re-alignment. Several responsibilities formerly owned by Technology have been moved under the Rail Maintenance organization at this time. Administrative Services was also moved under Contracts, Procurements and Materials. Additionally, as part of an external safety review, additions were made to include bus and Mobility (paratransit) information and certain document structure recommendations were made based on FTA Guidelines. Although not required by GDOT/SSO, Transit Resource Associates (TRA), Inc. performed an Assessment of Safety Critical Systems for MARTA in 2008 and recommended the bus additions and other changes be made to be more in line with FTA and APTA guidelines. This information was added to applicable elements and two appendixes were added to describe MARTA's compliance to APTA Bus SSPP Standard for Elements # 23 and # 24. Information about the SCADA (Supervisory Control and Data Acquisition) System was also added to the appropriate sections. Other new requirements from GDOT/SSO Standards document, updated January 31, 2009, included a document reference list and enhancements to Hazard Management, Maintenance Program Audits and Inspections and Facilities and Equipment Inspections. All requested changes were reviewed and implemented as deemed necessary to remain in compliance with the *Georgia Program Standard for Rail Transit Safety and Security Oversight* and *FTA Rule 49 CFR Part 659: Rail FIXED Guideway Systems; State Safety Oversight*. A document number was added as part of documentation control standards. Information about the Standard Operating Procedures for Internal Safety Audits was updated to reflect FTA guidelines.	August 31, 2009
Revision 13 includes updates to reflect the changes in management structure over the past three years. Numerous changes were made to the organization including the reorganization of DSQA. Administrative Services now reports to - Contracts, Procurements and Materials. Section 1 changed to reflect new GM/CEO and organizational charts changed. All requested changes were reviewed and implemented as deemed necessary to remain in compliance with the *Georgia Program Standard for Rail Transit Safety and Security Oversight* and *FTA Rule 49 CFR Part 659: Rail FIXED Guideway Systems; State Safety Oversight*. Added Sec. 10.7.1 and 11.7: *GDOT/SSO Access to SSI* for the review of accident investigations and reports.	January 31, 2013
Revision 14 includes updates to reflect the changes in management structure over the past year. The new organizational structure reflects the change in leadership as shown in Section 3. All requested changes were reviewed and implemented as deemed necessary to remain in compliance with the *Georgia Program Standard for Rail Transit Safety and Security Oversight* and *FTA Rule 49 CFR Part 659: Rail FIXED Guideway Systems; State Safety Oversight*. Updates were made in Sections 5, 13, 14, and 15 to include the Offices of Vertical Transportation, Maintenance of Way, and Facilities. Added Section 22- Transit Asset Management. Document number reflects new MARTA numbering system.	January 08, 2014

Document Change Control	
Revision 14 Addendum, dated September 2015, includes updates to reflect the changes in the current practices at MARTA as well as changes reflecting the outcome of GDOT's Three Year Safety Review conducted in October 2013. All requested changes were reviewed and implemented as deemed necessary to remain in compliance with the *Georgia Program Standard for Rail Transit Safety and Security Oversight* and *FTA Rule 49 CFR Part 659: Rail FIXED Guideway Systems; State Safety Oversight*. These changes include: • Section 4.1 Added triggers for changes to the SSPP • Sec. 3.1.2.1 changed 45.4 miles of track to 104 miles of mainline track based on Engineering's request to represent actual mainline track in both directions and includes pocket, crossover, and bypass track. Also included operation times of 7 days/week, 21 hours/day • Section 3.1.2.1.4 ATC was moved and detailed based on restructuring to more appropriate sections of the SSPP after review by the Directors of Operations and MOW. Sections added regarding ATC include Sec 13, 14.2.7, 14.2.9, 15.2.4, and 15.3 • Section 4.1 Added triggers for changes to the SSPP • Sec 4.4.3 Changed the section to read, *MARTA will have a minimum of 30 calendar days to respond to the draft report… [per GDOT comment 19 of Review Checklist Open Items Rev. 04/14/15]* • Section 4.2 clarified the language for the process for SSPP Control and Update Procedures • Section 4.2 clarified the language for the process for distribution of the final SSPP and all plans to all levels of management. Added reference to procedure. • Sec. 5.3 Removed Fitness for Duty Program enforcement due to lack of signed policy or procedures. There is currently no program in place. • Sec 21 Procurement added additional information regarding new roles and responsibilities of all departments regarding procurement of items safety related. • Sec 5.2.3 Office of Safety Tasks Responsibilities Matrix (See Table 2) updated with revised positions duties due to reorganization and added Internal Audit position. Also modified the Integrated Safety Task Matrix (See Table 3) re-defining the safety responsibilities relative to the current key processes. • Sec 5.3 Safety Task Responsibilities of Other Departments Sections added to clarify or define new roles with regard to safety such as the addition of Sec 5.3.5 Office of Vertical Transportation • Sec 5.3.11 Added Marta Guide Specification information for contractors. • Sec 11 Emergency Response Planning/Coordination/Training Updated section 11.1, 11.2, and 11.3 to describe emergency management activities, role, and responsibilities with regard to the current SEPP. • Updated the Internal Audit Schedule to new 3-year audit cycle, including OVT. • New Internal Audit schedule for 2016-2018 added in Appendix. • Updated Table 1: Certification/Re-training/Re-certification Matrix in Section 16.5.1. • Updated the Track and Structures Branch section of 15.2.4 Maintenance of Way Inspections. • Section 7.4 has been updated to describe the implementation of the method for selecting projects for certification and the use of the Safety and Security / System Modification Log, and it's quarterly submittal to GDOT for review. • Section 7.4.1 has been updated to reference the Safety and Security / System Modification Log.	September 2015

Document Change Control	
• Section 7.4.2 has been updated to reference the MARTA Guide Specification 013526: Governmental Safety Requirements. • Section 8 has been retitled "System Modifications and Change Control" and extensively rewritten to describe MARTA's current practices. • Section 11 has been updated to describe emergency response activities and training across multiple jurisdictions that work with MARTA with references to MPD's *Security and Emergency Preparedness Plan* (SEPP) document. Removed all mention of the SSP due to replacement by the SEPP. • Section 12.2 updated to indicate that audit elements span across departmental lines. • 12.3 Contains an updated Appendix F for the three-year audit schedule that includes Vertical Transportation. • Updated Section 16.2, Strategic Training Group to include SSPP and Safety 1st training initiatives with the Office of Safety for MARTA employees and contractors. • Updated Training sections 16.5.1 Table 9 and Section 16.5.3 to include new • SSPP training module for all employees. • Section 17 has been updated to reflect current practices. • Section 18.2 has been updated to reference the MARTA Guide Specification 013523: Authority Safety Requirements and 013526: Governmental Safety Requirements.	
Revision 15 changes include new signature line for the Interim AGM of Safety and Quality Assurance.	January 31, 2016
Revision 16 changes include new signature line for the AGM of Safety and Quality Assurance. Other changes are: • A new organizational chart for DSQA in Appendix E • Internal Audit Schedule found in Appendix F has been updated to reflect the removal of Security audits from the 3-year schedule • Minor updates were made to the following sections to reflect current practices: Section 5,14,17,19, and 22	January 31, 2017
Revision 17 changes include a new signature line for the Deputy General Manager. Other changes are: • Updates to reflect Departmental name changes • Addition of the Office of the Integrated Operations Center • A new organizational chart for MARTA in Appendix D • A new organizational chart for DSQA in Appendix E • Revisions to the Internal Audit Schedule in Appendix F • Minor updates were made to the following sections to reflect current practices: 3, 5, 14, 16, 22	January 31, 2018

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Definitions

Term	*Definition*
Accident	Any event that results in a fatality at the scene or a confirmed death within thirty days of the incident, injuries requiring immediate medical attention, property damage to an asset in excess of $25,000, an evacuation for life safety reasons, derailment, bus and rail collisions
Accident- GDOT Reportable	Any event involving the operation and maintenance of the MARTA rail system, if as result: • A fatality at the scene, or where an individual is confirmed dead within 30 calendar days as the result of a transit-related incident • Injuries requiring immediate medical attention away from the scene for two or more individuals • Property damage equal to or exceeding $25,000 to rail transit vehicles, non-rail transit vehicles, other MARTA property or facilities, and non-MARTA property • An evacuation for life-safety reasons • A collision at a grade crossing • A main-line derailment • A collision with an individual on rail wayside; or collision between two rail transit vehicles or between one rail transit vehicle and a non-revenue vehicle • Any evacuation of passengers to the wayside (i.e., other than a complete and proper train berthing at a rail station)
Accident, NTSB-reportable	Any collision, derailment, or explosion involving railroad trains, locomotives, and cars; or any other loss-causing event involving the operation of such railroad equipment that results in a fatality to a passenger or employee, or the emergency evacuation of persons. [Applies to MARTA fixed-rail]
ADA	Americans with Disabilities Act
AGM	Assistant General Manager
A/I and I	Accident/Incident and Investigations
ATO	Automatic train operation
ATP	Automatic train protection
ATU	Amalgamated Transit Union
AVL	Automatic Vehicle Locator
Authority	Another term used for Metropolitan Atlanta Rapid Transit Authority (MARTA)
BCC	Bus Communication Center
Contractor	An entity that performs tasks required on behalf of MARTA.
CAP	A Corrective Action Plan is a plan that describes the actions the agency will take to minimize, control, correct, or eliminate hazards, and the schedule for implementing those actions.
CNG	Compressed Natural Gas
DGM	Deputy General Manager

Term	*Definition*
DSQA	Department of Safety and Quality Assurance
EAM	Enterprise Asset Management is an online asset management system used by all maintenance personnel for work orders, hazards, and procedures related to MARTA assets
FASuites	Fixed Asset database
FTA	Federal Transit Administration, an agency within the U.S. Department of Transportation
GDOT/SSO	The entity designated by the State of Georgia to implement FTA 49 CFR Part 659 also known as the State Oversight Rule. The Georgia Department of Transportation (GDOT), Office of Intermodal Programs, designates the State Safety Oversight Agency to oversee MARTA's System Safety Program Plan and Hazard Management Plan
GEC	General Engineering Consultant
Hazard	Any real or potential condition (as defined by MARTA's Hazard Management Plan) that can cause injury, illness, or death; damage to or loss of a system, equipment or property; or damage to the environment
Hazard Analysis	A hazard analysis is a formal method of reviewing and documenting hazards for the purpose of their elimination or control.
Hazard Identification	Hazard identification is the recognition that a hazard exists and the definition of its characteristics.
Hazard identification and risk assessment (HIRA)	Hazard identification and risk assessment (HIRA) is a continuous process that occurs throughout the life cycle of a project or operation. The life cycle includes the concept, planning, design, construction/manufacturing/assembly, testing, pre-revenue, operation, maintenance, retirement, decommissioning, and disposal phases.
HIRA	Hazard Identification and Risk Assessment
Incident	An unforeseen event or occurrence, not necessarily resulting in death, injury, or property damage
Individual	Means a passenger; employee; contractor; other rail transit facility worker; pedestrian; trespasser; or any person on rail transit-controlled property
Investigation	Process used to determine the causal and contributing factors of an accident or hazard so that actions can be identified to prevent recurrence
Intelligent Transportation System (ITS)	Component that provides the Automatic Vehicle Locator (AVL) System
IOC	Integrated Operations Center
MARTA	Metropolitan Atlanta Rapid Transit Authority, also referred to as the Authority
MARTAnet	MARTA's intranet portal

Term	*Definition*
MPCC	MARTA Police Communications Center
MPD	MARTA Police Department
Mobility	Services offered to meet the service demands in compliance with the Americans with Disabilities Act (ADA) of 1990. At MARTA, the Department of Mobility operates and manages paratransit services
New Starts Project	Any fixed guideway system funded under FTA's 49 U.S.C. 5309 discretionary construction program
NIMS	National Incident Management System
NTD	National Transit Database
Paratransit	Mobility
Program Standard	Means a written document developed and adopted by the oversight agency, that describes the policies, objectives, responsibilities, and procedures used to provide rail transit agency safety oversight
Operator	An employee or contractor whose duty is to control, or drive a revenue or non-revenue vehicle
Oversight Agency	Means the entity, other than the rail transit agency, designated by the state or several states to implement this part
Rail Fixed Guideway System	Means any light, heavy, or rapid rail system, monorail, inclined plane, funicular, trolley, or automated guideway that: • Is not regulated by the Federal Railroad Administration • Is included in FTA's calculation of fixed guideway route miles or receives funding under FTA's formula program for urbanized areas (49 U.S.C. 5336) • Has submitted documentation to FTA indicating its intent to be included in FTA's calculation of fixed guideway route miles to receive funding under FTA's formula program for urbanized areas (49 U.S.C. 5336)
RSCC	Rail Service Control Center
Rail Transit-Controlled Property	Property that is used by MARTA that is owned, leased, or maintained by MARTA
Rail Transit Vehicle	MARTA's rolling stock, including but not limited to passenger and maintenance vehicles
Safety	Freedom from harm resulting from unintentional acts or circumstances
SCADA	Supervisory Control and Data Acquisition

Term	*Definition*
Security	Freedom from harm resulting from intentional acts or circumstances
SEPP	Security and Emergency Preparedness Plan MARTA's expanded System Security Plan
SOO	Safety Operational Officer
SSPP	System Safety Program Plan: A document developed and adopted by MARTA describing its safety policies, objectives, responsibilities, and procedures
SWPP and SRP	Storm Water Pollution Prevention and Spill Response Plan
Threat	Any real or potential condition that can cause injury or death to passengers; or employees, or damage to or loss of transit equipment, property, and/or facilities
Trapeze EAM	Fixed Asset database
Vulnerability	A characteristic of passengers, employees, vehicles and/or facilities that increases the probability of a security breach

1 Executive Approval (Policy Statement)

SYSTEM SAFETY POLICY STATEMENT

The primary mission of the Metropolitan Atlanta Rapid Transit Authority (MARTA) is to provide the region with safe, reliable, and customer friendly public transportation service. Safety shall be a major consideration in every stage of all MARTA activities, including planning, design, construction, testing, operations, and maintenance of the MARTA Rail and Bus Systems to ensure the highest practical level of safety for both passengers and employees. The Authority shall comply with relevant local, state, and federal requirements for the safety of MARTA transportation systems and related facilities. The Georgia Department of Transportation is the State Safety Oversight Agency for MARTA.

To meet the goals of System Safety, three objectives have been established:

- Avoid loss of life, injury of persons, damage or loss of property.
- Instill a commitment of safety in MARTA employees and contractor personnel.
- Provide for the identification, elimination, or mitigation of safety hazards.

The System Safety Program Plan (SSPP) is the governing document to implement the Authority's safety program objectives. The implementation of the SSPP will result in the elimination or mitigation and control of safety hazards and the reduction of accident rates. The SSPP organizes all safety activities into a coordinated and integrated effort directed toward optimizing the safety program and procedures. The SSPP identifies the activities and the responsibilities of all participants who are involved with the design, construction, testing, operation, and maintenance of the transit system.

The SSPP ensures that safety standards are established and that appropriate evaluation and review are accomplished on all facets of MARTA operations, including system design, construction, testing, operations, and maintenance. The responsibility for safety rests with each MARTA employee, contractor and MARTA's management, with ultimate accountability residing with the General Manager/CEO to produce necessary supplemental system safety policies in concert with the published SSPP that will provide the necessary guidance and direction to management, supervision, and to all employees. Under the authority of the General Manager and the Board of Directors, system safety policies published by the executive team will define the appropriate levels of authority, responsibilities, and accountabilities for management, supervision, and employees to ensure that they meet the safety requirements of their respective positions.

The General Manager has designated the Department of Safety and Quality Assurance accountable for overall safety management, performance, and the development and implementation of the SSPP.

Elizabeth O'Neill
Interim General Manager/CEO

2 Purpose, Goals and Objectives

The Metropolitan Atlanta Rapid Transit Authority (MARTA) *System Safety Program Plan* (SSPP) formalizes the Authority's safety duties and responsibilities for MARTA's rail, bus, and Mobility (paratransit) systems. The SSPP describes the programs developed to meet the requirements of the twenty-one system safety elements from the Federal Transit Administration (FTA) Rule 49 CFR Part 659 and complies with the Georgia Program Standard for Rail Transit Safety and Security Oversight (GDOT/SSO) which requires an additional Transit Asset Management element. The element organization is per the *Georgia Program Standard for Rail Transit Safety and Security Oversight,* dated January 2016.

The SSPP provides the foundation for pivotal safety activities and includes an internal audit process, hazard identification and resolution process, and external safety review process. Although not required by the GDOT/SSO, the addition of information about MARTA's Bus Operations and Mobility departments, as well as enhancements that are more in line with FTA and APTA Bus guidelines have been included.

Safety is the responsibility of everyone at MARTA, and it's the responsibility of line management to guarantee that the Authority is successful in maintaining a safe and secure environment for its personnel and customers. The Department of Safety and Quality Assurance provides the subject matter support, expertise, and overall monitoring of compliance with regulatory requirements, including data collection and reporting. The Office of Safety has the independent responsibility and authority to act in extraordinary cases to suspend operations if deemed necessary to ensure safety.

2.1 Purpose

The purpose of the SSPP is to set forth the requirements for identifying, evaluating, and minimizing safety risks throughout all business units and functions within MARTA. Development of the SSPP was in accordance with *the Georgia Program Standard for Rail Transit Safety and Security Oversight (SSO), January 2016 Revision 9*.

The SSPP identifies safety related activities, which occur during design, construction, testing, and operations. The Plan defines formal requirements, including the following:

- Functional structure of the safety management organization
- Implementation of established safety criteria
- Mechanisms for identifying and assessing safety hazards
- Methods to eliminate minimize or control identified unacceptable hazards.
- Methods for conducting investigations of accidents, incidents or unsafe acts
- Oversight of employee safety training programs
- Development and implementation of hazardous material and environmental safety programs
- Dissemination of the SSPP to all departments and delineation of responsibilities regarding SSPP implementation
- Describes the management and technical system safety policies, procedures and activities performed by MARTA

- Defines safety related activities affecting the delivery of transportation services for all divisions and departments
- Charges management at all levels with the responsibility for implementing policies, procedures and any corrective action plans in their respective areas
- Application of all activities that involve planning, design, construction, procurement, testing, training, operations, and maintenance of MARTA's Rail, Bus and Mobility (paratransit) departments

The SSPP outlines the appropriate interfaces with local, state, and federal governmental agencies to satisfy the requirements set forth in the FTA's 21 auditable elements.

Additionally, this revision of the SSPP includes supplementary bus information regarding alternative fuels and safety detailed in Appendix B, and Operating Environment and Passenger Facility Management in Appendix C.

2.2 Goals

The goals of the System Safety Program Plan include the following:

- Working with stakeholders across the Authority to establish sound system safety plans, including defined processes and procedures.
- Clearly defining line management day-to-day departmental responsibilities for implementation of key aspects of the Authority's safety program, including key performance indicators. Primary responsibility for safety activities rests with the Authority's line management.
- Utilizing the Internal Safety and Security Audit Program as the primary mechanism for monitoring achievement of key safety goals and objectives; with additional emphasis on a proactive, corrective action system that continues to improve and enhance employee, patron and public safety.

2.3 Objectives

The following objectives support the goals of system safety:

- Avoid loss of life, injury of persons, damage, or loss of property
- Instill a commitment to safety in all MARTA employees and contractor personnel
- Maximize the safety of future operations through the design and procurement processes
- Provide for the identification and elimination of safety hazards, and the systematic approach to the analysis and surveillance of operational safety for facilities and equipment

3 Management Structure

This section includes information about MARTA's organizational, roles and responsibilities, a general overview and history, the scope of MARTA services, and information about the integration of safety functions across the operations and maintenance departments.

3.0 Overview and Scope of MARTA Services

MARTA's transit service area includes a population of approximately 1.72 million in the City of Atlanta, Fulton, DeKalb, and Clayton counties. MARTA's trains, buses, and paratransit vans (MARTA Mobility) provided service for over 100 million passenger trips yearly. MARTA has its own police department with approximately 300 badge-wearing officers, making it the ninth-largest police department in Georgia.

3.0.1 General Overview and History of MARTA

Established by the Georgia General Assembly under the Metropolitan Atlanta Rapid Transit Authority Act of 1965, MARTA was created to plan, construct, finance, and operate rapid public transit in the metropolitan Atlanta region. First envisioned to service the five core counties of the Atlanta region, only DeKalb and Fulton counties, including the City of Atlanta, agreed to a 1% sales and use tax; and, since 1971, these jurisdictions have defined MARTA's boundaries. MARTA has grown to become the ninth largest provider of public transportation in North America.

After purchasing the privately owned Atlanta Transit System in 1972, MARTA began operation of its bus service in 1972. Through the 1970's, MARTA received grants from the federal government for planning, design, land acquisition and construction of a rapid rail system. The effort bore its first fruit on June 30, 1979, when the East Line began operating between Avondale and Georgia State Station, marking the start of MARTA's combined bus and rail service.

That same year, construction began on the Airport rapid rail station, one of many rail construction projects during the 1980's. By the end of 1982, Peachtree Center, West End, Arts Center and Midtown stations were completed. In December 1984, five new stations opened, including Lindbergh Center, Lenox, Brookhaven, Oakland City and Lakewood/Ft. McPherson. In August 1986, East Point Station opened and a little more than a year later, Chamblee Station began revenue service and served as the temporary end of the Northeast Line. The expansion continued through the early 1990's, with Bankhead Station opening in December 1992, and a new eastern terminus at Indian Creek Station, the first time the rail line went beyond the I-285 perimeter, opening in June 1993.

By June 1996 MARTA had completed more than 20 other major projects, including the North Line, the new Perry Boulevard compressed natural gas (CNG) bus facility, new Ride Stores, various Intelligent Transportation Systems (ITS) projects, escalator rehabilitation, mid-life overhaul of some railcars, and deployment of automatic train announcements. The new seven-mile North Line expanded to include Buckhead, Medical Center, and Dunwoody Stations, and represented the first time in MARTA's history that a line segment spanned all three funding jurisdictions.

In the late 1990's, MARTA focused on transit's link to community development to create an alternative to highway congestion. A partnership with BellSouth created the Lindbergh Transit Oriented Development (TOD), a live, work and play community. Centered on the

rail station, it was the largest multi-use development of its kind in the United States at the time.

By the end of 2000, MARTA had opened two new rail stations on the North Line, Sandy Springs and North Springs. In April 2001, the Laredo Garage Compressed Natural Gas (CNG) Facility opened, providing more capacity for a bus fleet that was nearly half CNG powered. In 2006, MARTA joined with the Atlanta Regional Commission and the Georgia Regional Transportation Authority to create the Transit Planning Board (TPB), which seeks to create the next regional plan for expanding and funding public transportation for the entire Atlanta Region.

Today, MARTA is the flagship provider of rail, bus, and paratransit service in the metropolitan Atlanta area.

(Please see the complete history of MARTA and other MARTA facts at www.itsmarta.com.)

3.0.2 Scope of Transit Services

3.0.2.1 Rail System Stations

MARTA's Rail System consists of 318 cars, 38 stations, 104 miles of mainline track in both directions and includes pocket, crossover, and bypass track, and 3 rail yards (Avondale Yard, South Yard, and Armour Yard), and is comprised of subway, elevated, and at-grade rail sections. There are two main and two branch rail lines. The main Northeast-South and East-West Lines cross, grade separated, at the Five Points Station. These lines are operated independently, but are linked through a single-track, interline connector, for non-revenue service between Garnett and Georgia State Stations. Branch lines include the Proctor Creek Line, which extends from Ashby Station on the East-West Line to the Bankhead Station and Turnback Track, and the North Line, which splits from the Northeast-South Line between Lindbergh and Lenox Stations and serves Buckhead, Dunwoody, Sandy Springs, and North Springs Stations. Rail Services is responsible for the safe and efficient operation of all rail car movement on the MARTA rail system. It is also responsible for the Rail Services Control Center. The average rail ridership per day is approximately 230,000. MARTA rapid rail transit trains operate over exclusive right-of-ways at up to 70 miles per hour, with an average of 30 miles per hour including station stops. The rapid transit structure and stations are of functional and aesthetic forms, appropriate for topographical and developmental conditions along the corridors served. Service runs seven days a week and approximately 21 hours per day.

3.0.2.1.1 Track and Right-of Way

MARTA's rail right-of-way includes at-grade, open-cut, subway, and elevated track structures. Track includes the two running rails, as well as the contact or third rail that transmits traction power to trains. These rails are supported by several different types of track structure, including standard tie and fastener construction with rock ballast, as well as direct fixation track wherein concrete forms the track base. In many locations, MARTA's right-of-way extends beyond the immediate track area to include passenger stations, systems-related buildings and facilities, and access points.

MARTA is the sole owner of all right-of-way on which its rail services operate, and does not share track with any other passenger or freight rail system.

3.0.2.1.2 Stations

MARTA's rail stations vary between subsurface, at grade, and elevated construction with multiple entry/exit points to street level. Additional exits, escalators, stairs and elevators provide vertical circulation between street, fare collection and platform levels. Some stations have adjacent parking facilities, pick-up/drop-off areas and/or bus pull-in areas to accommodate patrons arriving by automobile or by bus. Walkways are provided from surrounding streets, bus bays located at the station and between parking facilities and station entrances. While station configurations are not identical, most station elements are standardized for economy and ease of use, and help to establish an identity for the system as a whole.

MARTA has added an Office of Vertical Transportation under the new management structure to address all issues concerning escalators and elevators in rail stations. QEI certification of employees in this group along with station inspectors, policies and procedures, and the rehabilitation of all vertical transportation support healthy system safety performance in the stations.

3.0.2.1.3 Vehicles

The MARTA rail car fleet is currently composed of three different classes of married pair rail cars:

- 310 class (98 active cars, car numbers 101-200 built by Franco-Belge, 1979- 1982; refurbished in 2009).
- 311 class (120 active cars, car numbers 201-320, built by Hitachi, 1984-1987; refurbished in 2009).
- 312 class (100 active cars, car numbers 601-702, built by Breda, 2001-2005).

MARTA contracted with Alstom to rebuild 98 of the 310 class cars and all 311-class cars (218 rail cars in total). The rehabilitation was completed on February 23, 2009.

Table 1: Map of MARTA Rail System

3.0.2.2 Bus System and MARTA Mobility

The MARTA Bus System provides for the daily transport of passengers on a fixed route bus system. MARTA operates approximately 559 buses in Fulton, DeKalb, and Clayton counties and the City of Atlanta. The combined fleet travels over 30.1 million miles annually on 105 bus routes, including special events. Bus Transportation operates clean diesel buses and clean-fuel CNG buses. It includes three Bus Facilities that house, service, and dispatch buses: Perry, Laredo, and Hamilton. MARTA buses operate weekdays from approximately 4:00 a.m. to 1:58 a.m. and until 1:58 a.m. on weekends and holidays. Bus schedules may vary by neighborhood. In addition, the Office of Bus Transportation is responsible for the Bus Communications Center that serves as the

critical 24-hour communication link between all buses and operations. The Communication Center includes the Intelligent Transportation System (ITS) component that provides the Automatic Vehicle Locator (AVL) System, the Automatic Passenger Counter (APC) System, and a direct link to the Georgia Department of Transportation (GDOT).

MARTA Office of Mobility is an advance-reservation program that provides Americans with Disabilities Act (ADA) complementary paratransit services to eligible persons with disabilities who are unable to board, ride or disembark from an accessible vehicle on MARTA's regular Bus or Rail services. Service is provided with special lift-equipped vans on a curb-to-curb and, by request, origin-to-destination shared-ride basis. The service is offered on the same days and hours as regular Bus and Rail Service, and is restricted to an ADA-designated service area within Fulton, DeKalb, and Clayton counties along a 3/4 of a mile corridor on each side of all fixed bus route and in a three-quarter mile radius of all Rail Stations. Service hours are from 5:00 a.m. to 12:30 a.m., seven (7) days a week, including holidays with some exceptions. Personal Care Attendants, authorized by a medical professional, may travel with the disabled patron at no cost.

3.0.3 Physical Plant

3.0.3.1 Office of the Integrated Operations Center

The Integrated Operations Center brings together our central communications groups with a focus on improving services we provide to more than a half million riders of our system daily. The IOC was designed to position MARTA to broaden its reach in terms of creating an integrated transit network with capacity to serve the entire Atlanta region. The IOC is currently home to Bus Communications and Rail Control Center staff personnel. The center will also bring aboard MARTA Police Communications and Mobility Dispatch Operations in the future completing a coordinated multi-model plan to provide transportation solutions for the Atlanta region.

3.0.3.2 Rail Control

Located at Chamblee Station on the Northeast Line, housed at the Integrated Operations Center (IOC) Rail Control is a 24-hour group responsible for dispatching trains, monitoring train movement, and ensuring the integrity of rail system facilities. To accomplish these tasks, the Rail Control initiates corrective action in response to alarms that may affect rail system integrity and safety, controls traction power sections, and responds to fire alarms and equipment problems reported by voice communications and by a Supervisory Control and Data Acquisition (SCADA) system. With over 8,000 monitoring and over 3,000 control points, the SCADA system is used for actively observing certain equipment including traction power, train control, fire detection, intrusion, control panel malfunction, Synchronous Optical Networking (SONET) alarms, Pulse Control Modulation (PCM) alarms, lighting, tunnel fans, escalator status, uninterruptible power supplies (UPSs), and auxiliary power in substations.

In 2017, the IOC came on-line housing Rail Control and Bus Communications initially with plans to add MARTA PD dispatch operations in 2018.

3.0.3.3 Bus Communications

Bus Communications, located at the Integrated Operations Center, operates twenty-four (24) hours a day, seven (7) days a week monitoring, recording, and tracking buses for operational and security issues or concerns using five Motorola Computer-Aided Dispatch

(CAD) radio consoles. MARTA Bus Transportation also coordinates its services with those in Gwinnett County Transit and Cobb Community Transit. Bus Communications also coordinates with the Rail Control and Mobility Services in the event of emergencies or to facilitate inter-modal service from the IOC.

3.0.3.4 Police Communications Center

Located across the street from Edgewood-Candler Park Rail Station, the Police Communications Center (PCC) is a 24-hour facility responsible for monitoring and responding to calls via telephone and radio, and dispatching police officers to provide for the security of MARTA patrons, employees, and facilities.

3.0.4 Operations

3.0.4.1 Rail Operations

Rail Operations includes the Offices of Rail Transportation, Rail Car Maintenance, Vertical Transportation, Maintenance of Way, and Facilities.

Rail Operations is responsible for the following functions:

- Safe and efficient operation and maintenance of all rail car movement on the MARTA rail system
- Operation of the Rail Services Control Center
- Providing rail cars in sufficient quantities to meet the daily service milestones established by the Authority
- Providing a safe, reliable and sanitary infrastructure and operating system for the Authority's internal and external customer
- Providing management support for various systems critical to Operations

3.0.4.2 Maintenance of Way

The Office of Maintenance of Way is responsible for managing the maintenance programs for the Authority's traction and auxiliary power sub-stations, automatic train control, and the inspection and repair of track and track structures. The office is also responsible for right of way and maintenance, inspection, and for repairing The Authority's operating, support, and administrative facilities. The department focuses on maintaining the safety and reliability of wayside and applies generally accepted standards of maintenance in providing safe, reliable, operating systems throughout the transit system for our internal and external customers. Maintenance of Way is committed to MARTA's strategic priorities and endeavors to meet those objectives and standards through the combined efforts of the Director and the following three offices:

1. Electrical Power and Equipment
2. Automatic Train Control
3. Track and Structures

3.0.4.3 Bus Operations

The Bus Operations is made up of the Offices of Bus Transportation, Bus Maintenance, and Mobility, and is responsible for the overall management and coordination of MARTA's bus transportation and maintenance functions. It manages the budget, staff, and equipment necessary to provide safe, reliable, and customer-friendly bus services.

MARTA Mobility is under contract with MV Transportation. MV Transportation is responsible for the MARTA Mobility Services and Maintenance of the Mobility vehicles.

Mobility is specifically responsible for directing and coordinating the operations and functions of paratransit and special services. It meets service demands in compliance with the Americans with Disabilities Act (ADA), and works with community outreach programs to provide accessible transportation for the mobility and visually impaired, as well as those with cognitive disabilities.

3.0.4.4 Facilities

MARTA's maintenance facilities include maintenance shops and yards, bus repair and storage facilities, a heavy repair facility, bus stops and bus loops in rail stations, administrative buildings, storage buildings, park/ride lots, and miscellaneous maintenance and repair shops. Routine and scheduled preventative maintenance, cleaning, service and inspections, as well as minor repairs and component replacement, are performed at the Avondale Yard for the East Line, Perry Garage for West Line, the South Yard for the South line and the Armour Yard for the North Line. Major rehabilitation and system configuration projects are also performed at the Armour Yard facility.

Bus maintenance facilities are housed primarily in the three main fixed route garages, Perry, Laredo, and Hamilton, and the MARTA Mobility garage, Brady.

3.0.4.5

3.1 Integration of Safety Function

Safety is the responsibility of all MARTA personnel. Management of safety programs resides with each director and manager, with oversight from the Department of Safety and Quality Assurance, which also provides subject matter expertise, monitors compliance with regulatory requirements, and oversees program development, preparation, and enhancement.

3.1.1 Department of Safety and Quality Assurance

DSQA includes the Office of Safety and the Office of Quality Assurance and Configuration Management (QACM), and is responsible for developing and implementing a comprehensive safety program in accordance with federal, state, and local oversight guidelines and requirements. The Internal Safety Auditor responsible for ensuring compliance with FTA and GDOT is a member of this department. DSQA may suspend any unsafe or unreliable operations and activities at any time to protect passengers, employees, property, facilities, and the general public, the. A current DSQA organizational chart is attached to this document as Appendix C.

The Office of Safety ensures that a safe, reliable, and secure environment is available for patrons and employees through process improvement, statistical methodologies utilization, hazard identification and resolution, risk assessment, safety and security certification, waste reduction, instruction/education and best practices implementation. The Office's System Safety Programs branch is responsible for managing and monitoring MARTA's compliance with applicable regulatory requirements, while the Accidents/Incidents and Investigations branch manages the processes identified in the Accident/Incident Investigation Procedure (A/I and I Procedure) for all modes of transportation at MARTA and employee injuries.

The Quality Assurance branch of QACM supports the Authority's operations and capital projects by developing, implementing, maintaining, and monitoring activities outlined in the Quality Assurance and Testing Program Plans. The Quality Assurance Program Plan ensures that assemblies, structures, and systems of vehicles, equipment, and facilities are designed, engineered, manufactured, installed, and maintained in accordance with specified contractual, industry, and government requirements.

The Quality Assurance branch also implements a comprehensive Testing Program. This includes quality control, system evaluations, critical performance measures, and testing of all new and rehabilitated facilities and systems for compliance with MARTA standards and compatibility with the existing system. The Testing Program Plan details how the branch shall provide comprehensive test activities, analysis, recommendations, and conclusions reflecting the performance levels of critical areas of operation impacting customer service and perception.

The Configuration Management branch of QACM provides a process model to relevant business units within the Authority on identifying, controlling, maintaining, and verifying the versions of all configuration items, their attributes, and relationships. These relationships include, but are not limited to, change management, release management, requirements management, records management, and document/ library control.

3.1.2 Department of Police Services

The MARTA Police Department (MPD) provides police services to MARTA patrons and facilities, as well as protection and security for all MARTA assets, based upon accepted law enforcement, system security and emergency management standards. The Department applies these standards while upholding the laws of the state of Georgia, maintaining order, and enforcing MARTA rules. Using both sworn and unsworn personnel, the office provides the Authority, its customers, and its employees with a full service police agency dedicated to reducing actual crime and improving the perception of crime on the system, thereby maintaining current riders and attracting new riders to the system. MPD is responsible for the overarching security program for the Authority to include cyber security, corporate security, and emergency management. The MPD manages the MARTA Emergency Operations Center Program, Mobile Command Vehicle, and also develops and maintains MARTA's *System Security Plan* (SSP) and *Security and Emergency Preparedness Plan* (SEPP) which includes SSI procedures, the Authority-wide Continuity of Operations Plan (COOP) and Emergency Operations Plan (EOP).

3.1.3 **Safety Committees**

Safety Committees include:

Safety Committee	**Participants**	**Purpose**
GM/CEO Safety Policy Committee Meets Quarterly or at discretion of GM/CEO	General Manager/CEO Executive Management Team Members Representatives of the Amalgamated Transit Union Local 732 Office of Safety	• To support the *System Safety Program Plan (SSPP)* and provide guidance to overall safety efforts • Monitor compliance to *SSPP* directives and policies • Facilitate the Safety Award Program • Provide final resolution to safety critical issues presented by departmental General Safety Committees
Joint Safety Committee Meets monthly	MARTA management Representatives of the Amalgamated Transit Union Local 732 Office of Safety	• To serve as the liaison for the GM/CEO Safety Policy Committee and the General Safety Committees
General Safety Committees Meets monthly or as needed to resolve critical safety issues	Operations Directors that ensure cross-functional, level safety committees comprised of directors, supervisors and line personnel are established at office and branch levels, with appropriate participation by represented and non-represented personnel.	• To support the SSPP • Provide guidance to overall • safety efforts • Discuss and uphold safety goals • Implement and monitor safety action plans • Review safety training for their areas • Review accident/incident • statistics to identify corrective actions • Ensure compliance with safety rules and regulations • Review hazards and trends to reduce occurrence • Conduct safety inspections • Report safety accomplishments and/or recommendations to the Joint Safety Committee
Unit/Shop Level Safety Committees	Monthly	• To foster a proactive approach to safety

3.2 Lines of Authority for Safety

The current System Safety Policy defines the lines of authority for safety. This policy supports the General Manager/CEO's System Safety Policy Statement, authorizing DSQA to develop and maintain this SSPP and any necessary supplemental system safety policies or procedures.

DSQA facilitates and supports system safety throughout MARTA, working with all departments effectively implementing the SSPP.

3.2.1 MARTA Leadership

MARTA's general management organization was revised in 2013 to reflect the new leadership including a "C-Suite" senior management staff consisting of a Deputy General Manager, Chief Administrative Officer, Chief Financial Officer, Chief Operations Officer, Chief Counsel, and Chief of Staff. Other levels of senior management are aligned with supporting operational areas that enhance the safety component throughout the Authority.

The current MARTA General Management organizational chart is located in Exhibits D.

3.2.1.1 Board of Directors

A 12-member Board of Directors governs MARTA. Ten members represent the City of Atlanta, Fulton County, and DeKalb County. One member represents each the Georgia Building Authority and Georgia Regional Transportation Authority. The Board is briefed regularly by the Executive Management Team and is active in supporting all major projects at MARTA. The Board of Directors also contributes a Senior Liaison to the Operation and Safety Committee.

3.2.1.2 General Manager/CEO

The Office of the General Manager/Chief Executive Officer is the directing and coordinating mechanism for all MARTA activities. It is responsible for supporting the Board of Directors, including coordinating preparation for Board meetings, as well as directly overseeing the following Departments: Safety & Quality Assurance, Internal Audit, Diversity & Inclusion.

3.2.1.3 Deputy General Manager (DGM)

The Office of the Deputy General Manager oversees the following Departments: Planning, Police, Technology, Capital Programs & Development, Human Resources, Vertical Transportation, & Facilities.

3.2.1.4 Chief Legal Counsel

The Chief Counsel provides legal services and support as needed to the Authority's Board of Directors and staff units with the support of General Counsel and other outside counsel. The Department provides general legal support for the Authority, including matters such as real estate acquisition and disposition, review and drafting of contract documents, advice and counsel with respect to contract award and administration, and legal representation of the Authority in the defense, negotiation, mediation, arbitration and litigation of claims.

3.2.1.5 Chief Financial Officer (CFO)

The Chief Financial Officer oversees the following Departments: Finance and Contracts & Procurements. The Authority's KPI's feed into this department as a reporting function

provided to the Board of Directors. The CFO is also a liaison to the Business and Finance Committee.

3.2.1.6 Chief Operations Officer (COO)

The Chief Operating Officer overseas the following Departments: Rail Operations, Bus Operations, Mobility Operations.

3.2.1.7 Chief Marketing & Communications Officer

The Chief Marketing & Communications Officer oversees the following Department: Communications & External Affairs.

3.2.1.8 Chief of Staff (COS)

The Chief of Staff overseas the following Department: Transit Oriented Development (TOD).

4 Plan Review and Modification

This section describes the *System Safety Program Plan* review and update process.

4.1 Annual SSPP Review

The AGM of Safety and Quality Assurance is responsible for initiating and leading the process for the annual review and revision of the SSPP for MARTA.

The review process will determine the current suitability of the SSPP and focus on:

- Updates in accordance with any significant changes to the Authority's management organization structure and/or system characteristics.
- Changes to processes, policies, or procedures that affect system safety are considered triggers and require action on the part of the respective stakeholders in conjunction with the AGM of Safety and Quality Assurance for the purpose of identifying, prioritizing, and mitigating safety hazards.
- Compliance to the latest revision of the Federal Transit Administration, Code of the Federal Register Rule, *49 CFR Part 659: Rail Fixed Guideway Systems; State Safety Oversight.*
- Compliance to the latest revision of the Georgia Department of Transportation, State Safety Oversight Agency's Standard, the *Georgia Program Standard for Rail Transit Safety and Security Oversight.*

4.2 SSPP Control and Update Procedures

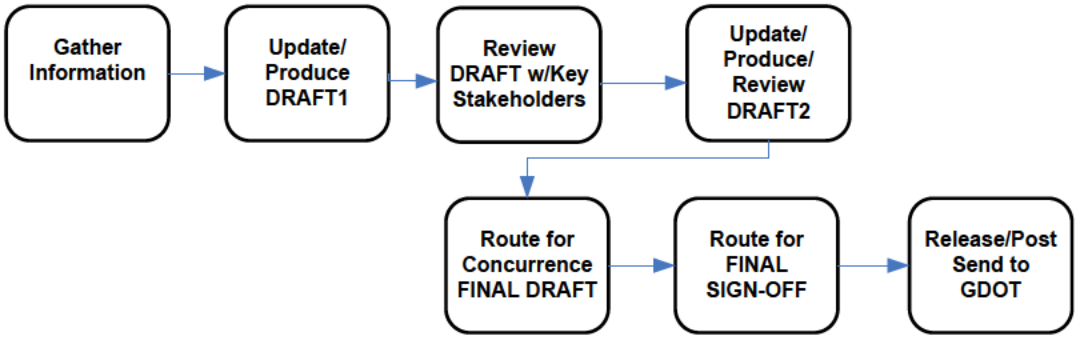
The current controlled version of the SSPP is posted on the Authority's intranet site, MARTAnet, and on the Office of Safety internal webpage. All Executive Team Members (EMT) and Senior Directors are provided with copies of the current fully executed and GDOT accepted SSPP. In addition, an Authority-Wide email is released to MARTA employees announcing the location of the most recent on-line version of the SSPP on MARTAnet, other departmental policies and procedures.

The document's disclaimer statement informs users of the control parameters:

The information contained in the SSPP may change without notice, and may have been altered or changed if you have received it from a source other than MARTA's Office of Safety and/or if the document has been printed. Any printed copy is obsolete or uncontrolled unless verified against the controlled copy on MARTAnet.

4.2.1 Update Process

The following process is used to develop and incorporate revisions to the SSPP that reflect changes in departmental practices and in compliance with federal regulations. The AGM of DSQA will appoint staff responsible for the revision and update process.



Process Task	Description
Content Gathering	Review existing policies, procedures, bulletins and presentations noting possible areas of change in areas such as Standard Practices and State and Federal regulations. Communicate with stakeholders and subject matter experts to gather any existing material and review knowledge areas.
Create First Draft	Based on the information provided during the Content Gathering phase, a revised first draft of the SSPP is created.
Review First Draft with Content Providers	Document is provided to the identified reviewers and Directors. The First Draft (D1) review serves two (2) purposes. 1. Staff can note specific changes in the existing document. 2. Identify specific areas that will require updates and/or must be created as new. 3. Each Content Provider will return the .doc file with their changes or scan and returned marked up version of section that require changes to the Office of Safety. All input is saved for historical purposes in SharePoint.
Create Second Draft	Based on the first draft review changes and interviews, the Office of Safety edits and produces the SSPP Draft 2.
Conduct Reviews	Provide the second draft for review. This includes a page-by-page review of the document with System Safety Programs Manager and Safety Internal Audits. All changes and are documented and action items are assigned as needed. Draft 2 is shared with Directors during this phase, which provides opportunity for review, changes, and concurrence.
Create Final Draft	All issues from the Authority and reviews to date are resolved and the documentation is edited for a final time. A concurrence form is prepared to route to the appropriate AGMs for sign-off.
Conduct Acceptance Review	Prior to final delivery, the final document is provided for Acceptance Review by General Management and the AGM of Safety and Quality Assurance. Signatures obtained.
Final Changes and Delivery	Delivery of final hardcopy to Management and electronic copy to GDOT/SSO as required.

4.3 SSPP Review and Approval by the State Safety Oversight

The annual review of the SSPP consists of contacting stakeholders within each department to solicit new and/or changed practices within their operation. The changes

are then combined by the Office of Safety for incorporation into the new edition of the SSPP and are stored on the SharePoint site for future reference. The Office of Safety will review the changes to verify the MARTA SSPP accurately reflects the Authority's practices and current processes, and is in compliance with the governing document(s). Using the *SSPP Internal Review Comment Tracking Form* or other written methods of communication, comments will be documented and communicated back to the original stakeholder.

Outside of the regularly scheduled review period, MARTA will identify situations that merit revision of its SSPP and notify GDOT/SSO of proposed revisions. MARTA will adjust the Plan as appropriate and submit the revised document to GDOT/SSO for review and acceptance.

The annual revision of MARTA's SSPP will be submitted to GDOT/SSO by January 31. If the SSPP is adequate as is and no revision is necessary MARTA will submit in writing to GDOT/SSO a statement (in memorandum format) to that effect.

If a revision is necessary, the GDOT Program Standard Revision 9 states: "In the event that MARTA / CITY conducts its annual SSPP review and determines that an update is necessary for the year, MARTA / CITY will submit a revised SSPP to the GDOT SSO Program Manager by January 31. As appropriate, referenced materials affected by the revision(s) must also be submitted with the SSPP." GDOT will then review the revised SSPP and respond to MARTA within 30 days.

Additionally, changes may be requested by GDOT/SSO to the SSPP based on reviews or audits from internal or external sources that compel safety or security relevant edits outside of the normal review cycle.

4.4 GDOT On-Site Triennial Review

The Georgia Department of Transportation State Safety Oversight Agency must conduct an on-site triennial assessment of MARTA's implementation of its rail safety and security plans. At the conclusion of a triennial review, a report is issued containing findings and recommendations resulting from that review, including an analysis of the effectiveness of the reviewed plan and a determination of whether it should be updated. The State will submit its final triennial review reports to the FTA as part of the State's next annual submission.

4.4.1 Pre-Review Activities

Six months before a triennial review is due to occur, GDOT/SSO will notify MARTA and formally propose the dates for the review. At this early stage, GDOT and MARTA will simply reserve the agreed-upon dates. After the review dates have been reserved, GDOT will prepare a general schedule for milestones in the triennial review process. Milestones include establishing the review team, confirming and reviewing relevant documentation, developing a checklist, communicating with MARTA, refining the on-site agenda, conducting the review, issuing draft and final reports, and following up. At least thirty (30) days before the review, the GDOT/SSO will provide its checklist to MARTA. MARTA will confirm the detailed review agenda seven days in advance of the first agenda item.

4.4.2 On-Site Review

GDOT/SSO will conduct the on-site triennial review using the checklist transmitted to MARTA. Review activities may include interviews, document and record reviews, and first-hand observations of relevant activities, spot checks, and visual examinations. At the

conclusion of the on-site review, the evaluation team will be prepared to conduct an exit meeting with MARTA to provide an overview of the major findings, observations and concerns.

4.4.3 Post-Review Activities

Within 90 days of completing the on-site review, GDOT/SSO will transmit a draft report to MARTA's point-of-contact, and attach the completed review checklist. This draft report addresses whether:

- The reviewed plan is an integral part of MARTA's overall management, engineering, operating, and maintenance practice.
- The plan is reviewed at least annually.
- MARTA regularly monitors compliance with its plan, including:
  - Identifying potentially serious conditions, hazards, threats and vulnerabilities and ensuring that methods to eliminate, control, or mitigate them are implemented.
  - Conducting investigations that follow adopted procedures and identifying deficiencies or areas requiring improvement.
  - Monitoring emergency preparedness programs as specified in the Plan and identifying deficiencies or areas requiring improvement.

The GDOT/SSO will transmit draft reports to applicable MARTA safety or security point-of-contact via email no later than 90 working days after the conclusion of the on-site review. MARTA will have a minimum of 30 days to respond to the draft report. Within 30 days of receiving the response, GDOT will make adjustments to the draft, at its discretion, and issue the final report to the attention of the chief executive. GDOT/SSO will also transmit the final reports of the three-year safety and security reviews by March 15 to the FTA as part of the Annual Submission Process.

Corrective action plans submitted by MARTA to address review findings are reviewed, approved, and tracked through to implementation.

4.5 SSPP Change Management

The Office of Safety is responsible for the update and issuance of the *SSPP*, who in conjunction with the Internal Safety and Security Auditor will circulate and review the SSPP per the update and review process described in the *SSPP Plan Review and Modification Procedure* and address any corrective actions against the SSPP. The AGM of Safety and Quality Assurance will facilitate routing to the COO and the GM/CEO for review and final signature. The signed document is prepared for delivery to the GDOT/SSO by the AGM of Safety and Quality Assurance and posted to MARTAnet.

5 SSPP Implementation – Tasks and Activities

5.0 Overview

This section describes the tasks and activities performed and/or supported by the Office Safety, in conjunction with other departments that serve to implement the SSPP, such as inspections, audits, design reviews, observations, investigations, corrective action monitoring, and technical assistance.

5.1 System Safety Function

The General Manager/CEO has delegated authority to the AGM of DSQA to develop, implement, and maintain the SSPP in accordance with applicable federal and state regulations and guidelines. The Authority, along with the Office of Safety, develops policies, procedures, and plans in direct support of the SSPP.

The Office of Safety is staffed with specialists relative to specific areas. The Office of Safety organizational chart may be found as part of DSQA in Appendix E. The staff interacts with all MARTA departments at all levels of the organization.

The AGM of Safety and Quality Assurance and the Office of Safety staff have the authority to direct corrective action when unsafe conditions or practices exist, up to and including the stoppage of work until appropriate corrective measures are taken. This action could include the interruption of revenue service if conditions warrant.

Staffing within the Office of Safety is in accordance with position classifications established by the Authority. Safety related positions are periodically reviewed for qualifications and are revised as appropriate prior to recruiting for vacant positions.

5.1.1 Methodology Used by the Office of Safety

The Office of Safety manages the implementation of the SSPP throughout MARTA using, but not limited to, the following methods, processes, and procedures:

- Internal Safety Audit Process
- Accident/Incident Investigations Standard Operating Procedure
- Hazard Identification and Resolution Process
- Safety Certification Process for extensions, major modifications and new projects
- Facility Inspections
- Rules/Procedures Review
- Safety Data Acquisition and Analysis
- Hazardous Materials Program
- Safety Committees

Programs and plans in direct support of the SSPP include:

- Hazard Management Plan
- Accident/Incident Investigations Procedure
- Construction Safety Plan

- Fire Life Safety Plan
- Environmental Safety Programs
- System Safety Certification Program Plan
- Internal System Safety Audits and Corrective Action Plans Procedure
- Systems Modification

MARTA utilizes qualified consulting firms for some environmental, safety, and industrial hygiene testing services.

5.1.2 Responsibilities of the Office of Safety

The Office of Safety is responsible for the implementation and maintenance of the SSPP and its supporting safety policies. The safety tasks of the staff ensure adherence to generally accepted industry standards and all applicable federal, state, and local regulations. In addition to System Safety, the Office is responsible for the following safety disciplines:

- Environmental Safety and Industrial Hygiene
- Industrial Safety
- Rail Operational Safety
- Bus Operational Safety
- Fire and Life Safety
- Construction Safety
- System Safety Engineering

5.1.3 Safety Task Matrices

The Office of Safety interfaces with MARTA departments in the development, implementation, and maintenance of policies, procedures, and programs in support of the SSPP, and established safety goals and objectives. The Office of Safety provides technical assistance to other MARTA departments in the areas of system safety, environmental safety, industrial safety, rail safety, bus and Mobility services safety, fire/life safety, and construction safety. Proper documentation of activities is maintained for internal and external review. A team approach is taken to ensure that all necessary safety tasks and responsibilities are met on a consistent basis. Provided are two matrices: **Office of Safety Tasks Responsibilities Matrix** (See Table 2) for activities performed by the Office of Safety; and the **Integrated Safety Task Matrix** (See Table 3) defining the safety responsibilities relative to the key processes.

Table 2: Office of Safety Tasks Responsibilities Matrix

SAFETY TASKS OF THE OFFICE OF SYSTEM SAFETY	Director Office of Safety	Manager of System Safety Programs	Manager of Operational Safety	Safety Operational Officers	Industrial Health Safety	Fire/Life Safety	Environmental Safety Inspector	System Safety Engineer	Environmental Safety	Construction Safety	Internal Audit	Data Analyst
Accident/Incident Investigation	P	P	P	P	P	P	S	S	P	P	X	X
Hazard Management	P	P	S	P	P	P	P	P	P	P	P/A	X
Facility Inspections	P	P	P	P	P	P	P	S	P	P	A	X
Maintenance Program Audits/Inspections	S	P	S	X	S	X	P	P	P	X	A	X
Rules/Procedures Review Process	S	S	S	A	S	S	S	S	S	S	A	X
Training and Certification	S	S	S	S	S	S	S	S	P	S	A	X
Configuration Management	RA	RA	X	X	X	S	X	P	S	S	A	X
Employee Safety Program	P	P	P	P	P	P	S	S	P	P	A	X
Safety Data Acquisition and Analysis	P	P	P	S	P	S	X	P	S	S	A	P
Hazardous Materials Programs	P	P	S	X	P	S	P	S	P	S	A	X
Contractor Safety Coordination	P	P	S	S	S	S	S	S	S	P	A	X
Procurement	RA	RA	RA	RA	S	S	X	RA	S	S	A	X
Drug and Alcohol Program	S	S	X	X	S	S	S	S	S	S	A	X
SSPP Update and Review Process	P	P	P	X	S	S	S	S	S	S	S	S
Emergency Response	P	P	P	P	P	P	S	S	P	P	A	X
System Modification	RA	RA	X	X	X	S	X	P	P	S	A	X
Safety and Security Certification	P	P	X	X	S	S	S	P	S	S	A	X

Key:

P = Primary Responsibility

S = Secondary or Support Responsibility

RA = Review/Approval

A = Audit Responsibility

X = Not Applicable.

Table 3: Integrated Safety Task Matrix

	Office of Safety	Office of QA and Configuration Management	MARTA Police	Mobility	Bus/Rail Transportation	Bus/Rail Maintenance	Architecture and Design Standards	Program and Contracts Management	Contracts, Procurement and Materials	HR / Learning & Development	Risk Management
SSPP Revision Process	P	P	P	S	P	P	S	P	P	P	S
Internal Safety Audits Process	P	S	S	S	S	S	S	S	S	S	X
Safety Data Acquisition and Analysis	P	S	S	S	S	S	S	S	S	S	P
Hazard Management Process	P	S	S	S	S	S	S	S	S	S	S
System Modification	P	S	S	S	S	S	P	P	S	S	X
Configuration Management/ Document Control	RA	P	S	S	S	P	P	P	S	S	X
Procurement	RA	P	RA	S	S	S	S	P	P	S	S
Safety and Security Certification Program	P	S	P	S	S	S	P	P	S	S	X
Rules/Procedures Review Process	P/RA	S	P	P	P	P	S	S	S	S	X
Training and Certification	RA	S	P	P	P	P	S	S	S	P	X
Compliance with Federal State and Local Safety Requirements	P	P	P	P	P	P	P	P	P	P	P
Contractor Safety Coordination	P	S	S	S	S	S	S	S	S	S	X
Drug and Alcohol Program	X	S	S	S	S	S	S	S	S	P	S
Maintenance Program Audits/Inspections	X	P	X	S	S	P	X	S	S	S	X
Facility and Equipment Inspections	P	S	X	P	P	P	S	S	X	X	X
Hazardous Materials Programs	P	S	S	S	S	S	S	S	S	S	S
Accident/Incident Investigations	P	S	P	P	P	P	X	X	X	S	S
Emergency Response	P	S	P	S	S	S	X	X	X	S	X

Key:

P = Primary Responsibility

S = Secondary or Support Responsibility

RA = Review/Approval

X = Not applicable

5.2 Safety Task Responsibilities of Other Departments

The operation and maintenance of MARTA requires continual safety activity throughout its operational life, including procurement of new systems, modification and/or rehabilitation of safety-critical equipment and facilities.

Refer to the System Safety Policy for additional safety tasks, responsibilities, and committees not outlined in this section.

The primary safety tasks and responsibilities of all bus, rail, and administrative and operational MARTA departments include the following:

- Establish safety goals and objectives in support of the MARTA Strategic Plan.
- Participate in MARTA's Drug and Alcohol Program as required.
- Conduct safety awareness programs to ensure that all employees understand the SSPP and supporting safety policies, programs, and plans.
- Establish and implement procedures for the safe operation of the transit system.
- Comply with applicable federal, state and local regulations, industry standards, and manufacturer's recommendations.
- Conduct, report, and investigate or participate in the investigation of accidents, incidents, and injuries as required by the Accident/Incident Investigations Standard Operating Procedures.
- Assist and participate in the internal safety audit process and external safety audits.
- Develop appropriate corrective action as required by internal safety audits, external safety audits, the hazard identification process, and accident/incident investigations.

5.2.1 Rail Transportation

The primary safety tasks and responsibilities of the Department of Rail Transportation are:

- Ensure that Rail Transportation staff adheres to established standard operating procedures, general orders, bulletins, and rules using Service Quality Superintendents.
- Partner with the Office of Learning & Development to ensure that appropriate technical training, certification, and biennial re-certification to all personnel as required based on job function.
- Ensure that proper safety and quality control practices are incorporated in day-to-day operations.
- Ensure that any safety and quality audits findings of the day-to-day operations are properly addressed and their appropriate corrective actions are implemented in a timely manner.
- Ensure that any safety accident investigations or incidents are properly addressed and their appropriate corrective actions are implemented as required per the *Accidents/Incidents Investigation Procedure*.
- Provide necessary mechanisms for reporting defects and hazardous conditions as required per the *Hazard Management Plan*.

- Coordinate with other MARTA departments in the notification process and implementation of emergency management procedures.
- Participate in emergency drills and exercises.
- Coordinate safety-related activities of the Rail Transportation staff and ensure compliance with the *System Safety Program Plan*.
- Maintain safety records for individual division employees relative to accidents and rules violations.
- Apply and maintain general safety practices daily with personnel in accordance with the *SSPP*.
- Provide data for statistical and trend analysis resulting from the Daily Service Review Conference Call.
- Alert MARTA Police to request emergency response from appropriate agencies (i.e. fire, police, EMS).
- Inform and communicate implementation of safety-related corrective actions.

5.2.2 **Railcar Maintenance**

The primary safety tasks and responsibilities of the Department of Railcar Maintenance are:

- Establish and maintain general safety committees in accordance with the *System Safety Policy*.
- Coordinate safety-related activities of the Rail Car Maintenance staff and ensure compliance with the *System Safety Program Plan*.
- Participate in the development of technical equipment specifications and procedures that address the system safety requirements.
- Monitor procurement practices to ensure that safety is not compromised in replacing safety-critical parts.
- Establish and implement procedures to assure that the rail car fleet is properly maintained and available in safe operating condition.
- Establish and implement appropriate maintenance inspections and repair programs.
- Ensure that any safety accident investigations or incidents are properly addressed and their appropriate corrective actions are implemented as required per the *Accidents/Incidents Investigation Procedure*.
- Maintain safety records for individual division employees relative to accidents and rules violations.
- Monitor the collection and disposal of waste (e.g., oils, parts washer solvents) to effect safe handling and minimize employee and environmental exposure to potentially hazardous products and materials.
- Works with the Office of Learning & Development to evaluate and update, as needed, training programs for Rail Car Maintenance personnel.
- Provide necessary mechanisms for reporting defects and hazardous conditions as required per the *Hazard Management Plan*.
- Participate in emergency drills and exercises.

5.2.3 Maintenance of Way (MOW)

The primary safety tasks and responsibilities of the Office of Maintenance of Way are:

- Ensure necessary procedures are in place and implemented for conducting maintenance activities safely and effectively.
- Ensure the safe operation and maintenance of traction power and auxiliary power systems, signaling and train control systems and equipment, and communication equipment.
- Ensure that proper inspections occur on structural systems (including aerial structures, tunnels, and stations) biennially to ensure strength and serviceability throughout the system.
- Monitor the performance of preventive maintenance efforts.
- Document and maintain records of inspections and maintenance work.
- Ensure that appropriate technical training and certification is provided to all maintenance staff.
- Ensure that revenue service related work is coordinated within Maintenance of Way and with Operations to complete work safely and efficiently without adversely affecting revenue service.
- Establish and maintain general safety committees in accordance with the *System Safety Policy*.

5.2.4 Facilities

The primary safety related tasks of the Office of Facilities are:

- Provide routine inspections of fire safety systems to maintain compliance with applicable NFPA guidelines as specified.
- Provide inspections and repairs to mechanical systems designed to manage air distribution and smoke control.
- Provide scheduled inspections and/or testing of fire doors/dampers.
- Provide routine inspections of Industrial Water Treatment Plants (IWTP)to minimize environmental impact to waste streams.
- Provide general overall inspections of equipment and facilities.
- Provide inspections and repairs of water based fire suppression systems to maintain compliance with NFPA 13 at applicable facilities.
- Provide inspections and repairs of waterless fire suppression systems to maintain compliance with NFPA 12A and NFPA 2001 at applicable facilities.
- Provide inspections and repairs for stationary fire pumps to maintain compliance with NCPA 20 at applicable facilities.
- Provide routine inspections of portable fire extinguishers as required to maintain compliance with NFPA 10.
- Maintain inspection records as required by the Authority having jurisdiction regarding fire safety, life safety, and environmental, underground storage tanks.

- Maintain safety records regarding on the job injuries or accident/incident investigations.
- Maintain updated Safety Data Sheets (SDS) for chemical usage and storage.
- Coordinate with the Office of Safety to facilitate fire drills.
- Provide routine maintenance of water fountains.
- Coordinate with the Office of Safety to remove asbestos containing material and to complete remediation.
- Provide routine inspections of eyewash equipment to maintain compliance with regulations at applicable facilities.
- Responsible for storage and removal of hazardous material and waste management at applicable facilities.
- Responsible for inspection of commercial trash compactors to maintain compliance with all ANSI Z 245.2 safety standards.
- Responsible for inspections and maintenance of pavement, railings, lot markings and signage, along with entrance and exits.
- Provide inspections and repair to interior electrical systems at applicable facilities.
- Heavy cleaning platform to platform in the right of way in rail stations.
- Cut and remove vegetation along the right of way at stations.

5.2.5 **Vertical Transportation (OVT)**

The primary safety tasks and responsibilities of the Office of Vertical Transportation are:

- Perform safety inspections on all of MARTA's elevator and escalator equipment located in the Authority's thirty-eight (38) MARTA Rail Stations, the MARTA Headquarters Building, Headquarters Annex and Maintenance Facilities.
- Instruct first line supervisors and MARTA Police Officers in the emergency evacuation of passengers from elevators and escalators.
- Witness and Verify Annual and Five-Year Safety tests on all elevators to meet ANSI A17.1 Code requirements.
- Ensure escalator brake torque readings are recorded and all escalator safety devices tested each month.
- Provide 24-hour per day, seven-day per week on-call safety coverage to investigate safety emergencies and issue required reports to the State Fire Marshall's Office, Chief Elevator Inspector.
- Assist the MARTA QA and Testing Branch, as needed.

5.2.6 **Bus Operations**

The primary safety tasks and responsibilities of the Department of Bus Operations are:

- Ensure that Bus Operations personnel adhere to the established standard operating procedures, general orders, bulletins, and rules.
- Establish and implement a pre-trip inspection program for all bus operators.
- Provide necessary mechanisms for reporting defects and hazardous conditions.
- Coordinate with the Office of Safety on system safety requirements.
- Establish and maintain general safety committees in accordance with the *System Safety Policy*.
- Provide data for statistical and trend analysis.
- Establish procedures that address alternative fuels safety.
- Works with the Office of Learning & Development to evaluate and update, as necessary, training programs for bus operators, supervisors, dispatchers, and bus communications personnel.
- Coordinate with other MARTA departments in the development of emergency management plans.
- Participate in emergency drills and exercises.
- Coordinate safety-related activities of the Bus Operations staff and ensure compliance with the SSPP.
- Maintain safety records for individual division employees relative to accidents and rules violations.
- Adhere to procedures related to alternative fuels safety. See Appendix B for additional information.
- Alert or Request an emergency response from the appropriate agencies (i.e. fire, police, EMS).

5.2.7 **Bus Maintenance**

The primary safety tasks and responsibilities of the Department of Bus Maintenance are:

- Ensure that Bus Operations (Transportation and Maintenance) personnel adhere to the established standard operating procedures, general orders, bulletins, and rules.
- Establish and implement procedures to assure that the bus, Mobility, and non-revenue fleet is properly maintained and available in safe operating condition.
- Establish and implement appropriate maintenance inspections and repair programs.
- Ensure that appropriate technical training and certification is provided to all bus maintenance personnel.
- Provide and maintain proper tools and equipment for the support of maintenance activities.
- Establish and maintain proper maintenance documentation in support of maintenance inspection activities.
- Ensure proper quality control practices are incorporated in day-to-day maintenance operations.
- Monitor the collection and disposal of waste (e.g., oils, parts washer solvents) to effect safe handling and minimize employee and environmental exposure to potentially hazardous products and materials.
- Monitor procurement practices to ensure that safety is not compromised in replacing parts.
- Participate in the development of technical equipment specifications and procedures that address the system safety requirements.
- Provide necessary mechanisms for reporting defects and hazardous conditions.
- Coordinate with the Office of Safety on system safety requirements.
- Establish and maintain general safety committees in accordance with the *System Safety Policy*.

- Provide data for statistical and trend analysis.
- Establish procedures that address alternative fuels safety.
- Works with the Office of Learning & Development to evaluate and update, as necessary, training programs for bus operators, supervisors, dispatchers, and bus communications personnel.
- Coordinate with other MARTA departments in the development of emergency management plans.
- Participate in emergency drills and exercises.

5.2.8 **MARTA Mobility**

The primary safety tasks and responsibilities of MARTA Mobility are to:

- Direct and coordinate operations and functions of Mobility and special services.
- Establish and implement a pre-trip inspection program for all Mobility operators.
- Meet service demands in compliance with the Americans with Disabilities Act (ADA) of 1990.
- Adhere to policies, standards, procedures, and practices that support safety compliance for the Authority.
- Utilize the Mobility Communication Center that serves as a 24-hour communication link between Mobility vans.
- Provide necessary mechanisms for reporting defects and hazardous conditions.
- Coordinate with the Office of Safety on system safety requirements.
- Establish and maintain general safety committees in accordance with the *System Safety Policy*.
- Evaluate and update, as necessary, training programs for Mobility operators, supervisors, dispatchers, and communications personnel.
- Coordinate with other MARTA departments in the development of emergency management plans.
- Participate in emergency drills and exercises.
- Coordinate safety-related activities of the Mobility Operations staff and ensure compliance with the SSPP.
- Maintain safety records for individual division employees relative to accidents and rules violations.
- Alert or Request an emergency response from the appropriate agencies (i.e., fire, police, EMS).

5.2.9 **Architecture and Design Standards (Engineering)**

The primary safety tasks and responsibilities of Architecture and Design Standards are to:

- Ensure that system safety principles are incorporated in concept, planning, design, architectural and engineering services, the procurement, installation and retirement/disposal of system-wide elements.
- Incorporate safety design principles into architecture and design criteria and guide specifications.

- Support the Office of Safety in the design review process.
- Support system safety design reviews of projects and with the Office of Safety.
- Support design services during construction.
- Apply scientific engineering and management principles, criteria, and techniques to achieve acceptable mishap risk, within the constraints of operational effectiveness and sustainability, time, and cost, throughout all phases of the system life cycle.
- Provide technical assistance and Systems Safety Engineering expertise to other MARTA departments.

5.2.10 General Engineering Consultants (GEC)

The Authority utilizes a General Engineering Consultant (GEC) to provide a wide variety of support services including:

- Project management
- Project definition and design
- Procurement and construction management
- Technical support
- Safety
- Quality Assurance

Each GEC is subject to the requirements of the SSPP and is required to develop their own Safety Program Plans that document their processes for compliance with all applicable requirements of this Plan. Also, the GEC is required to adhere to the MARTA Guide Specifications: Sections 013523 and 013526, which specify the requirements for Contractor safety and System Certification when appropriate. The GEC Safety Program Plans must be reviewed and approved by the Office of Safety. The Office of Safety also conducts periodic reviews of the GEC work practices to ensure compliance with the GEC Safety Program Plans and the SSPP.

Each GEC has staff dedicated to safety and quality assurance functions. These GEC staff work in cooperation with MARTA's Office of Safety and in many ways serve as an extension of the Office of Safety staff. GEC safety and quality assurance staff conduct a variety of activities in support of this plan, including:

- System safety and quality project design review.
- Safety and quality review of contractor/supplier submittals.
- Construction safety program inspections/audits.
- Construction and procurement quality inspections/audits.
- Safety certification and verification activities.

5.2.11 Project Management

The primary safety tasks and responsibilities of Project Management are:

- Monitor and coordinate actions necessary to ensure safety is incorporated in project-specific plans, designs, and negotiated agreements.

- Ensure through review, contribution and acceptance that systems are constructed in compliance with applicable building, mechanical, electrical, plumbing, and fire and life safety codes.
- Ensure outside contractors comply with Safety specifications in contracts
- Document and maintain records of safety related activities as related to project contracts.
- Ensure incorporation and compliance with configuration management standards on applicable projects and contracts.
- Collaborate with the Office of Safety on safety certification, and integrate the safety certification process into project management, as applicable.
- Participate as needed with general safety committees associated with programs and/or projects in accordance with the *System Safety Policy*.
- Monitor and coordinate actions necessary to ensure safety is incorporated in specifications, capital projects, and contracts.
- Include the Office of Safety in the review/update of the Authority's technical specifications for capital contracts.

5.2.12 **Human Resources**

The primary safety tasks and responsibilities of Human Resources are:

- Administer the C-Cure identification badge system with support from the Department of Technology.
- Develop job position descriptions that address safety-related restrictions and requirements.
- Develop and administer medical standards for specific job positions, as warranted and ensure that candidates for positions are capable of safely performing the tasks of these positions on a repetitive basis.
- Include a discussion of the Safety 1st Program in new employee orientation that includes where to find additional training on Hazard Management.
- Maintain appropriate documentation in personnel files.
- Assist in facilitating emergency/safety training to employees as appropriate.
- Administer and monitor MARTA's Drug and Alcohol Program.
- Establish and maintain General Safety Committees in accordance with MARTA’s System Safety Policy and participate as necessary in the GM/CEO Safety Policy Committee.

5.2.13 **Learning & Development**

The primary safety tasks and responsibilities of the Office of Learning & Development are to:

- Coordinate with the Office of Safety on training employees on the use of Safety 1st as an avenue for reporting identified hazards within the Authority, including what constitutes a hazard according to the FTA and GDOT.

- Train new mechanics and technicians to inspect, maintain, and repair MARTA's rail and bus and Mobility vehicles in a safe and effective manner.
- Establish or coordinate training programs in alternative fuels safety.
- Train and certify new rail operators and bus operators.
- Oversee and coordinate rail operator and bus operators training programs and practices.

5.2.14 Quality Assurance and Configuration Management

The Office of Quality Assurance and Configuration Management reports any safety issues identified while performing general quality assurance and configuration management activities to the Office of Safety for resolution.

Both functional branches within QACM shall establish and maintain proper documentation in support of configuration management, quality assurance, and operations support inspection and audit activities to ensure all non-conformities, risks and safety issues are accurately documented and reported.

5.2.15 Contracts, Procurement, Materials and Administrative Services

The primary safety tasks and responsibilities of Contracts, Procurement, and Materials and Administrative Services are to:

- Invite the participation and recommendations of the Office of Safety in the contract development, bid, and review process.
- Ensure that system safety is included in technical specifications, design criteria, and guide specifications and design reviews.
- Develop and maintain procurement practices to ensure compatibility with safety features and standards, designs, and procedures of existing MARTA procedures.

5.2.16 Technology Department

The primary safety tasks and responsibilities of the Department of Technology are to:

- Ensure that Technology staff adheres to established standard operating procedures, general orders, bulletins, and rules.
- Ensure that appropriate information technology training and certification is provided to all position as required based on job function.
- Establish and implement appropriate maintenance inspections and repair programs.
- Monitor and ensure employee Wayside certification.
- Participate and assist with the planning of emergency drills and exercises programs.
- Provide technical assistance for other business units.
- Support safety and emergency applications and systems.
- Provide IT security controls and training.

5.2.17 MARTA Police Department

The primary safety tasks and responsibilities of the MARTA Police Department are to:

- Participate, organize and coordinate with internal and external partners and stakeholders to plan emergency management related exercises.
- In coordination with bus, rail, mobility, and other internal partners to assist in the development of emergency response plans for MARTA. These plans are focused on strategic efforts to prevent, mitigate, respond to and recover from all hazards.
- Ensure police officers receive appropriate safety and related training to compliment security responsibilities.
- Develop, implement, and maintain the MARTA Security and Emergency Preparedness Plan (SEPP).
- Maintain the Emergency Management Function of MARTA and coordinate with other MARTA departments to ensure a safe and secure bus and rail transit system.

6 Hazard Management Process

6.0 Overview

Hazard management is designed to eliminate or mitigate the risk of mishaps through a systematic approach of hazard analysis, risk assessment, and risk management. In connection with this SSPP, the MARTA *Hazard Management Plan* documents MARTA's efforts to comply with FTA and GDOT Safety and Security Oversight standards for hazard management and tracking.

This section defines the hazard management activities performed throughout the life cycle of any system, upgrade, modification, resolution of deficiencies, or technology development. When properly carried out, these activities ensure the identification and understanding of all hazards and their associated risks so they can be eliminated or reduced to acceptable levels.

The effective and timely resolution of hazards is critical to achieving an optimum level of safety. MARTA's hazard identification and risk assessment process, contained in the *Hazard Management Plan,* is based on principles set forth in *MIL-STD-882 Department of Defense Standard Practice for System Safety*, and adapted to MARTA's unique transit safety situation.

A hazard is defined as any real or potential condition that can cause injury, illness, or death to personnel, patrons, or the general public; damage to or loss of a system, equipment or property; or damage to the environment. A more detailed hazard classification scheme, known as Hazard Identification and Risk Assessment (HIRA), is included in the *Hazard Management Plan*.

6.1 Hazard Management Process – Activities and Methodologies

The hazard management process is accessible to personnel at all levels of the organization. Any employee should report identified hazards directly by using the Safety 1st online reporting database, the Safety Hotline, or through their supervisor.

Additional sources of hazard identification include the following:

- Inspections
- Internal Audits
- Accident/Incident Investigations
- Customer Complaints
- SOO Audits
- Police Reports
- Equipment Failures

6.1.1 Office of Safety Responsibilities for Hazard Management

The Office of Safety manages, supports, and coordinates the various hazard management activities performed by departments, offices, and branches across MARTA, as well as for contractors and suppliers as applicable.

As part of these combined hazard management efforts, the office shall:

- Review, evaluate and approve submitted hazard identification and risk assessments.
- Maintain an active inventory of completed assessments.

- Maintain a comprehensive hazard tracking log submitted to senior management.
- Monitor and evaluate the implementation of barriers and controls.
- Assist MARTA departments with investigation and analysis of hazards.
- Participate in the review of hazard analysis during safety meetings.
- Review the analysis process and results for new designs, and modification to existing infrastructure and rolling stock.
- Develop and implement a hazard identification and risk assessment training program.
- Communicate any unacceptable hazard, as defined in the matrix contained in the *Hazard Management Plan*, to relevant external agencies as soon as possible.
- Provide investigation status reports to relevant external agencies according to SSPP reporting requirements.

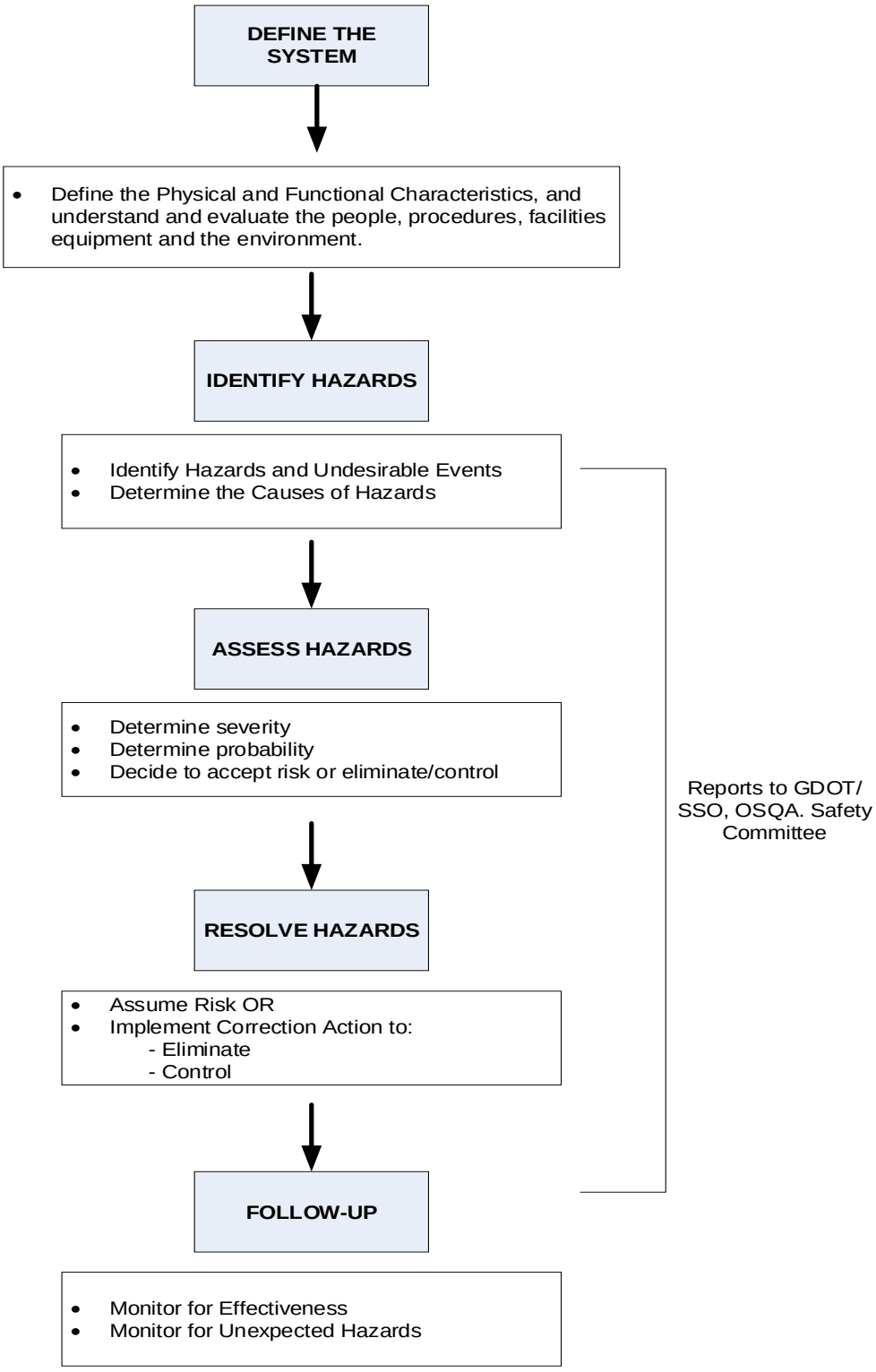
6.1.2 Accident/Incident Investigations and Hazard Management

As standard practice during the course of its investigation, the Operational Safety Branch of the Office of Safety may perform a hazard assessment in accordance with the principles set forth in the *Hazard Management Plan*. Management reviews the assessment and the System Safety Engineer updates the Hazard Tracking Log. All resulting unacceptable hazards are reported to GDOT following the procedures outlined in this document.

6.1.3 Safety Inspections and Hazard Management

The Office of Safety or its General Engineering Contractor (GEC) designee conducts periodic system safety inspections of facilities and equipment to identify hazards on a proactive basis. Incident reports, injury and illness reports and workers' compensation databases are reviewed by the safety organization as another method of hazard identification. This data is analyzed on an on-going basis to identify trends or significant hazards.

Table 4: Unacceptable Hazard Reporting Process



6.2 Coordinating with GDOT/SSO and Related Bodies

To ensure GDOT has an on-going role in the oversight of MARTA's hazard management process, the Authority makes its hazard tracking log available through the use of a computer workstation located in the MARTA Annex building at 2400 Piedmont Rd. NE, Atlanta, GA 30324. GDOT may review the log at any time and direct questions to DSQA in writing, but may not remove any materials from the property without the express written consent of the AGM of DSQA. In addition to facilitating this on-site review, MARTA regularly submits its hazard tracking log and other corresponding materials to GDOT as specified in the *Hazard Management Plan*. GDOT also has the right to request a full briefing from MARTA at any time on the known circumstances of an investigation, including corrective actions and resulting compliance.

In the event of an NTSB investigation into an unacceptable hazardous condition, DSQA is responsible for briefing GDOT regarding NTSB requirements and activities, including meetings held or interviews scheduled requests for data, functional testing, and examination of equipment. MARTA must provide GDOT with a copy of all written correspondence to NTSB concerning the investigation, as well as all NTSB reports and resulting recommendations.

6.2.1 Investigation and Notification of Unacceptable Hazards

MARTA must ensure the investigation of every hazard deemed to be "unacceptable" in accordance with the provisions specified by the SSPP and the *Hazard Management Plan.*

MARTA shall maintain documentation pertaining to the investigation and elimination of unacceptable hazards, and make these files available to GDOT for review and evaluation.

DSQA must also notify GDOT – through a pre-identified point-of-contact – of "unacceptable" hazardous conditions, defined using the criteria and assessment process described in the *Hazard Management Plan*, as soon as practicable but no later than 5:00 p.m. of the next regular business day. Notification is required even if the "unacceptable" condition has since been corrected. DSQA shall transmit its notification, via e-mail or fax, utilizing appropriately completed documentation of the hazard management process in action.

Relevant thresholds for notification are:

- System Safety Engineer classifies the hazard as unacceptable pursuant to the risk assessment matrix found in the *Hazard Management Plan*.
- The hazard involves any one or a combination of the following effects: fatality, injury (excluding employee injuries relating to industrial safety), environmental, or property damage.

6.2.2 Tracking and Reporting

As previously described, MARTA uses a hazard tracking log to track all open hazards to closure.

To meet its reporting requirements for unacceptable hazards under the *Program Standard*, DSQA develops and issues the following documents:

- Initial Report
- Interim Status Reports
- Final Report

6.2.2.1 Initial Report

An initial report is due to GDOT within seven (7) calendar days of hazard notification. The report may be transmitted via e-mail or hard copy.

Initial reports will contain findings of fact including:

- MARTA's investigative procedures.
- A recommendation as to whether convening an ad hoc investigative committee is needed.
- Plans for conducting interviews, inspections, examinations, or tests to determine the cause of the unacceptable hazard.

6.2.2.2 Status Reports

Monthly status reports shall be provided to GDOT's point-of contact until the investigation is completed. These reports may be transmitted electronically via e-mail or hard copy.

6.2.2.3 Final Report

Upon completing the investigation, MARTA shall submit a final written report for GDOT's review and approval that includes a description of activities, findings, identified causal or contributing factors, and a corrective action plan and corresponding status update. The report may be transmitted electronically via e-mail or hard copy.

Within 30 calendar days of receiving a report designated as final, GDOT will review the document and issue a written decision to MARTA either approving or disapproving the findings contained within.

In the event that GDOT does not accept the final report, it will communicate any area(s) of disagreement or concern to MARTA in writing. The report will not be considered final until all conditions are met and the report is approved by GDOT.

6.2.3 Corrective Action Plans

Corrective Action Plans (CAPs) are developed when reported hazards are identified by MARTA's internal safety and security audits, GDOT-led reviews and audits or are otherwise recommended by the criteria for frequency and severity outlined in the *Hazard Management Plan*. CAPs identify causal or contributing factors and outline solutions and responsibilities that will minimize, control, or correct the issues in a manner that reduces the chance of re-occurrence (reactive) or before an issue manifests as a reportable event (proactive).

MARTA has developed a Corrective Action tracking log that it uses as a model for following the progress of CAPs. To indicate that a CAP has been closed since the last submittal, the log must specify when and how MARTA verified implementation of any recommended actions. Verification may include documentary evidence as well as observations and inspections of corrections. Responsibility for populating, maintaining, and ensuring GDOT receipt of the CAP log rests with the System Safety Programs Manager in the Office of Safety.

All corrective action plans submitted to GDOT will identify:

- Reported hazard, deficiency or concern
- Agreed-upon action items
- Implementation schedule

- Individual stakeholders and department responsible for implementation

The CAP log will be transmitted electronically, by fax, or by postal mail to an established GDOT point-of-contact on a quarterly basis. As corrective action plans are closed out, MARTA must submit verification that the corrective action(s) has been implemented as described in the corrective action plan or that a proposed alternative action(s) has been implemented. This verification must be submitted with the no less than quarterly Corrective Action Plan Tracking Log in electronic or hard copy format. In the log, the rail transit agency must also inform GDOT SSO concerning any alternative actions for implementing a corrective action plan.

GDOT SSO will notify MARTA of its approval or rejection of a corrective action plan within ten (10) calendar days of receiving the corrective action plan. In the event GDOT SSO rejects a corrective action plan, GDOT SSO will state its reasons in writing and recommend revisions. The rail transit agency will submit a revised corrective action plan to GDOT SSO no later than 30 calendar days following the rejection.

7 Safety Certification

7.0 Overview

This section describes MARTA's objectives and processes that are defined within the *Safety and Security Certification Program Plan*

(SSCPP), document number SAQ-PL-1006, for ensuring that safety concerns are addressed in new starts and modifications to existing systems, vehicles, and equipment prior to release for revenue service.

7.1 Purpose

The purpose of the SSCPP is to ensure that:

- Hazards and security vulnerabilities are identified in the design stage of a new start or modification/renewal project, and are evaluated and properly controlled or mitigated, prior to the commencement of passenger use and service.
- All critical system elements are compliant with the identified safety and security requirements during the design phase, construction/installation phase, testing phases, and verification phases of a project.
- MARTA bus, Mobility, and rail systems are operationally safe and secure for everyone prior to entering revenue service or use by MARTA personnel.
- A process exists between contractors and MARTA's cross-functional project team(s) to perform evaluations and analyze designs and specifications.
- And to ensure that ongoing inspections and documentation occur over the lifecycle of the project.
- Activities culminate in the issuance of a final certification package by DSQA prior to placing the new or modified assets into revenue operation.

7.1.1 Applicability

DSQA evaluates relevant projects and initiates the SSCPP process on an as-needed basis depending on the project's impact to system safety. The SSCPP describes MARTA's processes for safety certification of capital projects that:

- Receive federal or state funding of any kind.
- Are identified as having a potential safety or security risks to passengers, employees, emergency responders, and/or the general public.

As part of the Project Design and Management processes, projects are evaluated for safety and potential hazards as part of the established criteria for safety standards. Projects can include new rail or bus systems and extensions, the acquisition and integration of new rail or bus vehicles and safety critical technologies into existing service and major safety critical redesign projects, excluding functionally similar replacements. When determined that a project requires System Safety and Security Certification, the project is added to the Office of Safety's *Safety and Security / System Modification Tracking Log.* The System Safety Engineer, the Safety and Security Certification Committee, and General Engineering Consultants, contribute to the development of a Safety and Security Certification Plan (SSCPP) for each project as part of the preliminary

design phase of a project. Prior to revenue service, a Safety and Security Verification Report (SCVR) is developed, documenting the project's compliance with its SSCPP.

7.2 Documentation and Reporting Responsibilities

Documentation related to the project will be continuously reviewed and analyzed by DSQA to ensure it provides for the safe operation during normal and emergency conditions. Additions or deletions from these documents, that affect the safe operation of the system, should be coordinated through MARTA'S Office of Safety and other affected departments for approval prior to implementation.

7.2.1 Procurement Documents

Prior to release, MARTA DSQA personnel reviews the procurement documents issued from the contractor's plant sites and facilities, or other divisions or subsidiaries of the contractor. Certification for safety and security is not contractual acceptance, and further contractual acceptance does not constitute safety and security certification.

7.2.2 Reporting Responsibilities

Reporting is a key element of the safety certification process. The System Safety Engineer in conjunction with the Safety Certification Engineer gathers reports from the key stakeholders throughout the project, and maintains the status of the Certifiable Elements List and Identified Hazards.

7.2.3 Periodic Reports

Periodic reports are prepared and issued by the Safety Certification Engineer and the Office of Safety. The frequency of the reports is dependent on certification activity levels, but will be quarterly at a minimum. The reports may include the following:

- Safety and Security Certification Plan progress.
- Changes to Project Certifiable Items Lists, if any.
- Significant problems encountered in the certification effort.
- Safety and Security Certificates of Compliance completed during the reporting period.
- Safety and Security Certificates expected to be issued in the next reporting period.
- Certification Program audit findings and recommendations for improvement, if any.
- The Director of the Office of Safety may prepare project certification progress reports for GDOT and FTA, as required.

7.3 Process Overview

The SSCPP is closely aligned with the Hazard Identification and Resolution Process ensuring proper analysis, evaluation, and satisfactory resolution of any potential safety hazards or security vulnerabilities are addressed. All potential hazards and safety risks are identified as part of the safety certification process. The Manager of System Safety Programs and the System Safety Engineer (SSE) will review the Capital improvement Program list, Job Order Contracts (JOC), Request for Proposals (RFP), and Request for Quotes (RFQ) for projects that meet the safety certification or system modification tracking criteria. The SSE will enter data into the tracking log and update the log as

necessary. The SSE will scan the log to the Manager of System Safety Programs the first week of January, April, July, and October. After review, the log will be forwarded to the Director of Safety for review, and then forwarded by the Director to GDOT within that same week. Identified hazards are monitored throughout the lifecycle of the project and resolved or noted as part of the final certification documents prior to acceptance of the project for revenue service operation.

The SSCPP also integrates with MARTA's Department of Capital Programs and Development. This ensures that all appropriate safety and security criteria and standards are established for the design, procurement, construction, inspection, testing and training associated with any project prior to final safety and security certification for transit operations readiness.

MARTA completes the following tasks in the implementation of the safety certification program:

- Develops a certifiable items list
- Identifies safety and security requirements for each certifiable element
- Verifies related compliance requirements
- Issues Certificates of Compliance for each certifiable element
- Issues Safety and Security Certificates

Since project aspects vary, required projects must develop a project-specific Safety Certification Plan.

7.3.1 Certificates Issued for Safety Compliance

Each critical certifiable system element receives a written safety and security certificate of conformance. When all required certifiable system elements are certified, a system safety certification statement is issued along with a Safety Certification Verification Report. These documents verify the readiness for revenue service for each operational phase of the system in regards to the safety and security requirements of the system. The following safety compliance certificates are developed as part of the Safety Certification Engineer's responsibilities:

- Compliance Certification
- Design Criteria Compliance
- Specification and Operations Readiness Compliance
- Construction Compliance
- Training and Exercises Compliance
- Risk Resolution Compliance
- Rules and Procedures Compliance
- Test Inspection Compliance

7.3.2 Design Criteria Certification

The MARTA Design Criteria and Contract Documents for MARTA Capital Projects, *MARTA Guide Specifications* Section 013526: Governmental Safety Requirements, *MARTA System Safety Program Plan*, and existing MARTA Rail and Bus System Rules and Standard Operating Procedures are all sources for project requirements.

Furthermore, all applicable Federal, State, and Local safety and security codes and regulations, standards, and industry practice must be identified and included in the design.

7.3.3 Develop Safety and Security Design Criteria

At the start of the Design Phase, Project Management team, Engineering, and the Architecture Team begin the design process, including the development of the project design and specification documents. The System Safety Engineer performs the following activities:

- Performs project safety analysis
- Creates a safety certification plan, based on project-specific requirements
- Reviews the design and compliance documents for safety elements
- Develops the Certifiable Elements List
- Identifies hazards and performs risk assessments
- May issue temporary use permits

7.3.4 Temporary Use Permits

If certification of the required elements for the test is not complete, the Safety Certification Engineer may issue a Temporary Use Permit. The permit is forwarded to each engineer responsible for each element. Only signatures for those elements that have not been issued a Certificate of Conformance or a Temporary Use Permit must be obtained. Examples of items placed under a Temporary Use Permit include light rail vehicles for dynamic testing, powered switches, track, and communication equipment. These permits expire upon completion of safety/security certification of the elements involved.

7.4 Certification Preparation and Recommendations

When an element is ready for certification, the Safety Certification Engineer and MARTA's Office of Safety evaluate evidence, documentation and any restrictions and recommendations received. A "Certificate of Conformance" package is prepared.

For each certifiable element, a written statement is issued and signed by the Certification Committee prior to revenue service. The Office of Safety and the MARTA Program Management Office attest that a project element is in accordance with specified system safety and security requirements.

7.4.1 Failure to Comply

If the Safety Certification Committee and MARTA's Office of Safety determine that the requirements have not been met, then the Office of Safety has the authority and responsibility to cease operation of the system until the issue is resolved.

7.4.2 Documentation of Records

The Project Safety and Security Certification file contains the following:

- Plan Updates and Corrections
- Certifiable Elements and Items Lists
- A summary sheet showing the certification status for the design, construction, testing, and pre-revenue phases of the project

- Original copies of the completed checklists for each certifiable element
- Supporting documentation that may not be contained within project files, including but not limited to:
- Visual Inspection Reports
- Copies of test reports for safety critical systems
- Copies of integration test reports
- Originals of the Temporary Use Notices
- Originals of the Integration Test Permits
- Originals of the Certificates of Compliance for each certifiable element
- Originals of the System Safety and Security Certificates for the project

7.4.3 Final Hazard Report

The Office of Safety's System Safety Engineer and Safety Certification Engineer will review and approve applicable work, documents, and subsequence changes to determine the adequacy of controls invoked to minimize potential hazards and/or risks. Hazard documentation is critical to the success of the Safety and Security Certification Program Plan.

7.4.4 Final Certification

The System Safety Engineer verifies and documents that the highest practical level of operational safety has been achieved for the project. The final safety certification package includes the following items:

- A Certificate of Safety Certification signed by the Safety Certification Engineer and the AGM of DSQA stating that all hazards identified in the Project's Hazard Analysis have been resolved or being tracked to closure. The certificate documentation will identify all Certifiable Elements and verify that all identified hazards have been mitigated or controlled to an acceptable level.
- Certification that all system, subsystem, and interface testing have been completed satisfactorily.
- A final Open Items List identifying all items opened during the life cycle of the project and their current closure status.

7.4.5 Final Verification Report

A final Safety Verification Report will be prepared by the System Safety Engineer and Safety Certification Engineer and submitted to the Director of the Office of Safety for concurrence.

8 System Modifications and Change Control

8.0 Overview

This section describes the processes and procedures used to manage safety relative to system modifications and change control for activities that do not require formal safety certification process as defined by the FTA, but that do require safety inspections and sign-offs prior to placement into the system. DSQA reviews changes or modifications to the bus and rail system that have the potential to affect patron, employee, property, or environmental safety. Safety and security implications associated with expansions of the rail system are evaluated through the *Safety and Security Certification Program Plan*.

8.0.1 Enterprise Asset Management

System Modifications are managed through the use of MARTA's Enterprise Asset Management (EAM) System. This system contains a record of all equipment, including buildings, rail cars, buses, tracks, electrical systems, etc. Service requests/defects are submitted (charged against a piece of equipment/asset) and then assigned or converted into a work order so the action taken along with all costs and system modifications are captured in relation to the equipment. The preventive maintenance program and schedules are also managed within the EAM as well as parts requests, warranty, incidents and other things associated with asset management. The work order process includes a verification and acceptance process prior to the return to revenue service. In this case, coordination and compatibility with the existing system, construction efforts under operating conditions, and testing and break-in phases are all managed as part of the ongoing asset modification, tracking and system safety efforts.

8.0.2 Identification of Hazards Associated with System Modifications

The Department of Safety and Quality Assurance participates in contractor and project team meetings to ensure compliance with technical specifications for safety. Activities include the review of contract letters, procedures, modifications, and drawings for compliance with technical specifications. Hazards identified during inspections or by notifications are addressed through the Hazard Management Process.

The Office of Safety personnel facilitate the identification, tracking and resolution of hazards as per the Hazard Management Process as described in Section 6 of this document.

System modifications that are not be subject to the Safety Certification Process are reviewed for safety-related issues using established thresholds and requirements, and are verified through documentation and approved through the System Modification and Approval Process.

Verification of compliance with safety requirements contained in the MARTA Guide Specifications, Sections 013523 and 013526, is accomplished through coordinated reviews of contractual documentation and system safety design reviews. The Office of Rail Systems Engineering has the responsibility of reviewing project designs and participating in the design approval process with DSQA. The technical oversight and direction; development, maintenance and enforcement of system design criteria; and management of design work by manufacturers, contractors, and design professionals is part of the design verification process.

8.1 System Modification Review and Approval Process

MARTA incorporates a comprehensive approach to systems modifications and risk management with the primary risk category being that of safety. This section of the SSPP provides an outline of the process used to control change to each MARTA asset undergoing system modification and manage the associated risk throughout the agency. The source document for this process is the "MARTA Process Standard for System Change Control".

8.1.1 Change Control Process

Using the holistic approach described above, the MARTA Change Control Standard (CCS) provides the process and procedures necessary to effect a change to MARTA systems. A stage-gated process is used to control changes using the following four states:

1. Proposal: All changes start as proposals for initial evaluation by a manager
2. Request: The proposal has been approved for further consideration by the CCB
3. Order: The Request has been evaluated & approved and is being implemented
4. Notification: The change has been implemented, Verified and Validated – Notifications are sent

8.1.2 Risk Identification and Mitigation

During the evaluation of the Change Proposal or Change Request, the impacts to MARTA systems are evaluated using a numerical risk scoring methodology. Where risks have been identified, mitigation planning for each risk factor must be approved prior the authorization for the change. The identification, tracking and resolution of hazards resulting from system modifications are conducted pursuant to the Hazard Management Process described in Section 6 of this document.

8.1.3 Key Change Control Roles

Additional roles are fully defined in the MARTA Change Control Standard (CCS). An excerpt is present in this section of the SSPP to aid with context.

1. CCB and CCB Chair
2. Safety Engineering
3. Quality Assurance
4. Design Engineering & Other Stakeholders

8.1.4 Change Control Board (CCB)

The Change Control Board (CCB) is responsible for making technical and business decisions on Change Requests received by the CCB Chair. The Office of Safety is a member of the CCB to ensure that each change proposal is properly designated with respect to safety criticality. A designation of "Safety Critical" shall not be changed - except by express consent of the Office of Safety.

8.1.5 Safety

The Office of Safety will provide Safety Analysis and ensure that the proceedings and results of the CCB are compliant with Federal Regulations and GDOT State Safety

Oversight. Risk Analysis techniques such as Failure Mode, Effects, and Critical Analysis (FMECA) and Fault Tree Analysis (FTA) will be deployed for decision support, based on the needs of each individual change request. The Office of Safety shall ensure that each change proposal is properly designated with respect to Safety Criticality. Additionally, the System Safety Engineering shall maintain an updated System Modification Tracking Log. A sample of this tracking log is provided in the appendices.

8.1.6 Quality Assurance/Configuration Management

The Branch of Configuration Management shall ensure that the approved processes related to Configuration Management and Change Control is being followed. In addition to this, the Branch of Quality Assurance (QA) shall provide oversight for each approval cycle. QA shall ensure that the agreed approvals are executed before approving further modification progression the change.

8.1.7 Design Engineering and Other Stakeholders

Other stakeholders include MARTA subject matter experts in various technical and operational disciplines. The approvers shall be recorded and agree by a quorum of the CCB for each change proposal prior to further action on the change.

8.2 Process Overview

The MARTA Change Control Process includes the following activities:

1. Change Proposal Review
2. Change Impact Assessment
3. Change Approval
4. Change Implementation & Verification
5. Change Validation

The MARTA System Change Control process is used to transform change proposals into actionable work orders and subsequently notifications to the organization that a change to the system has occurred. This process is invoked whenever entrance criteria are satisfied, and is completed when process exit criteria are met. A change proposal has a defined lifecycle with four stages as indicated in the description above.

8.2.1 Financial and Program Risk

In addition to Performance, Safety and Security risks discussed above, the risks to schedule and cost are captured during proposal analysis, enabling the reviewers, approvers and the CCB to make a better business decision and to allow prioritization and better planning of non-critical changes.

8.2.2 Identification of Hazards Associated with System Modifications

As each proposed change is evaluated for feasibility and risks, the System Safety Engineer in conjunction with the evaluation team (or CCB) will update the MARTA System Modification Tracking Log if a new hazard is identified or if an existing hazard is impacted in any way. Hazard identification at MARTA is more fully presented in Section 6 of this document, which also refers to the MARTA Hazard Management Plan.

8.2.3 Operational Readiness – Verification and Validation (V&V)

When a change order has been processed, the MARTA assets involved in the change are subject to verification and validation. A formal review of the work products captures review comments and test issues and tracks them to closure. Outstanding issues must be resolved and approved by the verification team (including the Office of Safety and Security) prior to the modified asset being placed into revenue service.

8.3 Change System Tool, Interfaces and High Level Data Flow

Automation of the change control data collection and management is being incorporated into a relational database tool that will be accessible to all authorized MARTA users. This will enable live, dynamic change tracking and eliminate the need for paper change request forms and associated manual filing. The change control tool will facilitate more detailed quality assurance of the change process classification data gathered and will also enable live (dashboard) statistical analysis of change trends and root causes of system change.

9 Safety Data Collection, Analysis, and Distribution

This section describes the processes used to collect, maintain, analyze, and distribute safety data to support improvements in safety performance and to monitor compliance with goals and objectives in the SSPP. MARTA's Safety 1st program, Worker's Compensation claims, and the Accident/Incident Investigation log are the main processes used to analyze specific safety performance measures and conduct follow up with stakeholders while the KPIs are the major reporting process to management.

9.1 Safety Data Acquisition and Analysis

The Office of Safety receives and collects a variety of information from reports and notifications from Bus Operations, Rail Operations, the Rail Service Control Center, and Bus Service Control Center, Risk Management, and the MARTA Police Department. Accident/Incident notification to the Office of Safety staff is by phone to the on-call officer and/or via the notification system. Sources include daily logs such as Safety 1st, operator and supervisor reports, mining of maintenance data, analysis of vehicle and personnel records and risk management data. Transportation data is collected in NTD, FASuite, and TransPortal while employee injury statistics are collected from the Risk Information Management System (RIMS). The analyst also receives data related to the number of persons injured, number of persons transported to area hospitals, collisions per garage, the number of preventable and non-preventable collisions, and Vehicle Collision Preventability Grading Forms. Worker's Compensation claims and contractor safety reports Injury statistics of MARTA contractors collected by the Industrial Safety Engineer and Construction Safety Engineer are also forwarded to the Data Analyst for compilation and review.

Centralized databases of safety data are analyzed in order to identify potential factors that may lead to accidents or incidents (leading and lagging indicators included). The Data Analyst then identifies and reports on trends and root causes, and assists the stakeholders with corrective actions recommendations. In conjunction with industry standards, the analyst applies analytical tools and develops metrics to critically evaluate events. The data is used in establishing statistical criteria, such as KPI's, in order to identify trends and assess known risks.

9.2 Safety Data Information Dissemination

The Safety Data Analyst selects pertinent data and organizes elements into meaningful reports to support analysis for audits, investigations, safety programs, and special requests. Vehicle collision and injury data is compiled into various reports per month, per division, and per 100,000 miles. Custom reports are created as required by management and include *ADHOC, daily, weekly, monthly, quarterly and annual statistical reports on incidents and accidents.* The Safety Data Analyst will also compile safety information, analysis of findings/recommendations, and operational division responses to Safety and Operations Management when required.

Ensuring the Authority's compliance with FTA requirements, the analyst coordinates comprehensive data quality verifications through the review, classification, and coding of bus, rail, mobility, non-revenue, and police incident reports for compliance and facilitates monthly on-line reporting to the Federal Transit Administration National Transit Database and enters the data in the TransPortal Database (MARTA data warehouse).

10 Accidents/Incidents Investigations and Reporting

This section describes MARTA's policies and procedures for responding to accidents and incidents that occur on its property and/or involve its assets.

10.0 Overview

The *Accident/Incident and Investigation Procedure (A/I and I Procedure)* contains MARTA's policies for reporting, investigating, and documenting all accidents/incidents, managing all resulting corrective actions, and preventing recurrences. It encompasses any event, series of events, or condition that results in death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

With respect to notifying relevant external agencies of accidents and incidents (GDOT, the Georgia Department of Labor, the FTA, and the NTSB), the *A/I and I Procedure* is fully compliant with all requirements set forth in 49 CFR 659 and the GDOT Program Standard.

10.1 Accident/Incident Reporting Criteria

MARTA's Office of Safety shall notify GDOT within two (2) hours of any accident or incident involving a rail transit vehicle or any incident occurring on MARTA-controlled property where one or more of the following occurs:

- A fatality at the scene, or where an individual is confirmed dead within 30 calendar days as the result of a transit-related incident
- Injuries requiring immediate medical attention away from the scene for two or more individuals
- Property damage equal to or exceeding $25,000 to rail transit vehicles, non-rail transit vehicles, other MARTA property or facilities, and non-MARTA property
- An evacuation for life-safety reasons
- A collision at a grade crossing
- A main-line derailment
- A collision with an individual on rail wayside; or collision between two rail transit vehicles or between one rail transit vehicle and a non-revenue vehicle
- Any evacuation of passengers to the wayside (i.e., other than a complete and proper train berthing at a rail station)

10.1.1 Accident/Incident Investigation Criteria

Accidents and incidents requiring investigation include:

- All collisions involving MARTA rolling stock, whether with other vehicles, equipment, people, obstacles, or facilities
- Train and train equipment derailments, split switches, and other similar events whether on the main line, in the yard, or in the shop
- Vehicles unintentionally leaving the roadway

- All thermal events involving MARTA vehicles or facilities, including fires, explosions, fumes or smoke conditions
- Any emergency evacuation of patrons or employees from MARTA vehicles, stations, or other facilities
- Employee casualties and occupational injuries, incurred on the job, involving MARTA vehicles or property
- Patron, trespasser, or passer-by casualties involving MARTA vehicles or property.
- Other unusual occurrences, incidents, malfunctions, etc., which may impact the safety of MARTA property, systems, or equipment; i.e., floods, catastrophic equipment failures

Accidents and incidents excluded from this procedure include assaults, robberies, or other crimes, which are investigated in accordance with MARTA Police procedures.

10.1.2 Accident/Incident Investigation Procedures

The *A/I and I Procedure* documents the process used by the Authority to investigate accidents. Prompt notification, thorough investigation, and comprehensive reporting are necessary to:

- Identify the factors which caused or contributed to the accident, incident or hazardous condition, while minimizing disruptions to service
- Determine appropriate corrective action(s) to prevent the accident/incident from recurring and/or control the unacceptable hazardous condition using HIRA methods
- Comply with state and federal regulations governing required agency notification

10.2 Internal Notification Procedure

Employees having direct knowledge of any accident or incident must notify the Rail Services Control Center, Mobility Communication Center, Bus Communication Center, or the Police Communication Center, who will contact the Office of Safety. Notification procedures and contact information are detailed in the *A/I and I Procedure* and in Rail Transportation's OP-4-2-01 Management Notification Procedure 080421.

The Office of Safety will issue a written report as required. Accidents and incidents are investigated by the Office of Safety. In addition, an ad hoc Accident Investigation Board may be convened by and report to the General Manager/CEO, when circumstances compel Accident Investigation Board involvement.

10.3 External Notification Procedure

The Office of Safety or MARTA Police will provide initial notification to the cell phone of the GDOT/SSO point-of-contact within two (2) hours of a reportable event leaving a detailed message. They will also make arrangements with GDOT for on-site review of any security-sensitive materials. MARTA will provide as much of the following information as possible:

- Name and job title of person reporting
- Name of the rail transit agency
- Event type (fatality, injuries, property damage, evacuation, derailment or other,)

- Location, date and time of event, and
- Initial assessment of the extent of fatalities or injuries

The rail transit agency will notify the FTA Office of Safety and Security of major accidents, and service disruptions in accordance with its requirements. Current requirements include telephone notification [202-366-2896 (during office hours) or 1-800-424-0201 National Response Center (after normal office hours)] followed by a FAX (202-366-7951) and/or e-mail notification.

The rail transit agency will notify the NTSB (1-800-424-0201, National Response Center) at the earliest practical time following any one of the following accidents:

- No later than two (2) hours after an accident that results in:
  - A passenger or employee fatality or serious injury to two or more crew members or passengers requiring admission to a hospital
  - The evacuation of a passenger train
  - A fatality at a grade crossing
- No later than four (4) hours after an accident which does not involve any of the circumstances enumerate in bullet one above, but which results in:
  - Damage (based upon a preliminary gross estimate) of $150,000 or more for repairs, or the current replacement cost, to railroad and non-railroad property
  - Damage of $25,000 or more to a passenger train and railroad and non-railroad property

Table 5: Notifications to GDOT

Notification	Description
Initial Telephone Call	• Within two hours of a reportable event, MARTA Office of Safety will call GDOT's point-of-contact on the 24/7 cellular phone number 678-206-5589, leaving a detailed message if necessary. • Provide as much of the following information as possible: • Name and job title of the person reporting, and identifying MARTA as the Rail Transit Authority logging the report; • Event type (fatality, injuries, property damage, evacuation, derailment or other); • Location and time of event; and • Initial assessment of the extent of fatalities, injuries
Initial email	• Within six hours of a reportable event, or as soon thereafter as practicable, MARTA Office of Safety will send an email to GDOT's point-of-contact at 404-631-1937. The information required will update or confirm the initial telephone call, and provide more detail. If required information is unknown or not applicable, indicate this on the fax: • Name and job title of person reporting, and identify MARTA as the reporting Transit Authority; • Event type (fatality, injuries, property damage, evacuation, derailment or other); • Location and time of event; • Initial assessment of the extent of fatalities, injuries; • Rail transit vehicle(s) involved (type, number); • Other vehicle(s) involved (describe); • Preliminary estimate of property damage;

Notification	Description
	• If the event is NTSB reportable and will the NTSB investigate; • If the event is FRA reportable and will FRA investigate; • Description of the event; and • MARTA's Safety point-of-contact for the investigation (name, telephone and pager numbers)

10.4 Accident/Incident Reporting and Documentation

For each such accident/incident, the Office of Safety shall develop reports on a preliminary, interim, and final basis as defined by the *A/I and I Procedure* with management review and approval in accordance with the requirements.

Table 6: Accident/Incident Reporting

Report	Description
Preliminary Report	Within forty-eight (48) hours of a reportable event, MARTA's Office of Safety will report initial findings of fact; its investigation plans; NTSB involvement in the investigation; and whether an ad hoc investigation committee will be convened.
Interim Status Reports	Until the investigation is completed, MARTA's Office of Safety shall prepare and submit monthly status reports that include minutes of any meeting held by ad hoc investigation committee or consultants, disclosure of any immediate corrective actions MARTA has planned or completed; principal issues or items currently being evaluated; and overall progress and status of the investigation.
Final Report	Investigation must be documented in a final report that includes a description of investigation activities, findings, identified causal factors, and a corrective action plan. At its discretion, and as specified in its accident investigation procedures, MARTA may separate its investigation report into two parts: description of investigation activities, investigation findings, and determination of the most probable cause and additional contributing causes; and recommendations to prevent recurrence, including a corrective action plan. Final reports are due within thirty (30) calendar days following completion of an investigation.

10.5 Corrective Action Resulting from Accident Investigation

MARTA will be required to review any final GDOT/SSO Accident Investigation Report and within fourteen (14) calendar days after receiving it MARTA must perform either of the following:

- Provide concurrence to implement the GDOT/SSO proposed corrective action plan
- Submit an alternative correction action plan to GDOT/SSO for review and approval

Corrective actions plans are forwarded to DSQA Internal Audit staff and added to the GDOT action log by the internal auditor and monitored through resolution.

10.6 Coordination with GDOT /SSO

GDOT has reserved the right to participate in any MARTA investigation of a reportable accident, and acknowledged MARTA's right to request GDOT's participation. If GDOT decides to participate in a MARTA investigation, its point-of-contact will notify DSQA by telephone or email, and follow up with a written notice.

The *A/I and I Procedure* formally establishes investigative procedures for MARTA that have been approved by GDOT.

10.6.1 GDOT State Safety Oversight access to SSI

DSQA will make arrangements with GDOT State Safety Oversight for onsite reviews of sensitive security information. Current access is based on current MARTA policy *Inspection of Authority Records* and the procedure titled *Inspection of Authority Records*.

DSQA will make available relevant files for the purposes of reviewing and adopting accident investigation reports and other GDOT State Safety Oversight requirements for access to SSI files at a secure computer workstation within the DSQA office. The documents available from the computer workstation include, but are not limited to MARTA polices, plans, procedures, *FASuite* maintenance management system, and DSQA Accident/Incident Investigation files. The computer workstation provides read only documents. SSI materials or files will not be removed from the premise.

11 Emergency Response Planning/Coordination/Training

The Authority's emergency response plans consist not only of this *System Safety Program Plan* (SSPP), but also the *Security and Emergency Preparedness Plan* (SEPP), which contain MARTA's TSA and 49 CFR 1520-compliant *Security Sensitive Information Plan* (SSI) as an appendix. The SEPP is available for MARTA employees to review on the MARTA Intranet.

11.0 Overview

The SEPP contains the majority of MARTA's Emergency Management Policy including elements of emergency response, planning, coordination and training. The SEPP contains security sensitive information related to incident command and other specific duties and functions that are carried out during emergencies. Collectively, these plans and their associated resources, in cooperation and coordination with local, state, and federal emergency aid response agencies, are designed to prepare MARTA to respond to and recover from emergencies on MARTA property whether natural or man-made in origin.

11.1 Responsibilities for Emergency Preparedness

MARTA departments currently employ emergency procedures and/or plans for natural, man-made, and terrorist incidents, defined as an all hazards approach in the SEPP. MARTA Police, Office of Safety, Bus Operations, Rail Operations, Facilities, and Maintenance of Way have procedures in place to address emergencies that include fire and smoke conditions, floods, inclement weather, Pandemic Influenza, and security incidents. The Office of Safety employs the Storm Water Pollution Prevention and Emergency Response Program to address environmental hazards and emergencies.

MARTA utilizes the National Incident Management System (NIMS) and its Incident Command System (ICS) as an integral tool for the command, control, and coordination of emergency responses at MARTA. This ICS structure, encapsulates best practices and a system-wide approach to incident management that is applicable to all areas of MARTA in additional to local jurisdictional entities and functional disciplines responding to all hazards and incidents. For every incident, MARTA Police have the primary responsibility as the Incident Commander (IC) unless Unified Command is established to include Safety and other entities. Incidents are managed using Unified Command on MARTA properties to ensure all responsible agencies are coordinating response efforts. The MARTA SEPP contains details on specific job responsibilities.

11.1.1 Office of Safety Responsibilities in an Emergency Response

In an emergency, the Office of System is responsible for responding to, evaluating, and monitoring hazardous and unsafe situations and developing measures to assure personal safety.

The System responsibilities of the Safety Officers shall include:

- Serving as Safety Officer to the Incident Commander as necessary
- Monitoring safety related practices and procedures
- Maintaining awareness of active and developing situations

- Assisting with evacuations as directed
- Ensuring first responder awareness of safety issues or concerns

11.2 Coordinated Schedule

The MARTA Police Department maintains a coordinated schedule for emergency response activities and provides it upon request. Periodic meetings discuss system upgrades and training opportunities with outside emergency responders.

11.3 Emergency Drills and Exercises

The fire jurisdictions that provide fire and emergency protection to MARTA participate in annual rail emergency simulations. Simulations occur over each respective department's shift, and include participants from Rail Transportation and MPD. Other emergency preparedness and response exercises, such as fire evacuation drills, occur throughout the year for the purpose of reviewing and testing compliance with current emergency response plans. Post incident briefings document the successes and failures for the simulations and the current plans re-evaluated as necessary.

11.4 Emergency Procedures

Other departments in MARTA are also responsible for coordinating and overseeing the deployment and implementation of precautionary and response-based procedures set forth in other emergency management plans similar to the ones below.

11.4.1 Environmental Incident Response

DSQA uses the *Storm Water Pollution Prevention and Spill Response Plan* to address facility-based environmental incidents. The Office of Safety's Environmental Safety Coordinator will assist in coordinating local, county, state, federal, or private agency resources in incidents involving a severe hazard or large area that may pose an extreme threat to life and property and may require a large-scale evacuation. The Office of Safety evaluates incidents using Spill Response Levels to determine the appropriate actions and communicates per the ICS.

11.4.2 Pandemic Influenza Preparedness and Response Plan

The *Pandemic Influenza Preparedness and Response Plan* provides guidance to MARTA personnel and regional partners regarding detection, response, and recovery from an influenza pandemic affecting MARTA's transit system. The plan describes the unique challenges posed by a pandemic that may necessitate specific leadership decisions, response actions, and communications mechanism. This plan is an appendix to the SEPP.

11.5 Emergency Training

MPD provides on-going emergency preparedness training to internal departments and ensures public awareness of important homeland security messages (i.e. Transit Watch). These training programs are fully compliant with *Homeland Security Exercise and Evaluation Program (HSEEP)* standards to meet certain FTA and Transportation Security Administration (TSA) requirements, as described in the SEPP. MPD also provides training to MARTA's first responder partners in the appropriate jurisdictions through Tabletop Exercises and annual field training. The After Action Report/Improvement Plan

documents the effectiveness of emergency preparedness as well as a path for improvement. More information on this program is found in the SEPP.

Other MARTA departments have also developed emergency procedures for natural and manmade disasters. Bus and Rail Operations have procedures in place to address emergencies that include fire and smoke conditions, floods, severe weather, and security incidents. The Transportation Training Group:

- Provides responder rail transportation training which includes wayside access training, simulations, and railcar configuration familiarization, system orientation, outside and inside rail car equipment familiarization, system and yard safety equipment familiarization, proper application and use of the shunt strap and voltage tester, and incident simulations. Each year the fire department jurisdictions responsible for providing fire and emergency protection to MARTA participate in a rail emergency simulation. These simulations include participants from MPD and Rail Transportation.
- Provides training procedures for severe weather and natural disasters, bus emergency/evacuations, smoke/fire on buses, bomb threats, sick or injured passengers and the bus operator's route familiarization based on the documented *Work Rules for Fixed Route Bus Operations,* the *ATU 732 Labor Agreement*, and *Bus Transportation Standard Operating Procedures.* Certified licensing is also part of the bus training requirements as applicable.

DSQA provides technical assistance to the Office of Learning & Development and periodically audits these training courses. DSQA and their contractors provide training for MARTA employees in certain aspects of fire/life safety and emergency response. This training includes:

- Spill drills for environmental awareness and incident management.
- Accident/Incident Investigations in compliance with the A/I and I procedure.
- Industrial safety issues, including Respiratory Fit Testing and training.
- Asbestos and hazardous materials awareness.

11.6 Familiarization Training

The Office of Learning & Development provides scheduled and on-request emergency training to local fire and police jurisdictions to familiarize emergency response personnel with the hazards associated with the bus and rail system. MARTA also participates in discussions with:

- Emergency Management Area Group (EMAG) Area 7
- Urban Area Security Initiative (UASI)
- Joint Terrorism Task Force (JTTF)
- All Hazards Council for Emergency Management
- Regional Transit Security Work Group (RTSWG)
- DeKalb and Atlanta Local Emergency Planning Committee (LEPC)
- DeKalb Emergency Management Agency (DEMA)
- Atlanta-Fulton County Emergency Management Agency (AFCEMA)

- Georgia Emergency Management Agency (GEMA)/Office of Homeland Security

11.7 GDOT State Safety Oversight access to SSI

DSQA and/or MARTA Police will make arrangements with GDOT State Safety Oversight for onsite reviews of sensitive security information. Current access is based on current MARTA policy *Inspection of Authority Records* and the procedure titled *Inspection of Authority Records*.

MARTA Police will make available relevant files for the purposes of reviewing and adopting accident investigation reports and other GDOT State Safety Oversight requirements for access to SSI files. Access to SSI files will be conducted in a secure area of the MARTA Police Department and attended by a designated MARTA Police staff member. SSI materials or files will not be removed from the premise.

DSQA will make available relevant files for the purposes of reviewing and adopting accident investigation reports and other GDOT State Safety Oversight requirements for access to SSI files at a secure computer workstation within the DSQA office. The documents available from the computer workstation include, but are not limited to MARTA polices, plans, procedures, *FASuite* maintenance management system, and DSQA Accident/Incident Investigation files. The computer workstation provides read only documents. SSI materials or files will not be removed from the premise.

12 Internal Safety Process

12.0 Overview

The Office of Safety utilizes Internal Safety Audits to monitor and evaluate the effectiveness of the *System Safety Program Plan.* Internal Safety Audits compel effective compliance and implementation of statutory and regulatory requirements set forth by the State of Georgia and the Federal Transit Administration (FTA). Additionally, the audit program presents opportunities for MARTA Management to institute improvements in System Safety.

12.1 Scope of Activities

At a minimum, the elements listed below must be audited in an ongoing manner to ensure that the SSPP is implemented properly and effectively. It is MARTA and GDOT/SSO's intent that approximately one-third of the internal safety audits be completed each calendar year. The following are the audit elements for Internal Safety Audits and many of the elements cross departmental lines.

- Policy Statement and Executive Approval
- Purpose, Goals and Objectives
- Management Structure
- Plan Review and Update
- System Safety Tasks and SSPP Implementation
- Hazard Management Process
- System Modifications
- Safety Certification
- Safety Data
- Accidents/Incidents
- Emergency Response
- Internal Safety Audits
- Rules Compliance/Procedures Review
- Facilities and Equipment Inspections
- Maintenance Program Audits/Inspection
- Training and Certification
- Configuration Management
- Compliance with Local, State and Federal Safety Requirements
- Hazardous Materials
- Drug and Alcohol Abuse Program
- Procurement

- Transit Asset Management

The Office of Safety is responsible for conducting the three-year cycle of internal safety with each audit year corresponding to the Authority's fiscal year – July 1 through June 30. Please see Appendix F for the three-year audit schedule.

12.2 Audit Process

DSQA will plan and schedule internal audits. The exceptions will be ad hoc audits that are not in the normal regimen. The Department of Safety and Quality Assurance will notify GDOT/SSO in writing thirty days in advance of all audits that are required by the *Georgia Rail Oversight Program Standard*. The advance notice will indicate the audit's start date, areas, functional units, departments, or offices. The required elements to be audited will be noted in the checklist and the checklist will be provided with the thirty-day advance notification. A three-year audit schedule is enumerated in Appendix F with departments and elements subject to the audit.

12.2.1 Integrity of Audit Process

Auditors must be independent and cannot conduct an audit in the direct or functional area in which the auditor is assigned. An auditor cannot conduct an audit against his/her Manager's area of responsibility.

The Director, General Superintendent, Superintendent, or Manager may participate in the audit or designate a facilitator and escort from the department being audited. The Director, General Superintendent, Superintendent, or Manager shall be at the exit meeting to be briefed, to review the results of the preliminary findings (if any), and to receive a preliminary verbal report.

The Lead Auditor shall review the documents provided to ensure they are relevant to the scope and purpose of the audit. The audit shall be conducted in an interview format by using the audit checklists to verify conformance to selected requirements against the specified reference criteria.

12.2.2 Cycle/Schedule

The current MARTA Internal Safety Audit Cycle is attached to this document as Appendix F. It contains all audits scheduled for the period 2016-2018 as described in the *Internal Safety Audits and Corrective Action Plans Procedure SAQ-SOP-1006*.

12.2.3 Checklists and Procedures

The AGM of DSQA will designate a lead internal auditor who will be responsible for the implementation of the *Internal Safety Audits and Corrective Action Plans Procedure SAQ-SOP-1006.*

The audit procedures and area-specific checklists will determine if all audited elements are performing as intended. Checklists will be developed with sufficient criteria, for each audit, to verify compliance to the requirements of the SSPP and all relevant internal MARTA documents, plans, policies and procedures. The audited department will be required to demonstrate compliance with objective and verifiable evidence as the

checklist specifies. The checklist will be submitted to GDOT for review thirty days prior to the start of each audit. The pre-audit checklist is preliminary, and subject to modification as the audit evolves.

In addition to the MARTA SSPP, the auditor may use internal departmental Standard Operating Procedures and other pertinent process documents as a basis for preparing a checklist before beginning the on-site audit. Some typical examples of these procedures and other pertinent documents are listed below:

- System operating rulebooks, bulletins, notices and procedures
- Maintenance manuals and procedures for vehicles, track and signals, automatic train control equipment, preventative maintenance inspection records, employee training records, environmental compliance procedures, and any other documents found to have significant importance in regard to system safety,
- Previous internal and external audit reports,
- Corrective action plans for accidents and unacceptable hazardous conditions reported to GDOT and,
- NTSB accident investigation reports and other agency peer review reports.

Utilizing the above listed materials, the auditor shall prepare an audit checklist. The checklist should cite the sources that compel compliance to the checklist question. The applicable reference documents that establish the acceptance criteria should be sited in the checklist, when possible.

Checklist audit questions have the following evaluation criteria:

- 1 – Meets Plan Requirements,
- 2 – Meets Plan with Comments,
- 3 – Needs Improvement/Finding,
- 4 – Unable to Audit, and
- 5 – Not Applicable (N/A).

The audit procedures and checklist will determine if all audited elements are performing as intended. Checklists will be developed with sufficient criteria, for each audit, to verify compliance to the MARTA SSPP and the requirements of the *Georgia Program Standard for Rail Transit Safety and Security Oversight*, and relevant internal MARTA documents, plans, policies, and procedures. The auditee will be required to demonstrate compliance with objective and verifiable evidence as the checklist questions require.

12.2.4 Audit Report

The audit report shall include, when appropriate, the auditor's recommendations for correcting deficiencies revealed by the audit. However, the audited department or contractor has the ultimate responsibility for developing and implementing an appropriate corrective action. When corrective action is required, the Office of Safety may need to examine the scope and extent of the underlying causes that led to the audit findings.

Following the completion of the on-site audit, the Lead Auditor shall prepare an audit report with the completed audit checklist. The final audit report will be disturbed to the Director of the department audited, all relevant personnel in the department, the Director of the Office of Safety and the Manager of Safety. If the Management of the department

subject to the audit disagrees with the results of the audit, the disagreement will be resolved by the Director of the Office of Safety and the Director of the audited department.

At the conclusion of each internal safety audit the Office of Safety will prepare and submit to GDOT/SSO a written report that documents findings, recommendations (if any), and any corrective actions identified as a result of the audit. MARTA Office of Safety and/or MARTA Police will make arrangements with GDOT/SSO for on-site review of any security-sensitive materials.

12.2.4.1 **Corrective Action Monitoring**

The Lead Auditor will track corrective actions through completion. Corrective action due dates will be commensurate with the magnitude of the task; corrective action due dates should be reasonable and feasible and mutually agreed upon between the Lead Auditor, the Manager of Safety and the Management of the audited department.

The Internal Safety Auditor monitors implementation of corrective actions. The audit findings and the corrective actions are tracked in a corrective action monitoring log. The Internal Auditor verifies the effective implementation of the corrective actions and reserves the right to continue monitoring the corrective actions for proof of sustainability. The re-evaluation of previously non-compliant items especially those that were predetermined as safety critical, is the responsibility of the Internal Safety Auditor and the Office of Safety. It is incumbent upon the audited department to develop a corrective action plan with a timely implementation schedule.

The Office of Safety will maintain a Quarterly Corrective Action Monitoring Log. The log will track and state the status of corrective actions generated by Internal Safety and Security Audits and document the implementation of the corrective actions, noting the date the finding was closed.

12.2.5 **Annual Audit Report**

The Office of Safety will prepare an annual report summarizing its internal safety audits and security audit activities and findings over the prior audit year and submit the report to GDOT/SSO for review and approval. The annual summary is due by February 1st. Non-sensitive materials may be submitted electronically via e-mail or in hard copy via mail or fax. The Office of Safety will make arrangements with GDOT/SSO for on-site review of any security-sensitive materials.

The Annual Internal Safety and Security Audit Summary will include the following:

- A list of the audits conducted during the prior 12 months.
- Additional supporting documentation that has not yet been transmitted to GDOT.
- A discussion communicating MARTA's status in meeting its three-year internal audit schedule, including identification of any obstacles in meeting the schedule and any proposed mitigation measures.
- An updated schedule for the next year's audits.
- The status of all findings, recommendations and corrective actions resulting from the audits and reviews conducted that year, as well as any outstanding items from prior years.
- Any challenges or issues experienced by MARTA Office of Safety regarding compliance with the required corrective actions or recommendations.

With the audit summary report, MARTA submits a formal letter of certification, signed by the Chief Executive/General Manager, stating that based on the evaluations performed during the audit process of the previous year that MARTA is in compliance with its SSPP. If MARTA determines that audit findings indicate non-compliance with the SSPP, the CEO must identify the activities that MARTA will undertake to achieve compliance.

GDOT will review the audit summary report within thirty days and issue written acceptance if GDOT concurs with MARTA's determination of compliance or non-compliance. While conducting its review, GDOT staff may request additional information, clarification, or revision from the Office of Safety point-of contact.

12.2.6 Coordination with State Safety Oversight

At least once a year, the State Safety Oversight Agency conducts an on-site monitoring exercise to verify compliance to the *System Safety Program Plan.* A monitoring exercise may be structured formally as an audit, or be informal such as attending a workshop or observing a drill to gain a better understanding of MARTA's approach to an issue relevant to the oversight program. GDOT will always provide advance written notice to the Office of Safety point-of contact to state the purpose, extent, and format of the next monitoring exercise and to work out an appropriate schedule of activities.

12.2.7 Audit Completeness

Objective evidence must be used to determine a finding as part of a comprehensive audit process. A finding is a lack of conformity to policies, procedures, work instructions or any authorized document that requires compliance. Objective evidence is verifiable qualitative or quantitative information, records or statements of fact that is based on observation, measurement, or test.

Types of documentation used for verification can include:

- Interviews and discussion with personnel.
- Review of procedures and records, including but not limited to Maintenance Procedures, Training Materials, Equipment Specifications, Rules and Regulations, Regulatory Codes, Service and Technical Bulletins, Standard Operating Procedures, Rule Books and Work Orders, Program Plans.
- Firsthand observations of operations and maintenance activities, and visual examinations and measurements.
- Additional documents needed for verification should be requested in the interviews;
- At all times, the auditor should:
    - Perform a fact-based, verified audit which demonstrates compliance with the SSPP and subordinate procedures.
    - Identify areas that merit safety improvements, which although compliant, should be considered for inclusion in the department's processes or program.
    - Operate without personal bias, personal interest, and without placing, or identifying blame.
    - Use open-ended questions and interview techniques to elicit discussion of safety programs, attitudes, and practices.
    - Illuminate good practices culled from successful safety practices in the industry.

- Provide professional support for corrective actions and safety program development.

Any audit finding which is deemed by the auditor to be an unacceptable hazard, that presents imminent danger, will be immediately addressed.

13 Rules Compliance and Procedures Review

13.0 Overview

MARTA-wide policies, procedures, protocols, processes, standards, plans, and guidelines are documented and available to MARTA employees. As documents are updated, a new revision section or other MARTA-approved document control methodology is added to define its particular revision cycle. MARTA management requires all departments to review their posted procedures and update as needed to comply with FTA configuration management and document control standards.

Bus, Rail, and Mobility Supervisors are mandated to instruct their employees on all job requirements, including schedule adherence and safety and rules compliance. Supervisors are required to complete ride checks, safety talk sessions, and customer information checks each month.

Employees must familiarize themselves with all applicable operating procedures and work rules, including additional instructions contained in daily updates and bulletins posted in each department. These include:

- Standard Operating Procedures (SOPs) for Rail Transportation
- Standard Operating Procedures (SOPs) for Bus Transportation
- Bus Maintenance Safety Information Bulletins (SIBs)
- Rail Car Maintenance Standard Operating Procedures
- Facilities Standard Operating Procedures
- Maintenance of Way Standard Operating Procedures
- General Operational Procedures and Bulletins

In addition to posted documents, the following Rules Compliance activities are in place:

- The Work Orders include procedures and automated verification.
- Random Ride Checks for Bus and Rail
- Internal Safety Audits includes Rules Compliance and Procedures Review as part the Audit Process

13.1 Review of Rules and Procedures

Standard Operating Procedures (SOP's), Operating Rules and General Safety Rules are developed by each department to provide for safe bus, Mobility, and rail operations.

Supervisors' responsibilities include the instruction to Bus and Rail Operators on schedule adherence, safety and rules compliance. Supervisors are required to complete ride checks and safety talk sessions along with customer information ride checks each month.

Operators are required to be familiar with the operating procedures and work rules affecting them and to check bulletin boards in their department/division at the start of each work shift for additional instructions.

Changes to these documents, that may affect safe operations at MARTA are coordinated with the appropriate departments prior to implementation and issuance. Any new or revised Rail, Bus or Mobility rules or procedures that pertain specifically to safety are to be submitted, reviewed, and approved by the Office of Safety prior to implementation as part of the concurrence routing and sign-off process. General Orders may be issued to facilitate the revision process. Each department locally manages a Document Control Process to control all revisions and updates. General Orders are distributed to all stakeholders affected.

13.2 Processes for Ensuring Rules Compliance

Review of Rules and Procedures is part of the Office of Safety's Accidents/Incidents Investigation Process as described in the Accidents/Incidents Investigation Procedure, Office of Safety Standard Operating Procedures, and the Internal Safety Audits Process as described in the Internal Safety Audits Standard Operating Procedures

For Operations, refer to *Procedure OP 4.1.01: Development and Maintenance of Standard Operating Procedures* and *OP.4.1.02: Issuance of General Orders* for procedures on the development, issuance, control and documentation of Operations SOPs and General Orders.

13.2.1 Violations

Violations of these rules and procedures are covered and enforceable under each Departments Work Rules. When enforced, violation(s) are noted in the employee's personnel file.

13.3 Compliance Techniques – Operations and Maintenance Personnel

Maintenance personnel use the computerized asset management system, FASuite, to ensure rules and procedures compliance using integrated checklists and procedures. This system contains a record of all MARTA-owned equipment, including but not limited to buildings, rail cars, tracks, and electrical systems. Service requests/defects are submitted using FASuite. These service request/defects are assigned and converted into a work order allowing the actions taken, along with all costs, to be captured in relation to the equipment. The preventive maintenance program and schedule are also managed within FASuite as well as parts requests, warranty, incidents and other things associated with asset management.

Supervisory verification tracking and reporting is also part of the system capabilities. Work Orders outline the task, identifies who performed certain tasks, and includes procedures associated with the checklists. The system has the capability to track an employee through this process via the Supervisor Portal.

Rail and Bus/Mobility Transportation and Maintenance use Pre-Departure Checklists, Pre-Service Release Inspections, Bus Safety Policy for Bus Maintenance, and the Ride Checks System to ensure rules compliance.

13.3.1 Pre-Departure Checklists

Pre-departure checklist inspections conducted as part of Bus and Rail Transportation's Operator duties are provided in the following SOPs:

RT 4.4.02: Rail Operators Pre-Departure Inspections

The Rail Pre-Departure Inspections Checklist establishes the requirements and instructions for inspections of trains by MARTA Rail Personnel to confirm readiness for revenue service prior to dispatch.

BT 4.2.01: Bus Operators Pre-Trip Inspections

The Bus Pre-Trip Inspections Checklist establishes the requirements and instructions for Bus and Mobility Operators to confirm vehicle readiness for revenue service prior to dispatch.

13.3.2 Rail Car Maintenance Pre-Service Release Inspection

Rail Car Maintenance performs inspections either in the storage yards prior to rail cars entering revenue service or following maintenance repairs, prior to re-release to revenue service. Details and results, which can include compliance with established standards and rules, are documented in a final inspection report as described in *RCM-SOP-003: Pre-Service/Release Inspection Procedures.*

13.3.3 Bus Maintenance Safety and Inspections

The *Bus Safety Procedure for Bus Maintenance (SIB 2001-025)* ensures rules compliance through the following activities:

- Safety Meetings at Bus Maintenance Facilities are scheduled on a monthly basis.
- Safety Inspections of Bus Maintenance Facilities are scheduled on a monthly basis and the results of the inspections are forwarded to the Director of Bus Maintenance.
- General Safety and response to Personal Injury Handbooks are given to all Bus Maintenance personnel.
- *Spill Control Safety Program* is established at all Bus Maintenance Facilities. The Office of Safety's Environmental Safety inspects facilities as defined in the Spill Plan.
- Evacuation Plans are established at all Bus Maintenance Facilities and all employees are instructed in the actions to take under an evacuation incident.

13.3.4 Random Ride Checks for Bus and Rail

In order to verify rules compliance and safe operation, Supervisors will ride with Operators during regular revenue service to observe work performance throughout the trip and provide instruction on handling and customer service skills. Refer to *RT 4.1.04 for Rail Transportation Ride Check Procedures* and *BT 4.2.08 for Bus Transportation Ride Check Procedures*.

13.3.5 Elevator and Escalator Safety Inspections

The Office of Vertical Transportation branch performs the following activities in support of Rules Compliance and Procedures Review:

- Conducts comprehensive on-site evaluations of processes and monitor vendor operations and maintenance activities procedures to identify any problem areas.
- Provides contract administration, inspection, and oversight of the work performed by contractors to ensure that all elevator and escalator equipment complies with all Federal, State, City, and Local Government requirements and code regulations.

- Maintains complete and accurate safety records, permits, engineering documents, and other technical reports to aid in establishing acceptable safety requirements.
- References and adheres to the OVT Standard Operating Procedures Manual (OVT-1 thru OVT-20) for elevators and escalators.

13.4 Compliance Techniques – Supervisory Personnel

The following documents describe the roles, responsibilities and activities conducted by Supervisory personnel in support of rules compliance.

- BT 4-3-09 – Responsibilities and Duties of Transportation Supervisors
- RT 4.1.03 – Monthly Safety Committee Meetings and RCSS Safety Briefings
- RT 4.3.03 - RSCC Superintendent Duties
- RT 4.2.03 – Rail Line Supervisor Duties
- RMSOP01 - General Shop Operation Procedure for Supervisors
- RMSOP07 - Shop Safety Walk Around Reporting Procedure

13.4.1 Safety Committees

Safety Committee Meetings are held on a monthly basis with some exceptions. These meetings provide a forum for creating and maintaining a high level of safety awareness and rules compliance. The *Joint Health and Safety Committee (JHSC) Guidelines* describe the structure and function of the Joint Health and Safety Committee; its importance, roles and functions in relation to the GM/CEO Safety Committee, General Safety Committee, and the Shop/Unit Level Safety Committees.

13.5 Documentation of Findings – Hazard Management Process

The following processes and activities support the incorporation of findings into the Hazard Management process at MARTA. The Office of Safety supports and coordinates contractors and suppliers system safety activities. Hazards are recognized as part of routine inspections, through the accident/incident investigations process, and by the safety internal audits process. Additionally, hazards are tracked as part of the work order system process. Hazard findings are captured through compliance observations, inspections, and subsequent corrective actions are planned and tracked as per *10.3.134 Hazard Identifications and Risk Assessment Procedure* and through use of the *Safety Audit Finding Response Sheet* and the Corrective Actions Tracking Processes.

13.5.1 Internal Safety Audits

As part of the Internal Safety Audit Process checklist, compliance with rules and procedures is examined and documented. The *Performance Evaluation Ride Check Forms* along with other evidence of rules compliance and records are examined and the results are recorded as part of the *Safety Internal Audit Process*.

13.5.2 Quality Assurance Activities

The Quality Assurance (QA) branch performs the following activities in support of procedure reviews.

- Evaluating Operations and Maintenance compliance with established standards and procedures.
- Facilitating quality improvement throughout the Authority by partnering with process stakeholders to identify opportunities for improvement and resolve quality/reliability risks.
- Ensuring that assemblies, structures, systems of vehicles, equipment and facilities are manufactured, installed, and tested in accordance with specified contractual requirements.
- Leading the effective implementation of quality/reliability improvement activities and corrective actions.
- Quality audits of Authority processes.
- Quality and Test oversight on capital improvement projects.

14 Facilities and Equipment Inspections

14.0 Overview

This section provides information about facilities and equipment inspections, including roles and responsibilities, descriptions of how safety-related equipment and facilities are regularly maintained, inspected and tested, and how identified hazards are entered into the hazard management process.

14.1 Facilities and Equipment Subject to Inspection

Facilities and Equipment subject to inspection include:

- Rail Maintenance facilities and yards
- Rail Operations facilities and rail cars
- Rail tracks and structures
- Elevators and escalators
- Bus Maintenance facilities
- Bus Operations facilities, buses and Mobility vans
- Operating, support and administrative facilities

Information in this element focuses on the activities performed by Operations. Rail Car Maintenance also performs equipment inspections. The Office of Safety conducts environmental inspections as part of the *Storm Water Pollution Prevention Plan* requirements and various Industrial Safety inspections. Bus Operations performs regular inspections on their facilities and equipment as part of their safety responsibilities.

14.2 Regular Inspection and Testing

Hours spent performing preventive maintenance (PM) is considered the backbone of an effective maintenance management system and hazard management process. PM encourages the reduction of hazards and reactive time, and increases productive planned work as part of scheduled maintenance measurements and hazard management.

Preventive Maintenance and Inspections are defined as those activities designed to eliminate or reduce wear on assets and equipment systems, thus reducing potential hazards. The total hours spent on PMI equals the total hours spent on preventive maintenance and inspection work as recorded on work orders in the EAM system. All operations and maintenance areas perform inspection and testing as part of their regular routines. The Office of Safety performs environmental and industrial inspections.

14.2.1 Scheduled Track Inspections

Train control, communications, traction power, work trains, and other miscellaneous equipment are inspected, tested, and maintained in 30, 60, or 90 day intervals in accordance with the manufacturer's maintenance manuals, accepted industry practices, and *MARTA's Automatic Train Control Maintenance Manual*.

Track inspections are conducted based on Federal Railroad Administration (FRA) standards. Inspections and risk assessments occur twice a week with at least 1 day

between inspections. Automated Track Geometry testing is performed twice a year. Ultrasonic Running Rail testing is performed twice a year. Detailed switch inspections are performed once a month. Bridge, Stations, and Tunnels are inspected on a biennial basis.

14.2.2 Tunnel and Structure Inspection

Inspection requirements are based on standards and regulations of the following agencies:

- National Bridge Inspection Standards 23 CFR 650 C
- American Association of State Highway and Transportation Officials
- FHWA (Federal Highway Administration)
- FTA (Federal Transit Authority)

14.2.2.1 Tunnel and Bridge Inspection and Assessment Process

Bridge Assessment is based on the FHWA numerical condition of 0 to 9. Tunnel Assessment is based on the FTA-FHWA numerical condition rating of 0 to 9. The rating and their corresponding conditions are described in the following table.

Table 7: FTA-FHWA Condition Rating

Rating	Condition Category	Description
9	Excellent	No maintenance or rehabilitation concerns. No noticeable deficiencies or deterioration.
8	Very Good	No maintenance or rehabilitation concerns. Very minor construction or fabrication defects that do not affect the capacity or function of the member.
7	Good	No problems noted.
6	Satisfactory	Some minor problems.
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.
4	Poor	Advanced section loss, deterioration, spalling, or scour.
3	Serious	Loss of section, deterioration, spalling, or scour have seriously affected the primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may be removed substructure support. Unless closely monitored, it may be necessary to close the structure until corrective action is taken.
1	Imminent Failure	Major deterioration or section loss present in critical structural components, or obvious loss present in critical structural components, or obvious vertical or horizontal movement affecting

Rating	Condition Category	Description
		structural stability. Structure is closed to traffic, but corrective action may put back in light service.
0	Failed	Out of service; beyond corrective action.

14.2.3 Track Inspection Requirements

Inspection requirements are based on standards and regulations of the following agencies:

- State of Georgia Fixed Guideway Safety Oversight Standards
- U.S. Department of Transportation Motor Carrier Safety Regulations
- Federal Railroad Administration (FRA)
- In addition, the following national consensus standards and guidelines are applicable to MARTA facilities:
- National Electrical Code
- Underwriters Laboratory (UL) Standards
- National Fire Protection Association (NFPA) Standards
- American National Standards Institute (ANSI) Standards
- American Conference of Governmental Industrial Hygienists (ACGIH) Guidelines
- Equipment manufacturers' operating standards

14.2.3.1 Track Inspection and Assessment Process

Track walkers use the EAM to identify defects as follows:

- **Red** - A track defect exists that requires action. Immediate temporary action is taken to address the issue. Project start for replacement of defective area occurs within 24 hours.
- **Yellow** – A defect exists but does not require action at this time. The inspector recommends continued observation of the noted defect.
- **Green** – A defect exists that is not critical, but noted. This defect can potentially be updated to a yellow status.

Inspection results are downloaded into MARTA's Enterprise Asset Management (EAM) System.

A monthly print out of all scheduled inspections and maintenance is done by MARTA's EAM, where all maintenance activity is maintained, tracked, and stored for every department as part of the as part of the Hazard Management Process. Summaries are provided in the *Hazard Management Quarterly Reports*.

14.2.4 Rail Shop Inspections

The Rail Shops (Railcar Shops) have Preventative Maintenance Inspections to inspect and test equipment by a defined procedure and checklist in specified time increments (8 /40/160/1000/2000 hours) Details are provided in the following documents:

- Armour Yard Shop PMI Schedule (Doc (310/311/312/P-956-960)
- Avondale Yard Shop PMI Schedule (Doc (310/311/312/P-961-965)
- South Yard Shop PMI Schedule (Doc (310/311/312/P-966-970)

14.2.5 Bus Maintenance Inspections

Bus Maintenance performs testing and inspection procedures such as:

- Bus Brake Testing (SIB 2005-13) - A procedure for testing bus brake efficiency and stopping distance for accident evaluation and multiple brake complaints.
- Low Voltage Testing (Radio) (SIB 2009-05): For testing MARTA bus radio systems for low voltage, and reporting the findings.
- Quality Control Program (SIB 2003-15) – A formalized program to inspect PM's by Management.
- 6000-mile preventative maintenance inspect (look on bus site)

14.2.6 System Safety Inspections

The Office of Safety performs a variety of inspections.

14.2.6.1 Industrial Safety Inspections

The Industrial Safety Inspection Program is a scheduled, documented safety inspection program to ensure that industrial safety policies, procedures and best practices are being followed properly and consistently at MARTA facilities. The Office of Safety develops and uses an inspection checklist for each facility inspection. With cooperation from the General Superintendents, the inspection is conducted over the course of a typical work schedule for each facility. Findings and observations are logged and document all unsafe conditions and/or observed acts in addition to the inspection checklist. The checklist can be used by the Supervisory personnel to conduct their own monthly facility inspections.

Post-inspection, a Safety Inspection Finding Response Sheet is sent to the Superintendent of the facility to identify the Determination of Cause, Corrective Action Taken, and Action(s) to Prevent Recurrence. The completed form is to be returned to the Industrial Safety Officer within 30 days. The responses are entered into a Corrective Actions Log and tracked for its progress, verification, and closure. These inspections provide additional safety data that are integrated into the Hazard Management Process and Corrective Action Tracking Process.

14.2.6.2 Fire/Life Safety Inspections

All fire safety-related equipment requires regular inspection, maintenance, and testing in accordance with applicable state and local code requirements. Some equipment, such as elevators, boilers, and paint booths require municipal permitting. As part of fire safety inspection activities, test documentation and permits are reviewed and monitored to verify all fire safety systems or systems which could affect fire safety are properly inspected and permitted.

14.2.6.3 Construction Safety Inspections

Construction Safety continues to assure contractor, patron and employee safety at various projects throughout the system through project design review, participation in weekly progress and safety meetings, performing regular job site inspections, and review and approval of contractor submittals.

14.2.6.4 **Environmental Inspections**

The Environmental Program conducts routine inspections of the bus and rail maintenance facilities including:

- Quarterly Stormwater Facility Inspections
- Quarterly Stormwater Visual Inspections
- Annual Comprehensive Site Stormwater Inspections
- Monthly Spill Prevention, Control, and Countermeasures Inspections
- Weekly Hazardous Waste Inspections at Small Quantity Generator facilities
- Semi-Annual Underground Storage Tank Inspections

14.2.7 **Office of Facilities Maintenance**

The Office of Facilities Maintenance is responsible for managing the maintenance programs for the Authority's facilities management and maintenance, utilities (gas, water and electricity), landscaping services and custodial services for all Authority owned buildings, rail stations, rail yards, parking facilities, bus garages and real estate. The primary focus of this office is to provide a safe, reliable and sanitary infrastructure and operating system for the Authority's internal and external customers through the following four departments:

- The Buildings and Support Equipment branch is responsible for the general maintenance, minor construction and repair for MARTA facilities including the bus garages, rail shops, rail stations, roads, parking lots and all associated mechanical, HVAC, water, sewer and fire protection systems.

- The Custodial and Landscape Services branch is responsible for the general custodial services, landscape maintenance, manufacture, repair and installation of signage for all Authority owned buildings, rail stations, parking facilities, rail yard, bus garages and real estate.

- The Headquarters Building Maintenance branch is responsible for the oversight of the operational tasks associated with custodial support, fire safety equipment, life safety equipment, HVAC equipment, electrical equipment, plumbing equipment, landscaping, painting, signage and utilities for the buildings that comprise the Headquarters Building Complex (MARTA Headquarters Compound, the Annex and the IOC). This maintenance group maintains a clean, safe and comfortable work environment for MARTA's internal business units.

- The Maintenance Control Center (MCC) is the nerve center of the Facilities Maintenance Operations. The MCC provides support via phone, email and online and also manages and distributes facility service requests/work orders via defined thresholds, systematic notifications, and provides Management with service level reporting. The MCC also is responsible for managing the integrity of the data entered into the EAM (FASuite) and ensuring it is properly maintained and updated as needed.

14.2.8 Office of Maintenance of Way

The Office of Maintenance of Way is responsible for managing the maintenance programs for the Authority's traction and auxiliary power sub-stations, automatic train control, and the inspection and repair of track structures. The department is also responsible for right of way maintenance and inspection. The department focuses on maintaining the safety and reliability of wayside equipment and applies generally accepted standards of maintenance in providing safe, reliable, operating systems throughout the transit system for our internal and external customers. Maintenance of Way is committed to MARTA's strategic priorities and endeavors to meet those objectives and standards through the combined efforts of the Director and the following three offices:

- Electrical Power and Equipment is responsible for preventive maintenance and repair of the Authority's traction and auxiliary power systems. The traction power portion of this office delivers safe and reliable third rail power (750 dc) to propel the Authority's rail cars and to maintain the wayside emergency trip stations. The auxiliary power portion of this office functions to deliver safe and reliable auxiliary power to the Authority's electrical loads (lighting, elevators, escalators, heating and ventilation) for all rails, bus and support facilities. This office performs general building electrical inspections, maintenance, and repairs as well as minor installation in bus and rail facilities. Additionally, the office provides corrosion control and systems integrity engineering for the Authority. The primary focus of this office is to provide uninterrupted traction power, well-lit passenger stations and parking lots, and electrical system integrity.

- Automatic Train Control is responsible for maintenance and repairs of the signaling and train control systems that guide rail vehicle movement. The function of this office is to ensure the safe operations of trains by maintaining track circuits, impedance bonds, switch machines, vital control relays, encroachment detection systems, traffic signals, routing circuits, train warning lights, and automatic speed command systems.

- Track and Structures is comprised of three major units: Track Inspection and Support, Track Maintenance and Structural Engineering, Maintenance and Inspection.

Track Inspection and Support provides track inspection services, scheduling services, personnel administration services, contract administration services, material management services, preventative maintenance, and track vehicle and equipment repair and maintenance services. Additional services include performing scheduled preventative maintenance, major component replacement and development of equipment procurement specifications.

Track Maintenance implements the majority of track maintenance repair programs including ballasted track maintenance, direct fixation track maintenance, contract rail maintenance, running rail maintenance and turnout maintenance.

Structural Inspection provides structural inspection services, including the inspection of aerial structures, tunnels, right-of-way structures and passenger station structures on a biennial basis to ensure safety, strength and serviceability. Maintenance services include structural component cleaning, structural concrete repair and inspection, expansion joint

repair and replacement, drain maintenance, structural bolt maintenance and bearing pad replacement and maintenance. This branch also furnishes conceptual engineering support for special projects and planning studies as requested various MARTA departments and Offices.

14.2.9 The Office of Vertical Transportation

The Office of Vertical Transportation (OVT) is responsible for the management of MARTA's Elevator and Escalator program to include the administration of maintenance and capital rehabilitation contracts. The office has major responsibility for completion of the appropriate activities necessary for the design, preparation, advertisement, and award of elevator and escalator contracts. It ensures contractors comply with contract technical specifications and requirements, as well as with any federal, state, city and local government requirements, ordinances, codes, and all applicable safety requirements and oversees equipment inspections and troubleshooting process of MARTA's elevator and escalator electrical and mechanical equipment problems and tracks installation of repaired or acquired equipment.

All OVT work activities comply with or exceed the requirements of the current National Elevator Industry, Inc. (NEII) Field Employees' Industry Safety Handbook. The Handbook is to augment the maintenance provider's company safety program. The NEII Field Employees' Safety Handbook is not intended to be used as the total company safety program or policy. The intent of this Handbook is to promote safety through adherence to OSHA safety regulations affecting the elevator/escalator industry and other trades working with MARTA.

Working with other MARTA staff members, such as Safety and Quality Assurance personnel, Project and Resident Engineers, Project and Construction Managers, keeps the Authority informed of the status of the elevator/escalator facilities on a routine basis.

14.2.10 The Department of Rail Transportation

The Department of Rail Transportation includes and is responsible for the Rail Services Control Center, Mainline Rail Operations, Yard Operations (Avondale, South Yard, and Armour Yard), Dispatch, Rail Car Appearance and Station Services.

Rail Transportation is responsible for the safe, clean, and efficient operation of trains throughout the rail system. This involves the Rail Services Control Center, which manages rail car movement through the Automatic Train Control system and remotely controls mechanical and electrical equipment.

Included in Rail Transportation is the Yard Operations staff that wash, store, and inspect rail vehicles and coordinate with Rail Maintenance to ensure the required number of cars are available for revenue service. The Yard operations staff also controls all yard movement, including movement in and out of shops, and provides vehicle-testing support.

Other responsibilities in Rail Transportation include:

- Dispatching scheduled work assignments to represented and non-represented personnel to ensure that all work is filled in accordance with the labor agreements.

- Providing reports of vehicle performance to assist with failure diagnosis and repairs.
- Monitoring and troubleshooting problems within rail cars.
- Monitoring, directing, and evaluating the performance of all rail transportation personnel.
- Station Services is responsible for face-to-face customer assistance.

14.2.11 The Department of Technology

The Department of Technology is responsible for providing efficient, reliable, cost-effective, and responsive technology services and dedicated support to all technology users throughout MARTA, and the investment, implementation, operation and maintenance of all technology hardware, software, networks and services. The department includes three offices.

14.2.11.1 Technology Infrastructure and Production

The Office of Technology Infrastructure and Production is responsible for providing maintenance and support for telecommunication, network, storage area network, servers and data centers for all technology systems. This office supports Authority-Wide business units in providing service desk, distributed desktop, data network, and system support. This office operates and maintains an integrated Technology infrastructure that enables MARTA to operate effectively and efficiently in current and emerging business environments. Infrastructure plans, deploys and supports the rollout of network and server infrastructure, desktops, printers and associated software and controls the overall usage of technology tools throughout the Authority. This department accomplishes these functions through the Technology Systems Support, Enterprise Network Operations, and Telephony Operations branches.

14.2.11.2 Technology Support Services

The Technology Support Services office is responsible for program, project, budget and contractual oversight for the Department and for analyzing and researching new transit technologies and programs. This office develops and tracks metrics (measures) and follows up to assure the quality of new product releases. In addition, this office fulfills Technology compliance through proper processes, documentation, and writing of proper process and procedures, and technology audit. This office accomplishes these functions and responsibilities through the Program Management, Business Management, Quality Assurance and Compliance branches.

14.2.11.3 Technology Applications

The Office of Technology Applications is responsible for development and implementation of new applications and the maintenance and modifications of existing applications for all of the Authority. This office is also responsible for providing technology stewardship for MARTA enterprise technology applications. This office accomplishes these functions and responsibilities through the ITS Applications, Business Applications, Database Administration and Automated Fare Collection (Breeze) Program Management branches.

14.2.12 Safety Inspections of Technology Equipment

With recent changes to the organization, the responsibilities for the inspections and maintenance of computer, radio fire, security equipment is split between Technology Infrastructure and Operations and the Rail Maintenance organizations. Inspections occur

on all systems on a periodic basis as defined in the Performance Maintenance (PM) schedules. PM Schedules go to the Offices of Safety annually.

The Technology Office is also responsible for the operation, maintenance, and software controls of the following systems:

- Rail Service Control Center (RSCC) computer system and software
- Network Equipment associated with Faregates*
- Closed Circuit Television (CCTV) (computer and network hardware only)
- Oracle Financial Application and related network equipment and personal computers hardware
- Telephones
- PCM/SONET Fiber Transport and Telephone Systems
- Station Public Address Systems
- Electronic Station Signage

The Computer Maintenance group, now under Rail Maintenance is responsible for the operation, maintenance, and inspection of the following systems:

- Bus radio computer system
- Remote Terminal Units (RTU) that remotely monitor and control traction power,
- Supervisory and control system
- Security lighting
- Automated train control systems and software
- Local Data Transmission Systems (LDTS) (shared with Communications Hardware/Telephone)

The Communications Hardware group, now under Rail Maintenance is responsible for the operation, maintenance, and inspection of the following systems:

- Fire and Intrusion Systems
- Automatic Train Announcement System (ATAS)
- Supervisory and control system
- Life safety, fire & intrusion alarms,
- Local data transmission systems (LDTS) (shared with Computer Maintenance)

The Radio Shop, now under Communications Hardware group is responsible for the operation, maintenance, and inspection of the following systems:

- Police, Bus, Rail, and Operations Two-Way Radios
- Bus radio computer system
- Closed Circuit Television (CCTV) (cameras and video transport only)
- Automated Vehicle Locator (AVL) System

*An outside vendor provides the Faregates and fare media encoders (Breeze System). However, the Technology Office manages the vendor activities and related MARTA system hardware and software interfaces.

14.2.12.1 Technology Systems Modifications

The Technology Office uses an industry-standard ITIL-based change management system to ensure the efficient management of IT services, support and manages system modifications. Requests for Changes (RFC) can arise in order to implement a change in the production environment or correct a fault in the infrastructure identified through the Problem Management process.

14.3Checklists

Checklists are used in support of the following programs:

- **Safety Internal Audits** – Checklists are created for each scheduled audit for each area subject to audit.
- **Industrial Safety Inspection Program** - Includes a schedule, electrical safety checklist, and flammable and combustibles checklist and an Audit Finding Report. Results are sent to the Facility Superintendent who is required to complete a *Safety Audit Finding Response Sheet* indicating a corrective action plan for each finding. Identified hazards are included as part of the Hazard Management Process and corrective actions are tracked per the Corrective Actions Process and Safety 1st.
- **Preventive Maintenance (PM) Procedures** – PM procedures include specific checklists as part of the procedure. **Integrated within the Work Order System**. - The Enterprise Asset Management (EAM) System is used to facilitate tasks, including inspections using integrated checklists and procedures. Supervisory verification tracking and reporting is also part of the system capabilities. Work Orders outline the tasks, identifies who performed certain tasks, and includes procedures associated with the checklists.
- **Pre-Departure Checklists for Bus and Rail**. See Section 13.3.1

15 Maintenance Audits and Inspections

15.0 Overview

This section describes the roles, responsibilities, and tasks associated with Rail Car, Bus, and Technology Maintenance Program audits and inspections.

15.1 Systems and Facilities Subject to Maintenance Program

The following facilities and the systems they support have scheduled Maintenance

Programs:

- Rail Car Maintenance
- Bus Maintenance
- Technology
- Maintenance of Way
- Vertical Transportation
- Facilities

15.1.1 Rail Car Maintenance

This section outlines the maintenance programs and inspection procedures for rail cars and related equipment. Rail Car maintenance and inspections occur in accordance with the following rail maintenance standard operating procedures (RMSOP/RCM-SOP):

- Rail Car Maintenance Plan Policy (RCM-SOP-017)
- Rail Car Maintenance Reliability Program Policy (RCM-SOP-018)
- Rail Car Maintenance Program (RCM-SOP-019)
- Supervisor QA Check (RCM-SOP-029)
- Pre-Service Release/ Inspection Procedure (RCM-SOP-003)

The following activities are performed in support of Rail Car Maintenance audits and inspections.

- Establish and implement procedures to assure that the rail car fleet is properly maintained and available in safe operating condition.
- Establish and implement appropriate maintenance inspections and repair programs.
- Ensure that appropriate technical training and certification is provided to all maintenance mechanics and electronic technicians.
- Provide and maintain proper tools and equipment for the support of maintenance activities.
- Establish and maintain proper maintenance documentation support of maintenance inspection activities.
- Ensure that proper safety and quality control practices are incorporated in day-to-day maintenance operations.

- Ensure that any safety and quality audit findings of the day-to-day maintenance operations are properly addressed and their appropriate corrective actions are implemented in a timely manner.
- Ensure that any safety accident investigations or incidents are properly investigated and appropriate corrective actions plans are developed implemented.
- Monitor the collection and disposal of waste (e.g., oils, parts washer solvents) to effect safe handling and minimize employee and environmental exposure to potentially hazardous products and materials as per the *Environmental Management Policy* (ED-4-2-1), the Environmental Handbook and Pollution Prevention Plans.

15.1.1.1 **Periodic Inspections**

Periodic inspections occur on rail cars as specified by the MARTA Rail Car Maintenance Running Maintenance manual, Heavy Maintenance manual, and model-specific manufacturer's servicing manuals. The inspections are based on manufacturer's specifications and conducted every 15K, 30K, and 60K miles. MARTA's rail car mileage is managed through FASuite. Railcar Maintenance personnel carry out PMI utilizing a defined procedure and checklist based upon specified time-in-service increments which vary according to the equipment being tested (8/40/160/1000/2000 hours). Details are provided in the following documents:

- Armour Yard Shop PMI Schedule (Doc (310/311/312/P956 through 960)
- Avondale Yard Shop PMI Schedule (Doc (P951 through 965)
- Rail Car Maintenance Reliability Program Plan (RCM-SOP-018

Preventive maintenance of all rail cars is performed by the Rail Car Maintenance department, in accordance with the manuals and specifications stipulated above. Inspections of systems and components as well as audits of all preventive maintenance activities and schedules are also performed by this department. All identified safety-critical discrepancies must be corrected by Rail Car Maintenance and verified by the Office of Safety before the cars are permitted to return to revenue service.

Additionally, weekly safety meetings with Supervisor crews provide information to front-line employees regarding general shop safety, ad hoc training, hazard management, and incident debriefing.

15.1.1.2 **Service Requests**

Service Requests are written by Rail Car Maintenance inspectors and RSCC personnel for all non-safety critical items found during inspections. These requests, along with those for unanticipated repairs discovered in other contexts, are entered into FASuite and then reviewed, prioritized, and scheduled for maintenance repair at the most opportune date.

15.1.1.3 **Additional Inspections**

Other regular inspections made in accordance with industry-accepted procedures and standards are:

- Pre-revenue service inspections
- Visual inspections by operators
- Quality Control inspections by supervisors

- Internal audits by the Branch of Quality Assurance

15.1.2 Bus Maintenance

Bus Maintenance Preventive Maintenance includes, but is not limited to, the following procedures:

- *Bus Brake Testing* (SIB 2005-13): A procedure for testing bus brake efficiency and stopping distance for accident evaluation and multiple brake complaints.
- *Low Voltage Testing* (Radio) (SIB 2009-05): For testing MARTA bus radio systems for low voltage, and reporting the findings.
- 6000 mile preventive maintenance inspection, as defined on the Bus Maintenance internal website.

Bus Maintenance conducts frequent scheduled internal audits and inspections to ensure its personnel follow established preventive maintenance policies and procedures. Maintenance Planners in the Bus Maintenance department monitor the database and schedule appropriate inspections. Such activities are conducted within the specific parameters set forth below.

15.1.2.1 Fixed Route Buses SIB 2010-13

Buses shall be inspected every 6,000 miles traveled, plus or minus 10 percent. Bus Maintenance strives to perform an average of 95 percent of inspections within this mileage range, and the inspections are tracked for compliance in FASuite.

The Safety Preventive Maintenance shall be performed at the following mileages: 6K, 18K, 30K, and 42K. This shall be part of a more extensive Preventative Maintenance Program for a floating 48,000-mile year.

The primary purpose of PM is to check the overall condition of the bus, change the engine oil and filters, service all subsystems, completely lubricate the bus, and repair any defects. To ensure a thorough inspection process, the engine, transmission, wheels, battery and battery box, and radiator shall be steam cleaned 24 hours in advance of the PM, and all buses are to be road tested to check operation, air, brake, steering, suspension, shift pattern, noise, and rattles.

All identified safety defects, as prescribed by the United States Department of Transportation Federal Motor Carrier Safety Regulations, will be repaired before a bus is put back into service.

As the coach inspection is being performed, the mechanic will remain alert for any defects that may not be on the inspection form.

Non-safety defects found in the course of a PM should be corrected or repaired by Bus Maintenance within 30 calendar days following inspection. If the follow-up repairs are not performed within the 30-day period, the bus will be removed from service until such repairs are completed. This does not apply to non-safety body repairs, paint jobs, or parts that are on order.

The Maintenance Manager can request modification of the inspection procedures if he or she believes a change is necessary. Requests must be reproduced in written form and sign the instructions authorizing the change. The Manager of Bus Engineering must approve all change documents.

15.1.2.2 **Mobility Vans SIB 2007-07**

The intent of this PM program is to have safe and reliable Mobility vehicles available for the riding public. Scheduled maintenance extends the life of vehicles and allows for the most cost effective and efficient use of maintenance personnel and resources. Repair decisions, at a minimum, should ensure the reliability of the vehicle for 6,000 miles. Preventative Maintenance Procedures shall be performed within 10% of target mileage.

GM 4500 Lift Vans shall be subject to inspections every 10,000 miles, plus or minus 10 percent. Bus Maintenance strives to perform an average of 98 percent of these inspections within the allotted mileage and the inspections are tracked for compliance by FASuite.

The primary purpose of the PM procedure is to check the overall condition of the vehicle, change the fluids and filters, service all subsystems, and completely lubricate the van. The Safety Preventive Maintenance shall be performed at the following mileages: 10K, 20K, 30K, and 40K. The 40K PM shall be the end of the cycle.

All safety defects, as prescribed by the United States Department of Transportation Federal Motor Carrier Safety Regulations, will be repaired before a van is put back into service. As the PM is being performed, the mechanic shall remain alert for any defects that may not be on the inspection form. This does not apply to non-safety defects such as lack of repair parts, body repairs, or paint jobs.

The Garage Manager/General Superintendent can request to modify the inspection procedures if he or she deems a change is necessary. The General Superintendent must reduce the request to written form and sign the instructions requesting the change. The Manager of Bus Engineering shall review the change documents for approval and the Director of Bus Maintenance shall give final approval.

Table 8: Bus Preventive Maintenance Service Bulletins

SIB number	Title
2008-26	Miscellaneous Bus Lift: The purpose of this bulletin is to ensure maintenance personnel have a policy and procedure available for the Safety Preventative Maintenance of the Advantage/Rotary bus lifts.
1998-036	L-Van PM: Updated policy and procedure for PM of L- Van fleet
2001-012	CNG Compressor PM's Policy and Procedure for the maintenance of CNG Compressors
2002-019	Orion PM's CNG PM program for Orion CNG'S
2002-021	Orion PM's Diesel PM program for Orion Diesels

SIB number	Title
2003-16	PM Program for Fleet Update of entire Fleet PM policies and procedures
2004-10	PM procedure for 8.3G Orions
2004-22	ISL 280 PM procedure for 2301-2355
2006-04	Bus Safety PM Safety PM procedure for all buses
2006-05	Bus Comprehensive PM' procedures for all buses
2006-12	Lift Van PM Policy and procedure for the PM of Lift Vans/Small Buses
2006-24	Bus Comprehensive PM procedure for buses 2411 -2465
2007-02	PM Sprinter Van PM Policy and procedure for the Preventative Maintenance of Sprinter Vans.
2007-07	GM 4500 PM Policy and procedure available for the Preventative Maintenance of GM 4500 Lift Vans

15.1.2.3 **Bus Maintenance Personnel Responsibilities**

Garage Planner

- Plan and schedule the inspection. Verify necessary parts are available
- Check Work Order notes and corresponding parts to verify that both reflect work completed. Notify Garage Management of any inconsistencies
- Close Work Orders once work notes and part integrity are confirmed
- Create any required follow up work orders

Preventative Maintenance Supervisor

- Inspect every bus inspected by Preventive Maintenance personnel
- Verify that defects previously found have been repaired or listed for repair
- Verify correctness of any undertaken repairs
- Verify that noted repairs and defects are forwarded to the Maintenance Planner for follow-up work orders or repair history

Superintendent or General Superintendent

- Inspect working or completed PM buses on a continuous basis
- Verify all repairs listed on the PM work orders have been completed satisfactorily
- List on the work order any additional defects noted, and forward the work order to the Maintenance Planner for a follow up sub-work order

15.1.3 Technology Maintenance

Depending on the equipment and its use, maintenance responsibilities related to the SCADA System are shared between the Technology, Computer Maintenance and the Electrical Power & Equipment (EP&E) branches. Separately controlled and maintained equipment, such as tunnel fans, signal equipment, or fire suppression systems, are maintained by departments with expertise in those respective areas.

Management and support of the network interfaces between SCADA system equipment is separate from maintenance of the equipment itself. SCADA maintenance begins at the connection to the monitored equipment. Computer Maintenance maintains the wiring and maintenance of the Local Data Transmission Systems (LDTS) and the Remote Terminal Units (RTUs). All remaining wiring and fiber from LDTS or RTUs to the rail controllers' computers and mosaic boards, as well as to the PCM Channel Banks, the SONET equipment, the DACS, the main distribution frame, and all affiliated software is maintained by the Department of Technology.

At the Rail Service Control Center (RSCC), an on-site Computer Maintenance Technician is responsible for the modem cabinet, computer hardware, and the mosaic boards. EP&E maintains the equipment that supplies power to the various components of the system.

User support is managed by the on-site Computer Maintenance Technician stationed at the RSCC location. If the technician determines that a SCADA issue belongs to the Technology Department, he/she contacts the IT Network Operations Center (NOC) to address the problem. If lack of power is the problem, Computer Maintenance contacts EP&E.

MARTA's train control hardware and software is currently undergoing a complete renovation as part of the Train Control System Upgrade project, scheduled to be completed in 2019. Departmental responsibilities for maintenance of the SCADA system may change because of this process.

Preventive Maintenance (PM) is carried out on all of the components of the SCADA system on a regularly scheduled basis. Diagnostic procedures as specified by system manufacturers are used for the PCM Channel Banks and the SONET system.

MARTA uses a PM compliance report generated by FASuites to verify that preventive maintenance is performed as scheduled.

15.1.3.1 Safety Inspections of Technology Equipment

The responsibility for inspection and maintenance of computer, radio, fire, and security equipment is divided between the Office of Technology Infrastructure and Operations and the Departments of Rail and Bus Maintenance respectively. Scheduled periodic inspections occur on all systems as defined in the PM schedules for each part of the system, which are sent to DSQA annually.

The Office of Technology Infrastructure and Operations is responsible for the operation, maintenance, and software controls of the following systems:

- Rail Service Control Center (RSCC) computer system and software
- Network Equipment associated with fare gates*
- Closed Circuit Television (CCTV) (computer and network hardware only)
- Oracle Financial Application and related network equipment and personal computers hardware
- Telephones
- PCM/SONET Fiber Transport and Telephone Systems
- Station public address systems
- Electronic station signage

***Note:** *An outside vendor provides the fare gates and fare media encoders (Breeze System). However, the Office of Technology Infrastructure and Operations manages vendor activities and related MARTA system hardware and software interfaces.*

The Computer Maintenance group, housed within Rail Maintenance, is responsible for the operation, maintenance, and inspection of the following systems:

- Remote Terminal Units (RTU) that remotely monitor and control traction power
- Supervisory and control system
- Security lighting
- Automated train control systems and software
- Local Data Transmission Systems (LDTS) (shared with Communications Hardware/Telephone)

The Communications Hardware group, housed within Rail Maintenance, is responsible for the operation, maintenance, and inspection of the following systems:

- Fire and Intrusion Systems
- Automatic Train Announcement System (ATAS)
- Supervisory and control system
- Life safety, fire and intrusion alarms
- Local data transmission systems (LDTS) (shared with Computer Maintenance)

Radio and Computer Maintenance, housed within Railcar Maintenance, is responsible for the operation, maintenance, and inspection of the following systems:

- Police, Bus, Rail, and Operations Two-Way Radios
- Bus radio computer system
- Closed Circuit Television (CCTV) (cameras and video transport only)
- Automated Vehicle Locator (AVL) System
- SCADA

15.1.3.2 **Technology Systems Modifications**

The Technology Infrastructure and Operations Office use an industry-standard Information Technology Infrastructure Library (ITIL)-based change management system

to provide efficient management of IT services, support, and system modifications. Requests for Changes RFC) can arise in order implement a change in the production environment or to correct a fault in the infrastructure identified through the Problem Management process.

15.1.4 Maintenance of Way Inspections

The participating departments are:

- **Track and Structures Branch** - The Track and Structures Branch is comprised of three major units:
  - Track Inspection and Support provides track inspection services, scheduling services, personnel administration services, contract administration services, material management services, preventative maintenance, and track vehicle and equipment repair and maintenance services. Additional services include performing scheduled preventative maintenance, major component replacement and development of equipment procurement specifications.
  - Track Maintenance implements the majority of track maintenance repair programs including ballasted track maintenance, direct fixation track maintenance, contract rail maintenance, running rail maintenance and turnout maintenance.
  - Structural Inspection provides structural inspection services, including the inspection of aerial structures, tunnels, right-of-way structures and passenger station structures on a biennial basis to ensure safety, strength and serviceability. Maintenance services include structural component cleaning, structural concrete repair and inspection, expansion joint repair and replacement, drain maintenance, structural bolt maintenance and bearing pad replacement and maintenance. This branch also furnishes conceptual engineering support for special projects and planning studies as requested various MARTA departments and Offices.
- **Electrical Power and Equipment Branch** - The Electrical Power and Equipment Branch is responsible for preventive maintenance and repair of MARTA's traction and auxiliary power systems. The primary focus of this branch is to provide uninterrupted traction power, well-lit passenger stations and parking lots, and electrical system integrity. The traction power function delivers safe and reliable third rail power (750 DC) to propel MARTA's rail cars and maintain wayside emergency trip stations. The auxiliary power function assures the safe and reliable delivery of power to MARTA's electrical loads (lighting, elevators, escalators, heating and ventilation) at all rail, bus and support facilities. The branch also performs general electrical maintenance, repair, and minor installation in bus and rail facilities.
- Automatic Train Control Branch - The Automatic Train Control Branch is responsible for maintenance and repairs of MARTA's signal and train control systems. The function of this branch is to provide for the safe operation of trains by maintaining track circuits, impedance bonds, switch machines, vital control relays, encroachment detection systems, traffic signals, routing circuits, train warning lights, and automatic speed command systems. Automatic Train Control personnel capture and track hazards using Safety 1st. Hazards and corrective actions are tracked by ATC management in a log that is provided to DSQA as part of the hazard management quarterly reporting process.

- Vertical Transportation

The Office of Vertical Transportation (OVT) directs and monitors the MARTA elevator and escalator full service maintenance contract. The responsibilities include:

- Observe and monitor field maintenance activities, troubleshooting and repair work on all of MARTA's elevator and escalator equipment
- Oversee preventive maintenance inspections per the established PM schedules
- Record and track trend analysis data to improve or redirect on-going maintenance efforts
- OVT utilizes FASuite database to direct the OVT Inspectors in their daily assignment of unit inspections
- Annual and Five-Year Safety tests are conducted to confirm ANSI A17.1 Code compliance

15.1.5 Office of Facilities

The Office of Facilities is tasked with maintaining the stationary equipment required to support the daily operation of the maintenance garages. In accordance with the established Facility Maintenance Plan (FMP), the Preventative maintenance schedules for stationary equipment follows the manufacturer's recommendations as a guideline to meet or exceed Estimated Useful Life (EUL) expectancies while ensuring the safe operating condition of specified stationary equipment.

- **Operating Inspections** – Equipment specified as Operation Critical routinely undergoes a daily/weekly Operator Inspection in addition to the scheduled Preventative Maintenance Inspections within Enterprise Asset management (EAM).
- **Preventative Maintenance (PM)** – PM procedures include specific checklists as part of the procedure. Integrated within the Work Order System. The EAM is used to facilitate tasks, including inspections using integrated checklists and procedures. Work Orders outline the tasks, Identities who performed specific tasks, and includes procedures associated with the checklists.
- **Schedule Changes** – If the age, condition, or average downtime of equipment show a need; frequency of inspections and/or PM's by the equipment operator, MARTA subject matter expert, or external contractor may be required.

15.2 Resolution of Audit/Inspection Findings

Findings are identified at the departmental level during scheduled audits or inspections, or by DSQA. Examples include:

- **Automatic Train Control** captures and tracks hazards using the Work Order System. Hazards and Corrective actions are tracked by ATC management in a log and that log is provided to Safety as part of the Hazard Management Quarterly Reporting.
- **Track and Structures** captures hazards as part of the Track Walkers process and classifies items (Green/Yellow/Red). Work is initiated through the Work Order System, which tracks finding to resolution in an automated fashion.

- **External Audit** findings are entered into the Corrective Actions Tracking database and DSQA staff work with owners and stakeholders to track and close items. A monthly report is sent to Executive Management on the status of open/closed and pending items.
- **Safety Internal Audits** tracks results of Safety Internal Audits, GDOT Audits and APTA audits and works with stakeholders to develop corrective actions plans and close findings.
- **Industrial Safety Inspections** capture findings based on checklists and observations and send the documented inspection results to the Facility Superintendent. The Superintendent is required to complete a Safety Audit Finding Response Sheet indicating the corrective action plan that is returned to Safety and entered into the corrective action log.

Resolution of these findings is completed through the corrective action process.

15.2.1 Documentation

Scheduled maintenance and inspection records are stored in FASuite. A Monthly Compliance Report generated by Rail Car Maintenance provides information to DSQA and the Rail Car Maintenance Department management on the percentage of cars inspected and in compliance.

15.2.2 Coordination with Hazard Management Process

The results of maintenance audits and inspections are analyzed after each audit or inspection by the supervisor of each respective maintenance department to determine if any significant hazards or trends in hazards have developed since the last audit or inspection. The supervisor/manager then reports any trends or results to DSQA. If negative trends arise, the Office of Safety may decide that a certain trend or specific hazard merits tracking and remediation through the official hazard management process. The hazard is then handled according to MARTA's *Hazard Management Plan.*

15.3 Checklists

Checklists are used across the Authority to ensure quality of service and compliance with regulation, policies, and procedures. A checklist must be used for each individual maintenance audit conducted. Checklists are integrated into the EAM Work Order System to provide automated tracking and reporting capabilities. Checklists are also integrated into following SOPs and processes related to maintenance audits and inspections.

- **Work Order Checklists:** The Enterprise Asset Management (EAM) System is used to facilitate operations maintenance tasks for all Authority assets. Work Orders include inspection checklists and procedures. Supervisory verification tracking and reporting is included within the system capabilities. Work Orders outline the tasks, and who performed certain tasks on any MARTA asset.
- **Safety Internal Audits Checklists:** The Safety Internal Auditor develops custom checklists for each area for each audit as per the ISSA SOP.
- **Environmental Compliance Checklists:** The Environmental Health and Safety Coordinator and Environmental consultant use checklists as part of routine inspections.

- **Industrial Safety Audits**: The Industrial Safety Officer uses an Electrical Safety Checklist and a Flammable and Combustibles Checklist as part of the Industrial Safety Inspections Program.
  - Checklists for inspections of stations, systems, vehicles, and materials
  - Construction Safety checklists as part of oversight on Capital Improvement Project
  - Checklists are also found as part of the following procedures:
    - Supervisor Quality Control Procedures (RMSOP 48)
    - Pre-Trip Inspection (BT 4.2.01)
    - Pre-Departure Inspections Check (RT 4.4.02)

16 Training and Certification

16.1 Overview

This section describes MARTA's employee and contractor training and certification programs.

The Office of Learning & Development reports to the AGM of Human Resources and is responsible for delivering comprehensive employee development services. The Office consists of specialty groups that provide initial and recurrent training for all represented and non-represented MARTA staff. Employee training is accomplished using both internal and external resources, and is designed to provide MARTA with personnel who have the skills, knowledge, and abilities to deliver safe, reliable and cost-effective transportation services.

All departments and employees described herein as having safety responsibilities (refer to the matrices in Section 5) are safety-critical, and management from each department is responsible for verifying that its employees receive the proper training to perform their jobs and tasks. Where appropriate and when resources allow, the Office of Learning & Development provides training to familiarize first responders with the rail system operations, bus and rail vehicle configurations, and system hazards.

16.2 Employee Safety

The following groups provide training to all MARTA operational employees, whose work responsibilities will necessarily be safety-related.

The Technical Training Group is responsible for providing the training required to certify all Authority Bus and Rail Operators and Supervisors to operate and deliver daily service by evaluating and updating, as needed, training programs for rail operators, yard tower supervisors, main line supervisors, dispatchers, and Rail Control Center (RCC) personnel. In addition to providing the instruction required to qualify new employees to deliver and supervise service delivery, the various transportation instructors deliver ongoing recurrent, new equipment and refresher training required to ensure Authority transportation employees maintain requisite operational skills. To ensure seamless operations between the Authority and local emergency services the Technical Training Group provides system familiarization training to local fire jurisdictions that respond to MARTA emergencies. This training is designed to familiarize first responders with the rail system operations, bus and rail vehicle configurations and system hazards.

The Technical Training Group also provides comprehensive training for all maintenance employees in Bus Maintenance, Rail Maintenance, Facilities Maintenance, and Maintenance of Way. Training is accomplished utilizing a combination of instructor-led classroom training, instructor led hands-on training, web-based training, and structured on-the-job training. Training programs include multi-year Department of Labor approved Craft Apprenticeship Programs, new maintenance employee transition training, regular skill sustainment training, and comprehensive new equipment instruction.

The Strategic Training Group addresses MARTA-wide, non-technical training. This group in concert with the Office of Safety is responsible for System Safety Program Plan and Safety 1st training efforts both within the new employee orientation training and MARTA University for the Authority. The other responsibilities of this group are:

- Coordinating Authority-wide non-technical training plans.

- Developing and establishing uniform training processes.
- Providing centralized training data management and reporting.
- Supporting training initiatives associated with information technology projects.
- Developing and delivering supervisory, management and leadership training.
- Delivering computer application end-user training.
- Developing and managing MARTA's Virtual University, while identifying strategies to leverage learning technologies.
- Managing the new employee orientation program (includes SSPP training and Safety 1st training).

The Technical Training Group, working in conjunction with DSQA and various other Authority departments, identifies training requirements to ensure that safety-related transportation and maintenance personnel are properly trained, qualified, and certified to perform their job functions.

16.3Contractor Safety

Contractors performing the same tasks as MARTA employees must undergo the same corresponding safety training programs or a task-or-skill-targeted but comprehensive outside version thereof, to ensure safe and efficient completion of contract projects.

Contractors are required to prepare a safety plan that complies with the SSPP. Contractors must place special emphasis on describing how their organization assures the identification, elimination, and/or control of potential hazards, which can lead to injury, loss of personnel and/or damage or loss of revenue hardware and continue to support equipment throughout the complete cycle of the program. The project-specific safety plan describes the relationships of all safety activities. Existing documents may be referenced and submitted as part of their safety plan. The contractor's Industrial Safety/Occupational Health and Safety Plan is required to be incorporated or attached to the safety plan. The plan should be in a matrix form, or some equivalent format, with the clear/concise title of the entire specific task covered by the plan that will be identified in the contract documents.

16.4Record Keeping

Training records are maintained electronically by the Office of Learning & Development in MARTA's Training Records Database or, where applicable, in hard copy files. Training records maintained in a hard copy form are archived by each individual training branch (Transportation and Maintenance, respectively) and may be accessed through the Senior Instructor of Rail, Bus, Infrastructure, or Strategic Training. In addition, certification records are kept in individual personnel files.

16.5Compliance with Training Requirements

The Office of Safety, the Office of Learning & Development, and departmental supervisors and Superintendents are responsible for monitoring overall employee compliance with safety-related training and certification requirements stipulated by job descriptions and responsibilities. In the event that an employee falls out of compliance

or is otherwise identified as requiring re-training, his or her Supervisor will work with the Office of Learning & Development to develop a course specific to that individual's needs.

16.5.1 Training Requirements

Current positional training requirements are outlined in the following matrix:

Table 9: Certification/Re-training/Re-certification Matrix

Certification/Recertification, Qualification and Sustainment Training Courses					
	Certification/Recertification/ Retraining	Prerequisites	Employees Requiring Certification/Recertifi-cation/Retraining	Course Length	Retraining Period
1	Bus Maintenance Six Month Journeyman Inspector	Meets direct hire criteria	Inspector	6 months	N/A
2	Bus Maintenance Mechanic Apprenticeship	N/A	Apprentice Mechanic	24 months	NA
3	Bus Maintenance Journeyman Automotive	Meets direct hire criteria	Journeyman Automotive Technician	6 months	N/A
4	Rail Maintenance Six Month Journeyman Mechanic	Meets direct hire criteria	Mechanic	6 months	N/A
5	Rail Maintenance Six Month Journeyman Electronic Technician	Meets direct hire criteria	Electronic Technician	6 months	N/A
6	Level I Wayside Access	N/A	Those certified to enter the wayside under the direct supervision of MARTA staff certified Level II or higher. Examples: contractors or visitors	3 hours	Annual
7	Level II Wayside Access	N/A	Dedicated Lookout Person (s) certified to initiate Simple Inspection or Safe Clearances. Examples: Safety, Radio Maintenance, Building and Grounds personnel and Station Agents.	8 hours	Annual
8	Level III Wayside Access	N/A	All Flag persons especially Track Maintenance, ATC, EP&E, Rail Operations.	40 hours	Annual
9	Track Walker	N/A	Track Walker	Determined by individual assessmen t	Annual
10	Electrical Power and Equipment Journeyman	Meets direct hire criteria	Power Electrician	6 months	N/A
11	Radio Journeyman	Meets direct hire criteria	Electronic Technician	6 months	N/A
12	Telephone Journeyman	Meets direct hire criteria	Electronic Technician	6 months	N/A

13	Computer Journeyman	Meets direct hire criteria	Electronic Technician	6 months	N/A
14	Automatic Train Control Journeyman	Meets direct hire criteria	Electronic Technician	6 months	N/A
15	On-Track Equipment Operator	N/A	New Track Maintainer and Electronic Technicians	40 hours	N/A
16	On-Track Equipment Operator Recertification	N/A	Existing Track Maintainers and Electronic Technicians	8 hours	Annual
17	On-Track Equipment Contractor Certification	N/A	Contractors	8 hours	Annual
18	Bus Operator Certification	Meets direct hire criteria	New Bus Operator Candidates	40 days	N/A
19	Bus Operator Recertification	N/A	Bus Operators	16 hours	Biennial
20	Bus Transportation Supervisor Certification	N/A	Promoted Transportation Employees and Direct Hires	35 days	N/A
21	Bus Transportation Supervisor Recertification	N/A	Bus Transportation Supervisors	8 hours	Biennial
22	Mobility Operator Certification	Meets direct hire criteria	New Mobility Operator Candidates	40 days	N/A
23	Line Instructor Certification	Line Instructor Qualifications	Bus and Mobility Operators	8 hours	3 Years
24	Rail to Bus Recertification	N/A	Operators returning to Bus from Rail	40 hours	N/A
25	A.D.A Final Warning Recertification	N/A	Final Warning Bus Operators	4 hours	As needed
26	NIMS – ICS 100	N/A	All employees	3 hour classroom or online	N/A
27	NIMS – ICS 700	N/A	All employees	3 hour classroom or online	N/A
28	NIMS – ICS 200	N/A	All non-rep	online	N/A
29	NIMS – ICS 800	N/A	All non-rep	online	N/A
30	Americans with Disability Act	N/A	All employees	2 hour	N/A
31	Drug and Alcohol	N/A	All employees	1 hour	N/A
32	Sexual Harassment Prevention	N/A	All employees	1 hour	Biennial
33	Rail Operator Certification	Level II Wayside Access	New Rail Operators	70 days	N/A
34	Rail Operator Recertification	N/A	Rail Operators	16 hours	Annual
35	Mainline Supervisor Certification	Rail Operator Certification and Level III Wayside Access	Mainline Supervisors	35 days	N/A
36	Mainline Supervisor Recertification	N/A	Mainline Supervisors	16 hours	Annual
37	Yard Tower Supervisor Certification	Rail Operator Certification and Level III Wayside Access	New Yard Supervisors	80 days	N/A

38	Yard Tower Supervisor Recertification	N/A	Yard Tower Supervisors	16 hours	Annual
39	Rail Control Certification	Rail Operator Certification, Mainline Supervisor Certification and Level III Wayside Access	New Rail Controllers	130 days	N/A
40	Rail Control Recertification	N/A	Rail Controllers	24 hours	Annual
41	Locomotive Certification	Rail Operator Certification and Level II Wayside Access	All Rail Operators working the rail yard with duties requiring the operation of the locomotive.	40 hours	N/A
42	Locomotive Recertification	N/A	Yard Operators	8 hours	Annual/ Semi-Annual if logs less than 10 moves in the previous 6 months
43	Rail Car Cleaner Certification	Level I Wayside Access	New Rail Car Cleaners	8 hours	N/A

The following apprenticeship programs were discontinued:

- Rail Maintenance Mechanic Apprenticeship
- Rail Maintenance Electronic Technician Apprenticeship
- Radio Apprenticeship
- Telephone Apprenticeship
- Computer Apprenticeship
- Electrical Power & Equipment Apprenticeship
- Automatic Train Control Apprenticeship

In lieu of the apprenticeship programs HR's Office of Talent Acquisition is qualifying applicants with an established pre-employment criteria. The criterion includes formal vocational training and/or previous job experience. Post-employment training includes requirements for successful completion of a six (6) month certification *Journey-level Program* taught by HR's Office of Learning & Development's Technical Training Group.

16.5.2 **Unscheduled Retraining**

There are currently three (3) forms of unscheduled retraining:

- Retraining required due to long term absence prior to returning to duty, delivered in accordance with MARTA policy and/or based on an individual supervisor/manager's assessment of the employee's knowledge/skill retention.

- Retraining resulting from a management-identified knowledge/skill deficiency in an employee.
- Retraining resulting from an accident investigation, safety violation, or other work practice violation.

16.5.3 Training Provided by the Office of Safety

The Office of Safety provides or assists in providing the following training:

- Respiratory Fit Training
- Asbestos O and M Training
- Spill Response Training/Spill Drills, Enhanced Spill Response Training, and Underground Storage Tank Management Training as part of the *Storm Water Pollution Prevention Plan*
- Safety Marshal Training
- System Safety Program Plan Training
- Safety 1st Training

16.5.4 Grading Methods

Knowledge and skill testing is conducted for all certification and qualification programs. Testing is performed through a combination of written and field-based testing. Passing score standards for written tests vary based on the course content and knowledge retention requirements, and field-based tests are graded based on established necessary skills and the test-taker's mastery of these skills. Grading criteria varies for each course and is maintained with the Office of Learning & Development. Courses are modified as necessary based on changes to equipment, industry standards, traffic laws, and best practices.

16.5.5 Needs Assessments

The Office of Learning & Development assists MARTA's other departments in performing regular training needs assessments to identify achievable training program plans. Training is adapted when necessary to fit the needs of changing industry practice, equipment, regulations, and MARTA policies.

17 Configuration Management

17.0 Overview

The Configuration Management Branch, a business unit within the Department of Safety and Quality Assurance (DSQA), is responsible for managing the Authority's configuration management database, emVision360, and for developing standards and guidelines within DSQA for establishing a systematic configuration management process through the approved *Configuration Management Program Plan* (CMPP). This section provides a description of the roles, responsibilities, and processes required to implement configuration management (CM) best practices as a systemic process within functional business areas and relevant contracts throughout the Authority.

For a thorough description of the system change control process that affects rail operations as defined in the System Modification Standard please see refer to Section 8, System Modification and Change Control.

The *System Modification Standard* includes the following activities:

1. Change Proposal Processing
2. Change Request Processing
3. Change Impact Assessment
4. Change Order Work Approval
5. Change Implementation & Verification
6. Change Notification and Validation

17.1 Configuration Management Process

The configuration management process, as presented in DSQA's *Configuration Management Program Plan* (CMPP), is the unique identification, change control, status accounting, physical and functional process configuration management audits commensurate to the configuration product and its lifecycle. This process dictates that all information that could impact safety, security, quality, schedule, cost, profit, the environment, or MARTA's reputation or name recognition shall be managed effectively. This information must be recorded, reported, documented and placed under configuration management.

The configuration management process shall apply to development and operation documentation that is created, distributed, and/or retained for information and action in managing the Authority, such as policies, management processes, plans, and other vital documents. Documents necessary to ensure consistent operation of the Authority must also be controlled. Additionally, all equipment, facility, infrastructure, administrative requirements (including process and requirements used to run an entity or business unit), shall be controlled and managed.

17.1.1.1 **Process Activities**

The CMPP prescribes that each business unit and relevant contractor within MARTA establish and maintain an efficient configuration management process, which includes the identification, change control, storage, and status accounting of vital documents and the Authority's assets. The CM process shall be implemented through the following process activities:

- Apply a standardized naming and numbering convention to all documents. DSQA has approved and released the *Integrated Numbering System Standard Operating Procedure* as a guideline for developing and implementing an effecting numbering convention.
- Process all controlled information through a standardized system, ensuring proper validation, release, and audit activities.
- Implement a standardized closed-loop change process to release new information and to change information previously released, ensuring requirements are properly documented and are clear, concise, and valid.
- Create and retain revision records for each released version of a document, ensuring retention of traceability of all documents and proof that the results conform to the applicable requirements.
- Utilize appropriate software tools to convert and automate legacy processes to achieve the highest levels of throughput and efficiency.

17.2 Process for Change

A standardized closed-loop change process shall be used to release new information regarding safety, security, quality, schedule cost, profit, the environment or MARTA's reputation or brand recognition. The same process shall be used to change information regarding an asset or item that has previously been released.

The change process controls and manages change to an item or asset, thereby ensuring the accuracy and integrity of that item. The process consists of identifying and classifying a change, evaluating specific components to be changed, and implementing the change with the appropriate approvals. The specific classification, approval, and submittal process for configuration changes shall be developed and managed by each functional business unit or department within the Authority.

Approved changes implemented at any point throughout a project's life cycle or during the project delivery or job order contracting process shall be forwarded to the appropriate project manager (PM). In accordance with the DSQA approved *Transference of Deliverables and Receivables* standard operating procedure, the PM will then determine which approved baseline or as-built drawings shall be transmitted to the Configuration Management Branch for storage and tracking in the Authority's configuration management database (emVision360).

Access to the Authority's configuration management database is open to all MARTA employees. The Configuration Management branch has established an online training module located on the Authority's intranet, which provides detailed user instructions on how to navigate the system and search for configuration items stored in the emVision360.

17.3 Authority for Change

Each department is responsible for developing procedures to initiate, control, and approve configuration changes to an item or asset.

17.3.1 Change Notification

A *Change Distribution Transmittal* form or other change notification form developed in accordance with that particular business unit's guidelines shall be used to identify all affected drawings, text, schematics, etc. and describes, in detail, the changes to the

documents. A transmittal or notification form is a supplementary document to the department's change proposal form that references the Change Control Number and identifies each individual, business unit, or stakeholder that must be notified of the change. The original business unit or entity is responsible for notification distribution.

17.3.2 Configuration Management Database

The Configuration Management Branch is responsible for managing and maintaining the Authority's configuration management database (emVision360). Each originating department or business unit shall forward completed and acceptable change control and notification packages, with supporting documentation indicating a fully approved and executed change order, to the CM Branch for processing. The Configuration Management Branch enters the configured documents, in the appropriate electronic format, into the emVision360 for storage, tracking and retrieval.

18 Compliance with Local, State and Federal Safety Requirements

18.0 Overview

This section describes the programs MARTA employs to meet local, state, and federal safety compliance requirements, including roles and responsibilities of the Safety Committees, Contractor Safety Supervisor, General Engineering Consultants (GEC), and MARTA's Construction Safety Engineer. This section includes the Employee Safety Programs, and the Contractor Safety Program along with the MARTA Guide Specifications: Section 013523 and 013526.

Plus, although not governed by OSHA, MARTA strives to meet the federal workplace safety and health standard when assessing and correcting potential hazards and exposures. All work shall be performed in compliance with:

Occupational Safety & Health Administration (OSHA) Regulations:

- 29 CFR Part 1910 -- Occupational Safety and Health Standards
- 29 CFR Part 1926 -- Safety and Health Regulations For Construction

18.1 Employee Safety Program

The *System Safety Policy*, which is reviewed annually and MARTA's Labor Agreement (Part 1 Section XXVI, Item 82) established MARTA's Safety Committee structure, a key component of its overall Employee Safety Programs.

The Safety Committee hierarchy consists of four levels:

1. The GM/CEO Safety Committee as mandated by the *System Safety Policy* Section 5.1 - Safety Committees and in the GM/CEO Safety Committee Administrative Guidelines
2. The Joint Health and Safety Committee as described in the *System Safety Policy* Section 5.1 - Safety Committees and in the Joint Health and Safety Committee Administrative Guidelines
3. General Safety Committees as described in the *System Safety Policy* , Section 5.1 - Safety Committees and in the Joint Health and Safety Committee Administrative Guidelines
4. Unit/Shop-Level Safety Committees as described in MARTA's Employee Safety Program and the Joint Health and Safety Committee Administrative Guidelines.

18.2 Working On or Near Transit-Controlled Property

The safety requirements that employees and contractors must follow when working on, or in close proximity to, the wayside are described in MARTA *Wayside Access Procedure.* All employees and contractors that go wayside are required to have initial wayside access training and annual recertification.

18.3 Compliance with Required Safety Programs

Per the *MARTA Guide Specifications*, Section 013523: Authority Safety Requirements, sub-section References, all work by contractors working on MARTA property is performed in compliance with the following federal and state laws:

- Williams-Steiger Occupational Safety and Health Act of 1970 (Public Law 91-506)
- Occupational Safety and Health Regulations (OSHA) 29 CFR 1910 and 29 CFR 1926
- American National Standards Institute (ANSI) Z117.1-2003, Safety Requirements for Confined Spaces, Z89.1-2003 Industrial Head Protection, Z87.1-1968, Practice for Occupational and Educational Eye and Face Protection
- Official Code of Georgia Annotated (OCGA)
- Federal Transit Administration (FTA) 49 CFR 655, Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations
- Manual of Uniform Traffic Control Devices (MUTCD)
- ANSI/ISEA 107-2004 High Visibility Safety Apparel
- For projects that meet the threshold for Safety Certification, *MARTA Guide Specifications*, *Section 013526: Governmental Safety Requirements* must be considered and met by the contractor and a Safety Compliance Assessment performed.

18.3.1 Construction Site Inspections and Reporting

MARTA and its representatives regularly survey/audit/inspect all contract construction sites, noting and recording all violations of applicable local, state, and federal regulations and the requirements listed in the Construction Safety Plan. Any findings are communicated to the Office of Safety's Construction Safety Engineer, the contractor, and the Resident Engineer for immediate rectification of violations. Contractor non-compliance shall result in an immediate corrective action plan, including possible suspension of work and/or replacement of the safety supervisor/manager by the Safety Department based upon the severity of the issue(s).

18.3.2 Construction Safety Supervisor Inspection Reports

The Contractor Safety Supervisor is required to submit weekly Construction Safety Inspection Reports. These reports list all safety violations committed by the contractor and any remedial actions taken to correct the violation. The Monthly Project Safety Report lists toolbox safety talks and other safety functions required of the contractor. MARTA's Construction Safety Engineer and, when applicable, the GEC, review and keep all reports on file.

The Contractor Safety Supervisor is required to submit OSHA 300 forms, which list all injuries, the nature of the injuries, any medical response taken by the contractor, and the number of lost workdays or restricted workdays incurred, by the tenth day of the following month. The Construction Safety Engineer, the GEC and the Resident Engineer maintain these reports.

19 Hazardous Materials

19.0 Overview

This section describes MARTA's Hazardous Materials Program. This program is administered by the Office of Safety in conjunction with the Authority's environmental, health, safety, and industrial hygiene consultants.

19.1 Environmental Management Programs at MARTA

MARTA is responsible for implementing employee and patron safety measures, as well as ensuring environmental protection and compliance Authority-wide.

The Environmental Program at MARTA has developed policies and procedures to minimize the release of pollutants into the air, water, and soil. The Environmental Health and Safety Coordinator in the Office of Safety manages these documents. The roles of the Coordinator include waste minimization, hazardous waste management, industrial wastewater and storm water management, spill prevention and response, managing groundwater remediation systems, and air pollution control. It is MARTA's responsibility to minimize and control the generation of hazardous waste and other pollutants to protect the environment. All members of MARTA management must ensure that facilities and equipment under their direction comply with applicable environmental regulatory requirements at the Federal, State, and Local level.

19.1.1 Inspection Programs

Management of hazardous and non-hazardous wastes consists of procedures and inspections conducted by the Environmental Health and Safety Coordinator. Wastes generated by MARTA facilities are evaluated (i.e. laboratory analysis) to properly classify the waste and determine the appropriate means of waste management and disposal. At a minimum, facility assessments/inspections occur annually to monitor for compliance with federal, state, and local regulatory requirements. Facilities subject to industrial wastewater, underground storage tank, storm water, hazardous waste, and air pollution regulatory requirements must have adequate controls along with monitoring to verify and document compliance. The Environmental Safety Coordinator communicates with facility personnel and MARTA's environmental engineering consultants to perform these inspections.

19.1.2 Off-Site Waste Management

The reclamation/disposal facilities that manage MARTA generated wastes are evaluated to verify substantive compliance with federal, state, and local environmental regulatory requirements. To minimize MARTA's liability associated with waste materials generated and managed at landfills or recycling facilities, potential reclamation/disposal facilities are required to complete MARTA's Technical Evaluation Questionnaire for Offsite Waste Management. This questionnaire is reviewed by the Environmental Health and Safety Coordinator to verify substantive compliance with applicable federal, state, and local environmental laws and regulations.

19.2 Training

As required by MARTA position descriptions, employees receive training in accordance with regulatory requirements. The purpose of the training is to provide employees with an overview of federal, state, and local regulatory requirements, management and response procedures, and review key contact information. Administered per the specific regulatory program, specific training for affected MARTA employees varies by facility and program.

19.3 Documentation

Plans have been developed for facilities subject to specific environmental regulations. Examples of environmental compliance plans include:

- Spill Prevention, Control and Countermeasures Plan
- Storm Water Pollution Prevention Plan
- Underground Storage Tank Operations and Maintenance Procedures
- Oil/Water Separators Operations and Maintenance Procedures
- Hazardous Waste Management Plan
- Air Compliance Plan (Laredo and Perry)

19.4 Studies

Studies of industrial hygiene occur on an as-needed basis to evaluate the degree of employee or patron exposure to chemical and physical agents encountered in the work environment. The survey results determine the necessary corrective action, including engineering and administrative controls and/or the required use of personal protective equipment. Reports of the industrial hygiene studies and corresponding recommendations are submitted to all affected departments. Employee training is provided regarding hazards identified in the work environment and the proper use of personal protective equipment, including respiratory protection where necessary.

20 Drug and Alcohol Abuse

This section outlines MARTA's Drug and Alcohol Abuse Program. MARTA is a certified drug free workplace.

20.0 Overview

MARTA complies with all provisions of the U.S. Department of Transportation, Federal Transit Administration (FTA) 49 CFP Part 655, which mandates urine drug testing and breath alcohol testing for individuals in safety-sensitive positions, and prohibits performance of safety-sensitive functions when there is a positive test result. MARTA complies with the U.S. Department of Transportation (DOT) 49 CFR Part 40, which sets standards for the collection and testing of urine and breath specimens. MARTA complies with the FTA 49 CFP Part 29, "The *Drug Free Workplace Act of 1988*".

20.1 Program Administration

The Department of Human Resources, Office of Employee Relations and Organizational Development, administers the Drug and Alcohol Program, Policies and Regulations for MARTA Employees.

20.1.1 Requirements and Testing

MARTA requires a drug-free and alcohol-free workplace. MARTA assists employees with personal or related problems that could affect job performance through the Employee Assistance Program (EAP).

Drug and alcohol testing is required under the following circumstances:

- Pre-Employment in a safety sensitive position (including placement of an existing employee/transferee and employees who have not performed a safety sensitive function for 90 or more consecutive calendar days, regardless of the reason and have been out of the random pool during that time period).
- Reasonable suspicion that an employee has used a prohibited drug or misused alcohol
- Post-Accident following certain types of accidents
- Random testing

20.1.2 Policy Requirements

Under the FTA drug testing rules and regulations for employees in safety sensitive positions, laboratory tests on urine specimens will be conducted for five types of drugs or their metabolites. These drugs include:

- Marijuana
- Cocaine
- Opiates (ex., heroin, morphine, codeine)
- Phencyclidine (PCP)
- Amphetamines (e.g., racemic amphetamine, dextroamphetamine, and methamphetamine).

20.1.3 Testing Violations

The penalty for a verified positive test or refusal to submit to a test is job termination. This policy applies to all employees and contractors when they are on MARTA property, or when performing any transit related safety-sensitive or non-safety sensitive business. This policy applies to off-site lunch periods or breaks when an employee is scheduled to return to work.

Visitors, vendors and contract employees are governed by this policy while on MARTA premises and will not be permitted to conduct MARTA-related business if found to violate this policy.

20.1.4 Training

MARTA employees and contract employees are required to adhere to MARTA's Drug and Alcohol Policy and testing requirements. MARTA assists employees with personal or related problems that could affect job performance.

Programs, policies, and procedures are contained in the following documents:

- Employee Assistance Program (Policy III.L)
- EAP vendor: Humana
- MARTA Drug and Alcohol Policy Manual 2011 (Rev 2, May 2014)

21 Procurement

21.0 Overview

This section describes the measures, controls, and assurances to ensure that safety principles, requirements, and proper representatives are included in MARTA's procurement process.

21.1 Roles and Responsibilities

The Office of Contracts & Procurement and Materials (CPM) serves as MARTA's central procurement arm. The office functions include responsibility for contract development, contract administration, procurement, and related administrative functions, all in accordance with applicable federal and state requirements. As described in the recently revised *Procurement Procedure Manual 10.3.35 dated January 2017*, the following descriptions include the new roles and responsibilities regarding safety related procurements:

- It is recognized that the Requestor Department may be required to coordinate some procurement requirements with other MARTA offices that have the need to be involved. In addition to the Requestor Department and CPM responsibilities that are generally described above, other MARTA offices will have to be consulted during the procurement initiation process by virtue of their functional responsibilities, e.g. Legal, Risk Management, Diversity and Equal Opportunity, Safety and Quality Assurance, Police Services, etc.
- The Departments of Diversity and Equal Opportunity, Police Services, Risk Management and Safety and Quality Assurance shall read all specifications prior to release.
- Any Requestor Department requesting the procurement of chemicals or safety equipment, (e.g., solvents, oils, cleaners, epoxies, or welding rods), must submit the requisition to the Department of Safety and Quality Assurance for review and comment prior to sending the request to CPM.
- Emergency Procurements are authorized for purposes of an emergency under this Chapter, an "emergency condition", is a situation (e.g. flood, epidemic, riot, or catastrophic equipment failure), which creates an immediate threat to the public health, welfare, or safety.

As a part of the CPM receiving inspection process, the Quality Assurance Branch upon notification shall inspect shipped equipment and materials if those articles have been flagged for inspection.

21.2 Acquisition and Disposition of Goods and Services for the Authority

The procedure titled *Procurement Procedure Manual 10.3.35 dated January 2017* provides information, roles and responsibilities regarding the procurement process as well as the methods and guidelines used for the acquisition or disposition of materials and services for the Authority. CPM will:

- Ensure the participation of DSQA in the contract development and evaluation process for bus, rail and infrastructure projects.
- Ensure the participation of MPD and the Office of Safety in the pre-planning committee meetings, so they can determine if the procurement documents are safety and security-clear.
- Ensure that system safety is included in technical specifications, design criteria, and guide specifications, design reviews, and disposition of goods.
- Develop and maintain procurement practices to ensure compatibility with safety features and standards, designs, and incorporation of existing MARTA procedures.

22 Transit Asset Management

22.0 Overview

MARTA's approach to asset management is based on the pillars of sustainability (economic, environmental, and social), integrated risk management, and life cycle management. Life cycle management at MARTA aims to track an asset from conception, creation, acquisition, or enhancement of the asset; the utilization and maintenance of the asset; through to the decommissioning and/or disposal of the asset. With proactive project life cycle management, MARTA can reduce risk and exposure, improve service delivery, and determine return on investment.

22.1 Roles and Responsibilities

The governance structure is critical to the success of the Asset Management Program. The Asset Management Program is located within the Office of Capital Programming, Department of Capital Programs & Development. The Assistant General Manager, Capital Programs and Development is a member of the Executive Management Team and reports to the Deputy General Manager who reports to the General Manager/CEO. The GM/CEO reports to the Board of Directors.

The Asset Management Program Manager (Asset Manager) and the Asset Management Program Analyst are the only fulltime asset management team members. The Asset Manager is responsible for the oversight of the program ensuring compliance with agency, local, state, and federal Asset Management requirements. The Asset Management Analyst assists with analyzing data integrity and monitoring the overall health of the Asset Management Program. Responsibility for the day-to-day management, maintenance, and operation of assets resides in the 13 departments or offices that manage, maintain, and operate the assets. The Directors and Managers responsible for the assets are also known as the "asset owners". Maintenance Planners working in each of these areas are generally responsible for tracking an asset throughout its life cycle including entering the asset into the EAM, filling out the required fields, preparing work orders against the assets, updating the condition of the asset as it is rehabilitated or replaced.

22.2 Asset Management Program

MARTA's Transit Asset Management (TAM) practices are defined in MARTA's *Strategic Transit Asset Management Plan (STAMP)*. This plan was prepared in order to describe and document MARTA's commitment and strategy for maintaining its assets in a State of Good Repair (SGR). The plan addresses MARTA's capital asset inventory, asset condition assessment, decision support tools, and investment prioritization. The plan also outlines the internal procedures and processes which ensure asset sustainability and replacement planning and is intended to be an evolving, dynamic and flexible strategy for moving forward.

22.3 Condition of the System

MARTA's condition codes are modeled after the FTA's condition criteria. In addition to condition, MARTA collects, at a minimum, the following information on each asset:

- Equipment ID

- Description
- Asset Category
- Asset Type
- Equipment Type
- Estimated Useful Life
- Stored Location
- Life Cycle Status
- In-service Date
- Original Cost
- Capital Category ID
- Capital Priority Code

This information currently exists in MARTA's Enterprise Asset Management (EAM) system. MARTA has the capability to report on any change in the condition of the system.

22.4 Capital Planning

The decision making process that develops and optimizes the annual operating (including maintenance) and capital programs for MARTA's portfolio of assets follows a two staged approach (asset class and organization). Priorities for asset replacement or renewal are identified, analyzed and justified for funding by the Asset Owners, working with the Asset Manager and the Office of Capital Programming. Asset replacement at MARTA is presently grouped into two primary categories; backlogged and current/future.

Backlogged assets are all assets pre-dating the current fiscal year and are due for replacement based on estimated useful life, condition level 2 or lower, and priority.

Future asset replacement requirements are assets over the next 30 years which will reach estimated useful life and through forecasting are projected to decline to condition code 2 or lower thus requiring rehab or replacement.

Assets are verified for replacement or rehabilitation through a condition assessment. In some cases, rehab/replacement decisions will be superseded by FTA regulations or MARTA policy.

Appendix A: List of Referenced Documents

As required by the Georgia Program Standard for the State Safety Oversight dated January 31, 2015, the following documents are referenced within the SSPP.

Title	Issuing Agency/Dept./ Office	Effective or Issue Date	Status	Reviewer Name and Title
Development, Issuance, Maintenance and Control of MARTA Administrative and Departmental/Division Procedures	Admin Services	11/18/2003	Update Pending	Chief Business Support Services
Monthly Safety Committee Meetings and RSCC Safety Briefings	Rail Transportation	4/1/03	Current	Director of Rail Transportation
System Safety Policy	Safety	11/3/08	Current	AGM of DSQA
Environmental Management Policy	Safety	01/31/2017	Current	AGM of DSQA
System Safety Policy	MARTA Board of Directors	12/31/13	Current	GM/CEO
Joint Health and Safety Committee Guidelines	Safety	9/17/2010	Current	AGM of DSQA
GM/CEO Safety Committee Guidelines	Safety	7/19/2009	Current	AGM of DSQA
Hazard Management Plan	Safety	5/06/2013	Current	AGM of DSQA
Safety and Security Certification Program Plan	Safety	12/31/2013	Current	AGM of DSQA
SQA-SOP-006 *Performing Internal Audits Document*	DSQA	1/01/2014	Current	AGM of DSQA
Rail Maintenance Standard Operating Procedures	RCM	2/01/2012	Current	Director of Rail Car Maintenance
Rail Transportation Standard Operating Procedures	Rail Transportation	1/30/2009	Current	Director of Rail Transportation
Bus Transportation Standard Operating Procedures	Bus Transportation	12/31/2009	Current	Director of Bus Transportation
Bus Maintenance Manual	Bus Maintenance	6/01/2009	Current	Director of Bus Maintenance
Procedure *Control and Disposal of Chemical Containers*	CPM	2009	Current	Chief Materials Management
Service Change Bulletin (No. 2009-15) for the Ordering, Storing and Removal of Chemical Supplies and Materials.	Bus Maintenance Engineering	2009	Current	Director of Bus Maintenance
Pre-Service/Release Inspection Procedures.	RCM	2/07/2011	Current	Director of Rail Car Maintenance
Issuance of General Orders	COO	4/21/2008	Current	Director Bus Trans/ Director Rail Trans

Title	Issuing Agency/Dept./ Office	Effective or Issue Date	Status	Reviewer Name and Title
Development and Maintenance of Standard Operating Procedures	COO	4/21/08	Current	COO
Acquisition and Disposition of Goods and Services for the Authority	CPM	2/2009	Current	Chief Materials Management
Wayside Access Procedure	MOW	2/20/2013	Current	Director of MOW
Track Inspections Procedures	MOW	4/2009	Revision 5	Director of MOW
Resident Engineer Manual Control # 065	Program Management	July 2015	Revision 5-13 Current	Director of Program Management
Bus Maintenance Procedures	Bus Maintenance Engineering	Refer to Bus Maintenance website	Current	Director of Bus Transportation
OVT Policy and Procedures Manual (OVT–1 thru OVT-20)	Office of Vertical Transportation	September 2013	Current	Director of Vertical Transportation
Pandemic Influenza Preparedness and Response Plan	MARTA Police	June 2009	Current	Chief of Police
Security and Emergency Preparedness Plan (SEPP)	MARTA Police	January 2017	Current	Chief of Police

Appendix B: Alternative Fuels and Safety (APTA Bus #23)

The GDOT/SSO Standard does not apply to MARTA's Bus Operations. However, as part of the *Comprehensive Assessment of Safety Critical Systems* performed by Transit Resource Associates, Inc. (TRA) in 2008, a recommendation was made to include bus information in MARTA's SSPP including elements from APTA's Standards on Bus Systems.

Alternative fuels require extensive knowledge of many different safety rules and regulations. The Bus Maintenance Department is responsible for the implementation, maintenance, and repair of the CNG fuel systems on MARTA Buses. MARTA currently has 441 CNG fueled buses. The Bus Maintenance Engineering Group has developed Technical SOPs, Emergency Procedures, and procedures for leak repairs on CNG tanks, PM procedures and maintenance manuals in addition to Bulletins when needed to address any unforeseen issues. Bus Maintenance is using certified CNG Inspectors to ensure that all work performed on CNG fuel tanks is done safety and properly. MARTA Technical Training is assisting Bus Maintenance with the delivery and implementation of a CNG Fuel System Certification and Re-Certification Program. MARTA's CNG Fuel Program is in full compliance with federal state and local regulatory agencies as well as the Atlanta Fire Department.

In addition to the OEM Manuals available for each bus type, the following Bus Maintenance documents support the safety and maintenance of the CNG Fuel Systems.

Number/Date of Revision	Document Name	Description
2001-012	CNG Compressor PM's	Policy and Procedure for the maintenance of CNG Compressors
2002-019	PM program for Orion CNGs	Preventative Maintenance program for Orion CNGs
1998-005	CNG Light/Venting	Start engine after amber light, ground vent line when venting
1998-025	Repairing CNG Buses	Procedure for repairing CNG buses at the Plant
1998-026	Repairing Defueled Bus	Removing fuel between tanks and from tanks
1998-027	Replacing Vent Line Plugs	Replace CNG tank vent lines plugs at PM
1999-001	CNG Fuel Tank Inspect.	Procedure for inspecting CNG fuel tanks every 3 years
2000-004	Vent Lines	Procedure for CNG vacuuming vent lines every year
2000-012	Amgads III Installation	2701-2818 Procedure for installation of Amgads III
2000-013	Stepper Valve Rebuild	Procedure for rebuild of CNG stepper valves
2001-008	Impco Regulator	New Impco, requirement to reprogram ECM, recalb. Wastegate
2001-018	CNG Ether Usage	Do not use ether on CNG, repair the problem
2001-021	S50G Fuel Filters	Procedure for installing new housings and filters

Number/Date of Revision	Document Name	Description
2001-027	CNG Tank Solenoid Inspec.	Requirement to check at 6,000 mile inspection for 2819 to 3024
2001-028	CNG Tank Solenoid Inspec.	Requirement to check at 6,000 mile inspection for 2701 to 2818
2002-010	CNG Fasteners	Procedure for replacing CNG tank fasteners without tank removal
2002-023	IMPCO Test	Procedure for testing IMPCO regulators
2002-025	CNG Leak Repairs	Requirement to isolate leaks outside before repairing in garage
2003-18	Impco Gasket Replacement	DD procedure to replace coolant side gasket on Impco regulators
2003-19	ITT O-ring Replacement	DD procedure to replace the O-rings in the coolant bowl
2004-07	Emergency Fueling	Policy and Procedure for emergency CNG fueling
2004-15	Fuel Receiving Procedure	Policy and Procedure for receiving fuel
2008-03	Fuel Focus Installation	Procedure for installing fuel focus on 2701 - 3002
2008-04	Fuel Focus Installation	Procedure for installing fuel focus on Orion "A" 2101 - 2160
2008-05	CNG Cylinder Decal	Ensure the visibility of the cylinder expiration date.
2008-06	CNG Venting	Procedure for venting CNG tanks

Appendix C: Operating Environment/Passenger Facility Management (APTA Bus #24)

As part of MARTA's commitment to safety in bus operations and passenger facilities, the Authority works to continuously monitor and improve bus stops. Practices and projects are in place to ensure that bus stops are designed, situated, and maintained to provide a safe operating environment for patrons and employees. This appendix will summarize the Authority's current bus stop practices and improvement projects.

Bus Stop Placement

Traffic conditions can present a considerable risk to patrons and employees. MARTA makes efforts to adhere to the following guidelines to minimize these risks:

- *Intersection position* – MARTA locates stops at the nearside of intersections wherever possible to facilitate predictable driving behavior and use of crosswalks by alighting passengers. When in bus-only lanes, stops may be located farside. Mid-block placement is avoided wherever possible unless pedestrian amenities (such as a signalized crosswalk) are present.

- *Curves* - Stops should be at least 150 to 200 feet after curves to ensure that the bus stop sign, waiting passengers, and any stopped buses are visible to oncoming traffic coming around the curve. Stops may be located further back if streets slope downhill (in an effort to allow more braking distance).

- *Signage* – Signage or other indicators (such as roadway paint) should be present to indicate the presence of a bus stop to patrons and other roadway users.

Safety is critical in passenger waiting environments. MARTA makes efforts to locate bus stops where the following conditions are possible:

- Located along sidewalks in usable condition, and near crosswalks and curb cuts

- Stops, wherever possible, should be ADA-accessible with a boarding pad (and if not present, a connection to nearby sidewalk)

- Waiting areas should be flat or on a slight slope, with at least three feet between the waiting area and curb

- If waiting area is unpaved, stops should be on firm ground, not mud or loose soil

- Waiting areas should be well lighted to improve nighttime visibility and to lower the potential for crime

Bus stops at MARTA facilities are located outside of traffic in designated bus bays. These locations are secured and patrolled by police, are ADA-accessible, and should have shelter and seating for bus passengers.

Infrastructure and Management

MARTA utilizes several bus stop indicators. Currently, MARTA primarily installs two standard signs – a bus stop indicator (Type OS-11 of the MARTA Off-Site signage system) and a sign displaying route information (Type OS-15). Additional indicators (such as indicators painted in-street or older, smaller bus stop signs) are present in the system, though not frequently.

The following amenities are utilized by MARTA at bus stops:

- *Shelters* – advertising and non-advertising shelters with seating
- *Benches* – non-advertising benches are installed by MARTA
- *I-Stops* – solar-powered bus stops with lighting and a schedule display (currently located along Blue Flyer routes)
- *Trash cans* - located at all bus shelters, benches, and some stops (garbage collection is managed through a combination of MARTA resources, municipal services, and advertising contractor obligations)

Bus stops are surveyed on a route-by-route basis; with current staff allocation, this results in a complete system survey approximately once per year. In addition, MARTA routinely addresses stop issues reported by patrons, staff, and the general public. Any conditions at stops found to be in need of repair or relocation/removal due to safety are documented and corrected.

A scorecard is utilized in the placement of bus shelters and benches, accounting for ridership, the level of service provided to the stop, and other stop conditions. To merit consideration for a shelter, a stop must have at least 15 boarding's per day; for a bench, a stop must have at least 7 boarding's per day.

All maintenance for stops at MARTA facilities is handled entirely by MARTA.

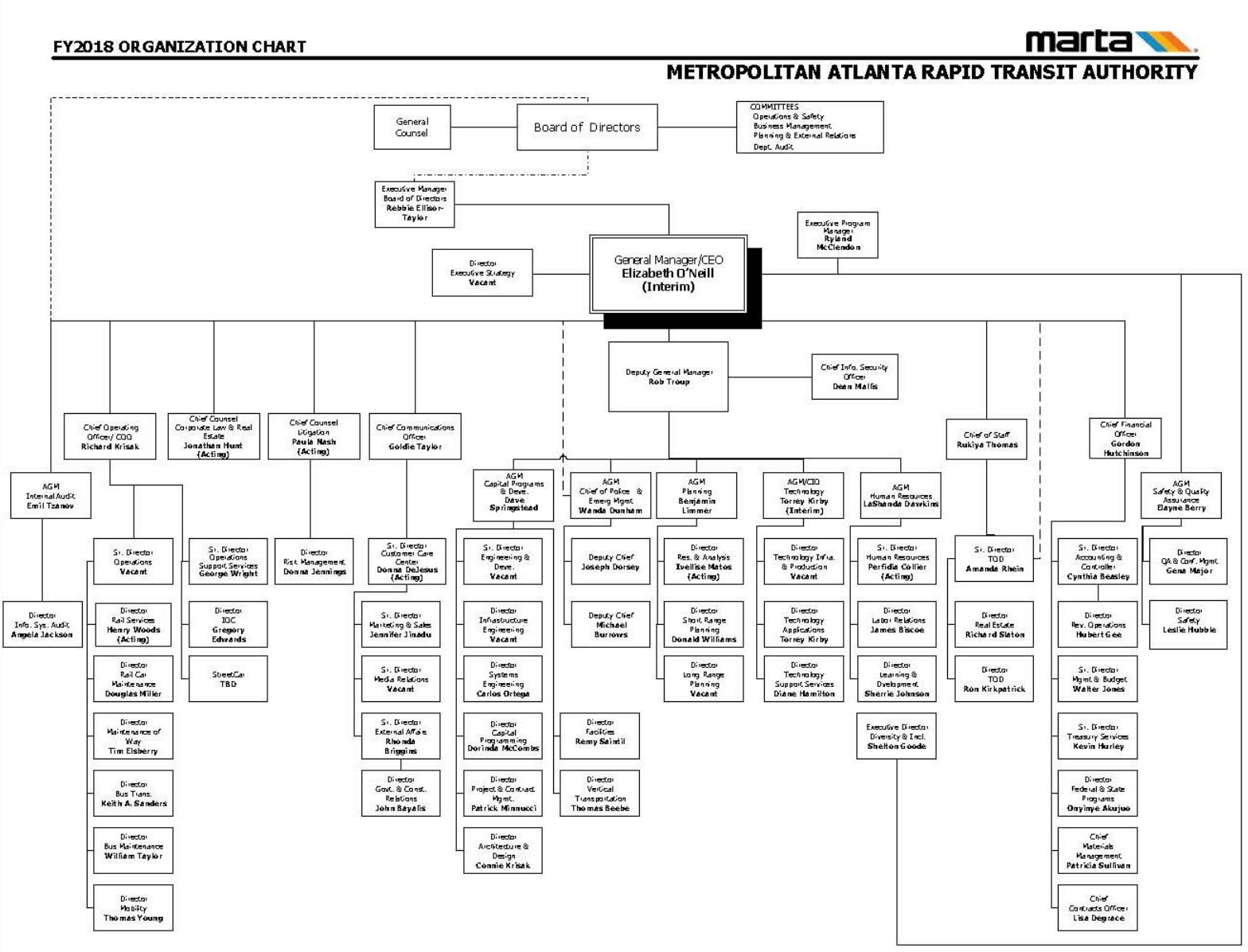
Improvement Programs

Several major projects planned for the next several years will improve bus stop conditions and address locations where bus stops do not meet the safety guidelines listed above. These projects include:

- Bus Stop Placement and Design Guidelines Manual (In progress) – formal documentation of MARTA's bus stop placement, infrastructure and management practices
- Elimination of "assumed" stops (Pending) – all current stops without signage or other indication will receive signage or will be removed from the system
- I-Stop redistribution (Pending) – I-Stops not in use currently on routes will be installed at poorly lighted stops with high ridership and/or crime issues
- Bus Stop Re-Spacing and Consolidation (In progress) – system-wide analysis of bus stop locations to improve spacing, safety, and convenience
- Bus Stop Inventory (Pending) – new bus stop inventory effort to enhance the Authority's bus stop database and to collect data for future improvement projects

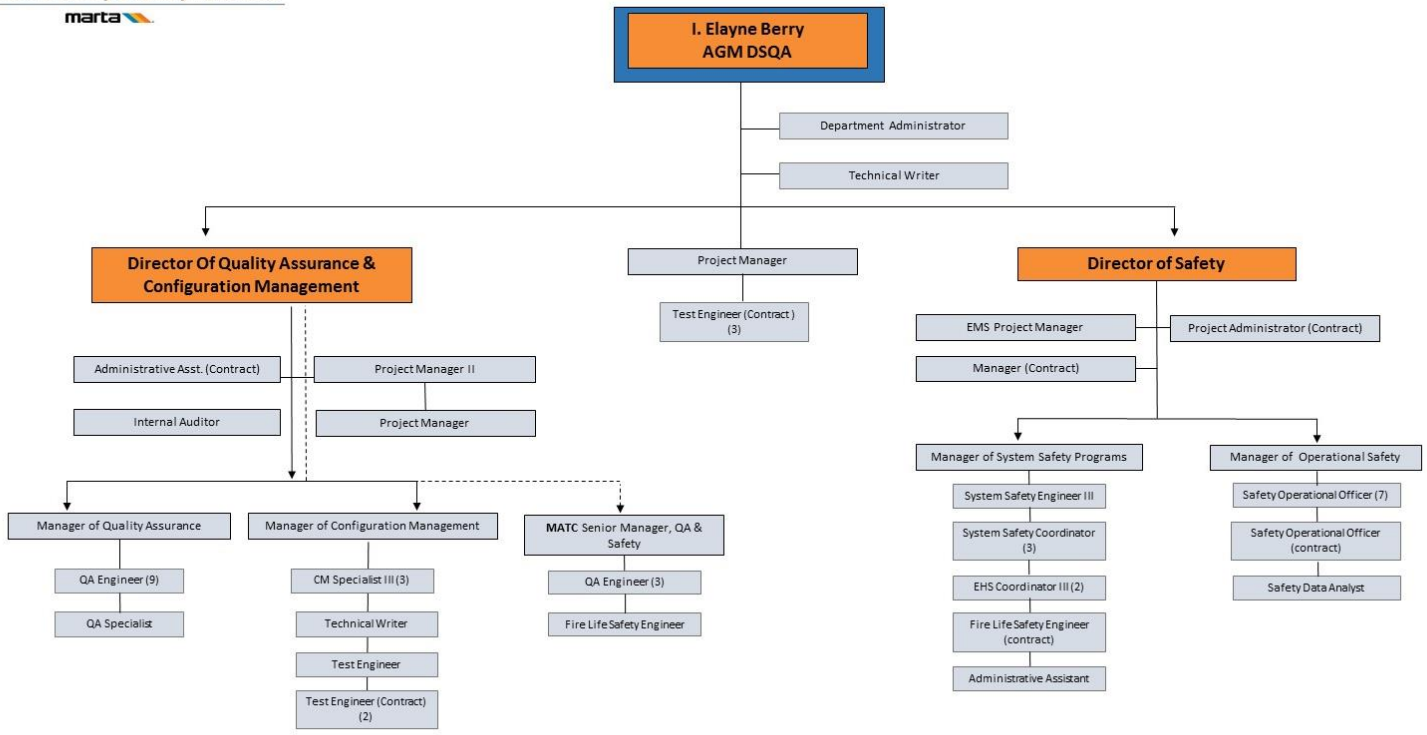
- Bus Shelter Replacements, New Installations (In progress) – shelters will be replaced once they are 10 years of age, and 10 new non-ad shelters will be installed each year (managed by Marketing)

Appendix D: MARTA Organizational Chart



Appendix E: Department of Safety and Quality Assurance Organizational Chart

The Department Of Safety & Quality Assurance Organizational Chart



Appendix F: MARTA Internal Audit Cycle

2016-2018

January 1, 2016 to December 31, 2016

Rail Car Maintenance:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 19: Hazardous Material
- Element 20: Drug and Alcohol Abuse Program
- Element 22: Transit Asset Management

Communications-Radio Maintenance:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program

Computer Maintenance:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program

Quality Assurance:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 12: Internal Safety Audits and Internal Security Audits
- Element 13: Rules Compliance/Procedures Review
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 20: Drug and Alcohol Abuse Program
- Element 21: Procurement

Program and Contract Management:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements

Engineering:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 7: System Modification
- Element 6: Hazard Management Process
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 22: Transit Asset Management

Technology:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 20: Drug and Alcohol Abuse Program

January 1, 2017 to December 31, 2017

Infrastructure Maintenance-Facilities-Buildings & Support Equipment:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program

Infrastructure Maintenance-Facilities-Custodial and Landscaping:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 13: Rules Compliance/Procedures Review
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program

Infrastructure Maintenance-Wayside-Track and Structures:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program
- Element 22: Transit Asset Management

Infrastructure Maintenance-Wayside-Automatic Train Control:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections

- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program
- Element 22: Transit Asset Management

Infrastructure Maintenance-Wayside-Electrical Power and Equipment:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modifications
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program
- Element 22: Transit Asset Management

January 1, 2018 to December 31, 2018:

Contracts and Procurement:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 21: Procurement

Materials: (a division of Contracts and Procurement)

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 13: Rules Compliance/Procedures Review
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 19: Hazardous Material Program
- Element 20: Element 21: Procurement

Office of Safety:

- Element 4: Plan Review and Modification
- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 8: Safety Certifications
- Element 9: Safety Data
- Element 10: Accidents and Incidents
- Element 11: Emergency Response Planning/Coordination/Training
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 19: Hazardous Material
- Element 20: Drug and Alcohol Abuse Program

Vertical Transportation:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 13: Rules Compliance/Procedures Review
- Element 14: Facility Inspections and Equipment Inspections
- Element 15: Maintenance Program Audits/Inspections
- Element 16: Training and Certification
- Element 17: Configuration Management
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program
- Element 22: Transit Asset Management

Human Resources-Drug & Alcohol Program:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 16: Training and Certification
- Element 20: Drug and Alcohol Abuse Program

Human Resources-Office of Training:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 16: Training and Certification

Rail Transportation:

- Element 5: SSPP Implementation-Tasks and Activities
- Element 6: Hazard Management Process
- Element 11: Emergency Response Planning/Coordination/Training
- Element 13: Rules Compliance/Procedures Review
- Element 16: Training and Certification
- Element 18: Compliance with Local, State and Federal Safety Requirements
- Element 20: Drug and Alcohol Abuse Program

Department of Safety and Quality Assurance (Office of the AGM):

- Element 1: Executive Approval
- Element 2: Purpose, Goals, and Objectives
- Element 3: Management Structure