

# **Appendix F1**

# Washington Metropolitan Area Transit Authority

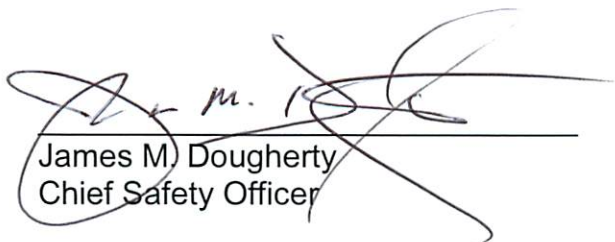


## SYSTEM SAFETY PROGRAM PLAN

January 2015

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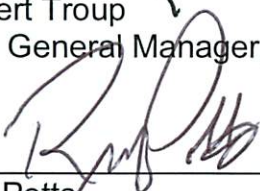
## Concurrences and Approval

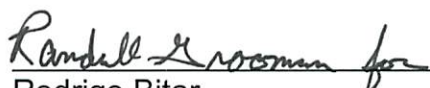
  
James M. Dougherty  
Chief Safety Officer

  
Ronald A. Pavlik  
Chief, Metro Transit Police Department

  
A. Robert Troup  
Deputy General Manager, Operations

  
Dennis Anosike  
Chief Financial Officer

  
Robert Potts  
Acting Assistant General Manager,  
Bus Service

  
Rodrigo Bitar  
Assistant General Manager,  
Transit Infrastructure and Engineering  
Services

  
Christian T. Kent  
Assistant General Manager,  
Access Services

  
Jack Requa  
Interim General Manager and  
Chief Executive Officer

  
Date



<b>2015 System Safety Program Plan Revisions</b>		
<b>Section</b>	<b>Revisions</b>	<b>Reason for Revision</b>
Document	Changed from 2014 to 2015	
	Concurrences and Approval: Robert Potts replaced Jack Requa	
	Concurrences and Approval: Jack Requa replaced Richard R. Sarles	
3.3.7	Maintenance, TIES replaced New Construction	
3.3.8	Maintenance, BUS replaced Maintenance, TIES	
3.3.9	Removed	
3.6.3.1	Office of Government Relations replaced The Office of Government Relations and Policy	
3.6.3.4	Office of Strategic Communications replaced The Office of Strategic Communications and Marketing Planning	
3.6.5.3	Department of Access Services (ACCS) replaced Office of Employee and Labor Relations	
3.6.5.3.1	Added 3.6.5.3.1 Office of ADA Policy and Planning	
3.6.5.3.2	Added 3.6.5.3.2 Office of Eligibility Certification and Outreach	
3.6.5.3.3	Added 3.6.5.3.3 Office of MetroAccess Service	
3.6.5.4	Added 3.6.5.4 Office of Employee and Labor Relations	
3.6.5.5	Added 3.6.5.5 Office of Parking	
3.6.5.6	Added 3.6.5.6 Office of Supply Chain Enterprise Services (SCES)	
3.6.5.7	Added 3.6.5.7 Department of Transit Infrastructure and Engineering Services (TIES)	

<b>2015 System Safety Program Plan Revisions</b>		
<b>Section</b>	<b>Revisions</b>	<b>Reason for Revision</b>
Document	Changed from 2014 to 2015	
3.6.5.7.1	Added 3.6.5.7.1 Office of Rail Car Maintenance	
3.6.5.7.2	Added 3.6.5.7.2 Office of Track and Structures	
3.6.5.7.3	Added 3.6.5.7.3 Office of Systems Maintenance	
3.6.5.7.4	Added 3.6.5.7.4 Office of Plant Maintenance	
3.6.5.7.5	Added 3.6.5.7.5 Office of Elevators and Escalators	
3.6.5.7.6	Added 3.6.5.7.6 Office of Chief Engineer, Vehicles	
3.6.5.7.7	Added 3.6.5.7.7 Office of Chief Engineer, Infrastructure	
3.6.5.7.8	Added 3.6.5.7.8 Office of Quality Assurance and Warranty (QAAW)	
3.6.5.7.9	Added 3.6.5.7.9 Office of Transit Asset Management (TAMO)	
3.6.5.7.10	Added 3.6.5.7.10 Office of Major Capital Projects (MCAP)	
3.6.5.7.11	Added 3.6.5.7.11 Intermodal Strategic Planning (IPLN)	
3.6.5.7.12	Added 3.6.5.7.12 Office of Storerooms and Material Logistics (SRML)	
3.6.5.7.13	Added 3.6.5.7.6 Office of Capital Program Delivery (CPDO)	
3.6.6	Department of Bus Service replaced Department of Transit Infrastructure and Engineering Services	
3.6.6.1	Office of Bus Maintenance replaced Office of Rail Car Maintenance	

<b>2015 System Safety Program Plan Revisions</b>		
<b>Section</b>	<b>Revisions</b>	<b>Reason for Revision</b>
Document	Changed from 2014 to 2015	
3.6.7	Added 3.6.7 Chief Financial Officer	
3.6.7.1	Added 3.6.7.1 Office of Accounting	
3.6.7.2	Added 3.6.7.2 Office of Treasurer	
3.6.7.3	Added 3.6.7.3 Office of Management and Budget Services	
3.6.7.4	Added 3.6.7.4 Office of Procurement and Materials	
3.6.7.5	Added 3.6.7.5 Office of Real Estate and Station Planning	
3.6.8	Added 3.6.8 Department of Information Technology	
3.6.9	Added 3.6.9 Department of Customer Service Communications and Marketing	
3.6.9.1	Added 3.6.9.1 Office of External Relations	
3.6.9.2	Added 3.6.9.2 Office of Customer Service	
3.6.9.3	Added 3.6.9.3 Office of Marketing	
3.6.9.4	Added 3.6.9.4 Office of Customer Research	
3.6.9.5	Added 3.6.9.5 Office of Public Relations	
3.6.9.5.1	Added 3.6.9.5.1 Strategic Communications	
3.6.9.5.2	Added 3.6.9.5.2 Media Relations	
3.6.9.5.3	Added 3.6.9.5.3 Executive Response Team	

**2015 System Safety Program Plan Revisions**

Section	Revisions	Reason for Revision
Document	Changed from 2014 to 2015	
3.6.10	Added 3.6.10 Office of General Counsel	
3.6.11	Added 3.6.11 Office of Inspector General	
Appendix	Updated Appendix D – WMATA Organization Chart	
Appendix	Updated Appendix E – SAFE Organization Chart	



## Table of Contents

Concurrences and Approval.....	3
2015 System Safety Program Plan Revisions.....	4
Table of Contents.....	8
1.0 Introduction .....	16
1.1 Authority.....	16
1.2 System Safety Policy Statement .....	17
2.0 Purpose, Scope, Goals and Objectives.....	23
2.1 Purpose.....	23
2.2 Scope.....	23
2.3 Goals and Objectives .....	23
3.0 Management Structure.....	26
3.1 General Overview and History of WMATA .....	26
3.2 Scope of Service .....	26
3.3 Physical Plant.....	27
3.3.1 Metrorail Physical Plant.....	27
3.3.1.1 Stations .....	29
3.3.1.2 Yards and Shops.....	29
3.3.1.3 Passenger Vehicles .....	29
3.3.1.4 Power Systems .....	30
3.3.1.5 Automatic Train Control System.....	31
3.3.1.6 Communications System.....	32
3.3.1.7 Track and Structures.....	32
3.3.2 Metrorail Safety Capabilities.....	34
3.3.2.1 Car Design .....	34
3.3.2.2 Rail Operations Control Center (ROCC) .....	34
3.3.2.3 Metrorail Stations .....	35
3.3.2.4 Additional Safety Features .....	36
3.3.3 Plant Maintenance Physical Plant.....	37
3.3.4 Metrobus Physical Plant.....	38
3.3.4.1 Bus Fleet.....	39
3.3.4.2 Metrobus Safety Capabilities.....	40
3.3.4.3 BMNT Training .....	40
3.3.5 Administrative Facility .....	41

3.3.6	Support Services Physical Plant .....	41
3.3.7	Maintenance, TIES.....	41
3.3.8	Maintenance, BUS .....	43
3.4	Integration of Safety Function .....	43
3.5	Lines of Authority for Safety .....	44
3.6	Organizational Safety Responsibilities .....	44
3.6.1	Department of Safety and Environmental Management.....	45
3.6.2	Metro Transit Police Department.....	46
3.6.3	Office of Chief of Staff .....	46
3.6.3.1	Office of Government Relations .....	46
3.6.3.2	Office of Planning.....	47
3.6.3.3	Office of Performance .....	47
3.6.3.4	Office of Strategic Communications .....	47
3.6.4	Department of Human Resources.....	47
3.6.5	Deputy General Manager Operations (DGMO).....	48
3.6.5.1	Office of Rail Transportation.....	49
3.6.5.2	Office of Operations Management Services.....	50
3.6.5.3	Department of Access Services (ACCS).....	50
3.6.5.3.1	Office of ADA Policy and Planning .....	51
3.6.5.3.2	Office of Eligibility Certification and Outreach .....	51
3.6.5.3.3	Office of MetroAccess Service .....	51
3.6.5.4	Office of Employee and Labor Relations.....	52
3.6.5.5	Office of Parking.....	52
3.6.5.6	Office of Supply Chain Enterprise Services (SCES) .....	53
3.6.5.7	Department of Transit Infrastructure and Engineering Services (TIES) .....	53
3.6.5.7.1	Office of Car Maintenance.....	53
3.6.5.7.2	Office of Track and Structures.....	53
3.6.5.7.3	Office of Systems Maintenance.....	54
3.6.5.7.4	Office of Plant Maintenance .....	55
3.6.5.7.5	Office of Elevators and Escalators .....	55
3.6.5.7.6	Office of Chief Engineer Vehicles.....	55
3.6.5.7.7	Office of Chief Engineer, Infrastructure .....	56
3.6.5.7.8	Office of Quality Assurance and Warranty (QAAW).....	56
3.6.5.7.9	Office of Transit Asset Management (TAMO) .....	58

3.6.5.7.10	Office of Major Capital Projects (MCAP) .....	58
3.6.5.7.11	Office of Intermodal Strategic Planning (IPLN).....	58
3.6.5.7.12	Office of Storerooms and Material Logistics (SRML).....	58
3.6.5.7.13	Office of Capital Program Delivery (CPDO) .....	58
3.6.6	Department of Bus Service .....	58
3.6.6.1	Office of Bus Maintenance .....	59
3.6.7	Chief Financial Officer .....	60
3.6.7.1	Office of Accounting .....	61
3.6.7.2	Office of Treasurer .....	61
3.6.7.3	Office of Management and Budget Services.....	61
3.6.7.4	Office of Procurement and Materials.....	61
3.6.7.5	Office of Real Estate and Station Planning .....	62
3.6.7.6	Office of Internal Compliance.....	62
3.6.8	Department of Information Technology .....	62
3.6.9	Department of Customer Service, Communications and Marketing.....	64
3.6.9.1	Office of External Relations.....	64
3.6.9.2	Office of Customer Service .....	64
3.6.9.3	Office of Marketing.....	64
3.6.9.4	Office of Customer Research.....	65
3.6.9.5	Office of Public Relations .....	65
3.6.9.5.1	Strategic Communications .....	65
3.6.9.5.2	Media Relations .....	65
3.6.9.5.3	Executive Correspondence Team.....	65
3.6.10	Office of General Counsel.....	66
3.6.11	Office of Inspector General .....	66
4.0	Plan Review and Modification .....	67
4.1	Annual SSPP Review.....	67
4.2	SSPP Control and Update Procedures .....	67
4.3	SSPP Review and Approval by the State Oversight Agency .....	67
4.4	SSPP Change Management .....	67
5.0	SSPP Implementation – Tasks and Activities.....	69
5.1	Overview .....	69
5.2	System Safety Function .....	69
5.2.1	Methodology Used by the Safety Organization .....	70

5.3	Fatigue Risk Management .....	70
5.4	Safety Responsibilities of Other Departments.....	70
5.4.1	Environmental Management .....	71
5.4.2	Safety Committees.....	71
5.4.3	Safety Recognition.....	73
5.4.4	Medical Surveillance .....	74
5.5	Confidential Close Call Reporting .....	75
5.6	Safety Tasks and Responsibilities.....	75
5.6.1	Complaint Investigations .....	75
5.6.2	Investigation of Repetitive Events .....	75
5.6.3	System Safety Design Review .....	76
5.6.4	Environmental Management Oversight .....	76
5.6.5	Safety Field Offices .....	76
5.6.6	State of Maryland Division of Labor and Industry.....	77
5.6.7	Commonwealth of Virginia Department of Labor and Industry.....	77
5.6.8	Occupational Safety and Health Administration .....	77
5.6.9	Safety Responsibilities and Task Matrix.....	78
6.0	Hazard Management Program.....	99
6.1	Overview .....	99
6.2	Hazard Management Process.....	103
6.2.1	Hazard Identification .....	103
6.2.2	Hazard Investigation .....	105
6.2.2.1	Notification of TOC of Hazardous Conditions.....	105
6.2.3	System Safety Analysis.....	107
6.2.4	Hazard Categorization .....	108
6.2.4.1	Hazard Severity.....	108
6.2.4.2	Hazard Probability.....	109
6.2.5	Hazard Risk Assessment .....	111
6.2.6	Hazard Resolution.....	112
6.2.6.1	Hazard Resolution Management and Tracking .....	113
6.2.7	Coordinating with the TOC Regarding the Hazard Management Process ..	114
6.2.8	Corrective Action Plan Development Process.....	114
6.2.8.1	Development of Corrective Action Plans.....	116
6.2.8.2	CAP Implementation, Verification, and Completion.....	117

6.2.8.3	CAP Tracking.....	117
6.2.8.4	Corrective Action Plan Technical Review Entity Process.....	117
7.0	Managing Safety in System Modification .....	118
7.1	System Modification .....	118
7.1.1	TIES .....	118
7.1.2	BMNT .....	118
7.2	New Systems/New Equipment.....	119
8.0	Safety and Security Certification .....	121
8.1	Overview .....	121
8.2	Safety and Security Certification Plan .....	122
8.3	Safety and Security Certification Process .....	122
8.4	BUS Safety Certification.....	124
9.0	Safety Data Acquisition .....	125
9.1	Safety Data Overview .....	125
9.2	Access to Data Reports Prepared by SAFE.....	127
10.0	Accident/Incident Notification, Investigation and Reporting.....	129
10.1	Overview .....	129
10.2	Accident/Incident Notification Criteria.....	129
10.3	Internal Accident/Incident Notification Procedure.....	130
10.4	External Accident/Incident Notification Procedure.....	130
10.5	Accident/Incident Investigation Procedures.....	131
10.5.1	Investigations of Fatalities, Derailments, Collisions, or Fires Resulting in Property Damage Exceeding \$25,000.00 .....	132
10.5.2	TOC Conducts Investigation .....	132
10.5.3	NTSB Conducts Investigation .....	132
10.5.4	Joint Investigations Conducted by TOC and WMATA.....	133
10.6	Accident/Incident Reporting and Documentation .....	133
10.6.1	TOC Requirements .....	133
10.6.2	WMATA Requirements .....	136
10.7	Corrective Action Resulting from Accident Investigations .....	137
10.8	Coordination with State Oversight Agency.....	137
11.0	Emergency Management.....	138
11.1	Responsibilities for Emergency Management .....	138
11.1.1	Metropolitan Washington Council of Governments .....	139
11.1.1.1	Passenger Rail Safety Subcommittee, Heavy Rail Safety Subcommittee...	139

11.2	Fire Protection, Equipment and Life Safety Agreements.....	140
11.3	Metrorail Transit Fire/Rescue Emergency Procedures Policy Agreement...	140
11.4	Coordinated Schedule.....	140
11.5	Coordination with Regional Emergency Management Organizations .....	141
11.6	Emergency Plans .....	141
11.7	Continuity of Operations Plans.....	141
11.8	Emergency Procedures.....	141
11.9	Emergency Training .....	142
11.10	Emergency Exercises .....	142
12.0	Internal Safety and Security Audit Program .....	144
12.1	Overview .....	144
12.2	Scope of Activities.....	144
12.3	Internal Safety and Security Audit Process .....	144
12.3.1	Integrity of the Safety and Security Audit Process .....	145
12.3.2	Cycle/Schedule .....	145
12.3.3	Checklists and Procedures.....	145
12.3.4	Safety and Security Audit Reporting .....	146
12.3.5	Annual Safety and Security Audit Reporting .....	147
12.3.6	Coordination with the TOC .....	148
12.3.7	Safety and Security Audit Completeness .....	148
13.0	Rules and Procedures Compliance and Review .....	150
13.1	Overview .....	150
13.2	Review of Rules and Procedures .....	150
13.3	Process for Ensuring Rules Compliance.....	151
13.4	Compliance Techniques: Operations and Maintenance Personnel.....	152
13.5	Compliance Techniques: Supervisory Personnel.....	152
13.6	Documentation of Rule Compliance.....	152
13.7	Monthly Submission of Rule Compliance Data to TOC .....	153
14.0	Facilities and Equipment Inspection.....	154
14.1	Overview .....	154
14.2	Facilities and Equipment Subject to Inspection .....	154
14.3	Regular Inspection and Testing.....	155
14.4	Checklists.....	155
14.5	Coordination with Hazard Management Process .....	155

15.0	Maintenance Audits/Inspections.....	157
15.1	Systems and Facilities Subject to Maintenance Program .....	157
15.2	Resolution of Audit/Inspection Findings .....	159
15.3	Checklists.....	159
16.0	Training and Certification Review/Audit .....	160
16.1	Overview .....	160
16.2	Employee Safety .....	161
16.3	Contractor Safety .....	165
16.4	Record Keeping .....	165
16.5	Compliance with Training Requirements.....	165
17.0	Configuration Management.....	167
17.1	Overview .....	167
17.2	Process for Change .....	169
17.3	Authority for Change .....	169
18.0	Local, State, and Federal Requirements.....	170
18.1	Occupational Safety and Health.....	170
18.1.1	Personal Protective Equipment.....	171
18.1.2	Hazard Communication Program.....	171
18.1.3	Safety and Industrial Hygiene Studies and Reviews .....	171
18.1.4	Medical Surveillance .....	172
18.1.5	Processes to Assess Safety Training Effectiveness.....	172
18.2	Working on or Near Rail Transit Controlled Property .....	172
18.3	Contractor Compliance with Required Safety Programs .....	173
19.0	Hazardous Materials .....	175
20.0	Drug and Alcohol Abuse .....	176
21.0	Procurement.....	177
21.1	Overview .....	177
21.2	Procurement of Chemicals and Hazardous Materials .....	178
21.3	Inspection of Contractor Equipment, Vehicles, Work and Deliverables.....	179
21.4	Inspection of Inventory Material .....	180
Appendix A - References .....		181
Appendix B - Acronym Glossary .....		183
Appendix C - Glossary of Terms .....		188
Appendix D - WMATA Organization Chart .....		197

<b>Exhibits</b>		
<b>Exhibit</b>		<b>Page</b>
1-1	WMATA Board of Directors System Safety Policy Statement (Amendment 4)	18-19
1-2	Reaffirmation of the WMATA System Safety Policy Statement	20-21
1-3	System Safety Policy Statement of the WMATA General Manager and Chief Executive Officer	22
3-1	Metro System Map	28
5-1	Safety Responsibilities and Task Matrix	78-97
6-1	Hazard Management Process	100
6-2	Hazard Management Process: Matrix Function Organization	101
6-3	Sources of Hazard Identification	103
6-4	TOC Incident / Hazard Notification and Reportability	105
6-5	Probability of Occurrence of a Hazard	109
6-6	Risk Assessment Matrices	110



## 1.0 Introduction

The Washington Metropolitan Area Transit Authority (WMATA) *System Safety Program Plan* (SSPP) consists of a series of required activities that must be undertaken to ensure the safety of its customers, employees, emergency responders and the public. The System Safety Program includes the application of a management structure, safety analysis techniques, accident/incident investigation, internal safety auditing, hazard management, safety and security certification, emergency management and fire protection and fire suppression requirements.

Development of this SSPP was in accordance with the revised FTA Final Rule (April 29, 2005): *Code of Federal Regulations* title 49, part 659; *Rail Fixed Guide-Way Systems; State Safety Oversight*. This SSPP was prepared in accordance with the Tri-State Oversight Committee's *TOC Program Standard and Procedures* (PS/P) (September 2012).

### 1.1 Authority

Federal enabling legislation signed into law on November 6, 1966, created the Washington Metropolitan Area Transit Authority. The law included the development of a rail transit system to serve the greater Washington, D.C. area. On October 21, 1972, legislation passed authorizing WMATA to acquire the area's privately held bus companies and to provide bus service to the public in the greater Washington, D.C. area. Under Federal, District of Columbia, Commonwealth of Virginia, and State of Maryland legislation, various government agencies exert authority over the responsibility for various safety and fire protection aspects of WMATA.

Because WMATA is partially federally funded, all program planning, including system safety, falls under the oversight of the Federal Transit Administration (FTA), the Federal Highway Administration (FHWA), the National Highway Traffic Safety Administration (NHTSA) and the Tri-State Oversight Committee (TOC) and is subject to their review. The National Transportation Safety Board (NTSB) has the responsibility and authority to conduct an investigation of transportation accidents and make recommendations to prevent future accidents/incidents.

## 1.2 System Safety Policy Statement

On April 28, 1983, the WMATA Board of Directors approved the WMATA *System Safety Policy Statement* (see exhibit 1-1) establishing the safety philosophy and safety objectives of the Authority. The *System Safety Policy Statement* was amended on December 16, 2010. On April 26, 2012, the WMATA Board of Directors passed a resolution that reaffirmed the December 16, 2010 amended *System Safety Policy Statement* (see exhibit 1-2).

The *System Safety Policy Statement* directs that safety standards be established and that appropriate inspections be accomplished for all facets of the operations including design, construction, testing, operations and maintenance. Procedures to ensure passenger and employee safety are also required.

The *System Safety Policy Statement* also directs that a comprehensive system safety program plan (SSPP) be developed and implemented. The SSPP defines an integrated, closed-loop approach to system safety and addresses organizational responsibilities, safety program implementation and safety verification. The SSPP is established under *Policy/Instruction No. 1.13/0, Departmental Manuals*, (lead by the DGMO). The SSPP complies with section 10 of the Tri-State Oversight Committee's *Program Standards and Procedures* (August 2014). The TOC is the designated State Safety Oversight Agency under *Code of Federal Regulations* title 49, part 659. The TOC was established by a "Memorandum of Understanding" among the District of Columbia Department of Transportation (DDOT), the State of Maryland Department of Transportation (MDOT) and the Commonwealth of Virginia Department of Rail and Public Transportation (VDRPT) last updated on September 13, 2010.

## **WMATA BOARD OF DIRECTORS SYSTEM SAFETY POLICY STATEMENT** **(Amendment 4)**

The mission of the Washington Metropolitan Area Transit Authority (WMATA) is to operate and maintain a safe, reliable and effective transit system that enhances mobility, improves the quality of life, and stimulates economic development in the Washington metropolitan area. Safety shall be a major consideration in every stage of all WMATA activities, including planning, design, construction, testing, operations, and maintenance of all the coordinated Metrorail, Metrobus and MetroAccess Systems to ensure the highest practical level of safety for customers, employees, first responders and the public. In this regard, WMATA shall comply with the Federal Transit Administration regulations 49 CFR, Part 659, Rail Fixed Guideway Systems; State Safety Oversight; Final Rule and applicable local, state, and federal requirements for the safety of the transportation systems and related facilities.

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

1. To avoid loss of life, injury of persons and damage or loss of property;
2. To instill a commitment to safety in all WMATA employees and contractor personnel;  
and
3. To provide for the identification and control of safety hazards, the study of safety requirements, the design, installation and fabrication of safe equipment, facilities, systems, and vehicles and a systematic approach to the analysis and surveillance of operational safety for facilities, systems, vehicles and equipment.

A comprehensive System Safety Program Plan (SSPP) has been developed and implemented to maintain WMATA's safety objectives and programs and should result in the elimination or control of safety hazards and the reduction of accident rates to facilitate continuous improvement in WMATA's safety performance; striving for zero accidents. The SSPP shall comply with section 10 of the Tri-State Oversight Committee's (TOC) Program Standard and Procedures. The SSPP shall organize all safety activities into a coordinated and integrated effort directed toward optimizing the safety features of equipment and operation.

The SSPP shall ensure that safety standards are established and that appropriate evaluation and review are accomplished on all facets of the WMATA operations, including system design, construction, testing, system safety and security certification, operations, and maintenance. The SSPP also shall address the procedures required to ensure customer and employee safety.

It is recognized that accountability for safety rests with each Board Member and every WMATA employee, including each supervisor, manager and executive, and that each is responsible for meeting the safety requirements of their position.

Individual employees must comply with the safety rules and procedures for his/her position, and supervisors, managers and executives must enforce the safety rules, procedures, standards and programs applicable to their departments. The SSPP shall identify the activities and the responsibilities of all participants who are involved with the design, construction, testing, operation, and maintenance of the transit system.

The General Manager is charged with the responsibility of establishing annual WMATA Safety objectives for submission to the Board of Directors in June of each year. The General Manager or designee shall submit to the Board of Directors, at the end of each fiscal year, a safety report on the WMATA operational, industrial, and construction safety performance to confirm that the safety program is being sustained as a top priority and record how the actual safety performance compares with established safety objectives. Further, a quarterly report on safety performance shall be submitted to the Board of Directors to include key safety issues, a summary of significant accidents or incidents, and recommendations for safety improvement. The General Manager has designated the WMATA Safety and Environmental Management (SAFE) Department, for overall safety management for the development and implementation of the SSPP. The Department of Safety and Environmental Management Chief Safety Officer reports directly to the General Manager.

The Board Safety and Security Committee was established to provide continual oversight to assure that all Metro facilities, systems, vehicles, equipment and operations are safe and secure for passengers, employees and the public served by Metro. The committee, comprised of the entire Board of Directors, will usually meet monthly and make recommendations for Board adoption that are focused on the direction and goals of Metro's safety, security and police operations.

The Board Safety and Security Committee will ensure that Metro is responsive to the Tri-State Oversight Committee, the Federal Transit Administration and the National Transportation Safety Board and that internal and external safety recommendations to Metro are handled expeditiously and effectively.

Metro's Chief Safety Officer and Chief of Police will report regularly to the committee on the status of safety and security programs, initiatives, incidents, metrics and the responsiveness of the agency to any safety findings and recommendations.

Adopted by the WMATA  
Board of Directors  
April 28, 1983  
Amended on May 14, 1987  
Amended on March 13, 1997  
Amended on October 19, 2006  
Amended on December 16, 2010

### **Exhibit 1-1**

**PRESENTED AND ADOPTED: April 26, 2012**

**SUBJECT: REAFFIRMATION OF THE WMATA SYSTEM SAFETY POLICY STATEMENT**

**2012-10**  
RESOLUTION  
OF THE  
BOARD OF DIRECTORS  
OF THE  
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

WHEREAS, The Board of Directors approved the WMATA System Safety Policy Statement on April 23, 1983; and

WHEREAS, The Board of Directors last amended the WMATA System Safety Policy Statement on December 16, 2010; and

WHEREAS, The Board of Directors, in response to the Federal Transit Administration's issuance of revised Title 49 CFR, Part 659, Rail Fixed Guideway Systems; State Safety Oversight, effective May 1, 2006, directed that the General Manager/Chief Executive Officer ensure that WMATA complies with the Tri-State Oversight Committee's Program Standard, Program Procedures and the WMATA System Safety Program Plan; and

WHEREAS, The Board Safety & Security Committee provides safety management oversight of WMATA activities; now, therefore be it

*RESOLVED*, The Board Safety and Security Committee recognizes the positive strides taken by WMATA in improving the safety of all employees and public-at-large; and be it further

*RESOLVED*, That the Board of Directors reaffirms the attached amendment to the WMATA System Safety Policy Statement that formalizes safety management oversight of the WMATA activities by the Board Safety and Security Committee and establishes that ongoing monitoring of the following form the basis of the Board Safety and Security Committee's safety management oversight process of WMATA Bus, Rail, and MetroAccess: (1) maintenance; (2) support and construction activities; (3) operations and safety data; (4) written accident/incident reports and staff briefings regarding fatalities, serious injuries, fires, major collisions (property damage equaling or exceeding \$100,000); (5) safety matters receiving media attention; (6) National Transportation Safety Board and Tri-State Oversight Committee investigations; and (7) the Hazard Identification/Resolution Matrix; and annual internal safety audit reports; and be it further

**Motioned by Mr. Downey, seconded by Mr. Acosta**  
**Ayes: 8 - Mrs. Hudgins, Mr. Downs, Mr. Downey, Mr. Nichols, Mr. Dyke, Ms. Bowser, Mr. Acosta and Mr. Barnes**

**Exhibit 1-2**

*RESOLVED*, That this Resolution shall be effective immediately.

Reviewed as to form and legal sufficiency,



\_\_\_\_\_  
Carol B. O'Keefe  
General Counsel

**Exhibit 1-2**

## **System Safety Policy Statement of the WMATA General Manager and Chief Executive Officer**

The Washington Metropolitan Area Transit Authority was organized with the mission to provide safe, secure, reliable and effective rail, bus and paratransit transportation services to our customers. Accordingly, safety is first, above all else, in all WMATA activities including operations, maintenance, and administrative functions of the organization. There is no higher value or priority than safety. A truly successful, effective and enduring safety program is one that prevents incidents from occurring by identifying risks in advance. We are building the foundation of a culture of prevention at Metro. We are developing a Safety Measurement System (SMS) to track, identify and monitor progress to address safety concerns. We have rebuilt and expanded our safety department.

All employees and contractors of WMATA are expected to conduct their duties safely, aimed at preventing, controlling and minimizing undesired events, such as customer or employee injury, equipment or property damage, or degradation to system safety in any WMATA function. Employees and customers are WMATA's most important assets, and their safety and security are WMATA's greatest responsibilities.

While the control of hazards and the prevention of accidents in Metrorail, Metrobus and MetroAccess transportation systems and facilities are the responsibility of each employee, they are foremost the responsibility of WMATA management. WMATA management is responsible for developing programs to promote and ensure the safety and security of all employees and customers. We are fully committed to providing a safe work environment, and safe vehicles, systems, and facilities. To that end, the WMATA Chief Safety Officer is empowered and authorized to administer a comprehensive, integrated and coordinated *System Safety Program Plan* (SSPP).

The Chief Safety Officer, as the executive of the Department of Safety and Environmental Management, reports directly to the General Manager/Chief Executive Officer. The Chief Safety Officer is responsible for overseeing all safety, environmental and corporate quality assurance issues for WMATA. This includes: developing and implementing, with WMATA executives and managers, the *System Safety Program Plan*; developing and managing a comprehensive Hazard Management Program; conducting accident and incident investigations on behalf of WMATA; developing and implementing a comprehensive Internal Safety and Security Audit Program; developing and implementing a Safety and Security Certification Plan; developing occupational safety and environmental plans and procedures; conducting safety related training programs; enforcing work rules; auditing the System Safety Program, safety rules and Standard Operating Procedures (SOPs) for compliance and coordinating with the Tri-State Oversight Committee on rail related safety issues, activities and programs described above.

  
Jack Requa  
Interim General Manager and Chief Executive Officer  
January 2015

### **Exhibit 1-3**

## **2.0 Purpose, Scope, Goals and Objectives**

### **2.1 Purpose**

The purpose of the SSPP is to set forth the requirements for identifying, evaluating and minimizing safety risks throughout all elements of the Metrorail, Metrobus and MetroAccess systems. The SSPP is the blueprint for the Authority's efforts in strengthening its overall safety management and its goal of continuous improvement in safety performance.

### **2.2 Scope**

The SSPP identifies system safety, hazard management, accident/incident investigation, internal safety auditing, environmental management, emergency management and fire protection related activities that occur during design, construction, testing and operations. The SSPP defines formal requirements, including the Twenty-one Elements required in the TOC PS/P, section 12 and the following:

- Functional structure of the safety management organization;
  - implementation of established safety, emergency management, environmental and fire protection criteria
  - mechanisms for identifying, assessing and controlling safety hazards and methods to eliminate, minimize or control the unacceptable hazards that have been identified
- Methods for conducting investigations of accidents, incidents, or unsafe acts;
- Interaction with and reporting responsibilities to the TOC and other external agencies;
- dissemination of the SSPP to all departments; and
- delineation of responsibilities for SSPP implementation.

Although not required by rule or regulation, WMATA, has included Metrobus and MetroAccess in the scope of this SSPP to provide organizational consistency, except where notifications, reports and approvals of documentation to the TOC are identified. The TOC is provided with rail system information only. The MetroAccess management team is required to develop, implement, and monitor the effectiveness of the SSPP for MetroAccess.

### **2.3 Goals and Objectives**

The goals of the System Safety Program are to ensure the safety of Metrorail, Metrobus, and MetroAccess customers, employees, first responders to Metro incidents, the public, equipment and infrastructure throughout the life of the system and to comply with the TOC PS/P established under the FTA State Safety Oversight requirements.



The objectives of the System Safety Program Plan are to define safety related activities, management controls and plan and establish a process for monitoring and assuring safety in accordance with the WMATA Mission Statement and values.

The purpose of these goals and objectives is to minimize the exposure of the public, personnel and WMATA property to hazards and unsafe conditions; and to assure that no single point of failure of a system or equipment results in an unsafe condition. These goals and objectives are reflected in the planning, design, construction, operation and maintenance of the system. The goals and objectives are accomplished through the performance of the following functions:

- Safety, fire protection and emergency management considerations are incorporated into all design and specification development and design reviews for the system;
- hazards associated with WMATA's system are identified and then eliminated or minimized to attain an acceptable level of risk;
- a safety culture is instilled throughout WMATA that emphasizes preventive measures over corrective measures to eliminate unsafe conditions;
- available historical data generated by WMATA is analyzed and used to support the WMATA System Safety Program Plan;
- safety, fire protection, hazard management, internal safety auditing, accident/incident investigation, construction safety, emergency management and environmental functions (to include oversight) are coordinated with other activities of WMATA;
- written policies, procedures, and rules are established in the *Metrorail Safety Rules and Procedures Handbook* (MSRPH), the *Department of Bus Service Employees' Handbook* (BSEH) and the *Department of Operations Administrative Procedures* (OAP); and
- all managers, supervisors and employees comply with Federal and state OSHA Standards, local codes and environmental regulations.

Each WMATA office/department in conjunction with the Office of Performance establishes annual safety objectives that are quantifiable and attainable. Success in meeting these objectives is quantified by the maintenance of accident/incident and injury statistics. A concerted effort is exerted to ensure that accident, incident and injury rates continue to improve over the long term. Typically, accident/incident and injury/illness statistics are reported to the Board of Directors quarterly in the Board Safety and Security Committee Reports. The Annual Safety Performance Report prepared by the Department of Safety and Environmental Management (SAFE) includes accident and injury statistics for the past calendar year. The Annual Safety Performance Report is provided to the Board Safety and Security Committee and the TOC. These accident and injury statistics are also brought to the Local Safety Committees (LSC), Departmental Safety Committees (DCS), and the Executive Safety Committee (ESC) meetings on a monthly basis.

## 3.0 Management Structure

### 3.1 General Overview and History of WMATA

In 1960, Congress created the National Capital Transportation Agency (NCTA) to develop a rapid rail system. The Washington Metropolitan Area Transit Authority (WMATA) was established in 1967, to replace the NCTA, as an instrument of the State of Maryland, Commonwealth of Virginia and the District of Columbia to plan, finance, construct, and operate, a comprehensive mass transit system for the Washington metropolitan area. In 1973, Congress consolidated the operations of several private bus companies into WMATA. Metrorail operations began in 1976 on weekdays on 4.2 revenue miles of track and served five stations. Metrorail began operating seven days a week in 1979 on 33.63 miles of track, serving 38 stations. Metrorail currently operates on 117.9 miles of track and 91 stations. The projected completion of Phase 2 of the Silver Line in early 2019 will extend Metro into eastern Loudoun County adding an additional 11 miles of track and six (6) new stations. In February 2014 Metrobus celebrated 41 years of service in the region. In March 2014, Metrorail celebrated 38 years of operation.

### 3.2 Scope of Service

WMATA's operations are performed in three distinct, but complementary systems; they are:

- Metrorail Operations

Metrorail ridership was over 206,491,850 trips in CY 2014. The Metrorail system serves Montgomery and Prince George's Counties in Maryland, the District of Columbia, the City of Alexandria, City of Falls Church, Arlington County and Fairfax County in Virginia.

The current revenue service characteristics are:

- Monday through Thursday....5:00 a.m. to Midnight
- Friday.....5:00 a.m. to 3 a.m.
- Saturday.....7:00 a.m. to 3 a.m.
- Sunday.....7:00 a.m. to Midnight
- Peak fare hours (rush hours) are from 5 a.m. to 9:30 a.m. and 3 p.m. to 7 p.m., Monday through Friday (holidays excepted);
- Maximum train lengths of eight rail vehicles;
- Minimum headways of 1.5 minutes between trains; and
- Maximum headways of 20 minutes between trains.

- Metrobus Operations

Metrobus ridership was 134,994,070 trips in CY 2014 on its service to Arlington County, Alexandria, Fairfax County and Falls Church in Virginia; Montgomery County and Prince George’s County in Maryland; and the District of Columbia.

The Metrobus operating characteristics are as follows:

- Operating hours: 24 hours per day
- All Metrobuses are kneeling buses equipped with wheelchair ramps/lifts
- Normal revenue service in rural, residential and urban areas throughout the Washington metropolitan area.

- Paratransit Operations

MetroAccess, through independent contractors, provides transportation for customers whose disabilities prevent them from using bus or rail. MetroAccess ridership was 2,193,926 trips in CY 2014. The MetroAccess core operating hours are as follows:

- Monday – Thursday.....5 a.m. to Midnight
- Friday.....5 a.m. to 3 a.m. Saturday
- Saturday.....7 a.m. to 3 a.m. Sunday
- Sunday.....7 a.m. to Midnight

### **3.3 Physical Plant**

- Metrorail physical plant
- Metrobus physical plant
- Administration physical plant

#### **3.3.1 Metrorail Physical Plant**

The completed regional Metrorail system is 117.9 miles of tunnel, elevated, and surface track, operating over exclusive Roadway and includes 91 stations. Exhibit 3-1 illustrates the Metrorail system and the various stations and the jurisdictions of Northern Virginia (Alexandria City, Arlington County, and Fairfax County), Maryland (Montgomery and Prince George’s Counties), and the District of Columbia as served by Metrorail in coordination with the Metrobus system.

# M System Map

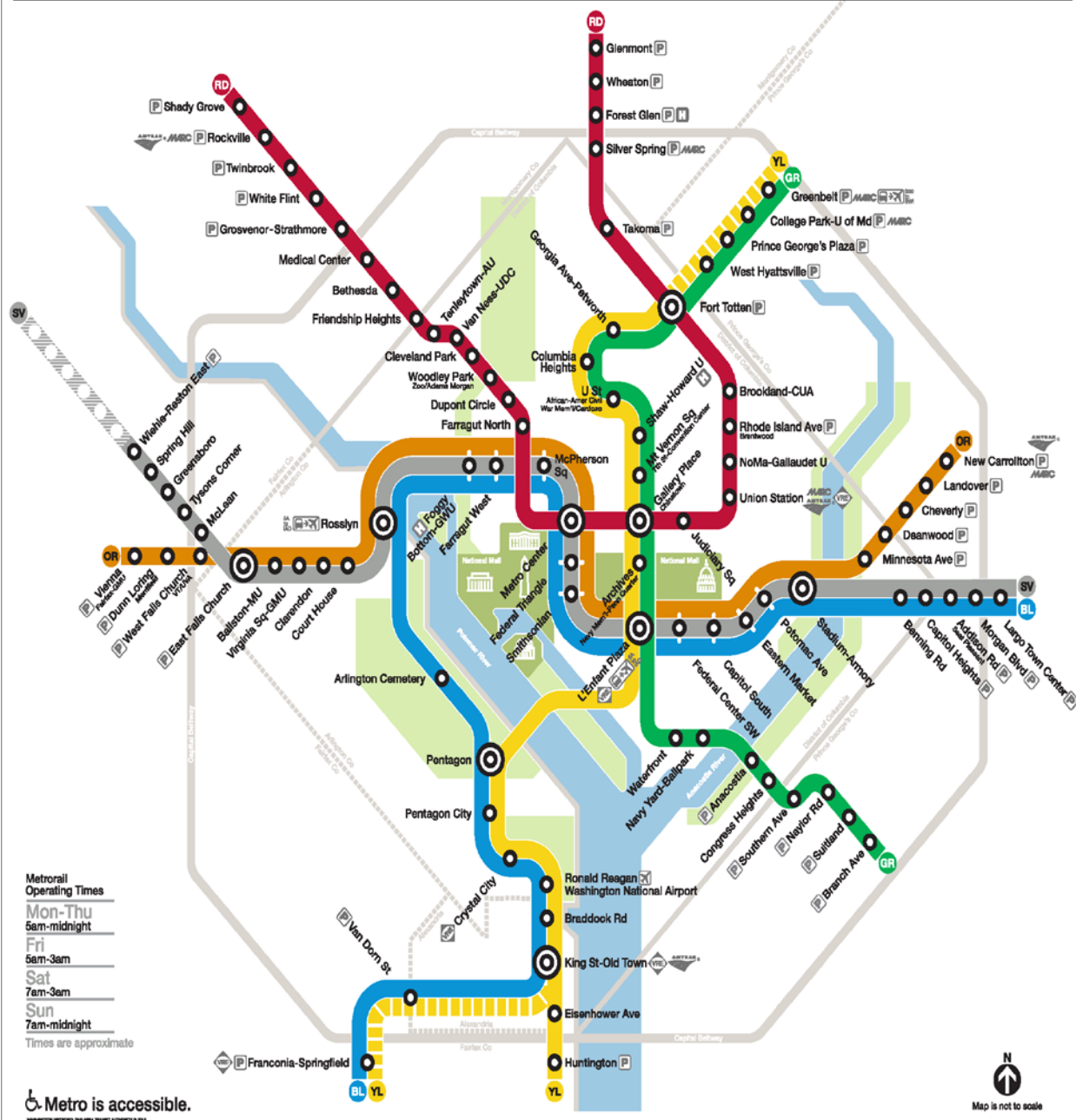
wmata.com  
 Customer Information Service: 202 637-7000  
 TTY Phone: 202 638-3780  
 Metro Transit Police: 202 962-2121

- ### Legend
- Red Line • Glenmont / Shady Grove
  - Orange Line • New Carrollton / Vienna
  - Blue Line • Franconia-Springfield / Largo Town Center
  - Green Line • Branch Ave / Greenbelt
  - Yellow Line • Huntington / Fort Totten
  - Silver Line • Wiehle-Reston East / Largo Town Center

- ### Station Features
- Bus to Airport
  - Parking
  - Hospital
  - Airport

Connecting Rail Systems

Rush-Only Service: Monday-Friday  
 6:30am - 9:00am 3:30pm - 6:00pm



**MetroRail Operating Times**  
 Mon-Thu 5am-midnight  
 Fri 5am-3am  
 Sat 7am-3am  
 Sun 7am-midnight  
 Times are approximate

Metro is accessible.

- No Smoking
- No Eating or Drinking
- No Animals (except service animals)
- No Audio (without earphones)
- No Littering or Spitting
- No Dangerous or Flammable Items

Exhibit 3-1

### 3.3.1.1 Stations

Stations are 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. Most stations have bicycle racks; many have bicycle lockers. 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 to establish an identity for the system. Station addresses are included on the applicable page of the *WMATA Emergency Response Maps*. These maps are distributed to all jurisdictional emergency response units and fire departments.

### 3.3.1.2 Yards and Shops

There are nine (9) Service and Inspection (S&I) Shops located throughout the system to provide routine maintenance. The major repair facilities for rail car and equipment overhaul, extensive modifications, wheel cutting, and spare parts storage to support the Metrorail system are located at the Brentwood and Greenbelt yards. Maintenance, to include cleaning, inspections, lubricating, operational testing, minor repairs, and component replacement for Metrorail trains are performed at the S&I yards. New rail car acceptance and preparation are accomplished at the Greenbelt Yard.

The mission of Car Maintenance (CMNT) is to initiate and successfully achieve a comprehensive maintenance program for rail vehicles and steel wheel non-revenue vehicles. Movements of trains are coordinated through the tower operator. The Office of Rail Train Operations (RTTO) administration offices are also located in each yard.

### 3.3.1.3 Passenger Vehicles

**WMATA Railcar Fleet Profile (as of June 27, 2013)**

<b>Railcar Manufacturer</b>	<b>Assigned Car Nos.</b>	<b>Service Implementation Dates</b>	<b>Fleet Size No. of Rail Vehicles in Use</b>	<b>% of Total</b>
<b>Rohr</b>	<b>1000-1299</b>	<b>1974-1979</b>	<b>270</b>	<b>25%</b>
<b>Breda</b>	<b>2000-3291</b>	<b>1983-1988</b>	<b>354</b>	<b>32%</b>
<b>Breda</b>	<b>4000-4099</b>	<b>1992-1994</b>	<b>100</b>	<b>9%</b>
<b>CAF</b>	<b>5000-5191</b>	<b>2001-2004</b>	<b>186</b>	<b>17%</b>
<b>Alstom</b>	<b>6000-6183</b>	<b>2005-2008</b>	<b>182</b>	<b>17%</b>
<b>Total</b>			<b>1092</b>	<b>100%</b>

Source: [CENV](#)

On July 26, 2010, Metro awarded a contract to Kawasaki to manufacture the new 7000 Series rail vehicles, which will replace the 1000 Series rail vehicles, fulfilling a top safety concern of Metro.

All rail vehicles are flanged steel wheel rapid transit rail vehicles. The normal capacity of each Rohr vehicle is 175 passengers, Breda rail car is 187 passengers, the AAI/CAF rail car is 187 passengers and for the Alstom 6000 Series car, the normal capacity is 175 passengers. All rail vehicles are 75 feet long and 10 feet wide, have contoured seats, heating, ventilation and air conditioning. Trains consist of dependent married pairs of rail vehicles with a maximum train length of eight rail vehicles, operating over exclusive Roadway with an average speed of 35 miles per hour (mph). Although the maximum designed speed is 75 mph, MSRPH Operating Rule 3.84 restricts the maximum speed for the Metrorail system at 59 mph except for certain segments of the Green Line where the maximum speed is 65 mph.

#### **3.3.1.4 Power Systems**

The 750 volts, direct current (DC) traction power system provides the power source for vehicle propulsion. The traction power system includes contact and running rails, associated conductor system, power substations and tiebreaker stations including transformers, rectifiers and switchgear for conversion and supply of power to the contact third rail system. Each segment of contact third rail can be supplied by adjacent power substations, and is supplied by separate power company substations, wherever practicable, for additional reliability.

A 480/277 volts alternating current (AC) auxiliary power system provides for lighting, heating, ventilation, air conditioning, escalators and elevators, communications, train control systems, fare collection equipment, emergency power systems, illuminated signs, clocks, alarms, station closed circuit television (CCTV), public address (PA) systems, and pumping stations. Reliability and safety features are provided in the distribution system to prevent loss of power for essential loads (train control, lighting, and communications) due to transformer over temperature or circuit breaker over-current conditions from either of the two power sources serving each station. Additionally, emergency power is provided from an uninterruptible power supply (UPS) battery system to prevent loss of critical lighting, Automatic Train Control (ATC), and communications in case of a complete loss of AC power. There are 74 permanent generators at key stations and facilities, 19 mobile (trailer) generators and 13 portable generators to provide power for safety critical equipment in the event of power loss.

The Office of Systems Maintenance (SMNT), in the Department of Transit Infrastructure and Engineering Services (TIES), is responsible for the control, maintenance, inspection, modification, overhaul, test and repair of the above-described systems. The Power Branch provides seven (7) days per week, twenty-four (24) hours per day coverage of the power systems.

### 3.3.1.5 Automatic Train Control System

The Automatic Train Control (ATC) system consists of the car borne and wayside train control and signal system. The ATC system is comprised of three subsystems: the Automatic Train Protection (ATP) system, the Automatic Train Operation (ATO) system and the Automatic Train Supervision (ATS) system. The ATP subsystem of the ATC System is designed to provide complete protection against collisions and over-speed conditions through the automatic block signaling system. Effective analysis and maintenance of the ATC system is critical to ensure the continued safe operation of the system. The ATP subsystem also provides control of interlockings, route security through interlockings and control of train door operation. The ATO subsystem performs the functions of accelerating the train to running speed, regulating the train running speed, and stopping the train at proper positions at stations. The ATS subsystem controls and supervises the routing and scheduling of the trains. The ATS subsystem also supervises and controls the transit system mechanical support and electrical power facilities.

ATC Engineering provides policies and procedures for the testing, inspection and maintenance in the ATC-1K/2K/3K documents. Each document provides guidelines in specific areas:

- ATC-1K – Mandatory safety critical inspection and test procedures (FRA regulatory compliance tests)
- ATC-2K – Guidelines for incident investigation, corrective maintenance and modification to ATC systems
- ATC-3K – Technical procedures for ATC systems which are not covered in the ATC-1K, i.e. non-vital systems, preventative maintenance and non-periodic adjustment procedures

ATC maintenance management policies and procedures are found in Automatic Train Control Branch Maintenance Control Policy, Revision #3. ATC Maintenance Management provides twenty-four (24) hour per day, seven (7) days per week coverage.

The train operator can operate in manual mode with permission from the Metrorail Operations Control Center (ROCC) and in accordance with procedural controls. However, since the Fort Totten accident in June 2009, all trains are operating in manual mode until otherwise directed.

In addition, since the Fort Totten accident, the Office of Chief Engineer, Infrastructure (CENI) has increased the frequency of its track circuit data review from once every 30 days to twice daily and is doing a deeper level of analysis with more stringent requirements. Engineers review computerized reports after each rush hour and investigate every anomaly they identify and ATC is taking immediate actions to correct



them. In some cases, the problem can be corrected quickly while others take more time. In the instances where repairs are lengthy, ATC may temporarily take a track circuit out of service to work on a repair. When a track circuit is disabled or deactivated for repair, trains are slowed to 15 mph through the affected area. Train operators maintain radio contact with controllers in ROCC.

### **3.3.1.6 Communications System**

The Communication Branch (COMM) of SMNT is responsible for the maintenance and availability of the Authority's communications systems in support of bus and rail operations. Communication maintenance service is provided 24 hours per day, 7 days per week. The WMATA telephone system is maintained by the IT Department. SMNT communications systems include:

- Metrorail Station Closed Circuit Television (CCTV) System, Metrorail Station Digital Video Recorder (DVR) and Network Video Recorder (NVR) Systems, Parking Garage CCTV
- Comprehensive Radio Communications System (CRCS), Conventional Mobile Radio Systems, MTPD Mobile Data Terminals, Public Safety Radio System (PSRS) Interfaces, Public Safety System Distributed Antenna System
- Metrorail Station, Metrobus Division, Parking Garage and ancillary building Fire and Intrusion Alarm (FIA) Systems, Metrobus Division and Metrorail Yard Perimeter Security Systems
- Metrorail Station and Metrobus Division Public Address Systems, Integrated Intercommunications System, Passenger Emergency Response System (PERS), Passenger Information Display System (PIDS), Kiosk Information Display System (KIDS)
- Environmental Monitoring Systems (Veeder Root/Gas Tank Leak Detection Systems), Methane Gas Detection Systems
- PROTECT system

### **3.3.1.7 Track and Structures**

The Track Maintenance North Branch (TKMN) maintains all tracks associated with the entire Red Line and the northern portion of the Green Line including mainline and yards. Two-thirds of the work and workforce are scheduled on midnight shift; however, due to the limited non-revenue hours, a substantial amount of work is now performed during off-peak revenue hours. The administrative offices are located at the TSSM Center at C99 Alexandria Yard in Alexandria, VA.

On a 24 hour, 7 days per week basis TKMN:

- Manages all maintenance and production work on the entire Red Line from Shady Grove to Glenmont;
- manages all maintenance and production work on the northern portion of the Green Line from Gallery Place to Greenbelt;

- manages assigned Capital Improvement Program/Infrastructure Renewal Program (CIP/IRP) programs for the entire Red Line and the northern portion of the Green line;
- manages running rail grinding, track geometry, ultrasonic rail testing and rail end welding for the entire Red Line and northern portion of the Green line;
- provides personnel and equipment support to other offices and contractors; and
- maintains the yard tracks within Shady Grove, Brentwood, Glenmont and Greenbelt yards.

The Track Maintenance South Branch (TKMS) maintains all tracks associated with the Orange, Blue, Silver, Yellow, and the southern portion of the Green Line including mainline and yards. The maintenance region offices are located in the Alexandria (C99) and New Carrollton (D99) maintenance yards. The administrative offices are located on the second floor of the TSSM Building in Alexandria Yard (C99).

The Track Inspections Branch (TKIN) is responsible for all track inspections throughout the entire Metrorail system. Within TKIN, there are two distinct sections working in unison: the inspectors and the Analytical/Technology (A/T) Center. The administrative offices and A/T Center are located at the TSSM Building at Alexandria Yard in Alexandria, VA.

TKIN performs the following inspections:

- All mainline interlockings, monthly
- All yards, quarterly
- Coordinates automated inspections i.e., rail flaw, lateral load, geometry, ultrasound and component assessment

The A/T Center compiles and develops reports to assist maintenance and production in planning, scheduling, and projecting for all system repairs.

The Track Production Branch (TPRO) has responsibility for performing all capital budget track work system-wide. This includes, replacement of ties, turnouts, fasteners, running rail, floating slab and third rail insulators.

The Structures Maintenance Branch (STRC) is responsible for the coordination, scheduling and implementation of all structure maintenance activities (bridges and tunnels). The administrative offices are located at the TSSM Building in Alexandria, VA. Structures Maintenance for all lines is located at Alexandria Yard and the Carmen E. Turner Maintenance and Training Facility.

On a 24-hour, seven days a week basis STRC:

- Maintains tunnels (repair structure and leaks);
- maintains aerial structures (bridges);
- manages the repair or diversion of station and tunnel leaks;

- executes structural maintenance of all aerials, bridges, retaining walls, stations, and tunnels;
- provides personnel and equipment support to the other offices and contractors;
- manages assigned Capital Rehabilitation Programs (CRP) and Infrastructure Renewal Programs (IRP); and
- supports the Office of Plant Maintenance (PLNT) in snow removal.

### **3.3.2 Metrorail Safety Capabilities**

The following is a brief description of some of the safety capabilities incorporated in Metrorail facilities and equipment

#### **3.3.2.1 Car Design**

Metrorail vehicles are designed to “fail” in the safest manner possible so that failure of any safety critical component will automatically stop the train or cause it to run at a safer, more restrictive speed. The car borne portion of the ATP subsystem of the ATC system ensures safe movement of the train. Trains are designed so that they cannot be moved if any side door is not closed and locked. A Daily Safety Test (DST) is performed on every train to ensure proper operation of the ATP subsystem. Emergency braking provides a high rate of braking to ensure safe stopping in the event of an emergency. The MSRPH, the manufacturer’s technical manuals and CMNT daily inspection procedures provide guidance for assuring that vehicles are safe for use in revenue service.

Fire resistant materials are used throughout the rail vehicles and fire extinguishers are provided in each cab. Emergency battery power provides communication, emergency car lighting, headlights and taillights if traction power is lost. The inter-car public address system allows passengers to talk to the operator from the intercom boxes at both ends of each car, and allows the train operator or the ROCC to pass emergency instructions and other information to the passengers. The 6000 Series rail vehicles also have an intercom box at the center of the rail car.

#### **3.3.2.2 Rail Operations Control Center (ROCC)**

The ROCC is equipped with monitoring, control, and communication facilities required to operate a safe and efficient rapid transit system, and to handle emergencies. The ROCC is staffed 24 hours per day, seven (7) days per week. The Office of Rail Transportation (RTRA) is responsible for managing the ROCC.

A non-vital computer system, Advanced Information Management (AIM) system, housed in the ROCC, monitors train positions, switch positions, signal status and malfunctions, status of support systems such as ventilation, drainage, fire and intrusion alarms, traction power system status and pumping station alarms.

ROCC, computer systems also facilitate supervisory control of interlockings and switches, the traction power system, and ventilation fans and dampers. The ROCC has direct communication via radio, telephone and/or public address with the following:

- Train Operators and train passengers
- Station managers and passengers in stations
- TRST and SMNT (ATC, Communications, Power and Automatic Fare Collection)
- CMNT and PLNT
- Road, terminal, and yard tower supervisors
- Local fire/rescue communications centers
- Metro Transit Police and local police
- Bus Operations Control Center
- Control towers of common corridor railroads

Reliability is provided for the ROCC systems by a back-up computer, which automatically activates if the primary control computer malfunctions. Two diesel generators provide standby power if commercial power is lost. In addition, critical ROCC communication equipment and computer functions are supplied by a UPS that will provide thirty minutes of emergency power.

The ROCC staff has the responsibility for complete control of Metrorail operations and all facilities necessary to coordinate activities required for correction of an emergency and/or non-routine situation in accordance with the established standard operating procedures.

### **3.3.2.3 Metrorail Stations**

The Metrorail stations are operated by the Office of Rail Train Operations (RTTO). The following safety provisions have been incorporated into the stations:

- Emergency Trip Stations (ETS) - An ETS is provided at both ends of every platform for emergency removal of traction power if a person falls to the track or any other emergency occurs. The ETS box is identified by a blue light attached to the box. Emergency telephones located at each ETS connect directly to the ROCC.
- Passenger Emergency Reporting System (PERS) - Two call stations are located on pylons, or support stanchions, approximately 200 feet from each end of all station platforms. This intercom system provides a means of reporting emergencies to the station manager. A control panel is located in each kiosk.
- Surveillance System - The Metrorail stations were designed to eliminate recessed or hidden areas and to provide unimpeded lines of sight for station managers and the Metro Transit Police. In addition, all passenger stations and elevators are equipped with CCTV cameras for monitoring safety and security. Monitors are located in the station kiosk(s). Digital Video Recorders and Network

Video Recorders are installed at all rail stations to enhance security and aid incident investigations.

- Fire Equipment - Each station has a fire alarm control panel with a minimum of seven separate fire zone circuits that include an ionization detector and/or a combined fixed temperature and rate-of-rise fire sensor that provides an alarm at both the station kiosk and the ROCC. Activation of a fire detector stops all entry escalators to slow passenger access into the station and causes passenger control arms of fare gates to open for unimpeded egress from the station. There are standpipes under the station platforms, accessed through manholes, in vent/fan shafts, and in the tunnels. Fire extinguishers are located in station fire equipment cabinets, station kiosks, train control rooms, communication rooms, and mechanical equipment rooms, fan shafts, along the track bed at ETS boxes and on trains. The stations and tunnels have ventilation fans that normally operate under thermostatic control to remove train-generated heat. In an emergency, these fans can be controlled from the ROCC to exhaust smoke from the stations or tunnels. Emergency tunnel and evacuation carts (ETEC) (manually propelled) and motorized ETEC carts are strategically located throughout the Metrorail system.

#### **3.3.2.4 Additional Safety Features**

- In addition to the ETS emergency phones, there is a direct phone line between each kiosk and the ROCC. The public address system provides direct communications from controllers in ROCC or the Station Manager from the kiosk to passengers in the stations, and from the train operators to customers in the trains. The PA system is used to provide emergency instructions on the safe and proper use of the Metrorail system and to make other general announcements.
- Lights are installed along the granite edge of station platforms, which flash to alert passengers when a train is arriving, thereby decreasing the tendency for passengers to stand at the platform edge to watch for the train.
- Detectable tiles are located on station platforms adjacent to granite edges to alert customers that they are approaching the edge of the platforms.
- Drainage Pumping Stations - There are 58 pumping stations in the Metrorail system to control water accumulation in tunnels caused by rain, street runoff and groundwater seepage. Each pumping station includes a lead pump and a lag pump either of which can carry the pumping load independently. Lag pumps and high water level sensors provide alarms to the ROCC if there is a malfunction or an excess accumulation of water.
- Roadway (ROW) and Elevated Structure Safety Provisions - six-foot high, chain-link fences topped with barbed wire have been installed on both sides of all at-grade Roadways to prevent trespasser access to the Roadway. Safety railings

(on both sides) and safety walks have been installed on all elevated structures to protect personnel from falls and to allow clear passage of personnel and trains. ETS boxes with emergency phones are located approximately every 800 feet along the Roadway.

- Common Corridor Safety Provisions - On routes where Metrorail shares a common corridor at grade with other rail properties, an Intrusion Detection and Warning (IDW) system is attached to the Roadway fences. The IDW consists of a frangible cable fastened along the fence, and an alarm display on computer monitors in the ROCC that signals the track and zone if any intrusion occurs. The IDW is interconnected with ATC so that trains are stopped prior to entering the area of intrusion. Derailment/dragging equipment detectors are installed on the CSX tracks. Hot Box detectors are provided along the railroad Roadway in approach to the common corridors. CSX/ROCC Hot Line telephones installed in ROCC and the railroad control towers allow immediate contact between the common corridor operations. If a fire or other common corridor emergency is reported to the ROCC, action would be taken to notify fire department and emergency response crews.
- Emergency Exits - Emergency exits are provided in vent shafts at single entry underground stations vent and fan shafts, and in emergency exit shafts between underground stations. With three exceptions, the maximum travel distance to an exit from the underground system is 1,250 feet. In single entrance underground stations, the emergency exit is located in the vent shaft at the end of the station furthest from the entrance. There are 91 emergency exits in the Metrorail system.
- Passenger Information Display System (PIDS) - This system provides up-to-date information regarding elevator availability status, system delays, emergency information, and information regarding approaching and arriving trains.
- Kiosk Information Display System (KIDS) - This system provides customers with major transit information, service disruptions and alerts prior to entering the station.
- Sidewalks with directional signs and lighting provide safe routes for pedestrians to travel from buses, surrounding streets and parking facilities to Metrorail stations.
- An emergency telephone system is installed in Metro parking structures.

### **3.3.3 Plant Maintenance Physical Plant**

In addition to the responsibility for maintenance of all bus and rail related facilities, PLNT operates nine facilities housing storage, shops and offices.

PLNT's headquarter offices are located at the Carmen E. Turner Maintenance and Training Facility (CTF) in Hyattsville, MD. PLNT's field bases are located in the following rail yards: Alexandria, West Falls Church, Shady Grove, New Carrollton, Greenbelt, Glenmont and Branch Avenue. The construction support shop is located at 6211 Blair Road, NW, Washington, D.C.

WMATA's largest facility is the CTF; it is a 640,000 sq. ft. building located on 28 acres of land at 3500 Pennsy Drive in Hyattsville, MD. DGMO, BUS, RTRA, TIES, SAFE, OEM, HR and CSCM are assigned space in this facility. The new ROCC at CTF opened in September 2011.

### 3.3.4 Metrobus Physical Plant

The Metrobus system operates approximately 167,800 daily miles through the jurisdictions of Northern Virginia, the District of Columbia and Maryland. It consists of four (4) urban and five (5) suburban divisions as follows:

<u>Division</u>	<u>Location</u>
Bladensburg	2251 26 <sup>th</sup> Street, NE Washington, DC 20018
Four Mile Run	3501 S. Glebe Road Arlington, VA 22202
Landover	3433 Pennsy Drive Hyattsville, MD 20785
Montgomery	5400 Marinelli Road Rockville, MD 20852
Northern	4615 14 <sup>th</sup> Street, NW Washington, DC 20011
Shepherd Parkway	2 DC Village Lane, SW Washington, DC 20032
Southern Avenue	1301 Boone's Hills Rd. Coral Hills, MD 20743
West Ox Road	4970 Alliance Drive Fairfax, VA 22030
Western	5230 Wisconsin Avenue, NW Washington, DC 20016

These divisions serve as dispatching points for bus service and provide cleaning, inspection and preventive, corrective and warranty maintenance of buses to ensure that safe, clean and reliable buses are available to meet ridership demands.

CNG maintenance facilities are located at the Bladensburg Division located at 2250 26<sup>th</sup> Street, NE, Washington, DC, the Four Mile Run Division located at 3501 South Glebe Road, Arlington, VA, and the Carmen Turner Facility located at 3500 Pennsy Drive, Hyattsville, MD.

Metrobus has two (2) heavy repair shops located at the Carmen Turner Facility and the Bladensburg Division. The Carmen Turner Facility Heavy Overhaul Shop is responsible for performing major corrective maintenance including engine and transmissions rebuilds and major repairs of damaged buses. The Bladensburg Heavy Overhaul Shop is responsible for the Heavy Maintenance Overhaul Program which brings the buses up to the latest standards and specifications.

The Office of Bus Maintenance (BMNT) maintains a non-revenue vehicle fleet of 1,976 vehicles and support equipment at the Bladensburg, Carmen Turner, and Eisenhower Avenue service vehicle shops. Non-revenue service vehicle body repair work and new vehicle and equipment replacement is performed at the Carmen Turner Facility.

#### **3.3.4.1 Bus Fleet**

WMATA operates the sixth largest bus fleet in the United States with 1,515 active buses as of September 2014 of which 65, or 4.3% are articulated buses and 1,450 are mini, small or standard size buses. The number of buses in WMATA's Metrobus fleet is determined by the projected annual bus schedule requirements with additional spares, to account for buses in maintenance and inspection or awaiting repair. The average age of the active bus fleet was 7.16 years, as of September 2014.

All Metrobuses are air-conditioned, equipped with two-way radios for emergency communication, video cameras, drive cam systems, fire suppression systems, kneeling features and wheelchair capabilities. Metrobuses are 100% accessible for the elderly and disabled. The buses have silent alarms, emergency engine shutdown switches, and flashing lights located around the roof area that can be activated to alert police agencies for operator/passenger protection.

The Metrobus fleet is comprised of the following power trains: Diesel, 14%; compressed natural gas (CNG), 30%; Hybrid, 46%; and Clean Diesel, 10%. The sub-fleets include buses manufactured by: New Flyer, Neoplan, Orion, NABI and Ford, with model years ranging from 1997 to 2014. There are five (5) buses in the special and historical fleet. As of September 2014, there were 1,516 active buses, the peak service level was 1,259 buses, and the total fleet consists of 1,542 buses.



### **3.3.4.2 Metrobus Safety Capabilities**

- S-1 Guards (installed in front of right rear wheel)
- On-board video recorders and cameras
- Silent alarm to be activated by operator (Destination Sign Changes to “Emergency Call Police”)
- Fire extinguishers
- Window emergency exit latches
- Flashing crime alert lights
- Fire suppression/CNG warning system
- Brake/door interlock system
- Emergency entrance and exit door releases
- Passenger seats with lumbar support
- Dashboard glare reduction
- Anti-microbial bus seat material
- Slip resistant bus flooring
- Shatterproof bus windows
- Driver Protection Barriers

As of June 2012, 100% of WMATA’s active bus fleet was equipped with Closed Circuit Television Cameras (CCTV). The bus CCTV system is comprised of between five (5) and nine (9) cameras depending on the subfleet configuration and records video on both the interior and exterior of the bus. This CCTV system acts as a deterrent against illegal or improper behavior on-board the bus (vandalism, theft, assault, etc.) and can be used as an investigative tool in the event of an occurrence on or outside of the bus relating to incidents such as injury claims, accident claims and general customer complaints.

WMATA’s buses are also 100% equipped with the DriveCam system which is a comprehensive fleet safety and risk management program. This system assists with improving Metrobus safety by documenting incidents and assisting operators to develop safer, more efficient driving habits. As part of a five-year contract, the contractor will review and analyze video footage; and provide feedback on operator driving habits. The system detects when an operator makes a defensive move to avoid an accident, brakes or accelerates suddenly, turns sharply or is involved in an accident. The analysis is provided to management, supervisors, trainers and operators and will be used to encourage good driving habits, correct poor habits, and assist in investigations.

### **3.3.4.3 BMNT Training**

BMNT has a training office located at the Carmen Turner Facility where training is provided for BMNT maintenance employees. BMNT has a technical skills program designed to train employees with limited education and/or experience in technical fields that do not otherwise meet all of the requirements currently identified for placement in WMATA’s maintenance positions. This program is designed to ensure the Authority continues to meet the objectives of safe, reliable and efficient public transportation

within its' jurisdiction. The BMNT training office also has a nine (9) week training program for new maintenance employees with two (2) days devoted to Safety Training conducted by the Office of SAFE. Some system-wide training is also provided if space permits. After this initial training, mechanics are required to complete 40 hours per year of refresher training. This refresher training reinforces previously acquired knowledge and skills with special emphasis on safety. Additionally, annual field safety training is provided on hybrid and CNG buses as well as Service Lane Operations.

### **3.3.5 Administrative Facility**

The primary administrative facility is the Jackson Graham Building located at 600 Fifth Street, NW, in Washington, DC. The Jackson Graham Building houses the backup Operational Control Center for Metrobus and Metrorail, and serves as WMATA's administrative headquarters. PLNT manages and maintains the Jackson Graham Building.

### **3.3.6 Support Services Physical Plant**

The Stone Straw Building, located at 900 Franklin Street, NE, Washington, DC, is a multipurpose facility that houses WMATA's reproduction facilities, central records and marketing storage.. This building is managed and maintained by PLNT.

The Metro Supply Facility (MSF), located at 8201 Ardwick-Ardmore Road in Hyattsville, MD is managed by the Office of Supply Chain Enterprise Services (SCES). Inventory Management, Classification, Warehousing, Purchasing, QAAW Incoming Inspection, Logistics and Surplus Property Disposal are also located at this facility. PRMT also manages the Open Materials Storage facility located at 3360 Pennsy Drive in Hyattsville, Maryland. The Revenue Collection Facility (RCF) located at 3301 Eisenhower Avenue, Alexandria, VA houses the revenue operations of the Office of the Treasurer (TRES) and the Transit Police Revenue Protection Division. The Metro Transit Police District I Substation is located in the Marlon F. Morales Building near the Fort Totten Metrorail Station. The Metro Transit Police District II Substation is located at 6654 Metro Access Road, Springfield, Virginia which is adjacent to the Franconia-Springfield Station. A facility located at 195 Telegraph Road in Alexandria, Virginia houses offices and shops for SMNT.

The Security Operations Control Center (SOCC) will be located at 3421 Pennsy Drive, Hyattsville, MD.

### **3.3.7 Maintenance, TIES**

Maintenance of all TIES rail vehicles, roadway maintenance machines, fixed equipment and facilities is performed in accordance with manufacturers' manuals, codes, standards and established procedures. The overall philosophy is to maintain a level of readiness that will ensure safe, efficient and reliable mass transit. Maintenance groups maintain a database (MAXIMO) to track scheduled maintenance of vehicles and

equipment. Safety critical equipment that does not meet established requirements is withdrawn from service.

Equipment or vehicles that are involved in an accident are removed from service until a complete inspection is conducted. Equipment or vehicles are returned to service only after it is determined that no defects contributed to the accident and SAFE releases the rail vehicles back to CMNT for return to service. SAFE is notified when safety critical equipment is removed from service and of accidents via the SMS. MAXIMO also interfaces with SMS. SAFE reviews this information and will enter identified hazards into the Hazard Management Process. All maintenance organizations provide preventive maintenance on a scheduled basis and maintain crews at strategic locations to ensure rapid deployment, recovery and return to service in the event of an emergency.

The Maintenance Operations Center (MOC) is responsible for coordinating and monitoring all maintenance personnel and equipment responding to emergencies, revenue train delays, unusual occurrences, equipment, and facility malfunctions having the potential to disrupt or affect revenue service on the rail and bus systems.

MOC is also responsible for monitoring all maintenance activities performed by PLNT, TRST and SMNT and all emergency maintenance or preventive maintenance affecting the configuration of wayside equipment, during revenue service hours. The activities of MOC are performed in accordance with *Operations Administrative Procedures* (OAP) No. 200-2. The MOC notifies SAFE in the event of accidents and incidents, including hazardous substance releases. SAFE enters any identified hazards into the Hazard Management Process.

The performance of preventive maintenance activities on all rail vehicles, roadway maintenance machines, and wayside equipment is performed in accordance with OAP 200-3. Unless directed otherwise by the appropriate AGM, approved preventive maintenance procedures shall comply with manufacturers recommended maintenance practices.

Corrective and supportive maintenance activities adhere to guidelines established by the following OAPs: 200-5, 200-9, 200-27, 204-1, 208-1, 210-3, 210-4, 210-6, and CMNT SOPs 1.04, 1.05 and 1.06.

Calibration of test measurement and diagnostic equipment (TMDE) is performed in accordance with OAP 204-01, dated April 2012. The Superintendent of the SMNT Shops and Material Support Branch is responsible for maintaining the Metrology Laboratory and all test equipment for the calibration of wayside equipment. The Metrology Laboratory is certified to ISO 10012 or ANSI Z540-1 standard in compliance with APTA RT-S-VIM-017-03 Rev. 1, dated November 2, 2006.

The Superintendent of the CMNT Shops is responsible for the calibration of TMDE in accordance with CMNT SOP 3.05.

QAAW monitors the effectiveness of the calibration process and periodically review the scheduled compliance reports. They also periodically review the documentation of all maintenance and repair processes.

### **3.3.8 Maintenance, BUS**

The mission of BMNT is to provide safe, clean and reliable buses for the riding public and ensure that WMATA's Non-Revenue Fleet of Vehicles are maintained in a safe, reliable and cost efficient manner.

Maintenance of the revenue fleet (buses), all Authority service vehicles (non-revenue), equipment and facilities is performed in accordance with manufacturer's manuals, codes, standard operating procedures, service bulletins, Standard Practice Bulletins and established procedures. Standard Operating Procedures are in place for Preventive Corrective Maintenance Programs, Operational, Administrative, Inventory Contract and Facilities Equipment policies for all revenue and non-revenue vehicles and equipment. Service Bulletins cover the bus power train, body, preventive maintenance, electrical, chassis, air system, HVAC and various support topics. Standard Practice Bulletins are in place for Division and Heavy Overhaul Shop procedures and Bus Fire Safety Practices.

The Maximo database is used to track scheduled maintenance of vehicles, (revenue and non-revenue) and equipment. Safety critical equipment that does not meet established requirements is withdrawn from service.

Equipment or vehicles that are involved in an accident are removed from service until a complete inspection is conducted. Equipment or vehicles are returned to service only after it is determined that no defects contributed to the accident.

The Bus Operations Communication Center (BOCC) is responsible for coordinating and monitoring all personnel and bus service, responding to emergencies, incidents, service delays and unusual occurrences that have the potential to disrupt or affect revenue service.

## **3.4 Integration of Safety Function**

The safety function is integrated throughout all operations and activities of the Authority. Safety functions and safety responsibilities are delegated from the Board of Directors via the *System Safety Policy Statement* (see exhibit 1-1) to the GM/CEO. The GM/CEO delegates safety functions and safety responsibilities to the CSO and the Executive Leadership Team (ELT), who are responsible for implementing the requirements of this SSPP in their assigned departments.

The ELT delegates senior managers to include safety requirements, responsibilities and objectives into the performance management plans of managers and supervisors. Managers and supervisors are held accountable by the performance management

process for achieving their operational and maintenance objectives in a manner that ensures the safety of Metrorail and Metrobus facilities, equipment and systems, and MetroAccess contracted services.

Safety performance is measured through the monthly tracking and corporate reporting of indicators such as bus, rail and MetroAccess passenger injuries and vehicle accidents and employee injury rates.

The SSPP serves as a blueprint for the organizational integration of the safety function and its effective implementation ensures the integration of the safety function throughout the Authority.

### **3.5 Lines of Authority for Safety**

The lines of Authority for safety are based on the responsibilities established by the WMATA Board of Directors *System Safety Policy Statement* in exhibit 1-1. The GM/CEO designates the CSO (SAFE) to oversee the implementation of the safety management functions of the various WMATA departments. SAFE also develops, publishes and maintains the SSPP and works with members of the ELT to ensure the effective implementation of the SSPP throughout the Authority. The safety responsibilities and functions of the ELT are described in the sections below. Members of the ELT are noted in these descriptions as (ELT), which demonstrates the lines of authority for safety throughout the organization. ELT members are also identified on the WMATA organization chart (see Appendix D).

### **3.6 Organizational Safety Responsibilities**

The WMATA GM/CEO has been charged by the Board of Directors, with implementing the WMATA System Safety Program consisting of four distinct efforts:

- System Safety (Rail, MetroAccess, and Bus)
- Construction Safety
- Fire Protection and Emergency Management
- Environmental Management and Occupational Safety and Health

Appendix D illustrates the current WMATA organization. Appendix E illustrates the SAFE Organization.

The Board of Directors provides management oversight of the implementation of the WMATA *System Safety Program Plan* through safety reports provided to the Board Safety and Security Committee. The following information is available to the Board Safety and Security Committee: Monthly safety and security reports, Hazard Management Reports; Accident/Incident Reports and written follow-up reports; briefings on investigations of fatalities, revenue derailments, collisions resulting in \$25,000 or more in property damage and on accidents being investigated by the NTSB and/or the TOC.

### 3.6.1 Department of Safety and Environmental Management

The Chief Safety Officer, Department of Safety and Environmental Management (SAFE) (ELT) reports directly to the GM/CEO. The CSO has been delegated specific responsibilities, by the GM/CEO, for the management of system safety, occupational safety and health, accident and incident investigation, the continuous hazard management process and the internal safety and security audit process. Additionally, the CSO has responsibility for oversight of construction safety, safety and security certification, safety data collection and analysis, industrial hygiene, safety training, safety program implementation, regulatory compliance, environmental protection, corporate quality assurance and monitoring the implementation of the *System Safety Program Plan* (SSPP). SAFE interfaces with all WMATA departments at all levels of the organization.

The CSO meets formally with the GM/CEO at least monthly in one-on-one meetings to provide updates on safety issues, safety priorities and hazard management. The CSO also meets informally with the GM/CEO on an as-needed basis, usually daily, to provide updates on safety issues. The CSO participates in the weekly ELT meetings to update the ELT on safety priorities, safety issues, and hazard management, and to communicate safety-related information across all WMATA departments, including the effects of budget reductions and resource constraints on the performance of safety-related maintenance activities and requirements. These issues may be addressed in more depth at the monthly Executive Safety Committee (ESC) meetings.

The GM/CEO, ESC and the ELT receive monthly safety reports generated from the Safety Measurement System (SMS) including accident and injury data, the Hazard Management Module and the Corrective Action (CAP) Tracking Log. This information will keep the GM/CEO, ELT and members of the ESC apprised of progress in implementing corrective actions and recommendations from investigations, safety and security audits and the Hazard Management Process.

SAFE reviews all safety related departmental procedures including: WMATA *Policy/Instructions*; *Department of Operations Administrative Procedures* (OAP); project management procedures; financial policies and procedures, human resources policies and procedures and procurement policies and procedures. SAFE also promulgates and monitors adherence to Authority-wide *Safety Rules and Procedures*.

The CSO and SAFE designees have the authority to direct that work or conditions, determined to be unsafe, or pose a hazard to customers, employees, contractor employees, the public or endangers the safe passage of trains, paratransit vehicles or buses, be suspended or restricted, until the unsafe condition or hazard can be mitigated or corrected. Interim corrective actions are required for serious and unacceptable hazards. The TOC (rail only corrective actions) must approve permanent corrective actions prior to formal implementation by RTTO, RTRA and TIES. SAFE monitors and

tracks the implementation of corrective actions in accordance with section 11 of the TOC PS/P.

### **3.6.2 Metro Transit Police Department**

The Chief of the Metro Transit Police Department (MTPD) (ELT) has the responsibility to provide both mission and safety training for MTPD personnel and to ensure compliance with applicable safety regulations and rules. MTPD has the additional responsibility for Authority-wide emergency management function and providing rail system, MetroAccess and bus familiarization and transit safety and security training to local, county, state and Federal law enforcement agencies; military counter-terrorism units; and jurisdictional fire department and emergency medical services personnel. The security provisions of *Code of Federal Regulations* title 49, part 659 and TOC PS/P section 13 are developed and maintained by MTPD separately from this document (in the SEPP) to ensure confidentiality.

### **3.6.3 Office of Chief of Staff**

Metro's Office of the Chief of Staff (CHOS) is an independent office that reports directly to the General Manager and Chief Executive Officer (GM/CEO), overseeing stakeholder relationships, developing and implementing the agency's strategic plans and goals, and leading agency-wide programs, as well as providing administrative support to internal agency staff in its day-to-day operations. Offices reporting to the CHOS include Government Relations, Planning, Performance, and Strategic Communications. Responsibilities of CHOS include:

- Provides oversight of these four offices to help create results that align with Metro's vision, mission, values, and goals;
- monitors and follows-up on all requests and directives from GM/CEO;
- manages special projects as directed by the GM/CEO;
- coordinates with the Office of the Board Secretary on accident and incident notification to the Board members, Board committee materials, meeting preparation, and member relations;
- maintains Metro's *Policy/Instruction Manual* and coordinates any necessary updates with the initiating office, General Counsel, and the ELT;
- approves all Metro travel requests and coordinates with the Office of Accounting (ACCT) on travel policy;
- coordinates audit reports that are addressed to the GM/CEO with the Office of Inspector General and relevant Metro departments;
- assists with Metro's strategic communications to employees, Board members, customers, and other stakeholders; and
- reviews responses to Public Access to Records Policy (PARP) requests including hearings on PARP request appeals.

#### **3.6.3.1 Office of Government Relations**

The Office of Government Relations (GOVR) is responsible for providing information and resources to WMATA internal stakeholders (Board of Directors and staff) on important governmental issues that affect the Authority and for building relationships with WMATA funding partners in Federal, state, and local governments. GOVR also assists Authority staff in keeping abreast of current government policy and in obtaining sufficient funding, so that WMATA can best provide safe, secure and efficient public transportation to the National Capital Region.

### **3.6.3.2 Office of Planning**

The Managing Director, Office of Planning (PLAN) is responsible for developing a long-range vision for transit service in the region, to represent the Authority in regional and local planning activities, and to identify, analyze, evaluate, and advance transit projects that are best aligned with the Authority's vision and goals.

### **3.6.3.3 Office of Performance**

The Office of Performance (CPO) (ELT) is responsible for developing and tracking organizational performance measures and metrics, including safety related performance measures and metrics that are tied to Metro's strategic plan; process improvement and reengineering; organizational structure; and alignment of employee performance management programs with organizational goals.

### **3.6.3.4 Office of Strategic Communications**

The Office of Strategic Communications (SCOM) is responsible for the development of integrated strategic communications and marketing plans that engage Metro's business plan, objectives, and enhance Metro's image among multiple audiences and stakeholders. In particular, the Office of Strategic Communications oversees the production of materials to execute communication, marketing plans or communicate individual projects or initiatives; initiates and prepares messaging or strategic communications direction for internal and external programs, as well as provides support for Board communications; and reviews and recommends approval for all programs, policies, and policy instructions on how Metro communicates with external and internal audiences.

## **3.6.4 Department of Human Resources**

The Chief, Department of Human Resources (HR) (ELT) reports to the GM/CEO and is responsible for human resources, administrative training, maintaining a central training database, organization development, equal employment opportunity, disadvantaged business enterprise programs, employee programs, and administrative programs and services. The Medical Services and Compliance Branch has the responsibility for administering the Substance Abuse and Employee Assistance Programs; and maintaining compliance with the FTA alcohol and drug testing regulations. The Medical Services and Compliance Branch also provides medical surveillance for occupational



illness when the need is identified by studies performed by Environmental Management and Industrial Hygiene (EMIH).

### **3.6.5 Deputy General Manager Operations (DGMO)**

The Deputy General Manager for Operations (ELT) reports directly to the GM/CEO and is responsible for the day-to-day management of the safe operation and maintenance of the region's Metrorail system and MetroAccess Service. The DGMO is also responsible for program planning and energy, vertical transportation, plant and facility maintenance, systems maintenance, engineering services and employee and labor relations. The DGMO coordinates the activities of the Managing Director of Rail Transportation (RTRA), and the Assistant General Manager for Transit Infrastructure and Engineering Services (AGM/TIES), and the Assistant General Manager for Access Services (AGM/ACCS), to manage the activities of over 5,000 operation, maintenance, engineering and support employees, a \$0.9 billion annual operating budget as well as a six-year Capital Improvement Program worth approximately \$5.0 billion.

The DGMO collaborates with the CSO and all members of the ELT to implement this *System Safety Program Plan* and the *Safety and Security Certification Plan* through the development and implementation of required plans, procedures and processes by Metrorail and Access Services personnel. The DGMO also collaborates with the ELT to allocate the necessary resources so that WMATA can fulfill its safety and security responsibilities and activities. The DGMO ensures that Corrective Action Plans (CAPs) are developed and implemented by responsible personnel, in collaboration with the CSO and the TOC, to (1) address recommendations from internal and external accident/incident investigations, (2) internal and external safety audit findings and recommendations and (3) to resolve hazards identified and managed through the WMATA Hazard Management Process.

The DGMO collaborates with the Chief, MTPD, to develop and implement the WMATA *System Security Program Plan* and emergency response and recovery plans to ensure that the Authority has up-to-date, effective and actionable strategies to address security threats and vulnerabilities and emergencies that occur in the Metrorail system and Access Services.

The DGMO develops, maintains, supports and promotes a high level of customer service and a safe working environment in full compliance with the Authority's safety rules, policies and procedures. The DGMO monitors operating performance, facilitates problem resolution and directs efforts and programs to achieve continuous improvement in rail service safety, security and quality. The DGMO ensures that RAIL and ACCS managers and supervisors establish specific safety objectives and work plans, for their direct reports that support the achievement of customer and employee safety objectives and Metrorail and Access Services Key Performance Indicator objectives in a safe manner.

In collaboration with the AGM/TIES, the DGMO oversees the engineering, preparation of plans and specifications, cost estimates and contract documents for construction (including the Dulles Corridor and 7000 Series rail vehicles), rehabilitation, maintenance and service contracts for transit facilities and vehicles. The DGMO is responsible for making informed decisions in the approval of the design of new transit system facilities and equipment, rehabilitation/modification of existing transit system facilities and equipment.

The DGMO oversees and monitors the technical training for all organizational elements within the DGMO organization.

### **3.6.5.1 Office of Rail Transportation**

The Managing Director for Rail Transportation reports directly to the DGMO. The Managing Director has been delegated by the DGMO, the day-to-day responsibility for the safe operation of the Metrorail system through the Director of the Rail Operations Control Center (ROCC) and Director of Rail Transportation Station Operations (RTSO). In addition, the Managing Director of RTRA is responsible for Rail Operations Scheduling (ROSC), Rules, Procedures, Quality Control, and Rail Operations Quality Training (ROQT). The Managing Director, RTRA has the responsibility to provide job related safety training for RTRA personnel and to ensure compliance with the MSRPH, OAPS and applicable safety rules, instructions and regulatory standards.

The ROCC, through ROCC supervisors (controllers), provides supervision over all phases of operation including: train operations, passenger operations, schedule management, wayside equipment, third rail power, communications, alarm monitoring, command, control and coordination of emergency response and notifications in accordance with the MSRPH. The MSRPH includes Operating Rules and Standard Operating Procedures for normal, emergency and recovery operations. The superintendent, ROCC, and assistant superintendents are responsible for day-to-day management of the ROCC. Train operators are responsible for the safe operation of their assigned train. The Division superintendents, through the yard tower operators are responsible for the safety of all yard operations.

### **3.6.5.2 Office of Operations Management Services**

The Director, Office of Operations Management Services (OPMS) reports to the DGMO and has been delegated responsibility for the maintenance-training program.

The Technical Skills and Maintenance Training Branch provides maintenance-training support for CMNT, PLNT, ELES, TRST and SMNT. The Cardozo High School Partnership is also administered through this branch.

The Technical Skills Program supports CMNT, ELES, TRST and SMNT. The Technical Skills Program is designed to train personnel with limited education and/or experience in technical fields that do not otherwise meet all of the requirements currently identified for placement in WMATA's maintenance positions. The program that started in 2000 is designed to ensure the Authority continues to meet the objectives of safe, reliable and efficient public transportation within its jurisdiction.

The Elevator and Escalator Apprenticeship Program is a four-year training period with classroom/lab training as well as on-the-job experience to prepare apprentices for journeyman level positions.

Maintenance training support is provided for PLNT and ELES. The training support includes the coordination of refresher training for mechanics as well as new employees.

Open Door Classes are offered to WMATA personnel throughout the calendar year. These classes include craft training in maintenance areas including electrical/electronic fundamentals, wiring and soldering techniques, hydraulic and pneumatic principles, basic industrial controls, mechanical principles, hand-tool and power-tool operation and safety, symbols and schematic diagram reading as well as systematic electrical troubleshooting.

### **3.6.5.3 Department of Access Services (ACCS)**

The Assistant General Manager, Department of Access Services (AGM/ACCS) (ELT) has been delegated by the GM/CEO and DGMO as the responsible officer for the safe operation and maintenance of the MetroAccess paratransit fleet. The Department of Access Services (ACCS) ensures the accessibility of public transportation including all Metro facilities and Metro-owned bus stops, vertical transportation, fixed-route transit, and equipment for people with disabilities and senior citizens. The department, through its three program offices (ADA Policy and Planning, Eligibility Certification and Outreach, and MetroAccess Service), ensures the continuous availability and improvement of all of Metro's accessible services and facilities. These improvements benefit the public and have important safety ramifications. Continually informing people with disabilities of the advantages of their safe and independent use of Metro's accessible fixed-route services helps ensure that paratransit service is conserved for those individuals who truly need them.

It is WMATA's policy to comply with the provisions of the *Americans with Disabilities Act* (ADA) of 1990 (42 U.S.C. 12101-12213 and 47 U.S.C. 225 and 611) and the U.S. Department of Transportation implementing regulations (*Code of Federal Regulations* title 49, part 27, part 37 and part 38) requiring transit agencies to offer accessible public transit services and provide accessible facilities for persons with disabilities. Additionally, WMATA strives to exceed these provisions to the benefit of our customers.

#### **3.6.5.3.1 Office of ADA Policy and Planning**

The mission of the Office of ADA Policy and Planning (ADAP) is to promote accessibility of Metrobus, Metrorail and Vertical Transportation by working to obtain and maintain ADA compliant facilities, equipment, operating procedures and training. ADAP performs the following functions:

- Coordinates WMATA activities with the disability community and stakeholders
- Regularly inspects WMATA's facilities and equipment for ADA and ADAAG compliance
- Assists in developing quality assurance processes, procedures and standards to assure ADA compliance
- Coordinates review of plans and specifications for ADA content in the design and construction or acquisition of additional or altered physical plant facilities and equipment
- Provides technical assistance on ADA matters including coordination with COUN, on changes in the law, regulations or court decisions
- Corresponds with the FTA, other federal agencies and local jurisdictions on ADA matters
- Provides access information and support to WMATA's customers with disabilities
- Serves as a standing member of WMATA's Reasonable Accommodations Committee
- Provides support to WMATA's Seniors and Customers with Disabilities Transportation Advisory Committee.

#### **3.6.5.3.2 Office of Eligibility Certification and Outreach**

The mission of the Office of Eligibility Certification and Outreach (ELIG) is to determine the eligibility of customers to use bus and rail at half fare and for those applying for MetroAccess service. Customers must complete an application and have it certified by a health care professional. ELIG then interviews the customer and conducts an assessment to determine eligibility. This office plays an important role in determining the customer's ability to use Metro safely and offering educational services to help maximize the customer's safe use of our system.

#### **3.6.5.3.3 Office of MetroAccess Service**

The mission of the Office of MetroAccess Service (MACS) is to provide contract management oversight for paratransit operations provided by contractors who schedule

and deliver reservation-based, door-to-door transportation service for seniors and customers with disabilities. MetroAccess is a shared ride transit service for people who are unable to use fixed-route public transportation due to disability. Shared ride means that multiple passengers may ride together in the same vehicle.

The service provides daily trips throughout the entire Washington metropolitan region, including the District of Columbia, suburban Maryland, and suburban Virginia. Rides are offered in the same service areas and during the same hours of operation as Metrorail and Metrobus. MetroAccess is a service of WMATA, and is the region's complementary paratransit service in accordance with the Americans with Disabilities Act (ADA). The MetroAccess Operations Control Center (MACS-OCC) coordinates communication and incident/accident response to all paratransit operators in conjunction with WMATA and local emergency personnel. MACS-OCC is staffed 365 days per year and 24 hours per day. The operation is managed by the Director of MetroAccess Service and the MACS-OCC Operations Manager.

#### **3.6.5.4 Office of Employee and Labor Relations**

The Director of the Office of Employee and Labor Relations (LABR) reports to the DGMO. The mission of LABR is to engage professionally and responsibly with the recognized labor organizations that represent Metro employees and to forge productive working relationships and achieve effective results that are grounded in respect for all parties and consistent with the Authority's business goals and objectives. The office is committed to proactive labor relations and a problem-solving approach to resolve disputes that arise under WMATA's five collective bargaining agreements. LABR's responsibilities include:

- Negotiating labor agreements which serve the strategic, economic and organizational goals of the Authority
- Providing guidance and training on the implementation and interpretation of collective bargaining agreements
- Providing guidance and advice on Authority policies and procedures that impact our unionized workforce
- Investigating and resolving formal and informal grievances and disputes with our unionized workforce
- Representing the Authority in grievance arbitration cases
- Planning, preparing, and overseeing interest arbitration efforts under the terms of the *WMATA Compact*, in the event of negotiation impasse

#### **3.6.5.5 Office of Parking**

The Office of Parking (PARK) is responsible for supporting the mission and vision of Metro by providing the best possible customer support to transit customers by maximizing the utilization of available parking resources, by providing a safe, friendly and reliable parking environment to customers who benefit from transit access across the region.

### **3.6.5.6 Office of Supply Chain Enterprise Services (SCES)**

The Director of SCES reports to the DGMO and is responsible for providing inventory management services for Metro's materiel storerooms. This Office ensures that all chemical-containing products stocked at any store are approved by SAFE and have been assigned an MSDS/SDS number.

### **3.6.5.7 Department of Transit Infrastructure and Engineering Services (TIES)**

The Assistant General Manager for Transit Infrastructure and Engineering Services (AGM/TIES) reports to the DGMO and is responsible for TRST, SMNT, CMNT, PLNT, ELES, MCAP, TAMO, CPDO, Chief Engineer, Infrastructure (CENI), Chief Engineer Vehicles (CENV), Quality Assurance and Warranty (QAAW), Storeroom and Material Logistics (SRML) and Intermodal Strategic Planning (IPLN).

The TIES offices coordinate with SAFE, RTRA, RTTO and other Authority offices and departments and the TOC to ensure that hazards are quickly and effectively eliminated. This includes the development of proposed Corrective Action Plans (CAPs), in collaboration with SAFE, for identified hazards and deficiencies in complying with requirements for the SSPP, in accordance with section 11 of the TOC PS/P. Proposed CAPs are forwarded to SAFE, which submits the CAPs to the TOC for its review and approval. The AGM/TIES and the Managing Director, RTRA and the Director, RTTO are responsible for the implementation of the TOC approved CAPs and for providing the required verification that the CAP effectively controls or reduces the hazard.

The AGM/TIES has the responsibility to provide job related safety training for TIES personnel and to ensure compliance with the MSRPH, OAPs, applicable safety rules and regulations. The AGM/TIES is also responsible for construction safety functions for those capital improvement projects (CIP) managed by TIES, which could include construction or modification of power, ATC, communications, track, tunnel structures, aerial structures and yards and procurement of rail vehicles. Safety related procedures for Metrorail maintenance activities are included in the MSRPH and OAPs.

#### **3.6.5.7.1 Office of Car Maintenance**

The Office of Car Maintenance (CMNT) is responsible for implementing a comprehensive maintenance program for revenue rail vehicles and steel wheel non-revenue vehicles that ensures the availability of safe, reliable and clean rail equipment to meet passenger demands. CMNT follows CMNT SOP Series 1.XX and 3.XX for its maintenance activities. CMNT provides coverage 24 hours per day, seven (7) days per week.

#### **3.6.5.7.2 Office of Track and Structures**

The Office of Track and Structures (TRST) is responsible for providing a safe and reliable rail system through comprehensive inspection, maintenance, and rehabilitation

programs that enhance the condition of the tracks, guide-ways, structures, and wayside systems. TRST develops issues, maintains and complies with the *Track Standards Manual* to ensure safe and reliable track for passenger service through consistent and effective track maintenance practices. Maintenance of Structures adheres to OAP 208-02, *Structures Maintenance Management, and Maintenance of Way*. Track and Structures provides 24 hours per day, seven (7) days per week coverage.

### **3.6.5.7.3 Office of Systems Maintenance**

The Office of Systems Maintenance (SMNT) is comprised of five Branches (Automatic Fare Collection Branch (AFCS), Automatic Train Control Branch (ATCS), Communications (COMM), Power (POWR) and Shops and Material Support (SAMS)] and a Capital Program Management Staff..

The Automatic Fare Collection Branch (AFCS) is responsible for the maintenance, repair and installation of fare collection and parking lot equipment.

The Automatic Train Control Branch (ATCS) of SMNT ensures the availability of wayside equipment and personnel in order to guarantee continuous safe, effective and economic rail operation. The Automatic Train Control (ATC) line function is responsible for performing preventive and corrective maintenance on ATC equipment used to support revenue operation. The Construction Inspection and Test (CIT) group performs all inspections, modifications, installation and contractor support as required to upgrade the existing system to provide greater safety and reliability to the system.

The Communications Branch is responsible for the maintenance and availability of the Authority's communications systems in support of bus and rail operations.

The Power Branch is responsible for the maintenance of all WMATA AC and DC power electrical facilities and equipment to ensure power is available for all passenger stations, trains, rail yards, chiller plants, tunnels, fan shafts, bus facilities and support for Start-up activities. Power personnel inspect, modify, overhaul, test and repair power distribution switchgear, lighting systems, associated electrical equipment and cables.

The Shops and Material Support Branch is WMATA's electronic and electro-mechanical repair facility. SAMS also facilitates equipment and materials purchasing, warehousing and transportation. SAMS provides the following services: shipping, inventory, repair, calibration, contract maintenance and engineering support.

#### **3.6.5.7.4 Office of Plant Maintenance**

The Director, Office of Plant Maintenance (PLNT) has been assigned, by the AGM/TIES, the responsibility for the safe maintenance of WMATA facilities and equipment including the Jackson Graham Building and CTF. PLNT coordinates with BUS, RTRA, RTTO, SAFE, CENI and other offices and departments to ensure that hazards are quickly and effectively eliminated or controlled. The Director, PLNT has the responsibility to provide job related safety training for PLNT personnel and to ensure compliance with applicable safety rules, regulations and standards. The Director, PLNT is also responsible for construction safety functions for those Infrastructure Renewal Projects managed by PLNT, which could include construction or modification of stations, parking lots, sidewalks, platforms and bus facilities. Safety related procedures for PLNT maintenance activities are included in the MSRP and OAPs.

#### **3.6.5.7.5 Office of Elevators and Escalators**

The General Superintendent, Office of Elevators and Escalators (ELES) has been assigned by the AGM/TIES the responsibility for the safe operation and maintenance of WMATA elevators and escalators (vertical transportation). ELES will coordinate with RTRA, RTTO, SAFE, QAAW, CENI and other offices and departments to ensure that hazards are quickly and effectively eliminated or controlled. The General Superintendent, ELES has the responsibility to provide job related safety training for ELES personnel and to ensure compliance with applicable safety rules and standards. The General Superintendent, ELES is also responsible for construction safety functions for those elevator and escalator projects managed by ELES. Safety related procedures for ELES maintenance activities are included in the MSRP, OAPs and in the *ELES Safety Maintenance Practices and Procedures Manual*.

#### **3.6.5.7.6 Office of Chief Engineer Vehicles**

The Chief Engineer, Vehicles (CENV) reports to the AGM/TIES. CENV is responsible for operations and maintenance needs of rail car vehicles. CENV provides technical support to procurement of vehicles and contractor selection for rail car vehicles. CENV Program Management leads and coordinates with METRO vehicle stake holders (e.g., CMNT, PRMT, QAAW, SAFE, COUN, RTTO and RTRA) the delivery and acceptance of rail vehicles which meet the specification requirements outlined in the vehicle procurement requirements and that the project remains legally compliant. Rail car system configurations are coordinated with respective departments for quality, maintenance, operators' use and safety to ensure that stakeholder's needs are incorporated and that the highest level of performance and service are delivered to WMATA customers.

CENV develops and maintains configuration controlled specifications and historical databases for rail car vehicles and configuration-controlled documents for rail car maintenance personnel.



The Reliability and Performance Analysis Branch (REPA) monitors and reports on reliability and performance of the rail car fleet. REPA provides technical assistance to CMNT and CENV and coordinates with new car contractors on rail vehicles in test status.

The Maintenance Planning and Scheduling (MPLN) Branch provides technical support to CMNT, ELES, PLNT, SMNT and TRST for the purpose of implementing the Authority's overall preventive and corrective maintenance programs. MPLN ensures that every asset, fixed or rolling stock is properly and effectively maintained through preventive and corrective maintenance and that all records and data pertaining to the assets are accurate, reliable and controlled.

#### **3.6.5.7.7 Office of Chief Engineer, Infrastructure**

The Chief Engineer, Infrastructure (CENI) reports to the AGM/TIES and is delegated the responsibility for the acquisition, construction and for completing the safety and security certification process (with SAFE) for new facilities, and systems. This responsibility includes the research, planning, design, engineering, construction, manufacturing and testing of all new facilities and systems. CENI is responsible for the safe delivery of infrastructure renewal projects, managing adjacent construction and managing joint development projects. In addition, CENI is responsible for maintaining, updating and publishing the WMATA *Emergency Response Maps*. The Chief Engineer has established procedures to ensure CENI's compliance with applicable safety requirements for all projects assigned to CENI. CENI, in conjunction with SAFE, has the primary responsibility for implementing the WMATA Construction Safety Program for activities performed by WMATA's construction contractors. This program consists of the following major elements:

- Construction Safety Program and Procedures
- OSHA Construction Training/Orientation
- Work site implementation of the WMATA Construction Safety Program
- Contractor RWP Training

Contracts are typically submitted to SAFE and MTPD for review prior to advertisement to ensure that contracts include the necessary requirements for construction safety and for safety and security certification. The *Coordinated Safety Program and Reporting Procedures* are included as a contract document in those contracts where an Owner Controlled Insurance Program is provided. *The Construction Safety and Environmental Manual* is included in those contracts where the contractor is required to provide its own insurance.

#### **3.6.5.7.8 Office of Quality Assurance and Warranty (QAAW)**

The Director of QAAW reports to the AGM/TIES and is responsible for establishing a systematic program of Quality Assurance for TIES. The program shall include but not be limited to quality oversight for contracts and contract specifications, engineering

initiatives configuration management, and monitoring programs and projects in accordance with established procedures, 113-14- Quality Oversight, 113-03- Internal Audit Policies, 113-05 Receiving Inspection, 113-12-Warranty Process for TIES, 113-22-Quality Control Inspector Duties and Responsibilities, 113-09-QAAW Management Review Plan, and the FTA Quality Assurance and Quality Control Guidelines # FTA-IT-90-5000-02.1, Feb 2002. In addition, the QAAW Office is responsible for all Quality Assurance and Quality Control tasks distributed within the following functional areas:

- TIES Rail Operations QA/QC (CENV, CMNT , ELES, SRML, TAMO, SMNT, PLNT)
- TIES Infrastructure QA/QC (CTEM, PLNT, TRST, SMNT, CPDO, MCAP, CENI, DULS, TASS)
- TIES New Rail Car Programs and Capital Improvement Projects QA/QC (7000 Series Rail Car Program and CIPs)
- TIES Parts Verification, Receiving Inspection and Warranty QA/QC (All TIES Offices)

Within these functional areas, QAAW supports TIES activities to enhance safe operations and maintenance by assuring compliance to WMATA workmanship standards and specifications.

To further enhance the consistent and safe application of WMATA management controls, QAAW develops and implements a compliance audit schedule for all offices within TIES for compliance to standards and operating procedures.

QAAW performs audits and document reviews, provides oversight and inspections to ensure compliance to Preventative Maintenance Inspection procedures (PMIs).

To improve TIES performance and enhance safety, QAAW follows FTA Quality Assurance and Quality Control Guidelines # FTA-IT-90-5000-02.1 and audits all processes that make up the WMATA Quality Management System.

QA Inspection takes place at strategic offices and key sites to perform inspection for compliance of work completed to all configuration control and workmanship standards, and safety critical requirements.

QAAW ensures Receiving Inspection for ALL Parts Verification/Validation for configuration control, and per the specification (drawings) and WMATA workmanship standards. In addition, QAAW enforces Warranty provisions (for Dulles Corridor and other TIES major offices including the New Car Programs) to enhance the safety and reliability of WMATA vehicles and systems.

QAAW also assists the Office of ADA Programs (ADAP) audits and compliance checks for all access deficiencies found during inspections in an effort to achieve 100% ADA compliance.

#### **3.6.5.7.9 Office of Transit Asset Management (TAMO)**

The Director of TAMO reports to the AGM/TIES and is responsible for developing an agency wide asset management framework that will integrate WMATA's asset management practices into one coordinated, organizational strategy, and provide the basis for continually improving asset management practices at WMATA.

#### **3.6.5.7.10 Office of Major Capital Projects (MCAP)**

The Director of MCAP reports to the AGM/TIES and is responsible for ensuring that proper capital investments are made to support the safe operations of the Metro system. Under direction of Office Director, MCAP is responsible for engineering, design and construction of bus garages, parking structures, MTPD substations, yards, maintenance bays, shops, and other facilities to support Metro System operations.

#### **3.6.5.7.11 Office of Intermodal Strategic Planning (IPLN)**

The Managing Director of IPLN reports to the AGM/TIES and is responsible for providing oversight in planning, coordination and implementation of policies, procedures and programs (long/short range system plans) for BUS and RAIL.

#### **3.6.5.7.12 Office of Storerooms and Material Logistics (SRML)**

The Director of SRML reports to the AGM/TIES and is responsible for providing the planning of materials that support maintenance activities as well as the storage and distribution of materials at ten storerooms. The SRML office works towards reducing the cost of inventory, increasing supplier on-time deliveries, and improving material forecasting accuracy, using up-to-date Inventory Management methods.

#### **3.6.5.7.13 Office of Capital Program Delivery (CPDO)**

The Senior Director of CPDO reports to the AGM/TIES and is responsible for streamlining internal processes within key groups and facilitating communication between logical internal and external partners. The CPDO office includes the offices of Infrastructure Renewal Programs (IRPG), System Renewal Program (SRPG), and Track Allocation and Support Services (TASS).

### **3.6.6 Department of Bus Service**

The Assistant General Manager for the Department of Bus Service (AGM/BUS) (ELT) reports to the GM/CEO. The AGM/BUS has been delegated, by the GM/CEO, as the responsible officer for: the safe operation and maintenance of the Metrobus system, the maintenance of the non-revenue vehicle fleet, vehicle (bus) engineering and bus procurement. This effort is coordinated with SAFE and PLNT to ensure that hazards are

quickly and effectively eliminated. The AGM/BUS has the responsibility to provide job-related safety training for BUS personnel and to ensure compliance with applicable safety standards and rules. Safety related procedures for Metrobus operations and maintenance are included in the BSEH, SOPs, Standard Practice Bulletins, Service Bulletins and the OAPs.

The Bus Operations Control Center (BOCC) acts on operator requests for maintenance or emergency assistance and coordinates accident responses by WMATA and local emergency personnel. The BOCC also coordinates bus service support required because of extended disruption of Metrorail service. The BOCC is staffed 24 hours per day, seven (7) days per week. The BOCC Director is responsible for the administrative management of the Bus OCC. Through radio and telephone equipment, the BOCC has direct communication with the following:

- Mayor's Command Center
- Bus operators
- Division operations and maintenance personnel
- Bus support offices
- Plant Maintenance
- Local Fire/Rescue Communication Centers, Metro Transit Police and local police
- Rail Operations Control Center
- WMATA essential personnel

#### **3.6.6.1 Office of Bus Maintenance**

The Managing Director of Bus Maintenance (BMNT) is responsible for the overall management of WMATA's Metrobus Maintenance and Engineering Organization including the development of policies and procedures, programs and initiatives to ensure cost effective and efficient management of WMATA's revenue and non-revenue fleet, bus storerooms and Bus Maintenance training and to ensure the service provided is safe, clean and reliable. The following branches report to the Managing Director, BMNT.

The Chief Engineer, Vehicles (buses) is the prime engineering resource for all bus vehicle aspects and is responsible for the acquisition, operations, maintenance and training needs pertaining to the revenue vehicles (buses), heavy equipment and their associated systems and for completing the safety and security certification process, in concert with SAFE. Bus system configurations are coordinated with respective departments for quality, maintenance and operator's use to ensure that stakeholder's needs are incorporated and that the highest level of safety, performance and service are delivered to WMATA customers. The Technical Support Branch monitors and reports on safety, reliability and performance of the bus fleet and provides support for the purpose of implementing the Authority's overall preventive and corrective maintenance programs. This branch also ensures that the buses and their associated systems are properly and effectively maintained through preventive and corrective maintenance.

The Director, Shop Support Services is responsible for the overall management of three (3) bus shops that provide safe and reliable components and buses through comprehensive maintenance and rehabilitation programs that enhance the condition and appearance of the buses.

The Director, Division Maintenance Operations is responsible for the overall management of nine (9) bus divisions that ensure the availability of safe, reliable and clean buses through daily, preventive and corrective maintenance, HVAC, ADA and DC Inspections, interior and exterior bus cleaning and service lane activities.

The Director, Non-Revenue Vehicles and Equipment is responsible for the Authority's Non-Revenue Service Fleet including vehicle and equipment acquisition, fleet and equipment maintenance, fleet utilization monitoring, parts management, fleet fueling services, disposal of fleet vehicles and equipment, performance reporting and customer service to ensure that safe, clean and reliable non-revenue vehicles and equipment are available to our internal customers.

The Director, Technology and Business Operations is responsible for supporting electronic communications throughout BUS to ensure safe and consistent maintenance and operations of Metrobus service for the riding public. This group manages functions which provide essential technical development and support to all of Bus Services and budgetary support for Bus Maintenance and Engineering.

The Director, Storerooms and Material Logistics facilitates equipment and materials purchasing, contract services, quality inspection of incoming materials and warehousing to support the operations of Bus Maintenance and Engineering. This branch ensures that all chemicals and hazardous materials requested by BMNT are approved by SAFE and that safety requirements are included in WMATA vendor and service contracts.

### **3.6.7 Chief Financial Officer**

The Chief Financial Officer (CFO) (ELT) reports directly to the GM/CEO and has the responsibility for the Offices of Accounting, Treasurer, Management and Budget Services, Procurement and Materials, Office of Real Estate and Station Planning and Internal Compliance.

The CFO, through the Office of Procurement and Materials (PRMT), has the responsibility for ensuring that only chemical and hazardous materials approved by SAFE are carried in WMATA inventory and that the requesting organization has coordinated safety and environmental requirements of contracts with SAFE, BUS, and TIES prior to advertisement.

### **3.6.7.1 Office of Accounting**

The Office of Accounting (ACCT) is responsible for financial systems and reporting, financial control, payroll, accounts payable and financial management services.

### **3.6.7.2 Office of Treasurer**

The Office of the Treasurer (TRES) is responsible for the collection and processing of revenues, investment of excess cash, debt issuance and management, financial risk management, fare media sales and distribution, and the implementation of fare media (SmarTrip®) related technology projects.

Treasury Operations is responsible for the Authority's cash management, including check printing, check disbursement and petty cash disbursement; debt and investment management; cash forecasting; and revenue controls at the Revenue Collection Facility.

The Revenue Collection Facility (RCF) receives all revenue income from bus and rail as well as processes and distributes fare cards. The RCF is an "industrial" operation and is therefore subject to Virginia occupational safety and health and environmental regulations.

The Office of Risk Management (RISK) is responsible for the administration of the Workers' Compensation Program, Third Party Claims and the Authority's insurance program. RISK's third party database is a source of safety data for the Hazard Management Program.

### **3.6.7.3 Office of Management and Budget Services**

The Office of Management and Budget Services (OMBS) is responsible for the following:

- Developing and executing the annual operating and capital budgets
- Reporting to the GM/CEO and Board of Directors on Metro's current financial status and year-end forecast
- Developing a comprehensive six-year capital program and funding agreement
- Analyzing and monitoring capital expenditures
- Representing the financial interests of Metro in labor contract negotiations
- Forecasting long-range revenue and expense

### **3.6.7.4 Office of Procurement and Materials**

The Office of Procurement and Materials (PRMT) is responsible for procuring contract services and for maintaining an inventory of materials to support the Metrorail and Metrobus systems. PRMT works with SAFE and user organizations to control the purchase of chemicals, hazardous materials, safety critical parts and materials and to

ensure that safety requirements are included in WMATA vendor, service and construction contracts.

### **3.6.7.5 Office of Real Estate and Station Planning**

The Office of Real Estate and Station Planning (LAND) leads WMATA's station access and station area planning activities, implements the joint development program, and manages WMATA's real property assets. In all three branches of the office, the group focuses on the objectives of the System Safety Program. Station access and station planning studies are conducted with significant coordination between LAND staff, Bus and Rail Operations, Accessibility, Transit Police, Safety and other offices to ensure that safe access is preserved or enhanced for all customers. Similar coordination occurs in the implementation of the joint development program to ensure that proposed projects support creating safe station area environments. Any proposed project on or near WMATA property is required to comply with all WMATA adjacent construction policies, to ensure protection of WMATA transit facilities, employees, and customers. These same requirements extend to those entities seeking permits or easements to access or use WMATA property. As part of the review of these types of requests and transactions, LAND staff ensures that all required insurance documentation is in place to protect our facilities, employees, and customers.

### **3.6.7.6 Office of Internal Compliance**

The Office of Internal Compliance (OIC) conducts objective assessments and reviews to monitor WMATA's adherence to financial management controls and related policies and procedures, with a primary focus on compliance with applicable federal regulations necessary to preserve WMATA's federal grant eligibility. The Office of Internal Compliance provides an objective evaluation of the design and operating effectiveness of applicable financial, regulatory compliance, and operational controls (financial management controls), and assesses related risks.

### **3.6.8 Department of Information Technology**

The Assistant General Manager/Chief Information Officer (CIO), Information Technology, (AGM/CIO) (ELT) reports to the GM/CEO and is responsible for developing and maintaining the Authority's Enterprise Architecture and enhancing business processes in the areas of budget, planning and scheduling and procurement. As the Authority continues to grow, other responsibilities include researching and implementing new technology systems to enhance transit services and fare collection and support the Authority in an IT capacity.

The AGM/CIO is responsible for maintaining all electronic, interactive and integrated services for all of SAFE's SMS applications. IT provides and supports the following:

- PCs and PC access
- Internet and Intranet access

- Telephone Systems
- Applications for Emergency Command Center
- Notification of system outages for internal and external customers
- Data warehousing for incident, safety and health management
- Passenger Information Display Signs (PIDS)
- Rail Operations Control System (ROCS)
- Maintenance employee real-time locator
- Statistical data
- 24 x 7 Support
- Automatic Train Control
- Elevator and escalator status and notifications
- Ridership real-time reports



### **3.6.9 Department of Customer Service, Communications and Marketing**

The Assistant General Manager, Customer Services, Communications and Marketing (AGM/CSCM (ELT)) reports to the GM/CEO and has responsibility for government relations, public relations, marketing and advertising customer service and customer research.

#### **3.6.9.1 Office of External Relations**

The Office of External Relations (EREL) is responsible for promoting public understanding of and support for WMATA activities, policies and initiatives. We reach out to the communities we serve, foster relationships and seek community participation in WMATA's decision-making processes. We value public participation and respond to our community and business stakeholders concerns and requests. We want to ensure that WMATA's external strategic communication programs are inclusive and accessible. Our goal is to build trust in the communities we serve and raise the awareness about WMATA's programs and services.

#### **3.6.9.2 Office of Customer Service**

The Office of Customer Service (CSVC) is responsible for the sale of WMATA's SmarTrip® cards and fare media, the Customer Information Call Center, Customer Relations Branch and Lost and Found. Customer information agents provide customers with ridership information regarding Metrobus, Metrorail and regional and local transit systems. This includes trip planning assistance, Bike-on-Rail assistance, parking information and Lost and Found. Customer relations specialists receive over 4,000 correspondences and 15,000 e-Mails annually. Lost and Found processes over 25,000 items annually.

Customer safety concerns and complaints received by CSVC are submitted to SAFE for review and resolution. CSVC and SAFE track these concerns and complaints to closure. SAFE enters any identified hazards into the Hazard Management Process.

#### **3.6.9.3 Office of Marketing**

The Office of Marketing (MKTG) draws on the skills, creativity and expertise of marketing staff and Metro's advertising agency, to provide information and position Metro as the transportation choice in the region. WMATA marketing communications are designed from concept to execution to attract new customers and revenue to Metro services and products and encourage expanded use of the system among existing customers.

#### **3.6.9.4 Office of Customer Research**

The Office of Customer Research (RESR) is responsible for bringing the voice of the customer to life at WMATA. Through surveys, reports, and other means, RESR discovers the motivations, needs and desires of our customers. This helps Metro management and other personnel deliver a superior service that meets our customers' expectations.

#### **3.6.9.5 Office of Public Relations**

The Office of Public Relations (PREL) consists of three groups: Strategic Communications, Media Relations and Executive Correspondence Team.

##### **3.6.9.5.1 Strategic Communications**

The Strategic Communications team proactively develops key messages and communication strategies to ensure a consistent approach to internal and external communications. The group also is responsible for informing customers about various projects that will affect Metro service, evaluating and implementing new communication technologies, communicating information about Metro operations and policy to employees via the intranet and producing the monthly employee newsletter.

##### **3.6.9.5.2 Media Relations**

The Media Relations (MREL) team is responsible for responding promptly to news media inquiries and providing accurate information. All media calls to any Metro employee about Metro business and issues should go through Media Relations first. The Media Relations office is the official "spokesperson" for the General Manager and other Metro offices. Media Relations is also responsible for handling filming requests, publishing Metro Weekly and providing a wide range of photographic services to meet Metro's needs for professional images.

##### **3.6.9.5.3 Executive Correspondence Team**

The Executive Correspondence Team (ECT) manages the flow of Metro's high-priority and policy-related external communications. Letters, faxes and e-mails that need escalated attention from senior staff or the Executive Leadership Team (ELT) are routed to ECT, where they are entered in Metro's Customer Relationship Management (CRM) database for tracking, assignment, routing and reply. ECT staff work directly with offices at every level throughout the Authority to develop content for use in replies to correspondence and other collateral materials.

### **3.6.10 Office of General Counsel**

The Office of General Counsel (COUN), (ELT) reports to the GM/CEO and is responsible for planning, directing and providing substantially all of the legal services provided to the Authority. COUN's role is not only to protect the Authority's legal interests, but also to serve as a pro-active problem-solving and problem-avoidance resource for the Authority's policymakers and managers. COUN's organizational structure and staffing have been developed specifically to meet these objectives and to provide an effective mechanism for providing required legal services at the lowest possible cost.

### **3.6.11 Office of Inspector General**

The Office of the Inspector General (OIG) (ELT) reports to the WMATA Board of Directors and is responsible for providing independent, objective management assurance audits and consulting services to WMATA departments. The office works to identify and evaluate revenue and cost risks and vulnerabilities; formulate, plan and implement operational audits, financial audits, control risk self-assessments, information systems reviews and audits, investigations and inspections. The purpose of the audits is to evaluate reliability of financial data and reporting, protect WMATA assets, and assess economy and efficiency of operations and the conformance with program objectives and to identify and/or detect misconduct, mismanagement, waste, fraud or abuse. The OIG works with SAFE to address safety and environmental issues brought to the attention of the OIG.

## **4.0 Plan Review and Modification**

### **4.1 Annual SSPP Review**

The *System Safety Program Plan* is reviewed annually to:

- Evaluate all safety tasks for appropriateness as Metrorail, Metrobus and MetroAccess improves and expands;
- incorporate the current task descriptions, and activities;
- refine and improve the current task descriptions and activities;
- identify new tasks which may be required as WMATA expands; and
- identify the organizations responsible for accomplishing the newly added safety-related tasks.

### **4.2 SSPP Control and Update Procedures**

The SSPP analysis, review, revision and publication process is the responsibility of SAFE. The CSO is responsible for the control and update of the SSPP. Input for these annual reviews is solicited from all WMATA departments, the TOC, APTA, industry safety peer reviews, and other regulatory agencies. The update process begins no later than June 30<sup>th</sup> with input requested no later than July 31<sup>st</sup>. An updated draft SSPP is circulated to all WMATA departments no later than September 30<sup>th</sup> with a courtesy copy forwarded to the TOC at this time. The final draft SSPP will be delivered to TOC by November 30<sup>th</sup>.

### **4.3 SSPP Review and Approval by the State Oversight Agency**

TOC requires that WMATA/SAFE conduct the annual review of its SSPP and submit a revised document prior to January 1 of each year. WMATA must include an identification and explanation of changes for TOC review and approval. The revised SSPP is reviewed by executive management, the ESC, approved by the GM/CEO, and presented to the Board of Directors Safety and Security Committee.

### **4.4 SSPP Change Management**

In addition to annual updates, TOC requires that WMATA identify changes that require modification of the SSPP on an on-going basis. WMATA/SAFE must incorporate necessary changes in the SSPP and submit these changes to TOC for approval, within 45 calendar days of the date of the change.

TOC may request modifications to WMATA's SSPP due to internal safety audit report results, on-site reviews and investigations, changing trends in accident/incident or security data, or other reasons that may come to the attention of TOC. Upon receipt of a written request for SSPP modifications from TOC, WMATA must submit a revised SSPP within 30 calendar days.

Within 45 calendar days of receipt of the revised SSPP, TOC will issue a response stating that it, either approves, conditionally approves, or is unable to approve the SSPP, along with checklists used to review the SSPP. If TOC conditionally approves or is unable to approve the SSPP, WMATA will have 30 calendar days to address noted deficiencies and requested changes in the plan and submit a revised SSPP to TOC. TOC, at its discretion, may arrange for a meeting with WMATA to discuss the noted deficiencies and requested changes. In the event WMATA objects to a noted deficiency or requested change from TOC, it must state its objections and suggest alternatives within 30 calendar days. The revised and updated SSPP must be submitted to TOC for review and approval within 30 calendar days after agreement on a course of action.

The SSPP may be delivered to TOC in a format agreed to by TOC (electronic). Once the SSPP has been approved by TOC, WMATA must submit a copy to TOC in an unalterable format (electronic or hard copy) with all required WMATA approval signatures visible.

## 5.0 SSPP Implementation – Tasks and Activities

### 5.1 Overview

The CSO has been delegated specific responsibilities by the GM/CEO for the management and oversight of: system safety, hazard management, occupational safety and health, accident and incident investigation, oversight of construction safety, safety and security certification, environmental management, fatigue risk management, safety training and for monitoring the effectiveness (via the Internal Safety and Security Audit Program) of the implementation of the SSPP. The CSO is responsible for advising executive and senior management on all safety policy and related matters. SAFE interfaces with all WMATA departments at all levels of the organization.

### 5.2 System Safety Function

The CSO has delegated the Assistant Chief Safety Officer (ACSO) the day-to-day operational leadership of the department and responsibility for establishing and implementing policies, procedures and programs to ensure that SAFE is effectively implementing its responsibilities under the SSPP. The ACSO provides management direction for the Hazard Management Program, accident and incident investigations and the Internal Safety and Security Audit Program. The CSO has delegated the Deputy Chief, Rail Safety for the day-to-day management of programs to implement the rail safety responsibilities of SAFE required by the SSPP and to monitor the safety programs implemented by the rail operations, construction safety, and maintenance departments as required by the SSPP. The Deputy Chief, Rail Safety is the primary contact with the TOC in matters relating to the Hazard Management Process. The CSO has delegated the Deputy Chief, Occupational Safety and Health (OSH) with implementing the employee safety, industrial safety, corporate safety and occupational safety training aspects of the SSPP. In addition, the Deputy Chief, OSH serves as the contracting officer's technical representative (COTR) and primary SAFE contact for safety consultants. The CSO has delegated the Deputy Chief, Environmental Management and Industrial Hygiene (EMIH) with responsibility for the environmental management, and industrial hygiene aspects of the SSPP. The CSO has delegated the Deputy Chief, Bus and MetroAccess Safety with responsibility for the bus operations, bus maintenance and MetroAccess aspects of the SSPP and for overseeing the WMATA safety programs for pedestrians and bicyclists. The Deputy Chief, Corporate Quality Assurance (SAFE (CQAL)) has been delegated the responsibility, by the CSO, for corporate quality assurance including developing and issuing a *Corporate Quality Assurance Quality Management System Manual (CQAL-1)* and monitoring compliance with an effective quality assurance audit program, to include internal safety and security audits.

### **5.2.1 Methodology Used by the Safety Organization**

SAFE uses the following methodologies to ensure a proactive approach to safety:

- Continuous hazard management process
- Accident and incident investigation process
- Safety data collection and analysis and review of MAXIMO reliability and failure data using SMS
- Continuous internal safety and security audit process
- Facility, equipment, systems and vehicle inspections
- Review of proficiency checks including bus and train operators and maintenance employees
- MSRPH compliance evaluations including onsite inspections of work sites and review of reports generated from the General Orders and Track Rights Database (GOTRS)
- System safety and security certification process and system modification safety review process
- Regularly communicating safety and hazard data to GM/CEO, the ELT, directors, managers, supervisors and employees via SMS, direct personal contact and a multi-tier safety committee process

### **5.3 Fatigue Risk Management**

In 2013, WMATA formally initiated development of a Fatigue Risk Management System (FRMS) for the purpose of promoting employee alertness in the interest of employee and public safety. *WMATA Policy/Instruction No. 10.6* defines the responsibilities of the Executive and Operational Committees for recommending policies and procedures. The Chief Safety Officer is responsible for management of the FRMS with participation and support across the Authority. *WMATA Policy/Instruction No. 10.7* establishes Hours of Service Limitations for Prevention of Fatigue and specifies responsibilities for establishing compliance. The Department of Safety and Environmental Management: (1) provides a framework for designation of safety-critical occupations subject to hours of service limitations, (2) develops training content in support of employee education and awareness, inclusion of fatigue elements in accident investigations, and implementation of hours of service limitations and (3) works with other WMATA elements to define and track program metrics. The FRMS incorporates employee fitness-for-duty related to sleep disorders (see 5.4.4).

### **5.4 Safety Responsibilities of Other Departments**

The tasks described in this section are in addition to those that are included under the specific Twenty-One Elements of the SSPP. The “Safety Responsibilities and Tasks Matrix” provided in exhibit 5-1 lists the SSPP sections and other pertinent documents that describe safety related responsibilities performed by the appropriate department/office. While the attempt was made to include all policies and departmental

plans and procedures in exhibit 5-1; each department is responsible for ensuring that SAFE is included in the review process for all original and revised departmental procedures and plans so that SAFE can determine if the content of the procedures and plans is safety related. SAFE is included in the review process of all *Policy/Instructions*.

#### **5.4.1 Environmental Management**

All industrial, maintenance, support and construction activities of the departments of Human Resources (HRMS Medical Services Branch), BUS, CFO (PRMT, Revenue Collection Facility), TIES, RTTO, MTPD, and PLJD, comply with applicable Federal, state and local environmental protection laws, standards and regulations. These include applicable requirements of the National Environmental Policy Act (NEPA), Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act (TSCA), Clean Water Act (CWA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), Noise Control Act (NCA), Air Pollution Control Act (APCA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Emergency Planning and Community Right-To-Know Act (EPCRA), Pollution Prevention Act and Superfund Amendments and Reauthorization Acts (SARA) and medical waste requirements of USEPA, Maryland, Virginia and the District of Columbia. Specific environmental management policies and procedures are included in the following separate documents: *WMATA Environmental Management Policy Manual* (Rev.2, July 2013), *Environmental Standard Operating Procedures* (EMIH Website) and *CENI Environmental Compliance Procedures*.

Design review and substantial completion inspections assist in ensuring that all WMATA facilities are designed and constructed in accordance with the applicable environmental laws and regulations.

Senior managers at each facility are assigned collateral duties as Environmental Compliance Officers (ECOs) and Deputy Environmental Compliance Officers (DCOs). These individuals are responsible for ensuring compliance with applicable environmental regulations. EMIH is responsible for providing technical advice to the ECOs and DCOs and for monitoring regulatory compliance.

#### **5.4.2 Safety Committees**

The Executive Safety Committee (ESC) and necessary subcommittees are established to ensure all aspects of the *System Safety Program Plan* (SSPP) are fully implemented and to ensure coordination of safety issues among departments. This may include reviewing investigation reports of major accidents and incidents, reviewing and approving changes to the MSRPH, BSEH, the RWPM and *WMATA Safety Rules and Procedures*. In addition, the ESC provides executive management oversight of the following: Hazard Management Process, Internal Safety and Security Audit Process, Environmental Management Audit Process, the Safety and Security Certification Process and implementation of TOC approved corrective action plans (CAPs). The ESC, at its discretion, can establish subcommittees and system safety working groups



to assist with ESC responsibilities and activities. The Chairperson of the ESC is the CSO.

Members include:

General Manager and Chief Executive Officer;  
Chief of Staff;  
Chief of Metro Transit Police Department;  
Deputy General Manager, Operations;  
Deputy General Manager, Administration/CFO;  
Assistant General Manager, Bus Services;  
Assistant General Manager, Transit Infrastructure and Engineering Services;  
Managing Director, Rail Transportation;  
Assistant General Manager, Access Services;  
Chief Human Resources Officer;  
General Counsel;  
Assistant General Manager, Information Technology;  
Assistant General Manager, Customer Service, Communications and Marketing;  
Chief Performance Officer;  
Assistant Chief Safety Officer (Vice-Chair);  
Deputy Chief, Rail Safety;  
Deputy Chief, Bus and MetroAccess Safety;  
Deputy Chief, Environmental Management;  
Deputy Chief, Corporate Quality Assurance;  
Deputy Chief, Occupational Safety and Health;  
Representatives of the Tri-State Oversight Committee (Metrorail issues only);  
Union representatives;  
Other members as appointed by the Chairperson

The Inspector General is a participant in the ESC.

The Departmental Safety Committees (DSCs) are management level safety committees that serve as the intermediary between the respective Local Safety Committees (LSCs) and the ESC. Metro currently has DSCs for bus, rail, and Access Services. A SAFE representative also serves as a member of each DSC and assists with the disposition of each hazard according to the assessment process described in the SSPP. Unresolved hazards from the DSC shall be forwarded to the ESC. DSCs are authorized to re-structure membership as required by their needs.

Local Safety Committees are established to address local safety issues, the Hazard Management Process and to assist in developing effective safety programs. There is typically one LSC at every major facility. The LSCs establish and foster a close working relationship with employees, unions, and management regarding safety issues. Employees are encouraged to report any perceived safety issue or hazard to their LSC representative for investigation and resolution. In addition, employees can report hazards directly to SAFE (Safety Hotline [202-249-SAFE] or Intranet Website). SAFE staff also serve as advisors to the LSCs. Membership is determined by each individual

committee chairperson but should include local supervision, union representation, and non-management employees. Unresolved hazards from the LSC shall be forwarded to the DSC, and in the absence of a DSC, to the ESC.

A Safety and Security Certification Review Committee (SCRC) is established to provide guidance for the safety and security certification of major construction and rehabilitation projects and vehicle procurement. The SCRC is accountable to the ESC for the overall conduct and implementation of Safety and Security Certification Plans and approval of certification documentation in accordance with the *Safety and Security Certification Plan (SSCP)*.

Depending on the project, members of the SCRC include:

CSO, or designee, (Chair);  
Chief, CENI, or designee;  
Chief Engineer, Vehicles;  
Managing Director, Rail Transportation;  
General Superintendent, TRST;  
General Superintendent, SMNT;  
General Superintendent, CMNT;  
General Superintendent, ELES;  
General Superintendent, BTRA;  
Managing Director, BMNT;  
Director, Plant Maintenance;  
Chief, MTPD, or designee;  
Director, ADA Policy and Planning  
TOC representative (for Metrorail projects only);  
Representatives of OEM;  
Other representatives assigned by the Chair in accordance with the SSCP

### **5.4.3 Safety Recognition**

Safety recognition awards acknowledge individual safety achievement. Currently established safety awards for WMATA employees are:

- Lost-Time Program
- Safe Driver Award
  - Bus, in conjunction with SAFE, provides safe driving awards to recognize bus operators with excellent safety records
  - Access Services, in conjunction with SAFE, provides safety awards to recognize operators with excellent safety records
  - Access Services' contractors administer safety award programs that recognize operators, supervisors and maintenance staff
- Rail Safety Award
  - RTTO, in conjunction with SAFE, administers safety awards that recognize train operators and station managers with excellent safety records

- Annual Safety, Security, and Emergency Response Award
  - The GM/CEO presents an award annually, to an employee who makes an outstanding contribution to the Authority's safety, security, programs and/or emergency response. This award is part of the Authority's Annual Awards Program
- PLNT Safety Award
  - PLNT, in conjunction with SAFE, administers safety awards that recognize mechanics, landscapers and custodians with excellent safety records
- SMNT Safety Award
  - SMNT administers a safety award program that recognizes SMNT organizational-level, intermediate-level and depot-level maintenance technicians, logistics specialists, clerks, parts runners, supervisors and maintenance managers with excellent safety records
- TRST Departmental Safety Awards
  - TRST administers a safety award program that recognizes TRST laborers, repairers, operators, trackwalkers, supervisors and maintenance managers with excellent safety records
- BMNT Safety Award
  - BMNT administers a safety award program that recognizes BMNT employees with excellent safety records. BMNT also provides gift cards or checks (direct deposit) to each employee at an Office/Division/Shop if the entire location reaches 100 consecutive days without a lost time accident (workplace accident, filed with Workers' Compensation where an employee loses time from work). The monetary award increases with each additional 100 days without a lost time accident. This results in awards at 100 days, 200 days, 300 days and 365 days. The count goes back to "0" following each lost time accident and at the beginning of each year.

WMATA recognizes "Champions of Safety" at an annual safety recognition ceremony. This program recognizes the accomplishments of our front-line employees in our Operations departments who have reached milestones in the safe operation of transit vehicles, and those that provide crucial support services that enables the safe operation of transit vehicles. The Champions of Safety Recognition Program directly supports Metro's safety improvement initiatives whose focus is improving our safety culture, adopting business practices that encourages a safer work place, and positions WMATA to be the best transit system in the nation.

#### **5.4.4 Medical Surveillance**

SAFE assists the Medical Services and Compliance Branch of HR to identify abnormal conditions in the workplace and to determine causes of occupational injuries and illnesses. SAFE identifies at-risk positions requiring medical surveillance and works with HR/Medical Services and Compliance Branch to monitor employee exposure to chemical and physical hazards within acceptable guidelines and/or regulatory limits. HR

programs include drug and alcohol compliance, hearing conservation, respiratory protection and management of sleep apnea, diabetes, and high blood pressure.

## **5.5 Confidential Close Call Reporting**

The Washington Metropolitan Area Transit Authority (WMATA) is sponsoring the Close Call Reporting Program, in partnership with Amalgamated Transit Union (ATU), Local 689 (L-689) and the Bureau of Transportation Statistics (BTS). This program is intended to:

- improve rail transit safety by collecting reports on near miss incidents, determining root causes of unsafe conditions, and developing appropriate preventative safety actions; and
- provide WMATA employees with a confidential platform to voluntarily report close call events without fear of disciplinary action.

BTS will disseminate information on trends of reported close call events to support WMATA's continuing efforts to improve safety. In addition, BTS will measure the reporting system's impact on safety by analyzing employee reporting patterns over time.

## **5.6 Safety Tasks and Responsibilities**

The tasks described in this section are in addition to those that are included under the specific Twenty-One Elements of the SSPP. The *Safety Responsibilities and Task Matrix* is provided in exhibit 5-1 that includes departmental and SAFE safety tasks and responsibilities.

### **5.6.1 Complaint Investigations**

WMATA employees can submit safety concerns and complaints to SAFE through the Safety Hotline (202-249-SAFE), the SAFE Website or through direct contact with a SAFE staff member. Customer safety complaints received by CVSC are forwarded to SAFE and investigated by SAFE personnel and are coordinated with the responsible office for resolution. Safety related complaints received by the OIG are forwarded to SAFE for investigation. Anonymity, if requested, is maintained for complaints investigated by SAFE. If hazards are identified during the investigation process, they are entered into the Hazard Management Process by the SAFE investigator assigned to manage the complaint. SAFE provides evidence of successful resolution of the complaint to CVSC and the OIG for complaints originating from those offices.

### **5.6.2 Investigation of Repetitive Events**

The SAFE Data Analyst reviews SMS, MAXIMO and other data on a daily basis, which includes searching for repetitive events that might have safety implications. When accident/incident reports and statistics indicate repetitive accidents/incidents, SAFE will

conduct an investigation to determine the cause. Identified hazards are entered into the Hazard Management Process.

### **5.6.3 System Safety Design Review**

Safety design reviews are an integral part of all acquisition processes for WMATA facilities and equipment. All new changes at WMATA, such as those to training or emergency management procedures, which have a system safety component shall be carried through into the design review process. Safety design reviews are performed by SAFE to: assess the compliance of facility or equipment design with safety, fire, and environmental regulations and requirements in specifications and to ensure that the safety of existing WMATA equipment is not degraded by the addition of new facilities or equipment, as part of the configuration management process. Safety design reviews are normally an integral part of engineering design reviews to minimize overlapping responsibilities. Safety design reviews are performed by SAFE on all new TIES construction, and TIES infrastructure renewal program (IRP) projects, joint development, adjacent construction projects and vehicle procurement.

TIES is responsible for ensuring that SAFE receives electronic transmittal and four (4) copies of designs and contract specifications of all contracts throughout all phases of the design review process. A minimum of two (2) weeks shall be allotted for the SAFE design review. PRMT shall ensure that all SAFE modifications and revisions of designs and specifications are included in contracts prior to advertisement. However, if SAFE comments are received after the date stipulated by the project schedule, alteration of documents, prior to bid, will be conducted through the amendment process. Identified hazards are entered by SAFE into the Hazard Management Process.

### **5.6.4 Environmental Management Oversight**

As the owner and operator of many diverse facilities, it is the responsibility of WMATA to minimize, prevent, and control the generation of hazardous and non-hazardous waste and pollutants to protect the environment. The *Environmental Management Policy Manual* establishes a comprehensive Environmental Management Program. SAFE performs oversight reviews to evaluate the Authority's environmental management system and to monitor regulatory compliance.

### **5.6.5 Safety Field Offices**

SAFE has established nine (9) Regional Safety Field Offices to which safety officers are assigned to work with facility managers as safety consultants and inspectors in support of the Hazard Management Program, Local Safety Committees and Safety Facility Improvement Programs. Safety Officers are assigned to the Red Line, Blue/Orange Line, Silver Line, and Yellow/Green Line to provide safety services to RTTO's Line Management staffs. Two (2) safety officers are assigned to construction safety. Bus Divisions are divided into five (5) regions, each with a dedicated SAFE safety officer.

### **5.6.6 State of Maryland Division of Labor and Industry**

SAFE is responsible for reporting occupational fatalities and multiple hospitalizations of three (3) or more employees within eight (8) hours of an accident that occurs at WMATA facilities in Maryland to the Maryland Division of Labor and Industry, Occupational Safety and Health Service (MOSH).

SAFE is to be notified immediately of the arrival of MOSH inspectors at any Authority facility for the purposes of conducting inspections or investigations. SAFE is the Authority's primary point of contact with MOSH. Copies of all citations received at a facility are to be immediately provided to SAFE. SAFE is responsible for submitting the Authority's response to MOSH citations and for requesting hearing or contesting citations in conjunction with COUN.

WMATA contractors working in Maryland are required to comply with MOSH standards including reporting requirements. Therefore, the Authority must establish contract requirements that require contractors comply with MOSH standards and monitor the effectiveness of such compliance

### **5.6.7 Commonwealth of Virginia Department of Labor and Industry**

SAFE is responsible for reporting occupational fatalities and multiple hospitalizations of three (3) or more employees within eight (8) hours of an accident that occurs at WMATA facilities in Virginia to the Virginia Department of Labor and Industry, Occupational Safety and Health Service (VOSH).

SAFE is to be notified immediately of the arrival of VOSH inspectors at any Authority facility for the purposes of conducting inspections or investigations. SAFE is the Authority's primary point of contact with VOSH. Copies of all VOSH citations received at a facility are to be immediately provided to SAFE. SAFE is responsible for submitting the Authority's response to VOSH citations and for requesting hearings or contesting citations in conjunction with COUN.

WMATA contractors working in Virginia are required to comply with VOSH standards including reporting requirements. Therefore, the Authority must establish contract requirements that require contractors comply with VOSH standards and monitor the effectiveness of such compliance.

### **5.6.8 Occupational Safety and Health Administration**

The Occupational Safety and Health Administration (OSHA) does not consider WMATA as being under its jurisdiction because it is a public agency. However, OSHA will notify SAFE if it receives an employee complaint, request that it be investigated and request that the Authority provide a written response. Alternatively, OSHA will notify the District of Columbia OSHA, which is a consulting agency, to investigate the complaint.

WMATA contractors working in the District of Columbia are required to comply with Federal OSHA standards including reporting requirements. Therefore, the Authority must establish contract requirements that require contractors comply with OSHA standards and monitor the effectiveness of such compliance.

### 5.6.9 Safety Responsibilities and Task Matrix

The *Safety Responsibilities and Task Matrix* (see exhibit 5-1) includes safety related responsibilities and tasks performed by SAFE and responsible departments. A key to acronyms used in the *Safety Responsibilities and Task Matrix* is included below:

OPS	Operations
MNT	Maintenance
HR	Department of Human Resources
P	Primary Responsibility
S	Secondary Responsibility
R	Review and Comment
A	Audit Responsibility
ACCS	Department of Access Services
BUS	Department of Bus Service
BTRA	Office of Bus Transportation
BMNT	Office of Bus Maintenance
CENI	Office of Chief Engineer, Infrastructure
CENV	Office of Chief Engineer, Vehicles
CFO	Department of Finance
COUN	Office of General Counsel
CSCM	Department of Customer Service, Communication and Marketing
CSVC	Office of Customer Service
CMNT	Office of Car Maintenance
JGB	Jackson Graham (Metro HQ) Building
MACS	Office of MetroAccess Service
MTPD	Metro Transit Police Department
OPMS	Office of Operations Management
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PLNT	Office of Plant Maintenance
PREL	Office of Public Relations
PRMT	Office of Procurement and Materials
RADS	Office of Replication and Digital Services
RCF	Revenue Collection Facility
RISK	Office of Risk Management
RTRA	Office of Rail Transportation
RTTO	Office of Train Operations
SMNT	Office of System Maintenance
TIES	Department of Transit Infrastructure and Engineering Services
TRES	Office of Treasurer
TRST	Office of Track and Structures

### Exhibit: 5-1

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: System Safety Program Plan</b>						
<b>Interfaces</b>						
<b>SSPP Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
Exhibit 1-1 and 2.3, 3.3	Establish annual WMATA safety objectives for submission to the Board of Directors in January of each year.	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P		Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers <sup>1</sup>
Exhibit 1-1 and 2.3, 3.3	Submit, a safety report on the WMATA operational, industrial, and construction safety performance at the end of the fiscal year and quarterly reports throughout the year	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P		Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
Exhibit 1-1 and 2.3, 3.3	The following information shall be provided to the Board Safety and Security Committee by WMATA staff: Quarterly operations and safety data; the Hazard Identification/Resolution Matrix; accident and incident reports; and annual internal safety and security audit reports. In addition, the Board Safety and Security Committee is provided briefings on internal investigations of fatalities, derailments, major collisions (damage exceeding \$100,000), and safety matters, incidents receiving media attention and investigations conducted by the National transportation Safety Board and the Tri-State Oversight Committee.	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P		Authority P MTPD P	Chief Safety Officer Assistant Chief Safety Officer Safety Data/TOC Liaison Officer
3.3	The CSO and SAFE designees have the authority to direct that work or conditions, determined to be unsafe, or pose a hazard to customers, employees, contractor employees, the general public or endangers the safe passage of trains or buses, be suspended or restricted, until the unsafe condition or hazard can be mitigated or corrected.	BTRA, MACS, RTRA, RTTO, P	BMNT P		Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Safety Managers Safety Officers

<sup>1</sup> Deputy Chief, OSH  
Deputy Chief, Bus and MetroAccess Safety  
Deputy Chief, Rail Safety  
Deputy Chief, EMIH



## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

### Interfaces

SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
3.3	Management of system safety, occupational safety and health, accident and incident investigation, oversight of construction, environmental protection and monitoring the implementation of the <i>System Safety Program Plan</i> (SSPP)	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
3.3	Review of departmental policies and procedures including <i>WMATA Policy/Instructions, Department of Operations Administrative Procedures</i> (OAPs), Office of Chief Engineer and Project Management, procedures, Department of Finance/Chief financial Officer (CFO) procedures, HR procedures and procurement policies and procedures. SAFE also promulgates and monitors adherence to Authority-wide safety procedures	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
4.0	SSPP Plan Review and Modification	BTRA, MACS, RTRA, RTTO, P	BMNT TIES R	R	Authority R	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
5.3.1.2	SAFE Staff Advise Safety Committee Meetings	BTRA, MACS, RTRA, RTTO, P	BMNT TIES P			Manager, Corporate Safety Programs/NTD Manager Safety Officers
5.4	Safety Design Reviews	ACCS. BTRA, RTRA, RTTO, S	BMNT S TIES P			Assistant Chief Safety Officer Deputy Chief, Rail Safety Safety Officers

## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

Interfaces						
SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
5.4.1	Safety related complaint Investigations	BTRA MACS RTRA RTTO P	BMNT P TIES P	P	RISK RCF RADS CSVC PRMT ACCS P	Assistant Chief Safety Officer Deputy Chief Safety Officers Manager, Bus and MetroAccess Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers
5.4.2	Investigation of safety related repetitive events	BTRA MACS RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT P	Assistant Chief Safety Officer Deputy Chief Safety Officers Manager, Bus and MetroAccess Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD
5.4.5	Maintain SAFE Field Offices	BTRA MACS RTRA RTTO P	BMNT TIES P		RCF RADS PRMT P	Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety Manager, Rail Safety Manager, Bus and MetroAccess Safety Manager, Corporate Safety Programs/NTD Manager, EMIH Safety Officers
5.4.6	Coordination with Maryland Occupational Safety and Health Service	BTRA RTRA RTTO S	BMNT TIES S	S	PRMT S	Deputy Chief, OSH Manager, Corporate Safety Programs/NTD Safety Officers
5.4.7	Coordination with Virginia Occupational Safety and Health Compliance Program	BTRA RTRA RTTO S	BMNT TIES S	S	RCF PRMT MTPD S	Deputy Chief, OSH Manager, Corporate Safety Programs/NTD Safety Officers

## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

Interfaces						
SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
5.4.8	Coordination with United States Department of Labor Occupational Safety and Health Administration (OSHA) and the District of Columbia Occupational Safety and Health Administration	BTRA RTRA RTTO S	BMNT TIES S	S	RADS PRMT S	Deputy Chief, OSH Manager, Corporate Safety Programs/NTD Safety Officers
5.4.4	Environmental Management Oversight Process	BTRA RTRA RTTO P	BMNT TIES P	P	CFO RCF RADS PRMT P COUN R	Deputy Chief, EMIH Environmental Protection Oversight Administrator
6.0	Hazard Management Process	BTRA RTRA RTTO P	BMNT TIES P		Authority RISK RCF RADS PRMT MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers Manager, Bus and MetroAccess Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers
6.2	System Safety Analysis	BTRA RTRA RTTO S	BMNT TIES P		RCF RADS PRMT S	Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Rail Safety Safety Officers
7.0	Managing Safety in System Modifications	BTRA RTRA RTTO P	BMNT TIES P		ACCS	Assistant Chief Safety Officer Deputy Chief, Rail Safety Safety Officers

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: System Safety Program Plan</b>						
<b>Interfaces</b>						
<b>SSPP Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
8.0	Safety and Security Certification	BTRA RTRA RTTO S	BMNT S TIES P		MTPD P	Assistant Chief Safety Officer Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety Safety Officers
9.0	Safety Data Reporting	BTRA MACS RTRA RTTO P	BMNT TIES P	P	Authority RISK RCF RADS P	Deputy Chief, OSH Manager, Corporate Safety Programs/NTD Safety Officers Safety Data/TOC Liaison Officer
9.2	Safety related reports to external agencies	BTRA MACS RTRA RTTO P	BMNT TIES P	P	RISK RCF RADS PRMT P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess Safety Deputy Chief, EMIH Manager, Corporate Safety Programs/NTD Safety Data/TOC Liaison Officer
10.0	Investigations	BTRA MACS RTRA RTTO P	BMNT TIES P	P	R RISK RCF RADS PREL CSCM MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and MetroAccess Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers Safety Data/TOC Liaison Officer Deputy Chief, Corporate Quality Assurance QA Managers QA Officers

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: System Safety Program Plan</b>						
<b>Interfaces</b>						
<b>SSPP Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
11.0 13.0	Develop/Update SOPs, Rules and Emergency Plans	BTRA MACS RTRA RTTO P	BMNT TIES P	P	MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and MetroAccess Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers Safety Data/TOC Liaison Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers
11.0	Emergency Response Liaison	BTRA MACS RTRA RTTO S	BMNT TIES S	S	MTPD P PREL P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and MetroAccess Safety Manager, Rail Safety
11.0	Fire Protection	BTRA RTRA RTTO P	BMNT TIES P		MTPD P	Fire Marshal Deputy Chief Safety Officers Manager, Bus and MetroAccess Safety Manager, Rail Safety Safety Officers

## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

### Interfaces

SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
12.0	Internal Safety and Security Audit Process	BTRA RTRA RTTO P	BMNT TIES P	P	Authority P MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and Metro Access Safety Manager, Rail Safety Manager, Corporate Safety Programs/ NTD Safety Officers Safety Data/TOC Liaison Officer Deputy Chief, Corporate Quality Assurance QA Managers QA Officers
13.0	Rules Compliance/Procedures Review	BTRA MACS RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT MTPD P	Chief Safety Officer is a signatory to MSRPH and BSEH. Chief Safety Officer is vice-chair of the Rail Standing Safety Rules and Procedures Sub-committee. The MSRPH must be reviewed and approved by the Executive Safety Committee. Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and Metro Access Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers Safety Data/TOC Liaison Officer Deputy Chief, Corporate Quality Assurance QA Managers QA Officers

## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

### Interfaces

SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
14.0	Facilities and Equipment Inspections	BTRA RTRA RTTO P	BMNT TIES P	P	MTPD RCF RADS PRMT P	Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Manager, Bus and MetroAccess Safety Manager, Rail Safety Safety Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers
15.0	Review Maintenance and Failure Data. Perform maintenance inspections/audits	BTRA RTRA RTTO P	BMNT TIES P		RCF RADS PRMT P	Deputy Chief, Corporate Quality Assurance QA Managers QA Officers Deputy Chief, Rail Safety Manager, Bus and MetroAccess Safety Safety Officers
16.0	Training, Certification, Review and Audit	BTRA RTRA RTTO P	BMNT TIES P	P	MTPD, RCF, RADS, OPMS, PRMT, P	Deputy Chief, OSH Deputy Chief, Corporate Quality Assurance Manager, Corporate Safety Programs/NTD Safety Officers Deputy Chief, EMIH Chemical Training Liaison Officer
17.0	Configuration Management	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT P	Assistant Chief Safety Officer Deputy Chief Rail Safety Deputy Chief, Bus and MetroAccess Safety Fire Marshal Safety Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers
18.1	Personal Protective Equipment Review	BTRA RTRA RTTO P	BMNT TIES P	P	MTPD RCF RADS PRMT P	Deputy Chief, EMIH Deputy Chief OSH Deputy Chief Rail Safety Deputy Chief, Bus and MetroAccess Safety Manager Corporate Safety Programs/NTD Safety Officers Chemical Training Liaison Officer

## SAFE Responsibility and Task Matrix

Source: System Safety Program Plan

### Interfaces

SSPP Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
18.3	Conduct Industrial Hygiene Studies	BTRA, RTRA, RTTO, S	BMNT TIES S	S	RISK, RCF, RADS, PRMT, S	Deputy Chief, EMIH Deputy Chief, OSH Safety Officers
18.3	Monitor Construction Safety Program	BTRA RTRA RTTO S	BMNT S TIES P	P	PRMT P	Assistant Chief Safety Officer Deputy Chief, Rail Safety Construction Safety Liaison Officer Construction Safety Officer
18.3	Monitor Occupational Safety and Health Compliance	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT P	Deputy Chief, OSH Manager, Corporate Safety Programs/NTD Safety Officers Chemical Training Liaison Officer Chemical Safety Officer
19.0	Hazardous Materials Management Material Safety Data Sheet Review	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT P	Deputy Chief, EMIH Manager, Environmental Services, HazMat Chemical Safety Liaison Officer Safety Officers
20.0	Drug and Alcohol Abuse Program	BTRA RTRA RTTO P	BMNT TIES P	P	PRMT P	Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Rail Safety Manager, Rail Safety Manager, Bus and MetroAccess Safety



<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: System Safety Program Plan</b>						
<b>Interfaces</b>						
<b>SSPP Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
21.0	Procurement Process	BTRA RTRA RTTO P	BMNT TIES P	P	CFO RCF RADS PRMT P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Chemical Safety Officer Fire Marshal Manager, Bus and MetroAccess Safety Manager, Corporate Safety Programs/NTD Manager, Rail Safety Safety Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers

## SAFE Responsibility and Task Matrix

Source: Safety Rules and Procedures

### Interfaces

Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
2.1/0 RE: SSPP 6.0	Hazard Management Procedure (June 2011)	BTRA RTRA RTTO P	BMNT TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Fire Marshal Safety Data/TOC Liaison Officer Safety Officers
2.2/1 RE: SSPP 8.0	Safety and Security Certification Plan	BTRA RTRA RTTO P	BMNT TIES P		MTPD P	Assistant Chief Safety Officer Deputy Chief Rail Safety Safety Officers
2.3/2 RE: SSPP 12.0	Internal Safety and Security Audit Program Procedures	BTRA RTRA RTTO P	BMNT TIES P	P	Authority MTPD P	Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance Fire Marshal
3.2/1 RE: SSPP 11.0	Jackson Graham Building Evacuation Procedures				Occupants ACCS JGB MTPD PLNT P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, OSH Fire Marshal Safety Officer (JGB S.O.)
4.2/1 RE: SSPP 19.0	Hazard Communication Program	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT MTPD P	Deputy Chief, OSH Deputy Chief, EMIH Chemical Training Liaison Officer Chemical Safety Officer Safety Officers
4.4/4 RE: SSPP 18.0	Confined Space Entry Program		BMNT TIES P	P		Deputy Chief, OSH Deputy Chief, EMIH Safety Officers
4.3/0 RE: SSPP 18.0	Bloodborne Pathogens Exposure Control Program	BTRA RTRA RTTO P	BMNT TIES P	P	MTPD P	Deputy Chief, OSH Deputy Chief, EMIH Safety Officers

## SAFE Responsibility and Task Matrix

Source: Safety Rules and Procedures

### Interfaces

Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
4.5/1 RE: SSPP 18.0	Respiratory Protection Program	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT MTPD P	Deputy Chief, OSH Deputy Chief, EMIH Safety Officers
4.6/0 RE: SSPP 18.0	Hearing Conservation Procedures		BMNT TIES P	P	RCF RADS PRMT MTPD P	Deputy Chief, OSH Safety Officers
4.7/0 RE: SSPP 18.0	Energy Control Program Lockout/Tag out		BMNT TIES P		RCF RADS PRMT P	Deputy Chief, OSH Safety Officers
5, 1/10 RE: SSPP 19.0	Environmental Management Policy Manual	BTRA RTRA RTTO P	BMNT TIES P	P	RCF RADS PRMT MTPD P	Deputy Chief, EMIH Managers, EMIH Environmental Protection Oversight Administrator

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: Safety and Environmental Manuals, Procedures, Plans and Policies</b>						
<b>Interfaces</b>						
<b>Procedure Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
RE: SSPP 18.0	Construction Safety and Environmental Manual		TIES P			Deputy Chief, Rail Safety Deputy Chief, EMIH Construction Safety Liaison Officer Construction Safety Officer
RE: SSPP 19.0	Consolidated Plans	BTRA RTRA RTTO P	BMNT TIES P		RCF RADS PRMT P	Deputy Chief, EMIH Managers, EMIH
RE: SSPP 19.0	Environmental Standard Operating Procedures	BTRA RTRA RTTO P	BMNT TIES P		RCF RADS PRMT P	Deputy Chief, EMIH Managers, EMIH Environmental Protection Oversight Administrator
RE: SSPP 19.0	Environmental Compliance Officers and Deputy Environmental Compliance Officers	BTRA RTRA RTTO P	BMNT TIES P		RCF RADS PRMT P	Deputy Chief, EMIH Managers, EMIH Environmental Protection Oversight Administrator
P/I 10.3/2 RE: SSPP 13.0	Electronic Device Policy	BTRA MACS RTRA RTTO P	BMNT TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
P/I 1.15/0 RE: SSPP 13.0	Rule Book Management	BTRA MACS RTRA RTTO P	BMNT TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers Executive Safety Committee
P/I 1.11/1 RE: SSPP 10.0	Procedures for Inter-Departmental Notification of Incidents	BTRA RTRA RTTO P	BMNT TIES P		PREL P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
P/I 4.10/3 RE: SSPP 17.0	Configuration Control Management	BTRA RTRA RTTO P	TIES P	P	Authority P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety Fire Marshal

## SAFE Responsibility and Task Matrix

**Source: Safety and Environmental Manuals, Procedures, Plans and Policies**

### Interfaces

Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
P/I 4.14/2 RE: SSPP 17.0	Design Control Board	BTRA, RTRA, RTTO, P	BMNT TIES P			Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety
P/I 5.10/0 RE: SSPP 18.0	Workers' Compensation Claims Management Program	BTRA, RTRA, RTTO, P	BMNT TIES P	P	Authority P RISK P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, EMIH
P/I 6.10/5	WMATA Employee Identification Cards	BTRA, RTRA, RTTO, P	BMNT TIES P	P	Authority MTPD P	Chief Safety Officer Assistant Chief Safety Deputy Chief, OSH
P/I 7.7.3/3 RE: SSPP 20.0	Drug and Alcohol Policy and Testing Program	BTRA MACS RTRA RTTO P	BMNT TIES P	P	PRMT P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
P/I 10.4/0 RE: SSPP 10.0	Accident/Incident Investigation Policy	BTRA MACS RTRA RTTO P	BMNT TIES P	P	CFO CSCM PREL MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief Safety Officers
P/I 12.1/2 RE: SSPP 10.0	News Media Policy	BTRA, RTRA, RTTO, S	BMNT TIES S		PREL P	Chief Safety Officer Assistant Chief Safety Officer
P/I 13.4/0 RE: SSPP 12.0	Office of Inspector General	BTRA, RTRA, RTTO, S	BMNT TIES S	S	OIG P Authority S	Chief Safety Officer Assistant Chief Safety Officer
P/I 16.1/1 RE: SSPP	ADA Compliance and Jurisdiction of the Department of Access Services	BTRA, RTRA, RTTO, P	BMNT TIES P	P	ACCS P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety

SAFE Responsibility and Task Matrix						
Source: Safety and Environmental Manuals, Procedures, Plans and Policies						
Interfaces						
Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
OAP 113-12 RE: SSPP 21.0	Rail Warranty Administration for Programs/Projects, Services and Materials	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Rail Safety ; Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance QA Managers
OAP 100-12 RE: SSPP	Procedures for Requesting Track/Facility Escorts and Equipment	RTRA RTTO P	TIES P			Deputy Chief, Rail Safety Manager, Rail Safety Safety Officers
OAP 113-01 RE: SSPP 21.0	Non-conforming Quality Hold and Containment		TIES P		PRMT P	Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance QA Managers
OAP 113-02 RE: SSPP 21.0	Rail Car Commissioning	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 113-03 RE: SSPP 21.0	Quality Assurance Audit Procedure	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Corporate Quality Assurance QA Managers
OAP 113-04 RE: SSPP 21.0	Quality Assurance Corrective Action	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Corporate Quality Assurance QA Managers
OAP 113-05 RE: SSPP 21.0	QAAW Receiving Inspection Policy and Procedure	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Corporate Quality Assurance QA Managers
OAP 113-06 RE: SSPP 21.0	First Article Inspection Procedure	RTRA RTTO P	TIES P		PRMT P	Deputy Chief, Corporate Quality Assurance QA Managers
CMNT SOP 1.07 RE: SSPP 15.0	Transit Car Re-railing Action Plan	RTRA RTTO P	CMNT P			Deputy Chief, Rail Safety
CMNT SOP 1.04 RE: SSPP 15.0	Corrective Maintenance (Rail Vehicle)		CMNT CENV P		PRMT P	Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
CMNT SOP 1.05 RE: SSPP 15.0	Preventive Maintenance (Rail Car)		CMNT CENV P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance

## SAFE Responsibility and Task Matrix

Source: Safety and Environmental Manuals, Procedures, Plans and Policies

### Interfaces

Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
CMNT SOP 1.06 RE: SSPP 15.0	Deferred Maintenance (Rail Car)		CMNT CENV P	S		Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 203-02 RE: SSPP 16.0	Creation and Maintenance of Individual Training Records	RTRA RTTO OPMS P	TIES P	P		Deputy Chief, OSH
OAP 203-03 RE: SSPP 16.0	Development and Revision of Curriculum Materials	RTRA RTTO OPMS P	TIES P	P		Deputy Chief, OSH Deputy Chief, Rail Safety
OAP 208-01 RE: SSPP 15.0	Track Maintenance Management, Maintenance of Way	RTRA P	TRST P			Deputy Chief, Rail Safety
RE: SSPP 15.0	Track Standards Manual		TRST P			Deputy Chief, Rail Safety
OAP 208-02 RE: SSPP 15.0	Structures Maintenance Management Maintenance of Way		TRST P			Deputy Chief, Rail Safety
OAP 206-01 RE: SSPP 14.0 & 15.0	Equipment Testing and Performance Evaluation	RTRA RTTO P	TIES P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 206-02 RE: SSPP 14.0	Engineering Tests	RTRA P	TIES P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 200-02 RE: SSPP 14.0 & 15.0	Maintenance Operations Center	RTRA P				Deputy Chief, Rail Safety Manager, Rail Safety
OAP 200-03 RE: SSPP 15.0	Preventative Maintenance on Revenue Vehicles and Wayside Equipment		BMNT TIES P			Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance
OAP 200-05 RE: SSPP 15.0	Corrective Maintenance		BMNT TIES P			Deputy Chief, Rail Safety Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance

## SAFE Responsibility and Task Matrix

Source: Safety and Environmental Manuals, Procedures, Plans and Policies

### Interfaces

Procedure Sec. #	Responsibilities and Tasks	OPS	MNT	HR	OTHER	SAFE Responsible Personnel
OAP 200-06 RE: SSPP 7.0	Engineering Modification Instruction	RTRA RTTO S	TIES P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 200-07 RE: SSPP 10.0	Computer Data Analysis (System Log)	RTRA P	TIES P			Deputy Chief, Rail Safety Manager, Rail Safety
OAP 200-11 RE: SSPP 14.0	Maintenance Service Instructions (MSIS)		TIES P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 200-24 RE: SSPP 16.0	Train Operator Certificate of Qualification	RTRA RTTO ROQT P				Manager, Rail Safety QA Managers
OAP 200-25 RE: SSPP 8.0	Engineering Service Bulletin		TIES P			Deputy Chief, Rail Safety Deputy Chief, Corporate Quality Assurance
OAP 200-26 RE: SSPP 10.0	Elevator Entrapments	RTRA RTTO P	ELES P			Deputy Chief, Rail Safety
OAP 200-33 RE: SSPP 18.0	Site Specific Work Plan	RTRA RTTO P	TIES P			Deputy Chief, Rail Safety Safety Officers
OAP 207-07 RE: SSPP 10.0	Accidents involving BUSV Vehicles, MACS Vehicles	BTRA MACS P	BMNT P			Deputy Chief, Bus and MetroAccess Safety Manager, Bus and MetroAccess Safety Safety Officers
OAP 207-08 RE: SSPP 10.0	Unreported Accidents/Occurrences	BTRA P	BMNT P			Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess Safety
OAP 207-17 RE: SSPP 10.0	Accidents Resulting in Fatalities	BTRA P	BMNT P			Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, Bus and MetroAccess
OAP 207-18 RE: SSPP 10.0	Impounding of Metrobus Vehicles	BTRA P	BMNT P		MTPD P	Deputy Chief, Bus and MetroAccess Safety Manager, Bus and MetroAccess Safety Safety Officers



<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: Safety and Environmental Manuals, Procedures, Plans and Policies</b>						
<b>Interfaces</b>						
<b>Procedure Sec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
OAP 207-21 RE: SSPP 14.0	Bus Pre-trip Inspection Procedures	BTRA P	BMNT P			Deputy Chief, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance QA Managers QA Officers Manager, Bus and MetroAccess Safety
OAP 508-17-1 RE: SSPP 18.0	Track and Structures Personnel Management Job Safety		TRST P			Deputy Chief, Rail Safety Deputy Chief, OSH Safety Officers
RE: SSPP 13	Interlocking Operator's Procedures Manual	RTRA RTTO P	TIES P			Manager, Rail Safety
RE: SSPP 13	Terminal Operations Procedures	RTRA RTTO P	TIES P			Manager, Rail Safety

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: Metrorail Safety Rules and Procedures Handbook (MSRPH) 2011 Permanent/Temporary/Special Orders</b>						
<b>Interfaces</b>						
<b>Order #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
RE: SSPP 13	MSRPH Rule Book, Procedures And Orders	RTRA RTTO P	TIES P	P	Authority P MTPD P	Chief Safety Officer is a signatory to MSRPH and BSEH. Chief Safety Officer is vice-chair of the Rail Standing Safety Rules and Procedures Subcommittee. The MSRPH must be reviewed and approved by the Executive Safety Committee. Assistant Chief Safety Officer Deputy Chief, OSH Deputy Chief, EMIH Deputy Chief, Rail Safety Manager, Rail Safety Manager, Corporate Safety Programs/NTD Safety Officers Deputy Chief, Corporate Quality Assurance QA Managers QA Officers
S.O. 03-03	Continuity of Operations Plan (COOP) for Rail	RTRA RTTO P	TIES P	P	Authority MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, Rail Safety Fire Marshal Manager, Rail Safety Deputy Chief, Corporate Quality Assurance
RE: SSPP 11.7	Continuity of Operations Plan (COOP) for Bus	BTRA P	BMNT P	P	Authority MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, Bus and MetroAccess Safety Fire Marshal Manager, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance
RE: SSPP 11.7	Continuity of Operations Plan (COOP) for MetroAccess	MACS P		P	Authority MTPD P	Chief Safety Officer Assistant Chief Safety Officer Deputy Chief, Bus and MetroAccess Safety Fire Marshal Manager, Bus and MetroAccess Safety Deputy Chief, Corporate Quality Assurance

<b>SAFE Responsibility and Task Matrix</b>						
<b>Source: National Transportation Safety Board Recommendations from Railroad Accident Report NTSB/RAR-10/02 June 22, 2009 Ft. Totten Collision</b>						
<b>Interfaces</b>						
<b>Rec. #</b>	<b>Responsibilities and Tasks</b>	<b>OPS</b>	<b>MNT</b>	<b>HR</b>	<b>OTHER</b>	<b>SAFE Responsible Personnel</b>
14	Regularly review recorded operational data from the rail car onboard recorders	RTRA RTTO	TIES P		ATU Local 689	Deputy Chief, Rail Safety
14	Regularly review recorded operational data from the Advanced Information Management System including data from the enhanced track circuit verification test	RTRA RTTO P	TIES P		IT P ATU Local 689 P	Deputy Chief, Rail Safety
20	Develop and implement a program to monitor the performance of onboard event recorders and ensure they are functioning properly.		TIES P			Deputy Chief, Rail Safety

## 6.0 Hazard Management Program

### 6.1 Overview

The management of identified hazards is a vital component of the WMATA System Safety Program. Accidents and incidents are prevented by proactively identifying hazards, assessing the associated risk, developing appropriate mitigating measures, and tracking implementation of the corrective action to closure. WMATA identifies hazards via several different internal and external sources. SAFE's strategy is to capture this information electronically whenever possible to assist with analysis. WMATA categorizes each identified hazard according to the severity and likelihood of occurrence of the hazard.

The Hazard Management Program (HMP) applies to all WMATA employees and obligates everyone to be constantly vigilant for identifying hazards. It covers all aspects of WMATA's facilities, systems, equipment, vehicles, Roadway, and work environments.

WMATA defines a hazard as a condition or set of conditions, internal or external to the system or system operation, which, when activated could cause injury or death or damage to or loss of equipment or property. An unacceptable hazard is a condition that may endanger human life or property or result in major system loss. This condition must be mitigated.

SAFE is directly responsible for the implementation of the WMATA Hazard Management Program (see exhibit 6-1) through *WMATA Safety Rules and Procedures No. 2.5/0, WMATA Hazard Management Program*. The program includes:

- Developing, updating and auditing the program;
- Training all designated WMATA employees and its contractors on the hazard management process; and
- Documenting and tracking all identified hazards to resolution.

Exhibit 6-2 illustrates a Matrix Function Organization that coordinates and implements the WMATA HMP. The coordinator and inter-departmental point of contact for the Rail HMP is the Deputy Chief, Rail Safety. The Rail HMP Coordinator works with ROCC, RTTO, RTRA, TIES, and RISK. As the Rail HMP Coordinator, the Deputy Chief, Rail Safety is the primary point of contact with the TOC regarding WMATA rail hazard management. The Bus HMP Coordinator is the Deputy Chief, Bus and MetroAccess. The Bus HMP Coordinator works with BTRA, BMNT, Bus Engineering, Bus Planning, Bus Operations Control Center, MetroAccess, TIES (PLNT, CENI) and RISK to identify, analyze and categorize bus related hazards and to develop and implement corrective action plans to resolve hazards. Hazards identified in the bus system are not submitted to TOC. The Deputy Chief, OSH will serve as occupational safety HMP coordinator and work with the responsible organization to identify, analyze, and categorize occupational safety related hazards and to develop and implement mitigating measures and CAPs.

The Deputy Chief EMIH is the coordinator for the environmental HMP and will work with the responsible organization to identify, analyze, and categorize environmental related hazards and to develop and implement mitigating measures.

MetroAccess contractors are responsible for developing and implementing a HMP for its organization. The AGM/ACCS is responsible for monitoring the effective implementation of the contractors' HMP. SAFE will assist ACCS when requested by the AGM/ACCS.

## Hazard Management Process

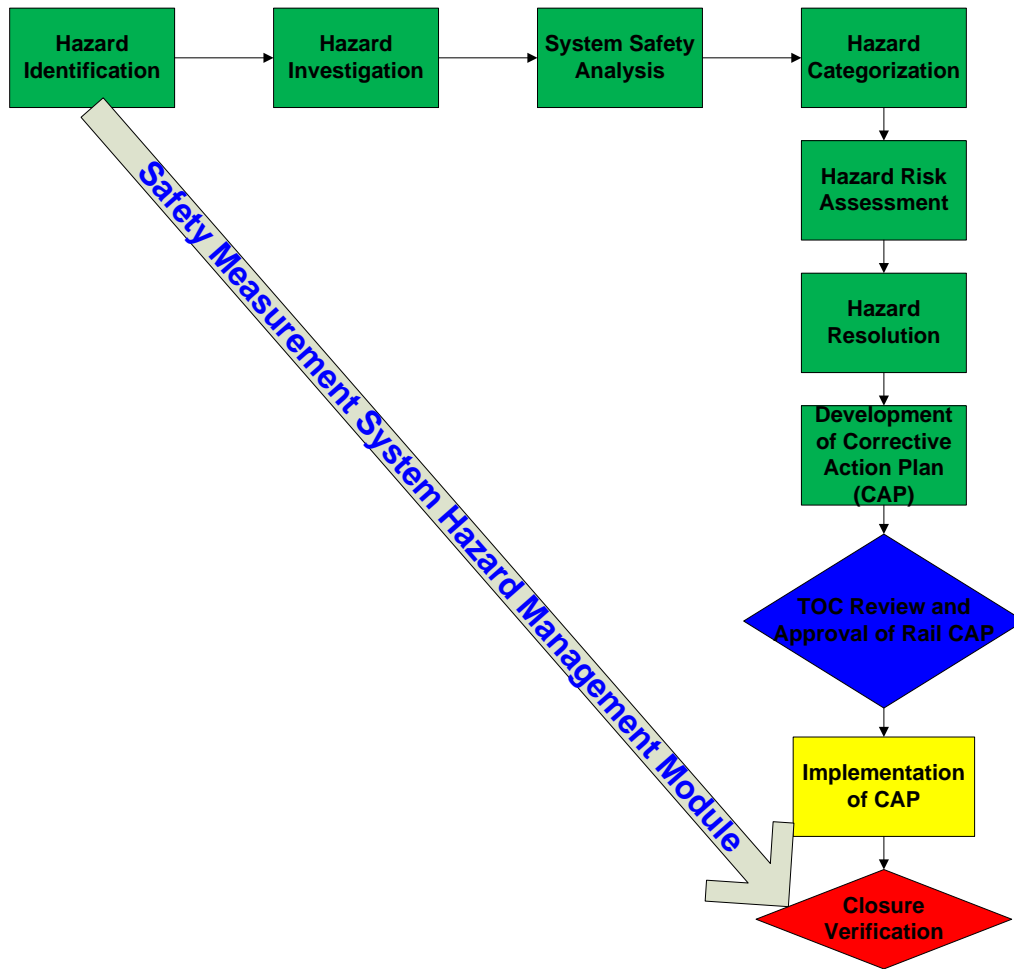
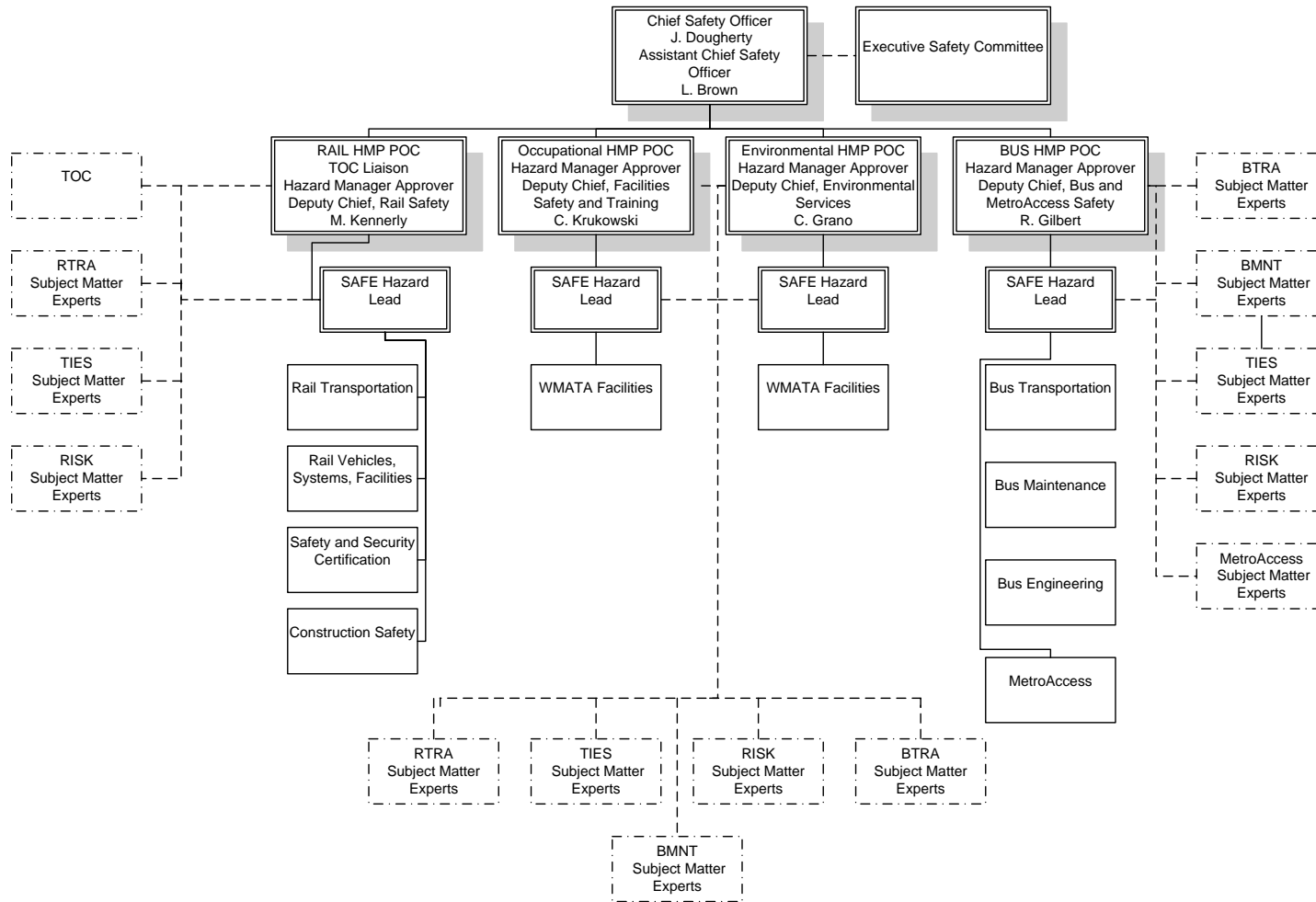


Exhibit: 6-1

# Hazard Management Process Matrix Function Organization



**Exhibit: 6-2**

## 6.2 Hazard Management Process

The Hazard Management Process:

- Defines WMATA's approach to hazard management and the implementation of an integrated system-wide hazard resolution process;
- Specifies the sources of, and the mechanisms to support, the on-going identification of hazards;
- Defines the process by which identified hazards will be evaluated and prioritized for elimination or control;
- Identifies the mechanism used to track, through resolution, the identified hazards;
- Defines minimum thresholds for the notification and reporting of hazards to oversight agencies; and
- Specifies the process by which WMATA will provide on-going reporting of hazard resolution activities to TOC. This activity may include weekly, monthly or quarterly meetings with WMATA to discuss hazard management issues.

### 6.2.1 Hazard Identification

Identification of hazards is the responsibility of all departments/offices/branches and individual employees and continuous management of hazards is the key to an effective system safety program. Hazards that are identified are analyzed by SAFE in collaboration with RTRA, RTTO, TIES, BUS and BMNT for severity, frequency and cost feasibility of remedial action required to eliminate, reduce or control the hazard. Hazards can be identified through a number of sources (see exhibit 6-3):

- System inspections, audits, regulatory inspections and observations
- Accidents, incidents investigations
- System reliability and failure reports
- Formal system safety analysis
- Ride checks and proficiency checks
- Customer complaints
- Employee safety concerns or issues reported to and managed by the Local Safety Committees
- Transit industry experience
- Safety Hotline
- Data mining of incident and maintenance databases



# Sources of Hazard Identification

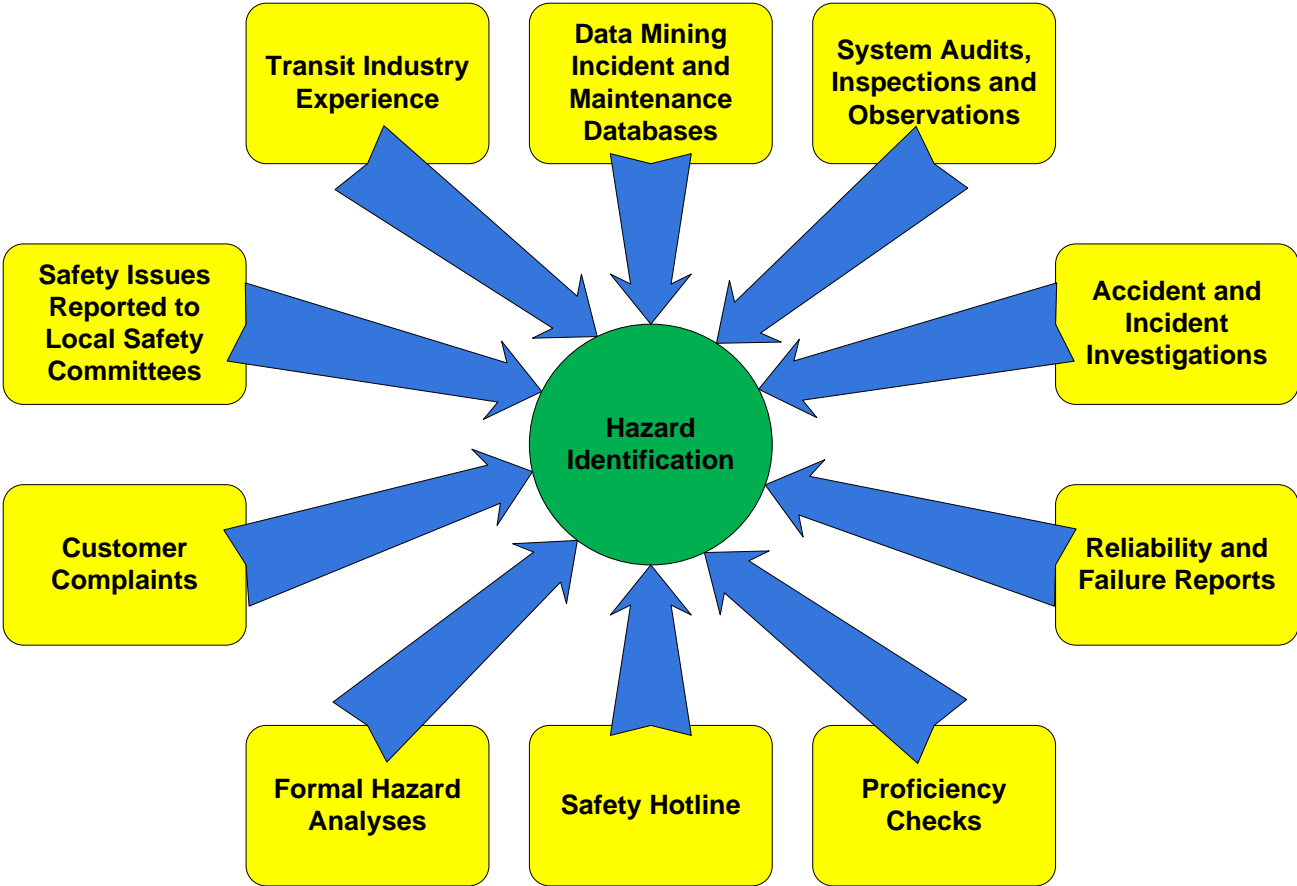


Exhibit: 6-3

## **6.2.2 Hazard Investigation**

WMATA investigates identified hazards in accordance with sections 8.4, 10.6 and 11.3c of the TOC PS/P. Bus related hazards are investigated in accordance with this section. The extent of the hazard investigation depends on the complexity of the hazard and the preliminary categorization of the hazard. SAFE will begin an initial investigation upon notification of the existence of a hazardous condition. SAFE's awareness of a hazard can occur from any of the sources described in section 6.2.1 and exhibit 6-3.

### **6.2.2.1 Notification of TOC of Hazardous Conditions**

During the hazard investigation process, if it is determined that a hazardous condition exists, that meets the following criteria as stated in section 10.6, "Requirements for Notification of TOC," of the TOC PS/P:

- I-A (Catastrophic/Frequent)
- II-A (Critical/Frequent)
- III-A (Marginal/Frequent)
- I-B (Catastrophic/Probable)
- II-B (Critical/Probable)
- I-C (Catastrophic/Occasional)

The CSO will immediately notify the responsible department head, the ESC, GM/CEO and the TOC Chair or designated TOC representative (for rail hazards only, by phone and e-Mail) within two (2) hours of the determination that the hazard meets the above criteria. Note: Exhibit 6-5: Risk Assessment Matrices categorizes hazards that meet the above referenced criteria as "Unacceptable". SAFE will provide regular e-Mail status updates to TOC regarding the resolution of the unacceptable hazardous condition.

To ensure that WMATA appropriately notifies TOC of all hazardous conditions affecting rail safety or security that are not necessarily assigned the Hazard Risk Index meeting the above criteria, SAFE shall also notify TOC of all hazardous conditions and incidents that meet the criteria listed in Exhibit 6-4 that is required by section 10.6 of the TOC PS/P and WMATA/TOC MOU.

### Exhibit 6-4: TOC Incident / Hazard Notification and Reportability

Incident / Hazard Type	Notification	TOC will review reports and adopt investigation
Fatality within 30 days	2 hours by phone	Yes
Two or more injuries requiring immediate medical attention away from the scene	2 hours by phone	Yes
Property damage equal to or more than \$25,000	2 hours by phone	Yes
Evacuation of a train or facility for life safety reasons, or of a train for any reason if not at a station platform including self evacuation.	2 hours by phone	Yes
Derailment of any powered vehicle on the mainline, or any train in a yard	2 hours by phone	Yes
A collision with an individual, any other vehicle, or a fixed object	2 hours by phone	Yes
Red signal violation / overrun	2 hours	Yes
Train encroachment or overrun into work zone	2 hours	Yes
Opening of vehicle side doors during train movement	2 hours	Yes
Fallen or dragging equipment from a rail vehicle	2 hours	Yes
Employee or patron electrical shock over 200 volts	2 hours by phone	Yes
Passenger falls from vehicle onto right-of-way	2 hours	Yes
Stranding of passengers on a train for more than 15 minutes	2 hours	No, unless requested
Other actions or malfunctions that could have resulted in significant injuries or damage	2 hours	No, unless requested
Speed restriction or track closure due to infrastructure damage or weather conditions	2 hours	No, unless requested
Fire in or on Metrorail property, including stations, the right-of-way, yards, and shops (including no evacuation)	2 hours	No, unless requested
Vehicle side door opening on the wrong side or off station platforms	1 business day	No, unless requested
Mainline rail breaks/cracks	1 business day	No, unless requested
Other incidents or hazards involving workers in a right of way	1 business day	No, unless requested
All hazards that WMATA gives a severity/frequency rating of 1A-C, 2A-B, or 3A	1 business day	No, unless requested

The TOC shall be notified of all other hazards via the monthly hazard log submission.

Notification of the TOC (rail hazards only) will be in accordance with the WMATA/TOC MOU and section 8.1 of the TOC PS/P and include the following information:

- Name/title of the WMATA representative reporting the hazard
- Method of notification
- Time of notification
- Time and date of hazard occurrence
- Location of hazard being reported
- Description of how the hazard was recognized and reported; to include 1) how the hazard was identified; 2) who reported the hazard, and 3) the date and time that SAFE was notified of the hazard
- Potential number of customers or employees exposed to the hazard
- Description of the hazard and the immediate corrective action(s) taken
- Initial evaluation of the hazard, using the criteria included in SSPP section 6.2.4

A written hazard report must be submitted to the TOC no later than three (3) business days after a hazardous condition meeting the above criteria is identified.

Upon completion of the unacceptable hazardous condition investigation process, SAFE will submit a draft final hazardous condition investigation report to the responsible executive manager, the ESC, the GM/CEO and to the TOC [rail hazards only]. If the investigation report is not completed within 30 calendar days, an interim status report will be provided to the TOC (rail hazards only), no later than 30 calendar days after the identification of the hazardous condition. Once the hazardous condition report is approved by the TOC (rail hazards only), SAFE will submit a final hazardous condition report including the TOC approved CAP (rail hazards only) to the GM/CEO (bus and rail), the TOC (rail hazards only) and to the responsible WMATA executive (AGM/BUS) for bus related hazards, and as applicable, (AGM/TIES) for implementation.

Hazards that do not meet the above criteria, or are not determined to be unacceptable, are investigated with the appropriate degree of detail determined by the HMP Coordinator and are reported in the Hazard Management Module of SMS. Upon identification of a hazard, WMATA will have 45 calendar days (TOC PS/P, section 11.2.c) to develop a CAP (rail hazards only) to correct identified deficiencies for TOC's review and approval (rail hazards only). A hazard that can be immediately mitigated will not require a CAP (TOC PS/P, section 11.2.f).

### **6.2.3 System Safety Analysis**

Hazard analysis encompasses a set of methodologies that first searches throughout the system for the potential to do harm. Having found such hazards, further analysis attempts to control any hazard at an acceptable level. However, to do so first requires an understanding of the causes of the hazards.

Hazard analysis attempts to determine the set of primary events in the hazard generation process. Upon identification of these events and completion of the analysis,

WMATA (SAFE, RTRA, RTTO, TIES, or BUS, BMNT) will undertake to develop a resolution that will mitigate, control or eliminate the generation of hazards in ways that can reduce their risk to an acceptable level.

Hazard analysis also attempts to reduce the severity of accident events by introducing protective devices and equipment, procedures and/or forms of system modifications that reduce injury and the amount of property damage in an accident event.

While identifying every hazard is virtually impossible, there are two methods for orderly identification of hazards: inductive and deductive analysis. The inductive hazard identification process consists of an analysis of system components to identify their respective failure modes and the effects they will have on the total system. This process assumes the failure of single elements or events and, through analysis, determines the potential consequential effects on the system or subsystem. The deductive hazard identification process involves defining an undesired effect (e.g., collision, fire) and then deducing the possible conditions or system component faults (or combinations of them) that are necessary to cause the undesired effect.

The historical rail and bus passenger accident experience data, available through SMS, will be a reliable source of input information to aid both the inductive and the deductive processes.

## **6.2.4 Hazard Categorization**

Included in this section is the method that WMATA uses for the categorization of all identified hazards. Hazards are normally categorized in terms of severity and probability of occurrence.

### **6.2.4.1 Hazard Severity**

Hazard severity is a subjective determination of the worst case that could be anticipated to result from human error, design inadequacies, component failure or malfunction. The categories of hazards based on the MIL-STD-882-C are as follows:

**Category 1: Catastrophic** – operating conditions are such that human error, design deficiencies, element, subsystem or component failure or procedural deficiencies may cause death or major system loss and require immediate termination of the unsafe activity or operation.

**Category 2: Critical** – operating conditions are such that human error, subsystem or component failure or procedural deficiencies may cause severe injury, severe occupational illness or major system damage and require immediate corrective action.

**Category 3: Marginal** – operating conditions are such that they may result in minor injury, occupational illness or minor system damage and are such that human error, subsystem or component failures can be counteracted or controlled.

**Category 4: Negligible** – operating conditions are such that human error, subsystem or component failure or procedural deficiencies will result in less than minor injury, occupational illness or less than minor system damage.

The categorization of hazards is consistent with risk-based criteria for severity; it reflects the principle that not all hazards pose an equal amount of risk to personal safety.

#### **6.2.4.2 Hazard Probability**

The probability of a particular event or a specific hazard occurring may be defined as a non-dimensional ratio of the number of times that a specific event occurs to the total number of trials in which this event will occur during the planned life expectancy of a system. Generally, hazard probability is described qualitatively in potential occurrences per units of time, miles, trips/runs or passengers carried. A hazard probability may be derived from the analysis of transit system operating experience, evaluation of WMATA safety data, the analysis of reliability and failure data, or from historical safety data from other passenger rail systems or bus systems. (See exhibit 6-4)

Probability of Occurrence of a Hazard			
Description	Probability Level	Frequency For Specific Item(s) (Events/Hour)	Selected Frequency For Fleet or Inventory (Multiple of Single Items)
Frequent	A	Likely to occur frequently (Greater than $10^{-3}$ )	Continuously experienced ( $10^{-2}$ ). MTBE is less than 1000 operating hours
Probable	B	Will occur several times in the life of the item ( $10^{-5}$ to $10^{-3}$ )	Will occur frequently in the system ( $10^{-3}$ ). MTBE is equal to or greater than 1000 operating hours and less than 100,000 operating hours.
Occasional	C	Likely to occur sometime in the life of an item ( $10^{-6}$ to $10^{-5}$ )	Will occur several times ( $10^{-4}$ ). MTBE is equal to or greater than 100,000 operating hours and less than 1,000,000 operating hours.
Remote	D	Unlikely but possible to occur in the life of an item ( $10^{-7}$ to $10^{-6}$ )	Unlikely but can be expected to occur ( $10^{-6}$ ). MTBE is greater than 1,000,000 operating hours and less than 100,000,000 operating hours.
Improbable	E	So unlikely, it can be assumed occurrence may not be experienced (Less than $10^{-7}$ )	Unlikely to occur, but possible ( $10^{-7}$ ). MTBE is greater than 100,000,000 hours.

\*MTBE = Mean time between events

### Exhibit 6-5

### 6.2.5 Hazard Risk Assessment

WMATA has adopted a system for assessing the level of risk for each identified hazard to determine what action(s) must be taken to correct or document the hazard risk. This risk assessment system has been incorporated into the formal system safety analysis that enables the ESC decision-makers to understand the amount of risk involved in accepting the hazard in relation to the cost (schedule, cost, operations) to reduce the hazard to an acceptable level.

The Risk Assessment Matrix (see exhibit 6-5) identifies the Hazard Risk Index (HRI) based upon hazard category and probability and the criteria for defining further actions based upon that index.

HAZARD FREQUENCY	SEVERITY CATEGORY 1	SEVERITY CATEGORY 2	SEVERITY CATEGORY 3	SEVERITY CATEGORY 4
Frequent (A)	1A	2A	3A	4A
Probable (B)	1B	2B	3B	4B
Occasional (C)	1C	2C	3C	4C
Remote (D)	1D	2D	3D	4D
Improbable (E)	1E	2E	3E	4E

Hazard Risk Index	Criteria by Index
1A, 1B, 1C, 2A, 2B, 3A	Unacceptable
1D, 2C, 2D, 3B, 3C	Undesirable – Management (ESC) decision
1E, 2E, 3D, 3E, 4A, 4B	Acceptable with ESC review
4C, 4D, 4E	Acceptable without review

**Exhibit 6-6: Risk Assessment Matrices**



Follow-up actions resulting from the risk assessment will be as follows:

**Unacceptable:** The hazard must be mitigated in the most expedient manner possible before normal service may resume. Interim corrective action may be required to mitigate the hazard to an acceptable level while the permanent resolution is in development.

**Undesirable:** A hazard at this level of risk must be mitigated unless a documented decision to manage the hazard until resources are available for full mitigation is issued by the CSO and forwarded to TOC (rail hazards only) for review and approval or disapproval.

**Acceptable with review:** The CSO must determine if the hazard is adequately controlled or mitigated as is.

**Acceptable without review:** The hazard does not need to be reviewed by the ESC and does not require further mitigation or control.

The Risk Assessment Process is used to prioritize hazardous conditions and focus available resources on the most serious hazards requiring resolution.

### 6.2.6 Hazard Resolution

Hazard resolution is defined as the analysis and subsequent actions taken to reduce to the lowest level practical, the risk associated with an identified hazard. Hazard resolution is not synonymous with hazard elimination. In a bus and rail transit environment, there are some hazards, which are impossible to eliminate and others, which are highly impractical to eliminate. Reduction of risk to the lowest practical level can be accomplished in a variety of ways from protective and warning devices to special procedures.

Resolution of hazards will utilize the results of the Risk Assessment Process. The objectives of the hazard resolution process are:

1. Identify areas where hazard resolution requires a change in the system design, installation of safety devices or development of special procedures;
2. Verify that hazards involving interfaces between two or more systems have been resolved; and
3. Verify that the resolution of a hazard in one system does not create a new hazard in another system.

The ESC and SAFE will use the following methodologies to assure that system safety objectives are implemented throughout design, construction, procurement, and operations and those hazards are eliminated or controlled:

1. Design out or design to minimize hazard severity. To the extent permitted by cost and practicality, identified hazards will be eliminated or controlled by the design of equipment, systems and facilities.
2. Hazards that cannot reasonably be eliminated or controlled through design will be controlled to the extent practicable to an acceptable level through the use of fixed, automatic, or other protective safety design features or devices. Provision will be made for periodic functional checks of safety devices and training for employees to ensure that system safety objectives are met.
3. When design and safety devices cannot reasonably nor effectively, eliminate or control an identified hazard, safety warning devices will be used (to the extent practicable) to alert persons to the hazard.
4. Where it is impossible to reasonably eliminate or adequately control a hazard through design or the use of safety and warning devices, procedures and training will be used to control the hazard. Precautionary notation will be standardized and safety-critical issues will require training and certification of personnel.

#### **6.2.6.1 Hazard Resolution Management and Tracking**

Resolution of identified hazards will be managed by SAFE, in collaboration with the responsible department, and approved and monitored by the CSO or ESC. The SMS Hazard Management Module will be used for tracking identified hazards and the hazard resolution process. The SMS Hazard Management Module includes the following information as required by section 10.5, "Hazard Tracking," of the TOC PS/P:

- Hazard description
- Immediate mitigation (if needed)
- Origin of hazard (e.g., accident investigation, capital project hazard analysis, employee safety committee)
- Date hazard was identified
- Hazard analysis results (frequency and severity, hazard score, depending on analysis method)
- Proposed permanent hazard resolution
- Hazard resolution verification/follow-up activities
- Date hazard closed
- Responsible investigator or SAFE Hazard Lead and Organizational Subject Matter expert
- Other relevant information

Additional documentation, such as Corrective Action Plans (CAPs), shall be developed for those hazards requiring complex and multifaceted resolutions. The determinations of SAFE or the ESC are submitted to the ESC for hazard resolution through implementation of the TOC (rail hazards only via SMS access) approved recommendations. SAFE manages the hazard resolution process through the SMS

Hazard Management Module, to which TOC has access. The GM/CEO, ESC the affected or involved department heads, and the TOC (rail hazards only, via SMS access) will be kept informed of the status of hazard resolution activities by SAFE.

### **6.2.7 Coordinating with the TOC Regarding the Hazard Management Process**

The SMS Hazard Management Module will be formatted to show at a minimum, all open/current hazards. TOC has access to SMS and the Hazard Management Module. WMATA will provide TOC with an electronic copy of the Monthly Hazard Log during the first full week of every month.

### **6.2.8 Corrective Action Plan Development Process**

**Note:** The Corrective Action Plan process described herein applies to Corrective Action Plans that are developed under the requirements of: SSPP Element 6.0, "Hazard Management Program"; SSPP Element 10.0, "Accident and Incident Notification, Reporting and Investigation"; and SSPP Element 12.0, "Internal Safety and Security Audit Program."

TOC requires WMATA to develop Corrective Action Plans (CAPs) in response to findings and recommendations related to the safety of the Metrorail system. CAPs are required for safety issues, deficiencies and nonconformance with the SSPP, policies, procedures and rules identified by findings and recommendations from the following activities:

- **TOC Triennial On-Site Safety and Security Reviews**

Upon notification of the findings of the draft final report, or receipt of the draft final report, WMATA will have 45 calendar days to develop a CAP to address all findings, including: identified areas of concern and deficiencies. WMATA will often be able to develop a single CAP that will address more than one finding simultaneously.

- **Accident/Incident Investigations**

TOC generally "deputizes" WMATA (SAFE) to conduct accident investigations on the TOC's behalf, and "formally adopts" the WMATA investigation report as its own. However, regardless of whether WMATA or TOC conducts an accident investigation, the investigation report may contain findings and recommendations related to deficient conditions or other safety issues identified during the investigative process. Not all accident investigations will result in the formation of recommendations and not all accident reports will generate CAPs. Findings of recommendations from investigations regarding identified deficiencies, safety issues or nonconformance with the SSPP, policies, rules or procedures must be addressed through the CAP process. The development of CAPs will be the primary responsibility of WMATA, with assistance provided by TOC, as may be

required. WMATA will include proposed CAPs to be considered for TOC approval as part of the Draft Final accident/incident investigation report. Alternatively, WMATA may indicate corrective actions already taken to address a given deficiency, directly in the draft final accident/incident investigation report. Finally, as mentioned above, there may be cases of investigations that result in no findings or recommendations, and in such cases, WMATA should explicitly indicate in writing to TOC that no corrective actions have been taken or will be forthcoming.

- **National Transportation Safety Board**

If the National Transportation Safety Board (NTSB) conducts an investigation at WMATA, it may issue a formal report with recommendations to the transit agency. Should this occur, the transit agency should review the recommendations and determine their appropriateness. Unless TOC and WMATA agree that, a specific recommendation is inappropriate; WMATA will develop and implement a CAP to address the recommendation.

- **Hazard Investigations**

WMATA may initiate, or TOC may specifically request, the investigation of a hazard. Generally, WMATA will conduct such investigations; however, regardless of whether WMATA or TOC conducts a hazard investigation, the investigation report should contain findings and recommendations related to deficient conditions or other safety issues identified during the investigative process. In either case, the development of CAPs will be the primary responsibility of WMATA, with assistance provided by TOC, as may be required. Upon TOC receipt of the final hazard investigation report, WMATA will have 45 calendar days to develop a CAP to address any identified findings and recommendations. Alternatively, WMATA may indicate corrective actions already taken to address a given deficiency, directly in the final hazard investigation report.

- **Internal Safety and Security Audits and Reviews**

If WMATA finds areas of non-conformance during incremental internal safety and security audits of the SSPP or SEPP, those areas of non-conformance must be addressed by a CAP. The CAP must be developed within 30 days of the audit or review.

- **Other Sources**

TOC may require WMATA to develop one or more CAPs to address findings and recommendations made because of peer reviews, American Public Transportation Association (APTA) reviews, and other external reviews. Additionally, if TOC becomes aware of a safety issue by some other means in the course of the implementation of the oversight program, such an issue will be

brought to the immediate attention of appropriate WMATA management so that WMATA can prepare an appropriate CAP. The timeframe for the CAP will be specified in written notification from TOC. A hazard that can be immediately mitigated will not require a CAP.

#### **6.2.8.1 Development of Corrective Action Plans**

Each CAP must include the following information:

- Identify noted finding and its source
- Process, plan, or mechanism to address and resolve finding or recommendation
- Target date for implementation of plan of action
- Department(s) and specific person(s) who will be responsible for implementation
- Hazard rating

The objective of a CAP is to address the original finding or recommendation that generated it. TOC's approval of a CAP depends on how effectively the proposed CAP addresses the original finding or recommendation. Effective CAPs are achievable, measurable, assigned to an individual (not just a department or office), and include a realistic target date for completion. CAPs are not conditional, nor are they recommendations to consider from one WMATA department to another (i.e., SAFE to TIES). CAPs are statements of specific actions that will be implemented by the responsible person and organization. TOC expects that WMATA will effectively implement all CAPs according to the proposed timeframe established by the target date.

Many CAPs are short-term and address issues that are simple to resolve. Other CAPs, are long-term, and may require WMATA to expend a high level of effort and resources to address over a period that could span years. There is no penalty for keeping a CAP "open" long-term; however, TOC must be able to verify that it is being implemented appropriately. In this event, TOC receives documentation including status reports, intermediate milestones, and other information from WMATA demonstrating progress. Additionally, and particularly for long-term CAPs that may be resource-intensive, WMATA will consider interim or temporary steps where resources may not be immediately available. TOC shall evaluate the appropriateness of CAP alternatives on a case-by-case basis.

When WMATA must develop a CAP to address a finding or recommendation generated by one of the above-described processes, WMATA must forward the written CAP to TOC, either electronically or in hard copy, for review and approval. TOC will notify WMATA whether it approves, conditionally approves, or is unable to approve the CAP within 30 calendar days after receipt of the CAP. For immediate or other significant safety hazards, WMATA need not wait for TOC approval to take action or immediate hazard mitigation measures. In cases where TOC is unable to approve a proposed CAP, TOC will work with WMATA on a case-by-case basis to help formulate an acceptable CAP.

### **6.2.8.2 CAP Implementation, Verification, and Completion**

WMATA must adhere to the stated approach and timeframe specified in the CAP. To verify implementation and completion of a CAP, TOC will either obtain documents clearly demonstrating that the CAP has been effectively implemented, or conduct an on-site, in-person verification. TOC reserves the right to request specific documents to verify CAP implementation and completion on a case-by-case basis. Section 11.4 of the TOC PS/P provides details on the type of verification information or documentation that must be provided by WMATA for the following categories of CAPs:

- Rules and Procedures Compliance
- Maintenance of Rail vehicles, Systems, Facilities and Equipment
- Engineering
- Training/Qualification/Certification
- SSPP, SEPP, and Other Plans, Policies, and Procedures

### **6.2.8.3 CAP Tracking**

TOC monitors CAP implementation through its access to the SMS Hazard Management Module. SAFE will collaborate with TOC to ensure that the SMS Hazard Management Module contains the most current information. CAP status will be formatted to show, at a minimum, all open/current CAPs and all CAPs that were closed within the last 30 days. WMATA closes its ISSR CAPs internally and separately from TOC closing them, as opposed to a singular closure process for all other CAPs. TOC will review CAP status independently, and will review selected CAP items with WMATA during various in-person meetings as needed.

### **6.2.8.4 Corrective Action Plan Technical Review Entity Process**

TOC and WMATA established the Corrective Action Plan Technical Review Entity (CAPTURE) process as a regular, in-person meeting intended to facilitate TOC verification of completion of CAPs. Unless specifically stated otherwise by the TOC Chair, CAPTURE meetings will take place monthly, at a time and location agreed upon by TOC and WMATA. Appropriate WMATA representatives from SAFE, RTRA, RTTO, and TIES will attend as needed to discuss CAP implementation and to provide verification documentation to TOC that CAPs have been effectively implemented. TOC members and consultant staff will be present at CAPTURE meetings to help verify CAP implementation and completion, and to receive status updates and progress reports on CAPs of a long-term nature.

## **7.0 Managing Safety in System Modification**

### **7.1 System Modification**

#### **7.1.1 TIES**

The Engineering Modification Instruction (EMI) process is the method utilized to assure that safety is not adversely affected by rail system modifications not subject to the System Safety and Security Certification Process. This includes evaluation and assurance that a proposed modification does not adversely affect a system, vehicle, equipment or facility previously certified under the System Safety and Security Certification Process. The SAFE Deputy Chief, Rail Safety will ensure that the required safety analysis is performed on the proposed modification to identify hazards that might arise because of implementation of the proposed modification. The Deputy Chief, Rail Safety will ensure that identified hazards are entered into the Hazard Management Process. CENI and CENV are responsible for defining the process for initiating, evaluating, processing, and implementing modifications or improvements to rail systems, vehicles, facilities, and equipment. For CENV EMI's, affected offices include: CMNT, TTDC, and QAAW. For CENI EMI's, affected office include: SMNT, TRST and SAFE. FYI, CENV uses Documentum for document work flows, and CENI uses SharePoint. A final EMI package is compiled for final review and approval by designated managers of affected offices. The approved packages is distributed to stakeholders including: SAFE, RTRA, RTTO, TRST, CMNT, SMNT, CENI, CENV, TTDC and QAAW as applicable. QAAW monitors the implementation of the modification.

Any proposed configuration change, except IT and CENI project management design changes, will be initiated by an EMI, and coordinated with RTTO, RTRA, SAFE, CENI, CENV, TRST, SMNT, CMNT, QAAW and CFO with documentation, including hazard analysis results, provided to support the economic or functional reasons for the changes. EMIs that involve a change to WMATA's standards shall be submitted to the Design Control Board for approval and inclusion in the standards. Configuration changes will be routed through the WMATA Design Control Board for review and approval in accordance with WMATA *Policy/Instruction 4.14/2, Design Control Board* and *Policy/Instruction 4.10/3, Configuration Control Management*. IT changes will be processed according to *WMATA P/I 15.1/3, Information Security* and *IT Standard 7.0*.

#### **7.1.2 BMNT**

The BMNT/BENG Bus Change Control Board (BCCB) meets monthly to review proposed changes to as-built configurations of Metrobus systems and equipment. The board authorizes temporary change notices (TCNs) for testing changes and makes recommendations as to final disposition to the Chief Engineer and Managing Director of Bus Maintenance (BMNT). The board maintains and distributes Change Notices (CNs) and Field Change Notices (FCNs) with an Engineering Modification Instruction (EMI) to the Shop and Division Superintendents. The BCCB is composed of individuals

appointed by the Chief Engineer and the Managing Director, BMNT. In addition to BMNT/BENG chairpersons and members, a member from MTPD, SAFE, Quality Assurance, Reliability Engineering and Training are also in attendance at these meetings. The quorum requires 2/3<sup>rd</sup> of the members be present at all meetings. Approval of any changes requires a 3/4<sup>th</sup> majority of the members present. All dissenting views are made part of the BCCB recommendations.

This method ensures that safety is not adversely affected by Bus system modifications.

## **7.2 New Systems/New Equipment**

Safety assurance of new systems, equipment and vehicles begins with the basic design and in the development of specifications to ensure that, safety requirements and standards are incorporated. Safety Design Reviews (see section 5.6.3, System Safety Design Review, page 75) are held to ensure that proposed designs meet safety requirements and are consistent with the requirements of *Policy/Instruction 4.10/3, Configuration Control Management*. Consideration is given to such items as system interfaces, human factors, environmental conditions, isolation of energy sources, materials compatibility, use and long-term storage of critical materials, emergency response capability, including emergency egress and rescue paths, fire sources and measures for protection, equipment layout, lighting requirements, and maintenance requirements. In these reviews, maximum use is made of existing data, reliability analyses, and other applicable design analyses and information. Hazard analyses or evaluations are conducted on test plans, procedures, and related test equipment; operational plans, procedures, and related operational support equipment; demonstration and evaluation plans, procedures, and related support equipment; and on maintenance plans, procedures, and related maintenance equipment. Results of these analyses or evaluations are used to verify the required safety level or to identify the necessary changes for incorporation into the safety provisions.

Testing is performed on critical components and assemblies as indicated in safety reviews to identify hazards. The SAFE Deputy Chief, Rail Safety ensures that Identified rail related hazards are entered into the Hazard Management Process for resolution. The SAFE Deputy Chief, Bus and MetroAccess Safety ensures that bus related hazards are entered into the Hazard Management Process for resolution. The inherent safety of equipment and its impact on WMATA as a system is demonstrated during system testing and demonstration activities.

WMATA is planning to implement a program to provide configuration control of the technical documents relating to the WMATA Metrorail and Metrobus infrastructure. A pilot has been established to demonstrate the feasibility of utilizing the Documentum software program for this purpose. The initial phase was in the systems engineering aspects of the Metro Matters Traction Power Update project. In addition to providing any WMATA employee web based access to the as-built electrical documents associated with this project, it also provided advanced document search capabilities with the addition of Metadata/attribute information associated with each technical document,



plus it established basic file folder structures and user privilege levels. Additionally, user features are also planned, such as a graphical user interface and an electronic document review and approval process.

The methodologies and business processes developed under OAP 200-06 to direct TIES EMIs are, broadly speaking, extensible throughout WMATA. In order to do so, WMATA is initiating a Product Life Cycle Management (“PLM”) program in 2014. This program will be responsible for:

- Implementing a PLM software tool to track asset design and configuration data from design or purchase of an asset to retirement;
- Working with all WMATA operational and engineering units to document (if necessary), reengineer as appropriate, and implement their processes for configuration management;
- Assure availability of configuration management and related data to all interested parties in the authority.

This program’s charter and schedule are scheduled for review and approval in the first quarter of 2015. The program’s steering committee will included a representative from Safety to assure compliance with the SSPP.

## **8.0 Safety and Security Certification**

### **8.1 Overview**

Safety and Security Certification (SSC) is the process of verifying that certifiable elements and items comply with a formal list of safety and security requirements developed for major construction, rehabilitation or vehicle procurement projects. Certifiable elements are those project elements that, as determined through hazard analysis and/or threat and vulnerability assessments, can affect the safety and security of customers, employees, emergency responders or the public. The requirements are defined by design criteria, contract specifications, applicable codes, industry safety, and security standards. SSC is applied to projects that may reasonably be expected to pose hazards or security risks to WMATA passengers, employees and emergency response personnel. SSC is accomplished through a collaborative effort between SAFE and the applicable Project Team, which may include representatives from other WMATA departments as well as Project contractors.

It is imperative that the SSC process is completed and all “unacceptable” and “undesirable” hazards and security risks, associated with the use of a new or rehabilitated system or facility are eliminated or effectively controlled prior to the start of in-service use. SSC of operational and non-operational elements for any new or rehabilitated rail line segment or rail related system or opening of a rail related facility must be fully completed prior to entering the pre-revenue demonstration phase of the project. The pre-revenue demonstration phase must be started a minimum of 30 days in advance of the anticipated opening date. This timeframe is required to allow RTRA, RTTO, TIES, SAFE and TOC to conduct an operations readiness review of the system or facility being placed into service. When establishing an opening date for the rail line segment, system, passenger vehicle use, or facility, this timeframe must be considered. Non-rail related facilities, vehicles, equipment, or systems are not permitted to be placed into service prior to the issuance of the Safety and Security Certificate.

The Safety and Security Certification Plan (SSCP) ensures:

- That design and operating hazards and security vulnerabilities are identified, evaluated and properly controlled or mitigated, prior to the commencement of passenger service;
- That all safety and security critical elements are evaluated for compliance with the identified safety and security requirements during the design, construction, installation, testing, and start-up phases of a project; and
- That WMATA systems are operationally safe and secure for customers, employees, emergency personnel and the public, prior to entering or re-entering after modification, revenue service or use by WMATA personnel.

The scope of the SSC process encompasses equipment, vehicles, facilities, including rehabilitation projects and operating and maintenance plans and procedures, including emergency response procedures:

- **Facilities:** Operations and maintenance facilities, bus bays and rail stations, Roadway, Park and Ride facilities, signal and communications systems buildings
- **System Elements:** Vehicles, voice and data communications, signal systems, grade crossings, third rail power, power substations, intrusion detection systems, fare vending machines
- **Equipment Maintenance and Inspection Training:** Maintenance facilities, automatic train control, communication systems, third rail power and substations, fiber optics, vehicles, automatic fare card collection equipment and mechanical equipment
- **Operations and Emergency Training:** Vehicle operators, field supervisors, controllers, vehicle mechanics, automatic train control technicians, communications technicians, automatic fare card collection equipment technicians, third rail power and substation technicians and mechanics, track inspectors, repairers and laborers, jurisdictional law enforcement, fire department and emergency medical personnel
- **Operations Plans and Procedures:** Emergency Preparedness Plans, rulebooks, standard operating procedures, emergency and contingency procedures.

## 8.2 Safety and Security Certification Plan

The *WMATA Safety and Security Certification Plan (SSCP)* (March 2012) is the document that implements the SSC program and process. The SSCP is intended to ensure compliance with the applicable regulatory codes: *Code of Federal Regulations* title 49, part 633, *Project Management Oversight*; *Code of Federal Regulations* title 49, part 659, *Rail Fixed Guideway Systems*; *State Safety Oversight* and *FTA Circular, C 5800.1*, August 1, 2007.

A project specific SSCP should be developed and implemented during the preliminary design phase of the project, for WMATA major capital projects of \$100 Million or more that receive FTA funding. Examples of project specific SSCPs are new vehicle procurements or system extensions.

## 8.3 Safety and Security Certification Process

The Safety and Security Certification Process consists of the following ten major steps that begin with system planning and design and continue into the start of revenue service.

- Step 1 Develop safety and security design criteria
- Step 2 Identify safety and security certifiable elements and prepare certifiable Items List (CIL) of safety and security requirements
- Step 3 Review compliance with design criteria conformance checklist
- Step 4 Perform construction specification conformance
- Step 5 Identify additional safety and security test requirements
- Step 6 Perform safety systems tests (normally as part of contractual requirements)
- Step 7 Monitor and verify that systems integration tests have been conducted
- Step 8 Manage "Open Items" from the Safety Critical Items List (SCIL)
- Step 9 Verify operational readiness
- Step 10 Issue overall safety and security certificate  
Issue safety and security verification report  
Conduct follow-up and final project closeout

The SSC process provides traceable verification that safety-critical (see Appendix C: Glossary of Terms) and security systems, subsystems, procedures and training programs have been reviewed for compliance with applicable transit related safety and security requirements.

A Safety and Security Certification Review Committee (SCRC) is established to oversee implementation of the SSC process and for ensuring that certifiable levels of operational safety and security items are completed and verified prior to the start of new revenue service, or the placement of rehabilitated facilities and systems into service/use. The SCRC is comprised of the CSO (or designee), who is the Chair, WMATA executives and senior managers, involved in and/or responsible for, or the end user of the products of the project and a TOC representative. The SCRC is a subcommittee of the ESC. The SCRC is involved in the Hazard Management Process of the project and reviews all identified unacceptable and undesirable hazards and the resolution of such hazards. The SCRC forwards the resolution of identified unacceptable and undesirable hazards to the ESC, which approves the hazard resolution and forwards the resolution for unacceptable hazards to the TOC for its review and approval. The TOC performs SSC reviews in accordance with section 15 of the TOC PS/P.

The CSO and/or ESC reviews and approves proposed restrictions, exceptions or acceptable equivalencies to be added to the Safety and Security Certificate, only when absolutely necessary, in the event a portion of the system will not be available on time or if equipment to be placed into service is not complete. Such approved restrictions, exceptions or acceptable equivalencies will be assigned completion dates, at which time they will expire. The completion of the work and the resulting removal of the restrictions, exceptions or acceptable equivalencies will be closely monitored by the ESC via the SCRC. The Final Safety and Security Certificate for the project will be issued when the work, on the affected portion of the system or the equipment, is completed and it is verified that the hazard or discrepancy is permanently resolved and approved restrictions, exceptions or acceptable equivalencies may be removed.

The Safety and Security Certification Verification Report and the final Safety and Security Certificate are reviewed and approved by the SCRC. The report summarizes the safety and security certification effort and the readiness of the line segment, facility, or system to be placed into service; an annotated matrix of the Critical Items List indicating the status (open/closed) of each item; Open Items List; and recommended actions and schedule for permanently closing out all open items, restrictions, and approved temporary measures. The report includes copies of the certification checklists, Certificates of Compliance for each certifiable element, and the System Safety and Security Certification document. The Final Safety and Security Certificate is signed by the CSO and the GM/CEO. This document certifies that all facilities, vehicles, equipment and procedures function in a safe and secure manner and that the facilities, systems, equipment, or vehicles are safe and secure for revenue service or use by the Authority. The Safety and Security Certification Verification Report and the Final Safety and Security Certificate for rail projects are submitted to the TOC for its review.

The CSO, subject to the GM/CEO's approval, can apply the requirements of the SSCP to any project that is not covered by *Code of Federal Regulations* title 49, Part 633. Resource availability is considered when making these determinations.

## **8.4 BUS Safety Certification**

Bus Engineering (BENG) Safety Certification is the process of verifying that certifiable elements comply with a formal list of safety and security requirements developed for bus procurement projects. Certifiable elements are those project elements that can affect the safety and security of customers, employees or the public. The requirements are defined by design criteria, contract specifications, industry safety and security standards.

The BENG Safety Certification Process includes the following:

- Safety Certifiable Checklist which lists the inspection item, the requirement/specification for that item, the inspection instruction, actual findings, the name of the safety officer who performed the inspection, date inspected and remarks that include any discrepancies found and the date the discrepancy was resolved.
- Pre-delivery Configuration Audit is a guide for inspection on at least one bus (first article) for each order and is performed by the on-site inspector.
- Certificate of Compliance from the bus manufacturer signifying that all applicable safety and security requirements have been completed and the indicated buses can be placed into service. This document is signed by the Chief Safety Officer, AGM- Bus Services, Chief-MTPD, DGM-Operations and the General Manager.

The above documents are attached to a memorandum from the Managing Director, BMNT through the AGM-Bus Services and is sent to the CSO-Safety seeking a Certificate of Compliance for a designated fleet of buses. Once approval is received, the buses are then placed in revenue service.

## 9.0 Safety Data Acquisition

### 9.1 Safety Data Overview

SAFE is implementing a Safety Measurement System (SMS) to collect and analyze safety data and generate safety reports for distribution to executive, senior and middle management and TOC (rail data only). The SMS was implemented for BUS July 1, 2010. Implementation for RTRA, RTTO, TIES, and MACS is now complete. The SMS is the application used by BUS, MACS, and RTRA, RTTO and TIES to enter and manage all accident and incident data. The SMS integrates the data from existing WMATA enterprise applications, ensuring that SAFE has access to the safety related data of all WMATA departments. SMS applications for hazard management are under development for safety and security audits and OSHA compliance, hazard identification and hazard mitigation and hazard tracking. The SMS will be used to track the implementation and closure of corrective actions to eliminate or control hazards. One capability of the SMS is to notify, automatically, via e-Mail, the appropriate SAFE staff and departmental staff of any required action regarding a hazard.

The following are sources of data, integrated through the SMS that SAFE utilizes to collect data and identify hazards for entry into the Hazard Management Process:

- Reports and observations from operators and other field personnel regarding hazards associated with Authority vehicles, schedules, routes, policies and procedures
- Information, experiences, and ideas from support departments
- Observations of facilities and operations hazards, by administrative personnel.
- Results from drills, exercises and emergency response to accidents and incidents
- Formal hazard analyses using the inductive process by analyzing system components to identify failure modes and effects on the system and personnel. Failure modes include conditions such as doors or switches failing to open or close, or acting improperly or inadequately. Examples of formal hazard analyses include Preliminary Hazard Analysis (PHA), Operating Hazard Analysis (OHA) and Failure Modes and Effects Analysis (FMEA).
- Formal hazard analysis using the deductive process to identify sequential and concurrent conditions, which are required to support a specific operation or task. An example of this type of analysis is the Fault Tree Analysis and TapRoot® analysis.
- SAFE conducts inspections and audits of facilities and equipment to identify and document safety, environmental and industrial hygiene hazards on a proactive

basis. The criticality of hazards identified during inspections is determined by SAFE and is included in the inspection report. Most hazards identified during inspections are corrected or mitigated in a short period. If hazards are identified, which might be system-wide or that would require design work and special funding, they would be entered into the SMS Hazard Management Module by SAFE and tracked to completion.

- TRST, SMNT, CMNT, BMNT, ELES, QAAW, SAFE (CQAL) and PLNT perform preventative maintenance and periodic inspections and audits in accordance with established procedures described in SSPP Elements 14 and 15. Inspection information is entered into the maintenance application MAXIMO. MAXIMO is used by TIES and BMNT to generate work orders for repair work on vehicles, equipment and facilities. Reliability and failure data is also generated from MAXIMO. SAFE data analysts have access to this information and review it daily as a source for identifying hazards. MAXIMO is also integrated into the SMS.
- SAFE can access the General Orders and Track Rights System (GOTRS) to review planned work on the rail system. Reports can be generated from GOTRS by SAFE to evaluate work sites and review how work sites are established by TIES forces. Because ROCC enters daily controller notes and actions directly into GOTRS, SAFE can generate reports to evaluate compliance with SOPs and work rules by those crews performing work in the rail system. In this manner, SAFE can identify hazards, rules and SOP violations for follow-up action and for entry into the Hazard Management Process.
- SAFE staff may use TapRoot® software to review accidents to identify the root cause of the accidents, identify and analyze hazards and develop corrective action plans. TapRoot® will also be integrated into the SMS.
- RTTO's Blackberry based application is used to perform ride checks of train operators by RTTO field supervisors. Each supervisor conducts five (5) ride checks per day. This data is incorporated into the SMS, which allows RTTO supervisors to notify SAFE of hazards and allows SAFE to review the data for purposes of hazard identification. Identified hazards are then entered into the Hazard Management Process by SAFE personnel.
- The Customer Service Branch receives comments, complaints and commendations from Metro customers and the public. Safety related issues are forwarded to SAFE for evaluation and follow-up action. SAFE determines if this information should be entered into the Hazard Management Process and if so, tracks the hazard to resolution.
- The Workers' Compensation and Third Party Claims database is also integrated into the SMS and is another source of data used to identify hazards. The SAFE data analyst reviews this information daily and enters identified hazards into the Hazard Management Process.

- SMS also provides access to safety related data in Trapeze (route planning and scheduling) and various People Soft applications, including training records applications.

BOCC, ROCC, MACS OCC, and MTPD Communications provide accident and incident notification to SAFE via an automated, wireless-based text messaging system; e-Mail incident reporting system; and telephone contact of SAFE personnel on a 24/7 basis. Notifications are made to SAFE in accordance with the criteria set forth in SSPP section 10.2, the *WMATA Incident and Accident Investigation Policy*, P/I No.10.4/0; and the FTA National Transit Database (NTD) reporting criteria. In addition to those criteria, BOCC and ROCC report any accident, through the SMS, that results in the rendering of first aid and/or the transport to a medical facility of one or more passengers. SAFE utilizes this information from initial notifications, in conjunction with SMS reporting, as a starting point for its collection of accident and injury data and reports.

SAFE develops the required reports to provide safety management information to executive and senior management and to the WMATA Board Safety and Security Committee and the TOC.

## **9.2 Access to Data Reports Prepared by SAFE**

SAFE produces and distributes the following reports throughout the Authority to communicate safety data to all levels of the organization:

- Internally Distributed Reports
  - Rail Passenger and Transit Facility Occupant Injuries
  - Bus Accidents – Report of passenger and collision accidents by type
  - Reports of employee injuries by type and cause are forwarded to regional safety officers for distribution to the managers of their assigned facilities.
  - Safety Performance Reports  
A Safety Performance report is submitted quarterly and annually to the WMATA Board Safety and Security Committee and TOC. The report provides accident rate data regarding bus and rail passengers. Employee and contractor lost time injury data in the construction and industrial areas are reported.
  - Monthly Safety Report  
This report is submitted monthly to the GM/CEO and ESC. This report includes the activities performed by SAFE staff for the previous month, safety performance data, and it tracks the progress of accident investigations, internal safety and security audits and hazard resolution.



- Daily Accident/Incident Reporting  
Accidents and Incidents are recorded daily by RAIL and BOCC in SMS.
- Reports Submitted to External Agencies
  - FTA – National Transit Database  
Requires monthly and real-time reporting of incidents
  - Tri-State Oversight Committee  
Annual report of internal safety and security audits, Preliminary Accident, Incident and Unacceptable Hazardous Condition Reports and Chronology of Events, Accident/Incident/Unacceptable Hazardous Condition Investigation Oversight Record, Monthly Management Report and Quarterly Accident and Unacceptable Hazardous Condition Summary Reports.
  - APTA – Annual Summary of Bus Data  
Includes operations, maintenance and accident data, submitted as part of a competition among transit bus operators for an annual safety award.

## **10.0 Accident/Incident Notification, Investigation and Reporting**

### **10.1 Overview**

Investigations are performed in accordance with the WMATA, *Incident and Accident Investigation Policy*, P/I No. 10.4/0 and the TOC PS/P. Under *Code of Federal Regulations* title 49, part 659.33 (accident notification) and part 659.35 (investigation), *Rail Fixed Guideway Systems; State Safety Oversight*, the TOC is required to conduct investigations of those accidents and incidents of which it is notified. These requirements are defined in the TOC PS/P in section 8.1 and hazardous conditions are defined in section 10.2. In accordance with section 9.0 of the TOC PS/P: WMATA may investigate TOC reportable accidents and hazards on behalf of the TOC; TOC may conduct the investigation; another agency may conduct the investigation; or the investigation may be jointly conducted by TOC and WMATA. Unless otherwise noted, in accordance with section 9.0 of the TOC PS/P, the standard method for accident/incident investigation will be for WMATA (SAFE) to conduct the incident or accident investigation on the TOC's behalf.

The ESC and its subcommittees review investigation reports of accidents and incidents defined in section 9.2. NTSB recommendations and TOC approved corrective action plans are tracked to completion by SAFE and reviewed by the ESC and WMATA Board Safety and Security Committee as appropriate.

At the discretion of the chair of the ESC (CSO), an ad hoc investigation committee may be assigned to perform accident or hazardous condition investigations, as an expansion of the SAFE investigation.

SAFE responds to and performs independent investigations of accidents defined in section 9.2, and serious injuries, major fires, yard derailments and as directed by the CSO. The data collected is provided to an ad hoc investigation committee, if established by the CSO, to assist with the investigation.

SAFE evaluates accident and incident reports provided by all departments and provides the appropriate level of investigation and/or follow-up to ensure that the required corrective action is implemented.

### **10.2 Accident/Incident Notification Criteria**

WMATA must notify TOC of all accidents and incidents that meet the requirements of section 8.1, of the TOC PS/P, "Notification Procedures for Accident/Incidents." (See Exhibit 6-4, page 100).

### **10.3 Internal Accident/Incident Notification Procedure**

SAFE shall be notified (within 10 minutes) of the types of accidents/incidents listed in section 10.2 and of other accidents and incidents as stipulated in the *WMATA Incident and Accident Investigation Policy*, by the ROCC, MOC, and MTPD Central Communications. BOCC, MACS OCC, and MTPD will notify SAFE of bus/paratransit related fatalities, bus/paratransit collisions with persons, bus/paratransit fires and bus/paratransit collisions resulting in property damage equal to or exceeding \$25,000. Notifications shall be made to the SAFE On-call Safety Officer. SAFE issues a monthly on-call schedule to OCC, MOC, and MTPD and provides additional contact information for SAFE personnel.

### **10.4 External Accident/Incident Notification Procedure**

If an accident occurs that meets any of the criteria in section 8.1 of the TOC PS/P, the SAFE Manager, Rail Safety or the Deputy Chief, Rail Safety must notify the TOC Chair (or a designated TOC representative) by phone or via wireless mobile device within two (2) hours of the accident's occurrence. Where WMATA shares track with the general railroad system, it is subject to the FRA notification requirements and shall notify TOC within two (2) hours of an incident for which WMATA must also notify the FRA (via the National Response Center [NRC]). If WMATA is unable to contact the TOC Chair or designated TOC representative by phone, WMATA must try other TOC members until someone is contacted. If WMATA is unable to contact any TOC members, they may leave a message as a voice mail or on a pager. In addition to a phone call, WMATA must provide a written e-Mail notification to all TOC members and to TOC's consultant.

WMATA must provide the following information as the initial 2-hour verbal and e-Mail notification to TOC:

- Caller's name and contact phone number
- Time and date of accident/incident
- Type of accident/incident
- Location and direction of travel of incident
- Transit vehicle identifying information, including: line, direction and vehicle number
- Information about any other vehicles involved
- Number of persons injured and requiring medical attention away from the scene and number of fatal injuries
- Estimated property damage (in dollars)
- Description of the accident/incident
- Description of accident investigation activities completed and anticipated in the short term
- Status of investigation by WMATA and any other investigating agencies, and whether or not the accident has been or will be reported to another oversight agency such as the NTSB

- Preliminary determination of cause, if available

WMATA will also generally notify TOC of certain incidents, hazards, and events that WMATA and TOC agree are severe enough to warrant such notification, even if they do not meet the notification criteria listed above. TOC will work with WMATA on a case-by-case basis to determine if such incidents, hazards, and events merit an investigation and associated reporting.

SAFE notifies the NTSB, via the National Response Center (NRC) (800-424-0201), no later than two (2) hours after an accident that results in the following:

- 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;
- Damage to a tank car or container resulting in release of hazardous materials or involving evacuation of the general public; or
- A fatality at a grade crossing.

SAFE notifies the NTSB, via the NRC, no later than four (4) hours after an accident, which does not involve any of the circumstances above but which results in the following:

- Damage (preliminary estimate) of \$150,000 or more for repairs or the current replacement cost, to railroad and non-railroad property; or
- Damage of \$25,000 or more to a passenger train and railroad and non-railroad property.

## **10.5 Accident/Incident Investigation Procedures**

In accordance with section 9.2, of the TOC PS/P, the TOC may authorize WMATA to conduct an accident/incident investigation on the TOC's behalf. Unless otherwise noted, this will be the standard method for accident/incident investigation, that is, WMATA shall generally assume responsibility for the investigation of accidents and incidents unless specifically noted otherwise by TOC. As stated above, TOC must review and formally adopt WMATA's accident and incident investigation procedures.

Accidents and incidents affecting or occurring in the Metrorail, Metrobus and MetroAccess systems are investigated in accordance with the *WMATA Incident and Accident Investigation Policy*, P/I No.10.4/0. All accidents and incidents are investigated. The degree of formality during the process of accident/incident investigation is directly dependent upon its severity. RISK, Third Party Liability, investigates all accidents for adjudicating claims arising from such accidents. Bus Service Operations Managers investigate all bus accidents. MetroAccess supervisors investigate MetroAccess accidents. At the discretion of the CSO or at the request of the AGM/ACCS, SAFE may conduct investigations of major MetroAccess accidents including those resulting in fatalities and multiple hospitalizations.

### **10.5.1 Investigations of Fatalities, Derailments, Collisions, or Fires Resulting in Property Damage Exceeding \$25,000.00**

Accidents and incidents meeting the criteria set forth in section 8.1 may be investigated by an ad hoc investigation committee as determined by the CSO. SAFE and/or the “GO Team” are the primary field investigative arms of an ad hoc investigation committee.

### **10.5.2 TOC Conducts Investigation**

TOC, at its discretion, and depending upon the particular circumstances of the accident, may choose to conduct an investigation of the accident utilizing its own personnel or a TOC authorized consultant. All TOC authorized accident investigation personnel are granted authority under the TOC SSO Program to conduct an investigation and evaluate records, materials, data, analysis, and other information, which is pertinent to the investigation. WMATA will provide to the TOC investigation team the resources and information necessary to conduct the investigation in an effective and efficient manner. The TOC on-site team will wait until WMATA and/or other emergency response personnel have secured the accident scene before commencing its on-site accident investigation. TOC reserves the right to request that WMATA hold the accident scene to the maximum extent feasible until the arrival of the TOC accident investigation team. TOC will assess physical evidence of the accident scene including, but not limited to damage and debris analysis, skid mark analysis, and the use of measurements, diagrams and photographs. TOC accident investigation personnel will conduct field analysis, operational surveys, interviews, record checks, data analysis, and other on-site and off-site tasks that may be necessary for a comprehensive investigation. TOC will also assess compliance with operating rules and procedures; conduct follow-up interviews (if required); analyze employee records and the results of post-accident drug and alcohol tests; and conduct vehicle and equipment inspections. TOC will comply with the American Public Transportation Association (APTA's) *Operating Practices Standard RT-OP-002-02: Recommended Process for Performing Rail Transit Accident/Incident Investigations*.

### **10.5.3 NTSB Conducts Investigation**

The NTSB may investigate a reportable event to achieve its primary function to promote safety in transportation. In such case, the NTSB is responsible for the investigation; the determination of facts, conditions, and circumstances; the cause or probable cause or causes; and recommendations to reduce the likelihood of recurrence of an accident or incident.

In the event of a NTSB investigation, TOC should participate as an official party to the investigation, and WMATA should conduct its investigation and investigate on TOC's behalf. TOC will support the NTSB as a member of its party system. WMATA shall provide TOC with a copy of all written correspondence to the NTSB concerning a reportable event or investigation and shall provide TOC a copy of all NTSB reports and any recommendations concerning the event or its investigation, upon receipt by

WMATA. TOC will assist the NTSB by providing information requested about WMATA critical practices and other matters as appropriate.

#### **10.5.4 Joint Investigations Conducted by TOC and WMATA**

WMATA and TOC may choose to conduct a joint investigation of the accident. WMATA and TOC may use WMATA's procedures, TOC's procedures, or a combination of the two procedures to investigate the accident. The procedures to be used must be established prior to the investigation and agreed upon by both WMATA and TOC. The resulting report becomes TOC's report of the accident as required by the SSO Rules.

### **10.6 Accident/Incident Reporting and Documentation**

For rail related accident investigations, SAFE must comply with the TOC requirements in section 9.0 of the TOC PS/P. SAFE is also responsible for investigating and preparing comprehensive accident investigation reports for bus accidents, MetroAccess accidents, employee accidents, contractor employee accidents (as determined by the CSO) and environmental incidents. *The WMATA Incident and Accident Investigation Policy P/I No. 10.4/0* and the *WMATA Contractor Safety and Environmental Manual (2011)* provide guidance for these investigations.

#### **10.6.1 TOC Requirements**

Accident/incident investigation reports, comprised of reports from operations, maintenance, as appropriate, and SAFE investigation documentation as appropriate, must be sent to the TOC according to the following schedule:

- **Initial Notification:**

Basic information about the reportable accident/incident must be transmitted verbally and via e-Mail to the TOC, as set forth in section 8 of the TOC PS/P.

- **Preliminary Report:**

As soon as possible after the accident/incident, but within three (3) business days, WMATA must fax, e-Mail, or hand-deliver preliminary written information, including any investigation summary information, preliminary reports from field personnel and other available information to the TOC.

- **Investigation Status Report:**

The TOC may request from WMATA, a report indicating the status of an investigation, including any significant new reports or report components, and any preliminary investigation conclusions within 10 days of the accident/incident. If the investigation process is not complete within 30 calendar days of the occurrence, WMATA must submit an Investigation Status Report including an

adjusted schedule for the completion of the investigation. WMATA will implement an investigation status tracking system that will send e-mail alerts to SAFE management about upcoming due dates for investigation reports in an effort to provide more timely investigation status.

- **Draft Final / Final Accident-Incident Investigation Report:**

At the conclusion of its investigation, WMATA must submit to the TOC a draft final accident or incident report authored by SAFE or its authorized representative. At a minimum, the draft final written report must meet all of the requirements set forth in section 9.1 of the TOC PS/P (the information included below). The TOC will work with WMATA to close accident/incident investigations with consideration of needed investigative processes, including (but not limited to) transportation investigations, derailment reports, police investigations, medical examiner reports, and other required materials to close an accident/incident investigation.

All draft final accident/incident reports produced for the TOC (and referenced throughout this section) must contain, at a minimum, the information contained in the list below [from *Code of Federal Regulations* title 49, part 659.35 (d)]:

- Description of investigation activities
- Identification of causal and contributing factors
- Corrective action plan to prevent recurrence, and to address a specific finding, recommendation, or other conclusion of the report. (This may comprise corrective actions already taken, in which case no further corrective action plans may need to be developed.)

More information may be included, based on WMATA's accident investigation procedures or external recommendations (such as APTA *Accident Investigation Procedure Standards*, RT-SOP-002-02). The TOC may request more information in order to gain information about a particular accident/incident or about accident information trends.

Unless the TOC specifically requests that WMATA's designated safety and/or security staff produce their own accident investigation report, WMATA may use multiple documents (e.g., field reports, analyses, logs) to fulfill the report content requirements in this section. WMATA may also use a summary report to help fulfill the reporting requirements in this section.

In cases where non-SAFE reports are used to make up the draft final accident report, or where SAFE's summary report is the only available document, all of the content requirements in this section must still be met.

SAFE staff may use a summary report to outline the draft final accident/incident report content, or to highlight its location in other departments' reports. This

summary report may be a completed, hand-written form, a database report, or some similar document. SAFE representatives are encouraged to review the format of such reports with the TOC to ensure that their content is sufficient to address TOC (and FTA) requirements.

For “high severity” accidents, generally including those listed below, the TOC will require that SAFE issue a formal written report. These accidents/incidents will include, but not limited to the following:

- Accidents with a significant number of injuries
- Accidents with fatalities
- Accidents which, upon preliminary report, involve a seemingly significant unmitigated, unidentified, or non-quantified risk
- Accidents/incidents involving vehicle, infrastructure, rules, or systems anomalies that have caused or could cause significant loss
- Accidents/incidents where a more independent investigation is deemed necessary

As part of this investigation methodology, the TOC may explicitly request a formal SAFE report containing all factual, investigative, and corrective action information. Alternatively, the TOC may request, or WMATA may suggest, that a SAFE memorandum or other document be used to address specific issues or information deficiencies in operating, maintenance, or engineering reports. Formal reports will generally require additional and/or more detailed information than a standalone summary report.

If the TOC requires more information, it will notify WMATA. TOC may periodically provide WMATA with a copy of the TOC Accident/Incident Tracking Database to outline what accident/incident report documentation has been received and what additional documentation it requests of WMATA for each open accident/ incident.

If the TOC requests changes to the report, WMATA shall revise the draft final report according to a period to be determined jointly by TOC and WMATA on a case-by-case basis. If the TOC does not require more information, TOC may formally approve a Draft Final investigation report, including any associated reports, conclusions, and corrective actions, in accordance with the TOC approval process in section 9.2 of the TOC PS/P. Upon receipt of the TOC approval for the draft final report, WMATA will remove the draft watermark and create a final version of the report. The final report will include a transmittal cover letter to the TOC with the CSO’s signature. The TOC will in turn transmit an official letter adopting the Final Report. WMATA will then attach the TOC’s approval or adoption letter to the final report and consider the incident investigation closed.

In the event that significant safety issues identified by TOC or WMATA in the course of an accident or incident investigation remain unresolved, TOC may



elevate such concerns to the highest levels of the respective TOC jurisdictional agencies, the WMATA GM/CEO, and the WMATA Board of Directors.

For investigations performed directly by TOC, within 45 calendar days of completion of the on-site and off-site accident investigation requirements, the TOC investigation team will prepare a draft accident investigation report. The draft accident investigation report will be provided to WMATA for its review. Comments will be due to TOC 30 calendar days after initial receipt of the draft report.

Any urgent findings/hazards identified will be brought to the immediate attention of WMATA so that WMATA can prepare and implement the appropriate response.

In the event that the NTSB conducts an investigation and the NTSB releases preliminary findings and recommendations from its investigation, TOC is authorized to participate in any discussions and reviews with WMATA and the NTSB. TOC and WMATA will review the NTSB findings, draft report, and draft final report, and make a determination of whether or not to adopt the NTSB report and recommendations. Should the NTSB recommendations be adopted by TOC as its own, WMATA shall implement the recommendations. If TOC does not formally adopt the NTSB investigation report as its own, TOC will prepare its own report. WMATA will then develop and implement TOC approved CAPs required from the TOC investigation report. The decision of the TOC not to adopt a NTSB investigation report as its own does not preclude WMATA from independently evaluating, accepting and implementing the NTSB recommendations.

### **10.6.2 WMATA Requirements**

All employees having a direct knowledge of an accident or incident must file a written report as required by the MSRPH and BSEH. Accidents and incidents are investigated by SAFE, and the office involved, in accordance with WMATA Policy/Instruction 10.4/0, *Incident and Accident Investigation*. Rail accidents and incidents are reported and investigated in accordance with the TOC PS/P. Reports are submitted for evaluation to SAFE, which in turn may conduct additional investigations when required.

All accident and incident reports are reviewed by SAFE and the involved office to determine cause, identify corrective actions, and make recommendations, to prevent recurrence.

All accident and incident reports are evaluated to determine any additional actions that are required, to initiate response to any recommendations that require action by departments other than the involved office, and to determine if additional investigation is required.

Information regarding accidents, incidents and system operation is obtained through the following reports:

- Reports generated from the Safety Measurement System
- SAFE maintains and distributes a computerized OSHA 300 Occupational Injury and Illness Report
- Risk Management reports regarding Workers' Compensation and Third Party Claims generated from the Sedgwick database

## **10.7 Corrective Action Resulting from Accident Investigations**

The corrective action process is described in SSPP section 6.2.8

## **10.8 Coordination with State Oversight Agency**

WMATA coordination with TOC, regarding accident investigation, notification, reporting, audit findings, hazard investigation, notification, reporting and resolution and development and management of corrective actions is described in detail in sections 10.1 through 10.7.

## 11.0 Emergency Management

### 11.1 Responsibilities for Emergency Management

The WMATA Office of Emergency Management (OEM) is part of MTPD, and works to support all WMATA departments as needed. All of the goals and activities of OEM involve safety as the top priority and therefore blend with SAFE's responsibilities and activities.

WMATA emergency management focuses on the preparedness, response, recovery, and mitigation of incidents and regional special events that affect WMATA transit operations. When events or incidents occur that impede WMATA's normal transit operations, the impact can cause transportation issues from a very localized to a regional scale. Effective emergency management minimizes these adverse impacts to transit operations, which also minimizes negative impacts to the National Capital Region transportation network.

Emergencies may be caused by natural phenomena or because of human generated incidents and may range from minor service disruptions to mass casualty incidents. During all emergencies, WMATA's first priority remains the same, preserve life safety. When an emergency results in the need for medical assistance or, in certain cases of fire alarms, WMATA relies on jurisdictional Fire and EMS Departments to respond. The Fire and EMS Departments are the region's trained experts in assessing fire or hazmat hazards, providing medical assistance, and performing extraction, recovery, and triage tasks at the incident scene. During minor emergencies without injuries or critical safety issues to passengers and employees, WMATA works with its depth of internal resources to resolve the incident to maintain safe and normal operations. It is important to note that WMATA, like any transit agency, effectively handles minor incidents or delays that occur in a transit system on a routine basis (such as a bus being taken out of service or a mechanical malfunction on a train). However, there are special events and incidents that can create a significant impact to transit operations and may sometimes require the need for external resources.

In the event of severe weather, major emergencies, natural disasters and other larger scale incidents, WMATA has an Emergency Command Center (ECC) designed for effective emergency management. This ECC includes information technology and communications tools for coordinating resources and managing the emergency from Metro's perspective. The management of this ECC works in concert with the *WMATA Emergency Operations Plan*.

Emergency preparedness includes: providing transit fire/life safety and emergency management training to WMATA employees and first responders, revising emergency plans, ensuring policies and procedures work in concert with WMATA emergency management practices, frequent public outreach events, presentations to transit and first response partners, equipment testing and maintenance and community involvement.

Planning and community involvement are primary ways in which WMATA fosters partnerships with regional first responders which strengthens WMATA emergency management practices. WMATA coordinates its emergency planning efforts with the agencies/groups described below.

### **11.1.1 Metropolitan Washington Council of Governments**

The Metropolitan Washington Council of Governments (COG) was formed in 1957, by elected officials, from the major cities and counties in the metropolitan Washington area. These officials recognized the need to develop a region-wide consensus to solve major area problems. Today, COG is the only metropolitan-wide governmental organization concerned with all aspects of metropolitan activity in the metropolitan Washington area. COG works toward solutions to such regional problems as crime, traffic congestion, fire, medical emergencies, natural and human-generated disasters, inadequate housing, air pollution, and inadequate commercial and employment opportunities. Many of these activities involve WMATA, especially in the area of fire and life safety.

WMATA emergency management personnel regularly participate in several COG committees/subcommittees including the COG Fire Chief's Committee, Passenger Rail Safety Subcommittee, Heavy Rail Safety Subcommittee, the RESF-1 Transportation Committee, and the Emergency Manager's Committee, the Regional Planners Subcommittee, and the Critical Infrastructure Protection Working Group. COG is a forum in which WMATA can coordinate with regional partners and voice issues, concerns, or solutions for the region. Due to COG efforts, WMATA has been involved with several regional exercises. Additionally, WMATA contributed to the revision of the *Metro Rail Transit Fire/Rescue Emergency Procedures Policy Agreement* approved by all jurisdictional Fire Chief's and WMATA's GM/CEO in November 2011.

#### **11.1.1.1 Passenger Rail Safety Subcommittee, Heavy Rail Safety Subcommittee**

The Passenger Rail Safety Subcommittee meets in the even numbered months while the Heavy Rail Safety Subcommittee meets in the odd numbered months. The Passenger Rail Safety Subcommittee is comprised of fire officials from the jurisdictions, COG staff, MTPD/OEM staff and RTRA and RTTO staff. The Heavy Rail Safety Subcommittee includes representatives from OEM, COG, AMTRAK, CSX, MARC and VRE. These subcommittees provide means for fire/rescue departments and WMATA to work together on Metro-related fire emergency equipment, procedures and emergency preparedness. The subcommittee also advises the Fire Chiefs on fire safety issues that arise within the rail and bus systems. WMATA recognizes the subcommittees' role in direct support to WMATA in the area of fire protection, life safety and emergency response. The major functions of the subcommittees are to:

- Provide liaison among personnel from fire/rescue departments and the staff of WMATA;

- Increase the efficiency of WMATA related fire/rescue services operational programs;
- Develop, update and maintain policies and procedures dealing with WMATA fire protection and life safety;
- Provide technical assistance and expertise in the development of equipment and systems for fire protection and rescue operations; and
- Provide liaison for fire service training programs and provide technical assistance and expertise in development of training for response to WMATA emergencies.

The subcommittees are informed prior to any planned change in WMATA configuration, which could adversely affect the safety of fire/rescue personnel or require substantial change in procedures for emergency response.

## **11.2 Fire Protection, Equipment and Life Safety Agreements**

These agreements describe the features of Metrorail systems and equipment required for compliance with pertinent statutes, and ordinances and regulations of the various jurisdictions served by WMATA. The agreements establish the criteria by which the acceptability of WMATA facilities and equipment are to be assessed and evaluated by the jurisdictions in which WMATA facilities are located.

## **11.3 Metrorail Transit Fire/Rescue Emergency Procedures Policy Agreement**

The *Metrorail Transit Fire/Rescue Emergency Procedures Policy Agreement* is a body of procedures developed by the regional Fire Chiefs of the greater Washington metropolitan area along with WMATA. These procedures outline the concepts used in emergency operation to ensure the safety of customers, WMATA employees and fire/rescue personnel during emergencies involving the Metrorail system.

These procedures provide for the coordination and performance of specific duties to mitigate rail emergencies in the Metrorail system. They are not intended to serve as the only set of governing procedures for WMATA or any jurisdictional fire service. The purpose is to provide a foundation on which specific and related operational procedures may be developed and implemented by WMATA and each responding fire/rescue service agency. As noted in section 11.1.1 this agreement was revised and re-issued in November 2011.

*(Copies of the aforementioned agreements are available from MTPD/OEM)*

## **11.4 Coordinated Schedule**

All OEM staff coordinates daily activities using a master calendar (Google) available from any internet connection. The calendar includes schedules for, WMATA departmental emergency response training, external agency emergency response training, exercises, drills, meetings and OEM staff leave. The calendar is maintained by

all OEM staff that may access and input training as it is requested by jurisdictional partners or other Metro departments. OEM participates in a daily conference call at 0730 Hours to review all scheduled activities on the coordinated calendar. This daily call provides an opportunity for OEM to further coordinate and resolve any scheduling issues.

## **11.5 Coordination with Regional Emergency Management Organizations**

MTPD/OEM works closely with jurisdictional Emergency Operations Centers to ensure an effective level of preparedness and response to Metrorail, Metrobus, and MetroAccess, regional emergencies and special events. MTPD/OEM personnel are assigned to the District of Columbia Emergency Management Operations Center during emergencies and major events when found necessary and when staff is available. MTPD/OEM liaises with emergency management personnel concerning WMATA bus, paratransit and rail operations. MTPD/OEM will serve as the WMATA liaison between key agencies responsible for regional evacuation and coordination.

## **11.6 Emergency Plans**

OEM is responsible for the development and management of emergency plans including the *Emergency Operations Plan* (EOP) and relevant annexes and the *Continuity of Operations Plan* (COOP).

The EOP outlines the established processes for managing large-scale incidents/emergencies and special events. The EOP is organized by emergency support functions (ESF) and includes annexes specific to certain threats and hazards (i.e., pandemic diseases and terrorism). This plan is scheduled to be reviewed, exercised, and updated annually.

## **11.7 Continuity of Operations Plans**

The Continuity of Operations Plan (COOP) addresses the emergency response and recovery in the event that the use of the Bus and Rail Operational Control Centers and WMATA Headquarters building is lost. New primary BOCC and ROCC have been established at CTF. Currently there are back-up facilities for the Emergency Command Center and back-up communication facilities for the bus and rail OCC and MTPD communications at JGB. MACS OCC backup facilities are at CTF and JGB as well. The COOP is scheduled to be reviewed, exercised, and updated annually.

## **11.8 Emergency Procedures**

Bus and rail emergencies, which endanger life, health, property, or revenue service, require response in accordance with WMATA rulebooks. Metrorail emergency response procedures are grouped together in the MSRPH. The MSRPH is distributed to all employees who are assigned to work on the Metrorail system. The MSRPH is

scheduled for revision and republication every two years. Modifications to existing rules and SOPs, or new rules and SOPs can be developed, distributed for review, concurrence and approval via the Special Order process. The new or modified rule or SOP is incorporated into the MSRPH at the next revision and republication. Bus emergency response procedures are issued in addition to the *Bus Standard Operating Procedures*.

## **11.9 Emergency Training**

OEM manages and maintains the Emergency Response Training Facility (ERTF) located at CTF. The FRA collaborated with WMATA to establish the first rail car Roll-Over Simulator in the United States to provide training to first responders for WMATA, MARC, VRE and AMTRAK incidents. Annually, WMATA trains over 3,000 local and state public safety personnel, federal law enforcement officers, and military counter-terrorism personnel. The facility is available as scheduled to WMATA departments and external agencies for emergency response training, Metro familiarization and other specialized training.

The group requesting training and use of the ERTF works with OEM staff to perform a needs assessment and develop a custom training session, exercise, or drill.

MTPD/OEM provides emergency preparedness and facility and equipment familiarization training for employees and Federal, state, and local emergency first responders at its ERTF. This facility houses a mock tunnel in which realistic emergency exercises are conducted with emergency first responders. Familiarization training is also conducted in the Metrorail and Metrobus facilities and in Metrorail yards and of Metrorail and Metrobus vehicles.

## **11.10 Emergency Exercises**

Metro is involved with many drills and exercises throughout the year. Exercises and drills are ongoing and a large part of Metro's preparedness and partnerships with regional first responders. A minimum of one large inter-agency exercise focused on a Metro emergency or incident is planned and conducted annually. To distinguish a large-scale exercise from other training (and for the purposes of tracking corrective actions). OEM defines a large-scale exercise as:

- 1) A drill or exercise including WMATA staff/employees and three or more local, state, and/or Federal partners
- 2) A drill or exercise taking place within the Metro system or at the Emergency Response Training Facility

A large-scale exercise allows Metro staff and jurisdictional first responders to practice and enhance emergency response and recovery skills based on a Metro incident or emergency scenario. OEM takes the lead role in coordinating this exercise for Metro.

Occasionally, one or several agencies approach Metro about hosting an exercise on Metro infrastructure or at Metro facilities. Metro works to accommodate such requests as best as possible acknowledging the benefit for all involved. While a partner agency may serve as the exercise lead, Metro plays a major role in the exercise planning and execution.

A “hotwash” or debriefing is held immediately or soon after the exercise. In addition, the agency leading the drill is typically responsible for creating the After Action Report and sharing it with participants. Metro reviews the After Action report in search of pertinent “strengths” and “areas for improvement.” Metro’s identified “areas for improvement” will become corrective actions if they have not yet been corrected. These corrective actions will be submitted to the TOC for review and adoption and tracked through the TOC Security Corrective Action Plans matrix by MTPD. The status of Metro’s large-scale exercises is recorded in the “MTPD Exercise Tracking List” maintained by OEM. Any safety hazards identified during the emergency exercises are submitted to SAFE for entry into the Hazard Management Process.

Funding is a major factor in the type and extent of Metro’s annual large-scale exercise. OEM is involved in COG and researches grant or other funding opportunities for these types of exercises. The degree of large-scale exercise is largely based on the funding available to support it. This may explain why one year Metro may have an extensive large-scale drill followed by a more modest exercise the next year.



## **12.0 Internal Safety and Security Audit Program**

### **12.1 Overview**

TOC PS/P section 6.0 requires that WMATA conduct comprehensive and continuous internal safety and security reviews to evaluate the quality and effectiveness of the implementation of the SSPP. *WMATA Internal Safety and Security Review Program Manual* No. ISSR-M-01 rev1 provides guidelines for conducting the Internal Safety and Security Review (ISSR) Process. This ISSR program also complies with the internal safety and security review requirements of the FTA regulation, *Code of Federal Regulations* title 49, part 659, *Rail Fixed Guide way Systems; State Safety Oversight*.

The CSO has been delegated specific responsibilities by the GM/CEO for monitoring the effectiveness of the implementation of the SSPP by the responsible departments. The ISSR process is the primary method used by the CSO to achieve those responsibilities. The ISSR process provides executive and senior management with a mechanism for verifying and documenting that the key elements of the organization are performing the specified safety and security functions and responsibilities.

The OIG will periodically, audit a WMATA function or activity that is an element of the SSPP independently from the ISSR process. SAFE reviews these reports for applicability to SSPP requirements and as a potential source for hazard identification.

### **12.2 Scope of Activities**

All WMATA safety activities and programs related to the Metrorail system are subject to planned, periodic and regularly scheduled safety and security audits throughout the life cycle of the rail transit system. The safety and security audit procedures and checklists evaluate the effectiveness of the implementation of the twenty-one (21) elements of the SSPP and the seven (7) required elements of the SEPP. Metro's Department of Bus Services participates in the voluntary Bus System Safety Management Program administered through the American Public Transportation Association (APTA).

The organizational units and functions, including SAFE, that are subject to the ISSR process are identified in the *Safety Responsibilities and Activities Matrix* in SSPP exhibit 5-1.

### **12.3 Internal Safety and Security Audit Process**

WMATA will perform comprehensive and continuous internal safety and security audits of its rail operations and those of appropriate WMATA contractors for compliance with the WMATA SSPP in accordance with the ISSR process, detailed in *WMATA Safety Rules and Procedures* No. 2.3/2, *Internal Safety and Security Audit Procedure*.

### **12.3.1 Integrity of the Safety and Security Audit Process**

SAFE manages the ISSR process. To maintain the independence and integrity of the ISSR process the CSO will work in cooperation with the Chief, MTPD. MTPD will provide auditing per this procedure of the implementation of those elements for which SAFE is responsible; conversely, SAFE will perform ISSR audits of the areas for which MTPD has implementation responsibility. Historically, the OIG conducts audits of certain programs for which SAFE has responsibility for implementing including environmental management and hazard communication.

The CSO may also retain the services of a qualified consultant to perform any or all of the duties prescribed herein under his or her direction and management. The CSO may also wish to provide expertise with contracted safety specialists with technical knowledge in particular areas for the enhancement of the safety and security audit team.

### **12.3.2 Cycle/Schedule**

WMATA will perform comprehensive and ongoing internal safety and security audits of its rail operations and those of appropriate WMATA contractors, for compliance with the WMATA SSPP, in accordance with the ISSR procedure, at least once every three years. Over a three-year period, all twenty-one (21) elements of the SSPP must be audited at least once. The three-year schedule showing the schedule for each department or contractor safety and security audit shall be reviewed and updated as necessary by October 1 of each year. A copy of the schedule shall be given to each department and contractor to be audited and to the TOC. The internal safety and security audit schedule (with any updates) is also included as an attachment to the Annual Internal Safety Audit Report submitted to the TOC prior to February 1 of each year.

Safety and security audits will be scheduled by the SAFE lead safety and security auditor, with the department to be audited, at least 30 days in advance of the mutually acceptable date. The lead safety and security auditor will officially notify the CSO of the date(s) of the audit, and provide supporting documentation, including document request and locations of the audit. The lead safety and security auditor also notifies the TOC at this time. TOC reserves the right to audit and approve WMATA's internal safety and security audits as conducted.

NOTE: No Bus internal or external audits are addressed in this document.

### **12.3.3 Checklists and Procedures**

Each internal safety and security audit will be conducted in accordance with a set of safety and security audit checklists prepared by the safety and security audit team and lead safety and security auditor before the on-site safety and security audit is begun. These safety and security audit checklists are prepared with the assistance of

documentation provided by the department to be audited, depending upon availability of such documentation. It is incumbent on all departments to formally document all required plans, programs, processes, protocols, methodologies and procedures in order that the documentation can be reviewed for this critical requirement of the ISSR process and for compliance with the SSPP. The checklists will also be developed in accordance with the principles of system safety, internal system safety and security auditing and the SSPP. The CSO shall ensure this checklist is submitted to the TOC prior to each scheduled safety and security audit per the TOC PS/P section 6.2.

#### **12.3.4 Safety and Security Audit Reporting**

The safety and security audit team shall prepare an internal safety and security audit report following the completion of the on-site safety and security audit. The internal safety and security audit report will include: 1) a narrative describing the safety and security audit process, activities, events and participants; 2) safety and security audit findings and recommendations; 3) proposed corrective action plans (CAPs) for identified deficiencies and areas of non-compliance; and 4) the completed safety and security audit checklists. The internal safety and security audit report is submitted to the TOC for its review and comment.

Once the TOC provides written approval of the CAPs, the internal safety and security audit report is finalized by SAFE and the final internal safety and security audit report is submitted to the GM/CEO by the CSO for approval. The GM/CEO approved final internal safety and security audit report, including the TOC approved Caps, are forwarded to the responsible executive (and/or contractor manager) within 90 days of the on-site internal safety and security audit, for implementation of the CAPs and recommendations. The CSO ensures that the final internal safety and security audit report and the TOC approved CAPs are submitted to the TOC as an “incremental internal safety and security audit report,” as defined in section 6.2 of the TOC PS/P.

The safety and security auditors’ recommendations for correcting deficiencies identified by the safety and security audit will be included in the internal safety and security audit report. However, the audited department or contractor has the ultimate responsibility for developing, approving and implementing an appropriate Corrective Action Plan meeting the approval of the GM/CEO, the CSO and ultimately the TOC. When corrective action is required, participation by SAFE or the safety and security audit team might be needed to examine the scope and extent of the underlying causes that led to the safety and security audit findings and recommendations.

The CSO will ensure that designated SAFE personnel monitor and follow-up on the implementation of the CAPs, and assist the department in tracking the CAPs to closure. The CSO will ensure that the CAPs included in all incremental ISSR reports are included as part of the annual report to the TOC as required by the TOC PS/P. WMATA closes its ISSR CAPs internally and separately from TOC closing them, as opposed to a singular closure process for all other CAPs.

The ISSR process should be a positive, cooperative process. In the event of disagreements with safety and security audit report findings or recommendations, the lead safety and security auditor will attempt to resolve the issues. In the event this is not successful, the CSO will work with the responsible executive to resolve outstanding issues. When necessary, issues or disagreements will be elevated to the ESC for final determination. Implementation of the CAPS generated from the ISSR findings and recommendations will be tracked via the Hazard Management Module of the SMS. A CAPS report will be provided to TOC and discussed during the monthly meetings per the TOC PS/P, section 4.2.

### **12.3.5 Annual Safety and Security Audit Reporting**

By February 1 of each year, WMATA will submit an annual safety and security audit report to TOC that documents the internal safety and security audits conducted in the previous year in accordance with section 6.3 of the TOC PS/P.

The WMATA annual report will include:

- A summary of the internal safety and security audits conducted for the previous year
- The completed internal safety and security audit checklists
- Findings and recommendations of the internal safety and security audit
- Suggested corrective actions to address the findings in accordance with CAP requirements
- A progress status of WMATA's three year schedule and potential obstacles with meeting the schedule
- The status of all findings, recommendations, and corrective actions resulting from the audits conducted that year
- Any challenges or issues experienced by SAFE or MTPD in implementing the Internal Safety and Security Auditing Program

Within 45 calendar days of receipt of the report, TOC will approve, conditionally approve, or state that it is "unable to approve" the report in a written response. If TOC does not approve the report, WMATA will have 15 calendar days to address noted deficiencies and requested changes in the report and submit a revised report to TOC. TOC, at its discretion, may arrange for a meeting with WMATA to discuss the noted deficiencies and requested changes.

In the event WMATA objects to a noted deficiency or requested change from TOC, it shall state its objections and suggest alternatives within 15 calendar days. TOC and WMATA shall audit the objections, suggested alternatives, and agree to an appropriate course of action within 15 calendar days. The revised and updated report shall be submitted to TOC for audit and approval within 30 calendar days after agreement on a course of action.

The annual safety and security audit report may be delivered to TOC in a format agreed to by the TOC Chair (electronic or hard copy). However, the report must be submitted in an unalterable format with all required approval signatures visible.

Along with the report, WMATA must also submit to TOC a letter signed by the GM/CEO certifying that WMATA complies with the SSPP and SEPP. This certification letter must describe compliance with all of the provisions contained in the SSPP and SEPP, and not just those elements that were subjected to internal safety and security audits in the previous year. For areas not in compliance, the transit agency is required to identify the activities to be undertaken to achieve compliance.

### **12.3.6 Coordination with the TOC**

SAFE coordinates the various aspects of the internal safety and security audit with TOC as described in sections 12.3.2 through 12.3.5. The CAP process is detailed in SSPP section 6.2.8

### **12.3.7 Safety and Security Audit Completeness**

The internal safety and security audit process is intended to be complete and comprehensive. SAFE is responsible for ensuring that all twenty-one (21) elements of the SSPP are reviewed in each three-year cycle and each element is comprehensively evaluated.

In addition to WMATA's approved SSPP, the safety and security audit team shall use standard operating procedures (SOPs), other pertinent documents and principles of system safety and security as a basis for preparing a set of safety and security audit checklists before beginning the on-site safety and security audit. Some typical examples of these procedures and other pertinent documents reviewed during the safety and security audits include:

- System operating rule book (*Metrorail Safety Rules and Procedures Handbook [MSRPH]*), Special Orders, Permanent Orders, Temporary Orders, written instructions, bulletins and procedures, *MTPD General Orders and Standard Operating Procedures*
- Safety-related *Operations Administrative Procedures (OAPs)*
- Manufacturers' and WMATA maintenance and operations manuals and procedures for vehicles, track and signals
- Training curricula and materials
- WMATA and departmental standard and emergency operating procedures (SOPs/EOPs)
- System design criteria and project engineering procedures for extensions and modifications
- Records and documentation of safety related events, tasks, processes, procedures, activities and policies
- Previous internal and external safety and security audit reports

- Corrective Action Plans
- NTSB accident investigation reports, other agency peer review reports
- All other documentation needed to verify safety and security related activities, programs and policies

## 13.0 Rules and Procedures Compliance and Review

### 13.1 Overview

Standard Operating Procedures, Operating Rules, and General Safety Rules, which are incorporated into the MSRPH, BSEH, the *MetroAccess Operator Handbook*, the *Safety Rules and Procedures* and the RWPM provide for safe operations and maintenance of the Metrorail, Metrobus and MetroAccess systems. *WMATA Policy Instruction P/I 1.15/0, Rule Book Management*, establishes procedures for development, revision, maintenance, management, and enforcement of rulebooks. The ESC provides oversight and executive management and review of this process to ensure consistency and the integrity of the rules and procedures modification process. These revisions are made on an as-needed basis. The MSRPH is scheduled to be reviewed and revised every two years. Special Orders, Permanent Orders or Temporary Orders are issued as interim measures until permanent changes are made in the MSRPH. In order to ensure the appropriate level of executive management oversight, the MSRPH, RWPM, BSEH, and Special Orders, Permanent Orders, Temporary Orders and Change Orders that modify or are intended to permanently establish rules and procedures are issued under the authority and signature of the GM/CEO.

### 13.2 Review of Rules and Procedures

The effectiveness of the MSRPH is evaluated via spot audits by SAFE and as part of the incident and accident investigation process. SAFE's Hazard Management Program includes the review of rules and procedures during the hazard analysis process. Supervisors and managers evaluate compliance with and the adequacy of the MSRPH and make recommendations for modifications or additions as part of their review of Incident Reports filed by employees. SAFE also reviews the Incident Reports and recommends corrective action or modification of rules and procedures as required. SAFE's accident and incident investigations include a review of applicable rules and procedures as part of the investigation analysis. Adherence to the MSRPH is determined in the conclusions section of accident and incident investigation reports and recommendations include the need for MSRPH, RWPM, and BSEH modification or the need for retraining of employees on the MSRPH, RWPM and BSEH.

P/I No. 1.15/0, *Rule Book Management*, section 4.04, requires that Executive Managers/Directors/General Superintendents ensure risk assessment is conducted and used to prioritize the development training and compliance of rules and procedures and to identify Cardinal Rules. P/I No. 1.15/0, section 4.07 requires that SAFE provide guidance to the offices performing the risk assessment of rules and procedures. P/I No. 1.15/0, section 5.01, "Initiating Rules and Procedures," provide that Local Safety Committees can make recommendations for changes to a rulebook based on:

- Employee suggestions
- Local investigations
- Safety conversations
- Hazard analysis

In addition, P/I No. 1.15/0, section 5.02, “Rule Book Change Evaluation,” requires that the Local Safety Committee make a determination if change will improve safety or operations and whether or not the change is urgent using the Risk Assessment Matrix (P/I No. 1.15/0, appendix D).

### **13.3 Process for Ensuring Rules Compliance**

Operations employees are tested on their knowledge of the MSRPH and RWPM during initial training and refresher training.

SAFE (CQAL) also conducts spot audits of MSRPH compliance of RTTO and RTRA employees, BSEH compliance of BUS employees and MetroAccess Operator Handbook compliance of MACS contractors. Maintenance groups have daily discussion of rules and procedures during “Tool Box” meetings. Applicable rules and procedures are also discussed when work is assigned.

*WMATA Policy Instruction P/I 1.15/0, Rule Book Management*, section 5.08, “Compliance,” requires all offices to develop a quality control program to ensure compliance to rules and procedures, including the RWPM. The quality control program shall include the following elements:

- Rule Prioritization – evaluate which activities pose greatest risk of injury, service disruption or customer dissatisfaction (review appendix D of P/I 1.15/0 to help prioritize).
- Roles and Responsibilities – identify who shall be responsible for administering the elements of the quality control program.
- Compliance Checks – identify the activities and associated rules to be monitored for compliance based on *WMATA Policy Instruction P/I 1.15/0, Rule Book Management*, section 5.08 (a) and
  - Determine the frequency of compliance monitoring with increased frequency for Cardinal Rules and dangerous activities;
  - Establish the process/guidelines on how to conduct the compliance checks;
  - Document the results;
  - Monitor observations of employees performing their duties;
  - Monitor activities during the same time work is conducted, to include nights, weekends and holidays (locations and times should be varied); and
  - Conduct monitoring safely, without putting evaluators, employees, contractors, customers, or equipment at risk.



## **13.4 Compliance Techniques: Operations and Maintenance Personnel**

Refresher RWPM and MSRPH safety training is required of RTTO personnel on an annual basis. All new RTTO and TIES employees are provided RWP safety training as part of the New Employee Orientation Program. Employees, who fail either the examination or practical, are reassigned to duties that do not require work on the ROW, until the employee attains a passing score on the examination and/or practical, respectively.

RTTO's Blackberry based application is used to perform ride checks of train operators by RTTO field supervisors. Each supervisor conducts five (5) ride checks per week. This data is incorporated into the SMS, which allows RTTO supervisors to notify SAFE of hazards and allows SAFE to review the data for purposes of hazard identification. Identified hazards are then entered into the Hazard Management Process by SAFE personnel.

SAFE can access the General Orders and Track Rights System (GOTRS) to review planned work on the rail system. Reports can be generated from GOTRS by SAFE to evaluate work sites and review how work sites were established by TRST, SMNT and contractor forces. Because ROCC enters daily controller notes and actions directly into GOTRS, SAFE can generate reports to evaluate compliance with SOPs and work rules by those crews performing work in the rail system. In this manner, SAFE can identify hazards, rules, SOP and RWPM violations for follow-up action and for entry into the Hazard Management Process.

System-wide issues regarding MSRPH and RWPM compliance are entered onto the SMS Hazard Management Module for evaluation, resolution and tracking to closure. SAFE performs inspections and audits of compliance with the MSRPH, RWPM and BSEH. Special emphasis campaigns are performed to monitor compliance and enforcement with RWPM safety rules and procedures.

## **13.5 Compliance Techniques: Supervisory Personnel**

Supervisors are required to ensure that employees perform their assigned duties in compliance with the MSRPH, RWPM, and BSEH, OAPs and other procedures and instructions. Disciplinary procedures consistent with union contracts are used to enforce compliance with established rules and procedures.

## **13.6 Documentation of Rule Compliance**

*WMATA Policy Instruction P/I 1.15/0, Rule Book Management*, section 5.08(e), "Record Keeping," requires that the departments maintain accurate compliance records. Records shall be kept both on observations and on action taken to correct observed deficiencies:

- Establish a tracking system (i.e., forms, electronic applications) to document and control compliance checks and corrective action activity. The tracking system shall provide status of the activity (e.g., open, closed, in-progress).
- Observers shall be trained in the method of collection and proper documentation of the observation.
- Establish retention time for each record and cite retention requirements in the program.

SAFE maintains the ROW Safety Inspection Matrix to document discrepancies and nonconformance with the MSRP and RWPM identified during its safety inspections.

This matrix is forwarded to responsible departments and requires the departments to implement corrective actions to mitigate discrepancies and ensure future compliance. SAFE tracks the corrective action to completion. SAFE also performs follow-up inspections of ROW worksites. Hazards identified during these ROW safety inspections are entered into the Hazard Management Process by the Safety Officer who performed the inspection.

Supervisors maintain the required documentation of enforcement actions consistent with WMATA disciplinary procedures and union contracts. P/I No. 1.15/0, section 5.08 (d), "Corrective Action to Address Non-compliance," establishes requirements for compliance and enforcement action.

### **13.7 Monthly Submission of Rule Compliance Data to TOC**

WMATA submits tabulated summaries of all the SAFE, supervisor, quality assurance, and quality control checks performed each month to TOC. The tabulations include, at a minimum, the following information:

- How many checks were performed in the course of one month
- Which specific rule(s) were checked
- Results of the rule checks

The tabulations should include all of the checks performed by:

- Supervisors
- SAFE (CQAL) Quality assurance personnel
- SAFE personnel

The summaries also include the Quality Control Reports generated for the month, all memoranda circulated among SAFE (CQAL), RTTO supervisors, and other pertinent WMATA personnel regarding the results of rule compliance checks.

## **14.0 Facilities and Equipment Inspection**

### **14.1 Overview**

Safety Inspections of WMATA's facilities are made by maintenance technicians, supervisors, safety officers and managers, to detect and correct unsafe conditions and deteriorating equipment conditions to ensure the safe passage of trains, safety for employees, public safety (including pedestrians and bicyclists), to minimize unnecessary disruptions to revenue service and to ensure compliance with regulations.

### **14.2 Facilities and Equipment Subject to Inspection**

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

- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)
- District of Columbia, Occupational Safety and Health Division
- Maryland, Division of Labor and Industry, Occupational Safety and Health Service
- Virginia, Labor and Industry Department, Occupational Safety and Health Division
- U.S. Department of Transportation, Federal Railroad Administration (FRA) Regulations and Motor Carrier Safety Regulations (MCSR)
- Local jurisdictions served by WMATA (building and fire codes)

In addition, where the jurisdictions have adopted federal safety laws and regulations, the following national consensus standards may be applicable to WMATA facilities:

- National Electrical Code
- Underwriters Laboratory Standards
- National Fire Protection Association Standards
- American National Standards Institute (ANSI) Standards
- American Conference of Governmental Industrial Hygienists (ACGIH) Standards
- Equipment manufacturers' operational standards
- Recommended standards and guidelines of the National Institute for Occupational Safety and Health (NIOSH)

In addition to maintenance and support facilities, the following facilities are inspected: MetroAccess facilities, train control rooms, communications rooms, power substations, tiebreaker stations and rail stations. Equipment inspected includes systems equipment, electrical equipment, communication equipment, mechanical equipment, safety equipment, escalators and elevators. Vehicles inspected include rail vehicles, track maintenance vehicles, buses and non-revenue (service) vehicles. Infrastructure subject to inspection includes track, aerial structures, bridges and tunnels.

### **14.3 Regular Inspection and Testing**

Track inspections of the mainline rail system are performed by trackwalkers twice each week with no more than two-day intervals between inspections. A riding inspection by maintenance managers is conducted on a monthly basis per OAP 208.1, *Track Maintenance Management; Maintenance of Way*. Discrepancies and anomalies are recorded and scheduled for repair by the track repair group. If serious deficiencies are identified, immediate repairs are initiated or speed reductions/restrictions are imposed until repairs can be made.

Daily Safety Tests (DST) are performed by CMNT technicians on each rail car. Any identified deficiencies are corrected prior to the car being released for revenue service.

Train Control Rooms are visually inspected every day to check the condition of ATC equipment and to detect conditions not normally monitored by monitoring systems, i.e., environmental conditions, presence of water, structural integrity, and housekeeping.

Interlocking Inspections are performed weekly to verify the proper condition of ATC wayside Interlocking equipment and associated track equipment.

Rail stations are inspected by the station manager and QAAW in accordance with *Metrorail Station Standard Operations Procedure # 1*. Deficiencies are reported to OCC and MOC and entered in the Maintenance Log.

Buses are inspected on a daily basis, as they proceed through the service lane, to identify defective safety equipment. Bus operators perform pre-trip and post-trip inspections and submit Shop Cards to report defective safety equipment at the conclusion of their shifts and buses are not returned to service until such items are repaired.

Bus stops are inspected annually by the Bus Stop Information Program to ensure accessibility for pedestrians and that bus stop information cases are readable from the sidewalk or roadside.

### **14.4 Checklists**

Checklists are developed from procedures manuals, standards and manufacturers' manuals and are used to perform and document the inspections described above.

### **14.5 Coordination with Hazard Management Process**

Most deficiencies identified during the inspections referenced above are repaired, prior to the equipment being placed in revenue service; or interim repairs are made to mitigate the hazard until permanent repairs are made. SAFE is notified of deficiencies by ROCC, MOC, BOCC or the responsible office. Deficiencies that are determined to be hazards with system-wide implications or that require design and long-term resolution

are entered into and managed by the Hazard Management Process. Resolutions are then tracked to closure by SAFE.

## 15.0 Maintenance Audits/Inspections

### 15.1 Systems and Facilities Subject to Maintenance Program

SSPP section 3.3 describes the major equipment and facilities of the Metrorail system along with the organization responsible for performing facility and equipment maintenance and maintenance audits and inspections. Each responsible organization maintains its maintenance and inspection manuals for each facility and all equipment. Preventive maintenance inspections (PMIs) are performed in accordance with manufacturers' requirements as applicable or defined by WMATA Engineering. Checklists are used to perform the PMIs. QAAW conduct periodic maintenance audits of facilities and equipment, utilizing checklists, in accordance with the *WMATA Quality Manual (QAAW-1 rev3)*.

CQAL conducts periodic maintenance audits of BUS facilities and equipment, utilizing checklists, in accordance with the WMATA Quality Assurance Program Manual (CQAL 1). PMI schedules and the resultant data are maintained and tracked in the MAXIMO database for all facilities and equipment. QAAW tracks and analyzes data to monitor trends to ensure quality and reliability of equipment and facilities. Reports are prepared and provided to TIES department heads to identify the need for improvements in maintenance quality and reliability processes and practices. The major safety related systems that require regular maintenance inspections along with the responsible organization are described below.

TRST preventive maintenance inspections are made in accordance with the WMATA Track Maintenance Standards; Maintenance and Inspection Manual WMATA – 1000. These track inspections include:

- All mainline tracks, in an assigned section will be inspection on foot, two times each week with an interval of at least one calendar day. Inspections can be suspended in the event of weather that causes unsafe, slippery or low visibility conditions. A riding inspection can be performed of the affected segment with supervisory authorization.
- Secondary Tracks will be inspected once per month.
- Gauge Measurement of the entire system quarterly.
- Geometry car performing a quarterly inspection
- Inspections of curves and spirals every four (4) months to assess super elevation and gauge either by walking or by the Track Geometry Vehicle.
- Inspection for internal defects in rail shall be made once a year with equipment capable of detecting defects in the rail proper as well as within the joint bar area. Currently these inspections are performed five (5) times per year.
- Dynamically loaded structures such as aerial structures, bridges, and parking garages are inspected annually.
- Static structures such as tunnels, stations, and retaining walls are inspected biennially.

Rapid transit car preventive maintenance inspections are made by CMNT in accordance with the following:

- Periodic preventative maintenance inspections in accordance with manufacturers' recommendations. PMI procedures in some cases are modified from OEM recommendations by CENV
- Periodic inspections specified by CENV and QAAW to ensure that all components/services meet or exceed manufacturers' recommendations
- Walk-around inspection checklist
- Visual inspection by operator

Automatic Train Control (ATC) preventative maintenance inspections are made by ATC technicians, supervisors and managers, in compliance with regulations, manufacturer guidelines and established maintenance standards. All discrepancies found during these inspections are reported, documented and corrected as soon as reasonably possible. These inspections/audits include:

- Twice-daily evaluation of mainline track circuits to proactively search for loss of shunt defects, utilizing the ATC Loss of Shunt Tool (software). In the event a loss of shunt condition is identified, immediate action must be taken to ensure that train operators approaching the defect area operate in manual and reduce train speed to no greater than braking distance within line of sight. SAFE and the Assistant Chief Engineer, ATC are notified by ROCC of each such loss of shunt condition as soon as train operations are protected. SAFE, SMNT and ATCS track loss of shunt defects through the Hazard Management Process.
- Audio Frequency and Interlocking AC Track Circuit Shunt Tests and Track Circuit Detection Signal Tests are performed quarterly. Track circuit adjustment is performed after corrective maintenance or disarrangement.
- Interlockings are inspected weekly and switch obstruction tests are performed monthly to ensure reliability and to provide safe passage for revenue trains and work vehicles.
- Vital Safety Circuits receive a locking test once a year, in accordance with FRA regulations, to verify their integrity. This includes approach, time, route, traffic and switch locking.
- Vital Relay Testing is performed every four years, per FRA regulations, to verify the integrity of all vital relays used in the ATC system.
- Intrusion Detection and Warning (IDW) system tests and inspections are performed annually to ensure reliability of the IDW system.

Bus Inspections – Inspection of bus support systems, facilities and equipment are made in accordance with appropriate maintenance manuals and procedures, which conform

to the jurisdictional motor vehicle inspection code for the District of Columbia, Maryland and Virginia departments of motor vehicles. In addition, a “B” Inspection, which includes safety related equipment, is performed on each bus every two weeks. SAFE (CQAL) conducts periodic maintenance audits of facilities and equipment, utilizing checklists, in accordance with the *WMATA Quality Assurance Program Manual (CQAL-1)*. PMI schedules and the resultant data are maintained and tracked in the MAXIMO database for all facilities and equipment. SAFE (CQAL) tracks and analyzes data to monitor trends to ensure quality and reliability of equipment and facilities. Reports are prepared and provided to BUS department heads to identify the need for improvements in maintenance quality and reliability processes and practices.

## **15.2 Resolution of Audit/Inspection Findings**

Serious hazardous conditions that are identified during the above inspections are immediately corrected and the conditions are documented in accordance with the responsible organizations’ procedures and practices. In the event a hazard cannot be immediately corrected, it is reported to SAFE and is managed and resolved in accordance with SSPP section 6.0, “Hazard Management Process.” SAFE then tracks the resolution to closure.

SAFE has access to audit, inspection and repair information in MAXIMO that allows SAFE to identify trends and possible repetitive events that should be addressed in the Hazard Management Process.

## **15.3 Checklists**

Each organization performing PMI audits and inspections develops and uses checklists based on manufacturers’ manuals, applicable procedures, standards and regulations and the MSRPH or BSEH.



## **16.0 Training and Certification Review/Audit**

### **16.1 Overview**

Instruction in safe methods of operation and safety procedures is included in manuals, handbooks, and other documentation developed for the training and certification of operations and maintenance personnel. Training systems have been developed, by each department (DGMO, RTRA, TIES, BUS, MTPD, CSCM, CHOS, HR, DGMA/CFO, IT, and PLJD), which includes in-house classroom training, on-the-job training and testing. Each department is responsible for establishing safety-training requirements, in conjunction with SAFE. SAFE teaches the occupational and environmental safety training at the Safety Training Academy at CTF or at WMATA facilities and maintenance shops. SAFE has primary responsibility for developing and providing formal corporate safety training courses. The Human Resources Training and Organization Development Branch (HRTM) maintains central records of safety training for all employees. Supervisors are notified by the system when required training is due. Supervisors and employees are required to review periodically, training records to ensure that the required training and certifications are being completed by employees.

SAFE evaluates and audits (as part of the ISSR) departmental safety training programs and provides technical expertise as necessary. Identification of protective devices and emergency equipment is included in the training documentation and instruction. In addition, safety posters, bulletins and notices are used as appropriate to enhance safety awareness during all phases of system operations.

Proficiency demonstrations and certifications are required of all operations and maintenance personnel. Safety concerns are incorporated in briefings given to personnel prior to their working with equipment or in facilities.

Contractors are responsible for ensuring compliance with the most stringent provisions of the applicable occupational safety and health statutes and regulations of the District of Columbia, State of Maryland, Commonwealth of Virginia or political subdivision in which the work is being performed, and the U. S. Department of Labor OSHA standards. The contractor shall submit a construction safety plan to WMATA's representative for review prior to commencement of work. The contractor shall, within five (5) days after receipt of Notice to Proceed (NTP), submit through WMATA's representative, to SAFE, a request for the Authority to schedule and conduct safety instruction at the earliest possible time for all contract personnel who will be engaged in the performance of contract work on or above the Roadway. The Authority will schedule and conduct RWP training for all contractors' work forces. Contractor training and certification must be renewed annually. The contractor shall not perform work at the contract site(s) on or above the Roadway, until all personnel of the contract work force have attended the RWP training and have been furnished evidence of attendance. The contractor shall follow all applicable MSRPH and RWPM rules and procedures while working in the operating rail system. For any work within Start-Up limits, all contractors' personnel shall receive WMATA Start-Up Lockout/Tagout training prior to commencing

the work. Other training may include, but not be limited to, Confined Space Training. Copies of training documents shall be forwarded to SAFE prior to work.

## 16.2 Employee Safety

Safety training is conducted by SAFE, MTPD, RTRA, ROQT, RTTO, BUS, TIES, TRES, RADS, OPMS, PRMT, IT and CFO. Each department is responsible for establishing training requirements and assuring that the necessary training is accomplished. The following courses are provided:

- New Employee Orientation

All new employees and all employees who receive a promotion must attend mandatory safety training including: depending on the job assignment, either Emergency Response Awareness Training for Non-operating Personnel or Roadway Worker Protection Training (RWP) for operating personnel; Personal Protective Equipment; multiple modules of Hazard Communication; and Blood Borne Pathogen Training. All employees receive training on the *System Safety Program Plan*, Hazard Management Program and basic Hazard Communication.

- First Aid and CPR Training

First Aid, CPR and Automatic External Defibrillator (AED) training is provided to station managers and other employees as required by class specification. MTPD personnel receive such training at the Police Training Academy and refresher training during mandatory in-service retraining. The American Red Cross or other nationally accredited courses and instruction methodologies are used for First Aid, AED and CPR.

- Special Safety Presentations

Special safety training presentations are made at work locations to instruct employees on methods to prevent traffic, passenger, and employee accidents.

- Hazardous Materials/Hazard Communication Training

All maintenance and support personnel who are required to use chemicals and hazardous or toxic substances are trained in the safe use of such substances. Employees who move to new positions are provided training in the use of any new chemicals that they may be assigned to use by the supervisor.

- Safety Related Operations and Maintenance Training
  - Categories of safety related work include train operators, bus operators, non-revenue (service) vehicle and equipment operators, maintenance of way employees, rail car maintenance employees, elevator and escalator maintenance employees, BMNT employees and police officers. Safety training is embedded in all of the technical and operations training courses provided to these categories of employees.
  - Safety training is conducted on Metrorail and Metrobus procedures and rules. Copies of WMATA's standard operating procedures and safety rules are given to all employees who work on the rail and bus system.
  - All new train operators are given the Train Operator Training Course, which covers rules, procedures, and actual train operation with an instructor. Each new train operator candidate is certified by RTTO with both written and practical testing to validate operational readiness and knowledge of operating and safety rules and procedures. Annually, each train operator is given a refresher course on the rules and procedures. All train operators are re-certified every two years with written and practical testing by RTRA, through the Performance Standardization Program. Each person who fails the annual examination is given special retraining. The preparation, administration, and maintenance of these examinations and related records are the responsibility of the employee's department/office. Supervisors perform "ride checks" on train operators to assess knowledge of train operations and the MSRPH.
  - All new bus operators are provided the Bus Operator Training Course, which includes traffic regulations, rules, procedures, bus simulator time and hands-on seat time in a bus with an instructor. Bus operators must have a commercial driver's license (CDL). Bus operators are provided annual refresher training, which includes time in the bus simulator. Supervisors perform "ride checks" on bus operators to assess knowledge of bus operations and the rules and procedures.
  - All new MACS contractor operators are provided the Paratransit Operator training course. No CDL is required. Annual refresher training is provided, and WMATA contractor supervisors perform "ride checks" and observations of operator performance.

- Safety Rules and Procedures Training

RTTO, RTRA, ROQT, TIES, OPMS, IT, TRES, MTPD, PRMT, TTDC, TSMT, and BUS personnel are trained to perform in accordance with the safety rules and procedures applicable to their office. TTDC provides job familiarization training to craft employees which includes an overview of basic job safety and applicable

MSRPH rules. All new SMNT, TRST and CMNT (2200+) Employees receive new hire familiarization training from TTDC which covers, MSRPH, Safety, Maximo (where applicable), and initial craft training.

The rules and procedures for each office are established by the appropriate office and coordinated with SAFE. Violations of Metrorail or Metrobus rules, regulations, and/or procedures may result in disciplinary action (cautions, retraining, reprimand, disqualification, suspensions, or dismissals) in accordance with the rulebooks, policies and the union contract.

- Emergency Preparedness Training

Employees are provided training in: system security (National Transit Institute course), SOPs regarding hazardous materials, bomb threats and unknown substance response incidents and emergency preparedness for non-operating employees, as part of New Employee Orientation, technical training and ongoing training programs.

- Managing Metro Emergencies

Personnel from jurisdictional law enforcement, fire departments and transportation departments are provided training in their role to manage traffic and pedestrian flow in the event of a major Metrorail service delay.

- SAFE and/or OEM are responsible for the following employee safety training activities:

- Training adequacy, uniformity and comprehensiveness

Training content is monitored and suggestions for improvement are provided to operating offices.

- New Employee Orientation

Employee orientation is conducted for all new WMATA employees to familiarize them with the Authority's programs and policies, including the safety program and to establish employee responsibilities under the Authority's safety program. SAFE responsibilities include basic MSRPH introduction.

- Industrial Hygiene Training and Education

Employees who use or come in contact with chemical, physical or biological hazards receive training in hazard mitigation, industrial hygiene principles and in the care and use of personal protective equipment. SAFE, T&OD, HR/Medical Services and Compliance Branch and MTPD

provide training in the proper handling of biologically contaminated materials such as tools, syringes and clothing.

- WMATA Safety Management Course

All managers and supervisors are required to attend this five-day course presented by SAFE. It is intended to provide the knowledge of OSHA regulations, WMATA safety policies, procedures and practices, to enable managers and supervisors to develop effective safety programs at their facilities and work areas.

- Employee RWP Safety Training

All new and existing employees of WMATA who will perform work on the Metrorail system ROW are required to attend an initial RWP safety training class conducted by ROQT that has been approved by SAFE, prior to beginning work. Employees are certified by written test and receive a certification card from SAFE. RWP Safety Training is conducted by TSMT (for non-Operations personnel) and SAFE (for contractors). TSMT provides the majority of the RWP Training. Successful completion of refresher training is required every three years.

- OSHA Required Safety Training

The following required OSHA training courses are identified in the training database for each job classification as required by employee position descriptions and work assignments:

- Personal Protective Equipment
- Respiratory Protection
- Hearing Conservation
- Hazard Communication
- Permit Entry Confined Space
- Confined Space Awareness
- Powered Industrial Truck
- Hazardous Waste Operations and Emergency Response
- First Responder – Operations
- Environmental Compliance Officer
- Hazardous Waste Management
- DOT Hazardous Materials
- Electrical Safety
- Fall Protection
- Aerial Lifts
- Cranes
- Powered Work Platforms
- Fire Extinguisher Training
- Lockout/Tagout
- Other courses as necessary

- Emergency Preparedness Training

All non-operating employees are provided Emergency Response Awareness Training as part of New Employee Orientation. Existing non-operating personnel are also provided this training by their assigned departments. Operating employees are provided emergency response training, “Warning Signs” developed by the National Transit Institute. This training is provided by the departments to which employees are assigned.

As part of the Train Operators Course and refresher courses, train operators are provided emergency response training in the ERTF to give them realistic experience of responding to emergencies. Station managers are provided similar training as a part of their training and refresher training courses. Bus and rail employees are also provided fire extinguisher training, where they actually extinguish a fire using an extinguisher.

- Non-WMATA Employee RWP Safety Training

All employees of WMATA contractors and others who perform work on the Metrorail system are required by contract to attend a RWP safety training class overseen by SAFE prior to beginning work.

### **16.3 Contractor Safety**

All contractors who perform work on, or interface with the operating system are required by contract to ensure that supervisors and assigned employees attend RWP training. Each contract also requires compliance with applicable Federal and state OSHA regulations. Contractors must submit to project management, required safety training certifications and documentations of course completion that are pertinent to the work to be performed under the contract. SAFE reviews the certifications and documentation for validity and to ensure currency of the training. SAFE performs regular safety inspections and audits of contractor work sites to review training records and assess contractor safety compliance. Deficiencies are brought to the attention of contractors’ project managers for corrective action.

### **16.4 Record Keeping**

All training records for employees and contractor safety training are maintained in an automated database administered by HRTM.

### **16.5 Compliance with Training Requirements**

Training requirements for each position and employee are included in the training database. Audits can be performed using the database to review training records of individual employees to determine compliance with training requirements. Each

employee record indicates which courses are required and which have been completed. Periodic notifications are sent to supervisors if required courses are not completed within the required period.

## 17.0 Configuration Management

### 17.1 Overview

A Configuration Management Plan is vital to WMATA to ensure, as much as possible, that the configuration of all WMATA property, vehicle, equipment and systems design elements, operations and maintenance documents, and safety and security documents are accurately and completely documented. Section 12 of the TOC PS/P, "WMATA System Safety Program Plan" requires that WMATA establish a configuration management process that ensures, as much as possible, that all rail transit property, equipment, systems design, elements, and safety and security documents are accurately maintained.

Configuration Management is defined as the effective control of the arrangement and operation of a facility, system, equipment or vehicle to ensure compliance with approved and/or accepted technical requirements and other governing criteria. Control of configuration of facilities, systems, vehicles and equipment begins during development of the final design and extends through construction, start-up, and operations concluding with deactivation of the facility, system, vehicle or equipment.

*WMATA Policy/Instruction (P/I) No. 4.10/3, Configuration Control Management* establishes authority and responsibility to manage the configuration of all WMATA (Metro) infrastructures: Metrorail facilities and Metrobus facilities. The AGM/TIES and the Chief Engineer, Infrastructure Services (CENI) is responsible for the implementation of this policy. The configuration of the Metrorail and Metrobus infrastructure is represented in the following documents: As-Built Drawings, Engineering Modification Instructions, In-Service/As-Is Drawings, shop drawings, catalog cuts, and O&M manuals.

The Chief Engineer, Vehicles (CENV) is responsible for configuration control of rail vehicles. The Chief Bus Engineer (BENG) is responsible for the configuration control of the Metrobus fleet with proposed changes to as-built configurations being reviewed, tested, approved or denied by the BENG Bus Change Control Board.

Any changes to an individual sub-system or a fleet/inventory-wide change should be recorded on as-built drawings in a timely and effective manner.

The five (5) basic program elements that comprise the Configuration Management Program are 1) program management, 2) technical requirements, 3) change control, 4) document control and 5) audits and self-assessments. CENI implements the five program elements to maintain consistency among design requirements, design configuration, physical configuration and a facility's documentation. The program elements are integrated throughout the organization both functionally and organizationally. Program management elements of the Configuration Management Program direct the development and implementation of a Configuration Management Program for WMATA. The Configuration Management Program requirements flow down



into implementing procedures and other engineering documents that provide detailed directions and work instructions.

The plan would initially provide an electronic technical document library of WMATA's major assets that support bus and rail operations. Examples of the types of documents the library would hold are operation and maintenance manuals, calculations, agreements, specifications, cut sheets, in-service condition drawings, shop drawings, licenses, deeds and plats.

The primary function of the library would be to provide controlled access to the documents and to make sure the latest version of the documents were always available. The library would maintain at least two (2) sets of documents and possibly three (3) sets for some documents. The first set would be in native format, the second set would be in the viewing format that is planned to be Adobe Portable Document Format (PDF). The third set could be some form of XML data. The majority of users would only use the documents for viewing and only a select few users would be able to make changes to the documents. The configuration management software would provide a full audit trail of document revisions, approvals and publishing.

WMATA is planning to implement a program to provide configuration control of the technical documents relating to the WMATA Metrorail and Metrobus infrastructure. A pilot has been established to demonstrate the feasibility of utilizing the Documentum software program for this purpose. The initial phase was in the systems engineering aspects of the Metro Matters Traction Power Update project. In addition to providing any WMATA employee web based access to the as-built electrical documents associated with this project, it also provided advanced document search capabilities with the addition of Metadata/attribute information associated with each technical document, plus it established basic file folder structures and user privilege levels. Additionally, user features are also planned, such as a graphical user interface and an electronic document review and approval process.

The methodologies and business processes developed under OAP 200-06 to direct TIES EMIs are, broadly speaking, extensible throughout WMATA. In order to do so, WMATA is initiating a Product Life Cycle Management ("PLM") program in 2015. This program will be responsible for:

- Implementing a PLM software tool to track asset design and configuration data from design or purchase of an asset to retirement;
- Working with all WMATA operational and engineering units to document (if necessary), reengineer as appropriate, and implement their processes for configuration management;
- Assure availability of configuration management and related data to all interested parties in the authority.

This program's charter and schedule are scheduled for review and approval in the first quarter of 2014. The program's steering committee will include a representative from Safety to assure compliance with the SSPP.

## **17.2 Process for Change**

The Design Control Board (DCB) is responsible for establishing, maintaining and promulgating architectural and engineering criteria and standards for the design, construction, reconstruction, maintenance, and operation of the Metro system. The DCB consists of one representative from TIES, MTPD and SAFE. Requests for change (RFC) will contain a description of the proposed change, justifications for change and supporting documents. The DCB will review the proposal and, if approved, will release the RFC, and authorize other actions necessary for implementation for the approved changes. Any department may appeal decisions of the Design Control Board. The GM/CEO has final appeal decision. *WMATA Policy/Instruction* No. 4.14/3; *Design Control Board*, controls infrastructure modifications. OAP 200-2006, *Engineering Modification Instruction* is used to control changes in rail vehicles, track and systems.

## **17.3 Authority for Change**

Authority for change to the architectural and engineering criteria and standards for the design, construction, maintenance and operation of the Metrorail system and Metrobus facilities is governed by *WMATA Policy/Instruction* No. 4.10/3; *Configuration Control Management* and P/I No. 4.14/2; *Design Control Board*. The AGM/TIES is responsible for establishing the Design Control Board and for maintaining a database necessary for change control and problem tracking. The DGMO is responsible for ensuring compliance with the policy by each operating department, and for forwarding all rail related requests to the Design Control Board for action. CENI is responsible for maintaining the original copy of the WMATA Standard Drawings, Design Drawings, Design Criteria and Standard Specifications. CENI is responsible for making revisions and modifications to electrical, mechanical and system documents. CENV is responsible for making revisions and modifications to rail vehicle documents. BMNT, Bus Engineering is responsible for making revisions and modifications to bus documents.

## **18.0 Local, State, and Federal Requirements**

### **18.1 Occupational Safety and Health**

WMATA industrial, maintenance and construction activities must comply with Federal, state and local occupational safety and health (OSHA) laws, standards and regulations, including *Code of Federal Regulations* title 29, part 1904, *Record Keeping*, title 29, part 1910, *General Industry Standards* and title 29, part 1926, *Construction Standards*. SAFE utilizes applicable consensus standards, including those established by the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA). These standards shall apply to both employees and contractors. In addition, the contractor is responsible for all subcontractors, suppliers or other persons working under his/her direction to comply with all safety requirements. Industrial activities include industrial, maintenance and support functions of BTRA, BMNT, CFO (TRES-RCF), HR, TIES, RADS, ODEV, OPMS, PRMT, MTPD, RTTO and RTRA. During training, emphasis is placed on the proper use of hazardous chemicals and personal protective equipment. Required personal protective equipment is provided with management and supervision enforcing its proper use. Employees have the responsibility to use and properly maintain all required protective equipment. In addition to engineering and administrative controls, procedures are established for the control of all hazardous materials, processes and other hazards in the industrial environment.

On-the-job training conducted by all departments emphasizes preventive occupational safety and health practices. SAFE has primary responsibility to develop and provide formal safety and environmental training courses for employees. It is the responsibility of each manager and supervisor of all WMATA departments to ensure a safe and healthful work environment for all employees assigned to activities under their direction.

Each manager and supervisor is responsible for having knowledge of and ensuring compliance with all applicable Federal and state OSHA laws, standards and regulations. Although the OSHA Act stipulates that employees are responsible for complying with OSHA standards, the employer is legally responsible and held accountable for the employees' compliance. Procedures are established that facilitate disciplinary action against those individuals who fail to comply with applicable OSHA laws, standards and regulations. Examples of types of employee actions that should be subject to disciplinary action are failure to use/wear required personal protective equipment, failure to follow proper chemical handling procedures and the unauthorized modification of safety equipment and devices.

SAFE uses posters to promote safety awareness and increase support of safety activities. Safety awareness posters are developed and distributed for display in highly visible areas throughout the workplace.

### **18.1.1 Personal Protective Equipment**

Appropriate personal protective equipment (PPE) is provided and is required to be used by WMATA personnel. This equipment is evaluated and approved by SAFE, prior to procurement by the using organization. SAFE has been provided access to certain PRMT databases to monitor purchases of personal protective equipment. Management and supervision of BTRA, BMNT, CFO (TRES-RCF), RADS, TIES, RTTO, RTRA and IT are responsible for providing the necessary personal protective equipment and enforcing employees use of the equipment. Individual employees who are required to wear SAFE approved safety work boots and shoes must provide their own shoes that comply with OSHA regulation *Code of Federal Regulations* title 29, part 1910.136, "Foot Protection." Many employees are provided a uniform or tool allowance, which can be used to purchase safety shoes.

PRMT shall implement the required quality control procedures to ensure that, only personal protective equipment, previously reviewed and approved by SAFE, is accepted by the receiving storerooms.

Selection of police equipment including body armor, weapons and chemical agents is the responsibility of the Chief of MTPD. SAFE assists MTPD in selection of personal protective equipment for use against Bloodborne Pathogens and weapons of mass destruction.

### **18.1.2 Hazard Communication Program**

The objective of this program is to ensure employee safety in the use of chemicals and hazardous materials and to ensure compliance with Federal and state hazard communication standards (Right-To-Know Laws) and applicable jurisdictional fire and building codes. The fundamental requirements of the Federal, Virginia and Maryland Right-To-Know laws/standards are included in the WMATA *Safety Rules and Procedures* No. 4.2/1, *Hazard Communication Program*. By December 1, 2013, employers must train their employees on how to read the new GHS formatted safety data sheets and labels.

### **18.1.3 Safety and Industrial Hygiene Studies and Reviews**

SAFE is responsible for monitoring facility compliance with applicable OSHA standards (*Code of Federal Regulations* title 29, part 1910, *General Industry Standards* and title 29, part 1926, *Construction Standards*) and applicable state and local codes and standards. SAFE personnel work with managers and supervisors to develop programs to assist in ensuring a safe and healthful work environment. SAFE performs periodic safety audits of inspections performed by facility personnel. SAFE develops and maintains procedures for the following programs: Confined Space, Bloodborne Pathogens, Hazard Communication, Hearing Conservation, Respiratory Protection, Lockout/Tagout and Personal Protective Equipment.

Industrial hygiene studies are conducted to evaluate the degree of employee (and customer) exposure to chemical and physical agents encountered in the work environment, including the office environment. The initial assessments are utilized to determine the necessary corrective action, including implementation of engineering and administrative controls and/or the required use of personal protective equipment. Comprehensive reports of the industrial hygiene study are submitted to the responsible office director. Industrial hygiene studies are performed on a hazard priority basis. The priority is established by SAFE, through an evaluation of the work processes, including type of work performed, types of chemicals or hazardous materials used to which persons are exposed, frequency and duration of exposure and number of employees (or patrons) exposed. An example of high priority exposures are:

- Work involving exposure to asbestos
- High airborne concentrations of lead, silica and other particulate and aerosols
- Organic solvents
- High noise levels

In addition, high priority is given to employee or customer concerns and requests for assistance from the HR Medical Director.

SAFE enters hazards identified through these reviews into the Hazard Management Process for resolution.

#### **18.1.4 Medical Surveillance**

SAFE assists the Medical Services and Compliance Branch of HR to identify abnormal conditions in the workplace and to determine causes of occupational injuries and illnesses. SAFE identifies at-risk positions requiring medical surveillance and works with HR/Medical Services and Compliance Branch to monitor employee exposure to chemical and physical hazards within acceptable guidelines and/or regulatory limits.

#### **18.1.5 Processes to Assess Safety Training Effectiveness**

SAFE provides mandatory safety training for employees in accordance with OSHA requirements. Employees are tested on their knowledge of the course material upon completion of the course. Supervisors are required to assess employee knowledge of regulatory requirements during performance of work tasks and provide refresher training as necessary. SAFE field personnel perform spot checks of employee and supervisor knowledge of regulatory safety requirements as part of their facility and work site inspections and audits and recommend that employees and supervisors be provided refresher training as required.

### **18.2 Working on or Near Rail Transit Controlled Property**

All WMATA employees, who work on or near the Metrorail system, receive employee RWP safety training during New Employee Orientation. In addition, all current WMATA

employees were provided training on the new RWP course. Testing is performed to ensure that employees know and understand the requirements. Employees who do not pass the test are not permitted to work on or near the ROW. Successful completion of RWP refresher training is required every three years. In addition, depending on their assignment, employees are provided job specific safety training in their technical, maintenance, or operations training programs. TIES, RTTO, RTRA, ROQT and MTPD employees and all employees who work on or near the rail system are provided training in the MSRPH and are tested on it annually or biennially. The safety training programs are described in section 16.2.

All contractors who perform work on, or interface with the operating systems are required by contract to ensure that supervisors and assigned employees attend training on RWP. This training course is presented by ROQT in cooperation with SAFE.

An examination is provided at the end of the RWP training session. Only those who receive a passing grade on the test (75%) are authorized to work on the ROW. The Contractor's employee identification badge (I.D.), issued by WMATA, includes a RWP-trained endorsement, for those who received the training and passed the examination. A contractor employee found on the ROW without the approved contractor's employee I.D. badge, with the RWP-trained endorsement, is considered a trespasser and is subject to prosecution. WMATA employees, who are assigned to monitor contractor work, and escort contractor employees on the ROW, are required to check contractor I.D. badges to ensure that they have the RWP-trained endorsement. A contractor employee who does not have the endorsement, shall not be permitted to work on the ROW. WMATA employees, including inspectors, escorts and SAFE are authorized to remove a contractor from a worksite if he/she demonstrates a lack of knowledge and understanding of the applicable MSRPH and RWPM rules and procedures. SAFE conducts periodic inspections of contractor ROW worksites and other worksites to assess knowledge of and compliance with the MSRPH, RWPM and applicable OSHA regulations. Identified hazards are into the SMS Hazard Management Module.

### **18.3 Contractor Compliance with Required Safety Programs**

SAFE, in coordination with CENI, and the contractor, administer construction safety as required by the *WMATA Construction Safety and Environmental Manual* (Revised 2011) and contract specification safety requirements. The referenced documents contain requirements concerning contractor safety programs and qualifications of safety superintendents. These include applicable Federal (OSHA), state and local safety requirements. The contractors are required to have required OSHA programs in place as applicable to the work required by the contract. Documentation of required programs is part of the contract submission process. The contractor is responsible for ensuring that its employees comply with OSHA regulations and WMATA rules and procedures. Contracts require compliance with specific OSHA regulations and employee safety programs as applicable to the work being performed. SAFE reviews and approves contractor site safety superintendents. SAFE conducts regular inspections of contractor worksites to assess contractor employee knowledge of and compliance with regulatory

and contract requirements. Deficiencies are brought to the attention of contractors' project managers for corrective action. SAFE conducts follow-up inspections to ensure implementation of corrective action. Identified hazards are entered into the SMS Hazard Management Module.

## 19.0 Hazardous Materials

SAFE is responsible for developing procedures that ensure compliance with the hazardous materials standards by all WMATA employees.

The chemical, hazardous material and Safety Data Sheet (SDS) review process is incorporated into the *WMATA Safety Rules and Procedures*, Procedure No. 4.2/1, *Hazard Communication Program*. All chemicals and hazardous materials used by WMATA employees or in the WMATA operating system shall be evaluated and approved by SAFE prior to use or testing of the product, in accordance with the *Hazard Communication Program*.

The using organization must ensure that SAFE has reviewed and has submitted written approval of requested chemicals, prior to procurement, including procurement utilizing blanket orders, petty cash, purchase cards, construction specifications or equipment specifications. PRMT does not process requests for chemical products without a written approval from SAFE and an approved SDS number on file for that product. SCES shall implement the required quality control procedures to ensure that only chemical and hazardous materials, previously reviewed and approved by SAFE and assigned a unique SDS number, are accepted by the receiving storerooms. Substitutes for chemical products and hazardous materials shall have SAFE review and approval prior to procurement.

All users of any approved product must read the Evaluation/SDS Approval prior to using the product and follow all instructions and precautions. SAFE may conduct site visits where chemicals are being used to ensure that workers are aware of the hazards and that they are using the proper PPE.

SAFE will maintain an online database for SDSs. Access to approved SDSs is available through the SAFE/EMIH Intranet Website. Departments whose employees use hazardous chemicals and materials may also have links from their departmental Websites to the Intranet SDS Home Page.



## 20.0 Drug and Alcohol Abuse

The HR/Medical Services and Compliance Branch has primary responsibility for administering a Substance Abuse Testing Program in accordance with *Code of Federal Regulations* title 49, part 40, *Procedures for Transportation Workplace Drug and Alcohol Testing Programs* and title 49, part 655: *Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations*. WMATA Policy/Instruction No. P/I 7.7.3/3 (*Drug and Alcohol Testing Program*) establishes requirements and responsibilities for administering the required programs.

HR/Medical Services and Compliance Branch monitors the program of each department and ensures that employees in safety sensitive positions who are returning to work from the program have been medically certified to do so. The major goal of the Substance Abuse Policy is to ensure a safe operating environment for the public and WMATA employees. The primary purpose of the Employee Assistance Program is to refer employees to the appropriate medical and/or rehabilitation treatment and counseling. The objective is to help them resolve their substance abuse problems, with the goal of returning them to their full productive job capacity.

HR/Medical Services and Compliance Branch has the primary responsibility for the verification of compliance with the Substance Abuse/EAP Program through random and post-incident testing and medical certification of capability of return to duty for employees and contractor employees assigned to safety sensitive positions. The Safety-Sensitive Contractor Compliance Monitoring Section of the Medical Services and Compliance Branch monitors the Drug and Alcohol Testing Program for WMATA's safety-sensitive Contractors to ensure Metro's compliance with FTA regulations.

## 21.0 Procurement

### 21.1 Overview

The following factors are considered by the organization (user) requesting procurement of the equipment, vehicles, systems, or facilities in deciding what, if any safety requirements are to be included. PRMT will ensure that all equipment and materials identified by the using organization or SAFE as safety critical will be coordinated through SAFE. Compatibility will be assured with the safety features, design, and procedures of the existing Metro system through:

- Requirements that modifications involving procurement or the procurement of new equipment cannot occur unless SAFE has determined whether safety certification will occur.
- Incorporation of “fail-safe” principles when failures would cause a catastrophic event resulting in injury to personnel, damage to equipment, or inadvertent operation of critical systems.
- Avoidance, elimination, or reduction of identified safety hazards by design change, safety devices, and parts or materials selection.
- Location of equipment components so that access by personnel during operation, maintenance repair, or adjustment activities do not require exposure to hazards; e.g., electrical shocks, burns, sharp edges or points, and dangerous or toxic materials.
- Design to minimize severe damage to equipment or injury to personnel in the event of an accident.
- Avoidance of undue exposure to physiological stresses, which might cause errors leading to an accident.
- Provision of suitable warning and caution notes in instruction for operation assembly, maintenance, and repair, and distinctive markings for personal protection on hazardous components, equipment, and facilities.
- Material Discrepancy Reports are used to document and track defective parts, when such items are identified. PRMT works with the responsible vendor to resolve defective parts issues. QAAW provides receiving inspection for all receiving store rooms for TIES.

Basic safety and user requirements are included in procurement specifications and coordinated with appropriate offices. As new facility, system, or equipment specifications are proposed, responding contractors are required to resolve hazards, in accordance with the following prioritized list:

- Design for minimum hazard:  
The major effort during the design phase of a contract shall be to select appropriate safety design features (e.g., fail-safe, redundancy).
- Safety Devices:

Hazards, which cannot be eliminated through design, shall be reduced to an acceptable level with appropriate safety devices.

- **Warning Devices:**  
Where it is not possible to preclude the existence or occurrence of a hazard, devices shall be employed for the timely detection of the condition and the generation of an effective warning signal.
- **Special Procedure:**  
Wherever it is not possible to reduce the magnitude of an existing or potential hazard through design or the use of safety and warning devices, the development of special procedures to control the hazard shall be required.

Specifications include the requirement that contractors who provide systems, subsystems, or equipment that affect safe movement of vehicles or passenger and employee safety, establish and maintain a system safety program in accordance with a WMATA-approved system safety program plan, which defines objectives, tasks, procedures, schedules, and data submittals for the safety activities that will be performed by the contractor. The contractor's system safety program plan and supporting documentation are reviewed and approved by the Contracting Officer's Authorized Representative (AR), subject to review and approval by SAFE.

Specifications also include the requirement for a contractor Quality Control Program and Quality Assurance Program in accordance with the WMATA Quality Assurance Program Manual.

## **21.2 Procurement of Chemicals and Hazardous Materials**

All chemicals and hazardous materials are procured in compliance with chapter 6.3, "Inventory Communication Tools" of the WMATA *Maintenance and Materials Policy and Procedure Manual*, June 2008 and the WMATA *Safety Rules and Procedures*, Procedure No. 4.2/1, *Hazard Communication Program*. All chemicals and hazardous materials must have a MSDS that is reviewed and approved by SAFE prior to use by Authority employees or by contractors on Authority property.

The use of Purchase Cards for chemical and hazardous materials purchases must comply with section 8.0, "Transaction Procedures," 8.01 (g) and section 10.09 of the *WMATA Purchase Card Guidelines*. Only chemicals and hazardous materials with a previously approved MSDS may be procured with a Purchase Card.

## 21.3 Inspection of Contractor Equipment, Vehicles, Work and Deliverables

All equipment and vehicles that a contractor intends to use in the Metrorail system or on Authority property must be evaluated and approved by the Contracting Officer's Technical Representative (COTR) and subject to review and approval by SAFE, prior to use.

The *WMATA Contracting Officer's Technical Representative Guide*, (January 2008), requires the COTR to perform inspections of contractor work and deliverables prior to acceptance. The purpose of inspection is to determine whether a completed product or service complies with the requirements of the contract and can, therefore, be accepted. The extent of inspection varies with the dollar value of the contract and the product or service procured.

At a minimum, the Authority COTR is required to inspect contractor deliveries in order to determine whether:

- The proper type or kind of supplies were provided
- The correct quantity of supplies was provided
- Any changes or deviations from contract requirements exists
- The product operates as intended
- There are no signs of spoilage or age deterioration
- The item is properly identified or marked
- Appropriate packaging was provided

Inspection Methods of the contract deliverables by the COTR include:

- Sensory and dimensional checks
- Performance or physical tests
- Quality tests

Nonconformance with the contract specifications is unacceptable if it adversely affects:

- System safety, or the safety and health of the product user
- Reliability, durability, or performance
- Interchangeability of parts or assemblies
- Any other basic objective of the contract

The COTR documents inspections findings and informs the Contractor in a timely manner. Issues are resolved in accordance with the contract provisions.

## **21.4 Inspection of Inventory Material**

TIES *Administrative Procedure* 113-05, *QAAW Receiving Inspection Policy and Procedures*, December 11, 2009, defines and establishes processes for acceptance of any rail system materials, parts, tools and equipment prior to being entered into inventory at the Metro Supply Facility. This procedure is to prevent the unintended use of any materials, parts, tools and equipment that do not meet the established criteria and specifications established by TIES.

Corporate Quality Assurance and SAFE perform storeroom inspection of Metro Access contractor facilities for compliance. The storeroom inspections are completed and documented on form #100-FM-28.

Corporate Quality Assurance OAP 100-15 First Article Inspection defines inspections of New purchased buses and bus systems. The inspections are conducted at WMATA bus facilities. The storeroom inspections are completed and documented on form# 100-FM-28.

## **Appendix A - References**

FTA, NTSB, FRA and APTA have stressed the safety aspects of rapid transit programs and the need for a formal approach to safety management in documents one (1) through six (6). Documents seven (7), eight (8) and nine (9) address OSHA Standards. Document ten (10) was used as a guideline in preparing the document.

1. Tri-State Oversight Committee. *TOC Program Standards and Procedures*. Washington, DC: September 2012.
2. U.S. Department of Transportation, Federal Transit Administration. *Code of Federal Regulations*, title 49, part 659, *Rail Fixed Guideway Systems; State Safety Oversight; Final Rule*. Washington, DC: GPO, April 29, 2005.
3. U.S. Department of Transportation, Federal Transit Administration. *Code of Federal Regulations*, title 49, part 659, *Rail Fixed Guideway Systems; State Safety Oversight Reference Guide*. Washington, DC: June 22, 2005.
4. U.S. Department of Transportation, Federal Transit Administration. *Implementation Guidelines for Code of Federal Regulations*, title 49, part 659. Washington, DC: March 2006.
5. U.S. Department of Transportation, Federal Transit Administration. *Resource Toolkit for State Oversight Agencies Implementing Code of Federal Regulations*, title 49, part 659. *Washington, DC*: March 2006.
6. U.S. Department of Transportation, Federal Transit Administration. *Handbook for Transit Safety and Security Certification*. Washington, DC: November 2002.
7. U.S. Department of Labor, Occupational Safety and Health Administration. *Code of Federal Regulations*, title 29, part 1910, *Safety and Health Standards for General Industry*. Washington DC: 2012.
8. U.S. Department of Labor, Occupational Safety and Health Administration. *Code of Federal Regulations*, title 29, part 1926, *Safety and Health Standards for Construction*. Washington, DC: 2012.
9. U.S. Department of Labor, Occupational Safety and Health Administration. *Code of Federal Regulations*, title 29, part 1904, *Standards for Record Keeping*. Washington, DC: 2012.
10. University of Chicago Press. *The Chicago Manual of Style*. 15th ed. Chicago: University of Chicago Press, 2003.

## **Appendix B - Acronym Glossary**



AC	Alternating Current
ACCS	Department of Access Services
AED	Automated External Defibrillator
AGM/ACCS	Assistant General Manager, Access Services
AGM/BUS	Assistant General Manager, Department of Bus Service
AGM/IT	Assistant General Manager, Information Technology
AGM/PLJD	Assistant General Manager, Department of Planning and Joint Development
AGM/TIES	Assistant General Manager, Transit Infrastructure and Engineering Services
AMTRAK	National Railroad Passenger Corporation's intercity passenger train service
ANSI	American National Standards Institute
APCA	Air Pollution Control Act
APTA	American Public Transportation Association
AR	Authorized Representative of the Contracting Officer
ATC	Automatic Train Control System
ATO	Automatic Train Operation System
ATP	Automatic Train Protection System
ATS	Automatic Train Supervision System
BMNT	Office of Bus Maintenance
BOCC	Bus Operations Control Center
BSEH	Department of Bus Service Employees' Handbook
BTRA	Office of Bus Transportation
BUS	Department of Bus Service
CAP	Corrective Action Plan
CCTV	Closed Circuit Television System
CDL	Commercial Driver's License
CENI	Office of Chief Engineer, Infrastructure
CENV	Office of Chief Engineer, Vehicles
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFO	Department of Finance, Chief Financial Officer
CFR	Code of Federal Regulations
CIT	Construction, Inspection and Testing
CMNT	Office of Car Maintenance
CNG	Compressed Natural Gas
COG	Metropolitan Washington Council of Governments
COMM	Office of Communications
COOP	Continuity of Operation Plan
COUN	Office of General Counsel
CPO	Office of Performance
CPR	Cardiopulmonary Resuscitation
CSCM	Department of Customer Service, Communications and Marketing
CSO	Chief Safety Officer
CSX	Rail Based Transportation Company

CQAL	Office of Corporate Quality Assurance (SAFE)
CWA	Clean Water Act
DCB	Design Control Board
DDOT	District of Columbia Department of Transportation
DCO	Deputy Environmental Compliance Officer
DGMA/CFO	Deputy General Manager, Administration-Chief Financial Officer
DGMO	Deputy General Manager, Operations
DOT	Department of Transportation
DST	Daily Safety Test
EAC	Equipment Advisory Committee
EAP	Employee Assistance Program
ECO	Environmental Compliance Officer
ECT	Executive Correspondence Team
ELES	Office of Elevators and Escalators
ELT	Executive Leadership Team
EMI	Engineering Modification Instruction
EMIH	Office of Environmental Management and Industrial Hygiene
EMS	Emergency Medical Services
EOP	Emergency Operations Plan
EPCRA	Emergency Planning and Community Right-To-Know Act
ERTF	Emergency Response Training Facility
ESC	Executive Safety Committee
ETEC	Emergency Tunnel and Evacuation Carts
ETS	Emergency Trip Stations
F&I	Fire and Intrusion Alarm System
FHWA	Federal Highway Administration
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GM/CEO	General Manager/Chief Executive Officer
HOMT	Heavy Overhaul Maintenance
HR	Department of Human Resources
IDW	Intrusion Detection and Warning System
IG	Office of Inspector General
IPLN	Intermodal Strategic Planning
IRP	Infrastructure Renewal Program
IRPG	Office of Infrastructure Renewal Programs
ISSR	Internal Safety and Security Review
IT	Department of Information Technology
MACS	Office of MetroAccess Service
MARC	Maryland Area Regional Commuter Train Service
MAXIMO	IBM Asset Management Software
MCSR	Motor Carrier Safety Regulations
MDOT	Maryland Department of Transportation
MOC	Maintenance Operations Center

MOSH	Maryland Occupational Safety and Health
MREL	Media Relations
MSDS	Material Safety Data Sheets
MSF	Metro Supply Facility
MSRPH	Metrorail Safety Rules and Procedures Handbook
MTPD	Metro Transit Police Department
NCA	Noise Control Act
NCR	National Capital Region
NCTA	National Capital Transportation Agency
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHTSA	National Highway Traffic Safety Administration
NRC	National Response Center
NTD	National Transit Database
NTP	Notice to Proceed
NTSB	National Transportation Safety Board
OAP	Operations Administrative Procedures
OCC	Operations Control Center
ODEV	Office of Organizational Development
OEM	Office of Emergency Management
OIG	Office of Inspector General
OPMS	Office of Operations Management Services
OSHA	Occupational Safety and Health Administration
PA	Public Address System
PABX	Private Automatic Branch Exchange
PARK	Office of Parking
PERS	Passenger Emergency Reporting System
P/I	Policy/Instruction
PIDS	Passenger Information Display System
PLJD	Department of Planning and Joint Development
PLNT	Office of Plant Maintenance
PME	Precision Measurement Equipment
PMI	Preventative Maintenance Inspection
PREL	Public Relations
PRMT	Office of Procurement and Materials
PSPC	Public Safety Policy Committee of Washington Metropolitan Council of Governments
QAAW	Office of Quality Assurance and Warranty
RCRA	Resource Conservation and Recovery Act
RFC	Requests for Change
RISK	Office of Risk Management
ROCC	Rail Operations Control Center
ROCS	Rail Operations Control System
ROQT	Office of Rail Operations Quality Training
RWP	Roadway Worker Protection
RTRA	Office of Rail Transportation

RTTO	Office of Rail Train Operations
S&I	Service and Inspection
SAFE	Department of Safety and Environmental Management
SARA	Superfund Amendments and Reauthorization Acts
SCES	Office of Supply Chain Enterprise Services
SMNT	Office of Rail System Maintenance
SMS	Safety Measurement System
SOP	Standard Operating Procedures
SRP	Safety Rules and Procedures
SSCP	Safety and Security Certification Plan
SSO	State Safety Oversight
SSPP	System Safety Program Plan
STDS	System Time Distribution System
TIES	Department of Transit Infrastructure and Engineering Services
TOC	Tri-State Oversight Committee
TPC	Third Party Claims
TRST	Office of Track and Structures
TSCA	Toxic Substances Control Act
TTY	Teleprinter System
UPS	Uninterruptible Power Supply
VADRPT	Virginia Department of Rail and Public Transportation
VDOT	Virginia Department of Transportation
VOSH	Virginia Occupational Safety and Health Service
VRE	Virginia Railway Express
WMATA	Washington Metropolitan Area Transit Authority
XML	Extensible Markup Language

## **Appendix C - Glossary of Terms**

The following is a glossary of terms used in this System Safety Program Plan. Note: Definitions are taken from the APTA Publication “Moving People Safely”, unless otherwise indicated.

**[Bus]** and **[Rail]** indicate that the terms are specific to a bus or rail function, respectively.

**Accident** - An unforeseen event or occurrence that results in injury or property damage.

**Advertised Run [Bus]** – A new vacant run posted on the board at all divisions for bidding by any operator who desires it. (WMATA)

**Alight** – To disembark from a vehicle. (WMATA)

**Automatic Train Control (ATC) System [Rail]** – The ATC system consists of three control subsystems and a computerized Central Control Facility. The three control subsystems are Automatic Train Operation (ATO), Automatic Train Protection (ATP), and Automatic Train Supervision (ATS). Each performs its own particular functions independently of the other two to a certain extent. The operations of the three subsystems are coordinated through the computer at Operations Control Center to achieve an integrated system. (WMATA)

**Automatic Train Operation (ATO) [Rail]** – That subsystem within the ATC system that performs functions normally performed by the train operator. These functions are regulation of acceleration rate, speed, rate of deceleration, programmed stopping, and door control in conjunction with ATP and the Train-to-Wayside Communication System. (WMATA)

**Automatic Train Protection (ATP) [Rail]** – That subsystem within the ATC System that enforces safe operation of the system. It imposes speed limits both to maintain train separation and to operate trains in accordance with civil speed restrictions. At interlockings, ATP ensures that train movement is permitted only when a route is available through the interlockings, and the switches are safely locked in position. In all cases where two or more trains request the use of a single segment of track or interlockings, the ATP prevents occupancy by more than one train. (WMATA)

**Automatic Train Supervision (ATS) [Rail]** – The ATS subsystem controls and supervises the routing and scheduling of the trains. ATS also supervises and controls the transit system mechanical support and electrical power facilities. (WMATA/GRS)

**Block [Rail]** – A section of track of defined limits, the use of which is governed by interlocking signals and cab signals under control and protection of the ATC System.

**Block, Absolute [Rail]** – A section of track between two specific locations into which no train is permitted to enter a section that is occupied by another train. This absolute

block is established and governed by the Operations Control Center when necessary, due to a carborne malfunction (e.g., ATP or Braking) or ATC failure. (WMATA)

**BLOCK NUMBER [Bus]** – A letter/number combination assigned to a segment of a bus schedule and displayed in the right front window of a bus. (WMATA)

**Boarding** – To embark on a vehicle. (WMATA)

**Characteristics, Operating** – Those quantitative, measurable parameters pertinent to a specific system, subsystem, device or component that provide definition of performance.

**Clearances [Rail]** – The distance between specified points along the track and specified points on moving vehicles.

**Configuration Management** – The effective control of a facility's as-built arrangement and operation to ensure compliance with approved and/or accepted technical requirements and other governing criteria.

**Construction Safety** – The optimum degree of safety within the constraints of effectiveness, time, and cost through specific application of safety management techniques throughout all phases of construction.

**Contract Service [Bus]** – An arrangement whereby a Metrobus is reserved for regular transportation without cost to riders. Contract service is paid by an agency or government, e.g., Department of Defense, Alexandria City Schools. (WMATA)

**Crash Safety** – A system characteristic that allows the system occupants to survive the impact of a crash and to evacuate the system after potentially survivable accidents.

**Crash Worthiness** – The capacity of a vehicle to act as a protective container and energy absorber during impact conditions.

**Crossover [Rail]** – Two turnouts, with track between the frogs, arranged to form a continuous passage between two parallel tracks. (FTA)

**Cutback [Bus]** – A turn back short of the regular destination. (WMATA)

**Deadheading [Bus]** – A bus in non-revenue service, marked "NOT IN SERVICE". (WMATA)

**Degradation** – Falling from an initial level to a lower level in quality or performance.

**Dragging The Line [Bus]** – Operating a bus so that it is behind the scheduled time of the following bus. (WMATA)

**Emergency** – A situation that is life threatening or which causes damage on or in any transit facility, train way, or vehicle.

**Exclusive Bus Lane [Bus]** – The right hand lane along major bus routes that is reserved during peak hours of operation for buses, taxi cabs, and cars turning right. (WMATA)

**Express Bus [Bus]** – Buses serving outlying areas with limits on where they can pick-up and discharge passengers. (WMATA)

**Fail-Safe (Safety)** – A characteristic of a system and its elements, the object of which is to ensure that any fault or malfunction, will not result in an unsafe condition.

**Fail-Safe Design** – A design principle in which each of the elements which make up a system is analyzed to determine the potential consequence of failure of that element, alone or in combination with any or all other elements of the system, to ensure that a failure or a combination of failures will not result in an unsafe condition.

**Failed Component** – A component that has ceased to perform its intended function.

**Failure** – An inability to perform an intended function.

**Failure Analysis** – The logical systematic examination of a system to identify and analyze the probability, causes and consequences of potential and real failure.

**Failure Assessment** – The process by which the cause, effect, responsibility and cost of an incident (reported problem) in the transit system is determined and reported.

**Failure, Human** – Failure due to human error.

**Failure Management** – Decision, policies and planning which identify and provide alternate measures to operate around potential failures in a safe manner. (WMATA)

**Failure Mode and Effect Analysis (FMEA)** – An inductive procedure in which potential malfunctions are identified and then analyzed as to their possible effects.

**Fault Tree Analysis** – A deductive process that graphically presents undesired events to determine possible causes of that event.

**Follower [Bus]** – The bus scheduled behind another bus. (WMATA)

**Frog, Track [Rail]** – A track structure used at the intersection of two running rails to provide support for wheels and passageways for their flanges, thus permitting wheels on either rail to cross the other. (FTA)



**Hazards** – Any real or potential condition that can cause injury or death, or damage to or loss of equipment or property.

**Hazard Analysis** – An analysis performed to identify hazardous conditions for the purpose of their elimination or control.

**Hazard Severity (MIL-STD 882)** – Hazard severity is defined to provide a qualitative measure of the worst credible mishap resulting from personnel error, environmental conditions, design inadequacies, procedural efficiencies for system, subsystem or component failure or malfunction as follows:

- **Category I – Catastrophic.** Death or system loss.
- **Category II – Critical.** Severe injury, severe occupational illness, or major system damage.
- **Category III – Marginal.** Minor injury, minor occupational illness, or minor system damage.
- **Category IV – Negligible.** Less than minor injury, occupational illness or system

**Hazard Probability (MIL-STD 882)** – The probability that a hazard will occur during the planned life expectancy of a system, expressed in potential occurrences per unit of time, events, population, items, or activity.

**Hazard Resolution** – The analysis and subsequent actions taken to reduce to the lowest level practical, the risk associated with an identified hazard.

**Headway [Bus]** – The time between buses operating on the same route. (WMATA)

**Headway [Rail]** – The time separation between two trains, both traveling in the same direction on the same track, measured from the time the head end of the leading train passes a given reference point to the time the head end of the train immediately following passes the same reference point. (FTA)

**Incident** – An unforeseen event or occurrence that does not result in injury or property damage.

**Interlocking [Rail]** – An arrangement of signals and signal appliances associated with turnouts, crossovers and pocket tracks so interconnected that their movements must succeed each other in proper sequence. (WMATA)

**Kiosk** - An octagonal structure located at each entrance to a station that serves as the hub of communications for the station. (WMATA)

**Line [Bus]** – The route a bus is scheduled to operate. (WMATA)

**Local [Bus]** – A bus that stops for either boarding or discharging passengers at every stop on the route. (WMATA)

**Mainline** – Track over which passenger service is operated. (FTA)

**Mode 1 (Automatic) [Rail]** – Train operation with train under ATO control with ATP monitoring and protection. (WMATA)

**Mode 2 (Manual with ATP Cutout) [Rail]** – Train operation under manual (train operator) control without ATP monitoring and protection. This mode is not permitted unless passengers are evacuated from the train and an Absolute Block is established to allow train movement. (WMATA)

**Notice to Operators (NTO) [Bus]** – Rules, regulations and special instructions posted on the bulletin boards at each bus division. (WMATA)

**Operations Control Center (ROCC) [Rail]** – The place where train control and train supervision is accomplished for the entire transit system.

**Owl Service [Bus]** – Metrobus service between midnight and 5:00 a.m. (WMATA)

**Peak Hours** – Those weekday (excluding national holidays) periods normally associated with the AM and PM rush. (WMATA)

**Personnel, Operating [Rail]** – Those employees of a transit system having direct and supervisory responsibility for the movement of trains, embodying both on-board and wayside duties. (WMATA)

**Pre-Trip Inspection [Bus]** – A standard operating procedure outlining the necessary steps to inspect a bus for possible safety defects prior to entering revenue service. (WMATA)

**Rail Fixed Guideway System** – Any light, heavy, or rapid rail system, monorail, inclined plane, funicular, trolley, or automated guideway that is: (1) included in FTA's calculation of fixed guideway route miles or receives funding under FTA's formula program for urbanized areas; and (2) not regulated by the Federal Railroad Administration. (FRA)

**Rail Rapid Transit System** – An electrified fixed guideway transportation system utilizing steel rails, usually for operating on an exclusive grade-separated Roadway for the mass movement of passengers within a city or metropolitan area and consisting of its fixed way, transit car vehicles and other rolling stock, power system, maintenance facilities and other stationary and movable apparatus and equipment and its operating practices and personnel.

**Regular Run [Bus]** – A scheduled combination of trips whose total time guarantees, equals, or exceeds payment for the number of hours specified as a day's work. (WMATA)

**Revenue Service** – The transportation of passengers.

**Risk Management** – The management of hazard probability and severity so that possible loss is minimized. (MIL-STD 882B)

**Route Number [Bus]** – That number assigned to a run for identification purposes. (WMATA)

**Safe** – Secure from danger or loss.

**Safety and Security Certification** – A system that provides traceable verification that all safety-critical and security systems, subsystems, procedures and training programs have been reviewed for compliance with all applicable transit-related safety and security requirements prior to the commencement of passenger service or normal operations.

**Safety Critical** – A designation placed on a system, subsystem, element, component, device or function denoting that satisfactory operation or implementation is mandatory to safety assurance. (WMATA)

**Safety Design Reviews** – Reviews performed by SAFE to: assess the compliance of facility or equipment design with safety, fire, and environmental regulations and requirements in specifications and to ensure that the safety of existing WMATA equipment is not degraded by the addition of new facilities or equipment, as part of the configuration management process. Safety design reviews are normally an integral part of engineering design reviews to minimize overlapping responsibilities. Safety design reviews are performed by SAFE on all new TIES construction, and TIES infrastructure renewal program (IRP) projects, joint development, adjacent construction projects and vehicle procurement.

**Safety Measurement System** – The Safety Measurement System (SMS) is a set of tools that allow the Department of Safety and Environmental Management (SAFE) to measure the overall system safety of WMATA. This set of tools provides both WMATA and SAFE a means to manage safety incidents, safety hotline reports, and hazards through modules of SMS by doing the following:

- Reducing paperwork;
- Eliminating redundant work efforts;
- Centralizing safety critical data;
- Direct tracking of identified problems; and
- Improved communication from the field to management and safety personnel.

**Safety Oversight** – The FTA *Fixed Guideway Systems; State Safety Oversight* regulation, *Code of Federal Regulations* title 49, part 659, requires that states in which a rail fixed guideway system operates, designate a state oversight agency to be responsible for overseeing the rail fixed guideway system’s safety practices. (FTA)

**Signal [Rail]** – A means of communicating direction or warning.

**Signal, Cab [Rail]** – A signal in the train operator’s cab that indicates prevailing speed commands, and conveys ATC system aspects.

**Signal, Interlocking [Rail]** – A visual wayside signal containing color-coded lights which governs movements into or within interlocking limits.

**Subsystem** – A defined portion of a system that is in turn composed of subsystems, component parts, or both. (WMATA)

**Station [Rail]** – A place designated for the purpose of loading and unloading passengers.

**Switch, Track [Rail]** – a pair of switch points with their fastenings and operation rods providing the means for establishing a route from one track to another.

**System** – A composite of people, procedures and equipment operating in a specific environment to accomplish a specific operation or task.

**System Safety** – The application of operating, technical, and management techniques and principles to the safety aspects of a system throughout its life to reduce hazards to the lowest level possible through the most effective use of available resources.

**System Safety Analysis** – A formalized method of identifying and eliminating or controlling system hazards. (WMATA)

**System Safety Engineering** – The application of scientific and engineering principles during the design, development, manufacture and operation of a system to meet or exceed established safety goals.

**System Safety Management** – An element of management that defines the System Safety Program requirements and ensures the planning, implementation and accomplishment of system safety tasks and activities consistent with the overall WMATA requirements. (MIL-STD 882)

**Terminal [Bus]** – The end of a route where a bus will wait until its scheduled return trip. (WMATA)

**Third Rail [Rail]** – A rail mounted on insulators alongside the running rail that provides traction power for train operation.

**Train [Rail]** – A consist of one or more pairs of rail vehicles combined into an operating unit.

**Train Identification [Rail]** – A method of identifying trains using information such as train number, destination, length, or a combination of these elements. This may be accomplished automatically for such functions as routing.

**Train Operator [Rail]** – That person on board a train having direct and immediate control of the movement of a train.

**Train Car, Rail, Rapid, [Rail]** – An electrically propelled passenger carrying rail vehicle characterized by high acceleration and braking rates for frequent stops, and fast loading and unloading.

**Transit System Fail-Safe** – The integration of the design, procedures, people and all other elements of a transit system using the principles of fail safety and system safety in such a manner that equipment failures or personnel errors, or combinations of both, shall not result in an increased hazard level.

**Trippler [Bus]** – Scheduled work for an operator whose total pay time is less than that specified for a regular run. (WMATA)

**Turnout [Rail]** – An arrangement of a switch and frog with closure rails by means of which trains may be diverted from one track to another. (FTA)

**Unsafe Condition** – Any condition that endangers human life or property.

**Vital Function** – A system, subsystem, equipment or component that provides a function critical to safety.

**Yard, Storage [Rail]** - A system of tracks within defined limits for making up trains and storing transit rail vehicles. (FTA)



**Appendix D - WMATA Organization Chart**

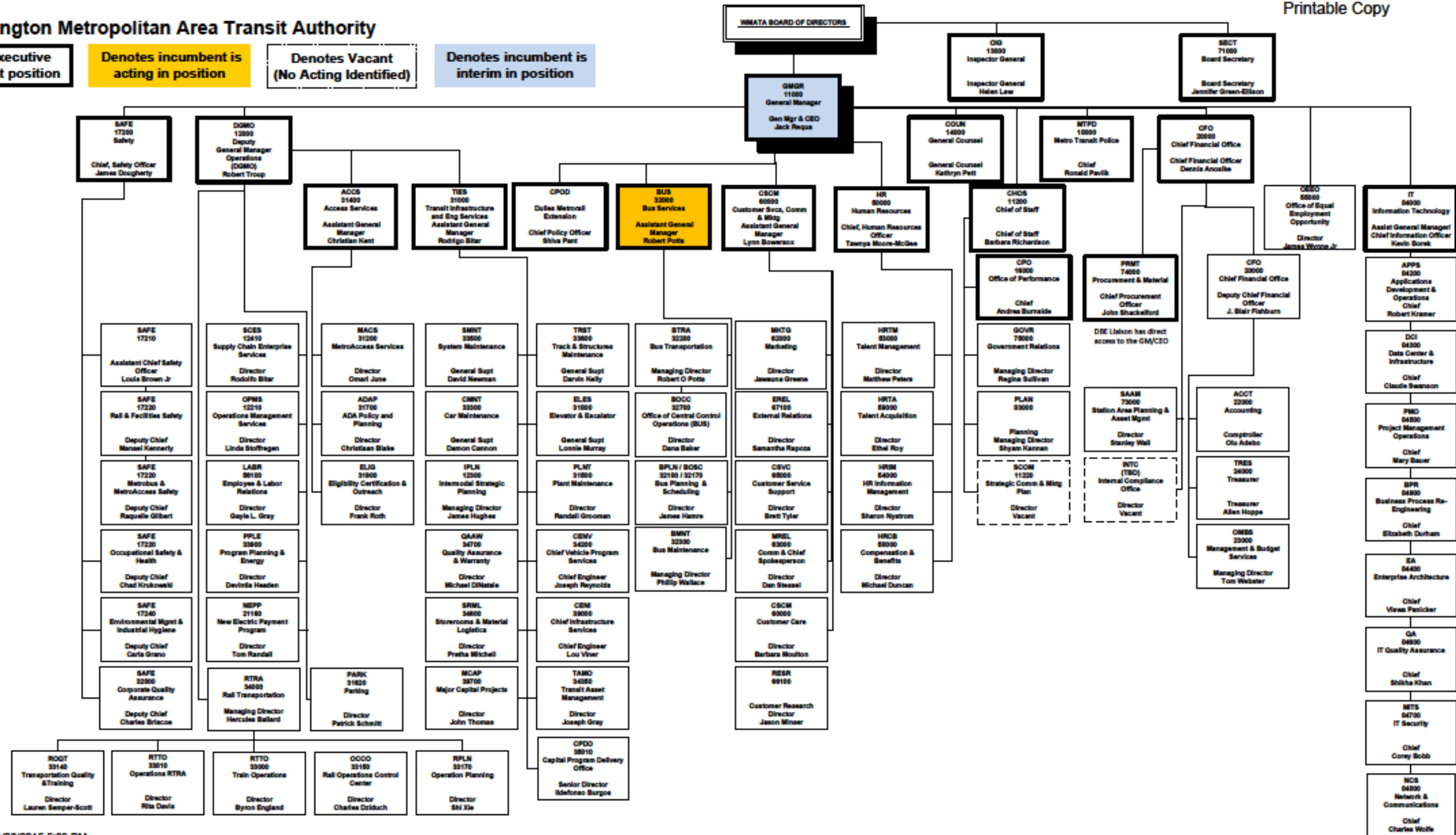
# Washington Metropolitan Area Transit Authority

Denotes Executive Management position

Denotes incumbent is acting in position

Denotes Vacant (No Acting Identified)

Denotes incumbent is interim in position



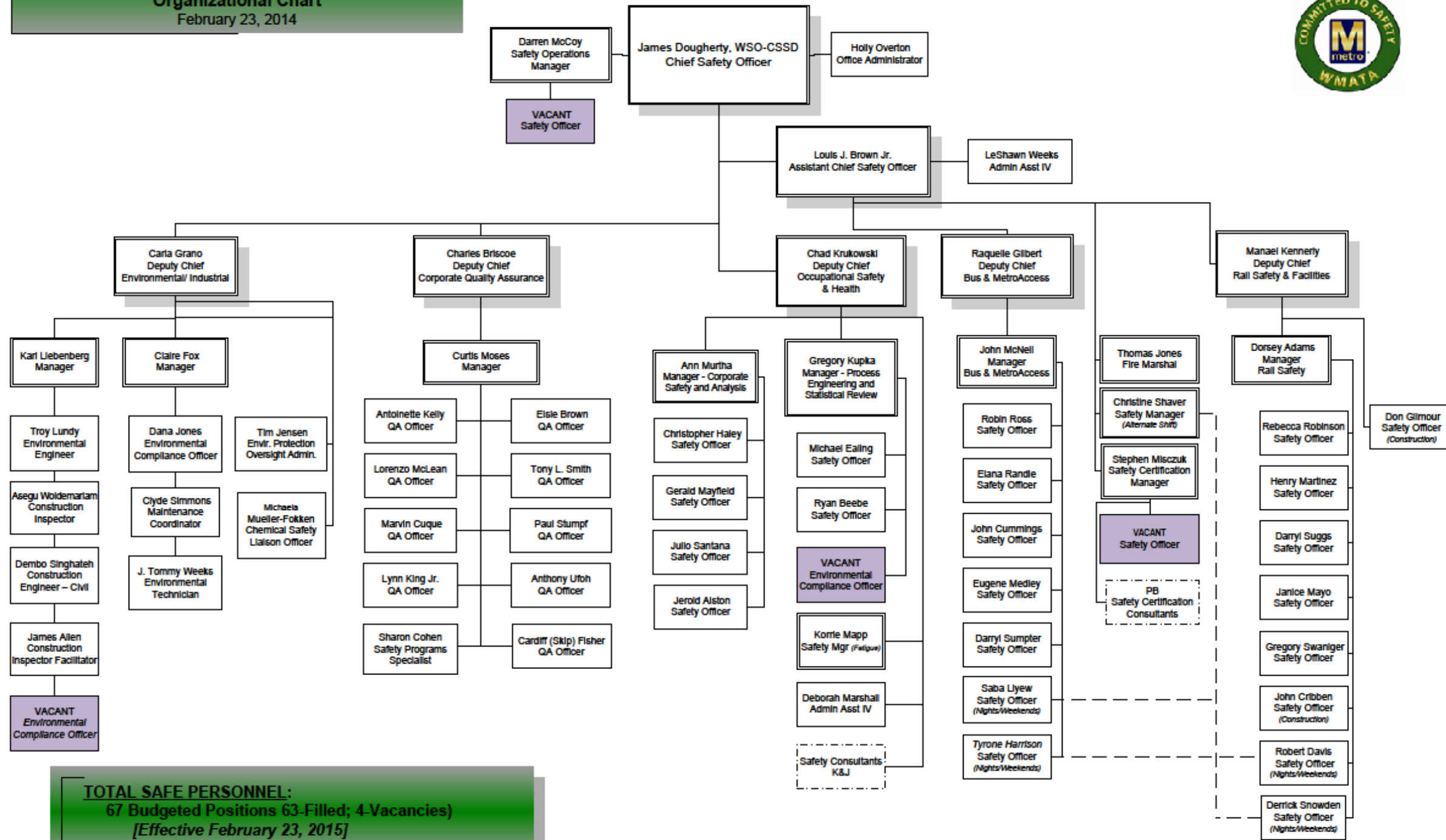
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## WMATA Organization Chart

## **Appendix E - SAFE Organization Chart**



**Department of Safety and Environmental Management**  
**Organizational Chart**  
 February 23, 2014



**TOTAL SAFE PERSONNEL:**  
 67 Budgeted Positions 63-Filled; 4-Vacancies  
 [Effective February 23, 2015]

**SAFE Organization Chart**