2023

PTASP

PUBLIC TRANSPORTATION AGENCY SAFETY PLAN

BI·STATE DEVELOPMENT | metro | GATEWAY ARCH | ST. LOUIS DOWNTOWN AIRPORT | RIVERBOATS AT THE GATEWAY ARCH | ST LOUIS REGIONAL FREIGHTWAY

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Approvals

The individuals below, submitting and signing this Public Transportation Agency Safety Plans (PTASP), verify that it was prepared in accordance with the appropriate and applicable requirements and guidelines set forth by the Federal Transit Administration in 49 CFR Parts 625, 630, 655, 670, 672, 673, 674, and others, and the Bi-State Safety Oversight (BSSO) Program Standard; that they are authorized representatives of the Board of Commissioners of Metro Transit; that their signatures attest that all items and conditions contained in this plan are understood, accepted and approved; and that they are committed to implementing the PTASP and achieving its safety goals and objectives.

Approved By:

Board Approval — Date: 8/10/2023

Joint Safety/Union Committee Approval — Date: 8/7/2023

Taulby Roach — Date: 8.1.2023
President and CEO (Accountable Executive)
Bi-State Development

Andrew Ghiassi — Date: 8/1/2023
General Manager of Safety (Chief Safety Officer)
Bi-State Development

Revisions/Amendments

Revision No.	Revision Date	Revised Sections
1	06/19/2020	Initial Submission
2	01/01/2021	Organizational charts, Emergency Management, Hazard Management
3	03/31/2022	Organizational charts, Emergency Management, Hazard Management, New Bi--Partisan Infrastructure Law requirements, updated committees and working groups
4	1/31/2023	Updated organizational charts, job titles, department names, and roles & responsibilities; Added details regarding Dept. of Safety training courses, Hazard Log, and CAP Tracker; Removed system schematics and MLRFGS system element tables that are not referenced in the PTASP and reside in other program standards (i.e. maintenance, engineering, and emergency preparedness plan); Removed repetitive information to avoid conflicts of information within the PTASP and across other program plans

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Introduction

Purpose

Metro has adopted the practices and methods of Safety Management Systems (SMS) as described in the National Transportation Safety Plan (NSP). The purpose of this Public Transportation Agency Safety Plan (PTASP) is to systematically implement Metro's SMS program and introduce safety processes where they are necessary to achieve assurance. The PTASP is reviewed annually to ensure all systems, equipment, facilities, plans, procedures, manuals, and training programs comply with established safety requirements; and that the PTASP reflects the current SMS configuration at Metro. Specifically, the PTASP:

- Establishes the safety program on a company-wide basis;
- Provides a framework for implementing Metro's safety management system, policy, goals and objectives;
- Identifies the relationships and responsibilities of each Metro department relative to achieving safety goals and objectives;
- Identifies the relationships and responsibilities of Metro with municipal and state governing bodies and other organizations and agencies that impact transit system safety;
- Provides a mechanism whereby Metro can demonstrate its commitment to safety, foster a positive safety culture and meet safety performance goals;
- Provides requirements that, as appropriate, contractors and suppliers meet Metro's safety requirements prior to commencing work and/or while on the premises;
- Satisfies federal, state, and local requirements;
- Ensures that the system meets or exceeds accepted industry safety standards;
- Facilitates Federal Transit Administration (FTA) and State Safety Oversight Agency (SSOA) safety inspections, reporting, corrective actions and general and special directives and requirements; and
- Implements NSP performance criteria, state of good repair, vehicle, safety standards, meet training criteria and all other safety management requirements and goals.

Every Metro employee and any outside contractor who serves Metro has the duty to adhere to the PTASP; to recognize, report and correct hazards; to work in a safe manner; to promote safety awareness; and to actively assist in accident prevention.

The signatures of the President and CEO, and Chief Safety Officer included in the Approvals section of this plan attest to the fact that this plan is understood, accepted and approved; and that management is committed to implementing SMS through the PTASP and achieving its safety goals and objectives.

Scope

It is the mission of Metro's management to provide bus, paratransit, and light rail services to the St. Louis Region. This PTASP is intended to cover all current and future Metro bus, paratransit and rail operations, services, and projects. In order to implement Metro's safety policies, goals, and objectives, this PTASP:

- Addresses all Metro departments and contractors;

- Applies to all activities which involve planning, design, construction, procurement, installation, and testing of equipment or facilities, operations, maintenance, support activities, and the environment in which the transit system operates, including areas of public access and adjacent property;
- Charges each director, manager, supervisor, and employee with the responsibility for PTASP implementation and success;
- Requires coordination, integration, communication, and cooperation among all directors, managers, supervisors, departments, and employees;
- Encompasses all rail, paratransit and bus facilities, equipment, vehicles, and employee activities and applies to all who come in contact with the rail and bus systems;
- Establishes appropriate safety performance measures to ensure continuous safety improvement;
- Accommodates federal and state safety assessments, inspections, investigations, audits, examinations and testing; and
- Fosters a positive safety culture at Metro.

Authority

Federal

Statutory mandates in the Moving Ahead for Progress in the 21st Century Act (Pub. L. 112–141; July 6, 2012) (MAP–21), reauthorized by the Fixing America's Surface Transportation Act (Pub. L. 114–94; December 4, 2015) and codified at 49 U.S.C. 5329(d), are in place to strengthen the safety of public transportation systems that receive Federal financial assistance under Chapter 53. This legislation defines requirements for the adoption of SMS principles and methods; the development, certification, and update of Public Transportation Agency Safety Plans (PTASP); and the coordination of PTASP elements with other FTA programs and proposed rules, as specified in 49 U.S.C. 5329.

In Section 20021 of MAP–21, Congress directed the FTA to establish a comprehensive Public Transportation Safety Program, one element of which is the requirement for the PTASP. Accordingly, the FTA issued a series of rulemakings with 49 CFR Parts 672, 673, and 674.

State Safety Oversight Program

The Bi-State Safety Oversight (BSSO) is the designated State Safety Oversight Agency (SSOA) agency for fixed guideway safety oversight for the MetroLink system.

Metro is covered under the authority of the BSSO program and must develop and implement a compliant Public Transportation Agency Safety Plan (PTASP), System Security Plan (SSP), and Emergency Preparedness Program Plan (EPPP) that comply with the BSSO Program Standard.

Definitions

Unless otherwise stated, definitions used in this document are consistent with federal regulations and guidance as shown in Appendix B.

System Overview

MetroLink

The MetroLink Rail Fixed Guideway System (MLRFGS) is owned and operated by Metro, a Bi-State Development (BSD) enterprise. Metro was created in 1949 through a compact between Missouri and

Illinois and ratified by the United States Congress. Metro's broad powers enable it to cross local, county, and state boundaries to plan, construct, maintain, own, and operate specific facilities in its efforts to enhance the quality of life in the region. Its service area encompasses 200 municipalities. The mission of the Bi-State Development Agency (now doing business as Bi-State Development (Metro)), as articulated by its governing board, is to promote "regional economic development."

MetroBus

MetroBus is the St. Louis metropolitan region's bus system that operates a fleet of 400 clean-burning diesel buses on 59 bus routes in Missouri and Illinois, encompassing a service area of nearly 540 square miles.

Call-A-Ride

Metro Call-A-Ride is the St. Louis metropolitan region's paratransit system that operates a fleet of more than 120 modern, wheelchair-lift equipped vans. This shared-ride service is available with advance reservations to the public and to persons whose disabilities inhibit them from using accessible, fixed-route MetroLink and MetroBus service.

General Administration

Metro is governed by a 10-member Board of Commissioners; five (5) each from the States of Missouri and Illinois. Missouri Commissioners are appointed by the Missouri Governor, based on recommendations from the St. Louis County Executive and the Mayor of the City of St. Louis. The County Board Chairs of St. Clair and Madison Counties directly appoint Illinois Commissioners. The Commissioners are required to be resident voters of the respective states and must reside within the Bi-State Metropolitan Region. Commissioners serve without compensation. Operating five (5) enterprises, Bi-State Development is a dynamic and multi-faceted resource for economic development in the St. Louis region. BSD owns and operates Metro, St. Louis Downtown Airport, Gateway Arch Riverboats, Gateway Arch Revenue Collections Center and Gateway Arch trams, and St. Louis Regional Freightway.

Section I: Safety Management Policy

Metro is committed to comprehensive safety planning, and as an operator of a public transportation system that receives Federal financial assistance under Title 49 USC Chapter 53, also complies with 49 CFR Part 673.

Metro has adopted the principles and methods of Safety Management Systems (SMS) as the basis for enhancing its safety program. All rules, regulations, policies, guidance, best practices, and technical assistance administered will, to the extent practical and consistent with legal and other applicable requirements, follow the principles and methods of SMS.

The Metro safety management policy will be communicated throughout the organization through:

- SMS Training for all employees
- Communications to all Metro personnel from the President and CEO and Chief Safety Officer (CSO)
- New hire trainings
- Safety Meetings
- General bulletin board postings

The PTASP will be available at all times to all employees. It will be maintained in an accessible electronic file or in hard copy(s) by all of management in locations accessible to employees under their supervision and management.

Chapter 1: Safety Management System Policy Statement

The management of safety is one of our core business functions. Metro is committed to developing, implementing, maintaining, and constantly improving processes to ensure that all our transit service-delivery activities take place under a balanced allocation of organizational resources, aimed at achieving the highest level of safety performance objectives and meeting established standards. All levels of management and all employees are responsible for the delivery of this highest level of safety performance.

Metro's commitment is to:

- Support the management of safety by providing appropriate resources resulting in a safety culture that fosters safe practices, encourages effective employee safety reporting and communication, and actively manages safety with the same attention to results as other Metro management systems.
- Integrate the management of safety among the primary responsibilities of all managers, directors, and employees.
- Define clearly for all staff, managers, directors, and employees alike, their responsibilities for Metro's safety performance and the performance of our safety manager system (SMS).
- Implement hazard identification and analysis activities, risk evaluation activities, and employee safety reporting program as fundamental sources for safety data, in order to eliminate or mitigate the safety risk of the consequences of hazards resulting from Metro operations or activities to a point that is consistent with our acceptable level of safety performance.
- Ensure that no action will be taken against any employee who discloses a safety concern through the employee safety reporting program (unless disclosure indicates, beyond any reasonable doubt, an illegal act, gross negligence, or a deliberate or willful disregard of regulations or procedures has occurred).
- Comply with, and whenever possible exceed, federal and state legislative and regulatory requirements and standards.
- Ensure that sufficient skilled and trained people are available to implement safety management processes.
- Provide all staff with adequate and appropriate safety-related information and training; ensure they are competent in safety management matters; and allocate to employees only tasks commensurate with employee skills.
- Establish and measure our safety performance objectives against realistic and data-driven safety performance indicators and safety performance targets consistent with the National Public Transportation Safety Plan.
- Continually improve Metro's safety performance through management processes that ensure appropriate safety management action is taken and is effective.
- Ensure externally supplied systems and services to support Metro operations are delivered meeting our safety performance standards.

Taulby Roach
President & CEO (Accountable Executive)
Bi-State Development

Chapter 2: PTASP Review and Updates

The Safety Management program operates under a principle of continuous improvement. To this end, the PTASP must be reviewed annually and revised as needed to reflect changes in Metro's organization, procedures, equipment, facilities, and operating environment including:

- Policy changes (mission, goals, or objectives)
- Organizational changes
- Changes to rules and regulations
- Changes in operating procedures
- Elimination of equipment or addition of new equipment
- Elimination of a facility or addition/acquisition of a new facility

Changes in safety policy, goals, or objectives require the approval of the President and CEO.

Changes in policy, organization, rules, regulations, or operations necessitating PTASP adjustments are accomplished within the schedule described herein.

2.1 BSSO Submittal

The BSSO requires Metro to assess its PTASP once each year. Metro must submit proposed PTASP changes to the BSSO annually for review and approval, including a summary identifying and explaining proposed changes. The specific due dates for the PTASP are contained in the Bi-State Safety Oversight Program Standards Manual for Oversight of MetroLink (Program Standard).

Metro must also submit to the BSSO any PTASP revisions made between annual updates. Such submissions are made prior to the time the revision is to be implemented. The BSSO reviews and approves, as appropriate, such revisions.

2.2 BSSO Review and Approval

The BSSO reviews the revised PTASP to ensure it complies with the BSSO Program Standard. Metro shall provide the BSSO with a draft of the annual update, or written confirmation that a review was conducted with no revisions deemed necessary, by April 1 of each year. The BSSO completes this review within (30) thirty calendar days of receipt of the plan, or notifies Metro if additional time is needed to complete the review. If Metro’s plan complies with the Program Standard, the BSSO issues a written approval of the plan and requests that Metro send a final copy of the PTASP with appropriate approval signatures and other endorsements as needed within fifteen (15) days of receiving Board approval. The plan the BSSO reviews and approves is considered the PTASP in effect until another such plan is submitted and approved in accordance with the requirements of the Program Standard.

If the BSSO determines that the submitted PTASP does not meet the published standards of the Program Standard, it will send a written notice, along with a description of what changes are necessary to gain approval. This written notice will typically be made up of a completed checklist, and as needed, an additional narrative or memo. Metro will have thirty (30) calendar days to make such changes, unless otherwise specified in the BSSO’s correspondence.

The BSSO will meet with Metro to discuss the review if Metro wishes. In the event Metro objects to a noted deficiency or requested change from the BSSO, it shall provide written notice of its objections,

and suggest alternatives within seven (7) calendar days. The BSSO and Metro shall review the objections, suggest alternatives, and agree to an appropriate course of action within fifteen (15) calendar days. This review process may include meeting(s) to clarify any deficiencies or issues.

2.3 Metro Review and Approval

The General Manager Safety will coordinate the annual review and revision process of the PTASP and ensure the review takes place. The Director Safety will notify Metro management, and the Joint Labor Safety Committee members, each year of the requirement to review their section of the PTASP for revisions. The General Manager Safety has the responsibility to incorporate any required changes into the overall PTASP. The revised PTASP is then presented to the Joint Labor Safety Committee, and the Executive Safety & Security Committee (ESSC) for review and approval. A copy of the updated PTASP is forwarded to the BSSO for review and approval by April 1. After the BSSO issues their approval the final version of the PTASP, the BSD Board of Commissioners will vote to approve the document. Within fifteen (15) days of Board approval, a fully executed signed version is transmitted to the BSSO, and a published copy is posted on The Hub. In the event that no changes are required following the annual PTASP review, the President and CEO will notify the BSSO that the annual review of the PTASP has been completed and that changes are not required.

A revision cover sheet is included with the distribution of each revision. The revision cover sheet includes the revision number, date, and description of all updates. If no revisions are deemed necessary, a dated revision cover sheet is distributed verifying that no revisions are needed.

2.4 Safety Performance Targets

Under the requirements of 49 CFR Part 673.11(a)(4), the Metro PTASP must address the applicable requirements set forth in the FTA's National Public Transportation Safety Plan (NSP) demonstrating compliance with the minimum safety performance standards authorized under 49 U.S.C. 5329(b)(2)(C).

These standards, as set forth in the NSP, are associated with data reported to the National Transit Database (NTD).

The following metrics are established each year:

- Fatality: death confirmed within 30 days; excludes trespassing, suicide, and illness/natural causes
- Injury: harm to a person requiring immediate medical attention away from the scene; includes NTD S&S-40 (major) and S&S-50 (non-major) events; excludes injuries resulting from security events (e.g. assaults and other crimes)
- Safety Event: events meeting the NTD S&S-40 (major) event threshold; includes major safety events (e.g. collision, derailment, fire, and evacuation); excludes major security events (e.g. assault and robbery)
- System Reliability: mean distance between major mechanical failures

The annual target for fatalities, injuries, and safety events is calculated by averaging the number of NTD reportable events from the preceding calendar years. The performance target is presented as the number of events, by mode, per one hundred thousand revenue miles.

System Reliability is reported, by mode, as the mean distance between major mechanical failures. Major mechanical failure is an event that prevents a vehicle from completing or starting a scheduled revenue trip because actual movement is limited or because of safety concerns. The Vehicle Maintenance Department tracks the number of major mechanical failures and establishes the performance targets by fiscal year.

Per 49 CFR Part 673.15(a) & (b), Metro is required to coordinate its performance targets as required by the NSP with the local Metropolitan Planning Organization and the State(s). These entities consist of East-West Gateway Council of Governments (EWGW), Illinois Department of Transportation (IDOT), and Missouri Department of Transportation (MoDOT).

During the draft stages of the PTASP each year, Metro will communicate its proposed performance targets to EWGW. The Accountable Executive, or their designee, will communicate this to EWGW by electronic means and/or an actual meeting. This will be accomplished each year before the draft PTASP is transmitted to the BSSO. Approved performance targets are listed in Appendix A.

Per the Bi-Partisan Infrastructure Law, Metro is also required to include the Joint/Labor Safety Committee in deciding the performance targets each year.

The annual draft PTASP submittal to the BSSO will serve the requirement of Metro communicating its proposed performance targets with the State(s). Metro also has the opportunity of communicating and coordinating with the BSSO on its safety performance measures through the quarterly BSSO meetings and/or site visits.

Chapter 3: Safety Management Accountabilities and Responsibilities

Metro has established the necessary authorities, accountabilities, and responsibilities for the management of safety amongst the following individuals at Metro, as they relate to the development and management of Metro SMS:

3.1 Lines of Authority

3.1.1 Accountable Executive

Metro has identified the President and CEO as the Accountable Executive. The President and CEO is accountable for ensuring that the agency's SMS is effectively implemented throughout Metro's system; and ensuring action is taken, as necessary, to address substandard performance in Metro's SMS. The President and CEO may delegate specific responsibilities, but the ultimate accountability for Metro's safety performance always rests with the President and CEO.

Responsibilities include:

- Ensuring safety concerns are considered in Metro's ongoing budget planning process;
- Ensuring transparency in safety management priorities for the Board of Commissioners and for the employees;
- Establishing guidance on the level of safety risk acceptable to the agency; and
- Ensuring the safety management policy is appropriate and communicated throughout the agency.

3.1.2 Chief Safety Officer (CSO):

The Accountable Executive has designated the General Manager Safety as the Chief Safety Officer (CSO). This position serves as the SMS Executive with authority and responsibility for day-to-day implementation and operation of Metro's SMS. The CSO holds a direct line of reporting to the President and CEO. The President and CEO, or other designee assigned by the President and CEO, will serve as the CSO when the position is vacant or unavailable.

3.1.3 Managers/Supervisors

Managers/Supervisors are responsible for safety performance within their functional area and implementing SMS. This responsibility includes determining and implementing measures to counteract safety hazards and to mitigate known or potential hazards.

3.1.4 Metro Team Members

All Metro team members are responsible for performing their work safely and in accordance with established SMS requirements for the protection of themselves, co-workers, customers, facilities, and equipment. This includes:

- Conforming to workplace safety policies, procedures and requirements;
- Completing all technical, on the job (OTJ), and safety training; and
- Immediately reporting hazards and safety concerns through the employee reporting program.

3.2 Accountability/Responsibility by Department

Within Metro, each department/functional area provides distinct roles and carries out specific safety management responsibilities to ensure the protection of passengers, employees, emergency responders, the community served, and Metro's property.

3.2.1 Engineering

- Administer/monitor construction contracts to ensure that contractor procedures conform to current BSSO and Occupational Safety and Health Administration (OSHA) regulations and that the results are safe for Metro and/or public use.
- Monitor the installation of facilities, systems, and equipment to ensure compliance with contractual requirements and procedures.
- Approve any new, upgraded or modified communications or electronic systems.
- Conduct environmental impact studies.
- Oversee design and engineering consultant services, and construction contracts.
- Report and make recommendations to the Executive Vice President and COO Metro Transit and Metro's Board on major capital projects.
- Participate on Metro's Executive Safety and Security Review Committee (ESSC) and the Safety and Security Certification Working Group (SSCWG) as appropriate.
- Manage hazard and vulnerability processes for capital projects.
- Establish and maintain current drawings for capital project facilities and systems.
- Monitor implementation of project specific safety and security plans, activities, and responsibilities.
- Monitor environmental and chemical compliance with local, state, and federal regulations for capital projects.
- Provide document control for capital projects.
- Provide configuration management for capital projects.

3.2.2 Finance

- Facilitate achievement of PTASP objectives through preparation and control of Metro's budget.
- Ensure necessary funding for safety programs/projects.

3.3.3 Information Technology (IT)

- Ensure IT processes follow the PTASP.
- Manage networking, hardware, software, the Internet, phones, computers, networks, and other technical areas.
- Support the Safety Department with computing technology to monitor, track, and implement SMS and its components.

3.3.4 Maintenance of Way (MOW)

- Ensure signals and switches are maintained safely and efficiently.
- Ensure substations and catenaries are maintained safely and efficiently.
- Ensure safety of Metro buildings including mechanical and electrical equipment.
- Ensure that rail stations and stops meet applicable safety requirements and Metro policies.
- Monitor compliance of organizational policies and procedures.
- Develop and monitor preventive maintenance procedures.
- Ensure the creation and maintenance of accurate records of inspections and maintenance work.

- Ensure necessary procedures are in place and implemented for conducting maintenance activities safely and effectively.
- Provide for enforcement of required safety procedures for all maintenance activities.
- Assist the Safety Department in conducting safety/fire inspections and correcting any identified safety deficiencies.
- Establish and maintain current drawings for Metro facilities and systems.

3.3.5 MarCom

- Act as a source of information to the public and news media during an emergency.
- Coordinate the dissemination of information to BSD team members.
- Provide public information on safety and security for regular operations.
- In partnership with the Safety Department, develop marketing and communication tools to increase the transit safety awareness of customers and others coming in contact with Metro.
- In partnership with the Safety Department, develop and implement community outreach programs promoting the safe use of Metro services.

3.3.6 Operations (MetroLink, MetroBus, and Call-A-Ride)

- Assist in the coordination of internal safety audits and participate in emergency response drills as required.
- Ensure effective response during emergencies as required by circumstances.
- Assist in accident investigations as required.
- Coordinate safety-related activities and ensure compliance with the PTASP.
- Ensure compliance with company and safety-related programs, policies and procedures, bulletins, and the PTASP.
- Coordinate daily activities of operations supervisors, instructors, dispatchers, movement directors, and operators.
- Take appropriate actions to resolve identified hazards in a timely manner.
- Continuously identify any operating hazards that require formal implementation of the Hazard Management Process.

3.3.7 Talent Management

- Develop position descriptions that address safety-related restrictions and requirements.
- Ensure that successful candidates for positions are capable of safely performing the tasks of these positions on a repetitive basis.
- Ensure employees are screened prior to employment in compliance with all FTA and BSSO requirements.

3.3.8 Procurement

- Monitor procurement practices to ensure that safety is not compromised in replacing parts.
- Ensure Metro stocks quality parts and provides specification and quality assurance for parts and materials.
- Ensure that the procurement process complies with established procedures for evaluating materials and products for use by Metro.
- Ensure that all contracts comply with Metro’s PTASP and all federal, state and local fire/safety regulations.
- Include safety requirements in contracts such that contractors must meet all applicable state, federal, and local regulations as well as Metro's requirements.

3.3.9 Scheduling and Service Planning

- Ensure that service delivery schedules allow sufficient running time for safe operations at speed limits and adequate recovery time for operators.
- Investigate operator complaints of insufficient running time.
- Develop runs and schedule relief in accordance with collective bargaining agreements and regulatory requirements.
- Ensure operational safety of stops, shelters, and route design and layover/recovery areas.

3.3.10 Security

- Be alert and observant of the personal security of Metro passengers, employees, and the public.
- Manage security logistical deployments within assigned zones.
- Respond to security and emergency incidents.
- Report hazards, threats, and other safety and security-related incidents to Public Safety Dispatch.
- Provide leadership and direction to Metro employees during security incidents.
- Liaison with local or MetroLink Police Taskforce officers and assisting in crowd control, securing witness information, and providing general on-scene assistance, as may be requested.
- Manage the emergency management program.
- Make on-scene decisions about restricting or continuing operations due to a security incident, in coordination with law enforcement.
- Issue suspensions and/or citations for violations of 'Metro's Code of Conduct' and fare policies.
- Prepare and submit internal Metro reports for security incidents in which they are involved or to which they respond.
- Collaborate with MetroLink Police Taskforce officers in fare enforcement missions.
- Patrol park and ride lots and parking structures, monitoring appropriate use, and issuing warnings and citations for parking violations.

3.3.11 Transit Asset Management

- Manage the condition and performance of assets in order to achieve and maintain a state of good repair (SGR).
- Manage the Enterprise Asset Management (EAM) system and track work orders and progress.
- Conduct an annual asset condition ratings review.
- Support capital planning processes.

3.3.12 Metro Training

- Ensure proper training of all new mechanics and technicians to safely and effectively inspect, maintain, and repair BSD's fleet.
- Ensure proper training of maintenance staff in emergency/safety procedures and injury/illness prevention as appropriate.
- Train and qualify new operators on routes, equipment operation, pre-trip inspection, emergency procedures, and injury and illness prevention.
- Perform re-training following accidents & occupational injuries as warranted.

3.3.13 Vehicle Maintenance

- Assure that the revenue and non-revenue fleet is properly maintained and in safe operating condition.
- Coordinate with the General Manager Safety on system safety requirements.
- Administer and monitor standardized programs, policies, and procedures.

- Monitor the collection and disposal of waste (e.g., oils, clarified waste water sludge) to affect safe handling and minimize employee and environmental exposure to potentially hazardous products and materials.
- Ensure appropriate action to resolve reported or otherwise identified hazards in a timely manner.
- Coordinate with the General Manager Safety in the development and implementation of risk reduction measures associated with the operation and maintenance of Metro's rail revenue vehicles.
- Coordinate safety-related activities of the vehicle maintenance staff and ensure compliance with the PTASP.
- Ensure that programs, retrofits, major repairs, and maintenance practices are performed safely and monitored for safety-related issues.
- Monitor body and paint, mechanical repairs, and component rebuild activities for quality.
- Assist in accident investigation process as required.
- Arrange removal of defective or damaged equipment.
- Schedule and coordinate preventive maintenance activities.
- Maintain vehicle records.
- Ensure that equipment complies with manufacturer specifications, federal requirements, and directives.
- Ensure all emergency communications electronic equipment complies with organizational requirements along with the associated guidelines.

Quality Assurance

- Where applicable, participate in the development of technical equipment specifications and procedures that address the safety requirements of regulatory agencies and Metro.
- Ensure that replacement equipment meets safety requirements prior to acceptance.
- Examine equipment and systems to explore the potential for increased efficiencies and improvements in user and fire safety as well as in performance.
- Administer warranty programs.
- Coordinate major equipment rebuild, repair, and retrofits.
- Ensure performance of inspection and testing activities necessary to ensure that equipment, supplies, and operations result in the desired level of safety.
- Monitor the performance of preventive maintenance efforts.
- Stop work on all unauthorized modifications.
- Analyze equipment failures and identifies trends.
- Document equipment modifications and informs affected staff of these modifications.
- When appropriate participate with the Safety Department in accident investigations, and develop findings and recommendations.

3.3 Accountability/Responsibility within Department of Safety

3.3.1 General Manager of Safety

The General Manager Safety serves as the Chief Safety Officer and is responsible for developing Metro's PTASP and providing the day-to-day leadership, management and administration of the safety program through:

- Communicating Metro's safety and security goals, programs, and strategic direction.
- Providing direction in the development, coordination, and implementation of safety training.

- Managing the agency's SMS and safety program.
- Developing safety policies, procedures, and programs that support a safe work and transit environment.
- Managing safety assurance audits and corrective action plans.
- Managing the Safety Department Committees and Working Groups.
- Developing and overseeing the Safety Department budget.
- Ensuring sufficient manpower and equipment resources are adequately deployed at Metro to meet SMS requirements, and informing the President and CEO of any deficiencies in this critical area.
- Providing monthly and/or quarterly reports to the President and CEO on SMS compliance agency-wide.
- Providing information, recommendations and status reports to the President and CEO on resource allocation supporting SMS compliance at Metro.

3.3.2 Director of Safety

The Director of Safety directs and manages the day-to-day responsibilities of the Safety Department by:

- Directing and monitoring the SMS program and ensuring immediate corrective action is implemented for failures of the SMS.
- Providing primary consultation and guidance on SMS implementation throughout the agency.
- Overseeing and supporting departmental assessments, investigations, inspections, observations, and other Safety Assurance activities to ensure full compliance with SMS.
- Assisting in and supporting development of safety policies, procedures, and programs.
- Serving as Metro's main contact with BSSO and other agencies related to safety programs and procedures.
- Overseeing development and maintenance of industrial hygiene, occupational management databases, and computer information systems.
- Ensuring the investigation of safety concerns reported to the Safety Department.
- Supervising the Drug and Alcohol Administrator and Safety Auditors.

3.3.3 Drug & Alcohol Program Manager

The Drug & Alcohol Program Manager is responsible for the implementation of and managing Bi-State's Drug & Alcohol Program and ensuing compliance with federal requirements. This includes:

- Monitoring compliance with the DOT/FTA/USCG Drug and Alcohol Testing Programs to ensure all applicable testing types and thresholds are met.
- Ensuring all employees receive the necessary training and are aware of drug and alcohol policies.
- Maintaining an accurate list of safety sensitive employees.
- Scheduling random selection, reasonable suspicion, and DOT testing.
- Maintaining secure recordkeeping systems for all testing records and related materials.
- Developing and administering medical standards for specific job positions, as warranted.
- Serving as Metro's Designated Employer Representative (DER) during disciplinary hearings.
- Providing oversight and follow-up of site visits by health professionals (e.g., in connection with Metro's drug and alcohol testing program).

3.3.4 Manager of Program Oversight & Analytics

The Manager of Program Oversight & Analytics serves in a leadership role for regulatory programs, corrective action plans (CAPS), document control, and analytics. This includes:

- Managing and facilitating annual updates/revisions for all regulatory Safety/Security program plans (e.g. Public Transportation Agency Safety Plan, System Security Plan, Emergency Preparedness Program Plan, etc.).
- Coordinating safety/security audits; serving as a liaison for SSO, Internal Audit, and contracted auditors.
- Managing the safety/security reporting requirements for NTD.
- Directing and supporting the development of safety/security performance metrics.
- Providing analytical support for evaluating the effectiveness of safety/security initiatives as outlined in the PTASP and SSP.
- Developing and managing data collection tools and dashboards that support Safety Assurance and SMS.

3.3.5 Safety Auditors

The Safety Auditors are responsible for the implementation and oversight of SMA, Safety Assurance initiatives, and Safety Promotion. This includes:

- Investigating accidents, hazards, and other safety-related events.
- Completing accident and safety-related reports.
- Performing and documenting risk identification, assessment, and mitigation processes.
- Maintaining the Hazard Log.
- Supporting Safety Promotion initiatives.
- Conducting safety inspections.
- Serving as department representatives during MetroLink, MetroBus, and Paratransit activities.
- Facilitating safety meetings.
- Developing and delivering safety-related training.

3.3.6 Safety Coordinator

The Safety Coordinator provides support to the Safety Department and Drug & Alcohol program. This includes:

- Functioning as an assistant to Metro's Designated Employer Representative (DER) and serves as the DER in the absence of the Drug and Alcohol Manager (DAPM).
- Ensuring recordkeeping requirements are met per: 49 CFR Part 670, BSSO Program Standard, FTA, and any internal requirements related to safety.
- Overseeing the compilation and auditing of incoming drug and alcohol testing paperwork.
- Scheduling and participating in hearings, coordinates personnel actions with Human Resources and Labor Relations, coordinates and works with Union officials.
- Assisting with developing, implementing, and overseeing Health and Safety Programs throughout Metro.
- Administering BSD's Motor Vehicle Records (MVR) program to ensure Metro employees maintain a valid and current driver's license.

Chapter 4: SMS Documentation

Metro maintains documents that support the PTASP, SMS implementation, and outcomes of SMS process/activities for a minimum of three years after they are created. This includes, in whole or in part, documents that describe programs, policies, and procedures that carry out the PTASP.

Metro makes documentation available to the FTA, other federal and state entities as appropriate, and the BSSO, as required by 49 CFR Part 673.31. This documentation is delivered using a variety of methods. Methods include, but are not limited to, data requests, access to various computer databases that house safety/SMS data, internal documents that analyze data, daily incident management data, and monthly hazard logs.

In addition to documents required by 49 CFR Part 673, Metro maintains records of:

- Safety risk mitigations developed in accordance with 49 CFR Part 673.25;
- Results from Metro performance assessments as required under 49 CFR Part 673.27; and
- Employee safety training taken for purposes of compliance with the PTASP and the Public Transportation Agency Safety Training Certification Program.

4.1 Training Documentation

The Department of Safety keeps training records for the courses facilitated by the department. All other training records are maintained by the individual departments or Metro Training Department. (See Chapter 15: Competencies and Training for additional information.)

4.2 Hazard Documentation

All hazards are captured and monitored on the Hazard Log. (See 6.4 Hazard Log for details.)

Hazard information is made available to the BSSO in accordance with 49 CFR Part 674.27 and the BSSO Program Standard. In addition, the BSSO will have access to a read-only Hazard Dashboard once the open items from the Excel log are transferred to the Esri log. Furthermore, all hazards with a final risk assessment of ‘unacceptable’ will be reported to the BSSO in accordance with the BSSO Program Standard as outlined below:

- Metro will notify the BSSO within 24 hours, or by 5:00 pm on the next regular working day, following the determination of a hazard or unsafe condition as ‘unacceptable’.
- The notification will be transmitted to the BSSO in accordance with the BSSO State Safety Oversight Program Rail Event Notification Standard Operating Procedure.
- Metro will submit an initial, investigative report of the unacceptable hazard to the BSSO within (14) fourteen calendar days of the hazard being identified. Status reports will be provided to the BSSO, at minimum monthly, until the investigation is complete.
- Metro will submit a final report to the BSSO for approval once the investigation is complete. The report will include a description of activities, findings, identified causal factors, hazard analysis and Corrective Action Plan (CAP) as appropriate.

Metro will transmit a summary of open, unacceptable hazards to the BSSO quarterly.

4.3 Corrective Action Plan (CAP) Documentation

The BSSO maintains a Corrective Action Monitoring Log that identifies all CAPS approved by the BSSO and proposed by BSD and their respective status. The BSSO updates the log with information collected from the monthly CAP Advisory Working Group Meetings. In addition, BSD maintains an online CAP Tracker the serves as a centralized location for information (e.g. general information, status updates, and forms) and performance metrics (e.g. number of open/closed/submitted CAPS). The CAP Tracker is maintained by the Safety Department and Internal Audit; the BSSO has read-only access. (See 14.3.1 CAP Tracker for additional details.)

Chapter 5: Integration with Emergency Management

The Emergency Management program is a function of the Department of Security under the direction of the General Manager Security. Emergency Management responsibilities of the program reside with the Emergency Preparedness Coordinator who reports directly to the General Manager of Security. Together, they coordinate with internal/external entities to develop a Multi-Year Training and Exercise Plan (MYTEP) which will conform to training requirements listed in the Emergency Preparedness Program Plan (EPPP).

Metro's EPPP is its primary guidance and policy document for emergency preparedness, response, recovery and mitigation. The Plan provides for supporting plans and procedures to be developed to guide Metro in response to all hazard emergencies. Metro is responsible for the coordination and provision of transportation resources provided to federal, state, and local governments, volunteer organizations, and the general public response in the event of an all hazard response which necessitates immediate evacuation. In such circumstances, Metro has coordinated with both local, county, and state governments and the emergency management agencies in its service area to support on-going development and revision of their respective Emergency Preparedness Program Plans and supporting incident management and response protocols and resource inventories.

Emergency response planning, coordination, and training procedures are contained in Metro's Standard Operating Procedures (SOPs) and EPPP. Metro ensures that the guidelines contained in the EPPP are regularly evaluated through agency-wide emergency exercises. Security personnel participate in annual drills and fire/life safety training with various emergency responders and Metro Departments including Safety. The EPPP is reviewed and updated, as needed, or on an annual basis by the Emergency Preparedness Coordinator and the Executive Safety & Security Committee (ESSC). An electronic copy of the EPPP is available on The Hub; printed copies are available upon request from the Emergency Preparedness Coordinator.

Section II: Safety Risk Management

Chapter 6: Hazard Management

Metro has developed and implemented a Safety Risk Management process for all elements of its public transportation system. The Safety Risk Management process is comprised of the following activities:

- Identification of safety hazards
- Analysis of safety hazards
- Safety risk evaluation
- Safety risk mitigation

Hazard identification and resolution is the core element of the PTASP, requiring timely correction of unsafe conditions, ideally, anticipated and reconciled before serious accident, injury, or damage occurs. The methodology employed for the formal process of hazard identification and resolution at Metro is based on U.S. Department of Defense Military Standard (MIL-STD-882E) Standard Practice for System Safety.

To ensure that Metro provides safe and reliable transportation services, Metro uses the hazard methodology to ensure hazards are identified, analyzed for potential impact on the operating system, and resolved in a manner acceptable to Metro management and regulatory agencies. Figure 1 outlines the hazard manage process.

Figure 1: Hazard Management Process

All Metro management, staff, contractors, and suppliers are required to implement hazard management and safety and system assurance throughout the design, construction, testing, and operational phases of Metro's projects. Hazards which cannot be eliminated in the design phase are to be controlled by safety devices, warning devices, training, and/or written procedures to prevent hazards.

Hazard identification and resolution is a safety process managed by the General Manager Safety with the assistance of the ESSC. Hazards are also managed and discussed through individual MetroLink, MetroBus, and Call-A-Ride meetings on a monthly basis.

6.1 Hazard Identification

Hazard identification activities define conditions and failures that have the potential for causing an accident. It is the responsibility of all Metro employees to identify and report hazards in accordance with

the processes described in the PTASP. While identifying every hazard is virtually impossible, the implementation of the hazard identification procedures can greatly increase Metro's ability to identify and thereby eliminate hazards or reduce risk to an acceptable level. The Safety Department conducts periodic inspections of facilities and equipment to identify hazards on a proactive basis. It also reviews incident reports, injury and illness reports, and worker's compensation databases. In the investigation of serious accidents, ad hoc safety committees/working groups are assembled utilizing various disciplines as members to develop a consensus determination of hazard severity and causal factors. When required, contractors and manufacturers may provide outside assistance to the committee/working group. Independent reviews may be obtained as to ensure objectivity.

Departmental managers are responsible for ensuring their employees report hazards to the Safety Department for review and analysis. Ultimately, these same managers are responsible for their respective department's compliance with their role in the Safety Risk Management (SRM) process.

6.1.1 Hazard Identification Sources

Hazard identification can be derived from the day-to-day operations and maintenance activities of the system. These activities can include the certification of new construction, the review of system modifications, structure inspection activities, equipment modifications, design reviews, testing, analysis, and maintenance inspections. Finally, hazards are often identified through safety audits, peer reviews, customer complaints, and triennial reviews. A summary of sources for hazard identification is as follows:

- Maintenance Audits & Inspections
- Facility & Equipment Inspections
- Structures Inspection Program
- Training & Certification Programs
- Accident & Injury Investigations
- Contractor, Patron, & Employee Reports
- Safety Data Acquisition & Analysis
- Operating Rules & Procedures
- System Replacements & Updates
- New Systems & Rolling Stock
- BSSO Three Year Reviews
- Internal Safety & Security Audits
- MetroLink Incident Management System
- Trespasser/Near Miss Log
- Safety Meeting Discussion Points and Action Items
- Facility Inspections
- Revenue Vehicle Inspections
- Transit Asset Management
- Safety Committees and Working Groups
- External Regulatory Agencies (e.g. FTA & BSSO)
- Employee Safety/Hazard Reporting
- EAM

6.1.2 Employee Reporting Program

Metro has an efficient and robust Employee Safety Reporting program. Employees, including contractors, are encouraged to report safety conditions to the Safety Department that are a hazardous condition or may cause a hazardous condition. All employees are protected from retaliation from their peers and/or supervisors due to reporting safety conditions.

Examples of items that can be reported include:

- Hazards/potential hazards
- Safety issues and concerns
- Accidents/incidents
- Possible solutions and safety improvements
- Close calls/near misses

When is Safety Reporting Protected?

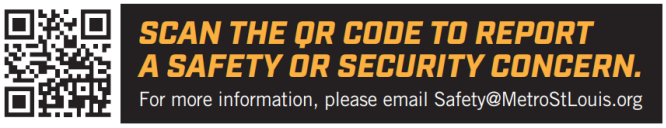
- Reporting safety hazards or potential hazards
- Making suggestions for safety improvements
- Reporting other employees' unsafe behavior
- Fatigue that presents an unacceptable hazardous condition
- Self-report of a close call or near miss

When is Safety Reporting Not Protected?

- Willful safety violations
- Reckless and neglectful acts
- Actions resulting in an accident/incident
- Criminal activities
- Alcohol or drug use
- Making a false report
- Being observed violating Metro's safety rules by supervisor

Employees may report via the following methods:

- Reporting directly (in person) to the immediate supervisor
- Reporting directly to a Safety staff member
- Reporting directly to the CSO
- Email Safety@metrostlouis.org
- Reporting via QR code/online form



Employees have the option of reporting anonymously at any time. Employees, who request a follow-up and leaves contact information, will receive feedback from Safety or a Supervisor in their area as to the disposition of the report. All hazards/safety concerns will be documented in the Hazard Log and investigated in a timely fashion.

Hazards and investigation results will be made available for all employees through the Safety Promotion process described in Chapter 16.

6.1.3 Hazard Investigation

Investigation findings are documented and provided to the General Manager Safety, who will provide support for the department and monitor corrective actions through full resolution. These hazards will be included on the Hazard Log for completion and monitoring.

The General Manager Safety, with support from the ESSC, will determine those hazards for which formal analyses [i.e. Preliminary Hazard Analysis (PHA), or Operating Hazard Analysis (OHA)] are prepared. Further details are provided below in Hazard Evaluation and Analysis.

To address hazards resulting from system extensions or modifications, operational and other changes, safety analysis included in design and procurement contracts will provide for:

- Identification of potential/existing hazards
- Assessment of the severity and probability of occurrence/reoccurrence of each potential hazard
- Timely awareness of hazards for those who must resolve them
- Ability to track and control hazards through all phases of a project's life cycle
- Formal Safety and Security Certification where applicable

6.2 Hazard Risk Assessment

The next step in the hazard management process involves classification of each hazard in terms of severity and probability of occurrence in order to determine the risk with which it is associated. This, in turn, provides the basis for determining possible mitigation strategies and allows Metro to prioritize hazards. The risk assessment criteria are adapted from the APTA Guidelines, MIL-STD 882E, and from the Federal Railroad Administration (FRA) Collision Hazard Analysis Guide. The classification process is described in the following sections and is performed by the Safety Department.

Maintenance items, such as vehicle and facility inspections will not receive formal hazard ratings and will be entered and tracked in BSD's EAM system. The EAM system will track and document the maintenance defect items from discovery to repair. A formal hazard analysis can be conducted on maintenance items where trends are discovered.

6.2.1 Hazard Severity

Hazard Severity is a measure of the most practical/credible mishap resulting from personnel error, environmental conditions, design inadequacies, and/or procedural deficiencies for systems, subsystems, or component failure or malfunction. Table A outlines the categories for determining hazard severity.

Table A: Hazard Severity Table

Category	Technical Definitional	Human Cost	Property Cost	Other Impacts
Catastrophic	Could result in death, permanent disability or complete system loss could result from incident cause by hazard.	Death to 2 or more; permanent disability to multiple persons.	Loss will exceed $1M	Irreversible environmental damage.
Critical	Could result in multiple severe injuries, disability, or major system loss will result from incident cause by hazard.	Hospitalization of 3 or more persons; single fatality.	Loss between $500K and $1M	System interruption greater than 24 hours.

Marginal	Conditions are such that injuries to 2 or more persons and/or severe damage to system and components.	Immediate medical care (EMS) away from scene for 2 or more persons.	Loss between $10K and $500K	System interruption less than 24 hours.
Negligible	Minor injury or damage.	Injury or occupational illness not resulting in a lost work day.	Damage less than $10,000	Minimal environmental impact.

6.2.2 Hazard Probability

Metro describes the probability that a hazard may occur in potential occurrences per unit of time, events, items or activity. Metro derives qualitative hazard probability from research, analysis, and evaluation of safety data from the operating experience of Metro and/or other similar transit authorities. When available, the use of appropriate and representative quantitative data that defines frequency or rate of occurrence for the hazard is generally preferable to qualitative analysis. Due to the unique nature of hazards, the quantitative analysis for each hazard may differ. A qualitative hazard probability ranking for Metro is as follows:

Table B: Hazard Probability Table

Hazard Probability Levels			
	Description	Quantitative	Fleet/System
Frequent	Likely to occur frequently	1 time out of 10 or more during a 12 month period of time	Continuously experienced
Probable	Will occur several times	1 time out of 100 during a 12 month period of time	Occurs frequently
Occasional	Likely to occur some time	1 time out of 1000 during a 12 month period of time	Will occur several times multiple locations
Remote	Possible to occur	1 time out of 100,000 during a 12 month period of time	Could occur once or twice
Improbable	Unlikely but possible to occur	1 time out of 1,000,000 in a 12 month period	Very unlikely but could occur once within lifetime of a fleet or system
Eliminated	So unlikely, we assume the occurrence may not be experienced.	Will not occur	This category applies to hazards that have been eliminated by design

6.3 Hazard Resolution

The objectives of a Hazard Resolution process are:

- To identify areas where hazard resolution may require a change in the system design or development of special procedures;
- To verify hazards involving interfaces between two or more systems have been resolved;
- To verify the resolution of a hazard in one system does not create a new hazard in another system; and

- To verify required analysis is provided in a timely manner, and identify where delinquent analysis is delaying hazard resolution.

Hazard resolution is not synonymous with hazard elimination. In Metro's operating environment, as in the real world, some hazards may be impossible to eliminate and it may be highly impractical to eliminate others. Thus, hazard resolution involves the reduction of risk to the lowest practical level. This is accomplished in a variety of ways, from re-design to warnings or administrative controls.

6.3.1 Hazard Risk Index

To determine what action to take to correct or to document acceptance of identified hazards, a system of determining the level of risk involved has been adopted. This risk assessment activity is incorporated in a formal safety analysis. In turn, this will enable management to properly understand the amount of risk involved relative to what it will impact (schedule, dollars, operations, etc.) to reduce the hazard to an acceptable level.

Before implementation of any corrective action, Metro has established a hazard severity category (1 through 4 and a probability ranking (A through F) which are combined to form a numerical value called a Risk Index, reflecting both severity and probability of occurrence for each identified hazard. Metro assigns a Risk Index to a hazard before implementation of any corrective action. The range of possible Risk Indices is shown in the following matrix.

Table C: Hazard Risk Index

Frequency of Occurrence	1 Catastrophic	2 Critical	3 Marginal	4 Negligible
(A) Frequent	1A	2A	3A	4A
(B) Probable	1B	2B	3B	4B
(C) Occasional	1C	2C	3C	4C
(D) Remote	1D	2D	3D	4D
(E) Improbable	1E	2E	3E	4E
(F) Eliminated	N/A	N/A	N/A	N/A

6.3.2 Hazard Acceptance

Metro applies risk assessment criteria to the identified hazards based on their estimated severity and probability of occurrence to determine acceptance of the risk or the need for corrective action to further reduce the risk. The risk assessment and acceptance criteria assist Metro management in understanding the amount of risk involved by accepting the hazard relative to the costs (schedule, dollars, operations, etc.) to reduce the hazard to an acceptable level. The following table identifies the hazard acceptance criteria:

Table D: Hazard Acceptance Criteria

HAZARD ACCEPTANCE CRITERIA				
	Hazard Risk Index	Decision Authority	Special Conditions	Responsible Party
	1A, 1B, 2A, 2B, 3A	Unacceptable	Requires immediate resolution and review, notification to SSO with 24 hours, concurrence from the ESSC and the Chief Safety Officer	CSO & ESSC
	1C, 1D, 2C, 2D, 3B, 3C	Undesirable	Requires review and approval of mitigation plan(s), or Accept risk from the Chief Safety Officer	CSO
	1E, 2E, 3D, 3E, 4A, 4B, 4C	Acceptable with Review	Mitigate risk to as low as reasonably practical or accept risk	Director of Safety
	4D, 4E	Acceptable	Risk is acceptable as is without further mitigation	Director of Safety

6.3.3 Hazard Resolution Precedence

Management will take appropriate actions to reduce the risk associated with the identified hazard to the lowest level practical. The methods utilized for eliminating or controlling hazards are listed in their order of precedence, as follows:

- Design for Minimum Risk: In other words, incorporate features in the initial design to eliminate hazards. If an identified hazard cannot be eliminated, then the associated risk can be reduced to an acceptable level through design.
- Incorporate Safety Devices: If identified hazards cannot be eliminated or their associated risk adequately reduced through design, that risk shall be reduced to an acceptable level through the use of fixed, automatic or other protective safety-designed features or devices. Provisions shall be made for periodic functional checks of safety devices.
- Provide Warning Devices: When neither design nor safety devices can effectively eliminate identified hazards or adequately reduce associated risk, devices shall be used to detect the condition and to produce an adequate warning signal to alert personnel of the hazard. Warning signals and their application shall be designed to minimize the probability of incorrect personnel reaction to the signals, and shall be standardized within like types of systems.
- Develop Procedures and Training: Where it is impractical to eliminate hazards through design selection or adequately reduce the associated risk with safety and warning devices, procedures and training shall be used. However, without a specific waiver, no warning, caution or other form of written advisory shall be used as the only risk reduction method for Category 1 or 2 hazards. Procedures may include the use of personal protective equipment. Precautionary notations shall be standardized. Tasks and activities judged critical might require certification of personnel proficiency.
- Reduce, Replace, Remove, or Do Not Operate – If there is no practical way to reduce the hazard, replacement, removal, or non-operation is indicated.
- Accept (with or without varying levels of review)– If a hazard will result in no, or less than minor, illness, injury, or system damage, no further action is necessary.

6.4 Hazard Tracking - Hazard Log

All reported hazards are tracked on the Hazard Log and analyzed for potential trends. Metro transitioned from an Excel based Hazard Log to an online Hazard Log in January 2023. The online log uses ESRI Survey 123 to capture hazard-related data and ESRI Dashboards to present, edit, and update hazard entries. The Hazard Log captures the following information:

- Description
- Location
- Source
- Initial/Final Hazard Rating
- Name of Reporter (unless reported anonymously via the Employee Reporting Program)
- Contact Information (unless reported anonymously via the Employee Reporting Program)
- Status
- Mitigation Strategy(s)

Safety Auditors monitor and regularly update the Hazard Log. Hazards reported on the log, investigative findings, and other updates are communicated with Metro employees through the Safety Promotion Process outlined in Chapter 16: Safety Communication.

Hazard information is made available to the BSSO in accordance with 49 CFR Part 674.27 and the BSSO Program Standard. In addition, the BSSO will have access to a read-only Hazard Dashboard once the open items from the Excel log are transferred to the Esri log. Furthermore, all hazards with a final risk assessment of 'unacceptable' will be reported to the BSSO in accordance with the BSSO Program Standard as outlined below:

- Metro will notify the BSSO within 24 hours, or by 5:00 pm on the next regular working day, following the determination of a hazard or unsafe condition as 'unacceptable'.
- The notification will be transmitted to the BSSO in accordance with the BSSO State Safety Oversight Program Rail Event Notification Standard Operating Procedure.
- Metro will submit an initial, investigative report of the unacceptable hazard to the BSSO within (14) fourteen calendar days of the hazard being identified. Status reports will be provided to the BSSO, at minimum monthly, until the investigation is complete.
- Metro will submit a final report to the BSSO for approval once the investigation is complete. The report will include a description of activities, findings, identified causal factors, hazard analysis and CAP as appropriate.

Metro will transmit a summary of open, unacceptable hazards to the BSSO quarterly.

Section III: Safety Assurance

Safety Assurance (SA) is a continuous process, constantly interacting with Safety Risk Management (SRM). It is a set of systematic, ongoing processes that are both led and facilitated by the Safety Department to monitor system safety performance. This monitoring is used to: verify that safety objectives are being met; identify previously unforeseen hazards; ensure that mitigations in place are effective and not creating new hazards; and collect data on safety that can be analyzed, trended and shared in support of continuous improvement of the SMS. In addition, SA activities assist the agency in identifying and correcting practical drift and in establishing appropriate safety performance measures/targets.

Chapter 7: Safety Data Acquisition and Analysis

It is the task of the Safety Department to monitor safety performance of Metro's operations. Selected data is accumulated and analyzed by Safety Department staff. This includes but not limited to: injuries, potentially hazardous equipment failures, structural defects, reports from the Employee Reporting Program, and rules and procedures violations. This information is presented at the quarterly Safety and Security Executive Committee (ESSC). The data is used in the tracking of hazard-related data to identify safety-related trends. These trends are further analyzed or investigated by the Safety Department, with the assistance of the affected department, to pinpoint the specific areas of concern. This is accomplished by interviews with personnel in the affected department(s) and analysis of pertinent documentation. Monthly safety meetings with each transportation mode are also used to discuss trends, hazards, information reported through the Employee Safety Reporting Program and any other safety concerns that may arise. Identified hazards are submitted to the management of the department responsible for implementation of the necessary corrective action. Also included in the submittal are recommendations for mitigation(s) or a request for corrective action development. The effectiveness of mitigations and corrective actions are tracked by the Safety Department, and through monthly Safety meetings with each mode of transportation.

Safety data is collected, documented and analyzed from numerous sources by all departments. Sources include but are not limited to:

- Accident Reports
- City Official Concerns
- Daily Operations Reports
- Employee Concerns
- FTA Bulletins and Safety Advisories
- Hot Spot Maps
- Internal Audit Reports
- Passenger Concerns/Customer Complaints
- Safety Meetings
- Public Safety Reports, concerns and investigations
- Employee Safety Reporting Program
- System reliability
- External agency Reports and Publications
- Claims Reports
- Maintenance Reports
- Employee Occupational Injury Reports
- Homeland Security Alerts
- Insurance Inspection Reports
- BSSO/FTA Reviews
- Inspections, Assessments and Observations
- Special Occurrence Reports
- Social Media Posts
- Customer Service information
- Rule Compliance Checks

Safety data collection also involves obtaining technical information, data and reports for use in systems development of program elements. Sources for such data include but are not limited to:

- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Federal Motor Vehicle Safety Standards (FMVSS)
- Environmental Protection Agency (EPA)
- State Safety Oversight Program (SSO)
- Safety Data Sheets (SDS)
- National Transportation Institute (NTI)
- Transportation Security Administration (TSA)
- Centers for Disease Control (CDC)
- Illinois Department of Health
- American Public Transportation Association (APTA)
- Federal Motor Carrier Safety Administration (FMCSA)
- Department of Homeland Security (DHS)
- Federal Transit Administration (FTA)
- Missouri and Illinois Statutes
- National Fire Protection Association (NFPA)
- Occupational Safety and Health Administration (OSHA)
- National Transit Database (NTD)
- Missouri Department of Health

Other data and information sources include building codes, professional society guidelines, and information technology and cybersecurity standards.

Chapter 8: Rules Compliance

The data obtained from the Rules Compliance programs is an important part of the SMS process at Metro. These rules cover both operational and maintenance types. Documentation can range from a computer database, to written forms. Safety has access to all of these records and reviews them for hazards and trends. In addition, the data from this program is also analyzed at regular MetroLink, MetroBus, and Call-A-Ride safety meetings. The hazards and trends that are discovered are put through the SRM process and mitigations/CAPs are generated when appropriate.

These safety meetings are also used to discuss the effectiveness of supervision relating to the implementation of operating and maintenance rules. If the data reflects an ineffectiveness or a process breakdown, a different direction may be warranted or a process may need to change.

8.1 Rules and Procedures for MetroLink

8.1.1 MetroLink Rulebook

This manual consists of those rules and procedures applicable to all MetroLink employees. Department managers, as required or as needed, make requests for revisions. The General Manager MetroLink approves revisions to the MetroLink Rulebook after reviewed by Safety Department and supporting staff.

A schedule of reviews has been established whereby system and operational changes are approved prior to implementation. Such changes include operational rules and procedures, supplementary manuals and bulletins. The General Manager MetroLink has the authority and responsibility for development and control of the MetroLink Rulebook and General Orders. A new rulebook is published at least every three (3) years to incorporate interim changes.

8.1.2 General Orders

General Orders are issued to modify a current operating rule or procedure or to address an urgent operating requirement.

8.1.3 Supplementary Manuals

Supplementary manuals are published to address a specific job assignment or function within a department, division, or section. These manuals are developed, issued, and implemented at the departmental level. Revisions to supplementary manuals are the responsibility of the department manager affected.

8.2 Compliance Checks

8.2.1 Vehicle Maintenance

Vehicle Maintenance Superintendents and Supervisors enforce rules and procedures by observing and monitoring employee performance in bus, paratransit, and rail shops and yards. Facilities and Rail Maintenance Supervisors enforce rules and procedures by observing and monitoring employee and contractor performance on the rail system and at work sites. Rules and procedures monitored and observed for compliance include, but are not limited to:

- General safety

- Proper use of tools, equipment and machinery
- Proper use of personal protective equipment
- Right-of-way safety
- Fire safety
- Material handling and storage
- Quality Assurance inspections and audits of procedures, including rule compliance

Preventive maintenance activities are continuously monitored by maintenance managers and supervisors. Inspection tasks are periodically updated to reflect fleet needs and enhance operational efficiency and safety.

Maintenance Supervisors also conduct follow-up activities after audits to ensure employee compliance with maintenance rules.

8.2.2 Maintenance of Way (Right of Way & Rail Systems Maintenance)

MetroLink established rules and procedures that govern maintenance activities along the operating right of way. These rules also apply to Metro contractors or other contractors that may perform maintenance or construction activities. Before any work along the right of way is authorized, a work permit must be obtained. Before work is commenced, a supervisor will brief the work crew on the upcoming work and the applicable safety measures. The supervisor will then make unannounced visits to the work sites to check for work zone safety compliance. In addition, Transit Service Managers (TSMs) and Safety personal will make routine visits.

8.2.3 Facility Worker Safety

Vehicle Maintenance Superintendents and Supervisors enforce rules and procedures by observing and monitoring employee performance in bus, paratransit, and rail facilities and yards. Facilities and Rail Maintenance Supervisors enforce rules and procedures by observing and monitoring employee and contractor performance on the rail system and at work sites. Rules and procedures monitored and observed for compliance include but are not limited to:

- General safety
- Proper use of tools, equipment and machinery
- Proper use of personal protective equipment
- Right-of-way safety
- Fire safety
- Material handling and storage
- Quality Assurance inspections and audits of procedures, including rule compliance

8.2.4 MetroBus & Call-A-Ride Operators

MetroBus and Call-A-Ride have an Operator Evaluations Program to monitor operator performance, to identify violations and take the necessary action to correct them. The Operator Evaluations Program consists of observations performed by TSMs to evaluate if the operators are adhering to the operating rules and to determine methods to improve their operating proficiency. All operators undergo at least (1) one direct observation by a TSM during each calendar year. New operators have their first direct observation within (1) one year from the date that they enter passenger service. For each evaluation, the TSM completes a checklist and discusses the results of the evaluation with the operator.

8.2.5 MetroLink Operators

Rail TSMs enforce the rules and procedures by conducting ride-along checks. The managers look for a variety of rules and procedures in compliance with the MetroLink Rulebook and General Orders.

8.2.6 MetroLink Hours of Service

Hours of Service is monitored through the MetroLink Event Review Working Group. This group meets monthly and has a collection of Operations Management and Training staff in attendance. One (1) of the standing items for the meeting is hours of service compliance. A report is generated from a Tableau database each month that indicates all hours of service violations of the MetroLink Hours of Service SOP and the MoDOT Hours of Service rule. Each hours of service violation is discussed as well as potential mitigations or corrective actions. These actions are captured on meeting minutes and will be used for continuous improvement.

Chapter 9: Safety Inspections

9.1 Facility & Equipment Inspections

Metro has established and maintains a list of MLRFGS facilities, physical equipment, and rolling stock subject to inspections and tests for safety critical elements. Several departments perform or monitor safety-related tests and inspections of facilities, equipment, and rolling stock. The Transit Asset Management Plan provides a listing of all Metro facilities, equipment, and rolling stock.

9.1.1 Yard & Shops Inspections

The Safety Department inspects the MLRFGS operating and maintenance facilities on an annual basis to ensure the safety of employees and guests and to ensure compliance with applicable safety regulations.

The Safety Department participates with the Bus & Rail Facility Maintenance Support Services Department and the LRV Maintenance Department to identify and document compliance with local, state, and federal regulations regarding environmental pollution issues related to air, water, soil contamination, and provides assistance to control hazards. Annual safety inspections are completed for each facility; the inspections include the following:

- Reporting findings and recommendations resulting from safety tests and inspections to appropriate personnel and management;
- Metro management;
- Performing follow-up inspections to determine compliance with findings and recommendations;
- Evaluating the effectiveness of safety tests and inspections;
- Portable fire extinguishers;
- Fire detection and alarm systems;
- Fire suppression systems;
- Building construction and maintenance;
- Building Facilities (i.e. heating, ventilation, and air conditioning, electrical, etc.);
- Means of egress and security (access controls);
- General housekeeping and storage practices; and
- Occupants' awareness of emergency procedures.

The inspection team will ensure personal protective equipment (PPE) is available at all times, eyewashes and fire extinguishers are operational, and general facility defects are noted and corrected. Serious deficiencies (i.e. life threatening) are corrected immediately. If a serious deficiency cannot be corrected immediately, it is given priority for corrective action/mitigation and preventive measures are taken to mitigate the maintenance deficiency in accordance with the procedures outlined in this PTASP. If a corrective action/mitigation for a serious deficiency is delayed, the ESSC or CSO may impose temporary measures to protect life and property. Examples of such measures include shut downs, evacuations, notifications, or signage advising of present conditions.

Inspections will be conducted to ensure compliance with local, state, and federal environmental regulations. Deficiencies in equipment and the facilities will be documented in EAM from discovery to closure. Conformance with these procedures provides timely resolution of possible hazards and deficiencies along with proper reporting of deficiencies within components of the system.

An inspection report identifying safety and health defects found during the inspection will be issued to the Bus & Rail Facility Maintenance Support Services Department. The defects will also be entered and tracked in EAM. This Department is responsible for correcting any deficiencies related to facilities and the equipment therein and provides a schedule listing when the corrections will be completed.

Facility inspections and audits are tracked by the Maintenance of Way (MOW) Department and Safety Department within the EAM system. The procedures for the annual safety inspection, including the "Facility Inspection Checklist," are outlined in this PTASP.

9.1.2 Structures Inspections

The MetroLink Standard for Structures Inspection and Maintenance outlines protocols, timetables, and responsibilities for the inspection of MetroLink structures. Structures governed by the plan include, but are not limited to, bridges, culverts, tunnels, retaining walls and elevated platforms. The inspections prescribed by the manual are performed in accordance with the current edition of the American Association of State Highway Transportation Officials (AASHTO) "Manual for Bridge Evaluation" and other standards and guidelines as noted in the plan. Maintenance of Way is responsible for the implementation and monitoring of the program. Deficiencies found in the structures are rated on a scale of 0 (failed) to 9 (Excellent) based on its condition, and the rating is recorded along with a report and photos in a structures database. A member of the Safety Department reviews reports on structures that receive a rating of 4 (Poor Condition) or lower. The hazard management process is then engaged to determine the risks associated with that structure.

9.1.3 Station Inspections

The Bus & Rail Facility Maintenance Support Services Department has the primary responsibility for inspections of stations and parking lots. The stations are inspected at least monthly; however, all maintenance and operational personnel report hazards or defects as noticed.

An annual emergency power simulation is conducted at MetroLink stations. The main power breaker is opened and electric power is removed. Operation of alarms, enunciators, generators, fire suppression systems, lights and equipment on the emergency circuit is verified.

9.1.4 Rolling Stock Inspections

The LRV Maintenance Department has the responsibility for regular inspection and maintenance of the MLRFGS rolling stock. The LRV Maintenance program includes daily safety inspections, mileage-based preventative maintenance inspections and RCM overhaul program. Scheduled inspections occur at mileage intervals of 5,000, 15,000, 30,000, 50,000, and 100,000 miles. LRV electro mechanics inspect equipment on the trains during preventive maintenance work. The LRV maintenance program is described in detail in the LRV Maintenance Manual.

LRV Maintenance conducts a pre-trip inspection on each LRV prior to passenger service. The LRV operator then performs a pre-departure check before commencing service. These items include:

- Fire protection equipment
- Emergency communications equipment – public address, radio, intercom
- Brakes, door operation, horns, bells, & silent alarm
- On-board signal equipment
- Headlamps, RR lamp, & indicator lamps

A copy of the Daily Pre-Departure Inspection Form is available at the LRV Maintenance departments. The Safety Department conducts regular LRV Inspections at least (4) four times per year and also participates in post-accident inspections.

The Safety Department will also conduct a sampled inspection program at least annually at both rail facilities. Deficiencies found will be entered and tracked within EAM.

9.1.5 Fire Detection & Suppression Equipment Inspections

The Safety Department collaborates with the Bus & Rail Facility Maintenance Support Services Department for the inspection of fire protection equipment at Metro facilities while the respective facilities maintenance department is responsible for the maintenance. Specific roles and responsibilities can be found in Safety SOPs 12.3 and 15.2.

9.1.6 Systems Inspections

The Rail Systems Maintenance Department has the overall responsibility for the inspection and maintenance of the MLFRGS systems elements consisting of the following:

- Track
- Signals
- Communication
- Overhead Catenary System
- Power Substations

9.2 Maintenance Inspections

Safety critical systems, such as track, structures, train control, transit vehicles, tunnel ventilation and fire control, elevators, escalators, and communications are inspected/tested and/or serviced on a scheduled, periodic basis. Inspections are done using checklists for each audit. When these systems are found in a failed or out of tolerance condition, in such a manner that would present a significant hazard, applicable operations will be restricted to maintain safety until an appropriate remedial action has been implemented. Equipment found in a failed or out of tolerance condition is recorded and tracked by the responsible maintenance department. These discrepancies are not to be closed out until repairs are completed. In the case of transit vehicle maintenance, should a vehicle not receive the prescribed preventive maintenance within the required maintenance schedule, the vehicle is withheld from revenue service.

The Safety Department performs internal safety audits of maintenance activities for safety critical systems. These audits focus on adherence to schedule, application of standards and procedures, and record keeping. All safety critical hazards discovered during audits or inspections are tracked in the hazard-tracking database.

9.2.1 Train Control

The Signals Maintenance and LRV Maintenance Departments share the responsibility for Metro's train control system. The Signals Maintenance Department is responsible for inspection and maintenance of wayside train control components. The LRV Maintenance Department inspects and maintains the train control components.

9.2.2 Signal System Inspections & Maintenance

The inspection program for the signal system includes all aspects of the Automatic Train Protection (ATP) systems (i.e. track circuits, cab signals, Vital Harmon Logic Controllers (VHLC), vital relays, electronic interlockings, relay houses, signals, power-operated switches, and highway grade crossings). The frequency and scope are detailed in the MetroLink Signal Systems Maintenance Plan. A number of "best management practices" regarding the frequency of inspection and the content of tests have been adopted from APTA's Signal & Communications Equipment Inspection and Maintenance Volume VI; APTA's Standard for Rail Transit Systems Highway Rail Grade Crossing Warning Device Inspection, Testing, and Maintenance Volume III; and Federal Railroad Administration's Rules and Regulations Governing Railroad Signal and Train Control Systems. However, MetroLink is not subject to the FRA rules and regulations, and such practices have been adopted as suitable for MetroLink due to the similarity of equipment in certain applications. This plan is reviewed annually to determine if updates to the plan are required.

Table E: Inspection Schedule - Key Signal System

Inspection	Frequency
Solar Switches	Quarterly
Visible Damage Assessment	Monthly
Ground Tests[1]	Monthly
Signal House Utility/Standby Generator/VHLC/Ground Tests	Monthly
Power Switches/Power Switch Circuit Controllers	Monthly/ Annually
Highway Grade Crossings	Monthly/Annually
Hand Throw Switch Circuit Controller/Electric Lock/Derail	Quarterly
Snow Melting test	Annually
Impedance Bonds/Rail Connections	Semi-Annually
Wayside Signals	Monthly/Semi-Annually
Insulated Joints	Semi-Annually
AC/AF track Circuits	Semi-Annually
Signal House Utility	Semi-Annually
Timer Relays	Annually
AC Vane Relays	Every 2 Years
Vital Relays	Every 4 Years
Route Locking/Approach Locking/Indication Locking/Time Locking/Traffic Locking/Wayside Signal Aspects	Every 2 Years
Meggering	Every 10 Years
Shunt Fouling	Quarterly

[1] At minimum, Grounds Tests are performed monthly. Each time the system is modified or disarranged, a Grounds Test is performed

9.2.3 Traction Power & OCS Inspections & Maintenance

The Traction Power Maintenance Department performs the OCS and Traction Power Substation (TPSS) inspection and maintenance. The frequency and scope of traction power inspections is detailed in the Traction Power Maintenance Plan. A number of practices regarding the frequency of inspection and the content of tests have been adopted from APTA's Manual of Standards and Recommended Practices for Rail Transit Systems 2004. This plan is reviewed annually to determine if updates to the plan are required.

Table F: Inspection Schedule - Traction Power & OCS

Inspection or Sub-System	Frequency
TPSS – Visual & equipment readings	Weekly
OCS – Mainline Visual	Weekly
TPSS – Breakers & Batteries	Quarterly
OCS – Video Inspection	Quarterly
OCS – Section Insulators	Quarterly
OCS – Air Break & Overlap	Quarterly
OCS – Fixed Tension	Quarterly
OCS – Lightning Arresters	Quarterly
OCS – Poles and Pole Ground	Quarterly
OCS – Yard Inspections	Quarterly
OCS – Balance, Weights	Semi-Annual
OCS – DC No-load Switch	Semi-Annual
OCS – Yard Door Bridge & DC Switch (Shop)	Semi-Annual
TPSS – Transformers, switchgear, rectifiers, circuit breakers	Annual
OCS – Hands-on hardware and support elements	Annual
OCS – Wire Gauge	Annual
Ladders & Hot Stick	Annual
Auxiliary PPE & Equipment	Annual

9.2.4 Communication Equipment Inspections and Maintenance

The LRT Communications Maintenance Department is responsible for the inspection and maintenance of the MLRFGS communication equipment. The frequency and scope of inspections are detailed in a database available at Rail Systems. Maintenance procedures are described in the MetroLink Light Rail Communication System Maintenance Plan.

9.2.5 Tracking Inspection & Maintenance

The Rail Right-of-Way (ROW) Maintenance Department is responsible for the inspection and maintenance of Metro's track components, consisting of: the roadbed, ballast, ties, rail, fasteners, and

special track work, as well as various other components of the MetroLink ROW. The frequency and scope of track inspections are detailed in the Track Maintenance Plan. A number of practices regarding the frequency of inspection and the content of tests have been adopted from APTA's Manual of Standards and Recommended Practices for Rail Transit Systems. Such practices have been adopted as suitable for MetroLink due to the similarity of equipment in certain applications. This plan is reviewed annually to determine if updates to the plan are required. Additionally, the first train each day is operated at reduced speed to permit observation of any irregularities on the alignment.

Table G: Inspection Schedule - Track

Inspection	Frequency
Ultrasonic Testing Mainline	Semi-Annually
Ultrasonic Testing Special Track Work	Annually
Geometry Testing	Annually (wood tie segments) Triennially (concrete tie segments)
Track Inspection	Weekly
Mainline Switches	Monthly/Annually
Yard Track & Yard Switches	Monthly
Alignment Inspections	Quarterly
Highway Grade Crossing Site Lines	Bi-Monthly

9.2.6 Ventilation & Tunnel System Inspection & Maintenance

The Bus & Rail Facility Maintenance Support Services is responsible for the inspection and maintenance of Metro's Tunnel Ventilation Systems. Tunnel ventilation is tested quarterly and maintained per manufacturer specifications. Included are visual inspection, cleaning, lubrication, and voltage verification. Operation is verified by SCADA.

9.2.7 Elevator & Escalator Inspections and Maintenance

The Bus & Rail Facility Maintenance Support Services Department oversees a contract which provides all of the required inspections and preventative maintenance for the MLRFGS elevators and escalators. Generally, elevators and escalators are scheduled for inspection and service monthly and the elevators have a load test done every 5 years.

9.2.8 Facility Inspections & Maintenance

The Bus & Rail Facility Maintenance Support Services Department is responsible for the inspection and maintenance of Metro's facilities, consisting of MetroBus, Call-A-Ride, and the MLRFGS operations and maintenance facilities, stations, parking structures, parking lots, and various other elements along the service area. The frequency and scope of these inspections in covered in detail in the Facilities Maintenance Plan. The Plan is reviewed annually to determine if updates or modifications are required.

Table H: Inspection Schedule - Rail Facilities

Yard & Shops	
Air Drier	Monthly
Compressor	Monthly
Crane Hoist	Monthly
Emergency Generator	Monthly
Exhaust Fan	Quarterly
HVAC	Monthly
Mobile Lift	Monthly
Overhead Door	Semi-annually
Train Wash	Monthly
Unit Heater	Annually
Fire Protection	Monthly
Stations	
Site Conditions	Monthly
Walking Surfaces	Monthly
Communication Building/Room	Monthly
Lighting	Monthly
Emergency Generator	Monthly
Plumbing	Monthly
Irrigation	Monthly
Lift Station	Monthly
HVAC	Monthly

Chapter 10: Safety Assurance Programs

10.1 Hazardous Materials Program

Metro has written Hazard Communication procedures for procuring chemicals to be used within the company facilities and properties. The specific Safety SOP that addresses this is SOP 10.4 Hazard Communication. Metro adheres to OSHA's Hazard Communication Standard (29 CFR 1910.1200). This standard requires that chemical manufacturers, distributors, and importers develop safety data sheets (SDS) for each product in compliance with the United Nationals Globally Harmonized Systems of Classification and Labeling of Chemicals. The standard requires employers make the SDS available to all employees who may work with a potentially hazardous chemical. Metro meets this requirement by providing an on-line, computer based SDS database found at the following web site:

https://chemmanagement.ehs.com/9/ebinder

Metro's procedures require that "Prior to the purchase of chemicals, products, compounds, or materials that may have potential of exposure to individuals handling it, Metro's procedures require that an SDS will be sent to the Safety Department of Metro for verification, review, and either approval or rejection." Approvals for new chemicals are obtained by submitting a request to Safety by using the online database system. Before any chemical can be allowed for use at Metro, the Department Superintendent or Supervisor will request approval through the Safety Department. This includes the use of test or sample chemicals. Any Superintendent or Supervisor can request an approval of a new chemical. The process and additional details can be found in Safety SOP 10.4 (Hazard Communication).

10.2 Transit Asset Management (TAM) & State of Good Repair (SGR)

Moving Ahead for Progress in the 21st Century Act (MAP-21) required the development and implementation of a TAM. The elements of the TAM include:

- Current asset inventory
- Asset condition assessment
- Performance measures
- Investment prioritization
- Tracking system that factors Safety

The plan divides the assets into four major classes - Vehicles, Facilities/Stations, Guideway, and Systems. A top level view of those classes is shown in the below table.

Table I: Metro Asset Classes

Vehicles	Facilities/Stations	Guideway	Systems
• Rail vehicles and fixed guideway non-revenue vehicles • Busses, Paratransit and non-revenue vehicles	• Rail Maintenance Facilities • Bus maintenance Facilities • Service Facilities • Stations	• Track • Bridges and Aerial Structures • Tunnels, U Sections and Cross Passages • Ancillary	• Security • Traction Electrification • Signals • Communications, monitoring, SCADA • Revenue Collection.

Metro utilizes Enterprise Asset Management (EAM) to track assets through the unit lifecycle. Assets are assessed based on age, condition, and performance and once the FTA releases guidance on safety requirements the database shall be utilized to query safety critical data to support better decision making and trend analysis.

The nexus between SMS and TAM is not prescriptive in the MAP-21 rulemakings. Metro is exploring how to functionally integrate these management systems, starting with identification of the assets most critical to transit system safety, and then identifying how Metro can better manage these assets to maximize the benefits of SMS and TAM.

Below depicts the Nexus between Safety Management and Transit Asset Management.

Figure 2: Safety & Asset Management Systems

Safety Management System

Asset Management System

10.3 Drug and Alcohol Program

Metro and Bi-State Development are committed to complying with the Drug Free Workplace Act and preserving the highest possible safety standards both in the quality of its services and the safety of its passengers, employees, the general public and property. Metro employees and employees of a transit contractor who hold safety sensitive positions (covered employee) are subject to drug and alcohol testing in accordance with federal and state regulations. The implementation of the Metro Drug and Alcohol Program Policy and Plan, as well as the requirements of federal and state regulations, is the responsibility of management.

The Drug & Alcohol Policy and Program Plan outlines the Agency's policy and outlines procedures training, testing, and reporting. Some topics include:

- Prohibited Substances
- Prohibited Conduct
- Test Classifications
    - Pre-employment
    - Post-Accident
    - Random
    - Reasonable Suspicion

  - Return to Duty
  - Follow Up
  - Probable Cause
- Testing Protocols
- RX and Medication
- Consequences

Additionally, the Drug and Alcohol Program Policy and Plan provides managers and employees with additional material such as Drug and Alcohol contacts, covered positions, and reportable drugs.

In addition, MetroLink rule 2.04 Operating Impairment requires employees to report any health or medical condition that may impair his or her ability to perform the assigned duties to Controller Supervisor, or Rail Dispatcher. This rule specifically includes the use of over-the-counter and prescription medication.

Employees are given written information about the Metro-sponsored Employee Assistance Program (EAP). This is a confidential counseling program from which all employees and their family members can obtain professional help in treating chemical dependency and substance abuse.

10.4 Health Safety

Health Safety addresses the chemical, physical or biological factors in the working environment that can have negative impacts on the short or long-term health of Metro employees and the general public. All employees are required to complete the Occupational Safety Training as part of the Core Safety Training. This course is comprised of the following sections:

- Personal Protective Equipment (PPE)
- Electrical Hazard – Arc Flash
- Fall Protection & Walking Working Surfaces
- Lock Out Tag Out
- Confined Space Safety
- Hazardous Communication
- Forklift Safety
- Hot Work (Welding, Cutting, & Brazing)

In addition, Hazard Communication Training is offered as a standalone course for employees whose jobs require them to work with and/or manage chemicals. This courses details the process and procedures that ensures compliance with Metro's Hazardous Material Program.

10.5 Federal, State, & Local Regulations

10.5.1 Federal Regulations

Although Metro is not specifically subject to OSHA regulations, it does use OSHA guidelines in establishing a baseline for its safety programs. Additional federal regulations applicable to Metro and the MLRFGS are found in the Code of Federal Regulations; Title 49 - Transportation, as cited and included throughout this document. The MLRFGS 'safety sensitive' employees are subject to all of the DOT/FTA drug & alcohol requirements discussed further in Metro's Drug & Alcohol Plan.

10.5.2 State Regulations

Metro and the MLRFGS are subject to State Safety Oversight regulations promulgated by the State of Missouri and by the State of Illinois.

MoDOT

Specific regulatory requirements are established in Missouri for:

- Signs (7 CSR 265-9.050) - Requires that all warning & directional signs along the MLRFGS ROW be made from a non-corrosive substance and be covered with reflectorized material.
- Hours of Service (7 CSR-9.070) - Requires a minimum of ten (10) hours off duty after each twelve (12) consecutive hours on duty and a minimum eight (8) hours off duty in each 24-hour period.
- Highway Grade Crossings (7 CSR 265-9.100) - Provides standards and requirements for the construction and maintenance of highway grade crossings.
- Highway Grade Crossing Warning Devices (7 CSR 265-9.110) - Prescribes minimum standards for warning devices; adopts and incorporates MUTCD, Part VIII
- Visual Obstruction at Public Grade Crossings (7 CSR 265-9.130) – Standards for visual obstructions at public grade crossings.

IDOT

Illinois Department of Transportation (IDOT) became the SSOA for the State of Illinois on January 1, 2017. The Illinois Commerce Commission provides the regulations and oversight at rail grade crossings in Illinois.

In addition, both states have developed and implemented a Bi-State Safety Oversight Program Standards Manual for Oversight of MetroLink that provides standards, procedures, and technical direction to the MLRFGS. Metro and the MLRFGS are also required to conform to a variety of state (and federal) environmental regulations in Missouri and Illinois.

10.5.3 Local Regulations

There are a host of local regulations which impact the operation of the MLRFGS. These include environmental regulations such as:

- Underground storage tanks
- Water and air quality
- Local fire protection and building codes
- Elevator/escalator inspection requirements

A summary of the more significant Federal, State, and Local regulations that may apply to the MLRFGS are listed in Table J. Metro ensures compliance for the Federal, State, and Local requirements through a variety of methods. Some of these methods include, but are not limited to:

- Training records
- Inspections
- Field verifications
- Document checks
- Computer database records checks
- Permit audits
- Internal audits

Table J: Federal, State, and Local Regulations

Topic or Area of Concern	Statutory Reference	Requirements
Elevator & Escalator Inspections	Missouri State & St. Louis County ASME A17.1, ANSI A90.1 Illinois conveyance Illinois State Act(225ILCS312/120)	Certified inspector reports, State Operating Certificates, Certificates of Inspection
Highway Grade Crossings	Title 92: Transportation, Chapter III: ICC, subchapter c: Rail Carriers, Part 1515 Report of Railroad Accidents/Incidents, Section 1515.10 Monthly Reports; Missouri Title7 CSR 265-9.100 & 265-9.110	Standards and requirements for the construction and maintenance of highway grade crossings
Driver license Recertification and Verification	49 CFR Parts 390 - 399	Compliance with DOT driver Qualifications; Federal Motor Carrier Safety Administration
Missouri Hazardous Waste Management Law and the Petroleum Storage Tank Law	The Resource Conservation and Recovery Act (1976); MO - Underground Storage Tanks – Technical Regulations – 10 CSR 20; 40 CFR Part 280; 41 Ill Admin Code 174, 175, 176, & 177	Report releases; cooperate in inspections; complete corrective actions; record keeping
Title 49 CFR Part 40 - Procedures for Transportation Workplace Drug & Alcohol Testing Programs	Board Policy Chapter 70.030; Title 49 CFR Part 655 - Prevention of Alcohol Misuse & Prohibited Drug Use in Transit Operations; Title 49 CFR Part 4 - Marine Casualties & Investigations; Title 49 CFR Part 16 - Chemical Testing (Coast Guard)	D & A Tests (Random, Post Acc, Pre-employment; etc.); Substance Abuse Program
Seismic Safety Requirements for New Building or Existing Building construction procurements	42 U.S.C. 7701 et seq.	Applies only to contracts for the construction of new buildings or additions to existing buildings.
ICC regulations required for New Construction / Rehabilitation / Improvement	20 ILCS 3405	
MODOT Regulations required for New Construction / Rehabilitation / Improvement Projects affecting Metro transit services in Missouri	Missouri Title 7 Divisions 10, 60, and 265	
Americans with Disabilities Act Title III	Appendix A to Part 36 - Standards for Accessible Design; Appendix A to Part 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities	Federal Regulations required for New Construction / Rehabilitation / Improvement Projects
Metropolitan St Louis Sewer District (MSD)	Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Storm Water Drainage Facilities (Rev 1/1/2011)	Sanitary Sewer and Storm Water Drainage Facility Design Requirements
Office of the Illinois State Fire Marshal (OSFM)	Public Act 92-0873, cited as the Elevator Safety and Regulation Act; (430 ILCS 15/4) (from Ch. 127 1/2, par. 156) – Underground Storage Tank Management	Covers the construction, operation, inspection, testing, maintenance, alteration, and repair of Elevators & Escalators Ill State Fire Marshal shall administer the Illinois Underground Storage Tank Program in accordance with this Section and Section 22.12 of the Environmental Protection Act
MO Div. of Fire Safety	Department of Public Safety Division 40—Division of Fire Safety Chapter 5—Elevators	Registration & Inspection of Elevators & Escalators
NTD Safety & Security Reporting	Title 49 CFR Part 630	http://www.ntdprogram.gov/ntdprogram/pubs/safetyRM/2011/html/2011_Safety_and_Security_Reporting_Manual_TOC.htm.

Chapter 11: Investigations

Details related to reporting, investigating, and documenting accidents and incidents are outlined in Safety SOPs 4.1 through 4.7 and MetroLink SOP 106.01 through 106.20.

11.1 Accident & Incident Notification

All accidents and incidents involving Metro personnel or property must be reported to the Operations Control Center (OCC)/Bus Operations Control Center (BOCC) in accordance with Metro's rules and standard operating procedures. Safety SOP 4.4 provides guidance as to levels for notification and response. Any Metro employee involved in, or witnessing, an accident or incident, shall immediately notify OCC/BOCC. In turn, the OCC/BOCC shall notify appropriate management, supervisory and emergency response personnel in accordance with the notification protocol. For MetroLink this protocol is described in MetroLink SOP 106.20. Internal notifications shall be made as soon as practical.

11.2 Accident Investigation

The Safety Department has the overall responsibility for accident investigations as defined by the accident investigation procedure. A TSM is first on the scene and initially investigates accidents. Depending on the severity of the accident, the Safety On-call Representative may also participate in the investigation. In the case of an accident defined as a Level 2 or higher, a Safety On-Call Representative is notified and will respond to the scene. The Safety Representative will assume the lead investigation role. The Safety Department, with support from MetroLink Operations, MetroBus, or Call-A-Ride, has identified certain procedures to follow when conducting an investigation. All formal safety investigations are confidential and include the following steps, as appropriate:

- On-site inspection of the scene
- Review of statements written by involved persons
- Interviews with involved persons and witnesses
- Review of the following physical evidence:
    - System log data
    - Vehicle and signal system event recorder data
    - Communication tapes
    - Train control position data
    - Train alarm tabulation printouts
    - Car, track, equipment maintenance and inspection reports
    - OCC documentation
    - Close circuit television (CCTV) Tapes
    - Digital recording device (DRD) Videos
    - On-scene measurements
    - Supervisory Control and Data Acquisition (SCADA)
- Perform system tests
- Preserve evidence
- Coordinate incident reconstruction activities
- Prepare report for management and the SSO (for rail)

Chapter 12: Event Reporting

12.1 State Safety Oversight (Rail)

Metro reports rail accidents and injuries to the MoDOT and IDOT SSO, and the FTA in accordance with 49 CFR Part 674, the BSSO Program Standards Manual, and the BSSO Event Notification SOP.

The contact information for IDOT, MoDOT, and the FTA:

- IDOT – IDOT District 8 Communications Center Phone (618-346-3233 or 618-346-3237)
- MoDOT – MoDOT SSO Program Manager Phone (573-418-0500)
- MoDOT 24-Hour Emergency Phone (573-751- 4291)
- FTA – email (CMC-01@dot.gov) , phone (202-366-1863)

The following accidents and incidents require notification within two (2) hours:

- A loss of life
- A report of a serious injury to a person
- A collision involving a rail transit vehicle
- A runaway train
- An evacuation for life safety reasons
- Any derailment of a rail transit vehicle, at any locations, at any time, whatever the cause

The FTA released two (2) guidance documents that exclude deaths and serious injuries from the 2-Hour reporting requirement if it was due to: illness, drugs, or natural causes occurring on the rail transit property. In these circumstances, the SSO Program Standard requires Metro notify the SSO within (1) one business day.

Reports prepared for the SSO Agency will follow the format outlined in Annex A - adopted from APTA Standard for Rail Transit Accident/Incident Investigation; Volume 4-Operating Practices, APTA; RT-SOP-002-02, dated July 26, 2004. Accident reports developed and prepared for the respective SSO agency are reviewed, approved and adopted by the SSO agency. The SSO Agency may request that causal factors or hazards identified during the investigation be addressed or corrected by Metro. In that instance, Metro will prepare a CAP.

12.2 National Transportation Safety Board (NTSB)

Metro notifies the NTSB following a rail accident:

1. No later than (2) two hours after an accident which results in:
    a. A passenger or employee fatality or serious injury to (2) two or more crewmembers or passengers requiring admission to a hospital;
    b. The evacuation of a passenger train;
    c. Damage to a tank car or container resulting in release of hazardous materials or involving evacuation of the general public; or
    d. A fatality at a grade crossing;
2. No later than (4) four hours after an accident which does not involve any of the circumstances enumerated in paragraph (a) of this section, but which results in:
    a. Damage (based on a preliminary gross estimate) of $150,000 or more for repairs, or the current replacement cost, to railroad and non-railroad property; or

b. Damage of $25,000 or more to a passenger train and railroad and non-railroad property.

Title 49 CFR Part 840 stipulates that the operator of a railroad shall notify the NTSB by telephoning the National Response Center at telephone 800–424–0201 at the earliest practicable time after the occurrence of any one conditions listed above.

49 CRF Part 840.4 stipulates that the information to be given in notification contains:

1. Name and title of person reporting
2. Name of railroad
3. Location of accident (relate to nearest city)
4. Time and date of accident
5. Description of accident
6. Casualties
    a. Fatalities
    b. Injuries
7. Property damage (estimate)
8. Name and telephone number of person from whom additional information may be obtained

12.3 Federal Transit Administration

Metro also reports safety and security data monthly to the NTD.

The NTD is the means by which the FTA collects uniform safety and security data. For an incident to be reportable to the NTD, it must involve a transit vehicle or occur on transit property and meet certain criteria. Reporting requirements categorize incidents as major or minor based on thresholds described in the NTD Reporting Manual.

The FTA NTD Report Manual mentions the importance of distinguishing between safety incidents and crimes, injuries, or deaths resulting from robbery, assaults, trespassing, arsons, and other crimes and misdemeanors not considered safety items. Those incidents are reported separately. Further information for the FTA NTD Reporting Manual is available from http://www.ntdprogram.gov/ntdprogram/ or the National Transit Database, PO Box 457, Merrifield, VA, 22116-0457; Telephone: 703-205-2475. Additional guidance on reporting accidents/incidents to the FTA is contained in the FTA National Database Report Manual.

Metro's Safety and Security NTD Data may be viewed on the NTD website at any time by approved employees, the SSO officials, and others who are qualified.

12.4 Missouri Division of Workers' Compensation

Employee injuries must be reported to the Missouri Division of Workers' Compensation within 30 days after receiving notice.

12.5 Illinois Division of Workers' Compensation

Metro complies with all reporting requirements for workers compensation in the State of Illinois.

Chapter 13: Change Management

13.1 System Modification

Any safety-critical change or modification to Metro's Transportation equipment or system is controlled to assure that hazards are appropriately identified and controlled in the plans and designs of the modified equipment or system.

This section describes the processes to ensure safety concerns are addressed in modifications to existing systems, vehicles, equipment, and procedures that do not require formal safety certification but which may have an impact on safety. These processes and approvals support and ensure a high level of system safety for patrons, employees, and the general public.

The configuration items of the MLRFGS, MetroBus, and Call-A-Ride are those civil systems and subsystems that define the engineering and physical basis of the safety critical operating and maintenance practice. The initial baseline configuration for all modes of transportation consists of the design criteria. These documents establish the basis for the preparation of the design, construction, and operations and maintenance parameters. Various processes, as described in the following paragraphs, have been established to ensure safety review, analysis, and approval (where appropriate) of changes to the fleet and facilities which may have a safety impact.

Any proposed change described in this section with a safety impact is subject to the Safety Risk Management Process (SRM) described in Part II. Hazards discovered in the System Modification process will follow the SRM process with possible involvement of the Safety and Security Certification Review Committee and ESSC,

13.1.1 Metro Active Project System (MAPS)

In general, the Department of Engineering & New Systems Development (ENSD) is responsible for the development, implementation, and management of capital projects and operating service projects. All projects are managed by a system referred to by ENSD as the Metro Active Project System (MAPS). The MAPS Manual describes the policies, goals, objectives, and procedures which apply to MetroBus, Call-A-Ride, or MetroLink. Five specific types of projects, as listed below, are governed by the MAPS Manual.

1. Design/Construction – longest in duration; recent MLRFGS example is the Cortex Station addition
2. Capital Maintenance – similar to Design/Construction projects but shorter in duration & lower in cost. Examples include the rail profile grinding project and the replacement of catenary strain insulators
3. Equipment – involve the procurement and installation of power driven, heavy equipment such as a one-ton hoist or a bucket truck; also could involve vehicle procurement
4. Special Projects – Arts-In-Transit installation and engineering studies (i.e., environmental impact; feasibility; customer needs surveys)
5. Operating Services – These services could include elevator maintenance, installation of security cameras, upgrades to SCADA

Metro's Safety Department maintains an active role throughout the project life cycle of any MetroLink, MetroBus, or Call-A-Ride project that might have a safety impact or introduce new hazards to the system. A project begins as a concept developed by one of many managers to meet one of the needs

identified by the project types listed above. Once the concept has been approved by the appropriate personnel and funding has been identified, a Project Charter or Scope of Work as needed, is developed by the assigned project manager. The charter initially addresses many of the items discussed in the PTASP in that it contains an overview of the project scope and a summary of any potential hazards, risks, operating impacts, and configuration issues. The Charter is circulated electronically for review and approval. Metro uses Policy & Procedure Manager (PPM) ™ software. This review and approval process include automatic routing and email notification. This is required to approve all Charters that affect the transportation systems. The charter is also reviewed by the appropriate safety staff to determine the extent, if any, the safety of the system might be impacted. If so, the Safety Department will actively participate in all phases of the project life cycle including design, procurement, construction, testing, permitting and ultimately operations. The Safety role during design and construction is very similar to the safety certification review processes described later in this chapter with a few exceptions. The projects referenced here will typically not involve all of the safety critical elements certified for a new alignment. However, the safety staff, in conjunction with ENSD, MetroBus, Call-A-Ride, MetroLink Operations, Rail Systems Maintenance, Right of Way Maintenance and LRV Maintenance, will identify those specific elements from the listing in the Safety Certification section of this chapter that will require certification on a project-by-project basis. The assigned Safety Auditor will attend design reviews and progress meetings throughout the life cycle of the project. Safety staff will visit the project jobsites to monitor progress and jobsite safety. Safety also audits to verify conformance to specifications. The Safety Auditor will sign the approvals on submittals, tests, QA/QC processes, and temporary permits on the safety critical elements for each project. The safety review process for MetroBus, Call-A-Ride, and MetroLink projects will also address system safety integration issues, where applicable.

13.1.2 Design Reviews

Design reviews are performed as needed for all major system procurements such as new vehicles, facility construction or modifications to established design criteria and standards. Reviews are performed to evaluate progress and technical adequacy of the design and to identify any necessary interface functional and physical compatibilities.

Design reviews include:

- Conceptual design reviews
- Preliminary design reviews
- Final design reviews
- Prototype reviews
- First article or initial product conformance reviews

A design review might, for example, consider compatibility with existing safety features, design and procedures of existing Metro equipment. The reviews address such factors and interfaces as:

- Human factors
- Environmental parameters
- Emergency responses
- Fire sources and protection
- Equipment layout and maintainability
- Operations and maintenance requirements

13.2 Configuration Management & Configuration Change Board (CCB)

This section describes the requirements and methods used to ensure configuration management control. It includes the following:

- The authority to make changes
- The process for making changes
- The notification and assurances to all affected departments regarding control of the rail transit agency's design baseline

The purpose of this section is to ensure that modification to individual subsystems or fleet and inventory-wide changes are recorded on as-built drawings and addressed in training courses, maintenance manuals, and procedures.

The configuration items of the transit system are those civil systems/subsystems which define the engineering and physical basis of the system, and safety critical operating and maintenance practice. The initial baseline configuration consists of the System Design (design criteria, standard drawings, and standard specifications) and the project documents associated with the original transit system project as well as those documents for each subsequent new alignment.

This section of the PTASP addresses those aspects of these items that are safety critical. A listing of many of the transit system safety critical systems and sub-systems is shown in Table K. The 'baseline' consists of those items whose changes may affect the System Safety Profile of the transportation system. Included in this category are the physical components of the fixed plant, Safety Critical Software, transit vehicles, and operational documents such as the Operating Rules and SOPs for operations and maintenance. The controlling documents include specifications, drawings, and/or associated lists, selected or designated as belonging to a particular technical baseline.

Any proposed change described in this section with a safety impact is subject to being presented, discussed, and approved or disapproved at the Configuration Change Board (CCB). Here, the Safety Risk Management Process (SRM) described in Part II will be followed. Hazards discovered in the Configuration Management process will follow the SRM process with possible involvement of the Safety and Security Certification Review Working Group and ESSC.

13.2.1 Baseline Configuration

Design Criteria, Standard Drawings, and Standard Specifications

Metro's Design Criteria and Standard Specifications define the principal design requirements for the transit system in sufficient detail to permit the definition and allocation of requirements to the systems and assemblies that comprise the system. The project documentation includes any exceptions allowed from the design criteria and 'As-Built' drawings that reflect field changes made to the standard specification drawings issued with the project. Changes that have an impact on a safety critical system, sub-system, or operating practice will require review by the Configuration Change Board (CCB) as established through the Metro Configuration Management Program. Therefore; it is important that this information be included on the Configuration Change Request (CCR) form (See Appendix B of the 2012 Configuration Management Plan). If it is unclear whether or not the change impacts safety critical system, it shall be noted on the form for determination by the CCB. For the purpose of determining impacts to safety critical systems, cost or schedule implications are not considered.

Table K: Safety Critical Systems & Sub-systems

Safety Critical Systems & Sub-Systems[2]		
Systems & Facilities		
01 Signals	05 Right of Way	09 Structures
• Interlockings • Train Separation • Wayside Equipment • Cab Signaling • Grade Crossings • Track Circuits	• Fencing • Drainage • Misc. Buildings • Line of Sight • Clearances	• Bridges • Tunnels • Retaining Walls • Culverts • Station Slabs
02 Communications	06 Rolling Stock	10 Yard & Shops
• PAT • Radio • SCADA • Intrusion Detection • CCTVs	• Light Rail Vehicles • Non-Revenue vehicles • Hi Rail Equip • Bus • Van	• Access/ Security • Storage Building • LRV Paint Facility • Electrical • Mechanical/HVAC • Special Equipment
03 Electrification	07 Fare Vending Equipment	11 Stations & Parking Lots
• Substations & Power • Overhead Catenary • Catenary Poles • Strain Insulators	• TVMs • Validator • Software	• Platforms • Parking Lots • Garages • Buildings
04 Track	08 Emergency Response Equipment	23 Integrated Tests and Procedures
• Ballasted Track • Direct Fixation • Embedded Track • Special Track work	• Track Carts • Emergency Egress & Ingress	• Tunnel Ventilation • Fire Suppression • Alarms • Ops Control Center
Policies, Procedures, & Training		
12 System Safety & Security	15 Configuration Mgmt. Plan	19 MetroLink Rulebook
• PTASP • SSP • EOP	16 Quality Assurance Plan	20 Operations & Maintenance SOPs
13 Emergency Familiarization	17 Safety SOPs	21 Training & Certification
14 Fire Life Safety	18 Security SOPs	22 Public Awareness
Integrated Testing		
23. Integrated Test Plan		

Engineering Drawings and Associated Specifications

Engineering drawings and specifications were developed during the Design phase(s) of the program and consist of the following types:

- Civil Systems (facility architect-engineer drawings and specifications): These documents are the drawings and specifications required to define, develop, procure, construct, fabricate, and install the basic facilities.

[2] *These are derived from the listing of elements that are included in the Safety Certification Process of this Safety Plan.*

- Rail Systems, Equipment Drawings and Specifications: These documents are the drawings and specifications required to define, develop, procure, construct, fabricate, install, and test the specific configuration items or elements that, when integrated, make up the systems installed.

Operation and Maintenance Requirements

Operation and maintenance requirements and specifications consist of the Safety Critical operating practices at the time that a segment of the transportation system is certified as revenue ready. This is primarily expressed in the Operating & Maintenance Plan. Safety Critical operating practices include unusual dispatching patterns (e.g. temporary speed restrictions, single tracking, etc.), operational rules pertaining to signal aspects and requirements for training/certification of train operators and signal technicians. Non-safety critical operational items such as train schedules are excluded from this documentation.

13.2.2 Configuration Changes – Approval & Control

Engineering

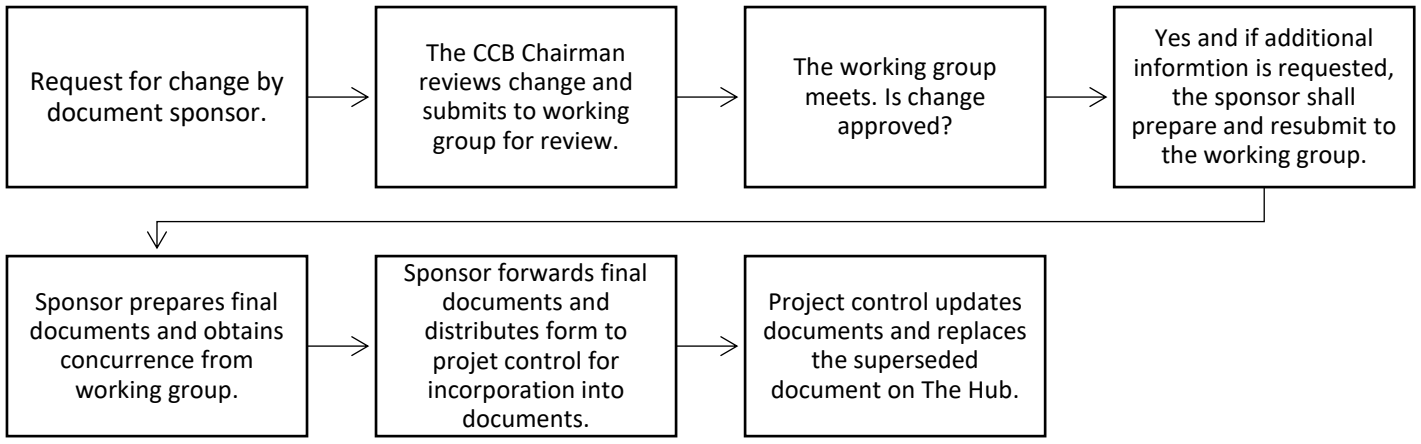
This process is managed by ENSD and is described in detail in the Metro ENSD Configuration Management Plan (Nov. 2012), also available on Metro's intranet system. That plan describes the procedures for the submittal, approval, and implementation of all baseline document changes as well as the process for the notification and distribution of those changes. Moreover, the Plan (pg. 3) stipulates the review by System Safety of any changes to the baseline documents that have an impact to safety critical systems, procedures or documentation.

Vehicle Maintenance

The configuration control process for Vehicle Maintenance is stipulated in the Vehicle Maintenance Department SOP 1.1, which applies to LRVs, MetroBus, Call-A-Ride, maintenance shop equipment, and non-revenue vehicles.

The configuration change process is illustrated in Figure 3 below:

Figure 3: Configuration Change Process



Roles & Responsibilities

Safety

- Review and identify potential safety hazards with any proposed change.
- Identify hazard severity and system risk resulting from single point and common cause failures.
- Participate in the Configuration Management Meetings to review progress and address any relative safety issues.

Engineering

- Control the Configuration Management baseline
- Design Criteria
- Standard Specs & Drawings
- Document Control

Rail Systems

- Controls all system integration issues

MetroLink, MetroBus, Call-A-Ride Operations

- Update changes to rules, procedures and any other item relating to safety and security.
- Update changes that could impact system and infrastructure changes on operations.

13.3 Safety and Security Certification

13.3.1 Safety & Security Certification Program

Safety & Security Certification is the process of monitoring and documenting satisfactory compliance with a formal list of safety and security requirements. The requirements are defined in design criteria, contract documents, the PTASP, and applicable codes and industry standards. These safety requirements are adhered to for all construction stages where revenue service will be maintained. For large projects, a specific Safety Certification Plan is developed. For smaller projects – which primarily involve enhancements or additions to the existing system, this process is handled during the reviews conducted for system changes. Metro self-certified all three major phases of the current system and the results of that process, in fact, provide the baseline for the configuration management process discussed in Section 8.

Metro's safety certification process is consistent with FTA's 'Handbook for Transit Safety and Security Certification' (FTA- MA-90-5006-02-01; November 2002). The goal of the safety certification process is to verify that identified safety and security requirements have been met and to provide evidence the new operating segments/phases are safe and secure for use in revenue service. Accordingly, the objectives of the safety and security certification program are to document that:

- Facilities and equipment have been constructed, manufactured, inspected, installed, and tested, in accordance with safety and security requirements in the design criteria and contract specifications.
- Operations and maintenance procedures and rules have been developed and implemented to ensure safe and secure operations.
- Safety and security procedures have been reviewed and updated if appropriate.

- Training documents have been developed for the training of operating personnel and emergency response personnel.
- Operations and maintenance personnel have been trained and qualified or certified.
- Emergency response agency personnel have been prepared to respond to emergencies in or around Metro property.
- Safety and security-related system integration tests have been conducted.

Metro maintains documentation to verify compliance with the safety certification process. The documentation may include test reports, quality assurance audits, submittals, visual inspection reports, and warranties. The Safety Certification Process is used formally for major rehabilitation projects and system extensions. In these instances, Metro issues Certificates of Compliance for all applicable elements.

The implementation and monitoring of the Safety Certification process is accomplished through the General Manager Safety. Final authority to approve the certification of Metro's extensions and expansions for revenue service rests with the President and CEO.

The processes for Safety Certification are further outlined in the Safety Certification Program Plan.

13.3.4 Safety and Security Certification Working Group (SSCWG)

The SSCWG acts as the safety and security body during normal operations. This group will also decide what projects receive formal safety and security efforts and to what extent. For large rail projects a separate SSCWG is convened. The SSCWG is responsible for safety review, compliance assessment, making recommendations to Metro and Metro Management regarding safety and security certification process and certifying that system extensions and other system enhancements are safe and secure for revenue service.

The Safety and Security Certification Working Group (SSCWG) is chaired by the following:

- Assistant Executive Director of Engineering Systems, Chair
- General Manager Safety, Co-Chair
- Director of Safety, Co-Chair

The SSCWG is comprised of representatives from:

- Safety
- Security
- Engineering
- Capital Projects
- Transit Assets
- Maintenance of Way (MOW)
- MetroLink Operations
- MetroBus Operations
- Call-A-Ride Operations

The SSCWG responsibilities include:

- Review and approve documentation as evidence of conformance to safety and security requirements
- Identify potential hazards/open issues

- Require hazard analyses to be performed to determine initial and residual risks
- Assign responsibilities for open issues and track to closure
- Conduct site visits and define additional safety-related tests and analysis, as required
- Subsequent to site installation and commencement of formal testing, review test plans and procedures, and issue test permits with applicable restrictions
- Determine if a project will follow formal safety certification efforts
- Determine whether to accept specific conditions or require corrective actions, including the specific method to mitigate the conditions or potential hazard
- Provide recommendations to the President and CEO regarding certification and noncompliance of system elements
- Issue Certificates of Compliance for certifiable elements
- Issue Temporary Use Permits
- Issue System Safety and Security Certificates, certifying that system extensions or system enhancements are safe and secure for revenue service operations

13.4 Procurement

The Safety Department performs safety reviews of procurement specifications, designs for facilities, equipment, or systems that may affect the safety of employees and passengers of Metro. The review is performed to ensure the incorporation of safety requirements in contract documents, and to assess compliance with the safety requirements through the testing and/or inspection of the facility, equipment, or system. Safety aspects of bid documents and specifications include the following:

- Safety requirements for construction or installation
- Tracking and verifying compliance with safety & security requirements in design reviews
- Testing and certification for installations and interfaces
- Maintaining configuration control
- Periodic safety evaluations and audits
- Incorporation of "fail-safe" principles where failure could cause a catastrophic event
- Safety devices, parts and materials that eliminate or mitigate most identified safety hazards

13.4.1 Pre-Procurement Reviews

For contracts that exceed $100K, the Safety Department participates in pre-procurement review with Procurement and the project manager to identify any unusual or unique safety issues that might be associated with the procurement. A safety staff member is then assigned to monitor the project through conclusion. For major system construction or major upgrades, Metro's Safety and Security Certification procedures are incorporated throughout the procurement process.

13.4.2 Oracle Workflow

Metro’s Oracle Requisition Approval Workflow sends notifications to the Safety Department when a requisition is submitted with factors that require their awareness. This notification is sent when a requisition is initially submitted. Discussions are then made off-line between the Safety Department, the requesting department and Procurement regarding Safety requirements prior to issuance of a solicitation or purchase order. The review and discussion prior to the purchase order ensures the following:

- All SDS are pre-approved.
- All required Metro training is included in the contractual agreement.

- A contractor safety plan and contractor Job Hazard Analysis are included as part of the contract submissions when appropriate. These are reviewed, and approved by safety staff prior to the start of work.
- All safety-sensitive contractor employees are identified and applicable Metro Drug and Alcohol Policies are included in the contract.
- Safety staff is able to participate in concept and design reviews as well as in the development of contract specifications.

Examples of categories routed to Safety include construction, rail systems and ROW maintenance, hazardous materials, work on MLRFGS ROW and others. Safety staff can then request additional material or confer with others.

Chapter 14: Continuous Improvement

Metro defines continuous improvement as a process by which a transit agency examines safety performance to identify safety deficiencies and carry out a plan to address the identified safety deficiencies. Many areas of this PTASP have already addressed the components of this section.

14.1 Safety Department Activities

To achieve continuous improvement in safety as outlined in this document, Metro performs the following safety risk management, safety assurance and safety promotion activities through the Safety Department to support other departments in meeting their obligations under the SMS:

- Conducts FTA- and BSSO-mandated internal safety audits.
- Conducts inspections at all facility locations.
- Performs investigations of major accidents involving employees/equipment.
- Conducts investigations of safety complaints, concerns and reports.
- Prepares reports on significant events.
- Participates on safety committees and working groups, including the ESSC and performs follow-up to safety committee/working group issues.
- Trains maintenance employees in industrial/occupational safety requirements.
- Liaisons local, state, and federal responders and agencies concerning emergency response to events involving mass transit.
- Supports the development, review and revision of safety-related Standard Operating Procedures (SOPs) in conjunction with Operations and Maintenance Departments; and develops, reviews and revises SOPs for the Safety Department functions.
- Participates on all committees/working groups for construction projects.
- Conducts safety inspections during construction projects.
- Assists Metro management with safety issues.
- Participates in Safety and Security Certification process for all capital projects.
- Reviews and comments on any changes to safety elements within MetroLink, Paratransit and Bus system.
- Reviews trended safety data provided by departments and provides feedback to ensure departmental compliance with SMS data requirements.
- Participates in development and implementation of system emergency drills.
- Facilitates monthly MetroBus and Paratransit Safety Meetings.
- Participates in formal meetings with the President and CEO, as appropriate, on safety issues.
- Provides full support and coordination on SMS implementation agency-wide.
- Ensures continuous safety improvement through support activities for all departments.
- Provides oversight activities for internal SMS assessments by each department.

14.2 Safety Audits

All Metro departments, Metro contractors, and supporting Metro departments are subject to annual audits by Bi-State Safety Oversight (BSSO) and the Internal Audit Department (IAD). Other Metro Departments, such as Corporate Compliance & Ethics may assist and provide support for these audits, as determined and approved by the BSSO.

The Internal Audit Department has the authority and responsibility to conduct or oversee regular internal audits and shall provide a formal report of Findings/Observations to the BSSO annually to ensure effective corrective action is taken to resolve deficiencies. Auditors shall be independent from the first line of supervision responsible for the activity being audited. The Internal Safety and Security Management Audit SOP provides guidance for internal safety and security audits. This SOP also covers guidance for the CAP dispute process and resolution.

14.3 Corrective Action Plans (CAPs)

CAPs can be developed resulting from a variety of situations or hazards. Some examples which could result in a formal CAP following Program Standard guidelines include: Unacceptable/Undesirable hazard rated items; as directed by the President and CEO, ESSC, Safety Department, BSSO, FTA, or other ad hoc meetings involving the monitoring of deficiencies. Outside of a directive from the BSSO or FTA, the Safety Department will facilitate the development of the CAP with the respective department. Ultimately the CAP is the responsibility of the assigned Department. Once a CAP has been generated, the CAP will be submitted to the BSSO in accordance with the Program Standard. Any internal disputes on CAP development/content will be brought to the President and CEO and/or the ESSC for resolution.

All CAPs following the Program Standard process will be documented and maintained on the BSSO Corrective Action Monitoring Log. The individual departments will maintain their own documentation and communicate updates to the BSSO in accordance with the program standard. Internal meetings to discuss CAP progress or the effectiveness of the mitigations are generally done at the Department level with the Safety Department assistance when needed. Ad hoc CAP meetings do occur when needed and the progress of all CAPs can be discussed at the ESSC.

All immediate or emergency CAP actions will be implemented in concurrence with the Program Standard section on Immediate or Emergency CAPs. An example of a situation that would require immediate action could involve an Unacceptable Hazard or other situations that could result in immediate harm or danger to the system or agency if quick corrective action is not taken. If such a case were to arise the General Manager Safety, or the President and CEO would make the decision for emergency action. That would then ensure the Program Standard procedures are followed in this area to include a notification to the BSSO in writing by 5:00 pm on the business day following its decision to take corrective action.

14.3.1 CAP Tracker

Metro developed and implemented an online CAP Tracker in January 2022 to serve as a centralized location for CAP information. The tracker captures all of the details from the CAP Submission Form, the status of the CAP, updates, and copies of BSSO approved forms. In addition, the tracker serves as a performance dashboard and displays the number of total open/closed CAPs, CAPs submitted for closure, and CAP submitted for extension/modification. The Safety Department and Internal Audit maintain the dashboard; other users (e.g. BSSO) have read-only access. Users can filter CAPs (i.e. CAP name, status, responsible department, etc.), view CAP details, and view/download BSSO approved CAP forms. The tracker was updated in January 2023 to include the ability to view/download supplemental materials (e.g. reference materials and items needed for closure).

14.4 Threat and Vulnerability Assessment (TVA)

Within a three-year cycle, Metro is required to perform a new or review past Threat and Vulnerability Assessment (TVA) for any necessary updates. The BSSO will approve Metro's process for threat and vulnerability efforts through the annual review and approval of the SSP. The BSSO will monitor ongoing Metro activities as a part of the internal audit program oversight activities. Metro is expected to document its methodology for performing TVAs, including how it identifies, manages and assesses vulnerabilities system wide utilizing an all hazards approach.

Section IV: Safety Promotion

Chapter 15: Competencies and Training

BSD has developed Safety and Security learning management system (LMS) that tracks progress and completion of the 'Core Safety Courses' and other computer-based training (CBT) facilitated by the Department of Safety. Managers have the ability to check progress of employees to determine if training is still required. Records of safety-related training are maintained in accordance with the requirements of 49 CFR 673 and 674.

The Hub/Support Applications/Safety Training Results: http://metrows16/safetytrainingresults

15.1 Track Access Training

All contractor employees and Metro employees performing work along the MLRFGS ROW are required to complete one or more of the following training programs:

15.1.1 TIER 1 (MetroLink System Safety)

This is a basic system safety awareness class for persons who work on or next to the alignment but are not doing any actual flagging duties or for those persons who may access the alignment for inspections, investigations, or observations. Generally, all of these individuals will be accompanied by at least one person who has Tier 2 training (Flagging and Radio) and can make radio contact with OCC.

15.1.2 TIER 2 (MetroLink Flagging & Radio Use)

This class provides additional knowledge for individuals who will actually be flagging trains and for those who will use the MLRFGS radio communication system.

15.1.3 TIER 3 (MetroLink Operating Rules)

This class is for Metro employees who spend considerable time on the MLRFGS ROW (i.e., Rail Systems, Engineering and Construction, Track Car Operators, and Safety and Claims) who will be using non-revenue vehicles along the ROW or who will be protecting work crews along the alignment. The class provides a basic understanding of MetroLink operating rules including those applicable to the operation of a track car. This class also provides a basic understanding of construction & maintenance operations on the ROW. The class does not provide competency training in the actual operation of rail vehicles.

All employees who successfully pass Tier I, II, & III System Safety Training receive a track access card noting the applicable permissions. Recertification is required annually for Metro employees and for contractor employees. Metro's safety staff provides the training.

A modified track access training is given to first responders.

15.2 Public Transportation Safety Certification Training Program (PTSCP)

Currently, BSD requires the following to successfully complete and retain the PTSCP certification for rail:

- General Manager Safety
- Director of Safety
- Safety Auditors

The Metro Safety Management System (SMS) Awareness Training also serves as the refresher training for the Public Transportation Safety Certification Training Program (PTSCP) per 49 CFR Part 672.

15.3 Core Safety Training

Core Safety Training is required of all BSD employees within (90) ninety days of new employment. The Core Safety Courses can be found on The Hub or at www.bistatedev.org/safetytraining.

15.3.1 Safety and Security Culture Training - CBT

This course will offer participants with an overview of the culture of safety and security at BSD and will encourage roles and responsibilities for ensuring safety and security among all members of BSD's team.

15.3.2 Safety Management System (SMS) Awareness - CBT

This training will teach participants about BSD's Safety Management System and how to spot and report hazards so that BSD can manage safety in a proactive way.

15.3.3 Emergency Preparedness Training - CBT

This training gives team members the information they need to keep themselves safe in an emergency. It also gives them access to additional internal procedures, guides, and documents and a basic understanding of what they mean.

15.3.4 Occupational Safety - CBT

This course will cover personal protective equipment, blood-borne pathogens, fall protection, hazard communication, and other potential job-specific hazards. The curriculum for the Blood Borne Pathogen module follows the guidelines set by the Centers for Disease Control and Prevention for exposure to infectious diseases. This consists of awareness of the most common blood borne and respiratory viruses and mitigation practices to prevent exposure and infection.

15.3.5 System Security Awareness - CBT

Participants in this training will become familiar with system security and learn how to identify potential terrorist behavior while working in an environment that includes both public transportation and commercial enterprises.

15.3.6 Drug and Alcohol Awareness Training - CBT

Participants in this training will walk away with an overview of Metro's drug and alcohol program as well as an understanding of their roles and responsibilities as workers in maintaining a drug- and alcohol free environment at work.

15.3.7 The Art of Defusing Conflict: De-Escalation Training – Instructor Led

This course aims to teach our employees about techniques to defuse stressful situations and help them identify situations that can cause a person to be frustrated, and ways to reduce stressors. In addition, participants will learn about agency-specific rules, policies, and restrictions and be able to demonstrate how best to handle difficult situations they may experience in the work setting or their personal life. Participants will learn how to recognize when others may have been triggered and how to help de-escalate the situation based on an understanding of proper listening skills, effective communication, and mental health issues.

15.3.8 Understanding Human Trauma/Being Trauma Informed - Instructor Led

This training presents information on how trauma impacts social, emotional, and health outcomes. The presentation explores the prevalence and impact of trauma on children's brain development; the Adverse Childhood Experiences Study; how to help children and families recover from trauma; as well as what is behind many of the behaviors we see and how we can shift our perspective through the lens of trauma. This basic groundwork helps the participants understand how they may respond to stress and their own self-coping mechanisms, then they can use this understanding to better understand how others respond to trauma and stress.

15.3.9 Human Trafficking Awareness - CBT

This course provides team members with awareness and training resources to help raise their understanding of human trafficking and educate them on its indications.

15.4 Other Safety-related Training

15.4.1 Bus/Train/Van Evacuation

This training provides operators with transit specific requirements for safely evacuating passengers during an emergency.

15.4.2 Confined Space – CBT

This training tells you about the most common dangers you will face while working in a confined space and the safest ways to deal with them. The course modules cover personal protective equipment, hazards, and the best ways to deal with the lack of oxygen.

15.4.3 Defensive Driving – CBT

This course helps people who drive BSD vehicles be prepared for dangerous situations, even if they are caused by bad weather or the mistakes of others.

15.4.4 E-Bus First Responder Familiarization – CBT

This training provides first responders with emergency protocols for responding safely to accidents involving BSD E-Bus fleet. It includes details on how to de-energize electrical systems and highlights hazardous components on the vehicle.

15.4.5 Electrical and Arc flash Safety Training – CBT

This training shows team members how to be safe around electricity in general and how to figure out incident energy values and arc flash boundaries. Team members are also given information about electrical components that are made to reduce arc flash risks and how to choose the right personal protective equipment (PPE) based on NFPA 70E.

15.4.6 First Responder Emergency Familiarization – CBT

This training provides first responders with awareness for responding to emergencies involving MetroLink, MetroBus, and Call-A-Ride vehicles. It gives a general system overview of BSD's routes and infrastructure. On-site tours can be scheduled by emailing the Department of Safety (safety@metrostlouis.org).

15.4.7 Fall Awareness – CBT

This training courses provides team members, who work at elevated heights, an overview of safety requirements. This includes proper PPE and set-up to ensure proper fall protection.

15.4.8 Hazard Communication Training - CBT

The curriculum for Hazard Communication Training meets the OSHA standards set under 29 CFR 1910.1200(h). This consists of familiarization to potential physical and health hazards from chemical exposure, understanding the Globally Harmonized System of chemical classification, and how to access the database of Metro's chemical inventory. All Metro Employees working with chemicals shall be required to complete the Office of Safety's computer based training for hazard communication.

15.4.3 Power Industrial Trucks – CBT

This training provides team members with the necessary safety requirements for operating a power industrial truck at BSD. This includes stand-up units and forklifts. A hands-on assessment is required before operating equipment; contact the Safety Department (safety@metrostlouis.org) for more information.

15.4.10 Power Tool Safety – CBT

This training provides team members with awareness on how to safely use powered hand tools at BSD. It provides team members with the proper technique for grinders, drills, saw, etc. and proper PPE for each type of tool.

15.4.11 Reasonable Suspicion Training – Instructor Led

Provides BSD management with training on how to identify signs of misuse of drugs and alcohol in the workplace.

15.4.12 Spill Control – CBT

Provides managers with the protocols for properly addressing fluid and chemical spills (e.g. from vehicles) into public waterway systems.

15.5 Department/Job Specific Training

The Metro Training Department is responsible for developing/implementing training plans and maintaining employee training records for Metro Operations. The Safety Department will support Metro Training Department in the development, implementation, and facilitation of safety-related training. This includes, but is not limited to, facilitating Accident Preventability, Defensive Driving, and Fatigue Awareness Training during new operator onboarding or operator refresher training.

The Security Department is responsible for developing/implementing training plans for security personnel and first responders. The Security Department maintains employee training records for in-house security personnel. Contractors (e.g., police departments and contracted security) maintain their employee training records and may provide them upon request. Security training requirements are outlined in the System Security Plan (SSP).

All other department/job specific training, unless otherwise stated, is managed by the individual departments.

Chapter 16: Safety Communication

Metro communicates safety and safety performance information throughout the Agency, conveying information on hazards and safety risks relevant to employees' roles and responsibilities and informs employees of safety actions taken in response to reports submitted through an employee safety reporting program, among other information.

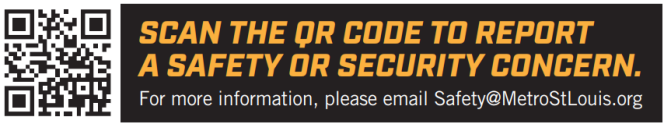
Metro understands SMS is dependent upon ongoing management commitment to communication. One of management's most important responsibilities under SMS is to encourage and motivate others to want to communicate openly, authentically and without concern for reprisal.

16.1 Employee Reporting Program

Employees, including contractors, are encouraged to report safety conditions to the Safety Department that are a hazardous condition or may cause a hazardous condition.

Employees may report via the following methods:

- Reporting directly (in person) to the immediate supervisor
- Reporting directly to a Safety staff member
- Reporting directly to the CSO
- Email Safety@metrostlouis.org
- Reporting via QR code/online form



Details regarding the Employee Reporting Program are outlined in section 6.1.2 Employee Reporting Program.

16.2 The Hub

The Hub – Safety and Security Page is used to accomplish Safety Communication throughout BSD. Below is an outline of some of the resources on included on the page:

- Drug & Alcohol testing forms
- Links for computer-based training
- Safety Performance Metrics (e.g. training completion, injury rates, etc.)
- QR Code for Employee Hazard Reporting
- Hazard Log Metrics/Updates
- Safety Campaigns/Initiatives (e.g. rail safety week, emergency exercises, etc.)
- Safety and Security Program Plans
- Safety and Security Updates
- Standard Operating Procedures
- Working Group Meeting Minutes

16.3 Safety Posters

Safety posters will be used in common areas at Metro facilities to communicate many of the safety items the Dashboard covers. Posters will allow Metro to communicate safety to employees and contractors who do not have access to an electronic means to access the Dashboard. Posters will also assist in communicating the Employee Safety Reporting Program.

16.4 Safety Committees

16.4.1 Executive Safety and Security Review Committee (ESSC)

The ESSC has been established to facilitate safety and security coordination among Metro departments. Chaired by the President and CEO, the Committee is charged with the responsibility of assisting in maintaining a high level of system safety and security. This committee brings together the common sense, technical expertise and unique perspectives of a variety of staff to focus upon system safety and security issues. The committee functions as the interdepartmental unit empowered to lead Metro in hazard management efforts. The ESSC assesses system-wide safety and security issues and verifies that safety and security is considered and incorporated in any new procedures, training programs, facilities and designs.

This committee meets at least quarterly and supports Safety in the following:

- Determining safety and security compliance with management policies, rules, procedures and assigned security responsibilities.
- Reviewing and discussing identified hazards and status of activities to resolve including review of supporting documentation (e.g. hazard tracking log, hazard investigation reports, and inspection reports).
- Reviewing safety and security data, information, and trends and identifying organizational issues that may contribute to events or less effective response to events.
- Actively promoting safety and security campaigns.
- Reviewing drills, exercise scenarios, and after action reports.
- Proposing improvements in safety and security procedures, equipment, and training.
- Assessing safety and security impacts of facility and/or operational changes.
- Annual review and revision as needed of the PTASP, as well as assuring its implementation.
- Monitoring compliance of each department with specific safety responsibilities and procedures as set forth in the PTASP by reviewing the results of safety audits conducted by the Safety Department.
- Participating in accident/event investigations as appropriate and in accordance with Metro's established procedures. The type of accident/event dictates who investigates the accident/event, appropriate forms or reports to be used and who is to be notified.
- Performing system safety review functions as required. Coordinating and following up with any external safety audits and participating as required (e.g., BSSO, peer reviews).
- Collecting, analyzing and reporting safety data. Reviewing maintenance and failure rate data to identify safety problems.
- Reviewing results of safety inspections, emergency drills, simulations and tests and developing action as appropriate.
- Preparing written documentation of all meetings, tasks, activities, investigations, analyses and recommendations. Following up on all pending matters.
- Establishing safety goals and objectives as defined by Metro employee safety program.
- Resolving field-related operating issues that may require a change, modification and/or addition to fixed safety/operational assets and/or operating procedures as a result of accidents, events, or field observations that relate to day-to-day safe and secure operations.

ESSC Committee members include:

- President and CEO (Chair)

- General Manager Safety (Chief Safety Officer) (Co-Chair)
- General Manager Security (Co-Chair)
- Executive Vice President and COO Metro Transit
- Director of Safety
- Director of Security
- Executive Vice-President, Chief HR Officer
- Asst. Executive Director Transit Assets
- General Manager MetroLink
- General Manager MetroBus
- General Manager Call-A-Ride
- Executive Vice-President, Chief Financial Officer
- Vice President of MarCom
- Emergency Preparedness Coordinator
- Chief Audit Executive (Observer)
- Vice President Capital Programs
- Executive Vice-President Multi-Modal Enterprises
- Executive Vice President of Administration
- Vice President Economic Development
- General Counsel
- Director of Risk Management
- Assistant Executive Director of Planning and Systems

16.4.2 Joint Labor Management Health and Safety Committee

On November 15, 2021, the Infrastructure Investment and Jobs Act was signed into law requiring a joint labor/safety committee. This Committee was formed by the regulatory deadline of July 31, 2022. In accordance with the law, this committee consists of:

- Management representatives, and
- Frontline employees representatives selected by the labor organization

The duties of the Committee:

- Approve the PTASP before final Board of Commissioners approval.
- Identify and recommend risk-based mitigations or strategies necessary to reduce the likelihood and severity of consequences identified through BSD's safety risk assessment.
- Identify mitigations or strategies that may be ineffective, inappropriate, or were not implemented as intended.
- Identify safety deficiencies for purposes of continuous improvement.
- Establish risk reduction performance targets using a 3-year rolling average of the data submitted to the National Transit Database (NTD) once the FTA updates the National Public Transportation Safety Plan.

16.5 Safety Working Groups

The Safety Department accomplishes many of its Safety Assurance activities through various working groups that span across the entire agency with all modes of transportation. These meetings enable the Safety Department to interface and collect data from the various departments to include: hazards, safety concerns, performance data, front-line worker collaboration, etc.

16.5.1 Front Line Team Member Safety and Security

To provide a strategic overview of safety and security issues affecting BSD front-line team members from the various BSD departments.

16.5.2 MetroLink Event Review

To provide safety assurance through use of management information on MetroLink safety performance.

16.5.3 MetroBus Event Review

To provide safety assurance through use of management information on MetroBus safety performance.

16.5.4 Call-A-Ride Event Review

To provide safety assurance through use of management information on Call-A-Ride safety performance.

16.5.5 Team Member Assault Review

Preventing and mitigating team member assaults.

16.5.6 Safety Assurance Review

To review, trend, and mitigate deficiencies documented in safety assurance inspection reports.

16.5.7 Safety & Security Certification

To ensure Safety and Security Design and Crime Prevention Through Environmental Design (CPTED) Criteria are integrated into Engineering Projects and verified prior to revenue service.

Appendices

Appendix A – National Public Transportation Safety Plan Safety Performance Measures (2023)

The thresholds for "reportable" fatalities, injuries, and events are defined in the National Transportation Database (NTD) Safety and Security Reporting manual. The performance target is presented as the number of events, by mode, per one hundred thousand revenue miles.

Fatality: death confirmed within 30 days; excludes trespassing, suicide, and illness/natural causes

Injury: harm to a person requiring immediate medical attention away from the scene; includes NTD S&S-40 (major) and S&S-50 (non-major) events; excludes injuries resulting from security events (e.g. assaults and other crimes)

Safety Event: events meeting the NTD S&S-40 (major) event threshold; includes major safety events (e.g. collision, derailment, fire, and evacuation); excludes major security events (e.g. assault and robbery)

System reliability is established and tracked by the Vehicle Maintenance Department. The metric is reported, by mode, as the mean distance between major mechanical failures for the fiscal year.

System Reliability: mean distance between major mechanical failure

Major Mechanical Failure: a failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns

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	MetroLink	MetroBus	Call-A-Ride
Fatality	0 0 per 100k mi	0 0 per 100k mi	0 0 per 100k mi
Injury	40 1.53 per 100k mi	162 1.28 per 100k mi	8 0.23 per 100k mi
Safety Event	7 0.25 per 100k mi	67 0.53 per 100k mi	4 0.11 per 100k mi
System Reliability	23,307 mi	20,000 mi	21,632 mi

Appendix B – Glossary

A

AASHTO - American Association of State Highway Transportation Officials

Accident - an event that involves any of the following: A loss of life; a report of a serious injury to a person; a collision involving an Metro vehicle; a runaway Metro vehicle; an evacuation for life safety reasons; or any derailment of an Metro vehicle [673] at any location, at any time, whatever the cause.

Accountable Executive (AE) - a single, identifiable person who has ultimate responsibility and accountability for the implementation and maintenance of the SMS of Metro; responsibility for carrying out the PTASP and Transit Asset Management Plan (TAMP); and control or direction over the human and capital resources needed to develop and maintain both the PTASP in accordance with 49 USC 5329 and TAMP.

ADA - Americans with Disabilities Act

Audit - an examination of records and related materials, including, but not limited to, those related to financial accounts.

ATP - Automatic Train Protection

B

BOCC - Bus Operations Control Center

BSD - Bi-State Development

Bi-State Safety Oversight (BSSO) - the representatives from the Missouri and Illinois Departments of Transportation assigned as the State Safety Oversight Agency for the MetroLink rail fixed guideway system.

C

Capital Asset - a unit of rolling stock, a facility, a unit of equipment, or an element of infrastructure used in public Transportation.

CBT - Computer Based Training

CCB - Configuration Change Board

CCTV - Close Circuit Television

CDC - Centers for Disease Control

Consequence - the potential outcome(s) of a hazard.

Continuous Improvement - a process by which a transit agency examines safety performance to identify safety deficiencies and carry out a plan to address the identified safety deficiencies.

Contractor - an entity that performs tasks on behalf of Metro, FTA, a State Safety Oversight Agency, or other rail transit agency, through contract or other agreement, including tasks required for rail compliance.

Corrective Action Plan (CAP) - a plan developed by Metro that describes the actions that Metro will take to minimize, mitigate, correct, or eliminate risks and hazards, and the schedule for taking those actions. Either a State Safety Oversight Agency or FTA may require Metro to develop and carry out a corrective action plan.

CSO - Chief Safety Officer

D

Decision Support Tool - a methodology: (1) To help prioritize projects to improve and maintain the state of good repair of capital assets within the public transportation system based on available condition data and objective criteria; or (2) To assess financial needs of asset investments over time.

DHS - Department of Homeland Security

Directive - a formal written communication from FTA to one or more recipients which orders a recipient to take specific actions to ensure the safety of a public transportation system.

DRD - Digital Recording Device

E

EAM - Enterprise Asset Management

EAP - Employee Assistance Program

EPA - Environmental Protection Agency

EPPP - Emergency Preparedness Program Plan

Equipment - an article of nonexpendable, tangible property having a useful life of not less than one year.

ESSC - Executive Safety & Security Committee.

Event - an Accident, Incident, or Occurrence.

EWGW - East West Gateway

F

Facility - a building or structure that is used in the provision of public transportation.

FMVSS - Federal Motor Vehicle Safety Standards

FRA - Federal Railroad Administration

FTA - the Federal Transit Administration.

Full Level of Performance - the objective standard for determining whether a capital asset is in a state of good repair.

G

Grade Crossing - (as defined in the National Transit Database glossary) an intersection of roadways, railroad tracks, or dedicated transit rail tracks that run across mixed traffic situations with motor vehicles, streetcar, light rail, commuter rail, heavy rail or pedestrian traffic; either in mixed traffic or semi-exclusive situations.

H

Hazard - any real or potential condition that can cause injury, illness, or death; damage to or loss of a facility, equipment, rolling stock, infrastructure, property, Metro system; or damage to the local environment, or reduction of ability to perform prescribed function.

Hazard Analysis - the formal activities to analyze potential consequences of hazards during operations related to provision of services.

Hazard Identification - formal activities to analyze potential consequences of hazards during operations related to provision of service.

Human Factors - applied technology comprising principles that apply to equipment design, certification, training, operations, and maintenance, which seek safe interface between the human and other system components by proper consideration to human performance.

Human Performance - human capabilities and limitations that have an impact on the effectiveness and efficiency of operations related to provision of services.

I

IAD - Internal Audit Department

IDOT - Illinois Department of Transportation

Incident - an event that involves any of the following: a personal injury that is not a serious injury; one or more injuries requiring medical transport; or damage to facilities, equipment, rolling stock, or infrastructure that disrupts the operations of Metro, a maintenance-related evacuation of a train into the right-of-way or onto adjacent track; or customer self- evacuation, certain low-speed collisions involving a rail transit vehicle that result in a non-serious injury or property damage, or damage to catenary equipment that disrupts transit operations. Incidents must be tracked and reported to FTA's National Transit Database in accordance with the thresholds for reporting set forth in Appendix A to Part 674.

Individual - a passenger, employee, contractor, other Metro facility worker, pedestrian, trespasser, or any person on Metro property.

Inspection - a process for gathering facts or information, or an analysis of facts or information previously collected. At the conclusion of an inspection, FTA may issue findings and recommendations.

Investigation - the process of determining the causal and contributing factors of an accident, event, or hazard, for the purpose of preventing recurrence and mitigating risk or investigation of an event.

L

LMS - Learning Management System

LRV - Light Rail Vehicle

M

Management of Change - a process for identifying and assessing changes that may introduce new hazards or impact the transit agency's safety performance. If a transit agency determines that a change may impact its safety performance, then the transit agency must evaluate the proposed change through its Safety Risk Management process.

MAPS - Metro Active Project System

MLRFGS - MetroLink Rail Fixed Guideway System

MoDOT - Missouri Department of Transportation

MOW - Maintenance of Way

N

Near Miss - a safety event where conditions with potential to generate an accident, event, or occurrence existed, but where an accident, event, or occurrence did not occur because the conditions were contained by chance or by existing safety risk mitigations.

National Public Transportation Safety Plan (NSP) - the plan to improve the safety of all public transportation systems that receive Federal financial assistance under 49 U.S.C. Chapter 53, or authorized at 49 U.S.C. 5329.

National Transportation Safety Board (NTSB) - an independent Federal agency.

NFPA - National Fire Protection Association

NTD - National Transit Database

NTI - National Transportation Institute

O

OCC - Operations Control Center (Rail)

Occurrence - an event without any personal injury in which any damage to facilities, equipment, rolling stock, or infrastructure does not disrupt the operations of Metro.

OCS - Overhead Catenary System

Operator of a Public Transportation System - a provider of Public transportation, such as Metro, as defined under 49 U.S.C. 5302(14), and which does not provide service that is closed to the general public and only available for a particular clientele.

OSHA - Occupational Safety and Health Administration

P

Passenger - a person who is on board, boarding, or alighting from a Metro-owned/operated rail transit vehicle for the purpose of travel.

Performance Criteria - categories of measures indicating the level of safe performance within Metro.

Performance Measure - a parameter that is used to assess performance outcomes.

Performance Target - a specific level of performance for a given performance measure over a specified timeframe.

Person - a passenger, employee, contractor, pedestrian, trespasser, or any individual on the property of a rail fixed guideway public transportation system.

PHA - Preliminary Hazard Analysis

PPE - Personal Protective Equipment

PPM - Policy and Procedures Management

Practical Drift – the slow and inconspicuous, yet steady, uncoupling between written procedures and actual practices during provision of services.

Program Standard - is a written document developed and adopted by BSSO that describes the policies, objectives, responsibilities, and procedures used to provide safety and security oversight of rail transit agencies.

Public Transportation Agency Safety Plan (PTASP) - the comprehensive agency safety plan for Metro that is required by 49 U.S.C. 5329 and Part 673, based on a Safety Management System.

Public Transportation Safety Certification Training Program (PTSCTP) - either the certification training program for Federal and State employees, or other designated personnel, who conduct safety audits and examinations of public transportation systems, and employees of public transportation agencies directly responsible for safety oversight, established through interim provisions in accordance with 49 U.S.C. 5329(c)(2), or the program authorized by 49 U.S.C. 5329(c)(1).

Public Transportation System - the entirety of Metro's operations, including the services provided through contractors.

R

Rail Fixed Guideway Public Transportation System - any fixed guideway system that uses rail, is operated for public Transportation, is within the jurisdiction of a State, and is not subject to the jurisdiction of the Federal Railroad Administration (FRA), or any such system in engineering or

construction. Rail fixed guideway public Transportation systems include but are not limited to rapid rail, heavy rail, light rail, monorail, trolley, inclined plane, funicular, and automated guideway.

Rail Fixed Guideway System (RFGS) - any light, heavy, or rapid system, monorail, inclined plane, funicular, trolley, or automated guideway that: (1) is not regulated by the Federal Railroad Administration; and (2) is included in FTA's calculation of fixed guideway route miles or receives funding under FTA's formula program for urbanized areas (49 U.S.C. 5336); or (3) has submitted documentation to FTA indicating its intent to be included in FTA's calculation of fixed guideway route miles to receive funding under FTA's formula program for urbanized areas (49 U.S.C. 5336).

Rail Transit Agency - any entity that provides services on a rail fixed guideway public transportation system.

Rail Transit Vehicle - Metro's rolling stock, including, but not limited to passenger and maintenance vehicles.

Rail Transit Controlled Property - property that is used by Metro and may be owned, leased, or maintained by Metro.

Recipient - an entity that receives Federal financial assistance under 49 USC Chapter 53 and includes sub- recipients.

Record - any writing, drawing, map, recording, tape, film, photograph, or other documentary material by which information is preserved. The term ''record'' also includes any such documentary material stored electronically. [670]

Risk - the composite of predicted severity and likelihood of the potential effect of a hazard.

Risk Mitigation - a method or methods to eliminate or reduce the effects of hazards.

Rolling Stock - any revenue vehicle used in a public Transportation system.

ROW - Right of Way

S

Safety - the state in which the potential of harm to persons or property damage during operations related to provision of services is reduced to and maintained at an acceptable level through continuous hazard identification and safety risk management activities.

Safety and Security Certification - the process applied to project development to ensure that all practical steps have been taken to optimize the operational safety and security of the project during engineering, design, and construction before the start of passenger operation.

Safety Assurance (SA) - processes within Metro SMS that functions to ensure the implementation and effectiveness of safety risk mitigation, and to ensure that Metro meets or exceeds its safety objectives through the collection, analysis, and assessment of information.

Safety Culture – fostering safe practices, encouraging effective employee safety reporting and communication, and actively managing safety with the same attention to results as other Metro management systems.

Safety Deficiency - a condition that is a source of hazards and/or allows the perpetuation of hazards in time.

Safety Management Policy - Metro's documented commitment to safety, which defines Metro's safety objectives and the accountabilities and responsibilities of its employees in regards to safety.

Safety Management Policy Statement - a document signed by the Accountable Executive and distributed throughout Metro that formalizes executive leadership's commitments to support SMS with both short-term and long-range initiatives.

Safety Management System (SMS) - the formal, top-down, Metro-wide approach to managing safety risk and assuring the effectiveness of Metro's safety risk mitigation. SMS includes systematic procedures, practices, and policies for managing risks, hazards, and management of safety risk.

Safety Objective - a high-level, global, generic, and non-quantifiable statement regarding conceptual safety achievements to be accomplished by an organization regarding its safety performance.

Safety Performance - an organization's safety effectiveness and efficiency, as defined by safety performance indicators and safety performance targets, measured against the organization's safety objectives.

Safety Performance Indicator - a data-driven, quantifiable parameter used for monitoring and assessing safety performance.

Safety Performance Measurement - the assessment of non-consequential safety-related events and activities that provide ongoing assurance that safety risk mitigations work as intended.

Safety Performance Monitoring - the activities aimed at the quantification of an organization's safety effectiveness and efficiency during service delivery operations, through a combination of safety performance indicators and safety performance targets.

Safety Performance Target - a specific level of performance for a given performance measure over a specified timeframe related to safety management activities.

Safety Promotion - a combination of training and communication of safety information to support SMS as applied to Metro's system.

Safety Reporting Program - a process that allows employees to report safety conditions to senior management, protections for employees who report safety conditions to senior management, and a description of employee behaviors that may result in disciplinary action.

Safety Review - a formal, comprehensive, on-site review by the BSSO of the transit agency's safety practices to determine whether the agency complies with the policies and procedures required under the PTASP.

Safety Risk - the assessed likelihood and severity of the potential consequence(s) of a hazard, using as reference the worst foreseeable, but credible, outcome.

Safety Risk Evaluation - the formal activity whereby Metro determines Safety Risk Management priorities by establishing the significance or value of its safety risks.

Safety Risk Management (SRM) - a process within Metro's SMS/PTASP for identifying hazards and analyzing, assessing, and mitigating safety risk.

Safety Risk Mitigation - the activities whereby a public Transportation agency controls the likelihood or severity of the potential consequences of hazards.

Safety Risk Probability - the likelihood that the consequence might occur, taking as reference the worst foreseeable – but credible – condition.

Safety Risk Severity - the anticipated effects of a consequence, should it materialize, taking as reference the worst foreseeable – but credible – condition.

SCADA - Supervisory Control and Data Acquisition

SDS - Safety Data Sheet

Security - freedom from intentional danger for employees and passengers.

Serious Injury - any injury which: (1) Requires hospitalization for more than 48 hours, commencing within 7 days from the date of the injury was received; (2) Results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) Causes severe hemorrhages, nerve, muscle, or tendon damage; (4) Involves any internal organ; or (5) Involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.

SOP - Standard Operating Procedure

SSCP - Safety and Security Certification Plan

SSCWG - Safety and Security Certification Working Group

SSP - System Security Plan

State of Good Repair (SGR) - the condition in which a capital asset is able to operate at a full level of **performance.**

State Safety Oversight Agency (SSOA or SSO) - an agency established by a State that meets the requirements and performs the functions specified by 49 U.S.C. 5329(e) and the regulations set forth in 49 CFR part 674.

Sub-recipient - an entity that receives Federal transit grant funds indirectly through a State or a Direct Recipient.

System Safety - the discipline that, through the application of system safety management and engineering principals, achieves the optimal degree of safety within the constraints of operational effectiveness and solid financial management.

T

Testing - an assessment of equipment, facilities, rolling stock, and operations of a recipient's public transportation system.

Threat - any real or potential condition that can cause injury or death to passengers or employees, or damage to or loss of transit equipment, property, and/or facilities.

TPSS - Traction Power Substation

Transit Agency - an operator of a public transportation system that receives Federal financial assistance under 49 U.S.C. Chapter 53, including Metro.

Transit Asset Management (TAM) - the strategic and systematic practice of procuring, operating, inspecting, maintaining, rehabilitating, and replacing transit capital assets to manage their performance, risks, and costs over their life cycle in order to provide safe, cost-effective, and reliable service.

Transit Asset Management Plan (TAMP) - a plan developed for Metro pursuant to 49 CFR part 625 that includes, at minimum, capital asset inventories and condition assessments, decision support tools, and investment prioritization.

TSA -Transportation Security Administration

TSM - Transit Service Manager

TVA - Threat and Vulnerability Assessment

V

Vehicle - any rolling stock used on a rail fixed guideway public transportation system, including but not limited to passenger and maintenance vehicles.

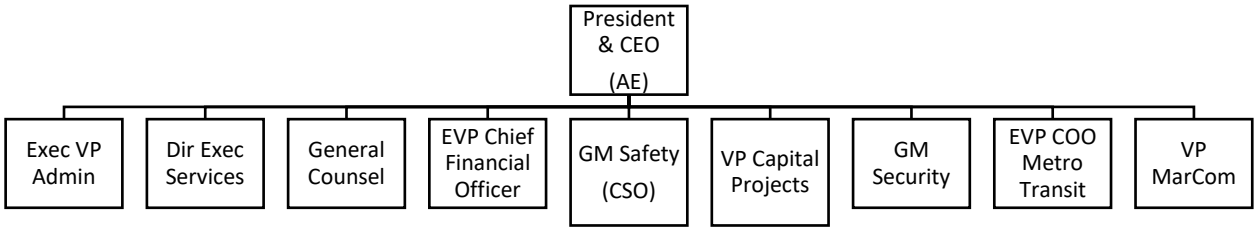
VHLC - Vital Harmon Logic Controllers

Vulnerability - a characteristic of passengers, employees, vehicles, and/or facilities that increases the likelihood of a security breach.

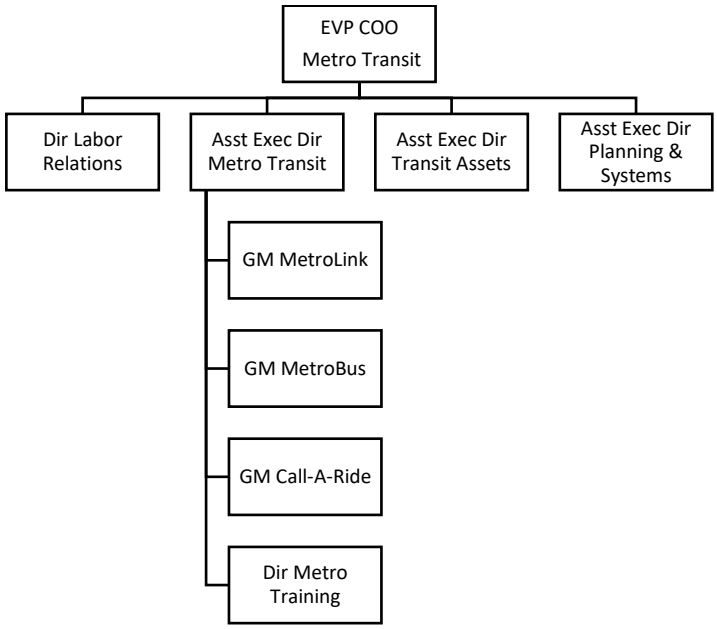
Appendix C – Organizational Chart

The following organizational charts have been condensed/consolidated to more easily illustrate the organizational structure within Metro. Detailed organizational charts are available upon request from Talent Management.

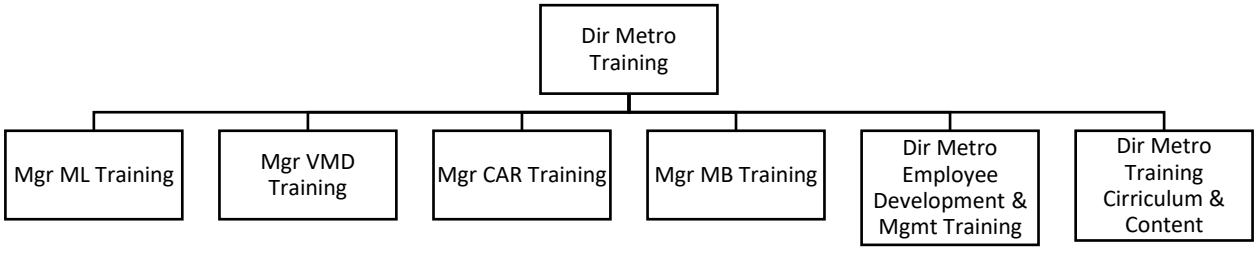
Executive Office



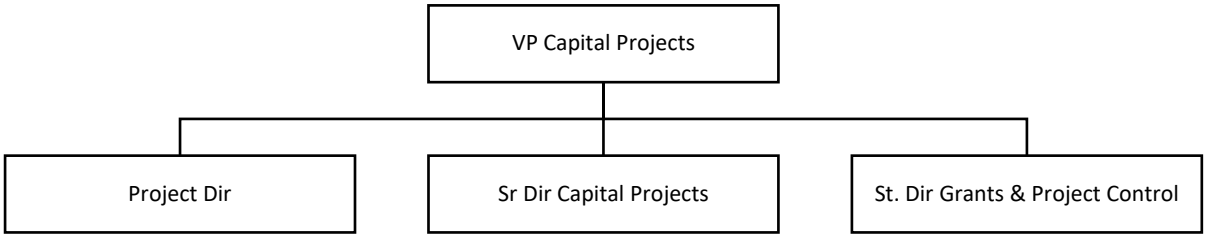
Metro Transit Executive Office



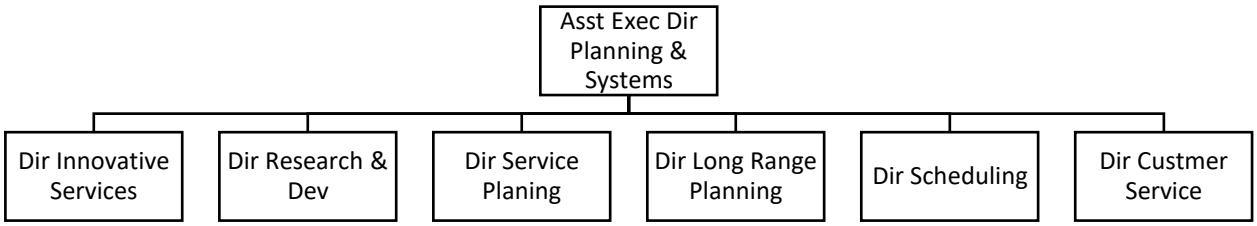
Metro Training



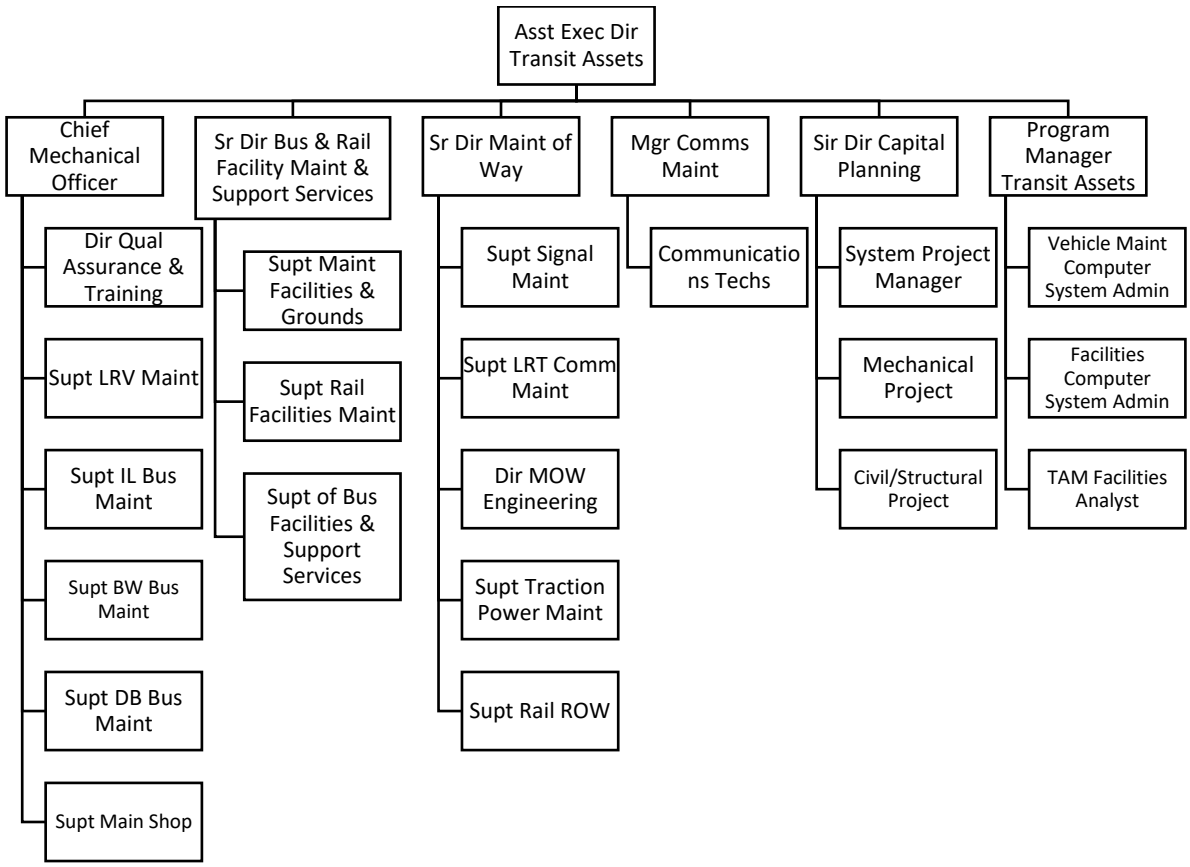
Engineering & New Systems Development



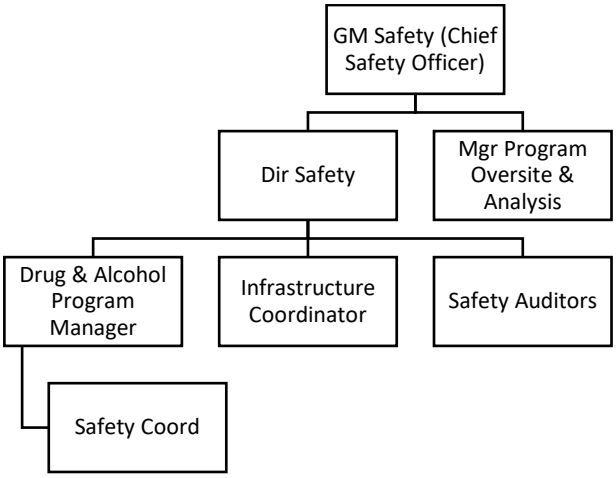
Planning & Systems



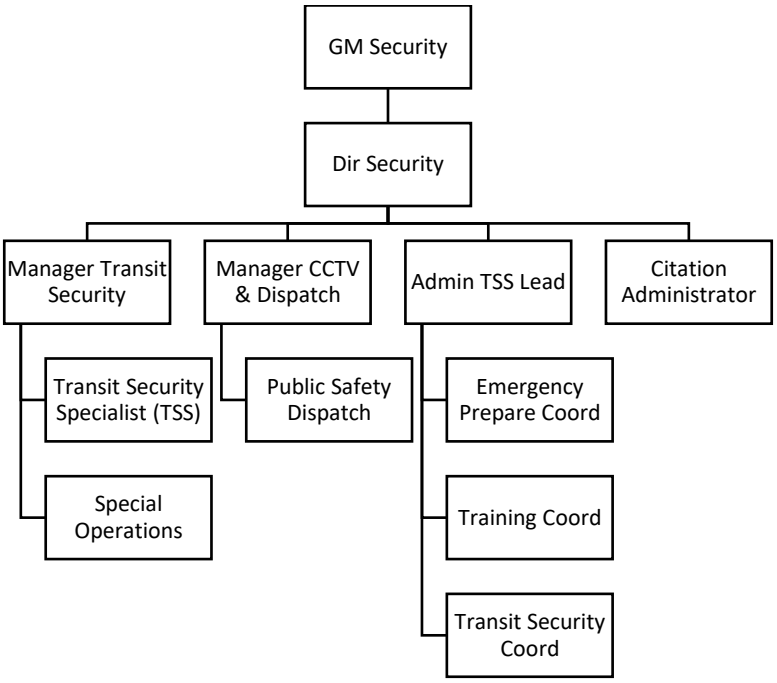
Transit Assets



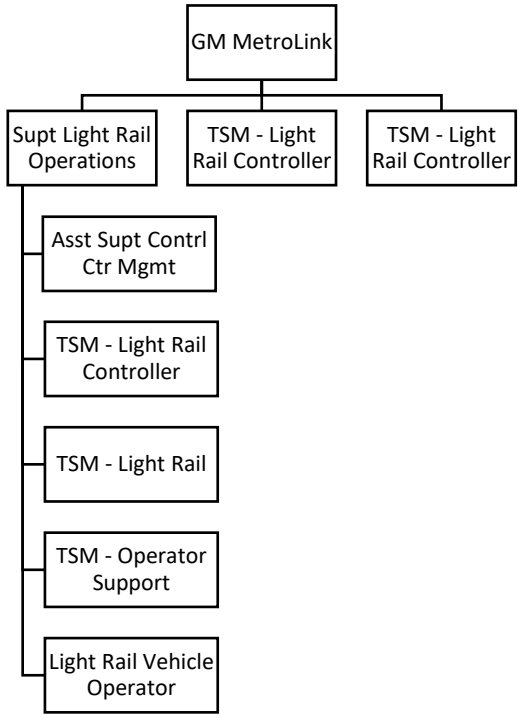
Safety



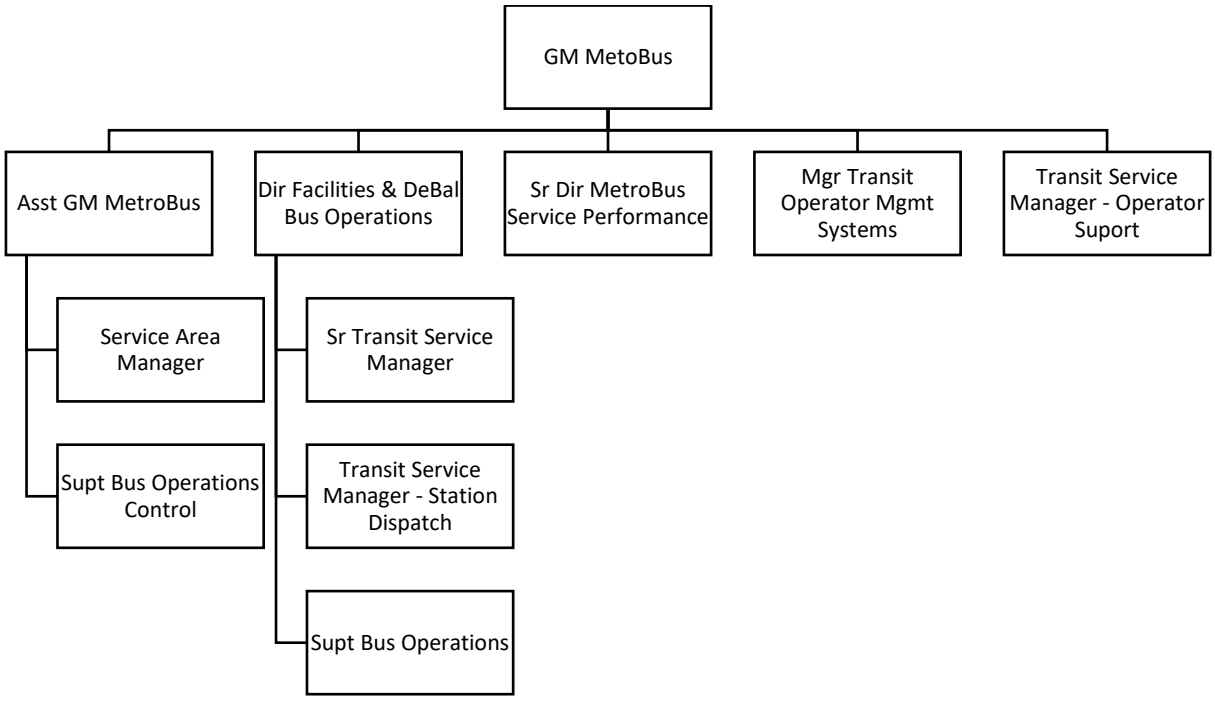
Security



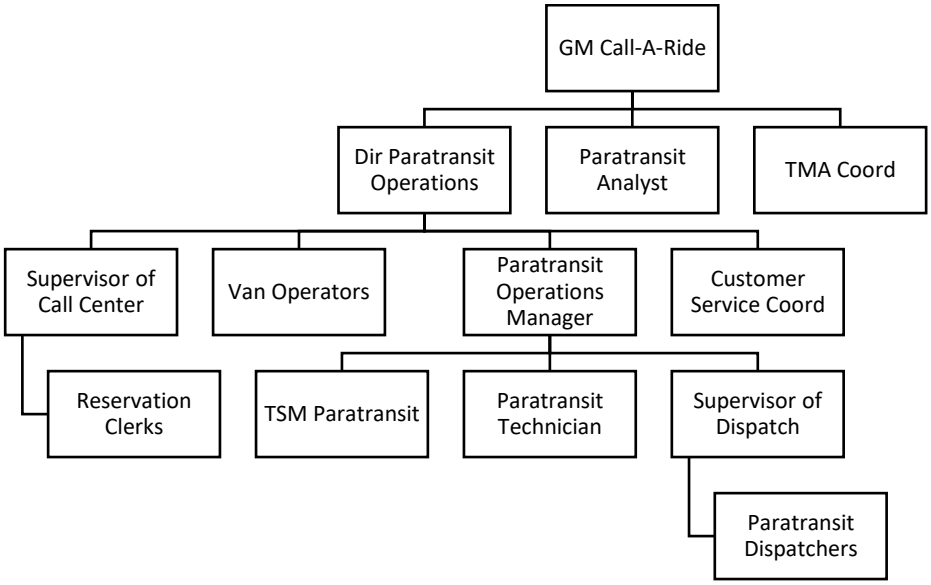
MetroLink



MetroBus



Call-A-Ride


GM Call-A-Ride
Dir Paratransit Operations
Paratransit Analyst
TMA Coord
Supervisor of Call Center
Van Operators
Paratransit Operations Manager
Customer Service Coord
Reservation Clerks
TSM Paratransit
Paratransit Technician
Supervisor of Dispatch
Paratransit Dispatchers