NEW YORK STATE DEPARTMENT OF TRANSPORTATION

PUBLIC TRANSPORTATION SAFETY BOARD

COMMUTER RAIL AND SUBWAY SAFETY SECTION

SYSTEM SAFETY PROGRAM PLAN GUIDELINES
FOR
LIGHT RAIL SYSTEMS

Revised
September, 1996
NEW YORK STATE
PUBLIC TRANSPORTATION SAFETY BOARD

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FOR

LIGHT RAIL TRANSIT SYSTEMS

JOHN F. GUINAN, Executive Director

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September, 1996
Since 1984 the Public Transportation Safety Board (PTSB) has been responsible for the safety oversight of over 125 public transportation systems in New York State. These systems include urban, rural and intercity bus properties; plus, subway, commuter railroad and light rail properties.

Modeled after the National Transportation Safety Board, the PTSB is the first such organization at the state level nationally. The Board is administratively housed within the New York State Department of Transportation with staff support provided by professionals from the Department’s Office of Passenger & Freight Transportation.

The Board has a record of working with the State’s public transportation systems in a proactive manner to improve safety for the nearly 1.8 billion riders who annually use public transportation. By working together there has been a decreasing trend in serious public transportation accidents over the last decade.

In December, 1995 the Federal Transit Administration (FTA) promulgated final regulations on implementation of State Safety Oversight of Rail Fixed Guideway Systems (49 CFR Part 659). These new regulations are based in large part on the experience of New York and several other states that have developed safety oversight programs.

Historically, the PTSB’s oversight program has been built around a requirement that each property develop a System Safety Program Plan (SSPP) which details the property’s internal operating procedures for conducting business in a safe and efficient manner. The guidelines contained in this document provide individual properties with the guidance needed to ensure their SSPP’s are developed in as thorough a manner as possible. Last revised in 1990, they have been expanded to include sections on employee safety and security as required in the new FTA oversight regulations.

It is the Board’s sincerest hope that our collective efforts in the area of system safety will continue to result in reducing the frequency and severity of accidents in the future. You can count on our continued assistance and cooperation.

JOHN F. GUINAN
Executive Director
Public Transportation Safety Board
The following guidelines for a rail system safety program plan are intended to furnish a rail transportation system with the basic criteria for developing a safety program plan. These guidelines identify all the elements that should be considered in a system-wide approach to safety. They stress operational safety rather than industrial safety, as operational safety implies a broader perspective in providing a safety service to the fare paying public and as the bulk of the accidents occur in the operational aspect of the transportation system. The System Safety Program Plan Guidelines that were developed by the American Public Transit Association for the Urban Mass Transportation Administration have been used as a resource material and are incorporated into the following guidelines.

The System Safety Program Plan Guidelines are intended to be flexible standards for developing a system safety program and to ensure that all essential elements are covered in a transit operator's safety program. One of the most significant factors in the design of a system safety program is the size of the rail system. The Public Transportation Safety Board recognizes and is sensitive to the diversity of rail systems and operational characteristics of the six (6) public transportation systems under its jurisdiction throughout New York State. This diversity of size and operational characteristics preclude the guidelines from being used to the same level of detail by each operator. Three separate guidelines have been developed to address heavy, commuter and light rail transit systems. The appropriate guidelines should be used to develop the most efficient and comprehensive plan for each system based on its individual characteristics.

It is the intent of these guidelines to highlight the significant factors that should be considered in the efficient and safe operation of rail transportation systems in providing a service to the public.

The paramount concern of the Public Transportation Safety Board, cited in the PTSB Rules and Regulations, is the actual and perceived value of requiring each transportation operator to develop and adopt a system safety program plan. The following summarizes the value of such a program:

- It gives evidence of a positive and active approach towards safety;
- It enables the transit system to display to its best advantage its safety policies, programs and goals;
- It gives the transportation operator a professional approach to safety;
- It enables management to see its entire safety effort coordinated into a system-wide approach;
- It assures management that all safety responsibilities and tasks are documented in a logical and organized manner;
- It develops a program where SAFETY is part of all decision-making processes; and
- It assures a consistent safety program among transportation operators throughout the State.

If the contents of the revised Public Transportation Safety Board System Safety Program Plan Guidelines contain a program that the rail system does not have, the PTSB recommends that the rail system comply with that program to ensure a systematic approach to transportation safety.
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SECTION 1: EXECUTIVE STATEMENT

Policy Statement

The management statement of a system safety policy should be a brief statement made by senior management that establishes the safety philosophy of the rail transportation system. This statement addresses the tone of the safety plan and gives direction to the individual or individuals responsible for implementing the system safety plan.

The system safety program plan is the top tier safety document within the transit property. The plan is intended to establish the safety philosophy and the property's commitment to safety. The senior executive should sign the plan.

Authority

The policy should define the authority and responsibility of the safety organization, including but not limited to the following.

1.1 Policy is signed by the senior executive officer.
1.2 Policy statement establishes the safety philosophy for the light rail system.
1.3 Policy identifies the extent of the light rail system's commitment to safety.
1.4 Policy designates and directs the responsible individual(s) to carry out the SSPP.
1.5 Policy provides the basis from which safety rules and applicable procedures can be carried out.
1.6 Policy defines the Safety Department's mission and role in the organization.
 SECTION 2: GOALS AND POLICIES

Goals and Policies

The purpose of a rail system safety program plan is to improve public transportation safety by reducing the number, rate and severity of rail accidents. This section should identify the role that management plays in developing the safety goals necessary to accomplish the purpose of the SSPP. Both short and long-term goals should be established and measures to gauge their accomplishment should be described.

The role of the other organizations in the safety areas, and their interface with the Safety Department should be defined. For example, the Operations/Transportation Department has a key responsibility in developing operating procedures for abnormal and emergency situations.

2.1 The SSPP clearly defines the safety goals, both qualitatively and quantitatively.

2.2 The SSPP describes management's participation in developing and updating goals and management's role and authority.

2.3 The SSPP describes the roles and authority of the company's departments/divisions/groups in establishing goals and policies and their interfaces are defined.

2.3.1 Safety Department's role, authority and interface with other departments throughout the organization are defined.

2.3.2 Executive VP Metro Rail's role, authority and interface with the Safety Department is defined in the SSPP including but not limited to the following:

2.3.3 Transportation Dept's. (M of W), role, authority and interface with the Safety Department are defined in SSPP, including but not limited to the following:

2.3.3.1 The Manager of Transportation's role, authority and interface with the Safety Department is defined in SSPP.

2.3.3.2 Superintendent of Rail Transportation's role, authority and interface with the Safety Department is defined in SSPP.

2.3.3.3 Rail Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.3.4 Rail Controller's role, authority and interface with the Safety Department are defined in SSPP.

2.3.3.5 South Park District Manager's role, authority and interface with the Safety Department are defined in SSPP.

2.3.4 Metro-Rail Police Department's role, authority and interface with the Safety Department are defined in SSPP.

2.3.4 Manager of Maintenance's role, authority and interface with the Safety Department is defined in SSPP.

2.3.5.1 Superintendent of Way and Power Maintenance's role, authority and interface with the Safety Department is defined in SSPP.
2.3.5.2 Way and Structure Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.5.3 Electric Power Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.5.4 Train Control Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.5.5 Communication Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.5.6 Way and Power Supervisor's role, authority and interface with the Safety Department are defined in SSPP.

2.3.5.7 EDP Systems Manager's role, authority and interface with the Safety Department are defined in SSPP.

2.3.6 Superintendent of Rail Car Maintenance’s role, authority and interface with the Safety Department are defined in SSPP.

2.3.7 Manager of Engineering’s role, authority and interface with the Safety Department is defined in SSPP.

2.3.8 Manager of Construction's role, authority and interface with the Safety Department is defined in SSPP.

2.3.9 Manager of Facility Maintenance's role, authority and interface with the Safety Department is defined in SSPP.

2.3.10 Quality Assurance Department’s role, authority and interface with the Safety Department are defined in SSPP.

2.3.11 Material and Procurement Department’s role, authority and interface with the Safety Department are defined in SSPP.

2.3.12 Management Services Department’s role, authority and interface with the Safety Department are defined in SSPP.

2.3.13 Public Relations Department’s role, authority interface with the Safety Department is defined in SSPP.

2.3.14 Human Resources Department’s role, authority and interface with the Safety Department are defined in SSPP.

2.3.15 Training Department’s role, authority and interface with the Safety Department are defined in SSPP.

2.4 SSPP is effective in defining and conveying the intent of the goals and policies.

2.5 Safety goals and policies are updated annually or as required based upon system changes.

SECTION 3. HISTORY & BACKGROUND
In addition to the background of the carrier, the plan should discuss operations and special leasing arrangements that could affect maintenance and operations.

Describe the following:

3.1 History/background of carrier.

3.2 Legal status and structure including the railroad’s mission.

3.3 How the rail line was formed (mergers, enabling legislation, etc.)

3.4 List governing regulatory agencies for the rail line.

3.5 Description of the owner(s)/operator(s) of the rolling stock and their interfaces with local, county and state jurisdictions.
SECTION 4: SCOPE OF OPERATION

The plan should cover the type of service, the operating routes and schedules and maintenance requirements.

The operating and maintenance rules and procedures should be referenced and pertinent forms attached to the plan.

4.1 The scope of rail transportation services provided by the light rail system should include but not be limited to the following:

4.1.1 Transportation modes: Types of service (commuter, etc.); lines; branches; fleet utilization; annual number of passengers; and annual number of revenue miles.

4.1.2 Operating schedules, routes, dwells, headway, consist sizes and crew sizes.

4.1.3 Methods of train control (car borne, wayside, ATC) on the mainline and in the yard locations for the rail cars and work equipment.

4.1.4 Methods of control used from the Central Control Facility and other control points (dispatchers offices).

4.2 Operating and maintenance rules and procedures should be listed, copies attached or referenced in the SSPP including but not limited to the following:

4.2.1 Standard Operating Procedures (SOP's) listed or copies attached or referenced.

4.2.2 Emergency Operating Procedures (EOP's) addressing contingency plans are listed in the SSPP including but not limited to the following:

4.2.2.1 EOP for fire and smoke on a train is attached or referenced in SSPP.

4.2.2.2 EOP for fire and smoke on the right-of-way is attached or referenced in the SSPP.

4.2.2.3 EOP for a passenger evacuation from a train is attached or referenced in SSPP and includes tunnels, at-grade and elevated structures.

4.2.2.4 EOP for a passenger evacuation from stations is attached or referenced in the SSPP.

4.2.2.5 EOP for a train collision or derailment is attached or referenced in SSPP.

4.2.2.6 EOP for a person hit by train is attached or referenced in the SSPP.

4.2.2.7 EOP for crowd control on a train and/or at a station is attached or referenced in SSPP.

4.2.2.8 EOP for pedestrian intrusion on the right-of-way is attached or referenced in the SSPP.

4.2.2.9 EOP for a bomb threat is attached or referenced in SSPP.
4.2.2.10 EOP for the removal and restoration of traction power is attached or referenced in the SSPP.

4.2.2.11 EOP for severe weather and natural disaster conditions (earthquake, floods, high winds, heavy snow, etc.) is attached or referenced in SSPP.

4.2.3 Abnormal operations or failure recovery procedures specifying contingency plans and Operations and Maintenance participation are listed in the SSPP but not limited to the following:

4.2.3.1 Operating procedure for power/propulsion failures is attached or referenced in SSPP.

4.2.3.2 Operating procedure for train control system failures is attached or referenced in the SSPP.

4.2.3.3 Operating procedures for single track/reverse running operations is attached or referenced in SSPP (should contain conditions for tunnels, at-grade and elevated structures).

4.2.3.4 Operating procedures for manual/absolute block operations is attached or referenced in the SSPP.

4.2.3.5 Operating procedures for work block/reduced speed/flagging protection is attached or referenced in SSPP.

4.2.3.6 Operating procedures for train delays is attached or referenced in the SSPP.

4.2.3.7 Operating procedures for communication system malfunctions (radio, PA, telephone) is attached or referenced in SSPP.

4.2.3.8 Operating procedures for inclement weather (snow, fog, heavy rain) is attached or referenced in the SSPP.

4.2.3.9 Operating procedures for train subsystem malfunctions (PA, doors, brakes, HVAC, lighting, couplers, etc.) is attached or referenced in SSPP.

4.2.4 Safety related maintenance procedures should be attached or referenced in the SSPP, including but not limited to the following:

4.2.4.1 Preventive maintenance procedures and intervals for rail equipment are referenced in the SSPP for each type of equipment.

4.2.4.2 Preventive maintenance procedures for track and structures are referenced in the SSPP.

4.2.4.3 Preventive maintenance procedures for signals, communications and power are referenced in the SSPP.

4.2.4.4 Preventive maintenance procedures include clear criteria and instructions for the removal and/or replacement of faulty equipment/track from revenue service are referenced in the SSPP for each area.
4.2.4.5 Staff size and qualifications for each maintenance discipline (equipment, way, communications, signal, power, etc.) are referenced in the SSPP.

4.2.4.6 SSPP identifies trend analysis programs used to track corrective/preventive maintenance data for all transit equipment/facilities/systems.

4.3 Training requirements for Operations and Maintenance personnel are established and referenced in the SSPP, including but not limited to the following:

4.3.1 Train crew (train operator, conductor) training requirements are referenced in the SSPP.

4.3.2 Control Center personnel training requirements are referenced in the SSPP.

4.3.3 Transportation Supervisor's training requirements are referenced in the SSPP.

4.3.4 Yardmaster's (in dispatcher's offices) training requirements are referenced in the SSPP.

4.3.5 Station personnel (station master, ushers etc.) training requirements are referenced in the SSPP.

4.3.6 Metro-Rail Police personnel training requirements are referenced in the SSPP.

4.3.7 Way and Structure Maintenance personnel training requirements are referenced in the SSPP.

4.3.8 Electric Power Maintenance personnel training requirements are referenced in the SSPP.

4.3.9 Train Control Maintenance personnel training requirements are referenced in the SSPP.

4.3.10 Communication Maintenance personnel training requirements are referenced in the SSPP.

4.3.11 Way and Power personnel training requirements are referenced in the SSPP.

4.3.12 Rail Car Maintenance personnel (maintainers, laborers, car repairmen, road car inspectors, etc.) training requirements are referenced in the SSPP.

4.3.13 Car Equipment supervisory personnel (master mechanics, general foremen, etc.) training requirements are referenced in the SSPP.

4.3.14 Training drills and/or refresher courses for train operators, conductors, Central Control personnel and supervisors, their types and frequency requirements are referenced in the SSPP.

4.3.15 Training drills for Maintenance personnel and outside emergency response units are referenced in the SSPP.

4.3.16 New employee orientation training and qualification requirements are referenced in the SSPP.

4.3.17 Employee Assistance Programs are referenced in the SSPP.
4.4 Safety related equipment and system capabilities (carborne, wayside, at the command center, towers, stations, yards and shops, etc.) are attached or reference in the SSPP.

4.5 Vital functions and fail safe equipment are incorporated into the system design.
SECTION 5: ORGANIZATION

This section is a summary of the safety responsibilities of departments other than the safety department. It highlights their safety responsibilities which contribute to the safety of passengers and which prevents or reduces damages to property. A summary of safety responsibilities of each individual department would be sufficient.

Some examples of safety-related responsibilities of other departments are training (where training is not a function of the safety staff), investigation of unsafe practices (where departments would be involved), disciplinary actions (where department heads or supervisors are responsible for the actions of their employees), safety rules and procedures, routine maintenance checks, etc.

In order to involve the entire organization in safety, the system safety program plan should identify the contribution of each group in promoting a safe transportation service.

The plan should describe or show all the organizational elements within the system. Inter-relationships should be described.

5.1 The light rail system's organizational structure including how it ties in with the entire Authority organization.

5.2 All dept./division/group/sections shown on organizational chart.

5.3 Roles, responsibilities, authority and interfaces listed for various division/departments/groups/sections of the organization.

5.4 SSPP reflects all in-house organizations that have data and explains inter-relationships.

5.5 SSPP describes the procedures to implement changes to the organization.

5.6 Describe how the Safety Dept. recommends safety changes related to functional/organizational changes for management review and approval.
SECTION 6: PLANT EQUIPMENT AND FACILITIES

The plan should contain a comprehensive description of the plant, equipment and facilities.

6.1 Description of stations in the SSPP addresses their safety related characteristics, including but not limited to the following:

6.1.1 Station characteristics are defined and described in the SSPP (at-grade, elevated, underground, center/side platform, transfer stations, etc.)

6.1.2 Station occupancy loads are determined and referenced in SSPP.

6.1.3 SSPP reflects that procedures/codes for establishing exiting requirements for passenger stations are defined.

6.1.4 SSPP reflects that passenger station design meets access and egress requirements for patrons and for emergency response units.

6.1.5 SSPP reflects that firefighting equipment and capabilities for passenger stations are in place, including but not limited to the following:

6.1.5.1 SSPP reflects that fire and smoke detection and alarm systems in rail stations are in place.

6.1.5.2 SSPP reflects that automatic fire suppression systems in rail stations are in place.

6.1.5.3 SSPP reflects at which passenger stations emergency ventilation is required and in place.

6.1.5.4 SSPP reflects that standpipes are in place at rail stations.

6.1.5.5 SSPP reflects that firefighter control of elevators is provided at stations.

6.1.5.6 SSPP reflects that firefighter telephones are provided at rail terminals.

6.1.5.7 SSPP reflects that a fire management panel is in place at rail stations.

6.1.5.8 SSPP reflects that portable fire extinguishers are in place at rail stations.

6.1.6 SSPP reflects at which rail stations supervision and control capabilities are provided, including but not limited to the following:

6.1.6.1 SSPP reflects the number and location of stationmaster booths at stations.

6.1.6.2 SSPP reflects which passenger stations are monitored/controlled from the Station Department Control Center.

6.1.6.3 SSPP reflects which rail stations are monitored by CCTV for surveillance and crowd control.

6.1.6.4 SSPP reflects which passenger stations are equipped with
means for emergency removal of traction power.

6.1.6.5 SSPP reflects which rail passenger stations are equipped with intrusion alarms in the non-passenger areas.

6.1.6.6 SSPP reflects which passenger stations are equipped with public address (PA) systems.

6.1.6.7 SSPP reflects which rail passenger stations are equipped with emergency telephones.

6.1.7 SSPP reflects at which rail passenger stations the design meets accessibility requirements for elderly and handicapped patrons including but not limited to the following:

6.1.7.1 SSPP reflects which passenger station entrances are accessible to the elderly and handicapped (gates, ramps, elevators, etc.).

6.1.7.2 SSPP reflects which passenger station platforms are accessible to the elderly and handicapped (high platforms, etc.).

6.1.7.3 SSPP reflects that rail car floor/station platform gaps are accessible to the elderly and handicapped (gaps less than 4 inches).

6.2 Description of the Operations Control Center in the SSPP contains safety related characteristics including but not limited to the following:

6.2.1 SSPP reflects that procedures for normal operations and contingency plans have been developed for the Control Center.

6.2.2 SSPP reflects that the Control Center facility requirements have been studied and incorporated.

6.2.3 SSPP reflects that the Control Center is equipped to handle contingencies (radios, telephones, PA, CCTV, direct hardware communications, etc.).

6.2.4 SSPP reflects that ergonomic design requirements have been incorporated into the Control Center.

6.2.5 SSPP reflects that SOP's and EOP's meet requirements such as the following:

6.2.5.1 SSPP reflects that SOP's and EOP's are approved, distributed and readily available at the Control Center.

6.2.5.2 SSPP reflects that SOP's and EOP's at the Control Center are kept updated and current.

6.2.5.3 SSPP reflects that the Control Center personnel are familiar with the current SOP's and EOP's.

6.2.6 SSPP reflects that fire protection measures at the Control Center are in place (suppression, detection, etc.).

6.3 Description of the maintenance facilities in the SSPP contain safety related characteristics including but not limited to the following:
6.3.1 Description of the maintenance facilities in the SSPP includes definitions of characteristics for each facility (type of maintenance, layout, etc.).

6.3.2 SSPP reflects that the repair line at the maintenance facility is analyzed for optimum safety.

6.3.3 SSPP reflects that fire/life safety equipment and capabilities at the maintenance facilities are in place.

6.3.3.1 SSPP reflects that operating procedures for moving rail cars/locomotives safely in the yards/maintenance facilities and shops are in place.

6.3.3.2 SSPP reflects that safety related maintenance procedures are in place (jacking pads, safety stands, etc.).

6.4 Description of wayside/right-of-way characteristics in the SSPP addresses the safety related aspects including but not limited to the following:

6.4.1 Track characteristics, class, speed restrictions are defined in the SSPP.

6.4.2 Right-of-way characteristics (elevated, at grade, underground, cut/cover, mixed traffic, pedestrian mall) are defined in the SSPP.

6.4.3 Right-of-way fire protection measures are described in the SSPP.

6.4.4 Right-of-way safety walks are described in the SSPP.

6.4.5 Emergency trip stations for power removal provided along the right-of-way are described in the SSPP.

6.4.6 Ventilation and smoke evacuation equipment in underground sections is described in the SSPP.

6.4.7 Wayside emergency communications are described in the SSPP.

6.4.8 Wayside signage and graphics are described in the SSPP.

6.4.9 Emergency lighting along the right-of-way is described in the SSPP.

6.4.10 Egress illumination along the right-of-way is described in the SSPP.

6.5 Description of the rolling stock in the SSPP addresses safety related characteristics including but not limited to the following:

6.5.1 Train emergency equipment (interior/exterior; in the cab; on rail cars or locomotives; accessible to passengers or to the crew only) is listed in the SSPP.

6.5.2 Rail car emergency exits (window and door releases and outside access for emergency response services) are defined in the SSPP.

6.5.3 Rail car fire extinguishers (type and location) are described in the SSPP.

6.5.4 Rail car communication systems are described in the SSPP.

6.5.5 Train equipment by-pass controls and releases are described in the SSPP.
6.5.6 Rail car signing and graphics are described in the SSPP.

6.5.7 Rail car lighting (normal and emergency) is described in the SSPP.

6.5.8 Train brake systems (electrical, friction, service, emergency, spin-slide, deadman, etc.) are described in the SSPP.

6.5.9 Rail car HVAC is described in the SSPP.

6.5.10 Rail car wheelchair space and tie down provisions are described in the SSPP.

6.5.11 Types of rolling stock used in service and for non-revenue purposes are described in the SSPP.

6.5.12 Rail car fire protection/flammability characteristics are defined or referenced in the SSPP, including but not limited to the following:

6.5.12.1 Flame spread for materials on the rail car is defined or referenced in the SSPP.

6.5.12.2 Smoke emission of materials on rail cars is defined in the SSPP.

6.5.12.3 Rail car floor fire resistivity is defined or referenced in the SSPP.

6.5.13 Rail car crash worthiness is described or referenced in the SSPP.

6.5.14 The light rail system's elements and functions are described or referenced in the SSPP including but not limited to the following:

6.5.14.1 Train control/signal system description is included and/or referenced in the SSPP.

6.5.14.2 Communications system description is included or referenced in the SSPP.

6.5.14.3 Means of egress in an emergency from trains, stations and right-of-ways are described or referenced in the SSPP.

6.5.14.4 Methods and systems for electrification (traction power, third rail, substations, etc.) are described in the SSPP.
SECTION 7: SYSTEM MODIFICATION

The plan should address any ongoing or planned activities that in turn result in changes to the SSPP and explain the safety organization's role in reviewing engineering changes.

Describe the following:

7.1 SSPP provides rules and procedures for incorporating changes and modifications to the light rail system, including but not limited to the following:

7.1.1 Provisions are made for incorporating new/extended lines into the light rail system.
7.1.2 Provisions are made for incorporating new/upgraded rolling stock into the light rail system.
7.1.3 Provisions are made for incorporating new/upgraded facilities, plant into the light rail system.
7.1.4 Provisions are made to incorporate new/upgraded equipment (e.g., train control, communications, etc.) into the light rail system.
7.1.5 Provisions are made to incorporate changes in operations (e.g., type and/or frequency of service) into the light rail system.

7.2 Procedures to evaluate the effect of modifications/new systems on safety, including but not limited to the following:

7.2.1 Safety review is required for engineering changes.
7.2.2 Safety review is required for standard and emergency operating procedure changes.
7.2.3 Safety review/requirements are part of the light rail system's procurement practices.
7.2.4 Safety review is required prior to instituting operations change which could impact safety.
7.2.5 Results of safety review, prior to instituting system changes, are reported and tracked.

7.3 Safety analyses are reviewed and upgraded as required in the evaluation of system modifications, including but not limited to the following:

7.3.1 Severity and frequency of hazards is assessed when evaluating system modifications.
7.3.2 Results and recommendations of hazard assessment in evaluating system modifications are reported to management.
7.3.3 Corrective actions (part of hazard resolution process for proposed system modifications) are validated prior to instituting system modifications.
SECTION 8: SYSTEM SAFETY ORGANIZATION

The plan should present a detailed description of the safety staff, the qualifications of personnel, any planned short and long-term additions to the safety organization's mission and any additional staff which may be required. Specific roles and responsibilities should be included.

Describe the following:

8.1 The safety organizational structure.

8.2 Roles, responsibilities, authority and interfaces defined within the safety organization including but not limited to the following:

8.2.1 Safety responsibilities are established/assigned to designated individuals within the organization.

8.2.2 Responsibilities of Safety Dept. personnel include the safety areas listed in the section outline of this audit checklist.

8.2.3 The Safety Department initiates safety actions and is responsible for dissemination and coordination of information.

8.2.4 Safety initiatives are taken by other departments/ divisions/groups within the railroad.

8.3 Safety Dept. is adequately staffed for roles and responsibilities as defined in the SSPP.

8.4 Safety Dept. staff qualifications are adequate for its role and responsibilities as defined in the job descriptions.

8.5 Safety Dept. staff is trained in appropriate disciplines corresponding to the areas of responsibilities.
SECTION 9: PARTICIPATION ON SAFETY COMMITTEES AND BOARDS

The plan should address the various committees and boards where safety is a vital concern. Examples are the accident/incident investigation board, a central safety committee, liaison committees with local enforcement and emergency response groups and line safety meetings.

Describe the following:

9.1 Safety Dept. is represented on the property's central/primary safety committee.
   9.1.1 The mission of the property's central/primary safety committee and the roles of the members are described.
   9.1.2 The property's central safety committee has the authority to make and implement safety related decisions.
   9.1.3 The property's central safety committee has scheduled meetings, minutes are taken, and distributed.

9.2 Safety Dept. is a permanent member of the accident/incident investigation board.
   9.2.1 The mission of the accident/incident board and the role of its members is described.
   9.2.2 The accident/incident board has the authority to fully investigate and make recommendations to top management.

9.3 The Safety Department is represented at senior management and labor union safety committee meetings.
   9.3.1 The mission of management/labor committees is defined; a procedure is in place to process safety related grievances.
   9.3.2 The management and labor union committees have scheduled meetings with appropriate follow up actions by the committees.

9.4 Safety Department attends local safety committee meetings and participates as required/planned.
   9.4.1 Local safety committee meetings are scheduled for all crafts on a regular basis, with planned topics; attendance is taken and make-ups rescheduled.
   9.4.2 Safety Department has a procedure in place to process safety concerns raised at local safety meetings and provides feedback to the individual.

9.5 Property has established a formal liaison activity with local fire department and emergency response agency.
   9.5.1 Mission and authority of the fire department liaison committee and the role of the members is defined.
   9.5.2 Procedures are in place to process recommendations of the fire dept. liaison committee and minutes are kept and distributed.

9.6 Formal liaison relationship is established with local law enforcement agencies.
9.6.1  Mission and authority of the law enforcement liaison committee and the role of the members are defined.

9.6.2  Procedure is in place to process recommendations of the law enforcement committee and minutes are kept and distributed.

9.7  Policy instructions are established with liaison for federal, state and local emergency medical service agencies.

9.7.1  Mission and authority of the government liaison committee and the role of the members are defined.

9.7.2  Procedures are in place to process recommendations of the emergency medical service agencies and minutes are kept and distributed.

9.8  Liaison committee is established with local handicap groups for railroad accessibility and use.

9.8.1  Mission and authority of handicap liaison groups and the role of the members is defined.

9.8.2  Procedures are in place to process recommendations of handicap liaison committee and minutes are kept and distributed.

9.9  Committee reports are prepared and distributed to top management and other departments identifying action items and organizational responsibility.
SECTION 10: MAINTAIN SYSTEM SAFETY PROGRAM PLAN

This section should describe the light rail system's policy for review, update and refinement of its System Safety Program Plan. A biennial recertification will be provided every other year. The recertification will be submitted to the PTSB for their review and approval. A new official resolution will be issued to the rail system with the recertification annexed to the original SSPP on file with the PTSB staff. The internal review of the SSPP should be included in this section.

In addition to the required biennial update, several types of conditions should also result in updating the SSPP. Examples are: changes in management, new equipment, new or modified systems, equipment and facilities and extended or modified operations. The internal review of the SSPP should be described in this section.

Describe the following:

10.1 Procedure in place to revise the plan biennially and submit it to the PTSB.

10.2 Procedure in place to control revisions and distribute changes to SSPP.

10.3 Procedure in place to update the plan as required for priority/critical items and events, including but not limited to the following:

10.3.1 New/extended/upgraded service and/or lines requires an update to the SSPP.

10.3.2 New/retrofitted rolling stock requires an update to SSPP.

10.3.3 New/refurbished facilities require an update to the SSPP.

10.3.4 New/revised emergency operating procedures requires an update to the SSPP.

10.3.5 Organization changes requires an update to the SSPP.

10.4 Procedure and process in place to coordinate revisions to the SSPP within the railroad organization including but not limited to the following:

10.4.1 Safety review board/council participates in the review of SSPP revisions.

10.4.2 Safety/Training Dept. participates in the review of SSPP revisions.

10.4.3 Transportation Dept. participates in the review of SSPP revisions.

10.4.4 South Park District Manager participates in the review of SSPP revisions.

10.4.5 Police Department participates in the review of SSPP revisions.

10.4.6 Rail Car Maintenance Dept. participates in the review of SSPP revisions.

10.4.7 Way and Structures Dept. participates in the review of SSPP revisions.

10.4.8 Electric Power, Train Control, Communications and Way and Power Sections participate in the review of SSPP revisions.

10.4.9 Engineering and Construction Dept. participates in the review of SSPP revisions.

10.5 Procedures and processes in place to coordinate the external review of SSPP revisions among agencies, including but not limited to the following:
10.5.1 New York State Public Transportation Safety Board is on review cycle of SSPP revisions.

10.5.2 Other external agencies (fire departments, emergency medical services, etc.) are on review cycle of SSPP revisions.

10.5.3 FTA/APTA may obtain a courtesy copy of SSPP revisions.

10.6 Comments from the internal and external review process are kept on file with disposition and supporting rationale.
SECTION 11: SAFETY RESPONSIBILITIES OF OTHERS

Organizations in addition to the Safety Dept. have critical safety roles. These include Transportation, Maintenance, Training and Personnel. The plan should clearly identify the detailed responsibility of each and Safety's interface in these activities.

11.1 Policy is in place describing the safety responsibilities and interfaces with the Safety Dept. by the other departments.

11.2 Transportation Dept. responsibilities are included but are not limited to the following:

11.2.1 Transportation Dept. develops emergency operating procedures including but not limited to the following:

11.2.1.1 Emergency operating procedure for fire or smoke on a train is developed by the Transportation Dept.

11.2.1.2 Emergency operating procedure for fire or smoke along the right-of-way is developed by the Transportation Dept.

11.2.1.3 Emergency operating procedure for fire or smoke in a station is developed by the Transportation Dept.

11.2.1.4 Emergency operating procedure for passenger evacuation from a train is developed by the Transportation Dept.

11.2.1.5 Emergency operating procedure for a train collision or derailment is developed by the Transportation Dept.

11.2.1.6 Emergency operating procedure for a person struck by a train is developed by the Transportation Dept.

11.2.1.7 Emergency operating procedure for crowd control on a train and/or a station is developed by the Transportation Dept.

11.2.1.8 Emergency operating procedure for pedestrian intrusion or vehicle encroachment onto the right-of-way is developed by the Transportation Dept.

11.2.1.9 Emergency operating procedure for a bomb threat is developed by the Transportation Dept.

11.2.1.10 Emergency operating procedure for the removal and restoration of traction power is developed by the Transportation Dept.

11.2.1.11 Emergency operating procedure for severe weather and natural disasters is developed by the Transportation Dept.

11.2.1.12 Emergency operating procedure for Transportation personnel in the yards are developed by the Transportation Dept.

11.2.1.13 Emergency operating procedure for passenger evacuation from a station is developed by the Transportation Dept.

11.2.2 Transportation Dept. develops procedures for abnormal and failure recovery conditions including but not limited to the following:
11.2.2.1 Operating procedure for inclement weather is developed by the Transportation Dept.

11.2.2.2 Operating procedure for recovery from train subsystem malfunctions is developed by the Transportation Dept.

11.2.2.3 Operating procedure for loss of power/propulsion is developed by the Transportation Dept.

11.2.2.4 Operating procedure for recovery from train control subsystem malfunctions is developed by the Transportation Dept.

11.2.2.5 Operating procedure for single track/reverse running operations is developed by the Transportation Dept.

11.2.2.6 Operating procedure for manual/absolute block and for work block/reduced speed/flagging protection is developed by the Transportation Dept.

11.2.2.7 Operating procedure for recovery from communication subsystem malfunctions is developed by the Transportation Dept.

11.2.2.8 Operating procedure for recovery from train uncoupling/pull apart is developed by the Transportation Dept.

11.2.2.9 Operating procedure for recovery from train delays is developed by the Transportation Dept.

11.2.3 Transportation Dept. defines facilities, equipment and personnel required to support/enhance railroad safety, such as, but not limited to the following:

11.2.3.1 Public address to support system safety is in place and functional.

11.2.3.2 Emergency telephone system to support system safety is in place and functional.

11.2.3.3 Communication systems to support system safety are in place and functional.

11.2.3.4 Transportation Dept. takes steps to familiarize personnel with safety equipment, use and locations.

11.2.4 Transportation Dept. takes steps to identify unsafe practices and procedures throughout the light rail system.

11.2.5 Transportation Dept. helps investigate unsafe practices and procedures.

11.2.6 Transportation Dept. helps investigate accidents and incidents.

11.2.7 Transportation Dept. establishes disciplinary procedures for unsafe acts, practices and rule violations.

11.2.8 Transportation Dept. helps establish safety training requirements for various positions including but not limited to the following:
11.2.8.1 Transportation Dept. helps establish safety training requirements for train operators.

11.2.8.2 Transportation Dept. helps establish safety training requirements for ticket inspectors.

11.2.8.3 Transportation Dept. helps establish safety training requirements for Control Center personnel.

11.2.8.4 Transportation Dept. helps establish safety training requirements for transportation supervisors.

11.2.9 Transportation Dept. participates in drills and simulations to validate procedures and training.

11.2.10 Transportation Dept. establishes requisite tests and inspections.

11.2.11 Safety performance is part of employee evaluation at the Transportation Dept.

11.3 Maintenance responsibilities include but are not limited to the following:

11.3.1 Maintenance Dept. defines support equipment, personnel and procedures for responding to emergencies including but not limited to the following.

11.3.1.1 Maintenance Dept. defines support equipment, personnel and procedures for responding to collisions or derailments at grade, elevated or tunnels.

11.3.1.2 Maintenance Dept. defines support equipment, personnel and procedures for responding to fire or smoke on a train.

11.3.1.3 Maintenance Dept. defines support equipment, personnel and procedures for responding to fires at stations.

11.3.1.4 Maintenance Dept. defines support equipment, personnel and procedures for responding to encroachment on the right-of-way.

11.3.1.5 Maintenance Dept. defines support equipment, personnel and procedures for responding to death or injury on the right-of-way.

11.3.1.6 Maintenance Dept. defines support equipment, personnel and procedures for responding to power removal and restoration.

11.3.1.7 Maintenance Dept. defines support equipment, personnel and procedures for responding to grade crossing accidents.

11.3.2 Maintenance Dept. defines support equipment, personnel and procedures for responding to abnormal or recovery conditions, including but not limited to the following:

11.3.2.1 Maintenance Dept. defines support equipment, personnel and procedures for responding to inclement weather.

11.3.2.2 Maintenance Dept. defines support equipment, personnel and procedures for responding to yard derailments or collisions.

11.3.2.3 Maintenance Dept. defines support equipment, personnel and procedures for responding to single track operations, equipment
failure or malfunction.

11.3.2.4 Maintenance Dept. defines support equipment, personnel and procedures for responding to train uncoupling/pull apart.

11.3.2.5 Maintenance Dept. defines support equipment, personnel and procedures for responding to work block/reduced speed and flagging protection.

11.3.3 Maintenance Dept. takes steps to identify unsafe practices and procedures throughout the light rail system.

11.3.4 Maintenance Dept. helps investigate unsafe practices and procedures.

11.3.5 Maintenance Dept. helps investigate accidents and incidents.

11.3.6 Maintenance Dept. establishes disciplinary procedures for unsafe acts, practices or rule violations (part of the union contract).

11.3.7 Maintenance Dept. defines safety critical items and establishes maintenance priorities for them.

11.3.8 Maintenance Dept. helps establish safety training requirements for maintenance activities and areas including but not limited to the following:

11.3.8.1 Maintenance Dept. helps establish safety training requirements related to maintenance of rail cars.

11.3.8.2 Maintenance Dept. helps establish safety training requirements related to maintenance of way, structures and bridges.

11.3.8.3 Maintenance Dept. helps establish safety training requirements related to the maintenance of signals, communications and power equipment.

11.3.8.4 Maintenance Dept. helps establish safety training requirements related to maintenance of non revenue equipment.

11.3.8.5 Maintenance Dept. helps establish safety training requirements related to mechanical equipment.

11.3.9 Maintenance Dept. participates in drills and simulations to validate procedures and training.

11.3.10 Maintenance procedures are in place in all maintenance sections including but not limited to the following:

11.3.10.1 Maintenance procedures are in place at the Way and Structure Maintenance Section.

11.3.10.2 Maintenance procedures are in place at the Electric Power Maintenance Section.

11.3.10.3 Maintenance procedures are in place at the Train Control Maintenance Section.
11.3.10.4  Maintenance procedures are in place at the Communication/Fare Collection Maintenance Section.

11.3.10.5  Maintenance procedures are in place at the Way and Power Maintenance Section.

11.3.10.6  Maintenance procedures are in place at the Rail Car Maintenance Section.

11.3.11  Safety performance is part of employee evaluation at all the maintenance sections.

11.4  Engineering Dept. responsibilities within each section of the organization include but are not limited to the following:

11.4.1  Rolling stock design is an Car Equipment Engineering responsibility.

11.4.2  Facilities design is an Engineering/Structures Department responsibility.

11.4.3  Communications design is the responsibility of the Way and Power Dept.

11.4.4  Power design is the responsibility of the Way and Power Dept.

11.4.5  Signal system design is the responsibility of the Way and Power Dept.

11.4.6  Engineering Depts. evaluates proposed engineering changes for safety impact and coordinates with the Safety Department.

11.4.7  Engineering Depts. helps validate design performance and effectiveness.

11.4.8  Engineering Dept. maintains configuration management systems for systems, equipment and facilities.

11.4.9  Engineering Dept. helps establish safety training requirements related to Way and Structures.

11.4.10  Engineering Dept. helps establish safety training requirements related to train control, communications and power.

11.5  Police responsibilities include but are not limited to the following:

11.5.1  Police review safety requirements and interfaces with the Safety and Transportation Depts.

11.5.2  Police report unsafe acts and situations.

11.5.3  Police help establish safety training requirements.

11.5.4  Police helps define roles and responsibilities in emergency and abnormal situations including but not limited to the following:

11.5.4.1  Police help define roles and responsibilities for responding to a train derailment or collision.

11.5.4.2  Police help define roles and responsibilities for responding to a main line or right of way accident.

11.5.4.3  Police help define roles and responsibilities for responding to an
11.5.4.4 Police help define roles and responsibilities for responding to a station emergency.

Police perform station and train surveillance.

Training Department responsibilities include but are not limited to the following:

11.6.1 Training Department integrates safety requirements into training programs.

11.6.2 Training Department provides feedback on procedures, rules, designs and operating conditions.

11.6.3 Training Department helps validate safety training effectiveness.

11.6.4 Training Department participates in emergency drills and simulations.

Training Department integrates safety requirements into training programs.

Human Resources Department responsibilities include but are not limited to the following:

11.7.1 Human Resources Department establishes hiring procedures.

11.7.2 Human Resources Department incorporates safety qualifications into job requirements and reviews applicant history prior to hiring.

11.7.2.1 Human Resources Department defines minimum qualifications.

11.7.2.2 Human Resources Department uses a test for new train engineers to determine qualifications.

11.7.2.3 Human Resources Department administers proficiency exam to applicants to rate qualifications and experience in appropriate field.

11.7.2.4 Human Resources Department requires pre-employment physical exam; medical and physical conditions established.

11.7.2.5 Human Resources Department verifies previous employment record.

11.7.2.6 Human Resources Department verifies required professional licenses and/or certificates prior to hiring.

11.7.3 Human Resources Department ensures new hires receive safety training during indoctrination program.

11.7.3.1 Human Resources Dept. ensures that new hires receive a rule book.

11.7.3.2 Human Resources Department verifies new hires sign a receipt acknowledging rule book received and read.

11.7.4 Human Resources Department continually reviews personnel compliance with job requirements.

11.7.4.1 Human Resources Department reviews employee record of
safety violations/mishaps that occur on the job and initiates retraining.

11.7.4.2 Human Resources Department requires an annual physical exam when applicable.

11.7.5 Human Resources Department administers an in place drug and alcohol abuse program.

11.7.5.1 Human Resources Department requires pre-employment drug and alcohol test.

11.7.5.2 Human Resources Department administers an employee assistance program (EAP) for drug and alcohol abuse.

11.7.5.3 Human Resources Department requires drug and alcohol annual test.

11.8 Procurement Department responsibilities include but are not limited to the following:

11.8.1 Procurement Department coordinates with the Safety Dept. for the purchase of safety critical/hazardous items including but not limited to the following:

11.8.1.1 Procurement Dept. coordinates with Safety Dept. on the purchase of rolling stock and safety critical parts.

11.8.1.2 Procurement dept. coordinates with Safety Dept. on the purchase of subsystems and equipment.

11.8.1.3 Procurement coordinates with Safety Dept. on the purchase of hazardous materials.

11.8.1.4 Procurement coordinates with Safety Dept. on the purchase of combustible versus non combustible materials.

11.9 Engineering/Construction Dept. responsibilities include but are not limited to the following:

11.9.1 Engineering/Construction Dept. coordinates with final designers and Safety Dept. for inclusion of safety requirements in new construction contracts.

11.9.2 Engineering/Construction Dept. verifies contractors compliance with safety requirements for all capital construction/procurement projects.

11.9.3 Engineering/Construction Dept. monitors/audits contractors activities on and off site for compliance with safety code.

11.9.4 Engineering/Construction Dept. maintains quality assurance and configuration management systems for all capital construction/procurement projects.

11.9.5 Engineering/Construction Dept. participates in hazard identification, assessment and resolution process during construction/procurement projects.

11.10 Quality Assurance Department responsibilities include but are not limited to the following:

11.10.1 QA Dept. participates in auditing safety compliance in various areas/departments, including but not limited to the following:
11.10.1.1 Quality Assurance Dept. participates in safety compliance audits in the Transportation Department.
11.10.1.2 Quality Assurance Dept. participates in safety compliance audits in the Equipment Maintenance Department.
11.10.1.3 Quality Assurance Dept. participates in safety compliance audits in the Engineering/Construction Department.
11.10.1.4 Quality Assurance Dept. participates in safety compliance audits in the Training Department.
11.10.1.5 Quality Assurance Dept. participates in safety compliance audits of the M of W Department.
11.10.1.6 Quality Assurance Dept. participates in safety compliance audits in the Procurement Department.
11.10.1.7 Quality Assurance Dept. participates in safety compliance audits of contractors/suppliers on and off site activities.

11.10.2 Quality Assurance Department participates in the hazard identification, assessment and resolution process in coordination with the Safety Dept.

11.11 Public Relations Dept. responsibilities include but are not limited to the following:

11.11.1 Public Relations Dept. coordinates news releases regarding safety including accidents and incidents, with the Safety Dept.
11.11.2 Public Relations Dept. coordinates safety programs for schools, media and the public with the Safety Dept. and other Depts.

11.12 Loss prevention program is established, including but not limited to the following:

11.12.1 Written loss prevention policy is in effect.
11.12.2 Written loss prevention policy is signed by top executive.
11.12.3 Loss prevention policy is referred to periodically in the property's directives and publications.
11.12.4 Responsibility to coordinate loss prevention program is assigned.
11.12.5 Key executives are involved with and supportive of loss prevention.
11.12.6 Standard is set to measure the degree of success of the loss prevention policy in meeting its objective.
11.12.7 Loss prevention policy is distributed to all members of management.
11.12.8 Loss prevention is measured as an indication of management's effectiveness.
11.12.9 Loss prevention is coordinated with the Safety Dept.
SECTION 12: HAZARD IDENTIFICATION

Hazard Identification Policy - Hazard identification is an analysis performed to identify hazardous conditions for the purpose of their elimination or control. This is a systematic approach to identify hazards that start with basic systems and subsystems and identifies the possible hazards or failures which could occur. Once hazards are identified, they should be assessed to determine their impact on the total system to determine whether to accept the hazard or the extent of corrective measures to eliminate the hazard or reduce its severity.

12.1 Hazard identification procedure and process is in place including but not limited to the following:

12.1.1 A policy for hazard identification has been formulated within or referenced in the SSPP.

12.1.2 A plan for hazard identification has been formulated within or referenced to the SSPP.

12.1.3 Procedures for hazard identification have been formulated.

12.1.4 Responsibility for hazard identification is assigned to personnel within the Safety Dept. or within other line organizations.

12.1.5 Define internal safety data sources for hazard identification. Data sources should include but are not limited to the following:

12.1.5.1 Safety analyses are used as data sources for hazard identification.

12.1.5.2 Testing is used as a data source for hazard identification.

12.1.5.3 Inspections by Safety/others are used as data sources for hazard identification.

12.1.5.4 Audits by Safety/others are used as data sources for hazard identification.

12.1.5.5 QA/QC non-conformance cards are used as data sources for hazard identification.

12.1.5.6 Unusual occurrence reports are used as data sources for hazard identification.

12.1.5.7 Accident/incident reports are used as data sources for hazard identification.

12.1.5.8 Malfunction reports are used as data sources for hazard identification.

12.1.5.9 Corrective maintenance reports are used as data sources for hazard identification.

12.1.5.10 Preventive maintenance reports are used as data sources for hazard identification.

12.1.5.11 Control Center daily logs and/or 24 hour summary reports are used as data source for hazard identification.
12.1.5.12 Passenger reports are used as data sources for hazard identification.

12.1.6 Define external safety data sources for hazard identification.

12.1.7 Data sources routed to Safety Dept. for evaluation of equipment inspected/analyzed for potential safety hazards.

12.1.8 All light rail personnel have access to and input into hazard identification and reporting process.

12.1.9 On-going operations monitored and reviewed for identification of potential hazards.

12.1.10 Line departments participate in hazard identification.

12.2 Safety analyses used for hazard identification should encompass areas including but not limited to the following:

12.2.1 Safety analyses conducted on existing elements of the operational system as part of the property's own risk assessment process.

12.2.2 Safety analyses conducted by consultants/contractors on new construction or procurement programs.

12.2.3 Safety analyses conducted for engineering change proposals.

12.2.4 The types of safety analyses conducted for hazard identification include but are not limited to the following:

12.2.4.1 Preliminary hazard analysis is used for hazard identification.

12.2.4.2 Subsystem hazard analysis is used for hazard identification.

12.2.4.3 System hazard analysis is used for hazard identification.

12.2.4.4 Operating and support hazard analysis is used for hazard identification.

12.2.4.5 Fault tree hazard analysis is used for hazard identification.

12.2.4.6 Software hazard analysis is used for hazard identification.

12.2.4.7 Sneak circuit hazard analysis is used for hazard identification.

12.2.4.8 Identified hazards are maintained and updated on a safety critical item list.

12.3 Fixed facilities inspected/analyzed for potential safety hazards include but are not limited to the following:

12.3.1 Stations are inspected/analyzed for potential safety hazards.

12.3.2 Right-of-ways are inspected/analyzed for potential safety hazards.

12.3.2.1 Rail-highway crossings at grade are inspected/analyzed for potential safety hazards on all lines.
12.3.2.2 Track is inspected/analyzed for potential hazards.

12.3.2.3 Wayside equipment and structures including structures and tunnels are inspected/analyzed for potential hazards.

12.3.3 Wayside signage and graphics are inspected/analyzed for potential safety hazards.

12.3.4 Equipment rooms are inspected/analyzed for potential safety hazards.

12.3.4.1 Train control/signal rooms are inspected/analyzed for potential safety hazards.

12.3.4.2 Communication equipment rooms are inspected/analyzed for potential safety hazards.

12.3.4.3 Power substations are inspected/analyzed for potential safety hazards.

12.3.4.4 Facility signage, graphics and lighting are inspected/analyzed for potential safety hazards.

12.3.5 Control Centers and other control points are inspected/analyzed for potential safety hazards.

12.4 Equipment is inspected/analyzed for potential safety hazards including but not limited to the following:

12.4.1 Rolling stock is inspected/analyzed for potential safety hazards.

12.4.2 Communications is inspected/analyzed for potential safety hazards.

12.4.3 Train control/signal equipment is inspected/analyzed for potential safety hazards.

12.4.4 Traction power, line and substation equipment is inspected/analyzed for potential safety hazards.

12.4.5 Fire detection and alarm equipment is inspected/analyzed for potential safety hazards.

12.4.6 Fire suppression systems are inspected/analyzed for potential safety hazards.

12.4.7 Electrification/uninterruptible power supply is inspected/analyzed for potential safety hazards.

12.4.8 Fare collection and ticket vending equipment is inspected/analyzed for potential safety hazards.

12.4.9 Security systems are inspected/analyzed for potential safety hazards.

12.5 Operating and maintenance procedures are analyzed for potential safety hazards including but not limited to the following:

12.5.1 Normal operating procedures are analyzed for potential safety hazards.

12.5.2 Abnormal operating procedures are analyzed for potential safety hazards.

12.5.3 Emergency operating procedures are analyzed for potential safety hazards.
12.5.4 Facilities/structures/bridge maintenance procedures are analyzed for potential safety hazards.

12.5.5 Rolling stock maintenance procedures are analyzed for potential safety hazards.

12.5.6 Track maintenance procedures are analyzed for potential safety hazards.

12.5.7 Communications, train control and power maintenance procedures are analyzed for potential safety hazards.

12.6 Personnel proficiency evaluated against the procedures for possible human induced safety hazards.
SECTION 13: HAZARD ASSESSMENT, ANALYSES AND RESOLUTION

The purpose of this task is to identify, on a priority basis, resolutions or controls to prevent potential hazards from becoming incidents or accidents. Those hazards that have been identified and assessed as to severity and likelihood of occurrence should be prioritized for resolution. The following activities should be carried out in performing this task:

13.1 Methodology and procedures for hazard assessment and resolution are established including but not limited to the following:

13.1.1 Procedures for hazard assessment and resolution are established.
13.1.2 Responsibility for hazard assessment and resolution is assigned.
13.1.3 Hazard assessment coordinator function is staffed in line organizations.
13.1.4 Hazard reports are routed to a safety coordinator.

13.2 Tracking system for identified hazards is in place.

13.3 Risk assessment process is in place.

13.3.1 Hazard severity categories are identified for hazard analyses and risk assessment.
13.3.2 Hazard probability categories are identified for hazard analyses and risk assessment.

13.4 Other risk assessment methods are utilized for priority rating for risk assessment.

13.5 Priority of hazards is based on hazard severity, probability of occurrence and cost of corrective action.

13.6 Acceptable level of risk is established and approved.

13.7 Analyses are conducted as required.

13.8 Responsibility for hazard assessment, analysis and resolution is assigned within the organization.

13.9 The assigned group responsible for hazard resolution has an adequately staffed committee designated.

13.10 Safety critical items list for identified hazards is maintained and updated.

13.11 Tracking system for status of risk is in place.

13.12 Close-out of corrected/resolved items is signed-off by all involved departments and proper authority.

13.13 Open items may be placed in a deferred status based on documented rationale and/or alternative solutions including but not limited to the following:

13.13.1 Items are placed in deferred or retained as is with alternative measures in place.
13.13.2 Alternative measures are coordinated with Safety Dept.
13.13.3 Temporary alternative measures for deferred items are replaced with permanent solution in timely manner.

13.13.4 Procedure in place for coordination/implementation of permanent solution/fix to deferred items.

13.14 Documentation of rationale and proper sign off for retention of acceptable risk is on file.

13.15 Choice of corrective action follows system safety precedence and includes design, safety and warning devices, and training for personal protection equipment.

13.16 Corrective actions to identified hazards are monitored for effectiveness.
SECTION 14: ACCIDENT/INCIDENT INVESTIGATION

The plan should address the existing procedures for accident/incident investigation. The procedures should define an accident and incident, internal and external notification procedures, participants, reporting and the required follow-up action with assigned responsibilities.

14.1 Plans and procedures are in place to investigate all reportable injuries, illnesses and property damage losses and they are investigated.

14.1.1 Responsibilities of safety personnel are defined and personnel are trained in accident investigation.

14.1.2 Responsibilities of organizations other than safety are defined (Operations, Transportation, Maintenance, etc.) for accident investigations.

14.1.3 Criteria for conducting an investigation are defined.

14.1.4 Intra-organization coordination is defined.

14.1.5 Criteria for notifying external organizations are defined.

14.2 Equipment, e.g. camera, recorder, witness forms, checklists, etc. are provided.

14.3 Previous investigation records include but are not limited to the following requirements:

14.3.1 Investigation is fully documented with recommendations to management.

14.3.1.1 Accident/incident is classified according to hazardous condition, unsafe act, etc.

14.3.1.2 Cost of accident is analyzed and categorized.

14.3.1.3 Accident recommendations are prioritized.

14.3.2 Recommendations are implemented or rationale as to why not is provided.

14.3.3 Follow-up checks are performed on the effectiveness of recommendations.

14.3.4 Provisions to amend/revise accident/incident investigation plan are established.

14.4 Accident investigation plan is tied to an accident prevention program.

14.5 Results and recommendations of accident/incident investigation are distributed.

14.6 Analysis of accidents including cost, injury, lost workdays and property loss are reported on scheduled basis (e.g., quarterly) to management.

14.6.1 Management reviews accident/incident reports and analyses, makes recommendations and takes corrective actions.

14.7 Accident/incident investigation reports and/or recommendations are part of safety data file.

14.7.1 Records are maintained in accordance with federal and state laws.

14.7.2 Reports are retained at least two years.

14.7.3 Records are readily accessible.
SECTION 15: SAFETY TRAINING

The plan should clearly explain the responsibilities and authority of the organizations, such as safety and transportation, to establish and define safety requirements as part of the overall training program.

15.1 Training program plan is in place and reviewed/revised biennially or more frequently, as required, by property conditions.

15.1.1 Course outlines for employee instructions and lesson plans are updated to reflect current system configuration, policies and procedures.

15.2 Safety is part of the overall training program.

15.2.1 Safety training is integrated into the overall training program, with inputs provided or approved by safety.

15.2.2 Instructors meet selection standards that include safety training or safety personnel used.

15.2.3 Current standardized lesson plans used include safety-training requirements.

15.3 Safety training goals, objectives and requirements are documented.

15.3.1 As part of the training program, students are provided manuals, safety rules and a rulebook.

15.3.2 In order to satisfactorily complete the training, students must demonstrate familiarity with the safety rules.

15.3.3 In order to satisfactorily complete the training, students must demonstrate familiarity with the procedure to identify, assess and report hazards.

15.3.4 Training has in place a process to obtain feedback from students completing the program of the effectiveness of the instruction.

15.3.5 Records are maintained on the student's attendance, participation and success with safety training.

15.3.6 Safety Dept. periodically audits the training and the quality and effectiveness in meeting the safety related goals and objectives.

15.4 Training requirements are established for each trade in the organization including but not limited to the following:

15.5 Training requirements established for train operators include but are not limited to the following:

15.5.1 Orientation program with the property, it's management policy and position on safety.

15.5.2 Defines the scope of the program, including what is covered in the classroom and on the rail.

15.5.3 The federal, state and any specific local safety rules and regulations.

15.5.4 Familiarization with the rail system's physical characteristics throughout all lines.
15.5.5 Thorough coverage of the role of safety in the overall organization and in operations.

15.5.6 Thorough familiarization with track conditions, clearances, visibility and speed restrictions.

15.5.7 Thorough familiarization with interlockings, signal configurations and locations.

15.5.8 Safe operation of car borne subsystems and responses to failures including but not limited to the following:

15.5.8.1 Training provided on the operation and safety criticality of the train control subsystems and procedures for handling failures.

15.5.8.2 Training provided on the operation of the communications system and procedures for handling failures.

15.5.8.3 Training provided on the operation of brakes and propulsion, safe acceleration/deceleration rates and procedures for handling failures.

15.5.8.4 Training provided on the operation of train doors, door controls and interlocks and procedures for handling failures.

15.5.8.5 Training provided on the operation of the HVAC subsystems and procedures for handling failures.

15.5.8.6 Training provided on the car trucks, including procedures for detection of and responding to truck failures and wheel problems.

15.5.8.7 Training provided on the operation of the train's electrical subsystems and procedures for handling failures.

15.5.9 Train operators receive training in the EOP's and SOP's including but not limited to the following:

15.5.9.1 Train operator's training for emergency conditions defines roles and responsibilities of the operator and other participants.

15.5.9.2 Train operator's training for emergency conditions includes response procedures for use of emergency exits.

15.5.9.3 Train operator's training for emergency conditions includes response procedures for handling of physically handicapped and school age children.

15.5.9.4 Train operator's training for emergency conditions includes response procedures for various smoke/fire conditions.

15.5.9.5 Train operator's training for emergency conditions includes response procedures for operating fire extinguishers and other emergency equipment.

15.5.9.6 Train operator's training for emergency conditions includes response procedures for train collisions and/or derailments.
15.5.9.7 Train operator's training for emergency conditions includes response procedures for passenger evacuations from trains at grade, in cut/cover sections and in tunnels.

15.5.9.8 Train operator's training for emergency conditions includes response procedures for death or injury on the right-of-way.

15.5.9.10 Train operator's training for emergency conditions includes response procedures for severe weather conditions.

15.5.9.11 Train operator's training for emergency conditions includes response procedures for pedestrian intrusion into the trackway.

15.5.10 Train operators are trained in passenger safety including but not limited to the following:

15.5.10.1 Train operators are trained on the use of special equipment such as wheel chair tie downs and locking devices.

15.5.10.2 Train operators are trained on passenger safety including onboard causes of accidents and injuries and steps to eliminate or control their occurrence.

15.5.10.3 Train operators are trained on passenger safety including the physical limitations of the elderly and handicapped and sensitivity training.

15.5.10.4 Train operators are trained on passenger safety including overcrowding and disruptions.

15.5.10.5 Train operators are trained on weather effects.

15.5.10.6 Train operators are trained on passenger safety including the effects of interior environmental conditions.

15.5.11 New hires/newly assigned train operators receive safety training prior to performing their jobs.

15.5.12 Procedures for scheduled retraining of train operators are in place and followed.

15.5.13 Procedure is in place for the retraining train operators for cause.

15.5.14 Procedure is in place to obtain feedback to evaluate the training given to train operators.

15.5.15 Accident/incident data is used to help evaluate training effectiveness of train operators and to perform trend analyses.

15.6 Training programs are established/documented for Control Center personnel.

15.6.1 Control Center personnel receive formal documented training on operating procedures for normal, abnormal and emergency conditions.

15.6.2 New hires/newly assigned Control Center personnel receive safety training prior to performing the job.
15.6.3 Procedure for the scheduled retraining of Control Center personnel is in place and followed.

15.6.4 Procedure is in place for retraining of Control Center personnel for cause.

15.6.5 Procedure is in place to obtain feedback to evaluate the training given to Control Center personnel.

15.6.6 Accident/incident data is used to help evaluate training effectiveness of Control Center personnel and to perform trend analyses.

15.7 Yard dispatchers receive formal documented training on operating procedures for normal, abnormal and emergency conditions.

15.7.1 New hires/newly assigned dispatchers receive safety training prior to performing the job.

15.7.2 Procedures for the scheduled retraining of dispatchers are in place and followed.

15.7.3 Procedures are in place for retraining of dispatchers for cause.

15.7.4 Procedures are in place to obtain feedback to evaluate the training given to dispatchers.

15.7.5 Accident/incident data is used to help evaluate training effectiveness of dispatchers and to perform trend analyses.

15.8 Transportation supervisors receive formal documented training on operating procedures for normal, abnormal and emergency conditions.

15.8.1 New hires/newly assigned transportation supervisors receive safety training prior to performing the job.

15.8.2 Procedures for the scheduled retraining of transportation supervisors are in place and followed.

15.8.3 Procedures are in place for retraining of transportation supervisors for cause.

15.8.4 Procedures are in place to obtain feedback to evaluate the training given to transportation supervisors.

15.8.5 Accident/incident data is used to help evaluate training effectiveness of transportation supervisors and to perform trend analyses.

15.9 Training requirements are established for ticket inspectors including but not limited to the following:

15.9.1 New hires/newly assigned ticket inspectors receive safety training prior to performing their jobs.

15.9.2 Procedures for the scheduled retraining of ticket inspectors are in place and followed.

15.9.3 Procedures are in place for retraining of ticket inspectors for cause.

15.9.4 Procedures are in place to obtain feedback to evaluate the training given to ticket inspectors.
15.9.5 Accident/incident data is used to help evaluate training effectiveness of ticket inspectors and to perform trend analyses.

15.10 Police attend a formal training program.

15.10.1 Police training program scope and purpose is defined.

15.10.2 Police training program covers property's policies including management's policy and attitude towards safety.

15.10.3 Police training program covers property's rules and regulations and interfacing with local authorities.

15.10.4 Police training program covers property's procedures and forms, purpose and how to use them.

15.10.5 Police training program covers property's EOP's and SOP's and policy roles and responsibilities under these conditions.

15.10.6 Police training program covers familiarization with rail equipment, facilities and right-of-ways.

15.10.7 New hires/newly assigned police receive safety training prior to performing the job.

15.10.8 Procedure for the scheduled retraining of police is in place and followed.

15.10.9 Procedure is in place for retraining of police for cause.

15.10.10 Procedure is in place to obtain feedback to evaluate the training given to police.

15.10.11 Accident/incident data is used to help evaluate training effectiveness of police and to perform trend analyses.

15.10.12 Police help coordinate safety training with outside agencies and emergency response groups.

15.10.13 Police conduct in-house training seminars and demonstrations.

15.10.14 Police participate in emergency drills and simulations.

15.10.15 Police attend and participate in safety seminars and workshops.

15.11 M of W/Structure maintainers receive formal documented training, including preventive and corrective maintenance procedures and emergency response.

15.11.1 New hires/newly assigned M of W/Structure maintainers receive safety training prior to performing the job.

15.11.2 Procedure for the scheduled retraining of M of W/Structure maintainers is in place and followed.

15.11.3 Procedure is in place for retraining of M of W/Structure maintainers for cause.

15.11.4 Procedure is in place to obtain feedback to evaluate the training given to M of W/Structure maintainers.

15.11.5 Accident/incident data is used to help evaluate training effectiveness of M of W
15.12 Train Control Maintainers receive formal documented training, including preventive and corrective maintenance procedures and emergency response.

15.12.1 New hires/newly assigned train control maintainers receive safety training prior to performing the job.

15.12.2 Procedure for the scheduled retraining of train control maintainers is in place and followed.

15.12.3 Procedure is in place for retraining of train control maintainers for cause.

15.12.4 Procedure is in place to obtain feedback to evaluate the training given to train control maintainers.

15.12.5 Accident/incident data is used to help evaluate training effectiveness of train control maintainers and to perform trend analyses.

15.13 Communication maintainers receive formal documented training, including preventive and corrective maintenance procedures and emergency response.

15.13.1 New hires/newly assigned communication maintainers receive safety training prior to performing the job.

15.13.2 Procedure for the scheduled retraining of communication maintainers is in place and followed.

15.13.3 Procedure is in place for retraining of communication maintainers for cause.

15.13.4 Procedure is in place to obtain feedback to evaluate the training given to communication maintainers.

15.13.5 Accident/incident data is used to help evaluate training effectiveness of communication maintainers and to perform trend analyses.

15.14 Way and Power maintainers receive formal documented training on operating procedures for normal, abnormal and emergency conditions.

15.14.1 New hires/newly assigned Way and Power personnel receive safety training prior to performing the job.

15.14.2 Procedures for the scheduled retraining of Way and Power personnel are in place and followed.

15.14.3 Procedures are in place for retraining of Way and Power personnel for cause.

15.14.4 Procedures are in place to obtain feedback to evaluate the training given to Way and Power personnel.

15.14.5 Accident/incident data is used to help evaluate the training effectiveness of Way and Power personnel and to perform trend analyses.

15.15 Engineering personnel receive formal documented training, including preventive and corrective maintenance procedures and emergency response.

15.15.1 New hires/newly assigned Engineering personnel receive safety training prior to
performing the job.

15.15.2 Procedure for the scheduled retraining of Engineering personnel is in place and followed.

15.15.3 Procedure is in place for retraining of Engineering personnel for cause.

15.15.4 Procedure is in place to obtain feedback to evaluate the training given to Engineering personnel.

15.15.5 Accident/incident data is used to help evaluate the training effectiveness of Engineering personnel and to perform trend analyses.

15.16 Construction Dept. personnel receive formal documented training on operating procedures for normal, abnormal and emergency conditions.

15.16.1 New hires/newly assigned Construction Dept. personnel receive safety training prior to performing the job.

15.16.2 Procedures for the scheduled retraining of Construction Dept. personnel are in place and followed.

15.16.3 Procedures are in place for retraining of Construction Dept. personnel for cause.

15.16.4 Procedures are in place to obtain feedback to evaluate the training given to Construction Dept. personnel.

15.16.5 Accident/incident data is used to help evaluate training effectiveness of Construction Dept. personnel and to perform trend analyses.

15.17 Rail Car personnel receive formal training including the following:

15.17.1 Rail Car maintenance program is in place for training machinists, car repairmen on the equipment for which they have a responsibility.

15.17.2 Rail Car maintenance training program scope and objectives are defined.

15.17.3 Rail Car maintenance training program includes the property's policies, including management's policy and attitude towards safety.

15.17.4 Rail Car maintenance training program includes the applicable rules and regulations and their enforcement.

15.17.5 Rail Car maintenance training program includes the forms and procedures used by the Car Equipment Dept., their purpose and how to complete them.

15.17.6 Equipment maintenance training program includes the role of safety when performing normal tasks and when responding to other than normal duties.

15.17.7 Equipment maintenance training program includes shop and overall facility familiarization.

15.17.8 Equipment maintenance training program includes instruction on the operation and maintenance of carborne equipment including but not limited to the following:

15.17.8.1 Maintaining and safely operating doors, door interlocks and other
safety features.

15.17.8.2 Equipment maintenance training includes the maintenance and safety criticality of the onboard train control system.

15.17.8.3 Equipment maintenance training includes the maintenance and safety criticality of the onboard communication equipment.

15.17.8.4 Equipment maintenance training includes the maintenance and safety criticality of the braking system.

15.17.8.5 Equipment maintenance training includes the maintenance and safety criticality of the climatic control system.

15.17.8.6 Equipment maintenance training includes the maintenance and safety criticality of the onboard electrical system.

15.17.8.7 Equipment maintenance training includes the maintenance and safety criticality of the truck and propulsion subsystem.

15.17.8.8 Equipment maintenance training includes the maintenance and operation of horn, wipers and lights.

15.17.8.9 Equipment maintenance training includes the maintenance of the car body, coupler, draft gear and train line.

15.17.8.10 Equipment maintenance training includes the maintenance and care of personal protective equipment.

15.17.8.11 Equipment maintenance training includes road call procedures and participation in failure recovery modes of trains in revenue service.

15.17.8.12 Equipment maintenance training includes the operation and safe use of wrecking equipment.

15.17.9 Equipment maintenance training covers all rolling stock and non revenue equipment on the property.

15.17.10 Maintenance of equipment training manuals provided for each type rail car and system or equipment maintained on the property.

15.17.10.1 Equipment maintenance documentation and manuals are provided in training and are complete and current.

15.17.10.2 Equipment maintenance documentation updates and revisions are controlled with accountability.

15.17.11 Equipment maintenance training includes adequate devices and training aids.

15.17.12 In equipment maintenance training the interface with the manufacturers is defined.

15.17.12.1 Manufacturers participate in maintenance of equipment training when new equipment is procured.

15.17.12.2 Equipment maintenance training includes manufacturers
Responsibilities during warranty and keeping adequate documentation.

15.17.12.3 Manufacturers responsibilities during retrofits are included in equipment maintenance training.

15.17.13 New hires/newly assigned car maintainers receive safety training prior to performing the job.

15.17.14 Procedures for the scheduled retraining of car maintainers are in place and followed.

15.17.15 Procedures are in place for retraining car maintainers for cause.

15.17.16 Procedures are in place to obtain feedback to evaluate the training given to car maintainers.

15.17.17 Accident/incident data is used to help evaluate the training effectiveness car maintainers and to perform trend analyses.

15.18 Rail Car Maintenance Supervisory personnel receive formal documented training, including preventive and corrective maintenance procedures and emergency response.

15.18.1 New hires/newly assigned Rail Car Maintenance Supervisory personnel receive safety training prior to performing the job.

15.18.2 Procedure for the scheduled retraining of Rail Car Maintenance Supervisory personnel is in place and followed.

15.18.3 Procedure is in place for retraining of Rail Car Maintenance Supervisory personnel for cause.

15.18.4 Procedure is in place to obtain feedback to evaluate the training given to Rail Car Maintenance Supervisory personnel.

15.18.5 Accident/incident data is used to help evaluate the training effectiveness Rail Car Maintenance Supervisory personnel and to perform trend analyses.
SECTION 16: EMERGENCY DRILLS AND SIMULATIONS

The plan should describe the property’s plan and procedures to handle abnormal and emergency situations and a description of their contingency planning. The plan should also include a discussion of the types and schedule of emergency drills and simulations planned/held as a means to train personnel.

16.1 Emergency response plan is in place, includes schedule for conducting drills and simulations.

16.2 Purpose, scope and participants are defined for each of the drills and simulations.

16.3 Planning for the emergency drills and simulations is coordinated with in-house organizations including but not limited to the following:

16.3.1 Emergency planning is coordinated with the Transportation Dept. including key sections within that dept.

16.3.2 Emergency planning is coordinated with the Maintenance Dept. (M of W, M of E).

16.3.3 Emergency planning coordinated with the Police Dept.

16.3.4 Emergency planning coordinated with the Training Dept.

16.3.5 Emergency planning coordinated with the Public Relations Dept.

16.3.6 Emergency planning includes inputs from participation of the property’s safety committee.

16.4 Emergency operating procedures already in place prior to the conducting of the drill and simulation include but are not limited to the following:

16.4.1 EOP for fire and smoke on a train is in place.

16.4.2 EOP for fire and smoke on the right-of-way is in place.

16.4.3 EOP for passenger evacuation from a train is in place.

16.4.4 EOP for passenger evacuation from stations is in place.

16.4.5 EOP for a train derailment or collision is in place.

16.4.6 EOP for death or injury on the right-of-way is in place.

16.4.7 EOP for pedestrian intrusion on the right-of-way is in place.

16.4.8 EOP for removal and restoration of traction power is in place.

16.4.9 EOP for severe weather and natural disaster is in place.

16.5 Emergency equipment is functional and available to support the drills and simulations including but not limited to the following:

16.5.1 Communications are assigned for use in an emergency.

16.5.2 Vehicles and rescue equipment is functional and available for use in drills and simulations and designated personnel trained in their use.
16.5.3 Maintenance emergency support equipment is functional and available for use in drills and simulations.

16.6 Planning for emergency drills and simulations is coordinated with outside agencies including but not limited to the following:

16.6.1 Emergency planning coordinated with local fire depts.

16.6.2 Emergency planning coordinated with local police depts.

16.6.3 Emergency planning coordinated with medical response teams and local medical facilities.

16.6.4 Emergency planning coordinated with the New York State PTSB.

16.6.5 Emergency planning coordinated with other New York State agencies.

16.6.6 Planning for emergency drills and simulations includes other rail properties.

16.7 Emergency drills and simulations are critiqued by observers and participants and results turned in to the Safety Dept.

16.8 Results of each emergency drill and simulation are reviewed and a report is prepared in a timely manner.

16.9 Recommendations are developed as a result of drills and simulations and incorporated into SOP's or EOP's. If not, rationale is provided.

16.10 Results are reported to the PTSB.

16.11 Drill and simulation reports are filed in the safety data bank for future reference.

16.12 Results of previous drills and simulations are incorporated into emergency planning.
SECTION 17: SAFETY TESTS AND INSPECTIONS

Operations and maintenance affect safety in that well maintained equipment and facilities will result in a reduction in potential hazards. Poor maintenance and poor routine safety checks lead to the likelihood of more accidents or unsafe conditions.

The plan should identify or reference the source of information on the types of tests and inspections that each department performs (on a scheduled basis) to help ensure the safety of the passengers and the general public.

This section should cover those operating rules and procedures and maintenance rules and procedures as they apply to safety. Unique situations that require special operating procedures as well as safety related maintenance procedures should be highlighted in this section. This would include all equipment and locations that require maintenance, the frequency, the reports made on maintenance, flow of information and working schedules and responsibilities of maintenance personnel. Include a sample of all maintenance forms in appendices.

The following areas should be addressed.

17.1 Train operator conducts pre-service inspections on train equipment including but not limited to the following:
   17.1.1 Brakes and propulsion subsystem.
   17.1.2 The door system.
   17.1.3 On-board communications systems.
   17.1.4 On-board train control systems.
   17.1.5 Interior and exterior lights.
   17.1.6 Train line and couplers.
   17.1.7 Presence of on-board emergency equipment.
   17.1.8 Train exterior and train interior.
   17.1.9 Clear division of responsibilities and scope of daily rail cars/locomotive inspection are established among train crews and others.
   17.1.10 Pre-service inspections performed on trains are logged and traceable.

17.2 Transportation supervisors conduct revenue service checks including but not limited to the following:
   17.2.1 Revenue service checks are performed to determine the train operator's general performance and conformance to SOP's and EOP's.
   17.2.2 Revenue service checks are performed to determine the train operator's handling of elderly and disabled passengers and sensitivity to their situation.
   17.2.3 Revenue service checks are performed to identify potential safety hazards to passengers on-board the train due to equipment problems.
   17.2.4 Revenue service checks are performed to identify potential safety hazards to passengers at rail terminals/stations.
17.2.5 Reports are filed and corrective action taken within the Transportation Dept. on problems identified during revenue service checks.

17.3 Preventive maintenance procedures and schedules include but are not limited to tests and inspections for the following:

17.3.1 The brake and air systems.
17.3.2 The door system.
17.3.3 The on-board train control system.
17.3.4 On-board communication system.
17.3.5 Trucks and suspension systems.
17.3.6 Propulsion systems.
17.3.7 Auxiliary power systems; including lights.
17.3.8 Body exterior, interior; including windows, seats, etc.
17.3.9 Mechanical/electrical systems; including train lines.
17.3.10 On-board fire extinguishers.
17.3.11 Preventive maintenance procedures and schedules are current and revisions controlled.
17.3.12 Preventive maintenance performed on rail cars are logged and traceable.
17.3.13 Preventive maintenance procedures and schedules are in place for systems such as train control, communications and power, including but not limited to the following:

17.3.13.1 Preventive maintenance procedures and schedules are in place for the inspection and testing of the train control system.
17.3.13.2 Preventive maintenance procedures and schedules are in place for the inspection and testing of the power systems.
17.3.13.3 Preventive maintenance procedures and schedules are in place for the inspection and testing of the communication systems.

17.4 Corrective maintenance procedures for rail equipment, facilities and systems are in place including but not limited to the following:

17.4.1 Corrective maintenance procedures are current and the revisions are controlled.
17.4.2 Corrective maintenance procedures are in place to verify that maintainers use the latest corrective maintenance schematics and manuals.
17.4.3 Corrective maintenance actions are recorded and filed according to existing procedures.
17.4.4 Corrective maintenance data is used for trend analysis.
17.4.5 Equipment defect report is used for corrective maintenance planning.

17.5 Quality Assurance Dept. responsibilities include but are not limited to the following:

17.5.1 Quality Assurance Dept. participates in auditing safety compliance of the Transportation Dept. with current preventive maintenance procedures.

17.5.2 Quality Assurance Dept. participates in auditing safety compliance of the Rail Car Maintenance Dept. with inspection and test procedures.

17.5.3 Quality Assurance Dept. participates in auditing safety compliance of the Way and Power Maintenance Dept. with current corrective maintenance procedures.

17.5.4 Quality Assurance Dept. participates in auditing safety compliance of the Facilities Maintenance Dept.

17.6 Maintenance facility elements are inspected and tested including but not limited to the following:

17.6.1 Maintenance facility shift inspection checklists are in place and used for those items identified as safety critical.

17.6.2 Maintenance facility housekeeping checklists are in place and used.

17.6.3 Maintenance facility inoperative systems are tagged, reported and scheduled for repair.

17.6.4 Maintenance facility approved workarounds are in place and procedures in place to notify employees.

17.6.5 Maintenance facility procedures are in place to prioritize the repair of safety critical items.

17.7 Station elements are inspected and tested according to established procedures and schedules including but not limited to the following:

17.7.1 Station element inspection and test procedures and schedules are in place and the revisions are controlled.

17.7.2 Station stairs and escalators are inspected as scheduled to ensure that they are properly maintained.

17.7.3 Station egress routes are inspected as scheduled to ensure that they are properly marked with code conforming signs.

17.7.4 Stations are inspected periodically to ensure that adequate lighting is provided for station platforms, stairs entrances, etc.

17.7.5 Station platform end gates are inspected as scheduled to ensure that they are properly secured and warning signs are in place.

17.7.6 Station public address systems are inspected as scheduled to ensure that they are properly maintained.

17.7.7 Station emergency telephones are inspected as scheduled to ensure that they are properly maintained.

17.7.8 Station CCTV is continually monitored to ensure proper operation.
17.7.9 Stations are inspected daily to ensure that they are properly maintained and housekeeping is performed.

17.7.10 Fire detection and alarm systems are inspected and tested following existing procedures and schedules including but not limited to the following:

17.7.10.1 Station fire suppression system is inspected and tested following existing procedures and schedules.

17.7.10.2 Station alarming is inspected and tested following existing procedures and schedules.

17.7.10.3 Station smoke and heat detectors are inspected and tested following existing procedures and schedules.

17.7.10.4 Station personnel are familiar with fire suppression system, its location and mode of operation.

17.8 Yard and equipment storage areas are inspected regularly following existing procedures and schedules including but not limited to the following:

17.8.1 Procedures and/or schedules are in place for controlling movement and storage of rolling stock in yard areas.

17.8.2 Procedures and/or schedules are in place for housekeeping in yard areas.

17.8.3 Procedures and/or schedules are in place for inspection of access and egress points in yards.

17.8.4 Procedures and/or schedules are in place for inspection of lighting in yard areas.

17.8.5 Procedures and/or schedules are in place for testing the public address system in yard areas.

17.8.6 Procedures and/or schedules are in place for winterizing maintenance support vehicles.

17.9 Preventive maintenance procedures and/or schedules are in place for inspection and testing of tracks, including but limited to the following:

17.9.1 Preventive maintenance procedures and/or schedules are in place for inspection of all main line tracks, at least weekly.

17.9.2 Preventive maintenance procedures and/or schedules are in place for track geometry car inspection, at least four times annually for main tracks and twice yearly for sidings and yards.

17.9.3 Preventive maintenance procedures and/or schedules are in place for ultrasonic induction rail testing biennially.

17.9.4 Preventive maintenance procedures and/or schedules are in place for biennial weed and brush control along the right-of-way and/or in yards.

17.9.5 Preventive maintenance procedures and/or schedules are in place for the inspection and repair of all wayside structures.
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<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>17.9.6</td>
<td>Preventive maintenance procedure and/or schedule for track are current and revisions controlled.</td>
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<td>17.9.7</td>
<td>Preventive maintenance activities performed on track and right-of-way are logged and traceable.</td>
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<td>17.9.8</td>
<td>Preventive maintenance procedures and/or schedules are in place for Way and Structure Dept. to winterize support equipment and vehicles.</td>
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<td>17.10</td>
<td>Preventive maintenance procedures and/or schedules are in place for systems such as train control, communications and power including but not limited to the following:</td>
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<tr>
<td>17.10.1</td>
<td>Preventive maintenance procedures and/or schedules are in place for inspection and testing of train control systems.</td>
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<td>17.10.2</td>
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<td>17.10.3</td>
<td>Preventive maintenance procedures and/or schedules are in place for inspection and testing of the communications systems.</td>
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SECTION 18: INTERNAL REVIEWS

The property's Safety Dept. should be performing its own internal audits to help ensure that all elements within the property are in compliance with the SSPP. The plan should include a schedule of the audits, objectives of the audits, other participants as applicable and how identified discrepancies are resolved.

Describe the following:

**18.1** Plan is in place for the conducting of internal reviews.

- **18.1.1** SSPP (latest revision) is available and used to guide internal reviews.
- **18.1.2** Internal review plan defines the purpose, scope and objectives.
- **18.1.3** Scope of internal review is adequate to cover the full responsibilities of the organization relative to the SSPP.
- **18.1.4** The goals and objectives of the internal review are defined.
- **18.1.5** Internal review schedule established with milestones.

**18.2** Procedure is in place to guide the conducting of the internal reviews and checklists are developed.

- **18.2.1** Specific audit/internal review steps and procedures are described.
- **18.2.2** Itemized internal review checklist is developed.
- **18.2.3** Audit sampling basis is defined for the conduct of internal reviews.

**18.3** The roles and responsibilities of participants in internal review process are defined.

- **18.3.1** Participants are identified who are responsible for conducting internal reviews at organizational levels.
- **18.3.2** Roles of the participants involved in conducting internal reviews is defined.
- **18.3.3** Internal review staff is trained in performing internal review activities.

**18.4** Reporting requirements regarding the results of the internal reviews are established.

- **18.4.1** Internal review results are analyzed and recommendations developed and filed, review report format is established.
- **18.4.2** Internal review report is prepared in a predefined format and distributed according to existing procedures.

**18.5** Process is in place to follow through on comments generated by internal reviews.

- **18.5.1** Internal review report status is maintained on file until final resolution is made.
- **18.5.2** Process is in place to maintain the internal review report status, with individuals assigned for corrective actions.
- **18.5.3** Internal review process documents the individual and organization responsible for the resolution and signing off on the corrective actions.
18.5.4 Procedure is in place to follow up on the effectiveness of the corrective actions.

18.6 Process is in place to receive, distribute and act upon public comments regarding service and operations safety in a timely, effective manner.

18.6.1 Public comments relating to safety are routed to the Safety Dept. and appropriate departments for response and actions.

18.6.2 Public comments relating to safety are responded to in a timely manner and effective fashion.

18.7 Process is in place to amend/revise plans and procedures based upon recommendations from internal review.

18.8 Internal review comments/recommendations are filed with rationale for action.
SECTION 19: EXTERNAL REVIEWS

The plan should address how the property and specifically the Safety Dept., responds to audit/investigations made by organizations external to the property.

19.1 External organizations should be identified. The purpose, scope and authority of organization should be defined including but not limited to the following:

19.1.1 The property supports reviews by the New York State Public Transportation Safety Board.

19.1.2 The property supports reviews by the National Transportation Safety Board.

19.1.3 The property supports reviews by the Urban Mass Transportation Administration.

19.2 External review results are analyzed, distributed in house for review and comments.

19.3 Procedures are in place for review and implementation, as applicable, of recommendations made by external auditing agency.

19.4 Procedures are in place to implement recommendations of external review agency and to follow up for determining the effectiveness of the recommendation.

19.5 Comments/recommendations are filed with a rationale for actions.
SECTION 20: COLLECT AND MAINTAIN DATA

The plan should identify the types of information collected on the property, how it is used to improve or verify the level of safety, where the information is filed and how it is retrieved. In addition the role of the Safety Department in analyzing and utilizing the data should be discussed.

20.1 Identify and maintain internal safety data sources and define the objectives.

20.2 Accident/incident/defect reports are collected and maintained in areas including, but not limited, to the following:

20.2.1 Rolling stock accident and incident reports are collected and maintained.

20.2.2 Facilities discrepancy reports (code violations, disrepair, etc.) are collected and maintained.

20.2.3 Equipment malfunction reports are collected and maintained.

20.2.4 Employee related accident and incident reports are collected and maintained.

20.2.5 Patron/public related accident/incident reports are collected and maintained.

20.3 Car inspection reports are collected & maintained in various areas including but not limited to the following:

20.3.1 Rolling stock preventive maintenance reports are collected and maintained.

20.3.2 Rolling stock corrective maintenance reports are collected and maintained.

20.3.3 Car Equipment pre-service or daily inspection reports are collected and maintained.

20.3.4 Car Equipment quality control inspection reports are collected and maintained.

20.4 Facilities inspection reports are collected and maintained for various areas including but not limited to the following:

20.4.1 Yard and shop facility inspection reports are collected and maintained.

20.4.2 Individual maintenance area inspection reports are collected and maintained.

20.4.3 Storage area inspection reports are collected and maintained.

20.4.4 Rail station inspection reports are collected and maintained.

20.5 Other inspection reports are collected and maintained in various areas including but not limited to the following:

20.5.1 Track, right-of-way and bridge inspection reports are collected and maintained.

20.5.2 Communication inspection reports are collected and maintained.

20.5.3 Power inspection reports are collected and maintained.

20.5.4 Train control system inspection reports are collected and maintained.

20.6 Data is collected in standardized format and is used to identify safety trends.
20.7 Periodic reports, analysis and studies are prepared for management to review based on safety data collected.

20.8 Study and analysis of safety data collected is used as input to the hazard identification process.

20.9 Results of safety data analysis are reported to PTSB and other properties.

20.10 Results of safety data analysis are reported to APTA for industry wide use.

20.11 Identify and maintain external safety data sources including but not limited to the following:

20.11.1 Other rail properties are identified and maintained as external safety data sources.

20.11.2 New York State Public Transportation Safety Board is identified and maintained as an external safety data source.

20.11.3 APTA is identified and maintained as an external safety data source.

20.11.4 NTSB is identified and maintained as an external safety data source.

20.11.5 FTA is identified and maintained as an external safety data source.

20.12 External data is collected and used to support analysis, hazard resolution.

20.13 Data collected is indexed, filed and readily retrievable.
SECTION 21: PROFESSIONAL DEVELOPMENT

The plan should address the program in place to enhance the professional skills and personal development of the safety staff including but not limited to the following.

21.1 Training and development plan in place for the Safety Dept. personnel.
   21.1.1 Training and development plan identifies the short term and long term needs and the new skills and type(s) of personnel to meet these needs.
   21.1.2 Procedure is in place to inform staff of new codes and regulations.

21.2 Safety staff is encouraged to attend professionally accepted safety courses, such as at TSI and universities for professional development.

21.3 Safety staff is encouraged to attend safety seminars and symposia as part of the professional development plan.

21.4 Safety staff is encouraged to participate in industry wide organizations including but not limited to the following:
   21.4.1 Safety staff is encouraged to belong to APTA rail safety committee.
   21.4.2 Safety staff is encouraged to belong to other professional organizations in the rail industry.

21.5 Safety staff is encouraged to join professional safety organizations, such as the System Safety Society and the American Society of Safety Engineers.

21.6 Safety staff is encouraged to take academic courses in safety related subjects.

21.7 Safety Dept. subscribes to and circulates professional publications as part of the development plan.
SECTION 22: SYSTEM SECURITY

The purpose of this section is to identify the tasks and responsibilities for system security; security's role in the overall operation of the system; the role management plays in enforcing it; and its effectiveness in the overall development of the property's system safety program planning process. Both short and long term goals should be included as well as the means to measure their effectiveness.

This section should be interfaced with those of other operating departments and explain the correlation to one another, especially with regard to safety. This section should discuss the security effects for potential danger considering the acceptance, control and elimination of such dangers within the confines of the available resources.

Because of the confidentiality required with the security program, much of the information may remain confidential and referenced as such, available for PTSB review in the event of a security breech in which the PTSB is solicited as a party to investigate the event.

22.1 Identify the purpose of the System Security Program Plan.

22.2 Identify the goals of the system security plan.

22.2.1 Short-term goals, both qualitative and quantitative.

22.2.2 Long-term goals, both qualitative and quantitative.

22.3 Describe the organizational structure and hierarchy of the Security Department (or organizational entity responsible for security) including, but not limited to discussion on such items as resources, service operations, operating environment, facilities and available equipment, existing capabilities and response measures.

22.4 Describe the role and authority of the property's security management with the other internal departments and external agencies (i.e. police, fire, ambulance, government agencies, etc.) including the policies and interfaces shared between them.

22.4.1 Interface with Safety Department
22.4.2 Interface with Transportation Department
22.4.3 Interface with Engineering Department
22.4.4 Interface with Maintenance of Equipment Department
22.4.5 Interface with Maintenance of Way Department
22.4.6 Interface with Capital Improvements Department
22.4.7 Interface with Procurement Department
22.4.8 Interface with Passenger Service Department
22.4.9 Interface with other pertinent internal and/or external departments/agencies.

22.5 Describe the responsibilities of each division of the Security Department.

22.6 Describe the training, and responsibilities with regard to training, for each Security Department employee.

22.7 Incorporate (by reference) the property's policies for threat and vulnerability identification, assessment and resolution.

22.8 Describe the update policy for the system security program plan.

NOTE: Other additions to the current SSPP on file with the PTSB will be required in those sections in which references to security need to be addressed.
SECTION 23: EMPLOYEE SAFETY

This section should explain the best scenarios from all of the property's departments to develop a comprehensive program containing those elements required by local, state or federal law which must be incorporated into an employee safety program. These elements should include, but are not limited to, such elements as Employee Right To Know, Occupational Health and Safety, etc.

23.1 Identify the goals for employee safety.

23.1.1 Short-term goals, both qualitative and quantitative for employee safety training.

23.1.2 Long-term goals, both qualitative and quantitative for employee safety training.

23.2 Describe the organizational structure and hierarchy of the Training Department (or organizational entity responsible for employee training) including, but not limited to discussion on such items as resources, service operations, operating environment, facilities and available equipment, existing capabilities and response measures.

23.3 Describe the role and authority of the property’s training manager with the other internal departments and external agencies (i.e. police, fire, ambulance, government agencies, etc.) including the policies and interfaces shared between them.

23.3.1 Interface with Safety Department
23.3.2 Interface with Transportation Department
23.3.3 Interface with Engineering Department
23.3.4 Interface with Maintenance of Equipment Department
23.3.5 Interface with Maintenance of Way Department
23.3.6 Interface with Capital Improvements Department
23.3.7 Interface with Procurement Department
23.3.8 Interface with Passenger Service Department
23.3.9 Interface with other pertinent internal and/or external departments/ agencies.

23.4 Describe the property's policies for training new hires, current employees and those employees requiring refresher training for cause.

23.5 Describe the employee safety update policy for the system safety program plan.

23.6 Describe the employee hazard identification procedure and resolution process.

23.7 Identify all pertinent employee support programs including but not limited to, hazardous materials programs, drug and alcohol abuse programs, contractor safety programs, procurement programs, new hires, etc.