

# TORONTO TRANSIT COMMISSION REPORT NO.

**MEETING DATE:** October 23, 2013

**SUBJECT:** APTA 2011 RAIL SAFETY AUDIT AND MANAGEMENT  
CORRECTIVE ACTION PLAN

## **ACTION ITEM**

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### **RECOMMENDATION**

The Board receive the attached audit report for information and forward copies to the Office of the Chief Coroner for Ontario, the Clerk of the City of Toronto and the Ontario Minister of Transportation.

### **FUNDING**

The APTA Rail Safety Audit program is funded in the operating budget of the Safety and Environment Department.

### **BACKGROUND**

TTC has participated in the triennial APTA rail safety audit program since its inception in 1989. In response to a recommendation of the Coroner's Jury investigating the 1995 Russell Hill subway collision, the audit report and management's corrective action plan are made public at a Board meeting and copies are sent to the Coroner's office, the City Clerk and to the Ontario Minister of Transportation.

### **DISCUSSION**

The audit package comprises four documents. The first is a narrative overview and summary prepared by the audit team. The second document is an itemized checklist of the 24 elements of the APTA *Manual for the Development of Rail Transit System Safety Program Plans* including an evaluation of how well TTC complies with the guidance. The third document is a set of supplemental forms that record the evidence that led to the evaluation in the checklist. The fourth document is management's corrective action plan for any items deemed to be in need of improvement by the audit team. This document also summarizes commendations for programs or activities the audit team recognizes as noteworthy.

In the current audit report there are just two items in need of improvement. All findings in the previous audit have been corrected and verified by the audit team.





## INTRODUCTION

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### Audit Background

The **Rail Safety Audit Program** (RSAP) of the American Public Transportation Association is designed to provide participating rail transit systems with a process for development and implementation of a System Safety Program Plan (SSPP) that is specific to an individual system's needs. The Program also provides for a periodic audit of the level to which a transit system has implemented its SSPP.

The RSAP was developed by the APTA Rail Safety Review Board (RSRB) in conjunction with the APTA Rail Safety Committee to ensure the highest standards for safety are maintained. The RSRB initiated the Safety Accreditation Task Force to review system safety programs and activities within the rail transit industry and to develop the formal program. Under the RSRB's direction, the Task Force recommended the format outlined in APTA's *Manual for the Development of Rail Transit System Safety Program Plans*. After approval, APTA's Executive Committee inaugurated the Rail Safety Audit Program on January 1, 1989. The program continues to contribute to the rail industry's ability to maintain effective self-regulatory safety programs.

### What This Audit Represents

The safety audit for Toronto Transit Commission (TTC) was conducted October 31 – November 10, 2011 by James Brown, William Thorpe, David Hahn and James Guseman. The audit was conducted in accordance with provisions of the APTA *Manual for the Development of Rail Transit System Safety Program Plans*. Glenn Pringle and Ron MacInnis coordinated the meetings and interviews held with representatives from all major departments within TTC.

This preliminary report represents the findings of the audit relative to the TTC System Safety Program Plan. All APTA recommendations, unless related to established industry standards, are non-binding and may be accepted or rejected after management review by the Authority. The Preliminary Audit Report period extends over the next 45 working days and allows TTC the opportunity to investigate the audit findings and take corrective action to resolve as many findings as possible before the Final Report is issued. Supplemental forms have been included with this report that provide comments on findings for which the auditors may either recommend corrective action to comply with the System Safety Program Plan or suggest enhancements

to augment the present SSPP. The audit team will receive any additional information from TTC to correct, clarify, or upgrade a finding prior to issuing the Final Audit Report.

### How To Respond to the Audit

The audit is performed on each department with responsibilities identified in the agency SSPP. The department review is published in the Supplemental Report Forms. Each department finding or recommendation is indexed to a program element number and identified in the Checklist "remarks" column. The numerical notations on the Audit Checklist determine the status of that observation by the Audit team and are defined as follows:

"1: Conforms: "Meets Plan Requirements" - Complies with program standards set by the industry and requires no additional action by the transit system.

"2: Non-conformance: "Program Improvement Needed" – Does not meet program plan requirements and/or standards set by the industry and requires immediate attention by the transit system, detailed in a corrective action plan.

The RSAP focuses on a rail system's System Safety Program Plan and the implementation of such plan. The audit report prepared under the RSAP reviews the System Safety Program Plan and evaluates the extent to which a system's management processes are complying with the plan. The audit report does not, nor is it intended to represent an in-depth review or audit of the safety of the rail system itself or of its operations and should not be relied on as such.

The TTC must advise APTA's Safety office during the Preliminary Report period of any item that may be appealed. Such items will be reviewed and, if not resolved, referred to the Rail Safety Committee for review and disposition. Corrective Action Plans and Strategic Plans for items noted in the audit findings as "2" are to be filed by TTC for inclusion in the Final Audit Report. The Corrective Action Plans are based upon program guidelines and outline the measures a transit system will take to bring its System Safety Program into compliance with its written Plan and/or enhancements to strengthen that element. A schedule of proposed implementation dates are a part of the Corrective Action Plan. The Corrective Action Plan is issued with the Final Report and forms the basis for the post-audit review, along with any open items.

## AUDIT OVERVIEW

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The audit encompassed all elements of the TTC System Safety Program Plan and the means for its implementation. The audit focused on reviewing processes, documents and records, and interviewing managers in each department to verify that all elements of the System Safety Program were developed, implemented, and reviewed on an ongoing basis. The audit report contains a checklist that identifies where in the report a reference to a particular element may be found. Each reference is specific to a particular department in the Supplemental Forms. A rating is applied to the reference indexed in the checklist column for that element and is applicable to the originating department and is not intended to be indicative of the entire agency's performance in that area unless the reference is associated with a General Recommendation. There are occasions when there are multiple references made to the same element number in the checklist. When that happens only one rating will be retained and it will represent the most severe rating out of all of those in the remark column and an asterisk is applied next to the reference point to designate which are the ones responsible for the more severe rating. This method helps management to identify which elements in their program are performing adequately and which ones could be strengthened.

An important aspect of the safety management program is that it offers a system the benefit of having an outside, independent evaluation of the extent to which its own management processes are tracking all the items necessary to maximize safety in the areas of operations, maintenance, training, inspections, and employee testing. While the Safety Audit Program does not evaluate the actual physical conditions of the audited transit systems, the safety management practices of the participating systems are evaluated to help each system determine if its own System Safety Management Program is up to the accepted, contemporary standards.

Transit systems participating in the APTA Safety Audit Program will be expected to ensure that all the items contained in the "Checklist" portion of this document have been incorporated into their respective System Safety Program Plans. However, as it is fully realized that each system is somewhat unique and that respective System Safety Program Plans must allow for the characteristics of each system, this document does not prescribe an absolute format for System Safety Program Plans. Rather, it offers a suggested format along with the type of methodology that will accomplish the purposes of system safety. The final choice of methodology to ensure that these checklist items are accomplished will rest with each respective transit system. The methodology must, however, be demonstrable from a safety compliance assessment perspective and properly documented by the system.

It should be emphasized that the System Safety Program Plan establishes the Safety philosophy of the entire organization and provides the means for implementation. A System Safety Program Plan could be implemented to:

- Establish a safety program on a system-wide basis;
- Provide a medium through which a property can display its commitment to safety;
- Provide a framework for the implementation of safety policies and the achievement of related goals and objectives;
- Satisfy federal and state requirements;
- Meet accepted industry guidelines and safety compliance assessment provisions; and
- Satisfy self-insurance provisions.

In order for an audit to be effective the ensuing results must be used for positive, all-encompassing corrective actions. This does not occur if the audit report is not an official document that is automatically provided to all appropriate levels of management. Various techniques such as audit coordination meetings and management briefings can be used to make the process as unobtrusive as possible while still providing valuable input to each

respective department being audited, as to areas of concern and possible corrective actions. No matter which method is chosen, it is important to design the process so it is construed as a positive force in the organization.

It should be emphasized that the audit process is only a management tool that provides assistance in discovering possible problem areas. By itself, it should not be considered an internal regulatory or decision-making process. Final authority for all decisions always rest within the management structure as prescribed by the individual organization.

## AUDIT SUMMARY

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The audit team verified, through documentation, the implementation of programs such as Training, Fitness-for-Duty, Employee Injury Reduction, CARE Teams, Observer Programs, Safety Certification, Safety Training and Security.


The effort of **TTC** to achieve a strong degree of program implementation in all areas of system operation is due to the effectiveness of its management, and a strong commitment to voluntarily comply with all safety recommendations. All departments are encouraged to continue their efforts toward further developing and maintaining the elements of the **TTC** System Safety Program.

The audit team found many of the essential elements of the **TTC** Safety Program Plan to be developed. Management is aware of the safety goals and objectives stated in the System Safety Plan; however, **TTC** is encouraged to continue the system-wide implementation of all safety programs. **TTC** should continue to focus on the re-alignment of the System Safety Program Plan, Threat & Vulnerability Assessments, Internal Audit Program, On-the-Job-Training, documented Facility Inspections, Corrective Action Plan-Tracking / Closing, Quality Assurance / Quality Control, Security-Sensitive Information, Construction Safety, Rail Inspection Program and Rules Compliance.

**TTC** is commended on continuing efforts to improve system safety through the Confined Space Labeling, Arc-flash surveys, Flame Resistant Uniforms (Categories 1 - 4), Joint Health & Safety Committees, Emergency Planning & Exercises, Transportation Training program, Fleet Maintenance Plan and Supervisor Ride-Checks.

The audit team expresses sincere gratitude for the assistance and cooperation afforded by the entire **TTC** staff and congratulates the **TTC** on a very successful audit.


**November 2011 – RSAP**

APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	1.0 Policy Statement & Authority for System Safety Program Plan	Page 1 of 24			Rail Audit Checklist	
	2.0 Purpose and Scope for System Safety Program Plan	Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
3.0 Goals for System Safety Program Plan						
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
1.1	Safety policy clearly stated and disseminated. <ul style="list-style-type: none"> <li>Approved by top management</li> <li>Signed by CEO / GM / Board</li> </ul>	X				
1.2	Authority outlined for the development of transit system. <ul style="list-style-type: none"> <li>Establishing body identified</li> <li>Authorizing legislation cited</li> <li>Jurisdiction(s) served</li> </ul>	X			S.F. Page 3, #1	
1.3	Authority for implementing Safety Plan defined. <ul style="list-style-type: none"> <li>Interface between Agency / contract services defined</li> <li>Operating / Maintenance agreements or MOUs establish safety and security roles</li> <li>Responsibility / authority for implementation of SSPP</li> </ul>	X				
2.1	System Safety Program Plan purpose: <ul style="list-style-type: none"> <li>Meets federal, state, and local requirements as applicable</li> <li>Meets industry standards / audit provisions</li> </ul>	X				
2.2	System Safety Plan scope: <ul style="list-style-type: none"> <li>Organizational philosophy</li> <li>Framework for implementation of safety policies and related goals and objectives</li> </ul>	X				
2.3	Relationship of system safety to operations: <ul style="list-style-type: none"> <li>Departments aware of responsibilities for the implementation of SSPP</li> <li>Safety definitions included and/or referenced where applicable</li> <li>Plan disseminated to all departments</li> </ul>	X			S.F. Page 9, #2	
3.1	Safety Program goals are clearly stated. <ul style="list-style-type: none"> <li>Long-term, with broad and continued relevance</li> <li>Meaningful with specific/desired results identified</li> <li>Achievable</li> <li>Integrated with Corporate mission, vision, or values</li> </ul>	X			S.F. Page 1, #1	
3.2	Safety Program goals are property specific and endorsed by management. <ul style="list-style-type: none"> <li>Role of each department / division identified in the attainment and support of overall goals and objectives</li> </ul>		X		S.F. Page 1, #4* S.F. Page 4, #2	

COLUMN DEFINITIONS:


- 1 – Meets Plan Requirements
- 2 – Program Improvement Needed (See Supplemental Form)
- 3 – Unable to Audit (See Reason/Reference in Remarks Column)



APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	4.0 Identifiable & Attainable Objectives	Page 2 of 24			Rail Audit Checklist	
	5.0 System Description / Organizational Structure	Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
	6.0 System Safety Program Plan Control and Update Procedures					
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
4.1	Objectives of Plan are clearly stated. <ul style="list-style-type: none"> <li>Associated with policies and goals</li> <li>Quantifiable using proper scales or values as KPIs</li> <li>Frequent status reports to top management</li> </ul>	X				
4.2	Policies / procedures in place for implementation of Safety Plan objectives and accountability. <ul style="list-style-type: none"> <li>Updates established and tracked</li> <li>Performance appraisal systems evaluate safety performance as key criteria</li> <li>Policies disseminated to all employees</li> </ul>	X			S.F. Page 2, #3	
5.1	System description provided: <ul style="list-style-type: none"> <li>History and scope of service</li> <li>Physical characteristics of system detailed</li> <li>Operations and Maintenance factors</li> </ul>	X				
5.2	Detailed organizational diagrams of each department referenced.	X				
5.3	Safety unit identified. <ul style="list-style-type: none"> <li>Key positions at all levels</li> <li>Relationships with other operational units</li> <li>Independent authority in reporting to CEO</li> <li>Relationship of transit system to local / outside jurisdictions / organizations</li> <li>Safety Plan and Policy dissemination</li> </ul>	X			S.F. Page 3, #2	
6.1	Documented method in place for updating, correcting, and modifying System Safety Program Plan. <ul style="list-style-type: none"> <li>Process and frequency of review established</li> <li>Change / modification procedure described</li> <li>Top management approves changes / modifications</li> <li>Strategic planning / review process</li> <li>Administrative controls on critical processes</li> <li>Inter-departmental coordination</li> <li>Inter-agency coordination</li> </ul>	X				


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	7.0 Hazard Management	Page 3 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
7.1	Hazard Management SOP / documented process in place: <ul style="list-style-type: none"> <li>Hazard identification / analysis / resolution / methods established</li> <li>Special areas of Hazard Management practiced (fire, security, collision, JHA / JSA, PPE, health, environmental, etc.)</li> <li>Mitigation process (hazard precedence) applied throughout system life cycle</li> <li>Scheduled program reviews conducted to determine effectiveness of procedures and to detect changes in frequency or severity ratios</li> <li>Coordination with all safety processes established including inspections, audits, customer reports, post-accident investigations, loss control reports, etc.</li> <li>Method established to analyze and perform trend analysis of information gathered (lessons learned, KPIs, regional crime data, state of good repair, etc.)</li> <li>Training provided on hazard management</li> </ul>	X			S.F. Page 4, #6 S.F. Page 8, #12 S.F. Page 17, #3 S.F. Page 19, #1	
7.2	Procedures on Corrective Action Plans developed and documented. <ul style="list-style-type: none"> <li>Method for tracking “open” items to closure</li> <li>Open items ranked, prioritized, and scheduled for actions toward resolution</li> <li>Person assigned responsibility for mitigations and performance reviewed</li> <li>Completion is formally accepted</li> <li>Historical files on “closed” hazards maintained</li> <li>Routine evaluations performed to determine status of corrected hazards for residual risk</li> </ul>	X				
7.3	Applying Risk Based Analysis solutions to engineering, management process, and human error prevention. <ul style="list-style-type: none"> <li>Risk based processes used effectively</li> <li>Re-evaluation performed (new equipment, new procedures, post-accident, etc.)</li> <li>Risk analysis embedded in the safety culture to target high consequence events</li> <li>Controls are appropriate for hazards and are established with measureable safety margins (alert when drifting towards failure)</li> </ul>	X			S.F. Page 19, #1	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	8.0 Accident / Incident Reporting and Investigation	Page 4 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
8.1	Documented policy / process in place for investigating accidents and incidents. <ul style="list-style-type: none"> <li>Accident investigation criteria established</li> <li>Significant event (near-miss) policy documented</li> <li>Post-accident critique conducted</li> <li>Field reports prepared with proper sign-off</li> <li>Post-accident analysis performed for cause(s)</li> <li>Hazard analysis performed based on accident / incident cause(s)</li> </ul>	X			S.F. Page 6, #3	
8.2	Training provided on basic accident investigation procedures / techniques: <ul style="list-style-type: none"> <li>New supervisor</li> <li>Retraining and refresher training offered</li> </ul>	X				
8.3	Internal / external notification procedures established: <ul style="list-style-type: none"> <li>Documented with SOPs / PIs</li> <li>Protocol clearly defined for reporting to regulatory or other authorities (FTA, SSO, FRA, NTSB, OSHA, etc.)</li> </ul>	X				
8.4	Documented accurate completion of accident / incident forms by employees. <ul style="list-style-type: none"> <li>Supervisor review</li> <li>Supervisor report on cause / corrective action, with management review</li> <li>Accident trend analysis performed and disseminated</li> <li>Process in place to track corrective action (s) to completion</li> </ul>	X			S.F. Page 7, #6	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	9.0 Internal Safety Management Assessment	Page 5 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
9.1	Safety audit program is established and documented to ensure all organizational elements, equipment, procedures, and functions are performing as intended from a system safety perspective. <ul style="list-style-type: none"> <li>• Safety programs developed / implemented</li> <li>• Audit schedules established / followed</li> <li>• Checklists prepared and distributed to operating units</li> <li>• Effective practices identified</li> <li>• Program deficiencies / potential hazards and weaknesses identified</li> <li>• Corrective actions identified / tracked for closure</li> <li>• Improvement recommendations made to system safety program</li> </ul>		X		S.F. Page 9, #4	
9.2	Key elements of the organization are identified by top management for achievement, recognition, or awards. <ul style="list-style-type: none"> <li>• Internal programs</li> <li>• Industry recognition</li> </ul>	X				
9.3	Audit program explained and training provided to all departments. <ul style="list-style-type: none"> <li>• Department input established for internal audit program</li> </ul>	X				
9.4	Document control established for internal audit program including recommendations and follow-up actions.	X				
9.5	Management review process: <ul style="list-style-type: none"> <li>• Top level management / corporate commitment and structure to oversee input and output</li> <li>• Formal (documented) review process</li> <li>• Assess internal and external audit findings / key performance indicators against organizational goals</li> <li>• Verify corrective action plan status</li> <li>• Follow-up meetings held between management staff to discuss individual audit findings</li> <li>• Review organizational philosophy (mission, vision, values) and adjust strategic plan for safety improvement</li> </ul>	X			S.F. Page 1, #2	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	10.0 Facilities / Infrastructure Maintenance & Inspections	Page 6 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
10.1	Facility inspections conducted on a regular basis. <ul style="list-style-type: none"> <li>• Checklist of items to document inspection</li> <li>• Tools and equipment included in inspection process</li> <li>• Frequency of inspections detailed</li> </ul>	X			S.F. Page 15, #6; S.F. Page 18, #8 S.F. Page 20, #8; S.F. Page 22, #1; S.F. Page 25, #6; S.F. Page 29, #10 S.F. Page 37, #1	
10.2	Facility inspections tracked including work orders and findings / recommendations (quality assurance). <ul style="list-style-type: none"> <li>• Supervisor spot checks of inspections (quality control)</li> <li>• Tracking performed on repairs with trends / follow-up established</li> </ul>	X			S.F. Page 16, #10 S.F. Page 19, #4 S.F. Page 22, #3 S.F. Page 25, #1	
10.3	Formalized training for employee tasks documented. <ul style="list-style-type: none"> <li>• Licenses / certifications obtained</li> <li>• System in place for tracking employee training</li> <li>• Vendor training documentation reviewed / approved</li> </ul>	X			S.F. Page 24, #5	
10.4	SOPs, PIs and / or Directives developed for facility employee tasks. <ul style="list-style-type: none"> <li>• Integrated with JHA / JSA</li> <li>• Based on industry standards</li> <li>• Job safety briefings conducted</li> </ul>	X			S.F. Page 5, #7 S.F. Page 15, #7 S.F. Page 37, #1	
10.5	Safety meetings conducted / audited. <ul style="list-style-type: none"> <li>• Attendance sheets maintained</li> <li>• Attendance frequency noted</li> <li>• Minutes / summaries prepared</li> <li>• Status reports sent to senior management</li> </ul>	X				
10.6	Systems Maintenance Plan: <ul style="list-style-type: none"> <li>• State of good repair identified</li> <li>• Deferred Maintenance policy documented</li> <li>• Formalized process for controlling work around</li> <li>• Shift turn-over process documents safety status</li> <li>• Calibration program referenced</li> <li>• Other system processes defined</li> </ul>	X			S.F. Page 14, #1 S.F. Page 14, #4 S.F. Page 17, #4 S.F. Page 18, #5, #7 & #10 S.F. Page 37, #2	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	10.0 Facilities / Infrastructure Maintenance & Inspections (continued)	Page 7 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
10.7	Calibration policy / program in place. <ul style="list-style-type: none"> <li>Precision instruments identified within program</li> <li>Tools and instruments tagged / marked</li> <li>Calibration tests documented</li> <li>Expiration date tracking process used</li> <li>Formal procedure to remove / destroy out of specification tools</li> </ul>	X			S.F. Page 25, #2	
10.8	Procurement and System Maintenance Inspections (Scheduled QA / warrantee inspections / surveillance) <ul style="list-style-type: none"> <li>In-house / contracted overhauls, maintenance, and repairs</li> <li>Reports generated / document control</li> <li>Corrective actions documented and tracked to closure</li> <li>Guidelines of OEM / after-market parts and equipment</li> <li>Protocols for procurement, warrantee, and system maintenance</li> </ul>	X			S.F. Page 36, #2	
10.9	SOPs / PIs or directives for testing repaired equipment. <ul style="list-style-type: none"> <li>System established to identify items that need repair (safety critical)</li> <li>Supervisor spot checks of repaired items</li> <li>References made to supporting documentation</li> </ul>	X				
10.10	Change control / system modification process utilized: <ul style="list-style-type: none"> <li>Safety certification</li> <li>Quality Assurance / Quality Control</li> <li>Configuration Management</li> </ul>	X			S.F. Page 3, #3 & #4	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	10.0 Facilities / Infrastructure Maintenance & Inspections (continued)	Page 8 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
10.11	Contracting for facilities, equipment, and material: <ul style="list-style-type: none"> <li>• Safety, QA, support documents reviewed</li> <li>• Safety specification review of special / substitute / replacement parts and / or equipment</li> <li>• Controlled storage / waste disposal</li> <li>• Employee, passenger, and public safety risks controlled</li> <li>• Emergency spill control</li> <li>• Shelf-life policy coordination</li> <li>• MSDS updates and distribution control</li> <li>• Safety department involved in procurement process, when required (i.e., chemicals, safety equipment, etc.)</li> <li>• Procurement process policy / procedure referenced where applicable</li> </ul>	X			S.F. Page 15, #5 S.F. Page 21, #9	
10.12	Construction Management: <ul style="list-style-type: none"> <li>• Construction safety plan includes rail operations hazards such as RWP and safety certification process</li> <li>• Construction safety manual developed</li> <li>• Written stop work policy established for safety critical tasks that pose immediate danger to life or health</li> <li>• Construction safety training required for management</li> <li>• Scheduled work site safety / security reviews</li> <li>• Safety is part of regular construction progress reviews</li> </ul>	X			S.F. Page 3, #7 S.F. Page 17, #1 S.F. Page 27, #8 & #9 S.F. Page 36, #1	

COLUMN DEFINITIONS:


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	11.0 Vehicle Maintenance Audits / Inspections & Repair	Page 9 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
11.1	Maintenance Program established and documented. <ul style="list-style-type: none"> <li>Safety, Engineering &amp; Procurement coordination for replacement / substitute parts</li> <li>Life-cycle / overhaul / PM / Fleet Management program plans in place</li> </ul>	X			S.F. Page 7, #5, #7, #8 & #9 S.F. Page 8, #13 & #14 S.F. Page 11, #1 S.F. Page 20, #7	
11.2	Formalized documentation system established for implementation of programs: <ul style="list-style-type: none"> <li>Work order system</li> <li>Key performance indicators</li> <li>Supervisor spot checks</li> <li>Deferred Maintenance program</li> <li>Testing and verification program on safety critical procedures / components</li> <li>Formal work around procedures</li> <li>Shift turn-over process documents safety status</li> <li>Industry standards</li> <li>Reports prepared; recommendations tracked</li> </ul>	X				
11.3	Checklist and schedule for conducting inspections of: <ul style="list-style-type: none"> <li>Vehicles (revenue / non-revenue)</li> <li>Tools &amp; equipment (forklifts, safety equipment, fire suppression systems, etc.)</li> <li>Plant equipment (in ground / above ground systems)</li> </ul>	X				
11.4	Calibration program in place. <ul style="list-style-type: none"> <li>Precision instruments identified within program</li> <li>Tools and instruments tagged / marked</li> <li>Calibration tests documented</li> <li>Expiration date tracking process used</li> <li>Formal procedure to remove / destroy out of spec tools</li> </ul>	X				
11.5	SOPs / PIs or directives in place for testing repaired equipment (quality assurance). <ul style="list-style-type: none"> <li>System established to identify items that need repair (safety critical)</li> <li>Supervisor spot checks of repaired items</li> <li>References made to supporting documentation</li> </ul>	X				

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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	11.0 Vehicle Maintenance Audits / Inspections & Repair (continued)	Page 10 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
11.6	Contractors used for maintenance repair. <ul style="list-style-type: none"> <li>SOPs and training on agency safety sensitive items</li> <li>Method in place to monitor contract work</li> <li>Inspections / acceptance program (QA)</li> </ul>	X				
11.7	Written work instructions or verbal task assignments include job safety briefing. <ul style="list-style-type: none"> <li>JSA / JHA conducted for routine assignments</li> <li>Employees assigned are trained and competent</li> </ul>	X				
11.8	System to establish priority of safety-critical repairs. <ul style="list-style-type: none"> <li>Daily maintenance check – go / no go list</li> <li>Operations pre-departure inspection (PDI)</li> <li>Coordination and review of PD documentation with maintenance staff and CM process</li> </ul>	X			S.F. Page 24, #2	
11.9	Procurement and Maintenance inspections (scheduled QA / warrantee inspections / surveillance. <ul style="list-style-type: none"> <li>In-house / contracted overhauls, maintenance, and repairs</li> <li>Reports generated / document control established, including sign-off authority</li> <li>Corrective actions documented and tracked to closure</li> <li>Guidelines for OEM / after- market parts and equipment</li> <li>Protocols for procurement, warrantee, and system maintenance</li> </ul>	X				
11.10	Safety meetings conducted. <ul style="list-style-type: none"> <li>Attendance sheets maintained / frequency noted</li> <li>Minutes / summaries prepared</li> <li>Status reports sent to senior management</li> </ul>	X				
11.11	System modification review and approval process documented on new or modified / updated equipment. <ul style="list-style-type: none"> <li>Training for maintenance staff</li> <li>Maintenance manuals provided</li> <li>Safety critical documents / elements identified</li> <li>Exception monitoring in place</li> <li>Approval / sign-off obtained</li> <li>Engineering coordination established</li> </ul>	X				


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	11.0 Vehicle Maintenance Audits / Inspections & Repair (continued)	Page 11 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
11.12	Change control / documentation process utilized. <ul style="list-style-type: none"> <li>• Safety certification</li> <li>• Quality Assurance / Quality Control</li> <li>• Configuration management</li> </ul>	X			S.F. Page 8, #11 S.F. Page 12, #1 S.F. Page 13, #1	
11.13	Formalized training for employee tasks documented. <ul style="list-style-type: none"> <li>• Licenses / certifications obtained</li> <li>• System in place to track employee training</li> <li>• Vendor training documentation reviewed / approved</li> </ul>	X				


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	12.0 Rules / Procedures Review	Page 12 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
12.1	<p>Rules and procedures reviewed and kept current.</p> <ul style="list-style-type: none"> <li>• Process / schedule established for reviews / updates</li> <li>• Results documented / distributed</li> <li>• Regulations and standards adopted and applied</li> <li>• Safety and security critical rules and procedures identified</li> <li>• Authority for issuing rules / policies defined</li> <li>• All rules / procedures in effect are held in a central location as controlled documents, with copies maintained in each department as needed</li> </ul>	X			<p>S.F. Page 24, #3 S.F. Page 25, #3 S.F. Page 26, #2 S.F. Page 33, #3</p>	
12.2	<p>Safety involved in the approval / review of policies, rules, and procedures affecting safety, health, fire, environment, or security (as appropriate).</p>	X			<p>S.F. Page 17, #2</p>	
12.3	<p>Administrative procedures in place to ensure that safety and security critical rules, procedures, and practices are given special recognition and / or precedence over others that may conflict.</p> <ul style="list-style-type: none"> <li>• Awareness or promotion programs (posters, bulletins, rule of the day / week, monthly theme, etc.)</li> <li>• Rules and procedures enforced</li> <li>• Formal method established to allow safety rules or procedures to be challenged and corrected before work begins</li> <li>• “Whistle Blower” provisions extended to safety and security issues outside normal chain of command</li> </ul>	X			<p>S.F. Page 28, #6</p>	
12.4	<p>Process of review has been incorporated into configuration management.</p> <ul style="list-style-type: none"> <li>• Document control established</li> <li>• Authority for issuing rules / policies defined</li> </ul>	X			<p>S.F. Page 19, #3 S.F. Page 25, #4</p>	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	12.0 Rules / Procedure Review (continued)	Page 13 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
12.5	Safety critical functions are governed by policies, rules, or procedures and incorporated into hiring, promotion, and succession planning practices: <ul style="list-style-type: none"> <li>• Job descriptions</li> <li>• Performance appraisals</li> <li>• Background checks</li> <li>• Drug / alcohol testing</li> <li>• New employees / contractors</li> <li>• Transferred and / or promoted employees</li> <li>• Criteria established for physical demands or medical conditions</li> </ul>	X			S.F. Page 10, #2 S.F. Page 27, #6 S.F. Page 28, #3 S.F. Page 29, #11	
12.6	Documented guidelines establish required knowledge, skills, and abilities needed for adherence to rules, procedures, and safe work practices. <ul style="list-style-type: none"> <li>• Incorporated into training programs</li> <li>• Competency evaluated in formal employee or contractor performance reviews</li> <li>• Information from JSA / JHAs reviewed and revised as needed</li> </ul>	X				
12.7	Competency in following safety critical rules and procedures evaluated on an established frequency. <ul style="list-style-type: none"> <li>• Training and post-training ride-checks / Ghost Rider programs for Operating employees</li> <li>• Efficiency / proficiency testing programs in place for safety sensitive / critical duties</li> <li>• Evaluations are documented and maintained</li> <li>• Failures require additional investigation for root cause and reinstruction or retest to establish correction in knowledge or behavior</li> <li>• Trend analysis performed to monitor program effectiveness</li> </ul>	X				


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	13.0 Training & Certification Review / Audit	Page 14 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
13.1	Documented program for training employees: <ul style="list-style-type: none"> <li>• Training policy established</li> <li>• New hires / Contractors / Vendors</li> <li>• On-the-Job Training (OJT)</li> <li>• Coordination of inter-departmental safety related training</li> <li>• Computer-based training</li> <li>• Training simulation applications utilized</li> </ul>	X			S.F. Page 21, #10 S.F. Page 28, #4 S.F. Page 30, #4 S.F. Page 33, #1 & #5	
13.2	Safety critical training is identified and documented. <ul style="list-style-type: none"> <li>• Pass / Fail criteria established</li> <li>• Safety critical questions review / verification process established</li> </ul>	X			S.F. Page 18, #9	
13.3	Safety coordination with Transportation, Engineering, Maintenance, and Security training documented. <ul style="list-style-type: none"> <li>• Where multiple departments provide training, coordination established</li> <li>• Common training policy adopted to ensure</li> </ul>	X				
13.4	Training program established to address re-training of employees. <ul style="list-style-type: none"> <li>• Return to work after long-term absence</li> <li>• Post-accident / multiple accidents</li> <li>• Reclassification of employee</li> <li>• Safety, security &amp; emergency response refresher</li> </ul>	X				
13.5	Trainers / Training program evaluated and periodically reviewed for effectiveness and course content (quality control). <ul style="list-style-type: none"> <li>• Qualification procedures for trainers</li> <li>• Testing program validation established</li> <li>• Test administration controls in place</li> </ul>	X			S.F. Page 6, #2 S.F. Page 7, #4 S.F. Page 33, #2 & #4	
13.6	Method in place to determine when training is due (tracking system) and training required for each job class at appropriate levels. <ul style="list-style-type: none"> <li>• Annual training identified</li> <li>• Re-certification tracked</li> <li>• Matrix developed to define position training requirements and frequency</li> <li>• Amount of training budgeted / completed</li> <li>• Training records centralized and program management established</li> </ul>	X			S.F. Page 27, #10	


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<b>APTA RAIL SAFETY AUDIT PROGRAM</b>		<b>TTC 11 - 11</b>			<b>DATE OF AUDIT Oct 31 – Nov 10, 2011</b>	
	13.0 Training & Certification Review / Audit (continued)	Page 15 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
<b>ITEM</b>	<b>ITEM DESCRIPTION</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>REMARKS</b>	
13.7	Vendor training programs established and evaluated for learning objectives and content. <ul style="list-style-type: none"> <li>• Training requirements specified in contract documents</li> <li>• Program can be replicated in-house (train the trainer)</li> <li>• Student / instructor manuals, visual aids, mock-ups, etc. provided</li> </ul>	X			S.F. Page 7, #10	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	14.0 Emergency Response Planning, Coordination and Training	Page 16 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
14.1	Building emergency evacuation plan established. <ul style="list-style-type: none"> <li>• Drills conducted and documented (scheduled and unscheduled)</li> <li>• Coordination defined between departments</li> </ul>	X			S.F. Page 26, #1	
14.2	Emergency Management Plans developed and implemented. <ul style="list-style-type: none"> <li>• Documented review and update process for Emergency Management Plans</li> <li>• All hazards (e.g. severe weather operations, mass casualty, pandemic event, security event)</li> <li>• Notification procedures established</li> <li>• Emergency response guidelines established</li> <li>• Training program developed and implemented</li> <li>• Defined role(s) of each employee and department in support of Emergency Management Plans</li> <li>• Public awareness programs implemented</li> <li>• Operations recovery / Continuity of Operations</li> </ul>	X			S.F. Page 4, #5	
14.3	Emergency response, planning, and coordination documented. <ul style="list-style-type: none"> <li>• Within organization and with outside agencies</li> <li>• Roles &amp; responsibilities defined between departments</li> <li>• Media relations guidelines documented</li> <li>• Passenger safety / customer assistance</li> <li>• Family notification / critical event counseling</li> </ul>	X			S.F. Page 4, #6 S.F. Page 6, #1 S.F. Page 9, #3	
14.4	Relationship established and documented with outside agencies / organizations: <ul style="list-style-type: none"> <li>• Participation on drills / attendance at meetings</li> <li>• Distribution of SOPs / PIs</li> </ul>	X			S.F. Page 10, #4	
14.5	Emergency drills conducted live or as tabletop. <ul style="list-style-type: none"> <li>• Post-drill meetings / critique conducted</li> <li>• Corrective actions areas and follow-up noted</li> <li>• Procedural revisions / updates generated as needed</li> </ul>	X				
14.6	Fire / Life safety analysis & programs established. <ul style="list-style-type: none"> <li>• Vehicles/tunnels/facilities/operating procedures</li> <li>• Applicable fire / life safety regulations</li> <li>• Documented annual review process and implementation of emergency procedures, safety rules, all hazards training, and preparedness</li> </ul>	X				

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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	15.0 System Modification Process	Page 17 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
15.1	System Modification Process <ul style="list-style-type: none"> <li>• Policy documents scope and responsibilities</li> <li>• Control authority established for procedures, practices, facility, equipment, systems, manuals, rules, etc.</li> <li>• Annual review process incorporated</li> <li>• Demonstration or pilot projects managed</li> <li>• Acceptance and sign-off / approval includes safety / security</li> <li>• Incorporated into Document Control</li> </ul>	X			S.F. Page 11, #2	
15.2	Standards and / or design criteria adopted <ul style="list-style-type: none"> <li>• “APTA” Manual of Standards and Recommended Practices for Rail Transit Systems standards used where applicable</li> <li>• Vehicle inspections and maintenance</li> <li>• Rail grade crossing practices</li> <li>• Operating practices</li> <li>• Fixed structures inspections and maintenance</li> <li>• Signals &amp; communications equipment inspection and maintenance</li> </ul>	X				
15.3	Quality Assurance / Quality Control Process <ul style="list-style-type: none"> <li>• Quality Policy documented</li> <li>• Authority and responsibility for QA / QC defined</li> <li>• Quality management standard adopted (ISO or other)</li> <li>• Inter-department coordination identified</li> <li>• Process controls established</li> <li>• Training and qualifications of staff documented</li> <li>• Inspection, test, and non-conformance procedures followed</li> </ul>	X			S.F. Page 8, #12 S.F. Page 22, #1 S.F. Page 24, #1 S.F. Page 25, #5 S.F. Page 26, #5	

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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	16.0 Safety Data Acquisition / Analysis	Page 18 of 23			Rail Audit Checklist	
	17.0 Inter-departmental / Inter-agency Coordination	Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
16.1	Responsibilities defined for providing, receiving, processing, and analyzing data. <ul style="list-style-type: none"> <li>Employee / contractor / patron accidents</li> <li>Rail operation mishaps and near-miss events</li> <li>Regulatory / safety hazard reports generated and maintained</li> </ul>	X				
16.2	Review of safety data collection and reporting (tracking / trend analysis & data interpretation). <ul style="list-style-type: none"> <li>Information disseminated appropriately</li> <li>Corrective actions documented &amp; tracked</li> <li>Organizational trend analysis performed</li> <li>Information Systems / Technology support functions defined</li> </ul>	X				
16.3	Key Performance Indicators (KPI) for safety and security identified. <ul style="list-style-type: none"> <li>Process in place for continuous improvement</li> <li>Measurements taken and disseminated appropriately</li> <li>Units of measure appropriate (leading vs. lagging)</li> <li>Measurement tied to departmental objectives' performance appraisal system</li> <li>Corrective action assessed for effectiveness</li> <li>Top management uses data to lead organization and in decision making</li> </ul>	X			S.F. Page 21, #12 S.F. Page 22, #5	
17.1	Relationships with transit system and local / outside jurisdictions / organizations established, including outreach programs.	X			S.F. Page 3, #2 S.F. Page 30 #7 S.F. Page 31, #1 & #4	
17.2	Safety Department responsibilities, functions, and authority understood by other departments.	X				
17.3	Procedures documented and applied for coordination of inter-departmental and community safety / security related activities. <ul style="list-style-type: none"> <li>Notification systems established</li> <li>Community resources &amp; mutual aid identified</li> </ul>	X			S.F. Page 31, #2 S.F. Page 32, #5 & #6	
17.4	Mechanism in place to ensure the transfer of information and communication between safety, operating, and other staff on safety concerns, as well as external to the agency.	X			S.F. Page 15, #8 S.F. Page 31, #3	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	18.0 Configuration Management	Page 19 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
18.1	A documented change management process in place and utilized. <ul style="list-style-type: none"> <li>Safety critical processes identified</li> <li>Safety critical components identified</li> </ul>	X				
18.2	Change Control Process <ul style="list-style-type: none"> <li>Change review and control procedure established</li> <li>Authority for making configuration changes and process to incorporate changes defined</li> <li>Schedule for implementation of changes</li> <li>Incorporated into Document Control</li> </ul>	X				
18.3	Document Control Program <ul style="list-style-type: none"> <li>Document life cycle management policy / procedure</li> <li>Physical security and contract presentation of controlled documents</li> <li>Document file system; identification of original and distributed copies</li> <li>Access controls for viewing, copying, distribution, and removal</li> <li>Digital content management</li> <li>Document retention / destruction procedures</li> </ul>	X			S.F. Page 4, #3 S.F. Page 19, #2 S.F. Page 24, #4 S.F. Page 28, #2 S.F. Page 35, #6 S.F. Page 36, #4	
18.4	Safety / Security Certification (SSC) Program <ul style="list-style-type: none"> <li>SSC plan documented and reviewed by management</li> <li>Certifiable elements identified</li> <li>Design and construction conformance</li> <li>Test and verification plan</li> <li>Formal certification steps documented with sign-off</li> <li>Open items reviewed / hazard mitigation measures established</li> </ul>	X			S.F. Page 36, #3 & #5	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	19.0 Employee Safety Program	Page 20 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
19.1	Employee Safety Programs : <ul style="list-style-type: none"> <li>Occupational / industrial safety programs developed and implemented (PPE, HAZCOM, fall, forklift, confined space, etc.)</li> <li>Employee accident investigation, role, reporting, and analysis process</li> <li>Proper tools and procedures used</li> <li>Proficiency testing / audits, assessments conducted by supervisors</li> <li>Occupational hazard prevention (employee injury reduction, human factors / human error prevention, behavior based safety programs in place)</li> <li>Safety awareness, recognition, and promotion programs</li> <li>Wellness programs / off-the-job programs established</li> </ul>	X			S.F. Page 1, #3 S.F. Page 2, #1 S.F. Page 9, #1 S.F. Page 14, #2 & #3 S.F. Page 22, #4 S.F. Page 28, #1 S.F. Page 29, #9 S.F. Page 37, #3	
19.2	Workplace safety coordination: <ul style="list-style-type: none"> <li>Documented labor / management participation</li> <li>Safety meetings / communication</li> <li>Employee safety programs document systematic control of potential occupational hazards to health and safety, emergency procedures, medical surveillance, training, and record keeping</li> <li>Joint safety inspections</li> <li>Department goals and objectives tracked</li> </ul>	X			S.F. Page 2, #2 S.F. Page 3, #6 S.F. Page 10, #3 S.F. Page 15, #9 S.F. Page 20, #6 S.F. Page 22, #2	
19.3	A process in place (reporting system) to allow for documented notification, tracking, and repair of hazards identified by employees.	X				
19.4	Job Hazard Analysis / Job Safety Analysis established. <ul style="list-style-type: none"> <li>Training provided to conduct JHA / JSA</li> <li>Re-evaluation performed (new equipment, new procedure(s), post accident, etc.)</li> <li>Scheduled reviews performed to determine if any change in frequency / severity</li> </ul>	X				


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	20.0 Hazardous Materials Programs	Page 21 of 24			Rail Audit Checklist	
	21.0 Fitness for Duty Programs	Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
20.1	Environmental Program plans include source reduction programs for hazardous materials <ul style="list-style-type: none"> <li>Hazardous materials identified, marked, and labeled</li> <li>Right to Know &amp; <i>Hazwopper</i> training</li> <li>Approved MSDS on file</li> <li>Storage areas designated and maintained</li> <li>Hazardous waste disposal / recycling</li> <li>Incident management for spills</li> </ul>	X			S.F. Page 18, #6	
20.2	Training / PPE supplied to employees for approved chemical / hazardous materials use.	X			S.F. Page 21, #9	
21.1	Fitness for Duty: <ul style="list-style-type: none"> <li>Medical monitoring program</li> <li>Fatigue awareness program</li> <li>Human Factors evaluations</li> </ul>	X			S.F. Page 30, #1, #5 & #6	
21.2	Drug & alcohol program in place, documented, and enforced by management. <ul style="list-style-type: none"> <li>Policy established for over-the-counter drug use</li> <li>Employee Assistance Program provided</li> <li>Clearly defined disciplinary actions / sanctions</li> <li>Audits conducted on outside agencies that conduct the tests</li> </ul>	X			S.F. Page 26, #4 S.F. Page 30, #2 & #3	


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APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	22.0 Contractor Safety Coordination 23.0 Procurement	Page 22 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
22.1	Contractor safety compliance is documented. <ul style="list-style-type: none"> <li>• Coordination between safety unit and contractor safety person / unit – site audits conducted</li> <li>• Contractors aware of safety, health, fire, environmental, and security programs</li> <li>• Contractor / construction site safety plans documented and reviewed</li> </ul>	X			S.F. Page 3, #5 S.F. Page 27, #7	
22.2	Ensure that all contractor personnel: <ul style="list-style-type: none"> <li>• Instructed on and have knowledge of safety rules / procedures and On Track Safety practices</li> <li>• Follow prescribed procedures</li> <li>• Sanctions are clearly documented</li> </ul>	X				
23.1	Procurement monitors purchases and has established procedures for and / or safety interface review of: <ul style="list-style-type: none"> <li>• Controlled storage / waste disposal</li> <li>• Containers visibly labeled</li> <li>• Emergency spill control</li> <li>• Shelf-life policy coordination</li> </ul>	X			S.F. Page 28, #7 S.F. Page 29, #8	
23.2	Procurement policy / procedure on safety critical components referenced where applicable. <ul style="list-style-type: none"> <li>• Supply chain for safety critical components controlled to prevent unauthorized substitutions</li> <li>• Part obsolescence procedures identified to preserve stock, acquire specifications for re-manufacture, etc.</li> </ul>	X			S.F. Page 29, #12	
23.3	QA / warrantee inspections for procurement and system maintenance documented: <ul style="list-style-type: none"> <li>• Checklists / schedules</li> <li>• Reports / corrective actions</li> </ul>	X				
23.4	Contracting for Services <ul style="list-style-type: none"> <li>• Safety plan reviewed as a contract deliverable</li> <li>• Safety personnel qualifications established</li> <li>• Specifications reviewed for safety / security requirements, roles, and responsibilities</li> <li>• Reports provided on safety performance and cite frequency (monthly, quarterly)</li> <li>• Contractor evaluations documented</li> </ul>	X				


COLUMN DEFINITIONS:

- 1 – Meets Plan Requirements
- 2 – Program Improvement Needed (See Supplemental Form)
- 3 – Unable to Audit (See Reason/Reference in Remarks Column)

APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	24.0 Security	Page 23 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
24.1	System Security Plan established and activities documented. <ul style="list-style-type: none"> <li>• Security procedures defined</li> <li>• Type of security equipment used and maintained</li> <li>• Security personnel equipment issued</li> <li>• Security training</li> <li>• Public awareness / education</li> <li>• Revenue security</li> <li>• Disaster preparedness</li> <li>• Security emergency procedures</li> <li>• Communication procedures</li> <li>• Interaction with local, state, and federal law enforcement</li> <li>• Facilities security and access control established</li> <li>• Sensitive Security Information identified and controlled</li> <li>• Security audit program established / implemented</li> </ul>	X			S.F. Page 10, #5 S.F. Page 26, #3 S.F. Page 28, #5 S.F. Page 34, #1 & #4 S.F. Page 34, #2	
24.2	Contingency SOPs developed and drills conducted for extraordinary circumstances. <ul style="list-style-type: none"> <li>• Terrorism</li> <li>• Riots / domestic unrest</li> <li>• Catastrophic natural events</li> <li>• System-wide communications failure</li> <li>• Power blackout</li> <li>• Formal critique forms used to follow-up after drills</li> </ul>	X			S.F. Page 34, #3	
24.3	Security reports, incident, and data collection; reports with recommendations, hazard analysis / resolution process, and follow-ups for: <ul style="list-style-type: none"> <li>• Threat and vulnerability identification</li> <li>• Threat and vulnerability assessment</li> <li>• Threat and vulnerability resolution</li> </ul>	X				
24.4	Security SOPs and site specific plans are reviewed / updated on a scheduled basis and as needed.	X				

COLUMN DEFINITIONS:

- 1 – Meets Plan Requirements
- 2 – Program Improvement Needed (See Supplemental Form)
- 3 – Unable to Audit (See Reason/Reference in Remarks Column)

APTA RAIL SAFETY AUDIT PROGRAM		TTC 11 - 11			DATE OF AUDIT Oct 31 – Nov 10, 2011	
	24.0 Security (continued)	Page 24 of 24			Rail Audit Checklist	
		Auditors: James Brown, William Thorpe, David Hahn & James Guseman				
ITEM	ITEM DESCRIPTION	1	2	3	REMARKS	
24.5	Defined security role of each employee and department in support of System security goals. <ul style="list-style-type: none"> <li>Personnel held accountable for security issues under their control</li> </ul>	X			S.F. Page 10, #1	
24.6	Plans and protocols (internal / external) established for threat level escalation / DHS Homeland Security Advisory System.	X				
24.7	Interface with external agencies defined: <ul style="list-style-type: none"> <li>State and local police</li> <li>Federal agencies</li> <li>Emergency responders</li> </ul>	X				
24.8	Security coordination established for: <ul style="list-style-type: none"> <li>Safety department interface</li> <li>Prohibited activity awareness programs including education and signage</li> <li>Engineering on facility construction / re-design or enhancement projects</li> <li>Transportation lines of communication and joint procedures / SOPs in place</li> </ul>	X				

COLUMN DEFINITIONS:

- 1 – Meets Plan Requirements
- 2 – Program Improvement Needed (See Supplemental Form)
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**Note:** *The General Recommendations are intended to provide basic guidelines and a summary of findings as may apply to several areas of **Toronto Transit Authority (TTC)**. Please refer to the Departmental Supplemental Forms for specific details that are applicable to specific areas of responsibility.*

1. APTA commends the TTC management team for its continued commitment to improving upon its system safety program. TTC has consistently demonstrated due diligence to the safety and security of its customers and employees. This open commitment to improving safety provides an excellent foundation for a proactive safety culture that can be supported by all TTC employees. **(3.1)**
2. The 2008 APTA audit identified eleven (11) areas of noncompliance to the safety program elements. All eleven audit “Needs Improvement” findings have been addressed by TTC. In addition, the 2011 audit identified numerous areas where program enhancement comments noted in the 2008 audit Management Letter were also addressed. APTA commends the responsiveness of the management staff to the APTA audit findings as a means for continuous safety improvement. **(9.5)**
3. The TTC has continued to make significant progress through its proactive safety initiatives such as the Work Safe / Home Safe program. The organization continues to be an industry leader in the development of an effective safety culture. Safety management system processes in place have been focused on ensuring lessons-learned from previous incidents are not repeated. APTA commends the TTC for its continuous commitment to safety as Priority One within the organization. **(19.1)**
4. Department Safety Action Plans were required by TTC Budget Guide Line but only a very few departments created one. There is no statement in the SSPP that each department is required to submit a Safety Action Plan on an annual basis. APTA recommends that requirements for annual Department Safety Action plans be incorporated into the SSPP and each identified department create one. **(3.2)**



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**FINDINGS AND OBSERVATIONS**

**SUPPLEMENTAL FORM**

**SAFETY CULTURE INITIATIVE**

1. The TTC launched a major Safety Culture initiative as a means to improve employee safety performance. Following a serious track-related incident that resulted in several employee injuries, the TTC initially requested an independent Safety Culture Survey to be performed on the Track Department. A consultant was hired to work with the TTC in improving the organizational safety culture and reduce employee injuries. The organizational-wide program was established on a behavioral-based peer safety assessment that is designed to reinforce safe practices performed, identifying at-risk activities and securing a commitment from the employee to correct any unsafe activities. There are nine CARE Teams (Controlling Accidents by Reducing Exposures) in place at key locations throughout the TTC to oversee and support the program application. There is also an “Observer Program,” which has been established for front line supervisory personnel. Since the inception of the program and in conjunction with other safety initiatives over the past several years, the organization has achieved a 30% reduction in workplace injuries. APTA commends the TTC commitment to employee safety as exemplified through this initiative. **(19.1)**
2. The Safety Culture Survey assessed the progress made in ten (10) different safety culture factors. Improvements were achieved in nine (9) of those factors. APTA commends the TTC for its open commitment to improving workplace safety. **(19.2)**
3. The Safety Department has moved to the dissemination of safety-critical plans and programs via the TTC intranet. The TTC intranet site contains numerous documents, plans and process including the System Safety Plan, the 7 Point Action Plan, HIRA guidelines, Safety Certification, Safety Procedures, etc. APTA acknowledges this program. **(4.2)**

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**SUPPLEMENTAL FORM**

**TRANSIT EXPANSION**

1. The Transit Expansion Department has been awarded \$8.6 billion over the next 10 years, which includes an estimated \$4.4 billion from the City of Toronto for construction of four capital projects on the Sheppard Subway Expansion and the Eglinton – Scarborough Crosstown Route. The project would be a joint City of Toronto, Ontario Provincial, Metrolinx and TTC effort. APTA acknowledges this program. **(1.2)**
2. The Transit Expansion Department has reached out to the community through face-to-face meetings with business owners at or near the Sheppard Expansion project to discuss with owners and employees the purpose of introduction to the project and how the project will benefit their business and the community. In addition to the introduction program, TTC is offering the opportunity to participate in Community Committees that would provide input and feedback on the positive impact the expansion will have on their community. APTA acknowledges TTC for its relationships with its external stakeholders, beyond the fire/life safety committees, that provide a forum to discuss community impacts and safety concerns. **(5.3 and 17.1)**
3. Safety certification is a formal process within the TTC and has been recently applied to the new subway and streetcar vehicle procurements. TTC will also be utilizing the application of safety certification for its capital expansion projects. The audit team reviewed the System Safety Certification Plan for the ATC Project dated July 27, 2011 and “Safety and Security Certification Master Specifications” language (dated September 16, 2011). APTA acknowledges TTC’s commitment to the safety certification program. **(10.10)**
4. The project design review process includes all affected stakeholders including Safety at the 30%, 60% and 90% design levels. APTA acknowledges this formalized and documented project design review program. **(10.10 )**
5. In addition to requiring contractors meet Occupational Health and Safety Act provision, the TTC Safety and Security Master Specifications includes but is not limited to the deliverables of contractor safety and security plans. APTA acknowledges TTC for its focus on contractor project safety and security. **(22.1)**
6. TTC has utilized APTA to conduct a project Peer Review with focus on system operating concepts and fare collection strategy. APTA commends TTC for its openness to assessing industry practices as a means of continuous improvement. **(19.2)**
7. Safety training is provided to project Resident Superintendents, Inspectors and Construction Engineers as a means to increase awareness and oversight of project on-site safety requirements. APTA acknowledges this safety training initiative. **(10.12)**

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**RAIL TRANSPORTATION**

1. Ride checks are done annually with greater frequency for new Operators, as 3-, 5- and 10-month assessments are conducted. More than 700 ride observations were conducted in 2010. The QA of process is the responsibility of Division management, which sends out “Blitz” topics developed to focus on risk areas. APTA acknowledges the effort. **(12.7)**
2. Annually, the TTC sets its goals and objectives based on analysis of information and financial / budgetary elements. The goals and objectives for 2011 include the workplace safety focus as the first of sixteen identified areas of focus. Other safety related areas included in the 2011 document include goals for reducing signal violations, switch incidents and platform overshoots. The single source for statistical information is maintained by the Analysis and Procedures work group at the David Gunn facility. Final approval of the goals and objective is by signature of the General Superintendent. APTA commends Rail Transportation for its focus on safety as demonstrated by its goals and objectives. **(3.2)**
3. The Analysis and Procedures work group also maintains the Emergency Preparedness and Response Plans on the TTC intranet website. This work group is the sole point of contact for Document Control and the document revision processes. APTA acknowledges this Document Control initiative. **(18.3)**
4. In addition, the Analysis and Procedures work group develop, coordinate, activate and facilitate tabletop drills, communication drills and full scale community emergency response exercises. The purpose of these drills / exercises is to test TTC’s emergency response procedures and communication process. Upon completion of the exercises a “Hot Wash” and “Final Debrief” are conducted and documented. The Analysis and Procedures work group determines if any revisions or updates are needed to be made to the emergency response plans and procedures. APTA commends this emergency preparedness program initiative. **(14.3)**
5. In the event that a revision to Transportation procedures and plans is needed, the Analysis and Procedures Department is responsible for making the revision and implementation of the change. The Analysis and Procedures Department will make the revisions and re-post the revised documents on the SharePoint system. Notification of the revision is sent to all affected supervisory personnel. APTA acknowledges this program. **(14.2)**
6. In the event of fatality, serious injury or significant safety or security event, the Department will communicate and increase awareness relevant to the application of approved procedures by prioritizing a designated topic through the Safety Blitz process. APTA acknowledges this lessons-learned initiative. **(7.1)**

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**RAIL TRANSPORTATION** (cont'd)

7. TTC has instituted asset of “Flashing Blue Light” Rules in an effort to raise the level of protection for individuals in the track area “under traffic.” APTA acknowledges the effort. **(10.4)**

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**RAIL CARS & SHOPS MAINTENANCE**

1. The TTC has invested in new subway and light rail vehicles as a means to increase service capacity, reliability and overall customer service. The Toronto Rocket subway vehicle is designed as independent train-set that allows a customer load capacity of 8% more than the existing fleet vehicles. The vehicles are also equipped with state of the art information and communication systems, i.e., LED next station indicators / on-board passenger emergency communication systems. The signage incorporates the core elements of the adult learning process, which include information conveyed in audio, visual and text display. APTA commends TTC for this significant capital investment to ensure passenger emergency communication. **(14.3)**
2. Currently, TTC is taking delivery of the Rocket cars and will continue with the Receiving Inspection process until the order is completed in 2014. In preparation for service, a Train the Trainer program, with the support of the manufacturer (Bombardier) is in the second level of classroom and field training. TTC maintenance personnel will be responsible for preventative maintenance tasks during the warranty period and the contractor will be responsible for corrective maintenance e. To maximize the deliverable from the warranty package, the Rail Cars and Shops (RCS) Work Group (in partnership with Training), is working closely with the contractor to ensure the OEM and Training Manuals are comprehensive and meet the needs and standards of TTC. APTA acknowledges this acceptance program level of focus. **(13.5)**
3. Currently, both the Greenwood and Harvey shops are experiencing a decrease in the number of injuries and, as a means to build on this success both shops have collaborated on the refinement of the Investigation of Incidents process. The core tool used in the investigation process is the Investigation Form, which is designed to capture critical information in the investigation of the incidents to determine root causes. The Investigation Form is intended not to place blame but rather to gather information in a manner that will reflect what the employee was doing at the time of incident, what will be done as a result of the investigation and what will be done going forward as part of any corrective actions identified. A Safety Liaison has been appointed to work with the Safety Department to focus on the human behaviour aspect rather than just the statistical information. The progression of the Investigation Form moves in bottom to top direction, starting with the Foreperson, then to the Supervisor and to then to the General Superintendent for review. Upon review, the General Superintendent determines if the investigation will be an agenda item at the monthly Safety Meeting. APTA commends this accident investigation initiative. **(8.1)**

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**RAIL CARS & SHOPS MAINTENANCE** (cont'd)

4. The Rail Car & Shop (RCS) group has reviewed the current training program for shop employees and determined that with the new Toronto Rocket (TR) equipment and current training standards will not meet the basic requirements for the maintenance of the new equipment. As a means to offset this concern, the RCS group has elevated the training requirements for new-hire employees. The training requirement's includes the certification as a specialist (Subway Vehicle Technician) in association with an accredited college. APTA acknowledges this program. **(13.5)**
5. In regard to quality assurance for repair / replacement parts part for the new TR equipment, the RCS group have assembled a list of vehicle parts and material that would impact the day-to-day operation in the event of failure. The parts and materials that are identified as Critical Failures and System Failures are purchased in advance and inventoried until the time of use. APTA acknowledges this program. **(11.1)**
6. For the calendar year of 2010, the RCS group had 1 reportable injury, which occurred in February. The documentation of this injury is supported by the TTC – Lost Time Injuries Report for 2010. APTA acknowledges this safety performance. **(8.4)**
7. Fleet Management Plan is updated every six months to ensure it accurately reflects current needs. APTA acknowledges this document review and update process. **(11.1)**
8. Due to the age of the fleets, there has been an issue with the obsolescence of parts and systems. The TTC has been proactive in addressing some of these concerns through re-engineering efforts that have allowed for ensuring vehicle availability and improved reliability. In addition, there are provisions in the new vehicle procurements designed to mitigate future concerns regarding obsolescence issues. APTA commends the TTC for its re-engineering initiatives. **(11.1)**
9. New TR vehicle has comprehensive diagnostic capabilities to identify equipment and system faults and communicate this information to maintenance so that maintenance personnel can efficiently respond to the defects. APTA commends the TTC for this maintenance information enhancement built into the design of the new TR vehicles. **(11.1)**
10. The new TR procurement included simulator for both Transportation and Maintenance. In addition, the contract included deliverable for key systems mock-ups to support training needs. APTA commends this investment in training. **(13.7)**

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**RAIL CARS & SHOPS MAINTENANCE** (cont'd)

11. The Rail Car Maintenance Engineering is responsible for managing the procedures review and update process. The process includes a priority-based system, as each procedure is reviewed in light of its safety- and mission-criticality. High priority procedures are prioritized for review and the turnaround time is generally in the range of one month. Affected management staffs are required to review and sign-off on any changes and the final version is then posted on the shared website. APTA commends this procedures review and update process. **(11.12)**
12. As part of a lessons-learned incident occurring in the 1990s, the TTC has committed to continuing its training of approximately 600 maintenance personnel focused on fasteners. All fasteners have a designated insignia that is checked by front line personnel before installation as an added measure of quality control. APTA commends the TTC for its commitment to ensuring safety critical training and quality control processes remain in place. **(15.3)**
13. The audit team discussed the modification process with Rail Car Maintenance Engineering and reviewed several modifications completed on the equipment including a redesign for the T1 vehicle traction motor lug failure, master controller modification and torque arm failure redesign. APTA commends the department for its thorough modification process and efforts to improve safety and reliability. **(11.1)**
14. The Rail Car Maintenance utilizes a Fleet Management Plan that is segmented for both Street Cars and Subway Cars. It is projected by the year 2014 there will be only three series of cars, which will significantly drive down the maintenance schedule. The Fleet Management Plan does address the three types of fleets, as well as the 10% decrease in the reduction of replacements cars. Factors that may impact the Fleet Management Plan include the forecasted increase in ridership on all lines of operation. APTA acknowledges this planning. **(11.1)**



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**SUPPLEMENTAL FORM**

**SAFETY AND ENVIRONMENT DEPARTMENT**

**Effective Practice**

1. The TTC Safety and Environmental Department has played a significant role in advancing the progressive initiatives designed to enhance the TTC safety culture. APTA commends the TTC Safety and Environmental staff for the implementation and support of the many safety program initiatives and accomplishments since the last APTA audit. **(19.1)**
2. The Safety Department has moved to the dissemination of safety documentation via the intranet. Plans and procedures are readily available on the website to include but are not limited to the System Safety Plan, the 7 Point Action and numerous safety procedures. APTA acknowledges this document control and information dissemination initiative. **(2.3)**
3. TTC Transit Enforcement participates on the Toronto Emergency Management Committee. APTA acknowledges this interagency coordination. **(14.3)**

**Needs Improvement**

4. At the time of this audit the Safety Internal Audit group was uncertain as to what resources would be available for achievement of their goals and objectives. Previous internal audits were performed during a 5-year cycle, with specific elements being audited during a quarterly schedule until completion of the 24 elements. A comprehensive Operations Compliance Audit has been performed every 5 years which included a Rules Compliance review. Although this criteria is carried in the SSPP, audits have been deferred to provide resources to the Work Safe Home Safe program. The recent reduction of staff has made it unclear as to the frequency and scope of future reviews. APTA recommends that the Internal Safety Audits be resumed and focus on safety- and mission-critical activities **(9.1)**



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**SUPPLEMENTAL FORM**

**TRANSIT ENFORCEMENT & SECURITY SERVICES**

1. The TTC has an established employee security awareness training program as well as a public external security awareness initiative. APTA commends the organization for its commitment to the establishment of both internal and external security awareness programs. **(24.5)**
2. Transit Enforcement has implemented a Background Check for Vendors that includes a criminal background check. Because a number of TTC projects may be near a school a sex offender background check is performed. APTA acknowledges this program. **(12.5)**
3. The Audit Team had an opportunity to discuss the Work Safe / Home Safe program with the Transit Enforcement Work Safe program facilitator. The program appears to be well received within the Department has been proven effective. APTA acknowledges the Department for its efforts with this employee safety initiative. **(19.2)**
4. Each year Transit Enforcement participates and / or leads in the coordination of community emergency response a drill that includes simulated emergency responses to a safety and / or security incident. The scope of these drills includes tabletops, communications and field simulations. In 2012 the drill will include a Transit Enforcement “boots on the ground” element, as well as the possible incorporation of a transit operations crew. APTA acknowledges this program. **(14.4)**
5. A draft Security Sensitive Information (SSI) policy has been created and is awaiting final signoff. APTA commends the department for its efforts with the development of the SSI policy. **(24.1)**

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**McCOWAN CARHOUSE TOUR**

1. A life-cycle maintenance program is used to support both the vehicle preventative maintenance and overhaul program component replacement. The staff utilizes reliability analysis to determine desired component replacement requirements. APTA acknowledges this maintenance practice. **(11.1)**
2. Equipment modifications have been made to the vehicles to improve performance reliability. APTA acknowledges this change / modification process. **(15.1)**

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**WILSON CARHOUSE TOUR**

1. New Toronto Rocket vehicle procurement design and acceptance process has included the application of safety certification. APTA commends the TTC for its expanded application of safety certification.  
**(11.12)**

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**RAIL VEHICLE ENGINEERING**

1. The Rail Car Engineering work group responsibilities include management of capital project, oversight of the change management process, development and maintenance of the Safety Certification Plan, as well as daily oversight of the Streetcar Fleet Management Plan 2012 to 2016 and the Subway Fleet Management Plan 2012 to 2016. APTA commends the Department for the development of both the Streetcar Fleet Management Plan 2012 – 2016 and the Subway Fleet Managements Plans. **(11.12)**

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**SUPPLEMENTAL FORM**

**TRACK & STRUCTURE DEPARTMENT**

1. Under the present re-organization of the TTC, the Track & Structure Department, which previously consisted of Track (Subway and Streetcar) Maintenance and the maintenance of all fixed structures, (tunnels, bridges and stations), now includes the Signals and Electrical Departments, along with Traction Power. Presently, documentation, e.g., Standard Operating Procedures of the Signals and the Electrical [and Wire] Departments are remaining in the previous formats. Whether the formats will change may depend upon the resources available to effectuate the change. A similar question exists as to the amalgamation of the Track & Structures (Stations / Tunnels / Buildings / Equipment), Signals / Electrical / Communications Joint Health and Safety Committees. The restructuring of the TTC organization has brought the Track & Structure Department into a closer working relationship with other infrastructure maintenance departments with a more “holistic” focus on state of good repair, efficiency of work process, minimizing duplication of effort and identifying gaps in ownership or maintenance of assets. APTA acknowledges the effort. **(10.6)**
2. The Track & Structure Department and the Plant Department have enlisted the efforts of a third party consultant to identify all the confined spaces at the TTC and defining whether each is a confined Space or a Permit-Only Confined Space. The action was a response to a previous APTA Audit finding in 2008 and was completed earlier in 2011. APTA acknowledges the effort. **(19.1)**
3. The Ontario Occupational Health and Safety Act’s (OHSA) confined space requirements were consolidated into the “Confined Spaces Regulation (O. Reg. 632/05) in July 2011. The training requirements following the initial training are limited to an annual training review, which is to be conducted to provide assurance that conditions and work methods have not changed. The TTC Confined Space Program requires refresher training with a 3-year re-certification in the event a trained person has not entered a confined space within the past six-month period. APTA commends the monitoring of the training / work record that is applied to provide the warranted assurance that confined space work is only conducted by those whose certifications have not lapsed by TTC standards. **(19.1)**
4. TTC has an ongoing Asbestos Management Program, as required under Section 8 of the OH&SA Designated Substances section. As required, the updating of the building surveys on a regular basis was provided during October 2011 of the locations and condition of the Asbestos Containing Materials (ACMs). APTA acknowledges the effort in effectively managing hazardous substances within the scope of subway preventive maintenance. **(10.6)**

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**TRACK & STRUCTURE DEPARTMENT** (cont'd)

5. During the 2008 APTA Audit, a finding was directed at the storage of fluorescent tubes in cardboard boxes that had become weathered. The Electrical Department has responded with the purchase of additional blue plastic storage containers for the spent tubes and required training of the 3<sup>rd</sup> Party Janitorial staff on the proper handling of them. APTA acknowledges the effort. **(10.11)**
6. During the walking inspections of the Subway Track and Tunnels that take place on a daily basis no one is a “Lone Worker,” as the requirement is that at least two-person teams will conduct such inspections. Additionally, access to the track area is limited to a specific track and the distance between adjacent stations, only with the permission from Transit Control. Subsequent to the request to enter the track, the Transit Control makes a blanket announcement to all trains that the specific track and station limitation is now occupied by maintenance forces. The permission also requires the Crew / Team to mount a blue light at the end of the station platform, marking the start of the inspection. The Crew / Team then rides a train to the opposite end of the inspection area to walk back toward the blue light, which provides a very high degree of confidence that the walkers are walking toward oncoming train traffic. Trains are required to sound the car horn when departing the station where the blue light is mounted, regardless of the location of the Crew in the work area. APTA acknowledges the effort. **(10.1)**
7. The 2011 Subway / SRT Rule Book’s Rule 3.5 (Pg 3 - 11) specifies, “For each work crew at track level, at any given time, one qualified employee has the sole responsibility of giving clearly visible approved hand signals to approaching vehicles using an approved signaling device.” The specificity of the wording, i.e., “...one qualified individual has the sole responsibility...” is commendable. **(10.4)**
8. Although Signals and Electrical now report to the Track and Structures Department, the Signals, Electrical and Communications (SEC) Joint Health & Safety Committee continues to produce a quarterly “Newsletter,” a part of which, is a table indicating each of its Groups, the “Date and Level of the Last Injury-Free Plateau Reached,” the “Date of the Last Lost Time Injury” and the “Accumulated Injury Free Hours.” As of October 1, 2011, the Operations Branch – Track & Structure Department earned the TTC’s “Zero Injury Award,” with the Signals group leading the way (into its eleventh consecutive year and more than 2.01 Million hours) without a Lost Time Injury. APTA commends the investment in the production of the quarterly document to advertise the fact that hazardous work can be conducted in a safe manner. **(17.4)**
9. The Track and Structures Department has two CARE Committees within the Department. APTA acknowledges the investment. **(19.2)**

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**TRACK & STRUCTURE DEPARTMENT** (cont'd)

10. The Track Department has developed a Non Destructive Testing (NDT) team dedicated to testing all field welds (thermite) within 15 days and providing test support to installation of new rail sections, components and the diagnosis of rail flaws on an ongoing basis. Flash butt welds have NDT testing performed as soon as the task is completed. Technicians to provide this specialized work are recruited, trained and licensed for performing this work. APTA acknowledges the effort to ensure that rail is tested for defects on a continuous basis. **(10.2)**

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**T & S DEPARTMENT – STRUCTURE**

1. The Structure Maintenance Department conducts inspections of Stations, Bridges, Overhead and subway tunnels; all but station finishes. Depending upon the visual inspection repair work will be completed on very small repairs in-house; larger repairs will require a condition survey and further investigation i.e., Tactile Inspection (including delaminating surveys, core sampling and concrete strain), which will result in a project that is created by Project Management / Construction Management of the Engineering & Construction Department (E & C) or by a 3<sup>rd</sup> Party Consultant. The project created following those steps can then be assigned (depending upon the size and scope of the project), to in-house efforts of the Structure Department or will be contracted out. As an example, the St. Andrews Station (roof-slab repair of the tunnel) project went through the process and E & C deemed that a 3<sup>rd</sup> Party contractor was not warranted, due to the expertise available in-house. In the event a concrete repair is deemed suitable as an in-house project, there is no Safety Department review / approval of the project details. However, if the project is deemed to be too large to be handled in-house, the Safety Department is involved in the Review and Approval process. APTA commends the staff for having the capability to conduct such work. **(10.8)**
2. One exception to the lack of a safety department review for an in-house project is noted to be the review of “hoarding” details due to the fire risk. APTA acknowledges the Safety Department’s review / approval due to the fire risk presented. **(12.2)**
3. The asbestos liner rehabilitation project requires abatement, which is being completed by a 3<sup>rd</sup> Party contractor and overseen by an abatement consultant. Type I and Type II asbestos work is laid out by those qualified and the layout procedures are reviewed and approved by TTC Occupational Hygiene. APTA commends the investment in the training to develop such expertise for conducting “non-abatement” asbestos work. **(7.1)**
4. The Structures Department utilizes its Structure Maintenance Database (SMD), which is the equivalent of the Maintenance of Way Information System (MOWIS) used by the Track Department to create Work Orders. In order to monitor and track the progression of degradations, an Excel spreadsheet has been created, with each “Structure-type” as its own file. Although the databases (SMD and Excel) are being utilized, neither lends itself to an effective report on the State of Good Repair and Asset Management System. The Track and Structures Department is looking forward to the expansion of the Maximo Enterprise Asset Management System to aid the department’s ability move to a life-cycle maintenance approach to its efforts. APTA acknowledges the efforts being made with the existing databases to continue to track the maintenance activities. **(10.6)**



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**T & S DEPARTMENT – STRUCTURE** (cont'd)

5. What was determined to be a requirement to replace six hundred fourteen Tunnel “rings” in the Yonge Street Tunnel (and be completed in 1,000 days), has been extended to the replacement of one thousand rings that is anticipated to be completed in the third quarter of 2013. APTA acknowledges the effort in assuring the State of Good Repair and the effect on safety of operations. **(10.6)**
6. The Leak Remediation project has become more effective with the utilization of pre-cut tunnel liners and newer hydraulic fittings to pump a less toxic mixture of acrylamide (chemically-activated acrylic / grout) used to eliminate leaks in the tunnel. APTA commends the development of initiatives to utilize less hazardous materials. **(20.1)**
7. The T & S Section is only responsible for the evaluation of bridges of the TTC ROW. However, T & S Section personnel continue to visually inspect the City of Toronto’s bridges that go over the TTC ROW to supplement Toronto’s inspection process. APTA commends the proactive effort. **(10.6)**
8. Bridge inspection has been expanded beyond the visual inspection to include tapping the structure to add an audible inspection to the process. However, in an effort to establish a greater level of confidence in the overall state of the TTC bridges, inspection of the bridge bearings is also to be accomplished by a 3<sup>rd</sup> Party. This additional inspection will require what is expected to require three years to complete. APTA commends the additional effort. **(10.1)**
9. The Beam Replacement group goes through a two-day “Bridge Rescue” training program conducted by a 3<sup>rd</sup> Party contractor, followed by a one-day refresher every three years. APTA acknowledges the effort. **(13.2)**
10. The repairs being effectuated to the tunnel liners and ring replacements are including monitoring systems to verify the repairs are remaining effective and are also being used to track degradation of the areas yet to be repaired. APTA commends the effort. **(10.6)**

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**T & S DEPARTMENT – ELECTRICAL**

1. The Electrical Department conducts Personal Risk Assessments for the work that is to be performed during the day, using a Personal Risk Assessment Form (PRAF). The Audit Team reviewed a sample of three such documents and commends the effort. **(17.1)**
2. The Technical Information Management System (TIMS) has been developed and maintained by the Engineering and Construction (E & C) CADD group. The Electrical Department CADD drawings are maintained utilizing the same system. APTA acknowledges the effort. **(18.3)**
3. The “Standard Practice for Document Control (SEC-EW-AD-AL-1/0” (January 17, 2002) is a well-written document that details the control mechanism for drawings, Manuals, etc. APTA acknowledges the document. **(12.4)**
4. The Audit Team reviewed several “S / E / C Supervisory Spot Checks” (Form 890/Aug. 2006) submitted by Supervisors. The documents demonstrated (by initialing) awareness of the Crew Leader, the Foreperson and the Supervisor who conducted the Spot Check. APTA commends the documented observations. **(10.2)**

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**T & S DEPARTMENT – STRUCTURE** (cont'd)

5. Audit Team review of Electrical Department's Monthly Safety Talk (Sept 7, Oct 5 & Nov 3, 2011) found the PowerPoint presentations to be well formatted, including substantial discussions of specific safety topics (Proper Lifting, Back Injuries & Ladder Safety), Joint Health & Safety Committee updates, questions and employee recognition. The SOP governing the Monthly Safety Talk (SEC-EW-SA-AL-11/0, dated February 20,, 2006) requires the Monthly Safety Talk to be performed at each Cost Centre. Minutes and Attendance Sheets are to be maintained and Supervisors are to ensure that copies of the Minutes of each Meeting and related materials are made available to those who may have missed the Meeting(s). Although the Audit Team was not able to review the Minutes or documentation of absent employees being provided the Minutes and related materials, APTA acknowledges the concept and materials provided. **(19.2)**
6. The Preventative Maintenance Activities of the Subway Wiring – Cost Centre 0726 tracking mechanism reviewed by the Audit Team demonstrated that the PM activities for the first two quarters of 2011 exceeded the targets in four of the six months represented and YTD totals exceeded the YTD Target. "Trouble Calls" have exceeded the target in each of the first six months of the year. Optimistically, the "Actual" completion has continued through the third quarter and will be successfully completed at Year's End. APTA commends the documentation and accomplishment for, at least the first two quarters. **(11.1)**
7. The Audit team requested copies of the last three Monthly Inspections performed by the Electrical Department's Joint Health and Safety Committee. The documentation reviewed demonstrated that five (5) different locations (Davenport, Duncan, Patten buildings @ Hillcrest, Arrow Garage and Russell AC / UPS Room) were inspected. In each case, "Housekeeping in front of AC board" was identified as a hazard. In all but one case, the "Action Taken" was listed as "Refer[r]ed to Zone Crew." The one exception was "Refer[r]ed to Carpenters." APTA acknowledges that an individual conducted an inspection of a different facility each month, according to a set schedule. **(10.1)**
8. A previous Audit recommendation ('08) was predicated upon finding "spent" fluorescent tubes in cardboard boxes, which were subject to open weather conditions and were severely deteriorated. An investment was made to the training of the contracted janitorial staff and in obtaining additional plastic containers to store the "spent" fluorescent tubes. Examination of the site at Hillcrest found additional plastic boxes and no evidence of improperly stored tubs. APTA acknowledges the improvement. **(10.11)**

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**T & S DEPARTMENT – STRUCTURE** (cont'd)

9. A previous Audit commendation referenced the efforts of the T & S Department and the Traction Power & Electrical Groups for initiating PPE requirements for electrical workers and natural fabric uniforms and Hazard / Risk Category 2 clothing. Such clothing is designed to protect electrical workers who work on or near equipment that is capable of generating an arc flash. Since that time TTC has invested in additional Flame Resistant clothing requirements (Category 4) that includes a flash coat, shin guards and Hoods. The Hoods are presently only issued to individuals as PPE for use when performing certain tasks deemed to be of higher risk. Presently, the “higher risk” activities have been determined from the internal analysis of the TTC employees associated with those tasks, e.g., the Trouble Crew is equipped with the FR Category 4 PPE, including the Hoods. However, TTC has completed the “Tender” period and will be choosing a 3<sup>rd</sup> Party to come in and evaluate the Hazard / Risk determinations to verify the in-house analysis and, possibly find other areas of risk not previously identified. The project will utilize the first three years of study to concentrate on the TTC substations and the final year will identify risks associated with AC rooms. APTA commends the original effort and the 3<sup>rd</sup> Party follow-up that will be conducted. **(20.2)**
10. The Training Program for a Licensed Electrician consists of three Semesters (two 10-week and 1 5-week durations) over a three-year period, with an 8,000 hour time-in-grade requirement. Internal Trainers and testing requirements exist for the Overhead Linesmen, both theoretical and practical. APTA acknowledges the program. **(13.1)**
11. The Traction Power Group (Substation, Overhead Wire and Staff) has a well-established Training Matrix that has already budgeted more than 8,000 hours of training for 2012. APTA commends the matrix and the planning process. **(13.1)**
12. The Traction Power Group’s Forepersons conduct Crew Inspections of Substations and Overhead crews and track the checks as a part of the Group’s KPIs and are well on their way of meeting the target of 730 and 360 documented observations, respectively, for the year. APTA commends the practice. **(16.3)**

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**PLANT**

**Effective Practice**

1. Elevators and escalators are maintained, except for the electrical “feeds” to escalators and elevators (maintained by T & S Electrical) the monthly and annual preventive maintenance and inspections of those devices is carried out by a 3<sup>rd</sup> Party Contractor and TTC Plant employees, respectively. Annual inspections are performed by the Technical Standards and Safety Authority (TSSA), which enforces Ontario’s Technical Standards and Safety Act (2000) and administers the training and certification of “Elevating Device Mechanics.” The maintenance of the elevators is accomplished by the 3<sup>rd</sup> Party Contractor, as there are so few elevators within the system. The escalator maintenance function resides as an In-house function. APTA acknowledges concept. **(15.3)**
2. The Plant Maintenance Department has developed and maintains the CARE initiative, utilizing observations of normal activities to identify risks, hazards and safe / unsafe work practices and issue positive reinforcement. APTA commends the effort. **(19.2)**
3. Just several years ago, the Plant Maintenance Department had Open Work Orders dating back to 2003. With the investment of effort, the Department can now say that the oldest Open Work Order is dated 2010. APTA commends the progress. **(10.2)**
4. The Audit Team reviewed the most-recent Hazard Identification Risk Assessment (HIRA) that was created by the Department for the use of the Lift Gate for Truck 676. The assessment was well done and APTA commends the development and implementation of the HIRA process. **(19.1)**
5. The Plant Maintenance Department does not track or report on Preventive Maintenance compliance as a Key Performance Indicator (KPI). The Departmental KPIs for elevators are related to Availability and to Reliability. Using the data available, the reliability of the elevators was below the target for 2010. Accordingly, the Elevator maintenance Contract was terminated and a new contractor was retained at the end of 2010. NOTE: The elevator reliability numbers evaluated YTD have indicated that the new contractor was not producing and that contract was also terminated. APTA commends the data utilization to implement effective decisions. **(16.3)**

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**PLANT** (cont'd)

6. The Plant Department employees drive Commission vehicles and as such, are required to complete a Defensive Driving course as a new-hire. APTA acknowledges the requirement. **(10.2)**

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**T & S DEPARTMENT – STRUCTURE MAINTENANCE**

**Effective Practice**

1. The Track and Structure Department, in an effort to provide reasonable assurance that its Front Line Supervisors and those they supervise are complying with all applicable rules, policies and standards, conducts Quality Inspections of work areas to evaluate documented Job Briefings, PPE, Work Methods, Work Zones, Work Car operations, Power cuts, working conditions and Tools & Equipment. For work that is not directly supervised, the QA inspections are performed at least four (4) times (at least two for Track and two for Structure crews) per month; for directly-supervised work the requirement is once a month for each of the two types of crews. APTA commends the effort. **(15.3)**
2. Documented “Circle Checks” (Pre-trip Inspections) are performed for all Work Cars, prior to moving a vehicle. Completion of this form also has a specification that the Operator self-certifies as being Fit-For-Duty. When completed, the form is given to the Foreperson / Assistant Foreperson who then double-checks the Pre-Trip Inspection Report, brakes and consist couplings, etc., prior to movement. The Foreperson / Assistant Foreperson documents his / her actions on a “Supervisor Workcar Release Checklist” and it is proscribed that this check may not done “remotely.” APTA commends the effort. **(11.8)**
3. The footer of the Track and Structure Department SOPs contains the sentences, “The online version of the SOP is recognized as a controlled document. Any printing of this document, whole or in part, renders the hard copy uncontrolled. Before using a printed copy, verify that it is the most current version.” APTA commends the language. **(12.1)**
4. Documented Job Briefings occur prior to the start of work at the site. The documentation (Job Briefing Records, Form 883) is submitted to the Superintendent and is to be retained in accordance with the Record Retention and Destruction Policy. APTA commends the documented effort. **(18.3)**
5. The T & S Department’s SOP “T & S Training Requirement for Safety” (TS-0102-22; Rev 3, April 20/09) is a very thorough document, which details a Training Matrix for each of the Groups (Subway/SRT Track, Streetcar Way, Structure Engineering, Structure Maintenance, Maintenance Engineering) *and includes* a Matrix for Administrative Staff. APTA considers the identification of training requirements for Administrative Staff to be an **Industry Leading Effective Practice. (10.3)**



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**SUPPLEMENTAL FORM**

**T & S DEPARTMENT – STREETCAR TRACK MAINTENANCE**

**Effective Practice**

1. Track maintenance on the Surface and Subway utilize two different databases for tracking work performed and generating Work Orders (WOs). The Surface Track Department utilizes Maximo as its Management Information System (MIS), which permits the use of a handheld PC (“Minimo”) to download the WOs and generate the Preventive / Programmed Maintenance (PM) and / or Corrective Maintenance (CM) activities. As there is no WIFI ability to remotely download the information, the download is performed by returning to the work station and connecting to the laptop / desktop computers found there. APTA acknowledges the effort. **(10.2)**
2. APTA reviewed the Hercules, SLR Inc. invoice “12MIS-00897548,” dated 22-Aug/2011 for the “Visual” and/ or “Proof” Test certifications of chain slings and links specified to specific slings. APTA commends the practice of the NDT of slings, chains and links as a part of an effective program. **(10.7)**
3. The Audit Team reviewed the Hazard Identification Risk Assessment (HIRA), which was dated 2010-03-15 for the tasks of the Streetcar Way Track Patrol and was found to have entries for various risks (Mechanical, Chemical, Body Mechanics, Stress, Noise, Gravity and Electrical), a rating for each task, (i.e., Low, Medium High, with 1 to 25, 25 to 50 and 50 to 100 numerical ratings, respectively), and a “Risk Score,” The second half of the document contains a list of the Procedures, Hardware and Environment in place to mitigate the risk and the final determination of “Sufficient” for each of the identified tasks. APTA commends the effort. **(12.1)**
4. The Track Patrol Inspection – Streetcar Way Procedure (CWP-IN08-02, Issued March 1, 2002 and Revised July 20, 2009) was found to be quite thorough and included, but was not limited to, identification of the Types of Inspection (Visual and Ping Testing), Rules and Responsibilities, Quality Assurance, Slow Order creation, Personnel Requirements, Equipment Lists (including calibration references), Safety Requirements & Practices, Priority Ratings for defects found and Documentation. APTA commends the effort. **(12.4)**
5. Within the past four (4) months, the Streetcar Way Department has initiated a Quality Check program, wherein Senior Supervisory Staff are tasked with visiting individual worksites to evaluate the PPE compliance, the Safe work Zone setup / maintenance and the planning of the work. APTA commends the initiative. **(15.3)**
6. The Streetcar Way department has invested in a mechanical sweeper (HAKO) that mechanically removes sand from the section of track preceding a switch; the area where the Streetcar predominately stops (the carstop). The removal of sand accumulation from the track in advance of switches is now a weekly maintenance function. APTA commends the effort. **(10.1)**



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**ENGINEERING & CONSTRUCTION**

**Effective Practice**

1. The Engineering Department began its discussion with a Safety Briefing that encompassed review of the Emergency Plan, sound of the warning system, moving to the assembly area and wash room locations. The information provided followed closely with the “TTC Engineering & Construction – 5160 Yonge Street, 6<sup>th</sup>, 11<sup>th</sup> & 13<sup>th</sup> Floor (Floors leased by TTC) Emergency Evacuation Plan (July 28, 2011), which supplements the Occupant Emergency Guide that is provided by the Building Management group. APTA commends the practice and the Emergency Evacuation Plan, **(14.1)**
2. Consistent with good practice, the Engineering *Design Manual* (rev. November 7, 2011) was reviewed and updated over a two and a half-year period. APTA commends the effort. **(12.1)**
3. Crime Prevention Through Environmental Design concepts are incorporated into the conception and design phases of project work. APTA acknowledges the effort. **(24.1)**
4. Senior Engineers have been designated as Safety-sensitive employees and are subject to the implementation of the Fitness-For-Duty Alcohol and Drug Policy that was implemented in 2010, following Commission approval to implement a program (absent Random Testing) in 2008. The TTC Fitness-for-Duty requirements are explained to 3<sup>rd</sup> Party Contractors, who must abide by that Policy when conducting work for the TTC. Although TTC employees do not call for testing of Contractor employees who may show signs of drug use and / or alcohol abuse, TTC reserves the right to inform the Contractor that a certain employee is not permitted to work on the TTC project. APTA commends the process. **(21.2)**
5. The TTC has developed an intranet based (M65-2) Technical Review Routing System to support the interdepartmental design and review comment and signoff process. APTA commends this initiative. **(15.3)**

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**ENGINEERING & CONSTRUCTION** (cont'd)

6. The Department has identified a demographic gap in terms of mid-level Engineers. To fill this gap, the Department has utilized the efforts of retired Senior Engineers to work, either part-time or as a consultant. APTA acknowledges the practice. **(12.5)**
7. Construction projects of high value all incorporate a percentage of “Value” engineering and are insured through an Owner-Controlled Insurance Program (OCIP / “Wrap-up”). TTC has found these methods to produce very favorable results. APTA acknowledges the process. **(22.1)**
8. The TTC’s “Station Standard” is applied for all Station construction / re-habilitation to provide for consistency in the design and construction. APTA acknowledges the process. **(10.12)**
9. The Safety Certification process is being applied to the Toronto-York Spadina Subway Extension (TYSSE) project and is considered a subset of the TYSSE Commissioning Program, which requires a Commissioning Test Plan, System Safety Certification Plan, Training Plan, O & M documentation Plan, Mobilization Plan, Warranty & Warranty Administration Plan and a Deficiency Management Plan and is modeled after the TTC Safety Department Guidelines and the FTA / APTA Handbook for Safety Certification. APTA acknowledges the effort. **(10.12)**
10. The Engineering and Construction Departments have access to the Pathlore Training Database and check it regularly to determine planning efforts and make certain that required certifications do not lapse. APTA acknowledges the effort. **(13.6)**

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**SUPPLEMENTAL FORM**

**MATERIALS MANAGEMENT & PROCUREMENT**

**Effective Practice**

1. Upon entering the Materials Management Office, one notices the posting of the Departmental Employees all of the employees who have consecutive years of fewer than two lost-time days. APTA acknowledges the publicity surrounding successful careers and demonstration that one can be successful with attendance goals. **(19.1)**
2. The Materials Management Department's information system (Material Management System) existed for approximately twenty (20) years having the capabilities of Inventory and Accounts Payable. The system is being replaced by a new Inventory Financial System (IFS), which will deal with Inventory, Accounts Payable, Purchasing and be a Vehicle Work Order System. The system will also offer the capability to utilize bar coding. A study has been conducted and implementation of bar coding antennas, using the functional specifications for the warehouse and it should be completed by the end of the month, with a targeted date of implementation in Spring 2012. APTA acknowledges the effort. **(18.3)**
3. The Department maintains a Training Matrix and uses an Access Training Database to conduct Succession Planning within the Department. Training needs are assessed after annual meetings with Departmental personnel to determine their individual goals for advancement. The Management Team then designs training programs that foster the growth desired and maintains an "Individual Development Portfolio." APTA commends the initiative. **(12.5)**
4. The Materials Management Department also utilizes the capabilities of the Operations Training Center that provides 90-day notifications of recurrent training requirements. APTA commends the effort. **(13.1)**
5. The Materials Management Security Escalation Plan continues to be reviewed and updated as warranted on an annual basis. APTA commends the effort. **(24.1)**
6. During the brief tour of the Warehouse, it was noted to follow good housekeeping, pre-trip inspections of the industrial trucks observed were complete and in three out of three cases, operators of the industrial trucks were operating them with the seat belts fastened. APTA commends the practices. **(12.3)**
7. Shelf life of degradable items is conducted by time-dating the materials by Lots, which are tracked within the IFS system. If inventory is within 30 days of expiration, the end-users are notified to evaluate the condition of the items. APT acknowledges the practice. **(23.1)**

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**MATERIALS MANAGEMENT & PROCUREMENT** (cont'd)

8. Materials and Procurement Department has 64,000 items across the property. They store 25,000 items in their store. They utilize an algorithm to notify employees which items to check at a predetermined frequency on a daily basis. Inventory in the “A” classification is counted 4 times every year, “B” classification is verified twice a year and inventory in the “C” classification is verified once every 4 years. The algorithm selects the daily count of 10% of the A’s, 20% of the B’s and 70% of the C’s. APTA acknowledges the inventory count verification schedule. **(23.1)**
9. The HIRAs produced for employees of the Materials Management Department are reviewed two times per year, with the formal update occurring in February. APTA acknowledges the process. **(19.1)**
10. The Material & Procurement Department’s Joint Health and Safety Committee conducts monthly facilities inspections. They use checklist to ensure safety critical items are inspected. The minutes are recorded and kept on the online MinTrack portal. APTA commends the monthly facility inspections. **(10.1)**
11. Background checks are not performed on regular contractors. TTC does conduct due diligence reference checks to verify the company can provide the quality of service they are bidding on. The security guards monitoring the facilities go through “more thorough” investigations to ensure they are trustworthy and qualified. APTA acknowledges this practice. **(12.5)**
12. The Department has established a “Green Procurement Policy,” which was developed over three phases. Initially (2008) several Pilot Projects were established in seven of the Cost Centres, with a Consultant-provided training program. The second phase included more vendor interaction and training (314 people) and the establishment of a Steering Committee. Phase III has become “the way we do business” and has established its [greenprocurement@ttc.ca](mailto:greenprocurement@ttc.ca) website to aid vendors in providing the goods and services desired by the Commission. APTA commends the effort. **(23.2)**

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**SUPPLEMENTAL FORM**

**HUMAN RESOURCES – FITNESS FOR DUTY**

**Effective Practice**

1. The TTC “Fitness for Duty” Policy identifies positions to which the Policy applies including, “Safety-sensitive,” “specified management” and “designated executive.” Anyone holding one of those identified positions are subject to the possibility of a “Reasonable Cause” or “Post-Incident” position. Supervisor / Managers have the capability to go to the Human Resources intranet site and click on the “Fitness for Duty” tab. In such cases, a Supervisor / Manager may need a ready resource to assist with making the correct determination. APTA commends the availability. **(21.1)**
2. Supervisory training related to the TTC Drug and Alcohol Policy are conducted as a part of every newly hired / promoted Supervisor as a part of a twelve-month training program. The training is conducted via E-learning modules and the Fitness-for-Duty Module is a half-day session. APTA acknowledges the effort. **(21.2)**
3. Although the question was raised about the benefits of the Drug & Alcohol Policy and program implementation and could not be answered with any specificity, the answer was, “We believe the investment was worthwhile.” APTA commends the TTC and the efforts put forth in the area of Fitness-for-Duty and considers it to be a Canadian **Industry Leading Effective Practice**. **(21.2)**
4. E-learning development by the Human Resources Department has been growing steadily. The goal is for the introduction of ten (10) more E-learning modules in 2011. APTA commends the aggressive development demonstrated. **(13.1)**
5. The Human Resources Department liaises with the Employee & Family Assistance Program (EFAP) in support of helping employees deal with troubling issues, including substance abuse. APTA acknowledges the effort. **(21.1)**
6. Another aspect of the Human Resources Department relates to the “Light Duty – Transitional Work” efforts, which attempt to get employees back to work and remain as productive as they can be; lessening the drain of claims benefits. APTA acknowledges the effort. **(21.1)**
7. TTC has partnered with community health providers to assist with a suicide awareness program called “Gatekeeper.” Training is provided to supervisors and employees regarding suspicious suicidal behaviors and has helped to lower suicides. APTA commends this suicide awareness and prevention program. **(17.1)**

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**FINDINGS AND OBSERVATIONS**

**SUPPLEMENTAL FORM**

**MARKETING, CORPORATE COMMUNICATIONS & CUSTOMER SERVICE**

**Effective Practice**

1. The Marketing Department, although not mentioned as having any role or responsibility to support the safety effort in the TTC System Safety Program Plan conducts 2 -3 Campaigns per year to support the safety initiatives. Suicide prevention signs have been posted throughout the system announcing the purposes of the DWA and corresponding crisis assistance (Distress Center) that is readily available. Other campaigns have included the production of “Ten Steps to Safety” (related to Streetcar Stops), Platform Screen Video presentations, *Metro* messages 3 days per week and an upcoming campaign regarding standing behind the Yellow Line. APTA acknowledges the department’s efforts to support the distribution of the TTC’ Safety Messages. **(17.1)**
2. The Customer Service Department has created an Advisory Panel that has helped to improve the customer service and interaction with the public at TTC. Telephone Surveys are conducted three times per year resulting in several “e” initiatives to notify and update the public on service interruptions, current schedule, next train arriving, etc. In addition, through the [My TTC e-Services](#) link on the [www.ttc.ca](http://www.ttc.ca) website, customers can set up their account to automatically send advisories, service information , e-alerts and e-newsletters. APTA acknowledges the efforts. **(17.3)**
3. The TTC Newsletter *Coupler* is presently in its 85<sup>th</sup> year of publication “linking TTC Employees.” It is being delivered electronic through the website. The newsletter includes several safety topics including the Work Safe, Home Safe initiative, and other Fitness-for-Duty initiatives such as wellness reminders, healthy lifestyle, fatigue awareness, flu clinic notifications. Employees are also notified through Eblasts that are sent to employees who sign up for it. The most-recent edition (Vol. 86, No. 7) has a message, “Take the ANC test,” which is an “Adjusted Neck Test” to enable individuals to take a personal test (neck measurement, and three YES / NO questions), which is an indicator of the likelihood of having sleep apnea and suggestion of further study. Implications of such an item will affect the Fitness-for-Duty of certain individuals. APTA acknowledges the efforts. **(17.4)**
4. The language found in the TTC Media Relations Policy is very clear that the Chief General Manager and the Director, Corporate Communications or designees (Subject Matter Experts) are the only individuals designated to speak with the media regarding TTC business. There is currently no training program for the SMEs, as each is “coached” prior to the time one is designated to speak with the media. APTA acknowledges the language and its intent. **(17.1)**

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**SUPPLEMENTAL FORM**

**MARKETING, CORPORATE COMMUNICATIONS & CUSTOMER SERVICE** (cont'd)

5. Transit Control is taking a more-active role in response to Social Media, taking over e-Alert and Twitter to provide real time information to customers. Compliments / Complaints will still be passed on to Corporate Communications and Customer Service, respectively. APTA acknowledges the effort. **(17.3)**
6. The TTC and its Customer Service interactions extend to weekly customer engagements at heavily-used stations in an effort to keep on the pulse of the public, to get managers out onto the system to see what customers see. The station of the week is “tweeted” and announced to the public ahead of time, as the day of the week, station and time of occurrence varies week-to-week. APTA acknowledges the interaction between managers and the public. **(17.3)**



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**FINDINGS AND OBSERVATIONS**

**SUPPLEMENTAL FORM**

**TRAINING**

**Effective Practice**

1. The Operations Training Center has now been brought under the Human Resources Department. The Group (more than 100 Instructors) delivers over 200 Training Programs to the Employees of the TTC. More than 13,000 Training Sessions were conducted in 2010. APTA acknowledges the effort. **(13.1)**
2. Each of the four (4) Training Chiefs conduct quality checks of every Instructor two times per year. Such goals are contained within the Employee Performance Appraisal documentation of the Training Department. APTA commends the effort. **(13.5)**
3. The TTC Training Department provides curriculum for the Rail Maintenance and Transportation, as well as TTC Bus Maintenance and Operations. The training material is reviewed in 3 to 5-years cycles with the determination of frequency being related to new equipment, rules changes and revision to work practices. APTA acknowledges this training program review and update process. **(12.1)**
4. In preparation for the new Toronto Rocket equipment, the Training Department has elevated the standards for their training instructors. The new standards include a 2 year degree from an accredited Junior College in electronics and the Training Department does include current employees with these traditional in consideration and interview process. The Training Instructors will become the subject matter expert on the equipment and are a valuable resource in supporting the transition challenges associated with the new technology. APTA commends the department for this initiative. **(13.5)**
5. The TTC Training Department provided the Status Report on Course Documentation – November 2011, which is a comprehensive list of specific training modules, training subject matter and supporting audio / visual materials. This living document provides a central source for the identification of training programs and training materials specific to the module. APTA acknowledges this plan. **(13.1)**



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**SUPPLEMENTAL FORM**

**INFORMATION TECHNOLOGY**

**Effective Practice**

1. IT continues the effective practice that, depending upon one's level of access ("elevated" or "non-elevated"), the server will cause hibernation of one's computer after only one minute or five minutes, with the more stringent requirement applied to those who have the "elevated" level of access. Additionally, TTC Blackberries go into hibernation after 30 seconds of inactivity to protect the network and reduce the risk of security vulnerability. APTA commends the practice. **(24.1)**
2. An Annual penetration audit is performed to verify the security of the system. This is accomplished through the use of a 3<sup>rd</sup> party attempting to break into the system. The verification is allowed to try to attacks IT, but not Transit Control, which is maintained by the Communications Group of the Plant Department. The penetration testing has not been successful in penetrating the strong security measures set up by the IT Department. Vulnerabilities, if found are discussed and fixed. APTA commends the practice. **(24.1)**
3. The IT Department does have a back-up site, to which all back-up data is stored. The site is a "warm" site that requires six to eight hours to fully restore the system. The Department is in the process of enhancing its ability to utilize the back-up facility from the "warm" site to a "hot" site and is approximately 75% of the way. The site is tested three times per year. Additionally, the Department has established a Disaster Recovery Plan, based upon a Corporate Business Impact Assessment, which led to effective prioritization of the steps needed to be taken to recover. APTA commends the effort. **(24.2)**
4. The Information Technology Department continues the practice that passwords will not only be changed (forced by the system), every ninety (90) days, but also requires them to be complex (i.e., combinations of numbers, letters and symbols), as specified in the Information Technology Services Department "TTC Password Standards" (AD-091-01), Version 1.0.0, February 4, 2009.. APTA acknowledges the requirement. **(24.1)**

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**SUPPLEMENTAL FORM**

**INFORMATION TECHNOLOGY** (cont'd)

5. The Information Technology Services Department “TTC Password Standards” (AD-091-01), Version 1.0.0, February 4, 2009 contains a Revision Page of the document’s history of revisions. While it may not be the first Department / Group to utilize such a “Document History” sheet as a part of the document, APTA considers the practice to be commended. **(18.3)**
6. In terms of restricted access to web sites, “Websense” restricts access to the “seven deadly sins” and illegal sites are blocked. Additionally, other category sites that use extensive bandwidth and slow the system down are restricted. Unrestricted access is provided to certain small group of employees e.g., Special Constables. **(24.1)**

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**FINDINGS AND OBSERVATIONS**

**SUPPLEMENTAL FORM**

**SIGNALS & TRAIN CONTROL ENGINEERING / INFRASTRUCTURE PROJECTS**

**Effective Practice**

1. The Signal & Train Control (STC) work group recognizes their core objectives as; 1) assist in the design of capital projects, 2) design in the construction phase and 3) support operations. These objectives are supported by Chief Signal Engineer, Senior Project Manager and a staff of 50 design specialists. Some construction projects are also supported by STC staff. APTA acknowledges the effectiveness of the construction and operations support program. **(10.12)**
2. Currently, the TTC - STC work group has received approval of \$340m for development of the Sheppard Extension, of this amount the City of Toronto will be funding a significant portion of the development. In 2012 TTC will revise these dollars to \$407m. In the event that TTC would lose the funding, STC has formulated a contingency plan to re-signal the existing system. APTA acknowledges the prioritization of capital program based on available resources. **(10.6)**
3. In preparation for the full funding the STC work group has initiated the development of a System Certification Plan that defines the development of an Engineering Testing Teams that will include participation of contractors who will be testing systems and equipment to ensure they function as designed. The testing guidelines the contractors will be using can be found in the Safety Certification Plan. APTA acknowledges this safety certification process. **(18.4)**
4. The STC work group has developed a process to track and manage Circuit Change. The newly revised process includes shared access that is password protected and with the partnership of the IT work group, the Excel documents has been made available to the Signal Maintenance work group during the 3rd quarter of 2011. Contractors in the field who have a password can access the Drawing Packages. APTA acknowledges this plan. **(18.3)**
5. A Circuit Change is only considered completed when all required processes held in the spreadsheet have been checked off and the Drawing Coordinators (*Drawing Engineering Drawings Coordinator – worksheets 2010 – 1999*) agree that the as built drawings are complete, have been distributed to the appropriate shareholders and are filed away in a vault. As a means to ensure effective oversight of this process, the Circuit Change Review Board meets monthly to review the overall progress on the changes and to set priorities. The Change Review Board is composed of senior Signals Engineering and Maintenance staff. APTA acknowledges this program. **(18.4)**

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**FINDINGS AND OBSERVATIONS**

**SUPPLEMENTAL FORM**

**MAINTENANCE OF WAY - SIGNALS**

**Effective Practice**

1. The Signal and Track departments coordinate their activities to provide a monthly joint switch inspection. This exceeds the APTA RT-S-FS-002-02, *Standard for Rail Transit Track Inspection and Maintenance* which sets an annual requirement for joint switch inspection. APTA commends the effort. **(10.1 and 10.4)**
2. The Signal Relay shop is ISO 9000 certified. All 20,000 relays are individually bar-coded and traceable within the system. Vital relays are replaced and rebuilt every 5 years and line relays are replaced and rebuilt every 10 years. This process eliminates the need to maintain a signal gang to “slide” relays. APTA commends the quality and control practice over this safety critical process. **(10.8)**
3. As of October 31, 2011 the Signals Group had achieved more than 2 million “Accumulated Injury Free Hours,” with the last injury occurring in April 2000. APTA commends the achievement. **(19.1)**



**Toronto Transit Commission: System Safety Program Corrective Action Plan (CAP) Status Report**

APTA Rail System Safety Management Program

Date of Audit: October 31 – November 19, 2011

Corrective Action Plan Last Updated: August 28, 2013

**NEEDS IMPROVEMENT**

APTA	Recommendation (as stated in APTA report)	Corrective Action / Comment (Transit Agency)	To Be Completed On or Before	Assigned Responsibility	Element Status (to be completed by APTA)
3.2 SSPP Goals	APTA recommends that requirements for annual Department Safety Action plans be incorporated into the SSPP and each identified department create one.	<p>Management supports this approach. The Safety and Environment Department is working with line management to define the appropriate elements for department level plans including periodic updates and will amend the System Safety Plan or other appropriate documentation to create a corporate standard.</p> <p>August 2013 Update:</p> <p>The TTC Safety, Health, &amp; Environment Management System (SH&amp;E) Manual (Approved July 19/2013) describes the overall system to manage safety, health, and environmental risks. Elements of this manual replace the existing System Safety Plan.</p> <p>Section 2.3 of the Safety, Health &amp; Environment Management System Manual establishes the requirement for corporate and department SH&amp;E objectives and business plans to meet the commitments of the TTC Safety, Health &amp; Environment Policy.</p>	March 2012	Safety and Environment Department	Closed subject to verification
9.1 Internal Audits	APTA recommends that the Internal Safety Audits be resumed and focus on safety- and mission-critical activities	<p>Management will prepare a plan to re-introduce a management system audit program as part of the 2013 work plan through reallocation of staff resources.</p> <p>August 2013 Update:</p> <p>Safety and Environment staff have contracted with an external third party to conduct a management system audit, based on legislative requirements, in Q4 2013.</p>	January 2013	Safety and Environment Department	Closed subject to verification



**Toronto Transit Commission: System Safety Program Corrective Action Plan (CAP) Status Report**  
 APTA Rail System Safety Management Program  
**Date of Audit: October 31 – November 19, 2011**  
**Corrective Action Plan Last Updated: August 28, 2013**

<b>COMMENDATIONS</b>	
<b>Safety Element No.</b>	<b>DESCRIPTION</b>
<b>3 SSPP Goals</b>	APTA commends the TTC management team for its continued commitment to improving upon its system safety program. TTC has consistently demonstrated due diligence to the safety and security of its customers and employees. This open commitment to improving safety provides an excellent foundation for a proactive safety culture that can be supported by all TTC employees. <b>(Supplemental form page 1 #1)</b>
<b>6 SSPP Control</b>	The TTC has developed an intranet based (M65-2) Technical Review Routing System to support the interdepartmental design and review comment and signoff process. APTA commends this initiative. <b>(Supplemental form page 26 #6)</b>
<b>8 Accident Incident Reporting</b>	Currently, both the Greenwood and David Gunn shops are experiencing a decrease in the number of injuries and, as a means to build on this success both shops have collaborated on the refinement of the Investigation of Incidents process. The core tool used in the investigation process is the Investigation Form, which is designed to capture critical information in the investigation of the incidents to determine root causes. The Investigation Form is intended not to place blame but rather to gather information in a manner that will reflect what the employee was doing at the time of incident, what will be done as a result of the investigation and what will be done going forward as part of any corrective actions identified. A Safety Liaison has been appointed to work with the Safety Department to focus on the human behaviour aspect rather than just the statistical information. The progression of the Investigation Form moves in bottom to top direction, starting with the Foreperson, then to the Supervisor and to then to the General Superintendent for review. Upon review, the General Superintendent determines if the investigation will be an agenda item at the monthly Safety Meeting. APTA commends this accident investigation initiative. <b>(Supplemental form page 6 #3)</b>
<b>9 Internal Safety Mngmt</b>	The 2008 APTA audit identified eleven (11) areas of noncompliance to the safety program elements. All eleven audit “Needs Improvement” findings have been addressed by TTC. In addition, the 2011 audit identified numerous areas where program enhancement comments noted in the 2008 audit Management Letter were also addressed. APTA commends the responsiveness of the management staff to the APTA audit findings as a means for continuous safety improvement. <b>(Supplemental form page 1 #2)</b>
<b>9 Internal Safety Mngmt</b>	The Wilson Carhouse employees have achieved 200,000 hours of injury free and 100,000 accident free performances. APTA commends the Wilson Carhouse team and all those TTC employees supporting employee safety at this location. <b>(Supplemental form page 12 #2)</b>



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 APTA Rail System Safety Management Program  
**Date of Audit: October 31 – November 19, 2011**  
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<b>COMMENDATIONS</b>	
<b>Safety Element No.</b>	<b>DESCRIPTION</b>
<b>10 Facilities</b>	The Leak Remediation project has become more effective with the utilization of pre-cut tunnel liners and newer hydraulic fittings to pump a less toxic mixture of acrylamide (chemically-activated acrylic / grout) used to eliminate leaks in the tunnel. APTA commends the development of initiatives to utilize less hazardous materials. <b>(Supplemental form page 18 #6)</b>
<b>11 Vehicle Maint.</b>	The APTA Audit team was impressed with the extensive maintenance knowledge base, expertise and pride exhibited by the Shop management staff during a tour of the facility. APTA commends the TTC for its extremely competent and professional management team. <b>(Supplemental form page 11#1)</b>
<b>14 Emergency Response Planning</b>	In addition, the Analysis and Procedures work group develop, coordinate, activate and facilitate tabletop drills, communication drills and full scale community emergency response exercises. The purpose of these drills / exercises is to test TTC's emergency response procedures and communication process. Upon completion of the exercises a "Hot Wash" and "Final Debrief" are conducted and documented. The Analysis and Procedures work group determines if any revisions or updates are needed to be made to the emergency response plans and procedures. APTA commends this emergency preparedness program initiative. <b>(Supplemental form page 4 #4)</b>
<b>17 Inter Agency</b>	The Signals, Electrical and Communications (SEC) Joint Health & Safety Committee continues to produce a quarterly "Newsletter," a part of which, is a table indicating each of its Groups, the "Date and Level of the Last Injury-Free Plateau Reached," the "Date of the Last Lost Time Injury" and the "Accumulated Injury Free Hours." As of October 1, 2011, the Operations Branch – Track & Structure Department earned the TTC's "Zero Injury Award," with the Signals group leading the way (into its eleventh consecutive year and more than 2.01 Million hours) without a Lost Time Injury. APTA commends the investment in the production of the quarterly document to advertise the fact that hazardous work can be conducted in a safe manner. <b>(Supplemental form page 15 #8)</b>
<b>19 Employee Safety Prog</b>	The TTC has continued to make significant progress through its proactive safety initiatives such as the Work Safe / Home Safe program. The organization continues to be an industry leader in the development of an effective safety culture. Safety management system processes in place have been focused on ensuring lessons-learned from previous incidents are not repeated. APTA commends the TTC for its continuous commitment to safety as Priority One within the organization. <b>(Supplemental form page 1 #3)</b>
<b>19 Employee Safety Prog</b>	The Safety Culture Survey assessed the progress made in ten (10) different safety culture factors. Improvements were achieved in nine (9) of those factors. APTA commends the TTC for its open commitment to improving workplace safety. <b>(Supplemental form page 2 #2)</b>



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 APTA Rail System Safety Management Program  
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**Corrective Action Plan Last Updated: August 28, 2013**

<b>COMMENDATIONS</b>	
<b>Safety Element No.</b>	<b>DESCRIPTION</b>
<b>23 Procurement</b>	<p>The Department has established a “Green Procurement Policy,” which was developed over three phases. Initially (2008) several Pilot Projects were established in seven of the Cost Centres, with a Consultant-provided training program. The second phase included more vendor interaction and training (314 people) and the establishment of a Steering Committee. Phase III has become “the way we do business” and has established its <a href="mailto:greenprocurement@ttc.ca">greenprocurement@ttc.ca</a> website to aid vendors in providing the goods and services desired by the Commission. APTA commends the effort.</p> <p><b>(Supplemental form page 29 #12)</b></p>

<b>INDUSTRY LEADING EFFECTIVE PRACTICES</b>	
<b>Safety Element No.</b>	<b>DESCRIPTION</b>
<b>10</b>	<p>The T &amp; S Department’s SOP “T &amp; S Training Requirement for Safety” (TS-0102-22; Rev 3, April 20/09) is a very thorough document, which details a Training Matrix for each of the Groups (Subway/SRT Track, Streetcar Way, Structure Engineering, Structure Maintenance, Maintenance Engineering) <i>and includes</i> a Matrix for Administrative Staff. APTA considers the identification of training requirements for Administrative Staff to be an <b>Industry Leading Effective Practice</b>.</p>
<b>21</b>	<p>Although the question was raised about the benefits of the Drug &amp; Alcohol Policy and program implementation and could not be answered with any specificity, the answer was, “We believe the investment was worthwhile.” APTA commends the TTC and the efforts put forth in the area of Fitness-for-Duty and considers it to be a Canadian <b>Industry Leading Effective Practice</b>.</p>