



**GEORGIA DEPARTMENT OF TRANSPORTATION**

**ATLANTA STREETCAR SYSTEM  
2015 SAFETY AND SECURITY SPECIAL ASSESSMENT  
FINAL REPORT  
February 5, 2016**



**PREPARED FOR**  
State Safety Oversight Program  
Division of Intermodal  
Georgia Department of Transportation  
*In partnership with the*  
Federal Transit Administration

**PREPARED BY**  
Dovetail Consulting, Inc.

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# Acknowledgments

The Georgia Department of Transportation would like to thank the City of Atlanta, MARTA, and the Atlanta Downtown Improvement District personnel for their professionalism and cooperation throughout the assessment process. The Department would like to extend a special thanks to all of the personnel who participated in interviews, provided numerous supporting documents for review, coordinated access to facilities, vehicles and equipment, provided demonstrations, and escorted the assessment team during the field observations.

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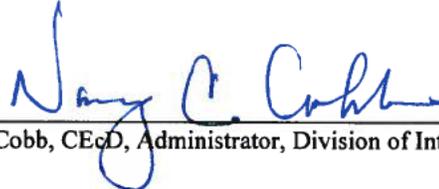
# Approvals

The individuals below, approving the Special Assessment Report of the Atlanta Streetcar System, verify that it was prepared as required by the Moving Ahead for Progress in the 21<sup>st</sup> Century (MAP-21) Act, 49 CFR Part 659.29 State Safety Oversight Rule and the Georgia Program Standard; that they are authorized representatives of the Georgia Department of Transportation (GDOT); that their signatures attest that the contents of this report are understood, accepted and approved; and that they are committed to supporting the Atlanta Streetcar System in the implementation of the agreed upon corrective actions and strategies resulting from the report.

**APPROVED BY:**

  
\_\_\_\_\_  
Carol L. Comer, Director, Division of Intermodal 02/15/2016  
Date

**RECOMMENDED FOR APPROVAL BY:**

  
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# Executive Summary

As required by 49 CFR Part 659.29 State Safety Oversight Rule and the Georgia Program Standard, the Georgia Department of Transportation (The Department), in conjunction with the Federal Transit Administration (FTA), conducted a Special Assessment of System Safety and Security at the Atlanta Streetcar System. Specifically, Section 7.3 of the Program Standard, Other GDOT SSO Reviews states,

*At its discretion, GDOT may conduct reviews or special assessments of issues related to system safety and system security at the City system. In addition to the specific readiness reviews... GDOT may initiate a review of a particular subject matter area(s) in response to a given hazard, accident, or incident or trend of such event(s).*

In addition, section 20021(a) of MAP-21, adopted in its entirety as section 5329 of U.S.C. Title 49 Chapter 53, requires each State to develop an SSO program with the authority to require, oversee, and enforce rail transit agency safety plans; to investigate accidents and safety concerns a rail transit systems; and to require rail transit agencies to correct and resolve safety deficiencies and hazards. MAP-21 also creates a new regulatory role for FTA and the States, providing FTA significant authority to strengthen public transportation system safety and further several important goals including safety, safety of good repair, performance, and program efficiency.

## Scope

The Department assembled a Special Assessment Team that was comprised of the individuals from the Division of Intermodal and its consultant, Dovetail Consulting, FTA Transit Safety Office and its consultant, BCG, and FTA Region IV.

October 26 – 30, 2015, the assessment team conducted its review of the Atlanta Streetcar System to determine the quality and effectiveness of the implementation of system safety and system security, including field inspections of all facilities and systems including vehicles, track, OCS, and traction power substations. The safety and security assessment consisted of an evaluation of the following 10 elements:

- The transit agency's compliance with requirements specified in the agency's track, traction power, signal, and rail vehicle inspection, testing, and repair programs, and needed enhancements in these programs;
- The performance and effectiveness of transit agency's rail operations dispatch and communications activities, and the overall quality of the radio system and any visual display systems used to support and monitor the operations;
- The effectiveness of transit agency's roadway worker protection program;
- The quality and frequency of communication regarding maintenance and safety issues across transit agency departments and with the transit agency's executive leadership and board;
- The quality of, and transit agency's conformance with, initial and refresher training programs for major classifications of operations and maintenance employees;
- Implementation of the transit agency's fatigue management program;
- The quality and effectiveness of transit agency's rules compliance and operational testing programs for major classifications of operations and maintenance employees, including supervisors and yard operations;
- The quality and effectiveness of supervision provided for major classifications of operations and maintenance employees;

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- The quality and availability of data in the transit agency's information management systems to support enhanced safety risk assessment and hazard management activities.

### Report Organization

The report is organized in 10 sections:

Section 1	Entrance Briefing
Section 2	Operations
Section 3	Maintenance
Section 4	Human Resources
Section 5	Communications
Section 6	System Safety
Section 7	System Security
Section 8	MARTA Active Management
Section 9	Exit Briefing
Section 10	Corrective Action Plans

### Summary of Findings

The following table summarizes the 34 findings by each assessment area as discussed within this report. The table also provides cross-references to the relevant Corrective Action Plans (CAPs) detailed in Section 10 of this report and previously issued findings by the FTA Office of Transit Safety and Oversight for the Atlanta Streetcar System as a result of its audit of the Department's safety oversight program conducted in June 2015.

Finding #	Description of Finding	Required Action to Close Finding	CAP #
<b>Management and Administration</b>			
1	Atlanta Streetcar and MARTA are consolidating duties and reallocating resources to create a smaller organization with clearer lines of duty.	Atlanta Streetcar must develop a stable organizational structure to support ongoing, consistent, and safe management of streetcar operations and maintenance.	SA-CAP.OPS.002 SA-CAP.OPS.009 SA-CAP.MGMT.055
2	The organizational structure, roles and responsibilities between the Atlanta Streetcar and MARTA as described within the IGA and adopted SSPP and SEPP are inconsistent with the actual practices for executive decision-making and day-to-day management of the Atlanta Streetcar.	Atlanta Streetcar must identify and outline the roles and responsibilities of all the decision-making authorities involved with streetcar operations and maintenance activities.	SA-CAP.OPS.011 SA-CAP.OPS.013 SA-CAP.MAINT.024 SA-CAP.MGMT.051
3	Management transition from MARTA to Atlanta Streetcar and responsibilities of each agency are uncertain and not clearly defined.	Atlanta Streetcar must ensure that the operational transition from MARTA to the City of Atlanta is clearly specified in the SSPP and other applicable documents.	FTA SSO Finding 4

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<b>Finding #</b>	<b>Description of Finding</b>	<b>Required Action to Close Finding</b>	<b>CAP #</b>
<b>4</b>	There is an absence of the assignment of due dates in nearly all cases of coordination meetings.	Atlanta Streetcar must develop and implement procedures for Committees or follow existing Committee procedures as outlined in the SSPP, and ensure accountability for action items discussed during meetings.	SA-CAP.OPS.014 FTA SSO Finding 8
<b>5</b>	Atlanta Streetcar has not developed a <i>Sustainability Action Plan</i> per MARTA's review and response to the OCS unacceptable hazard and subsequent system shut down.	Atlanta Streetcar must develop a <i>Sustainability Action Plan</i> for a period of at least 12 months to address all facets of transit management and be commensurate with the number of employees and their technical capabilities and qualifications.	SA-CAP.MGMT.049
<b>Operations</b>			
<b>6</b>	There is disconnect between the established rules and the Operator's response to obstructions on the track when in operations, as evident by the probable cause of several accidents.	Atlanta Streetcar must complete the revisions to the Rule Book and other governance documents to ensure that they incorporate the relevant corrective actions identified within this report.	SA-CAP.OPS.017 SA-CAP.MGMT.50 SA-CAP.MGMT.53
<b>7</b>	Rules compliance ride checks have not been performed in a manner consistent with the SSPP. Formally documented observations of rules compliance only take place twice per month.	Atlanta Streetcar must reexamine the frequency of field observations and rules compliance checks to ensure adequate field supervision and daily assurance of safety operations.	SA-CAP.OPS.018
<b>8</b>	Peak period and special event operations descriptions have not been included in the <i>Operations and Maintenance Plan</i> .	Atlanta Streetcar must develop a comprehensive <i>Operations and Maintenance Plan</i> to include staffing requirements for peak periods, special events, and emergency operations.	SA-CAP.OPS.019
<b>9</b>	The diagonal bar signal is in effect; however, there are no written operating rules, procedures, or training in place directing its use.	Atlanta Streetcar must develop operating rules and procedures that govern mainline and yard movements, including the diagonal bar signal operations. (Note: Training is addressed in a later CAP.)	SA-CAP.SAFE.038
<b>Maintenance</b>			
<b>10</b>	Atlanta Streetcar is not currently capturing contractor work orders and repairs, maintenance	Atlanta Streetcar must ensure a <i>Maintenance Plan</i> , procedures, checklists, forms, and a functioning maintenance	SA-CAP.OPS.006 SA.CAP.MAINT.026

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<b>Finding #</b>	<b>Description of Finding</b>	<b>Required Action to Close Finding</b>	<b>CAP #</b>
	activities for bar signals, and accident repairs, among other data.	management information (Hansen) system are developed and implemented to address maintenance practices.	
<b>11</b>	Contractors for vehicle maintenance, track maintenance, and TPSS maintenance are vacant, as well as the internal Maintenance Superintendent position.	Atlanta Streetcar must secure organizational resources for track maintenance and OCS maintenance.	SA-CAP.OPS.007 SA-CAP.OPS.008 FTA SSO Finding 6
<b>12</b>	Preventative maintenance inspections are inconsistently implemented and documentation is incomplete.	Atlanta Streetcar must ensure preventative maintenance inspections are conducted as required for track, vehicles, traction power substations, OCS, and stops.	SA-CAP.MAINT.027
<b>13</b>	The maintenance rules compliance activities are not being executed on a regular basis as required and results are not being forwarded to the Maintenance Superintendent to take necessary corrective actions.	Atlanta Streetcar must reexamine the frequency of maintenance compliance checks to ensure maintenance deficiencies are managed timely and effectively.	SA-CAP.MAINT.025
<b>14</b>	Bar signals are not included as system assets identified in the SSPP.	Atlanta Streetcar must integrate the transit signal maintenance program into its day-to-day performance management and hazard management process, and update the SSPP, training program, and procedures as appropriate.	SA-CAP.OPS.010
<b>15</b>	Maintenance deficiencies and recommendations from two independent OCS assessments (Clarner report and C3M report) remain open.	Atlanta Streetcar must address, document, and track to closure the findings and recommendations identified in the Clarner and C3M OCS studies.	SA-CAP.MAINT.022
<b>Human Resources</b>			
<b>16</b>	Challenges persist in prioritizing the recruiting and hiring of Atlanta Streetcar System positions and not all positions have been designated safety-critical as required.	Atlanta Streetcar must perform a staffing assessment to identify all safety-critical positions, minimum staffing thresholds for safety-critical operations and maintenance positions, as well as develop and implement a written standard to establish and monitor	SA-CAP.HR.028 SA-CAP.MGMT.052

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<b>Finding #</b>	<b>Description of Finding</b>	<b>Required Action to Close Finding</b>	<b>CAP #</b>
		this threshold for operations and maintenance positions.	
17	Atlanta Streetcar has updated job descriptions for safety-critical positions for multiple positions.	Atlanta Streetcar must finalize job descriptions, including minimum qualifications, training, and experience required for safety-critical positions.	SA-CAP.OPS.012
18	Atlanta Streetcar has a vacancy rate of 48% for safety-critical positions.	Atlanta Streetcar must fulfill the organizational resources for vacant, safety-critical positions and ensure individuals are aptly qualified and trained to complete their tasks.	SA-CAP.OPS.003 SA-CAP.OPS.004 SA-CAP.OPS.005 SA-CAP.HR.031 SA-CAP.SAFE.035 SA-CAP.SAFE.039 SA-CAP.MAINT.023
19	Atlanta Streetcar is not implementing the random and post-accident drug and alcohol testing practices in accordance with FTA requirements.	Atlanta Streetcar must ensure random and post-accident drug and alcohol tests are in compliance with FTA, SSPP, and accident investigation requirements.  Atlanta Streetcar must ensure independent audits of compliance to the drug and alcohol program are performed.	SA-CAP.HR.029 SA-CAP.HR.030 FTA SSO Finding 12
<b>Training</b>			
20	None of the training required by the SSPP had been fully completed or documented in a consistent manner.	Atlanta Streetcar must implement a comprehensive <i>Training Program Plan</i> outlining the standards and required proficiencies for safety-critical operations and maintenance positions.	SA-CAP.OPS.015 SA-CAP.MGMT.048 FTA SSO Finding 5
21	Maintenance and operations rules compliance activities are being performed by personnel without the qualifications, knowledge, and information necessary to assess compliance.	Atlanta Streetcar must ensure positions required to perform supervision and rules compliance activities have appropriate training and knowledge and have access to necessary documents with respect to their areas of management and oversight.	SA-CAP.OPS.001
22	The diagonal bar signal is in effect; however, there are no written operating rules, procedures, or training in place directing its use.	Atlanta Streetcar must train all relevant operations and maintenance employees on the mainline and yard movement operating rules and procedures including the diagonal bar signal operations and ensure this content is incorporated into applicable operations and maintenance initial	SA-CAP.SAFE.038

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<b>Finding #</b>	<b>Description of Finding</b>	<b>Required Action to Close Finding</b>	<b>CAP #</b>
		and refresher training curriculums.	
<b>Communications</b>			
23	Public outreach communication tools have been established, but no formal <i>Public Outreach Plan</i> has been developed for Atlanta Streetcar nor are such activities described within the SSPP.	Atlanta Streetcar must develop and implement a <i>Strategic Communications Plan</i> to outline roles, responsibilities, goals, strategies, and performance measures for reaching target audiences and update the SSPP and SEPP accordingly.	SA-CAP.COMM.032 SA-CAP.COMM.034
24	There are no communication campaigns or activities related to security awareness for the riding public.	Atlanta Streetcar must develop and implement a transit security awareness campaign and quality of life campaigns targeted toward internal and external audiences and update the SSPP and SEPP accordingly.	SA-CAP.COMM.033
<b>System Safety</b>			
25	The <i>Quality Maintenance Program Handbook</i> activities are not being performed. No designated Quality Assurance resource exists to manage these activities.	Atlanta Streetcar must implement quality assurance activities defined in the <i>Quality Maintenance Program Handbook</i> .	SA-CAP.SAFE.036
26	The hazard management process is not being followed. No hazards have been brought to the Safety Certification and Security Committee nor have hazards been reported effectively and consistently to the Department.	Atlanta Streetcar must ensure safety hazards and security threats are effectively identified and communicated through internal reporting relationships and a practice is developed for elevating certain hazards to the Safety Certification and Security Committee for review and resolution.	SA-CAP.OPS.016 SA-CAP.OPS.020 SA-CAP.OPS.021 SA-CAP.SAFE.041 FTA SSO Finding 10
		Atlanta Streetcar must comply with the hazard notification, investigation, and reporting requirements established in the Department's Program Standard.	
		Atlanta Streetcar must follow the SSPP hazard management process to ensure identified hazards are documented and mitigated to the lowest acceptable risk levels.	
27	Atlanta Streetcar is not following the procedure for proper documentation and transmittal of	Atlanta Streetcar must notify and submit accident/incident investigations to the Department	FTA SSO Finding 11

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<b>Finding #</b>	<b>Description of Finding</b>	<b>Required Action to Close Finding</b>	<b>CAP #</b>
	accident/incident information to the Department.	which meet the required thresholds.	
<b>28</b>	The CAP log is missing required information elements and CAPs created for identified systemic issues.	Atlanta Streetcar must include responsible parties, schedules of completion, initial risk assessment ratings, and final risk assessment ratings for all existing CAPs as outlined in the SSPP and Hazard Management Plan, and continue to track CAPs to closure. Atlanta Streetcar must ensure systemic issues are included as CAPs.	SA-CAP.SAFE.040 SA-CAP.SAFE.042 SA-CAP.SAFE.043 FTA SSO Finding 14 FTA SSO Finding 15
<b>29</b>	Atlanta Streetcar does not have a complete set of as-built drawings necessary to form an adequate baseline for the implementation of its configuration management program.	Atlanta Streetcar must establish and implement a <i>Configuration Management Plan</i> that documents the physical characteristics of the streetcar system and outlines the practice for managing system changes.	SA-CAP.SAFE.037
<b>30</b>	The <i>Atlanta Streetcar Safety Certifiable Items List Status Sheet</i> is incomplete and one element needs to be reopened.	Atlanta Streetcar must review all open certifiable elements without due dates or expired due dates, reopen the Traffic Signals element with respect to the diagonal bar signal, and identify responsible parties and schedules of completions for all open items.	SA-CAP.SAFE.044
<b>31</b>	Project completion for the Breeze Vending Machines is scheduled for January 2016, however safety certifications, operations, maintenance, and security procedure updates were not underway as of October 2015.	Atlanta Streetcar must ensure the completion of the safety and security certification process for the Breeze Vending Machines prior to initiating the equipment into revenue service.	SA-CAP.SAFE.044
<b>System Security</b>			
<b>32</b>	Atlanta Streetcar in coordination with the Atlanta Police Department (APD) are in the process of improving streetcar security through multiple enhancements.	Atlanta Streetcar in coordination with APD must continue to implement law enforcement strategies in compliance with the Security and Emergency Preparedness Plan (SEPP) to enhance public safety and emergency response to streetcar events such as improving communications systems and procedures, and designating an	SA-CAP.SEC.045 SA-CAP.SEC.046 SA-CAP.MGMT.054

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Finding #	Description of Finding	Required Action to Close Finding	CAP #
		APD Executive Liaison to the Atlanta Streetcar.	
		Atlanta Streetcar in coordination with APD must examine the benefits of modifying the communications system to be independent of the 9-1-1 system for improved response to streetcar incidents and issues.	
33	Atlanta Streetcar has not identified the Threat and Vulnerability Assessment (TVA) scope, methodology, and frequency per the requirements of the SEPP.	Atlanta Streetcar must develop and implement a Threat and Vulnerability Assessment program for the streetcar system.	SA-CAP.SEC.047 FTA SSO Finding 7
34	Atlanta Streetcar internal security audits are not scheduled until 2017 and are not conducted in an ongoing manner, such that security audits are conducted annually at minimum.	Atlanta Streetcar must ensure internal security audits are conducted in an ongoing manner over a three-year cycle.	FTA SSO Finding 9

**Summary of Corrective Action Plans**

As specified in Section 8.5.3 of the Program Standard, the Department may initiate CAPs during revenue service operations to the rail transit agencies within the scope of its oversight program. Section 8.5.3 further specifies that in the course of carrying out its oversight responsibilities, such as the conduct of special assessments, if the Department determines that corrective action plans are required, the Department must notify the Atlanta Streetcar System in writing. The Department submits this Special Assessment Final Report as formal notification by the Department to the Atlanta Streetcar System that corrective action plans are required.

As a result of the special assessment, the Department issued the following corrective actions to the Atlanta Streetcar System:

Assessment Area	CAPs
Operations	21
Maintenance	6
Human Resources	4
Communications	3
System Safety	10
System Security	3
MARTA Active Management	8
<b>Total CAPs</b>	<b>55</b>

The details of each corrective action are explained in Section 10, Corrective Action Plans.

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### Immediate Concerns

Immediately following the on-site portion of this assessment, the Department sent a letter to the City of Atlanta, dated November 5, 2015 outlining the following immediate concerns:

1. The Atlanta Streetcar System must provide stable and adequate staffing resources with the requisite training, qualifications and experience to perform the required *supervision and rules compliance* activities of all operations and maintenance functions as specified within the System Safety Program Plan, Security and Emergency Preparedness Plan, and related plans and procedures. The assignment of duties must ensure clear division of roles and responsibilities between the Superintendent, Supervisor, Dispatcher and Technicians. Atlanta Streetcar must also ensure that the level of supervision for operations and maintenance activities is safely and sufficiently balanced with the level of passenger service delivered.
2. The Atlanta Streetcar System must develop and implement a *Sustainability Action Plan* that identifies the specific management and organizational goals, actions, resource requirements, schedule, and performance measures to build the necessary *organizational capacity and capabilities* to effectively operate, maintain, and ensure the safety and security of the Atlanta Streetcar System. The Plan must cover a minimum period of 6 months.
3. The Atlanta Streetcar System must develop and implement a comprehensive *Training Program Plan* for all organizations and positions with direct responsibilities identified within the System Safety Program Plan and Security and Emergency Preparedness Plan and related procedures. The plan must identify stable and adequate staffing resources with the requisite training, qualifications and experience to deliver the operations, maintenance, accident/hazard/security incident investigation, supervisory, and job-specific safety and security training. The organizational structure for the Atlanta Streetcar System must be aligned to the Training Program Plan.

The Department requested a response date of November 16, 2015. The City of Atlanta's response is included as **Appendix E**.

### Draft Report

There were two steps necessary to complete the assessment process and move forward with the implementation of corrective actions and improvement plans that will strengthen the quality and effectiveness of the Atlanta Streetcar System's safety and security program:

#### 1. Draft Report

First, the Atlanta Streetcar System had a minimum of **21 calendar days** to perform a factual review the Draft Report for accuracy and completeness and provide the assessment team comments and/or corrections. Also during this review period, the Atlanta Streetcar System was required to develop implementation strategies for the corrective action plans (CAPs) identified by the assessment team in the last section of this report.

The Department proposed **55** CAPs to address the identified findings; however, during the comment period, as specified in Section 8 of the Program Standard, if the Atlanta Streetcar System wished to modify a CAP or propose an alternative CAP, it must be described in sufficient detail such that the Department could determine its acceptability and decide whether to approve the CAP.

The Atlanta Streetcar System provided responses to the Draft Report, including the CAPs, on January 29, 2016.

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### 2. Final Report and CAP Implementation Monitoring

Next, the Department was required to review the Atlanta Streetcar System CAPs, which included review of the CAP implementation schedule. Then, the Department was required to incorporate the CAPs and the responses into the Final Report.

As discussed in the Program Standard and the Atlanta Streetcar's Corrective Action Plan Program, for each CAP, the Atlanta Streetcar was required to respond with the following information:

- CAP Requirements – refers to the description of the corrective action required by the Atlanta Streetcar to address the finding
- Individual / Department Responsible for CAP Implementation – refers to the individual (name and title and department) responsible for the implementation of the CAP.
- CAP Verification – the CAP log must indicate when and how the Atlanta Streetcar verified implementation of completed CAPs
- CAP Due Date – refers to the estimated completion date for the CAP
- CAP Completion Date – refers to the actual completion date of the CAP

The Department and its partners at FTA, completed the review of the Atlanta Streetcar's requests for clarification to the Draft Report and responses to the CAP Log on February 5, 2015. Specifically, the Department's review of Atlanta Streetcar's comments sought to ensure that the Final Report accurately and completely reflected the Department's verification methods which included interviews, document and records reviews, software demonstrations, and field observations. The Department has provided the clarifications and detailed responses to the Atlanta Streetcar on the CAP log which is attached to the Final Report as **Appendix F**.

Finally, once the Department has determined that all responses on the CAP log are acceptable, the Department will begin the monitoring of the implementation of each CAP as described in Section 8 of the Program Standard. The Atlanta Streetcar will continue to provide a monthly CAP, including CAPs addressing the Special Assessment, along with all applicable supporting documentation verifying closure.

# Acronyms

<b>ADID</b>	Atlanta Downtown Improvement District
<b>APD</b>	Atlanta Police Department
<b>ASC</b>	Atlanta Streetcar System
<b>CAP</b>	Corrective Action Plan
<b>CIL</b>	Certifiable Items List
<b>COO</b>	Chief Operating Officer
<b>DHS</b>	Department of Homeland Security
<b>EOP</b>	Emergency Operating Procedure
<b>FTA</b>	Federal Transit Administration
<b>GDOT</b>	Georgia Department of Transportation
<b>HIRA</b>	Hazard Identification and Risk Assessment
<b>IGA</b>	Intergovernmental Agreement
<b>MARTA</b>	Metropolitan Atlanta Rapid Transit Authority
<b>OCS</b>	Overhead Contact System
<b>PHA</b>	Preliminary Hazard Analysis
<b>RFP</b>	Request for Proposal
<b>SAP</b>	Substance Abuse Professional
<b>SCSC</b>	Safety Certification and Security Committee
<b>SOP</b>	Standard Operating Procedure
<b>SSCP</b>	Safety and Security Certification Plan
<b>TPSS</b>	Traction Power Substation
<b>TVA</b>	Threat and Vulnerability Assessment
<b>VMF</b>	Vehicle Maintenance Facility

# Entrance Briefing

## Special Assessment Requirements

As required by 49 CFR Part 659.29 State Safety Oversight Rule and the Georgia Program Standard, the Georgia Department of Transportation (The Department), in conjunction with the Federal Transit Administration (FTA), conducted a Special Assessment of System Safety and Security at the Atlanta Streetcar System. Specifically, Section 7.3 of the Program Standard, Other GDOT SSO Reviews states,

*At its discretion, GDOT may conduct reviews or special assessments of issues related to system safety and system security at the City system. In addition to the specific readiness reviews... GDOT may initiate a review of a particular subject matter area(s) in response to a given hazard, accident, or incident or trend of such event(s).*

October 26 – 30, 2015, the assessment team conducted its review of the Atlanta Streetcar System to determine the quality and effectiveness of the implementation of system safety and system security, including field inspections of all facilities and systems including vehicles, track, OCS, and traction power substations. The safety and security assessment consisted of an evaluation of the following 10 elements:

- The transit agency's compliance with requirements specified in the agency's track, traction power, signal, and rail vehicle inspection, testing, and repair programs, and needed enhancements in these programs;
- The performance and effectiveness of transit agency's rail operations dispatch and communications activities, and the overall quality of the radio system and any visual display systems used to support and monitor the operations;
- The effectiveness of transit agency's roadway worker protection program;
- The quality and frequency of communication regarding maintenance and safety issues across transit agency departments and with the transit agency's executive leadership and board;
- The quality of, and transit agency's conformance with, initial and refresher training programs for major classifications of operations and maintenance employees;
- Implementation of the transit agency's fatigue management program;
- The quality and effectiveness of transit agency's rules compliance and operational testing programs for major classifications of operations and maintenance employees, including supervisors and yard operations;
- The quality and effectiveness of supervision provided for major classifications of operations and maintenance employees;
- The quality and availability of data in the transit agency's information management systems to support enhanced safety risk assessment and hazard management activities.

## Special Assessment Preparation

Prior to the review, the assessment team prepared a Schedule of Activities. The assessment team coordinated with the Atlanta Streetcar System to finalize the proposed Schedule of Activities, including the attendees, times, locations and required materials. In addition, the assessment team requested the participation of GDOT, FTA, MARTA, and City of Atlanta executive leadership during the Entrance and Exit Briefings. The assessment team also requested several read-ahead materials prior to the on-site portion of the assessment.

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# GEORGIA DEPARTMENT OF TRANSPORTATION

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### Verification Methods

The verification methods included document, rules, and records reviews as well as interviews with Atlanta Streetcar senior management, safety, operations, maintenance, security, human resources and other key personnel. The verification methods also included field observations of preventative maintenance inspections. By employing these verification methods, GDOT sought to make informed assessments regarding the quality and effectiveness of the implementation of the system safety and system security of the Atlanta Streetcar.

To prepare for the assessment, the Department encouraged the Atlanta Streetcar System to continue moving forward and provide status updates and responses to the various deliverables that were owed to the Department, namely:

- Responses to the Actions Required section on the Department's 04/25/15 Accident Verification Checklist
- Responses to the Monthly Hazard Management Meeting Action Item List
- Updates to the Corrective Action Plan Log (Internal Audit, Accidents/Incidents, Unacceptable Hazards, Unacceptable Threats/Vulnerabilities, GDOT Action Items/CAPs, FTA Action Items/CAPs)

While the review team was in receipt of the most recently approved versions of the System Safety Program Plan, Hazard Management Plan, Accident/Incident Investigation Plan and Incident Investigation Procedure, Internal Safety and Security Audit Program Plan, and Corrective Action Plan Program submitted to the Department in January 2015, during the course of the review the assessment team required additional documents and related procedures which are summarized in this report.

### Special Assessment Team

The Special Assessment Team was comprised of the following individuals:

- Carol Comer, Director, GDOT Division of Intermodal
- Nancy Cobb, Administrator, GDOT Division of Intermodal
- Michael Somersall, SSO Program Manager, GDOT Division of Intermodal
- Mignon Allen, Dovetail Consulting, GDOT SSO Consultant
- Fred Mead, Dovetail Consulting, GDOT SSO Consultant
- Monty Montgomery, Dovetail Consulting, GDOT SSO Consultant
- Will Allen, Dovetail Consulting, GDOT SSO Consultant
- Eric Madison, FTA Transit Safety Office
- Dain Pankratz, BCG, FTA TSO Consultant
- Margarita Sandberg, FTA Region IV

### Special Assessment Schedule

The review took place over the course of four (4) business days:

*Day 1 Monday, October 26, 2015*

- Entrance Briefing
- Interviews: Operations Management
- Group Interviews – Operators, Dispatcher, Operations Supervisor
- Field Observations: Ride checks

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*Day 2 Tuesday, October 27, 2015*

- Field Observations: Preventative Maintenance Inspections: OCS, Track, TPSS, Vehicles
- Interviews: Maintenance Management, Human Resources, Communications
- Group Interviews – Technician, Maintenance Supervisor

*Day 3 Wednesday, October 28, 2015*

- Interviews: Safety and Security, Accident Investigation Process
- Field Observations: Site Visits to GDOT-Reportable Collision Locations

*Day 4 Thursday, October 29, 2015*

- Interviews: MARTA Active Management

*Day 5 Friday, October 30, 2015*

- Exit Briefing

### **Verification Methods and Activities**

While on-site the assessment team conducted interviews with Atlanta Streetcar System representatives, witnessed various software demonstrations, and also conducted field verifications, document and record reviews:

Interviews/Briefings:

#### *Atlanta Streetcar System*

- Chief Operating Officer
- Deputy Chief Operating Officer
- Interim Executive Director
- Director, Safety, Security and Training
- Senior Advisor to Mayor
- Director, Performance Management
- Commissioner, Public Works
- Project Liaison
- Program Controls Manager
- Procurement
- Administrative Assistant
- Administrative Assistant, Maintenance
- Operations Superintendent / Acting Maintenance Superintendent
- Maintenance Technician
- Dispatcher
- Supervisor
- Operators

#### *Atlanta Downtown Improvement District (ADID)*

- President
- Vice President, Transportation

#### *MARTA*

- Chief Operating Officer
- Chief Administrative Officer
- Interim Assistant General Manager, System Safety and Quality Assurance

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- Senior Director, Operations
- Director, Streetcar Services
- Assistant General Manager, Legal Services

### *City of Atlanta*

- Human Resources Director
- Human Resources Manager
- Human Resources, City Nurse

### Demonstrations:

- Maintenance Management Information System (Hansen)

### Field Observations:

- Unannounced Streetcar Ride Inspection
- Preventative Maintenance Inspection of Track
- Preventative Maintenance Inspection of OCS
- Preventative Maintenance Inspection of Traction Power Substation (in VMF yard)
- Preventative Maintenance Inspection of Vehicle

### Record Reviews:

- Training Records: Operators, Supervisors, Superintendents

### **Draft Report**

Following the completion of the special assessment, the assessment team prepared a Draft Report which included a summary of the interview discussions, documents reviewed, and various field inspections and observations. It is important to note that the special assessment was a “snapshot” in time. The Draft Report identified and documented conditions evident during the assessment period, regardless of the status of potential remediation activities subsequent to the assessment.

### *Factual Review for Accuracy*

The Atlanta Streetcar System had a minimum of **21 calendar days** to perform a factual review the Draft Report for accuracy and completeness and provide the assessment team comments and/or corrections.

### *Corrective Action Plan Development*

Also during this review period, the Atlanta Streetcar System was required to develop implementation strategies for the corrective action plans (CAPs) identified by the assessment team in the last section of this report.

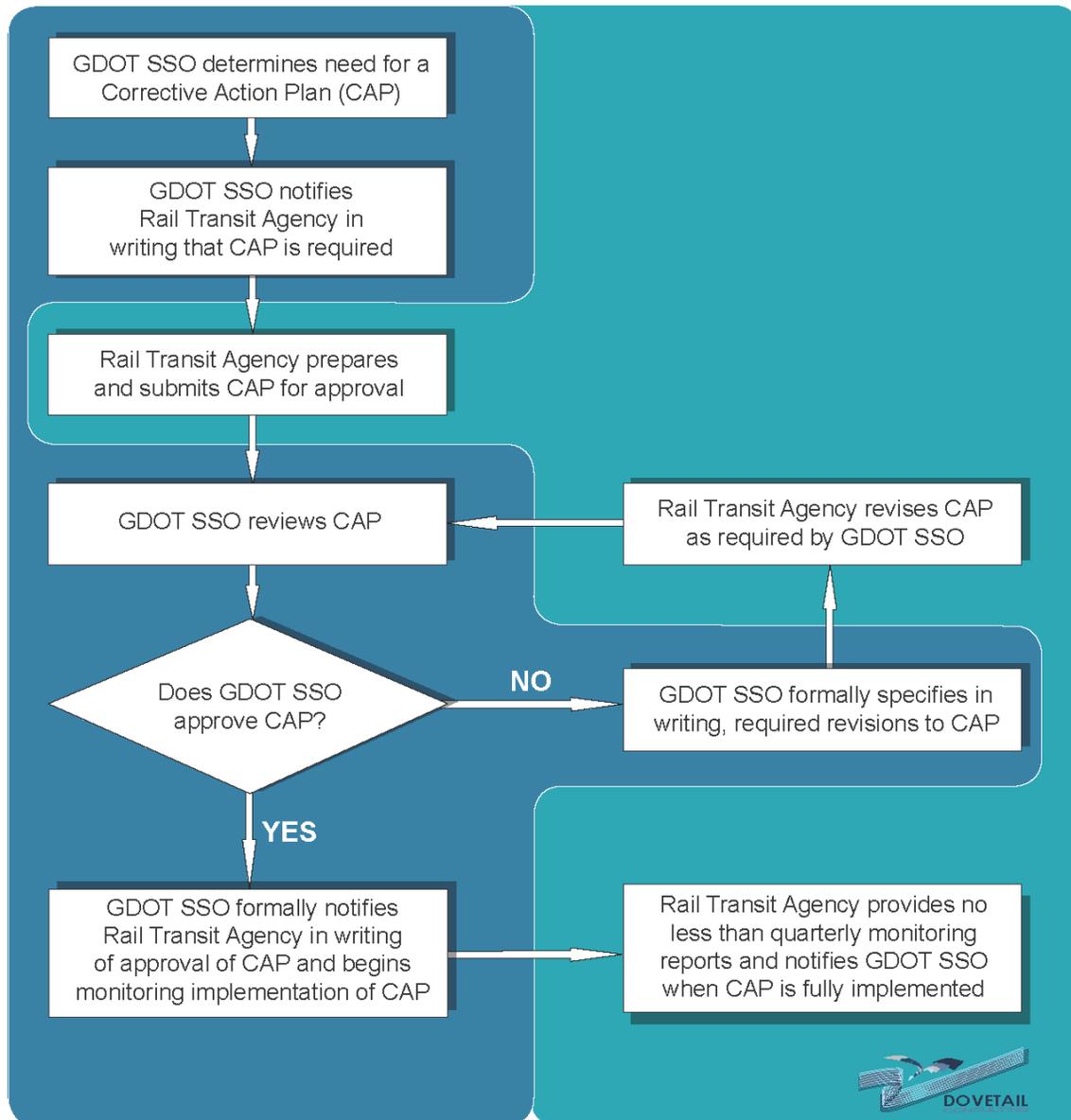
### **Final Report**

Following the Department’s review of the Atlanta Streetcar System CAPs, which included review of the CAP implementation schedule, the Department incorporated the CAPs into this Final Report and began the monitoring of the implementation of each CAP as described in Section 8 of the Program Standard.

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### Corrective Action Plan Process



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# Operations

### Management Structure and Staffing Resources

The assessment team began the session with a request to the Interim Executive Director to provide a detailed overview of the organizational chart for the Atlanta Streetcar System, with emphasis on the staffing resources to support transit operations.

The Interim Executive Director turned the group's attention to the Atlanta Streetcar's response to the read-ahead materials requested by the assessment team prior to the on-site visit. A summary of the response appears below:

- The organizational chart was developed as part of the Intergovernmental Agreement (IGA) between the City of Atlanta and MARTA prior to revenue service. With almost a year of operating experience, the parties recognize that the streetcar can be managed with a smaller/administrative support effort, and that a smaller organization will have clearer lines of communication and authority. A formal recommendation for a change in the organizational chart will occur in December 2015. In the meantime, the Atlanta Streetcar System is working in that direction via attrition and other actions.
- There are several positions and contractor slots that are not currently filled, including some that have never been filled. An explanation of the vacant positions on the organizational chart provided by the Atlanta Streetcar and additional positions that the assessment team learned of throughout the course of the on-site visit appears in the table below:

Position	Atlanta Streetcar Explanation
Interim Executive Director	---
Administrative Assistant	---
Compliance Manager	<b>VACANT</b> This function is responsibility of Executive Director. The City of Atlanta is determining if the compliance function can be fulfilled by existing staff with possible assistance from professional staff elsewhere in the City of Atlanta.
Director of Safety, Security, and Training	---
Consultant – Rail Safety and Security Risk	---
Consultant – Rail Engineering	<b>VACANT</b> While an on-call arrangement may become advisable or necessary in the future, no new construction or modifications to the system are anticipated for the next few years. A solicitation for on-call rail engineering firms or joint ventures would need to be based on an assumed level of work so that proposing firms would be able to make a business decision about competing for such work. At this time a minimal amount of work is not foreseen.
Director of Marketing	<b>VACANT</b> The marketing function is supported by the City of Atlanta support services and ADID. The City of Atlanta is reviewing how best to supply this function.
Business Liaison	---
Program Controls Manager	---

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Position	Atlanta Streetcar Explanation
Data Reporting Analyst	<b>VACANT</b> This position is under review. The City of Atlanta is evaluating the current workload and whether there is available support from City of Atlanta staff.
Business and Procurement Manager	---
Contracting Officer	<b>VACANT</b> The position is under review. The contracting functions are being handled by the Procurement Manager and Atlanta Streetcar personnel.
Title VI / DBE Officer	<b>VACANT</b> This function is the responsibility of the Executive Director as part of his compliance duties.
Manager of Streetcar Services	<b>VACANT</b> This function is the responsibility of the Executive Director and serves to flatten the organizational structure.
Administrative Assistant	---
Superintendent of Operations	---
Superintendent of Maintenance	---
Streetcar Supervisors (2)	---
Dispatchers (2)	---
Streetcar Operators (12)	---
Streetcar Technicians (3)	---
Infrastructure Cleaners (2)	---
Contractor – Vehicle Maintenance	<b>VACANT</b> The main function of this contract would be to perform body repairs. This has been done on an ad hoc basis. A procurement document is under review with solicitation in November 2015, and contract award in February 2016.
Contractor – Track Maintenance	<b>VACANT</b> With embedded track, there is no significant work for an outside contractor for the T-rail and strapguard installation. Contingency for switch repair or replacement will be accomplished by maintaining standard qualifications for switch original equipment manufacturer and other qualified firms. With non-powered and reliable switch types, this should be a sufficient measure. A firm can be hired for a detailed switch inspection at 5 year intervals.
Contractor – OCS Maintenance	The City of Atlanta procured the services of a qualified electrical contractor who will be used on a task order basis through the end of its term, February 2016. The contract may be extended.
Contractor – TPSS Maintenance	<b>VACANT</b> A single bid proposal has been received and is under evaluation.
Contractor – Security	---
Contractor – Transit Signal Maintenance	---
Contractor – Breeze Vending Machines	---
Fare Evasion / Code Enforcement	---
City of Atlanta Support Services	Traffic Signal Repair Station Cleaning / Repair HR Support Payroll Support Procurement Support IT Support Law Support Facility Maintenance Vehicle Maintenance – Supplemental Compliance Training – Supplemental

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Position	Atlanta Streetcar Explanation
	Policing and Security Fare Inspection Performance Management Financial Management Grant Management Capital Asset Replacement Communications and Marketing

The Interim Executive Director acknowledged that the organizational chart needs to change and that there were additional work sessions planned to refine the structure and gain concurrence. He confirmed that he performs the role of both Executive Director and Manager of Streetcar Services. He stated that 8-9 Operators were needed to provide daily service and currently there were 11 Operators on staff, and 14 Operator positions authorized. He explained that the Dispatcher position would be reclassified to 3 Service Supervisors. At the time of the interview, the dispatcher function was being fulfilled by 2 temporary personnel employed through a third-party contractor.

The assessment team commented that the Supervisors were generally qualified in maintenance supervision rather than operations. The Interim Executive Director admitted this was an issue that Atlanta Streetcar intended to address by reclassifying the Dispatchers to Service Supervisors and transitioning the current Supervisors into Maintenance Supervisors only, because that is aligned with their skill set.

The assessment team learned in subsequent interviews that Atlanta Streetcar's plans to reallocate code enforcement officers from the Atlanta Police Department to the Atlanta Streetcar; however, these positions do not appear on any organizational charts, position reports, or safety and security plans. The Atlanta Streetcar System should ensure that the SSPP and SEPP and organizational charts are updated to describe this new function.

During the discussion, the assessment team pointed out that body repair alone is not an adequate long term, comprehensive vehicle maintenance program for the components and subcomponents of the streetcar vehicle. The Atlanta Streetcar System should ensure that the Maintenance Plan and third-party contracts are developed to address this safety-critical function.

The assessment team asked where MARTA was within the organizational structure for the Atlanta Streetcar System given the fact that no MARTA positions were shown on the organizational chart or discussed in the read ahead materials. After lengthy discussion, the Director of Streetcar Services indicated that his line of authority and reporting were essentially up through the MARTA chain of command to the MARTA COO and his role at the Atlanta Streetcar was that of coordination with the Manager of Streetcar Services. The Interim Executive Director added that MARTA was not providing direction to Atlanta Streetcar personnel. Upon consideration of the interviews and supporting documentation, it appeared to the assessment team that the organizational structure, roles and responsibilities between the Atlanta Streetcar and MARTA as described within the IGA and adopted SSPP and SEPP were inconsistent with the actual practices for executive decision-making and day-to-day management of the Atlanta Streetcar. The Atlanta Streetcar and MARTA should review the organizational chart and the implementation of the duties and responsibilities of each position and ensure it is consistent with the adopted agreements and plans, including the SSPP.

*The Intergovernmental Agreement (IGA) for the Operation and Maintenance of the Atlanta Streetcar Project, executed November 13, 2014*

To verify the day-to-day management positions, duties, and responsibilities of MARTA for the Atlanta Streetcar System, the assessment team reviewed the IGA, Section 2.4, MARTA. This section of the agreement confirmed that MARTA is directly responsible for the day-to-day management of the streetcar,

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including, but not limited to, the express authority to take all actions necessary to maintain the safe operation of the system. MARTA's Chief Operating Officer (COO) manages the MARTA Director of Streetcar Services and has final decision making authority regarding actual operation and maintenance of the system, including the ability to reduce or cease service. MARTA's Director of Streetcar Services directly manages the Atlanta Streetcar System's Manager of Streetcar Services and supervises day-to-day operations and maintenance of the system.

### **Operations and Maintenance Meetings**

The Director of Streetcar Services clarified that the weekly Operations and Maintenance meetings and monthly Management Project Status Reports were two of the mechanisms by which MARTA carries out its duties as 'active manager' of the Atlanta Streetcar System. He recalled that the top concerns discussed within the report were staffing and preventative maintenance. He also mentioned that the weekly interface meetings were a more informal format, with no set agenda.

#### *MARTA / ASC Interface Meetings*

To verify the management interface between MARTA and the Atlanta Streetcar System and better understand the identified concerns and strategies to address them, the assessment team requested and reviewed the *MARTA / ASC Interface Meeting Minutes* for the period from September 15, 2015 through October 13, 2015. The weekly meetings are typically attended by the MARTA COO, MARTA Sr. Director of Operations, MARTA AGM System Safety and Quality Assurance, ASC Interim Executive Director, and ASC Director of Streetcar Services. When the Interim AGM System Safety joined the group, system safety became a standing agenda item.

The assessment team's review confirmed that the discussion in the weekly interface meetings topics varied widely to include construction close out activities, maintenance procurement, accident/incident management, preventative maintenance, staffing and recruiting, training program development, and security. A summary of the most relevant discussion appears in the list below:

- OCS Punch List

The minutes indicated that scheduled OCS work for September 11 and 12 was cancelled; however, there was a need to schedule repairs and to address inspection findings. An option was discussed to have another contractor perform the OCS system repairs, but the general consensus was that URS should be allowed every opportunity to do the repair work. The Interim Executive Director agreed to contact URS and schedule warranty repair work for nearly a month later (October 12, 2015). Subsequent meetings indicated that URS was on schedule to initiate warranty repair work and requested the lock out/tag out plan developed by C3M. The Interim Executive Director also reported that he was reviewing the C3M report.

- FTA Site Visit (September 18, 2015)

The minutes described the preparation for the FTA site visit which included status updates on the procurement of OCS emergency services, MARTA and C3M OCS inspection findings, incident investigations, lock out/tag out procedure, and the implementation of the preventative maintenance program.

- System Maintenance Contracts

The minutes indicated the following procurement status for the system maintenance contracts:

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- OCS emergency contract executed with C3M – Completed September 22
- OCS short term inspection, repair, and maintenance contract executed with C3M – Completed September 22
- OCS long term inspection, repair, and maintenance contract – under review
- TPSS contract – under review
- Track contract – Interim Executive Director proposed not to execute this contract, but no rationale was provided in the minutes. The group acknowledged that the FTA expressed concern about not having a track maintenance contract in place. The City needed to determine a response to FTA’s concerns.
- Body repair contract – Interim Executive Director also proposed not to execute this contract. Again, there was no rationale documented in the minutes.

- MARTA Incident Notification

The minutes indicated that the MARTA AGM of Safety was copied on email notifications to external oversight agencies, but MARTA required immediate notification of all incidents. To address this concern, the Interim Executive Director was going to take responsibility for ensuring timely notifications to MARTA personnel. A robo-call service was under consideration as a potential incident notification solution.

- OCS Preventative Maintenance

The minutes showed that during the interim period until OCS warranty repairs are completed, the Atlanta Streetcar was informed that they must ensure that PMs are being conducted on the OCS.

- Staffing and Recruiting

The minutes confirmed that the Interim Executive Director was required to provide a staffing plan for the Atlanta Streetcar and that the system was understaffed as follows:

- 2 Maintenance Technicians
- 2 Supervisors
- 4 Operators (counting current class) – completed on September 29, 2015

- Internal Safety and Security audit

The minutes indicated that the group was considering the media request to release the most recent internal safety and security audit report.

- GDOT/FTA Audit

The minutes confirmed that the GDOT/FTA audit of Atlanta Streetcar was scheduled for the week of October 26, 2015. Atlanta Streetcar was planning to review the FTA audit of WMATA to prepare. In the meantime, MARTA was planning to conduct another systems maintenance audit and assist with switch machine maintenance training.

- Vehicle Preventative Maintenance

For this agenda item, the minutes state that the Siemens Vehicle Technician was going to review the preventative maintenance plans and that maintenance staffing was an issue.

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- TPSS Preventative Maintenance Contract  
The minutes state that this contract only had one bidder; however, the cost proposal was high.

- Training Program

The minutes indicate there is a need to develop an Atlanta Streetcar Training Program for Operators, Technicians, Dispatchers, Supervisors, and Superintendents.

- [REDACTED]

While discussion evolved over the course of several weeks for any given issue, the assessment team observed that there was an absence of the assignment of due dates in nearly all cases. In this way, it appears that MARTA's direction, guidance, and expectations could be allowed to languish if the Atlanta Streetcar was limited in resources or consensus on the actions necessary to resolve the identified issues. Given the criticality of ensuring effective management of the operations and maintenance of the Atlanta Streetcar System, steps must be taken to formalize and document the meetings of management committees and groups, including assignment of action items to personnel empowered to take action to resolve issues as well as assignment of due dates to ensure timely closure.

### *Monthly Operations Report*

The assessment team reviewed the *Monthly Operations Reports* for the period from January 2015 through September 2015. The reports provide information on Atlanta Streetcar's significant operation activities and Key Performance Indicators which include: Trip Performance, On-Time Performance, Mechanical Reliability, Safety, and Customer Service.

The safety related key performance indicators and major concerns expressed by MARTA included the following:

Issue	Detailed Discussion
<b>Staffing</b>	<ul style="list-style-type: none"><li>• Staffing is an ongoing process, additional staff are needed to support 3 car operations – operators, dispatchers, and technicians.</li><li>• New human resources background and credential certification process needs to be implemented to ensure real time verification of new hire qualifications.</li><li>• Planning meetings are needed between Human Resources and Atlanta Streetcar operations and maintenance personnel to determine staffing requirements.</li></ul>
<b>Training</b>	<ul style="list-style-type: none"><li>• MARTA provided training personnel to assist with Operator training.</li><li>• In MARTA's assessment, Atlanta Streetcar needs to develop training courses for Operators, Dispatchers, Supervisors, and Superintendents.</li></ul>
<b>Compliance Audits</b>	<ul style="list-style-type: none"><li>• MARTA Safety Department is conducting an audit of Atlanta Streetcar in advance of the planned FTA/GDOT audit.</li><li>• The objective of the audit is to prepare the Atlanta Streetcar for the audit and to validate its compliance with established standards, procedures, processes.</li><li>• FTA conducted an audit of GDOT to assess compliance with established safety standards, procedures, processes. Some of the preliminary findings related to Atlanta Streetcar were:<ul style="list-style-type: none"><li>○ Failure to report reportable incidents to GDOT</li><li>○ Failure to implement corrective action following incidents</li><li>○ Procurement of systems maintenance contracts not in place</li><li>○ Atlanta Streetcar management transition plan not in place</li><li>○ Configuration management plan not in place</li></ul></li></ul>



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Issue	Detailed Discussion
<p><b>MARTA Priority Issues and Concerns for Atlanta Streetcar</b></p>	<p>The City of Atlanta administrative structure is currently experiencing challenges in providing Atlanta Streetcar operations support in a timely manner.</p> <p>The following internal City of Atlanta administrative issues have been observed and require attention:</p> <ul style="list-style-type: none"> <li>• Manager of Streetcar Services does not have flexibility to actively manage the operating budget to support small-to-medium administrative, operational, infrastructural and maintenance procurements, resulting in shortages of basic consumable materials and supplies</li> <li>• Atlanta Streetcar lacks policies and procedures and support documentation for governing the unique aspects of a transit operation including: payroll, employee seniority, disciplinary actions, fare enforcement, etc.</li> <li>• The procurement of the following must be implemented quickly: spare power truck, OCS, TPSS, and track emergency services to provide reliable uninterrupted service. Procurement documents have been submitted to various subject matter experts for review and comment.</li> <li>• Track procurement needs to be determined</li> <li>• Long-term OCS contract needs to be determined</li> <li>• Vehicle body procurement needs to be determined</li> <li>• TPSS procurement needs to be determined</li> <li>• Maintenance program process and procedures are being fine-tuned</li> <li>• Staffing levels are not sufficient to meet level of service</li> <li>• Maintenance intervals for system elements are due/approaching, scheduling of required maintenance is impacted by staffing shortages. Operations and maintenance is currently developing a Maintenance Action Plan to bring programs current.</li> <li>• Incident notification and reports for several recent events require timely closure. Incident notification and reporting for several recent events not provided to MARTA. Director of Safety and Training to initiate a call system to ensure required individuals are notified of Atlanta Streetcar incidents</li> <li>• Operator training needs to be performed by certified trainer. MARTA arranged for MARTA Trainer to assist with operator training.</li> </ul>

Like other management, coordination, and performance reports discussed throughout this report, the monthly Operations Report aptly identifies a number of serious administrative, operations, maintenance, safety, and security related actions that should be taken to ensure a safe, functional, and efficient streetcar system, but the assessment team observed that there is no real management accountability for implementing the required actions within reasonable timeframes. There also appears to be no consequences to the Atlanta Streetcar for not following MARTA guidance and direction or mitigating the concerns raised.

### *Operations and Maintenance Meetings*

The assessment team reviewed the *Operations and Maintenance Meeting Agenda and Minutes* for the period from July 1, 2015 through September 23, 2015. Each meeting concluded with a list of tasks, their statuses, and notes, which are summarized below:

Date	Task Description	Status	ASC Notes
7/1/15	APD Coordination for traffic, accident, and special events plan	Revised	Description revised: Special Event Coordination (6/17/15)
7/1/15	Discussion on protection equipment and PPE plan	Revised	Description revised: Fall protection (6/17/15)
7/1/15	Maintenance Action Plan	Added	Added 6/17/15
7/1/15	Incident Notifications	Added	Added 6/17/15

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Date	Task Description	Status	ASC Notes
7/1/15	GTT Meeting results update on progress	Closed	Closed 7/1/15
7/1/15	Admin Assistant at VMF	Closed	Closed 6/17/15
7/1/15	Advise O&M management of operations status for the following: (1) Streetcars in service, (2) Status operator CDL testing, (3) O/M to verify periodically, (4) O/M recruiting efforts to establish operator and technician pool, (5) Maintenance Superintendent training status CDL-P with this	Closed	Closed 7/1/15
7/1/15	O&M update regarding VMF Custodian reassignment dates – Manager will get update regarding Statuses of Custodians	Closed	Closed 7/1/15
7/1/15	ADID advised that O&M meeting with MARTA and findings regarding BVM contractor warranties, and how warranties and servicing will or will not be affected	Revised	Description revised: 1-year maintenance (7/1/15)
7/8/15	Fare enforcement and Fare Enforcement Policy; Quality of Life Policy	Added	Added 7/8/15
7/8/15	Procurement update	Added	Added 7/8/15
7/29/15	Matrix of staff needs to include, Staffing Plan, and an Organization Chart	Closed	Closed 7/22/15
7/29/15	Proposed service schedule and operator bid	None Given	Closed 7/22/15
8/14/15	APD collaboration with ADID and Streetcar for radio reprogramming	Closed	Closed 8/14/15

While there is a tracking of tasks in the Operations and Maintenance meetings, these meetings are yet another instance where significant coordination, operations, maintenance, safety, and security related actions have been identified, and in some cases assigned responsibility, but there appears to be no real management accountability for ensuring that the tasks are accomplished in a timely manner. The actions are closed when they are closed, rather than part of a comprehensive set of actions toward overall strategic goals and performance measures.

### Safety and Security Committees

The Director, Safety, Security and Training said that he has received meaningful and productive support from MARTA Safety.

The Interim AGM System Safety and Quality Assurance explained that she will be assuming responsibility for chairing the Safety Certification and Security Committee (SCSC). She was attending various lower level staff meetings to determine what issues were routinely elevated to the SCSC. Her initial goal was to determine the appropriate items that should be brought before the SCSC. In other words, not everything needed to go to the SCSC, several items could be resolved through the day-to-day active management and partnership between MARTA and the Atlanta Streetcar System.

### Rules and Standard Operating Procedures

The assessment was seeking a clear understanding and definition of line of sight operations as it is practiced at the Atlanta Streetcar System. The Operations Superintendent replied that line of sight operations is defined as the ability to stop the streetcar within half the distance of the position or object ahead. When asked what the operating procedure is when an object fouls the track, the Operations Superintendent responded that right-of-way training is where Operations learn about the dynamic envelope and line of sight operations. The assessment team continued to search for a response to the specific rule that defines the Operators action when a motor vehicle or other obstacle is on the track blocking the movement on the streetcar. Atlanta Streetcar personnel referenced Rule 2.27.

The assessment team reviewed the Atlanta Streetcar Rulebook to verify the procedure for objects fouling the track and gathered the following:

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- **109 REPORTING DANGEROUS AND UNSAFE CONDITIONS**  
Employees must immediately report to the Dispatcher or Supervisor any defects, structural problems, or obstructions found on a Streetcar vehicle or on the right-of-way, or any conditions or situations that could adversely affect safety or service, and take any necessary precautions until the situation can be resolved.
- **220 ON SIGHT SPEED**  
A speed that allows the streetcar to stop within ½ the range of vision of another train, a stop signal, a misaligned switch, a track defect, or an obstruction.
- **227 OBSTRUCTIONS ON THE TRACK**  
If there is a disabled motor vehicle or other obstruction on the track ahead, the Streetcar Operator must bring the vehicle to a stop, put on the hazard flasher, and notify the Dispatcher.
- **DEFINITION: Restricted Speed**  
A speed not to exceed 10 mph or a speed which allows the streetcar to stop within half the range of vision, being prepared stop short of another train, broken rail, stop signal, a track switch not properly aligned, inoperative grade crossing equipment, work crew or other obstructions.

The assessment team determined that the Atlanta Streetcar System has established adequate definitions and rules to implement line of sight operations, restricted speeds, and the actions to take when there are obstructions or other unsafe conditions that prohibit the safe movement of the vehicle; however, in practice, as evident by the probable cause of several accidents, there appears to be a disconnect between the established rules and the Operator's response to obstructions on the track when in operations.

The Interim Executive Director, Director of Streetcar Services, and Operations Superintendent advised that the rule book was under review. A working group has been established to determine how best to incorporate Special Notices and Bulletins into new or revised rules and to develop other recommendations and improvements.

### Rules and Procedural Compliance

The assessment team further asked the group to describe the activities undertaken to ensure the compliance by the Operators of the established rules and procedures. The Atlanta Streetcar participants responded that they attempt to perform ride checks once per week. The implementation of the procedure began in July following the results of the FTA audit of the Atlanta Streetcar in June 2015. The Operations Superintendent, Maintenance Superintendent, and Dispatcher (was also responsible for Planning, but is no longer with the system) performed the ride checks. As of late, the Director, Safety, Security and Training as well as the Director of Streetcar Services also perform ride checks.

The assessment team asked what training the checkers received prior to implementing this requirement of the Atlanta Streetcar's SSPP. The Operations Superintendent reported the following:

<b>Dispatcher</b>	Initial Operator Certification Training (classroom only)
<b>Maintenance Superintendent</b>	Initial Operator Certification Training (classroom only) Supervisor Training
<b>Operations Superintendent</b>	Initial Operator Certification Training (classroom and OJT) Supervisor Training

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The assessment team noted that the Director, Safety, Security and Training and Director Streetcar Services are performing ride checks, but have not been trained and certified as Operators at the Atlanta Streetcar System. In addition, of those who have received Operator training and are performing ride checks, only the Operations Superintendent received the 40 hours of field training. Apparently, the Atlanta Streetcar System has not established the minimum qualifications and training standards of supervisory personnel who are responsible for ensuring rules compliance.

The assessment team reviewed the Atlanta Streetcar SSPP which requires that Supervisors conduct a minimum of two performance-based operational ride checks of Operators each month. The SSPP also requires that the Superintendents review the ride checks of the Supervisors once each month. With respect to system safety, the SSPP requires that the data from the ride checks be reviewed for hazard trends by the Director of Safety, Security and Training. When the assessment team asked the Operations Superintendent (also Acting Maintenance Superintendent and frequently serving in the capacity of Supervisor) about his interface with the Director of Safety, Security, and Training regarding rules compliance checks for operations, vehicle maintenance, and system infrastructure maintenance, he responded there is no interface for this activity. The rules compliance requirements for the performance and auditing of rules compliance ride checks has not been performed in a manner consistent with the SSPP.

As an illustration, to gain a better understanding of the adequacy of two rules compliance checks per month, the assessment team asked if there were any general orders or safety bulletins requiring speed restrictions. The Operations Superintendent responded that any diverging move requires a maximum speed of 5 mph. There is also a permanent requirement that limits Operators to a maximum of 10 mph through switches. For the Atlanta Streetcar System, over the course of a month there are several thousand opportunities that the speed restrictions or other operating rules may be violated; however, formally documented observations of rules compliance only take place twice per month.

The group discussed opportunities for increased supervision and controls to ensure that rules, including speed restrictions, are adhered to by Operators. The Director of Streetcar Services replied that an increase role for MARTA in a supervisory capacity would have to be reevaluated as that is beyond the current agreements and staffing assumptions. The Interim Executive Director mentioned that two methods to determine speed on a daily basis are through checking time points (typically by radio communications) and by receiving customer complaints. The group agreed these methods are not direct observations by a Supervisor according to ride check forms and the SSPP. As later discussed in this report, the information collected through the call center are customer requests for general information and have not proven to be a source for the Atlanta Streetcar to acquire timely and accurate information on Operator rules compliance.

### **Operations and Maintenance Plan**

The assessment team asked if the Atlanta Streetcar System revised its Operations and Maintenance Plan to describe the current operations and maintenance staffing, schedule, and other resource requirements to support the level of service delivered. The Operations Superintendent stated that the adopted Operations and Maintenance Plan requires two cars, every 15 minutes. But the Atlanta Streetcar was unable to provide the staffing necessary to meet this operational requirement. Instead, three cars are needed to provide 15 minute headways during peak periods and special event operations. The assessment team inquired if the definition of peak periods and a description of special event operations were included in the Operations and Maintenance Plan. The Atlanta Streetcar participants responded at this time this information is not included and is under development. An Operations and Maintenance Plan that is consistent with the actual operating practices is needed as an overarching guidance document for rules, procedures, training and coordination with the system safety program.

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### **Drug and Alcohol Program**

The Interim Executive Director told the assessment team that Pre-Employment and Random Testing were handled by the Human Resources department. Post-Accident Testing was determined by the Director, Safety, Security and Training at the time of each event based on a written decision tree. He stated that there had been no occasions during his tenure that warranted the administration of a reasonable suspicion test. In addition, the assessment team was not provided with documentation ensuring sufficient implementation of the reasonable suspicion testing requirements.

### **Procurement**

The assessment team questioned how the Atlanta Streetcar System verified the adherence to safety features and standards in the procurement process. The Interim Executive Director responded that a Procurement Manager has been designated to guide this process. The Procurement Manager would be contacted to discuss the details of the procurement process at a subsequent interview session. The Director of Streetcar Services added that the scope of services within each contract is reviewed and approved by the SCSC and each contract includes clauses for adherence to safety standards. The Director suggested that the TPSS scope of services would provide an example of the implementation of safety in the procurement process.

### **Training Program for Operators, Supervisors, Dispatchers**

On November 13, 2015, two members of the assessment team conducted a complete review of the training records for all Atlanta Streetcar System safety-sensitive positions. The results of this review are included as **Appendix A**.

The assessment team reviewed the training records for the Operations Superintendent, Operations Supervisor, Maintenance Technicians, and Operators against the requirements of the SSPP. At the time of the audit, the assessment team concluded that none of the training required by the SSPP had been fully completed or documented in a consistent manner. Some training requirements were nearly completed, such as SOP training (94%), pre-employment medical exam (88%), and drug & alcohol training (88%). Other requirements are partially complete, such as right of way safety (75%), bloodborne pathogens (75%), A1 OCS training (60%), and substation training (60%). However, the majority of training shows little to no completion. No supervisor, maintenance technician, or operator has completed all of the training as specified in the SSPP. In addition, there are no standards identified for job specific safety training, so the assessment team is unable to verify completion. Finally, training-related documentation is missing such as streetcar operating cards, random drug & alcohol testing, and medical renewal exams.

To immediately assist the Atlanta Streetcar System with compliance to the training requirements of the SSPP, at the conclusion of the records review, the assessment team transmitted its draft results to the Atlanta Streetcar System for review. To close the gap, the Atlanta Streetcar System must ensure that the training delivered to all safety-sensitive personnel – Operators, Supervisors, Technicians, and Superintendents – is consistent with the minimum training courses and frequency as outlined within the SSPP.

### **Interview with Operators**

The assessment team held a group interview with three (3) full-time / permanent streetcar Operators. The session began with a description of the background, qualifications, and streetcar operations experience of each Operator. The assessment learned that the Atlanta Streetcar System's Operators experience spanned a wide range from transit bus operator to heavy equipment vehicle operator to streetcar operator. Operators were sourced from within the City of Atlanta and also from the nation's largest public transportation systems.

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Next, the group discussed their impressions of the content and delivery of the Initial Operator Training. According to one Operator, during the pre-revenue operations phase, when the first set of Operators were hired, the Atlanta Streetcar System did not have an adequate training program or structure. During that time, the Operator was thrust into the role of Streetcar Operations Trainer/Instructor. While the Operator had previous streetcar operations experience with another system, training roles and responsibilities were duties that the Operator was neither hired, trained, certified, nor compensated to perform. Now, three operator training classes later, the Operator was still concerned that there has been no consistency in the content and delivery of the Initial Operator Training courses nor a consistent timeframe for the delivery of the training.

The assessment team recapped their understanding of the Initial Operator Training courses as documented in the Atlanta Streetcar System's System Safety Program Plan. These courses addressed several topics including safety and security, hazard management, standard operating procedures, blood borne pathogens, accident reporting, roadway worker protection, signals, defensive driving, and vehicle familiarization. In general, the operators confirmed that the training was delivered; however, concerns revolved around the lack of dedicated and specific instructors for the various training modules. While there was a general number of hours that training may occur each day, the operators experienced a more sporadic, inconsistent training schedule. In addition, classes would often be disrupted by trainers being pulled away from training to handle their other duties and responsibilities. The Operators identified the lack of adequate staffing as a main contributor to distractions and disruptions during training.

The assessment team and Operators discussed the facts, sequence of events, and probable causes of streetcar collisions with motor vehicles. In more than one case, the incidents were due to the Operator not following established procedure with respect to objects fouling the track and the inability to properly identify the dynamic envelope. This group of Operators advised the assessment team that they were trained to identify the dynamic envelope as anything over the white line. Also, that the white line is defined as the white line for parking spaces and more recently the white line along the entire alignment.

To continue, the Operators described the typical accident notification, investigation, and reporting process:

- Operator contacts the Dispatcher via radio and states there is an emergency and describes the nature of the incident.
- Operator checks the passengers to determine if there are any injuries. If there are injuries, the Operator contacts the Dispatcher via radio and relays the number and nature of injuries.
- If necessary, the Operator allows passengers to exit from one door on the side closest to the curb.
- Operator awaits instructions from Dispatch and arrival of emergency services.

With respect to accident and emergency management, the Operators shared concern that the ranks of Operators, Supervisors and Dispatchers were understaffed. While interviews were held and selections made for the permanent position of Dispatcher, the selected candidate was unable to move into the Dispatcher position until more Operators were hired and trained.

In terms of familiarity with the SSPP, the operators responded that it was only recently distributed in its entirety to the Operators two weeks prior to the Special Assessment. The Operators also confirmed that there have been a series of SSPP versions over the course of the last year. For example, there was no SSPP distributed to Operators during the training provided in the pre-revenue phase, another version of the SSPP was distributed in August 2015, and yet another version in October 2015.

The Operators indicated that safety hazards were addressed in training. Examples of safety hazards were obstructions, hard stops, and brake slippage. The Operators explained that there are various methods for reporting safety hazards such as calling in an observation to the Dispatcher or completing an incident report.

When asked what the top concerns are for the Atlanta Streetcar System, the Operators responded as follows:

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- 4. Operational Safety during Special Events.** Operators were concerned about the increased difficulty operating the streetcar during special events which crowd the streets with pedestrians. This was considered particularly true at two stops: Edgewood and Centennial Olympic Park.

The group of operators offered a solution to address their primary concerns—provide dedicated City of Atlanta Police Officers to ride the streetcars during passenger service hours to provide increased visibility, security, law enforcement, and emergency response.

Concerning their awareness and application of certain operational rules and procedures, the Operators responded that restricted speed was defined as 5-6 mph and this applied to all switches and 3-5 mph applied to all diverging moves. In terms of monitoring adherence to operational rules and procedures, the Operators stated that they have observed a Superintendent or Supervisor conduct a ride check approximately once every three weeks or so. The Operators reminded the assessment team that the lack of staffing has required Superintendents and Supervisors to carry so many additional duties and responsibilities, that this has undoubtedly affected the frequency and quality of the performance of ride checks. However, even with the lack of staff, one Operator did restate a positive training experience when she made a hard stop, was observed by the Superintendent performing a ride check, and was retrained on spot.

The assessment team asked the Operators about their experiences related to fatigue management and hours of service requirements. The Operators reported that there is some overtime, but it typically does not exceed 12 hours of operating time.

The Operators confirmed that they were required to submit to a pre-employment drug screening test during the hiring process. Yet, when asked about random drug testing, the Operators stated that recently all the employees on the morning shift were subject to a random urine test, which is inconsistent with the FTA drug and alcohol testing requirements.

The session closed with all the Operators agreeing that there was a definite need to establish specific rules governing patron's behavior while riding the Atlanta Streetcar System.

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### **Operations – Interview with Operations Superintendent and Dispatcher**

The assessment team held a group interview with the full-time / permanent Operations Superintendent (who was also Acting Maintenance Superintendent) and the full-time / temporary Dispatcher. The session began with a description of the background, qualifications, and transit experience of the Superintendent and the Dispatcher. The Dispatcher stated that she recently started with the Atlanta Streetcar System in August 2015. She had no background in transit or dispatch, instead her experience was in mental health/social work. While her original assignment was four weeks, her assignment was extended for an unknown timeframe. Although the Dispatcher had received no dispatcher-specific training, she did spend her first three weeks on staff in the classroom portion of Initial Operator Training.

The Dispatcher continued by describing her duties and responsibilities on a typical day:

- Arrive at 8:00 a.m.
- Assist the Operations Superintendent with the operator schedule and spreadsheets for shift bids.
- File daily pull outs, maintenance and operations logs.

While assigned the position of Dispatcher, she does not handle any standard dispatch functions such as radio communications or fitness for duty tasks. Her role is primarily clerical assistance and the Operations Superintendent or others perform the dispatch function for the Atlanta Streetcar System.

The Operations Superintendent described his typical duties for dispatch:

- Arrive at 5:30 a.m. to observe Operators' fitness for duty and verify sign in sheet.
- Update inspection forms and logs, as required.
- Monitor radio communications for daily pull out.
- Manage Operator boards (relief, extra board)
- Modify Operator status board (days on/off)
- Take calls – for example, there was a location where the train signal failed every day. The signal aspect would display the wrong command every day between 10:00 a.m. – 10:30 a.m. In a subsequent work session, the assessment team delved deeper into the circumstances of this unacceptable hazard at length with the Atlanta Streetcar System's management team.

When asked about the quality and effectiveness of the current dispatch function, the Operations Superintendent responded that in any scenario where staffing is thin, which is essentially most of the time, the stretch becomes a problem and the quality and effectiveness of the dispatch function suffers. While not a comprehensive fix, he did suggest that recorded radio communications would assist with documentation, reporting and investigation tasks.

The tools and methods for scheduling were identified as a source of inefficiency. Currently, the Operations Superintendent prepares the schedule manually using Microsoft Word, Microsoft Excel and bulletin boards. This method takes an extremely long time, and any adjustment, such as adding a third streetcar, only lengthens the already time consuming process. Right now the process spreads out over the course of four (4) working days.

The Operations Superintendent, in his capacity as Acting Maintenance Superintendent, also described his daily duties related to pre-trip vehicle inspections. He expressed concern that there was only one (1) person trained to make a limited set of vehicle repairs in the event there was a defect identified during the pre-trip inspection.

In addition to dispatch, operations, and maintenance duties, the Operations Superintendent explained the daily reports he is responsible for preparing. These reports - missed trips, on time performance, incidents -

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are prepared only in the event there is adequate staff available to cover his duties. If there is not enough staff, which is often, these reports are simply not done. On average, due to the lack of staff resources, these reports frequently lag 60 days behind schedule.

When asked what are the top concerns for the Atlanta Streetcar System, the Operations Superintendent and Dispatcher responded as follows:

1. **Lack of Staffing.** There is a significant lack of staffing in key operations and maintenance roles throughout the Atlanta Streetcar System. The Operations Superintendent recommended increasing staffing in these areas:
  - a. **Dispatcher.** Increase staffing to two (2) full-time dispatchers based on 19 hours of daily service delivery
  - b. **Supervisors.** Add one (1) full time Supervisor and one (1) on call Supervisors to provide more adequate supervision 7 days/week. Right now, there are not enough people to perform basic supervisory duties during all passenger service hours.
2. **Lack of Supervision.** There is a critical need to supervise Operators while they are operating streetcars on the system. Again, right now, there are not enough people to make observations and ensure adherence to the operating rules and procedures.
3. **Transient Patrons.** The Atlanta Streetcar System needs options for addressing transient patrons that violate the system's rules for the riding public.
4. **Lack of Knowledge/Training.** There is no established, formal training for Dispatchers. As such, there is concern about the gap in the knowledge and ability of those currently assigned to perform the duties listed on the job descriptions.

The assessment team asked the group about their experiences implementing the hazard management process at the Atlanta Streetcar System. The Operations Superintendent stated that the Operations personnel have been working to improve their review of incident reports, identification of safety hazards, and reporting to Safety and upper management.

The session wrapped with a last question related to the communication procedures for Operations personnel.

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### Operations – Interview with Operations / Maintenance Supervisor

The assessment team conducted an interview with a full-time / permanent Operations Supervisor. Like the other small group interviews, the session began with a brief discussion of the Supervisor's background, qualifications, and transit experience. He responded that he started with the Atlanta Streetcar System approximately 18 months ago. His previous transit experience began with a major transit vehicle manufacturer. Prior to that he spent twenty years with the military in aircraft/electrical maintenance.

Next, he described his typical day as an Operations Supervisor:

- When assigned to the day shift, arrival time is 3:30 a.m. Supervisors are scheduled for day shifts for 30 days, then rotate to night shifts for 30 days. He expressed concern about the effectiveness of the schedule rotation versus providing adequate staffing levels for the Supervisor position.
- In terms of routine day-shift activities, there are several, including:

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- Checking logs from the previous night.
- Making a pull out sheet and train orders.
- Determining car availability.
- Perform walkthrough inspection of the yard and shop.
- Inspect the two traction power substations within the yard.
- Inspect the OCS system and track.

Aside from dispatch/radio communications, the Supervisor's evening shift duties do not mirror the day-shift. For example, no maintenance activities or ride checks are performed. The Supervisor confirmed that he has never performed ride checks because he is not a qualified Operator.

Regarding safety, he did not recall having interfaced with the safety and security committees or the Director, Safety, Security and Training, but has voiced his concerns to the Director, Streetcar Services.

When asked what the top concerns are for the Atlanta Streetcar System, the Operations Supervisor responded as follows:

1. **Lack of Staffing.** The Supervisor was concerned about the lack of trained and qualified personnel necessary to adequately supervise, operate, and maintain the Atlanta Streetcar System. He was equally concerned about the system's inability to attract and retain Supervisors as evidenced by the series of resignations in recent months. On the maintenance side, he was concerned that soon only he and the Operations Superintendent would be available to cover all shifts which would require them to work 12 hour shifts for 7 days a week. This was viewed as an unacceptable long term staffing solution.
2. **Lack of Training.** Related to the lack of manpower, was the lack of adequate equipment and training to properly perform the required daily inspections. For a typical OCS and track daily inspection, the Supervisor drives a truck in the dark alone prior to passenger service. The Supervisor believes there are safety hazards associated with this method namely distracted driving while observing the OCS above, the track below, and driving at the same time, with no lookout in passenger seat. While the Supervisor received approximately 8 hours of classroom training on track inspection from qualified MARTA track personnel, along with on-the-job training on switch inspection from the Operations Superintendent, he had reservations about how well this training approach equipped him and others to perform adequate inspections.

Coupled with the concerns for training was the lack of equipment required to perform necessary maintenance, particularly for the streetcars. While there is a wheel truing machine, he was unaware of training or use of this equipment. As a result, the activities required to maintain wheel to rail adhesion do not appear to be occurring. He concluded there was a need to adequately train staff and provide the required equipment in all areas of maintenance – track, OCS, traction power, and vehicles.

For clarification, the assessment team asked if his role was that of Operations Supervisor or Maintenance Supervisor. He responded that he was originally hired as a Maintenance Supervisor, which was aligned with his background and experience. However, after he was hired, his duties and responsibilities were as Operations Supervisor. He was required to perform dispatch/radio communications activities with Operators, which he characterized as working outside of his classification.

In terms of fulfilling his supervisory role, he added that he typically worked from the vehicle maintenance facility annotating operations and maintenance logs throughout the course of his shift. He did not typically conduct any supervisory activities out in the field such as rules compliance

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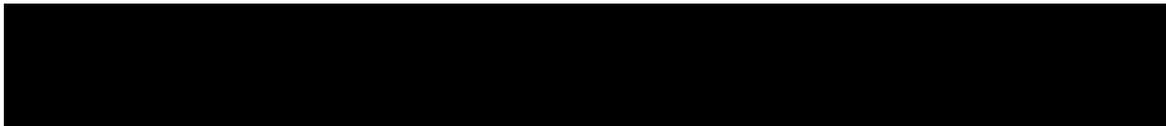
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monitoring of Operators. However, in the event of an accident, he is notified via radio. He then notifies the Operations Superintendent via the emergency contact list, who takes over the dispatch duties. Next, he deploys to the scene of the incident and takes over the investigation process.

In terms of specific training for Supervisors, he confirmed that he had not attended Supervisor training delivered by the Atlanta Streetcar System, and was unaware of the training.

He also stated that he had not received accident/incident investigation training while employed at the Atlanta Streetcar System. Instead, he follows the lead of the Operations Superintendent when an accident occurs.

3. **Lack of Written Rules and Procedures.** There is a lack of comprehensive, written standard operating rules and procedures. While he received revised procedures recently, which is a positive sign, it was his understanding that the resignations of maintenance technicians were related to the absence of written procedures to follow.



# Maintenance

## Observation of Daily Preventative Maintenance Inspections

Prior to the initiation of passenger service on the second day of the site visit, the assessment team observed the daily preventative maintenance inspection for the vehicles, track, TPSS, OCS, and facilities. While the daily inspection procedures appeared to be followed, the assessment team concluded that the Atlanta Streetcar System should evaluate the effectiveness and availability of the equipment to support the inspections, such as lights, lifts, and vehicle safety equipment.

## Management Structure, Staffing Resources

The assessment confirmed with the Atlanta Streetcar participants that their responses regarding management structure, staffing and resources discussed in the Operations interview session applied equally to the maintenance function of the organization.

## Contract Status and Management

The assessment team asked the Atlanta Streetcar System to provide a status update on the establishment of long-term contracts for Vehicle Maintenance, TPSS Maintenance, OCS Maintenance, and Track Maintenance. The assessment team also requested an update on any emergency maintenance contracts and a description of the management responsibility for day-to-day contract management.

The Interim Executive Director responded with the following explanations:

- **Vehicle (Body) Maintenance**

The scope of work includes body work, fiberglass, panels, and decal replacement. The intent is for local body shops to provide the replacement and repair services. November 2015 is the target date for letting the contract.

- **Vehicle Maintenance**

There is no scope of work or procurement strategy for long-term vehicle maintenance. There is a vehicle warranty program that expires March 2016. When the Maintenance Superintendent is hired, the Atlanta Streetcar System intends to assess whether or not the warranty program should be extended and what the long term maintenance program will be.

- **Track Maintenance**

The scope of work is in development and the warranty expired in August 2015. The Interim Executive Director asserted that the maintenance support services for track should be limited. His preferred approach for procurement would involve identifying a list of local, qualified bidders to perform services as needed.

He added that recurring track maintenance issues have involved a buildup of grit and debris in the switches due to heavy rains. Power washing the switches temporarily resolves the buildup in the switches. Discussions are underway to identify a more effective, long term solution such as

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improving the storm water drainage along the alignment. The assessment team asked about the linkage between the results of the track inspections and the hazard management process. The group responded that the buildup in the switches is noted on the inspection forms, but the inspection results have not been reported to Safety and have not been entered into the hazard tracking log. The Interim Executive Director closed by stating that a senior member of MARTA Track & Structures Department was scheduled to provide additional training to newly hired Atlanta Streetcar personnel in November 2015.

- **OCS Maintenance**

The scope of services is still under development, but will generally include long term OCS maintenance activities. The base period of performance is three-years with 1 year extensions. The Interim Executive Director advised that a significant change in the scope is the reduction of the minimum 5 years of OCS maintenance experience. The rationale for the change is to allow local qualified electrical firms the ability to bid on OCS work. The target date to advertise this contract is November 2015. If required, the Atlanta Streetcar System is prepared to extend its emergency contract with C3M to provide continuity in OCS maintenance services.

### *OCS Contract Scope of Services*

The assessment team reviewed the contract scope of work for inspection and repair services for the Atlanta Streetcar Overhead Contact System. First, the contractor was required to perform a system inspection of the entire Overhead Contact System for any deviations from manufacturer specification, damages, irregularities, or mal-adjustments, along with inspections at additional locations as requested by the contract administrator. After the inspection, the contractor was required to provide the contract administrator with information including the list of all items that need repair, Recommendation and Deficiency Reports, Recommended Repair List, summary of work for the recommended repairs, and itemized repair cost estimate. Next, the contractor had to perform corrective repair of all authorized work on the OCS to address corrective actions identified during the inspection. These repairs included emergency repairs, which is any repair of a known condition that is necessary to restore the system to a normal operation, specifically within 10% of the As Built Construction and/or Record Drawings.

The assessment team reviewed the *Record of Concurrence and Approval for Emergency Repair and Maintenance* emails dated June 3, 2015 regarding Report on Concurrences, Needs Requirements, Emergency Repair and Maintenance, TPSS. The record of concurrence and associated emails verified the approval of the procurement process from the Manager of Streetcar Services and the Procurement Manager.

- **TPSS Maintenance**

The Interim Executive Director explained that the [REDACTED] traction power substations required for the Atlanta Streetcar System were under warranty until November 2015.

In September 2015, the Atlanta Streetcar opened the single bid received for long term TPSS maintenance. The cost proposal is currently under evaluation. If the cost is beyond the system's resources, Atlanta Streetcar may have to reconsider its procurement options. One option under consideration is combining OCS and TPSS maintenance into a single solicitation.

To gain a more detailed understanding of the overall maintenance specifications, conditions, scope of services and overall procurement process, the assessment team requested and reviewed the scope

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of services for the TPSS maintenance contract. Refer to the System Safety chapter of this report for further details.

- **Emergency Contracts**

At the time of the assessment, the Atlanta Streetcar System had only one emergency contract in place for the emergency OCS condition assessment and emergency repairs.

### **Maintenance Training**

The assessment team asked if there was a specific position designated with responsibility for maintenance training. The Interim Executive Director affirmed that there were no dedicated trainers for any discipline or function. Instead, it will be the responsibility of the yet to be hired Maintenance Superintendent to obtain the necessary training resources for maintenance.

### **Quality Assurance / Quality Control**

The assessment team also asked if there was a specific position designated with responsibility for Quality Assurance / Quality Control. Again, the Interim Executive Director indicated that this would be the responsibility of the Maintenance Superintendent. The assessment team pointed out that this response is inconsistent with the quality assurance responsibilities assigned to the Director of Streetcar Services in the System Safety Program Plan, Section 8.3.2:

*The Director of Streetcar Services will ensure that quality-related goals and objectives are met and properly administered by confirming that products are designed, engineered, manufactured, installed, and tested in accordance with specified contractual, industry and governmental requirements. This is achieved through contract and operations monitoring, assessments, audits, evaluations, statistical analysis, cross-functional education, process establishment, testing and measures, and best practice implementation.*

*The Director of Streetcar Services will provide technical assistance to other departments to ensure that facility construction projects, assigned equipment/material procurement contracts, installation contracts, supplies, and other work performed on the transit system are tested and in full compliance with system criteria, contractual requirements, approved drawings, and related codes/standards.*

The Director of Streetcar Services stressed that there were many instances throughout the SSPP that assigned responsibilities to the Director of Streetcar Services that were not what he understood to be his role and responsibilities. Upon hearing that response, the assessment team asked what was the meaning of MARTA's signature on the plan. In other words, why would MARTA management endorse a plan that identifies an extensive amount of system safety responsibilities for its staff and then have the staff not fulfill these roles. After lengthy discussion, the group agreed that an appropriate next step would involve a comprehensive review of the SSPP and related plans and accurate division of responsibilities between MARTA and Atlanta Streetcar. The assessment team resolved to discuss this issue further during the MARTA interview session later in the week. Refer to the MARTA Active Management section of this report for further details.

### **Maintenance Rules and Procedures**

The assessment team began this discussion with questions related to the management and supervisory activities undertaken by the Atlanta Streetcar System to ensure employee compliance with established maintenance rules and procedures. In response, the Interim Executive Director provided a copy of a completed Maintenance Rules Compliance Checklist. He confirmed that over the life of the system, perhaps

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only 1 or 2 of the checklists have been completed and this requirement was not consistently being met. He advised that it will be the responsibility of the new Maintenance Superintendent to complete checklists. In addition, the group was unaware of what files were maintained by the previous Maintenance Superintendent who resigned.

### *Maintenance Rules Compliance Checklist*

The assessment team reviewed the Maintenance Rules Compliance Checklist (revision November 2014). Maintenance supervisors are required to perform the compliance check monthly and forward the checklist to the Superintendent of Maintenance for review and corrective action as needed. The checklist captures shop location, date of supervisor inspection and superintendent review, and supervisor and superintendent's name and signature. While on site the assessment team received a completed compliance checklist dated October 2015. The checklist's categories and relevant comments by the Supervisor who performed the review appear below:

- Administrative
  - The Supervisor reported that Maintenance Technicians have not been trained on several pieces of equipment including cranes, HYD press, and the wheel truing machine.
  - Concerning appropriate use of a lockout/tagout program to prevent accidental energizing of equipment, machines, or electrical systems that are being repaired, the Supervisor reported that the only person currently authorized to lock out the TPSS is the Operations Superintendent. No other maintenance personnel are able to perform this requirement.
- Housekeeping
  - The Supervisor commented that he was unaware of a procedure for removing damaged, broken, or unguarded tools, equipment from service, although he was responsible for ensuring compliance.
  - Regarding the requirement that all compressed gas cylinders must be adequately secured with non-combustible restraints to keep the cylinder(s) from falling, the Supervisor reported that there is a rack, and one small cylinder, but it is not secured and the one chain present is not securing anything.
  - The Supervisor was unable to confirm in his report if incompatible chemicals are stored separately. He did confirm there are three flammable material cabinets where all materials are stored.
- Fire / Emergency Safety
  - The Supervisor was unable to confirm in his report if the emergency eyewashes for the shop were tested (flushed) monthly as required.
- Electrical Safety – No comments.
- Personal Protective Equipment – No comments.
- Tools and Equipment
  - The Supervisor reported that maintenance personnel have never been trained on the use of the cranes.
  - The Supervisor was unable to verify that daily inspections of forklifts, cranes, hoists and rigging were documented. Although building inspection are performed daily, the inspection did not cover these items.
- Welding – Not applicable.
- Hazardous Materials – No comments.

While the checklist is comprehensive and well organized for the purpose of auditing the compliance of maintenance activities within the shop, it is not being implemented on a regular basis as required, not being completed by personnel with enough knowledge or access to information about the system to assess compliance, and not being forwarded to the Superintendent to take the necessary corrective action.

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The Operations Superintendent clarified that there is an established procedure for calibration of the tools and equipment used for maintenance. He also stated that a review of the personnel files should verify the delivery of initial training to Atlanta Streetcar staff on the maintenance procedures.

### *Accident / Incident Response*

Next, the Operations Superintendent described the typical maintenance response to a streetcar collision:

- On Scene Supervisor makes an assessment of the damage to the vehicle and whether or not it can be safely operated or must be returned to the VMF via tow.
- Once the vehicle arrives at the VMF, the Maintenance Superintendent assesses the damage and initiates the work order process.
- If necessary, the Maintenance Superintendent will coordinate with Procurement to arrange the repairs. If the repairs can be performed in-house, the Maintenance Technician will complete the repairs.
- The Maintenance Superintendent is also responsible for gathering data from the vehicle such as CCTV camera footage and the event data recorder.
- The Operations Superintendent compiles all the accident information and forward it to the Director, Safety, Security and Training.

### **Hansen, Maintenance Management Information System**

The session began with a description of the relevant background, qualifications, and experience of the Director of Performance Management. After describing his background and knowledge in computer science, performance analytics, and business process improvement, the Director explained that he began engaging with the Department of Public Works and Atlanta Streetcar System approximately eight months ago. His primary focus with the streetcar system was to establish an asset management, trending, and analysis solution for preventative maintenance inspections, work orders, parts/materials management, and quality assurance / quality control. The Director is assisted by the Administrative Assistant for Maintenance. She began her involvement with the Atlanta Streetcar System one year ago as a Technician with the maintenance management information system vendor, Hansen.

Next, the Director of Performance Management and the Administrative Assistant provided a detailed overview and demonstration of the software application for transit asset management, Hansen.

The User Guide (October 20, 2015), was distributed to the assessment team during the demonstration that provided useful information about the purpose of the system, description of the range of asset specific data fields, and how the system works. The primary function of the Hansen system is the creation of work orders for the most common assets of the Atlanta Streetcar System – facility, fleet equipment, and vehicle. The guide provides examples of the typical assets such as shop for facility, vehicle 1002 for vehicle, and portable car lifts for fleet equipment. After a work order is created and saved, the system automatically generates a work order number. The guide then instructs the maintenance personnel to print a work order form that includes the following information:

- Work order number, type of maintenance inspection that will be done, asset associated to the work order, and activity code that connects the asset to the work order.
- Work order details such as scheduled start date, end date, and when the work order is planned to be completed.
- Following the inspection, the creator of the work order enters the start time, end time, and who completed the inspection.

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The system also allows the user to attach a new work order to a closed work order in the event a problem was found following an inspection. Once the linked work order is saved, the system provides a final screen that shows both the original work order and the linked work order.

Following the demonstration, the Director of Performance Management fielded questions from the assessment team. He confirmed that the Atlanta Streetcar System is not currently capturing contractor work orders and repairs, such as the emergency repairs made by C3M to address the OCS unacceptable hazard. However, he agreed with the assessment team that this information would be beneficial to add to the total work history of each asset. He also mentioned that Maintenance Technicians have been directed to ensure they enter their start and end times on work orders in order to capture this important data.

The assessment team also recommended that the specific asset codes be developed and included for all safety-critical assets, including the track, OCS, traction power, and transit bar signals. The assessment team confirmed that codes have been developed to capture accident repairs; however, Atlanta Streetcar System must continue populating the system with accident data for each asset.

The group reviewed the SSPP to verify that Hansen system was comprehensive and included each of the assets subject to the inspection and maintenance program. The SSPP specifies the following equipment as subject to inspection and maintenance:

- Vehicles
- Track
- OCS
- Traction Power
- Stations
- Traffic Signals
- Vehicle Maintenance Facility

The assessment team commented that the Hansen system should be expanded to include all assets identified in the SSPP. At the time of the assessment, there was no module for the bar signals.

Following the Hansen demonstration, the Operations Superintendent and Vice President of Transportation from the Atlanta Downtown Improvement District joined the assessment team to further discuss the bar signal defect / unacceptable hazard that was mentioned in the earlier discussion. The Operations Superintendent reported that there was a daily defect for one of the bar signals that occurred every day at approximately 10:30 a.m. and has been present for some time. The assessment team was interested in how Operations initially observed and reported this defect, their interface with Safety, and how the unacceptable hazard was being assessed and resolved. The Vice President of the ADID explained that the Department of Public Works has procured the services of an engineering firm to provide full maintenance every 60 days and light maintenance every 30 days for 157 traffic signalized intersections in the downtown area. This group of intersections includes the specialized bar signals dedicated to the Atlanta Streetcar System. The Vice President offered to provide the scope of services and defect reports that were associated with the traffic signal maintenance contract to the assessment team.

The assessment team reviewed the *Downtown Traffic Operations Program* which outlined the Year 1 Scope of Services for Atlanta Streetcar's contractor, Jacobs Engineering Group, Inc. As part of its responsibilities, Jacobs will conduct an inventory of the existing downtown signalized intersections. Jacobs will continue to perform routine maintenance and retiming, including proper operation of field devices and pedestrian signals, synchronization of controller clocks, and correct timing plans. Full maintenance will be performed every 60 days, and light maintenance will be performed every two weeks. Any deficiencies or malfunctions identified will be recorded and tracked through closure. The tracking log contained one safety-related deficiency – the failure of the streetcar phase at the intersection of Ellis Street and Peachtree Street.

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The assessment team also reviewed *DTOP On-Call and Routine Maintenance Schedule*. The DTOP maintenance schedule verified that the Atlanta Streetcar System has required and established a light maintenance program which began during the last week of June 2015 and continued every week until full maintenance began during the second and third weeks of August. This maintenance cycle has repeated as of the first week of September.

### *Transit Signal Defect Unacceptable Hazard*

Regarding the transit signal unacceptable hazard, the assessment team reviewed the emails between the ADID Vice President and Jacobs Engineering. On October 27, 2015, the ADID VP inquired about a streetcar bar signal that was not functioning properly, whether it would be logged on the DTOP spreadsheet, and if it had already been remedied. A Jacobs traffic engineer responded that the issue had been reported the previous week concerning the streetcar phase being skipped at the intersection of Peachtree Street and Ellis Street around 10:00 a.m. Jacobs had observed the location, but had not been able to verify the report. Jacobs decided to install a new controller and then resume monitoring after the replacement. The next day, Jacobs followed up confirming that the controller had been replaced and observation of the skipped streetcar signal. Jacobs explained that the streetcar cycle was missed when the streetcar arrived early at the stop, did not proceed during the first cycle, and waited long enough at the stop to lose the GPS signal. Jacobs resolved the problem by extending the length of the call in the controller.

### **Recurring Maintenance Training**

To determine adherence to the recurring maintenance training program as defined within the SSPP, the assessment team reviewed the required training with the Operations Superintendent. He confirmed that the status of training implementation is as follows:

Required Maintenance Training	Implemented (Yes / No)
Streetcar Operator Training	Yes
Streetcar Technician Training	Yes
Supervisor Training	Yes
Maintenance Inspection Training	Yes
OCS Training	Yes
Substation Training	No (Annual)
Track Training	Yes
Post-Accident (Unscheduled) Retraining	Yes
Rulebook, Standard and Emergency Operating Procedures (SOP/EOP) Training	Yes
Right of Way Safety (Annual) Employees/Contractor	Yes
Specific Safety Training	Yes
Drug & Alcohol	Yes
Reasonable Suspicion	Yes
CPR/First Aid (2 Years)	Yes
Blood borne Pathogens (Annual)	Yes
Vehicle Maintenance	Yes
Heavy Equipment Maintainer-Operator	No
Streetcar Maintenance/Mainline Special Training	No
Facilities, Grounds	No
Electrical, Signal, and Substation Maintainers	No
Maintenance Supervisors (Track, Vehicle, Power, Facilities)	Yes

At the end of the session, the assessment team advised that the personnel records of the Maintenance Superintendent, Supervisors and Technicians would be reviewed to verify the implementation of the required maintenance training.

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### **Training Record Reviews for Mechanics, Technicians, and Inspectors**

As discussed in the Operations section of this report, on November 13, 2015, two members of the assessment team conducted a complete review of the training records for all Atlanta Streetcar System safety-sensitive positions, including records for maintenance personnel. The final results of this review are included as **Appendix A** and discussed in the Operations sections of this report.

To immediately assist the Atlanta Streetcar System with compliance to the training requirements of the SSPP, at the conclusion of the records review, the assessment team transmitted its draft results to the Atlanta Streetcar System for review. To close the gap, the Atlanta Streetcar System must ensure that the training delivered to all safety-sensitive personnel – Operators, Supervisors, Technicians, and Superintendents – is consistent with the minimum training courses and frequency as outlined within the SSPP.

# Human Resources

## Organizational Structure

The session began with the City of Atlanta Human Resources Director and Manager providing a description of their relevant background, qualifications, and experience. The Human Resources Manager has an extensive background spanning over 20 years in human resources, and has been employed by the City for the last three years. The Human Resources Director considers herself a generalist in human resources and has a wide range of skills that includes training and employee relations.

To better understand how Human Resources delivers its support services to the departments throughout the City, the assessment team asked the Director and Manager to describe the overall organization structure for Human Resources and its connections to the Atlanta Streetcar System. They responded that the Commissioner of Human Resources provides overall leadership to the department and is supported by two Deputy Commissioners. A Senior Human Resources Representative and Training Manager report to the Director of Human Resources who reports to a Deputy Commissioner. A Senior Recruiter dedicated to the Department of Public Works reports to the other Deputy Commissioner. In this way, Human Resources provides talent acquisition and human resources support to the Atlanta Streetcar System.

To further understand the current operations and maintenance capacity of the Atlanta Streetcar System, the assessment team requested and reviewed human resources information for authorized positions and their status (vacant, filled, full-time, part time, safety sensitive, or extra help). The results of this review are discussed later in this section.

The Director and Manager commented that challenges exist in prioritizing the recruiting and hiring of vacant Atlanta Streetcar System positions. To address this, strategies are in effect to meet their human resources needs including bi-weekly meetings and assignment of back up human resources staff, when required. The Manager stated that it is the responsibility of the client group, in this case the Atlanta Streetcar System, to establish thresholds for filling positions and communicating those thresholds to Human Resources.

To date, the Atlanta Streetcar System's point-of-contact for human resources activities has varied from the Operations Superintendent to the Executive Director to the Project Controls Manager.

When asked whether or not the City of Atlanta uses third party contracts for human resources activities, the Director said three contracts are in place. The first contract provides temporary personnel. The second contract provides driving history as well as criminal and educational background checks. The third and last contract is for occupational medical services, include drug and alcohol testing.

The assessment team shifted the discussion to the efforts to update the Human Resources procedures to prevent recurrence of Operators being initially hired and remaining in service without meeting the minimum credentialing requirements, including a CDL. In previous hazard management meetings between GDOT and the Atlanta Streetcar System, because of the apparent gaps in the hiring and return-to-work processes, GDOT suggested that the following corrective actions be taken:

- The City of Atlanta should develop a Human Resources policy and procedures for the Atlanta Streetcar for initial hires that includes a re-verification of the candidate's qualifications and background check before allowing the candidate to enter Operator training when the candidates have been in the employment pool for an extended period.

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- The City of Atlanta should develop a procedure that requires at least monthly verification of Operator's licensing requirements.
- The City of Atlanta should develop a policy and procedure that requires notification from the City of Atlanta Police Department to the Atlanta Streetcar of Atlanta Streetcar personnel, particularly Operators that have received traffic citations.
- The City of Atlanta should develop a return-to-work policy and procedure that specifies the documentation that an Operator (or other personnel) who is involved in an incident that leads to arrest must present to Atlanta Streetcar management demonstrating the final disposition of the incident and demonstrates that the City's requirements to return-to-work and operate a streetcar have been met.

The Director and Manager advised the assessment team that changes have been made in the last few months to address the hiring issues raised by the State. The Atlanta Streetcar System does not hire Operators unless they have a CDL, Class B, with a passenger endorsement. In response to this change, the job descriptions of safety-sensitive positions were also updated. In addition, the Atlanta Streetcar System conducts its own monthly checks to ensure Operator's medical cards and driver's licenses remain current.

### *Job Listings – Duties, Safety Responsibilities, Licenses / Registration*

The assessment team reviewed the updated job descriptions for the safety-sensitive positions as discussed in the interview with Human Resources. A review of the job descriptions verified that the Atlanta Streetcar has established the following safety qualifications, licensing, duties and responsibilities for the following personnel:

#### Superintendent of Streetcar Operations

- Directs and coordinates all operation personnel; Supervises the hiring process; Ensures compliance with all regulations and manufacturers' processes for operations; Coordinates operations requirements with the maintenance department; Reports equipment failures; Monitors training and safety;
- Takes reasonable precautions to ensure the protection of employees, contractors, volunteers, patrons and members of the public; Identifies and informs personnel of hazards in the workplace and safe work methods; Ensures that personnel are trained on, and follow, safety policies and procedures; Responds to health and safety concerns of personnel
- Valid State of Georgia driver's license and CDL, Class B, with passenger endorsement, current Department of Transportation (DOT) medical clearance

#### Streetcar Superintendent of Maintenance

- Ensures streetcar vehicles and infrastructure is maintained in a state of good repair to meet operation service requirements; Directs and coordinates all maintenance personnel including Streetcar Supervisors, Technicians, and Cleaners, in addition to maintenance and security contractors; Implements and monitors training; Supervises the hiring process;
- Takes reasonable precautions to ensure the protection of employees, contractors, volunteers, patrons and members of the public; Identifies and informs personnel of hazards in the workplace and safe work methods; Ensures that personnel are trained on, and follow, safety policies and procedures; Responds to health and safety concerns of personnel
- Valid State of Georgia driver's license and CDL, Class B, with passenger endorsement or the ability to obtain one within 3 months; Current Department of Transportation (DOT) medical clearance

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##### Streetcar Operations Supervisor

- Directs and supervises the work of the assigned Atlanta Streetcar superintendents and streetcar operators from right of way locations; Observes vehicle movements, rail stop cleanliness and all related activities on a daily basis and initiates corrective action as needed; Assists Rail Operations staff in implementation of new or revised rules, procedures, training programs and other materials
- Carries out the City's safety program for the unit; ensures staff follow safely practices in work methods and procedures; educates assigned personnel of rules, regulations, codes, safe work habits and potential hazards presented by their work environment completes accident reports and investigates risk claims
- Valid CDL, Class B, with passenger endorsement; Successful background check; Adherence to City of Atlanta Drug and Alcohol Program

##### Senior Communications Dispatcher

- Responds to the changing needs of the Atlanta Streetcar regarding coverage of operations, such as emergency situations, streetcar replacement and repair, re-routing of streetcar, delays in service and detours; Handles sensitive and confidential requests and inquiries; May guide and train other employees on proper procedures and protocol of the Atlanta Streetcar; Initiates collision reporting and participates in accident investigations when required
- Takes reasonable precautions to ensure the protection of employees, contractors, volunteers, patrons and members of the public; Identifies and informs personnel of hazards in the workplace; Assists in determining safe work methods; Follows all safety policies and procedures; Reports health and safety concerns in a timely manner; Maintains field streetcar vehicles status at all times to ensure safety of the employees performing activities, including working accidents, hazardous incidents, fire traffic control, pursuits, etc.
- Valid CDL, Class B with P endorsement; Current Department of Transportation (DOT) medical clearance

##### Streetcar Technician

- Performs journey-level diagnosis of rail equipment malfunctions, determines probable cause, and makes the necessary repairs; Conducts operational inspections and repairs; Performs acceptance testing and pre-service preparations on equipment; Overhauls and maintains traction power substations
- Takes reasonable precautions to ensure the protection of employees, contractors, volunteers, patrons and members of the public; Identifies and informs personnel of hazards in the workplace
- Valid State of Georgia driver's license and CDL, Class B, with passenger endorsement or the ability to obtain one within 3 months; Current Department of Transportation (DOT) medical clearance

##### Streetcar Operator

- Operates a streetcar to transport passengers safely; Maintain complete up to date Rail Operations Rule Book and knowledge of all safety rules and procedures; Performs pre-pull-out inspection of train and track for safety reasons and reports any operational problems; Wears Personal Protective Equipment as supplied and instructed
- Takes reasonable precautions to ensure the protection of employees, contractors, volunteers, patrons and members of the public; Assists in determining safe work methods; Follows all safety policies and procedures; Reports health and safety concerns in a timely manner
- Valid State of Georgia's driver's license and CDL, Class B, with passenger endorsement; current Department of Transportation (DOT) medical; No more than three moving violations in the past three years; Must pass physical examination and drug screen required for job; Stable work record; Ability to meet the physical requirements of the position

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*Atlanta Streetcar System Position Report - October 28, 2015*

The assessment reviewed the position report and verified that the Atlanta Streetcar System has a total vacancy rate of **47%**. When considering safety sensitive positions only, the vacancy rate is more than **51%**.

In addition, the position report indicates that the positions highlighted in yellow are Safety Sensitive Positions. The assessment team cross referenced the Human Resources report with the identification of safety-sensitive positions according to the adopted Drug and Alcohol Policy and found the Custodians were not identified as safety-sensitive, although identified as such in the policy (highlighted in orange). The position report also appears to have discrepancies in terms of filled and vacant positions. For example, the Maintenance Superintendent is identified as filled; however, the assessment confirmed with Atlanta Streetcar management personnel through on-site interviews that the position was vacant and the Operations Superintendent was acting in that capacity.

When the assessment team adjusted the number of safety sensitive positions to comply with the Drug and Alcohol Policy, the safety sensitive position vacancy rate was **48%**.

#	Position Title, Actual	Position Title, ASC Org Chart	Filled/Vacant	Status	HR Notes	Assessment Team Notes
1	Administrative Assistant, Sr.	Administrative Assistant	FILLED	Active		
2	Not provided	Administrative Assistant	Not provided	Not provided	Not provided	At time of assessment, position was filled temporarily (Tuck), yet position does not appear on Position Report
3	Communications Dispatcher (D)	Dispatcher	VACANT	Extra Help	Creating 3 ACTIVE positions in legislation October 2015; these will be abolished	At time of assessment, position was filled temporarily (Barclay)
4	Communications Dispatcher (D)	Dispatcher	VACANT	Extra Help		At time of assessment, position was filled temporarily (Johnson)
5	Communications Dispatcher (D)	Dispatcher	VACANT	Extra Help		
6	Custodian Sr.	Infrastructure Cleaner	FILLED	Active		Drug & Alcohol Policy identifies position as safety sensitive. HR position report does not.
7	Custodian Sr.	Infrastructure Cleaner	FILLED	Active		Drug & Alcohol Policy identifies position as safety sensitive. HR position report does not.
8	Contracting Officer	Contracting Officer	VACANT	Active	Not actively recruiting;	

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#	Position Title, Actual	Position Title, ASC Org Chart	Filled/Vacant	Status	HR Notes	Assessment Team Notes
					Determination to be made on status	
9	Government Liaison / Safety Trainer	Data / Reporting Analyst	VACANT	Active	Will use position to hire Data / Reporting Analyst FOC	
10	Marketing & Communications Director	Director of Marketing	VACANT	Active	Not actively recruiting; Determination to be made on status	
11	Public Works, Deputy Commissioner	Acting Executive Director & Manager of SC Services	VACANT	Active	Not actively recruiting; Determination to be made on status	At time of assessment, position was filled temporarily (Jones); Drug & Alcohol Policy identifies position as non-safety sensitive, but subject to testing.
12	Safety & Training Supervisor	Not listed	VACANT	Active	Not actively recruiting; Determination to be made on status	
13	Streetcar Acquisition Director	Business & Procurement Manager	FILLED	Active		
14	Streetcar Communications Analyst	Business Liaison	FILLED	Active		
15	Streetcar Compliance Director	Compliance Manager	VACANT	Active	Not actively recruiting; Determination to be made on status	
16	Streetcar Operator	Streetcar Operator	FILLED	Active		
17	Streetcar Operator	Streetcar Operator	FILLED	Active		
18	Streetcar Operator	Streetcar Operator	VACANT	Active		At time of assessment, position was filled permanently (Dean)
19	Streetcar Operator	Streetcar Operator	VACANT	Active		
20	Streetcar Operator	Streetcar Operator	FILLED	Active		
21	Streetcar Operator	Streetcar Operator	FILLED	Active		

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#	Position Title, Actual	Position Title, ASC Org Chart	Filled/Vacant	Status	HR Notes	Assessment Team Notes
22	Streetcar Operator	Streetcar Operator	VACANT	Active		
23	Streetcar Operator	Streetcar Operator	VACANT	Active		
24	Streetcar Operator	Streetcar Operator	VACANT	Active		
25	Streetcar Operator	Streetcar Operator	FILLED	Active		
26	Streetcar Operator	Streetcar Operator	FILLED	Active		
27	Streetcar Operator	Streetcar Operator	FILLED	Active		
28	Streetcar Operator	Streetcar Operator	FILLED	Active		
29	Streetcar Operator	Streetcar Operator	FILLED	Active		
30	Streetcar Operator	Streetcar Operator	VACANT	Active		
31	Streetcar Safety, Security, & Training Director	Director of Safety Security and Training	FILLED	Active		
32	Streetcar Services Assistant Manager	Not listed	VACANT	Active	Not actively recruiting; Determination to be made on status	
33	Streetcar Services Manager	Acting Executive Director & Manager of SC Services	VACANT	Active		
34	Streetcar Transit Program Controls Manager	Program Controls Manager	FILLED	Active		
35	Superintendent of Maintenance	Superintendent of Maintenance	FILLED	Active		
36	Superintendent of Operations	Superintendent of Operations	FILLED	Active		
37	Urban Planner III	Title VI & DBE Officer	VACANT	Active	Not actively recruiting; Determination to be made on status	
38	Vehicle / Equipment Maintenance Supervisor	Streetcar Supervisor	VACANT	Active		At time of assessment, position was filled permanently (Hall)
39	Vehicle / Equipment Maintenance Supervisor	Streetcar Supervisor	VACANT	Active		
40	Vehicle / Equipment	Streetcar Supervisor	FILLED	Active		

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#	Position Title, Actual	Position Title, ASC Org Chart	Filled/Vacant	Status	HR Notes	Assessment Team Notes
	Maintenance Supervisor					
41	Vehicle / Equipment Mechanic III	Streetcar Technician	FILLED	Active		
42	Vehicle / Equipment Mechanic III	Streetcar Technician	FILLED	Active	Is on extended leave	
43	Vehicle / Equipment Mechanic III	Streetcar Technician	VACANT	Active		
44	Vehicle / Equipment Mechanic III	Streetcar Technician	FILLED	Active		
Total Number Positions		44	Total Vacant	21	Percent Vacant	47%
Total Number Safety Sensitive Positions		29	Total Vacant	15	Percent Vacant	51%
Total Number Safety Sensitive Positions (Adjusted by Assessment Team)		31	Total Vacant	15	Percent Vacant	48%

**Training Program**

The Director confirmed that the HR Training Manager is responsible for delivering training during Initial Qualification and Certification Training for Operators at the Atlanta Streetcar System.

*Department of Public Works – New Hire Orientation Agenda*

The assessment team reviewed the new hire orientation agenda, which confirmed that the following safety and security training is delivered by Human Resources during Initial Operator Certification Training:

- Safety Video
- Sexual Harassment Policy
- Bullying in the Workplace
- Substance Abuse Policy
- Workplace Violence
- Safety Policy Procedures

**Drug and Alcohol Policy**

*Post-Accident Testing*

This session began with the Mobile Nurse describing her length of employment and current duties. She is a Registered Medical Assistant and has been employed by the City of Atlanta for over 9 years. She is responsible for scheduling physicals for all non-sworn City personnel which includes safety-sensitive positions within the Atlanta Streetcar. She is also the recipient of all Atlanta Streetcar personnel post-accident drug and alcohol test results. A lengthy discussion followed the assessment team’s review of the report summarizing post-accident test results provided during the interview session. The assessment team clarified the required information needed on the post-accident drug and alcohol test report in order to provide the Atlanta Streetcar System’s management team with adequate information to complete and document the

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accident/incident investigation specified in its SSPP. The Nurse agreed that she would be able to make the necessary revisions to the post-accident drug test reports.

### *Random Testing*

Next the discussion focused on the Director of Employee Benefits and his experience and management responsibilities for the drug and alcohol program. The Director stated that he has been employed by the City of Atlanta for the last 10 years and has a background in healthcare benefits, health, and wellness. As it relates to the Atlanta Streetcar System, he coordinates with the occupational medicine contractor to implement the random drug testing program. When asked to describe his methodology for random drug testing of the Atlanta Streetcar employees, he responded as follows:

Date	Testing Methodology	FTA Compliant
April 2015	Random Testing <ul style="list-style-type: none"><li>All personnel on site that day were tested.</li></ul>	No
August 2015	Random Testing <ul style="list-style-type: none"><li>Picked every third name.</li><li>If name picked previously, the name was taken out of the random pool.</li></ul>	No
September 2015	Random Testing <ul style="list-style-type: none"><li>Picked every third name.</li><li>If name picked previously, the name was taken out of the random pool.</li></ul>	No

The FTA members of the assessment team clarified that this random drug testing methodology was not compliant with FTA drug and alcohol testing requirements. It was further suggested that the Director of Human Resources coordinate directly with the FTA Transit Safety Office to obtain further guidance on how to comply with its random drug and alcohol testing requirements.

### *Pre-Employment Testing*

The Director of Human Resources confirmed that pre-employment drug and alcohol testing is mandatory for all City of Atlanta employment candidates. The pre-employment testing is performed and documented by the occupational medical services contractor.

### *Program Compliance Audits*

The assessment team asked the group if any department within the City of Atlanta was tasked with the responsibility of auditing the compliance to the FTA drug and alcohol program. The participants responded that they were unaware of any compliance checks or audits being performed by any group.

### *Drug and Alcohol Policy*

The assessment team reviewed the Atlanta Streetcar Drug & Alcohol Policy & Procedures dated September 29, 2014. The assessment focused on the following implementation requirements:

- Post-Accident Testing

All safety-sensitive employees will be required to undergo urine and breath testing if they are involved in an FTA-reportable accident with any ASC transit vehicle. FTA defines an accident as an occurrence associated with the operation of a vehicle, if as a result of any adverse event any one of the following occurs:

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- A fatality, as defined by FTA in 49 CFR 659
- An individual suffers bodily injury and immediately receives medical treatment away from the scene of the accident
- The mass transit vehicle involved is a bus, electric bus, van or automobile, the incident involves one or more vehicles (including non-FTA-funded vehicles) incur disabling damage as the results of the accident resulting in towing from the scene
- The mass transit vehicle involved is a rail car, trolley car, trolley bus, or vessel, and the mass transit vehicle is removed from operations.

As discussed earlier in this report, Operators of streetcar vehicles have been involved in adverse events which met the post-accident testing criteria described above; however, the Atlanta Streetcar System did not subject the Operators to the required tests. The Atlanta Streetcar System must ensure its compliance to FTA's post-accident testing guidelines.

- Random Testing

The FTA regulation 49 CFR 655.45 requires random (unannounced) testing of drugs and alcohol for all safety-sensitive employees. The selection of safety-sensitive employees for random drug and alcohol testing will be made using a scientifically valid method that ensures each covered employee will have an equal chance of being selected each time selections are made. The random tests will be unannounced and spread throughout the year.

Based upon the ASC's operations, random testing is conducted on all days and during all hours in which safety-sensitive functions are performed. ASC requires non-safety-sensitive employees to be subject to all random testing requirements in this document. The same forms will be used for both DOT and non-DOT required testing. The current FTA required random testing percentages are 25% for drug and 10% for alcohol. All safety-sensitive employees can be tested at any time during an employee's shift. Employees may be notified by their supervisor, the Compliance Officer or other manager or supervisor.

Employees are required to proceed immediately and directly to the collection site upon notification of their random selection. Under ASC policy, any employee who does not proceed immediately to the testing center when notified, or who fails to report to the testing center within one hour of notification, will be placed on medical hold without pay until the DER investigates the late report. The DER will require a written, signed statement from the employee documenting the circumstances of employee's situation. Failure to proceed immediately for testing or taking greater than one hour to report for testing can result in disciplinary action up to and including discharge. All employees who fail to report for a drug or alcohol test will be discharged. All safety-sensitive employees with a MRO verified positive on a drug and alcohol test will be immediately removed from their safety-sensitive position, discharged, and referred to a Substance Abuse Professional (SAP), in accordance with 49 CFR 655.

The assessment team determined that the methodology for the selection of safety-sensitive employees for random drug and alcohol testing is not being made using a scientifically valid method that ensures each covered employee will have an equal chance of being selected each time selections are made.

The drug and alcohol policy also defines the safety sensitive positions that are subject to the testing and is summarized in the table below. The assessment team cross referenced the safety sensitive positions defined in the drug and alcohol policy requirements against those identified on the HR position report and determined that the Atlanta Streetcar is not implementing the testing requirements as required for three positions – Manager of Streetcar, Director of Streetcar Services,

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and Deputy Director of Streetcar Services. In addition, the drug and alcohol policy requires update to include new positions that are subject to the testing program, namely Dispatchers.

<b>D&amp;A Policy Criteria</b>	<b>D&amp;A Policy Safety Sensitive Position</b>	<b>Safety Sensitive on HR Position Report? (Y/N)</b>
Operating a revenue service vehicle.	<ul style="list-style-type: none"> <li>• Superintendent of Operations</li> <li>• Streetcar Supervisors</li> <li>• Streetcar Operators</li> </ul>	Y Y Y
Controlling dispatch or movement of a revenue service vehicle.	<ul style="list-style-type: none"> <li>• Director of Safety, Security &amp; Training</li> <li>• Manager of Streetcar Services</li> <li>• Superintendent of Operations</li> <li>• Streetcar Supervisors</li> </ul>	Y N Y Y
Maintaining a revenue service vehicle or equipment used in revenue service.	<ul style="list-style-type: none"> <li>• Superintendent of Maintenance</li> <li>• Streetcar Technicians</li> </ul>	Y Y
Carrying a firearm for security purposes.	<ul style="list-style-type: none"> <li>• None</li> </ul>	N/A
Operating a non-revenue service vehicle when required to be operated by a holder of a commercial driver's license.	<ul style="list-style-type: none"> <li>• None</li> </ul>	N/A
Contractors: all contractors "standing" in the shoes of safety-sensitive employees will also be required contractually to adhere to the requirements of 49 CFR 655 and this policy.	<p>At the time of writing, those contractors will be performing maintenance duties in the area of:</p> <ul style="list-style-type: none"> <li>• Vehicle Maintenance</li> <li>• Track Maintenance</li> <li>• Electrical (Power) Maintenance</li> <li>• Security</li> </ul>	N/A
Non-safety-sensitive positions subject to ASC testing provisions.	<ul style="list-style-type: none"> <li>• Director of Streetcar Services</li> <li>• Deputy Director of Streetcar Services</li> </ul>	N N

# Communications

## Management Structure

The session opened with the Press Secretary from the Office of the Mayor of the City of Atlanta providing an overview of the various groups involved in communications related to the Atlanta Streetcar System. She explained that the Office of the Mayor functionally oversees the communications program for all departments within the City of Atlanta, excluding the Atlanta Police Department, Hartsfield-Jackson International Airport, and Watershed Management. She also mentioned that the Office of the Mayor has handled all media relations efforts for the Atlanta Streetcar System in partnership with the ADID.

## Communications Strategies

Next, the participants described the communications strategies for the Atlanta Streetcar System:

1. Community Liaison – A dedicated Community Liaison has been in place since the construction phase of the project. The liaison provides stakeholder involvement and education to targeted groups such as property owners along the alignment, special interests (PEDS, Wheat Street Tower, Curb Market) as well as members of the general public. To date, he has conducted over 70 alignment roughs with school age children, residents, and other stakeholders.

The Community Liaison has been working with the Atlanta Streetcar System since 2012. He added that his typical duties include hosting a monthly speaker's bureau, managing social media, voicing community concerns to the Safety department, notifying the public of service interruptions, and participating in the Interagency Law Enforcement Forum which coordinates the logistics of multiple agencies for special events and parades.

The assessment team commented that the SSPP should be updated to describe the safety related activities of the Communications personnel, particularly participation in the Interagency Law Enforcement Forum and procedures for reporting of safety and security concerns to Safety.

2. Operations Life Saver – Atlanta Streetcar System provides public education programs to prevent collisions, injuries, and fatalities on and around rail fixed guideway tracks and at rail grade crossings.
3. ADID Alignment Tours – ADID provides additional alignment tours, above and beyond those conducted by the Community Liaison. To date, ADID has hosted over 119 tours.
4. Georgia State University – Atlanta Streetcar System conducts targeted outreach to Georgia State University students which includes a ridership campaign and safety messaging.
5. Chambers of Commerce – This is a relatively new strategy where the Communications personnel meet with chambers of commerce on a quarterly basis to push out messages for safety and adherence to traffic laws in and around the Atlanta Streetcar System.
6. Printed Materials/Advertisements – The ADID Vice President discussed several pieces of printed collateral for the Atlanta Streetcar System including the “It’s not where you go, it’s how you get there” brochure, articles in *Where* magazine and *Where* hotel guest books.

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7. Downtown Ambassadors – ADID personnel trained to provide residents, tourists, conventioners, employees, business owners, and transit riders with a variety of information and assistance.
8. Customer Service Information Plan – The assessment team reviewed the Customer Service Information Plan and Procedures dated November 5, 2014. The plan outlines the Atlanta Streetcar System’s objective for public communication during emergency events. The responsibilities of each member involved in emergency communications is as follows:
  - Atlanta Streetcar Office of Communications provides timely and accurate information to the public, news media, project partners, and local community groups, especially concerning service disruptions, lifesaving / health preservation instructions, emergency status information, and other useful information. Receives all calls from the media and the public concerning an emergency situation, develops and issues news releases through the media, social media, email, and other available means. Coordinates with other departments through situation briefings, tours, field information centers, interviews, and the Everbridge Emergency Notification System, if deemed appropriate.
  - Communications Director makes the determination if the Everbridge Emergency Notification System is necessary for the current situation.
  - Manager of Streetcar Services has the lead for operational discussions with designated regional and local officials and will have responsibility for operational communications. Provide guidance to all other managers about emergency readiness and response.
  - Chief Human Resources Officer provides information to Atlanta Streetcar employees about continuation of, or modifications to, the Atlanta Streetcar’s administrative operations.
  - Department of Public Works’ Information Technology group posts information on the Atlanta Streetcar’s web site
  - Office of Customer Service provides information to callers.
9. Media Relations – In response to accidents/incidents, Communications personnel provide media responses that emphasize core messages such as “Motorists should obey traffic laws around streetcars.”
10. Chief Bicycle Officer – In a progressive move, the City of Atlanta recently hired its first Chief Bicycle Officer. She is responsible for a wide range of activities related to bicycle transportation including public outreach, project development, grant writing, engineering/planning bicycle projects, oversight of the City’s bike share program, and ensuring new development is consistent with the bike elements of the City’s existing plans.
11. Crisis Communications Plan – The Press Secretary explained that the City has a Crisis Communication Plan that describes the communications protocols during major events and emergencies. The plan describes the establishment of 24 hour centers that provide communications to media outlets until such time that the Mayor deactivates the centers.

She also advised the assessment team that the City formed a Communications Committee that includes personnel from the Mayor’s Office, ADID, Atlanta Streetcar, and MARTA. The committee has direct responsibility for enhancing safety and security and mitigating issues as they arise.

The assessment team responded that these safety-critical communications strategies and groups are not currently described or referenced within the SSPP for the Atlanta Streetcar. The SSPP should be revised to ensure that it captures and reflects all safety, security, and emergency communications activities of City of Atlanta departments and the ADID.

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12. Communications Systems – The ADID Vice President described a number of communications systems including systems for text messages, emails, and phone calls, a 3-1-1 customer service system (planned), real time passenger information system (planned), and a mobile fare payment application (planned).
13. Atlanta Downtown Improvement District – The ADID Vice President explained that ADID is the transportation management association for the downtown area and partners with Atlanta Streetcar System to conduct community and business outreach activities, staff support, and funding.

### Customer Call Log

The assessment team reviewed the customer call log. Of the 78 calls, between July 1 and September 30, 2015, the overwhelming majority were general calls about the streetcar's route, stops, hours of operation, and fare information. While there were no safety-related calls, the log has categories to capture that information such as bicyclist and other human powered vehicle safety, streetcar motorist safety, and passenger safety.

### 311 Call Center

The City of Atlanta has established 311 customer call center and provided a script to customer service representatives to respond to a variety of streetcar topics including an overview of the streetcar system, caution near the TPSS system, basics of safe ridership, safety of bicyclists, nearby attractions, hours of operation, stops, route, and fare information, and disability access. As it relates to safety, customer service representatives are trained to respond to inquiries of streetcar motorist safety as follows:

*Streetcar operators must obey the same traffic and speed laws as any other motorist. Streetcars travel at or below the posted speed limits and must obey all traffic signals. It's okay to drive on the streetcar tracks – in most cases, roadway space and safety require it. Be aware that vehicle tires may feel a bit different on the track, but the tracks are not electrified. Look for streetcars before you make a right at a red light. The streetcars are very quiet and you probably won't hear them approaching. Make sure you look before starting your turn. Streetcars are NOT cars – they cannot stop quickly and are on rails, so cannot maneuver out of the way of vehicles and pedestrians. A streetcar traveling at 20 miles per hour takes almost 60 feet to stop. Do not attempt to pass a streetcar. The Atlanta Streetcars are big – they're nearly 9 feet wide and 12 feet tall – and they will block your line of sight, so do not pass a streetcar at a stop, and be alert for those disembarking from the streetcar. Streetcars cannot go around cars parked on the track. Park your entire vehicle within the white lines and do not double-park.*

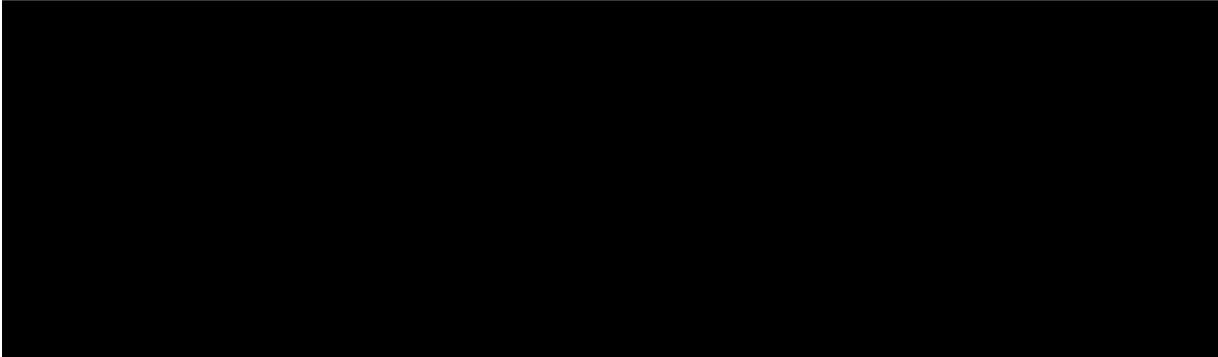
They are also trained to respond to questions about caution near power lines, wires, and substations as follows:

*The City of Atlanta is concerned about your safety and would like you to know that the streetcar is powered by electrical overhead wires that are extremely dangerous if not handled correctly. If someone has been harmed at/or near the streetcar, immediately dial 911. Here are some general safety tips when visiting the Atlanta Streetcar. Making improper contact with the streetcar's energized overhead wires could be potentially harmful or life threatening. To help ensure your safety and the safety of all streetcar passengers, refrain from the following activities: (1) Making direct or indirect contact with the electric poles and wires surrounding the streetcar. This may include touching, climbing, or throwing articles at wires. The overhead wire or "catenary" is energized at 750v direct current (DC) and could pose a safety hazard with undue contact. (2) Entering*

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*a Streetcar power substation(s). Unauthorized access in/or near a power substation is strictly prohibited. (3) Standing, walking or approaching within 10 feet of overhead wires. The City of Atlanta would like for all streetcar visitors and passengers to enjoy this local attraction while keeping the utmost safety in mind. You may visit our website for additional safe ridership information.*



### **Public Outreach Plan**

The assessment team asked if the communications strategies were documented in a formal Public Outreach Plan; such a plan would describe the communications goals, objectives, target audiences, strategies and performance measures for the Atlanta Streetcar System. The Press Secretary responded that the City implements an established set of tools, but has not documented them in a formal plan. She agreed that it would be beneficial to pull all of the tools together into a Strategic Communications Plan for the Atlanta Streetcar System.

# System Safety

## Procurement

In this session, the Procurement Manager was asked to provide a detailed description of the procurement process for the Atlanta Streetcar System, including all steps related to system safety requirements and criteria. The Procurement Manager explained that the process begins with a meeting between Procurement and Atlanta Streetcar personnel to define the contract requirements and scope of services.

The assessment team pointed out Section 21.2, Acquisition and Disposition of Goods and Services of the SSPP which states that the Director of Streetcar Services will, “ensure that Asset Engineers (currently the City of Atlanta and MARTA) are included in technical specifications and design criteria, and guide specifications and design reviews.” The Procurement Manager confirmed that Atlanta Streetcar does not have asset engineers per se, but there is access to MARTA and their general engineering consultants.

He continued to explain the next steps in the process which include determining the budget and procurement method. When asked how the Atlanta Streetcar System determines safety features and standards, the Procurement Manager responded that he works with the Director, Safety, Security and Training to provide that contract language. The assessment team also asked if the City had established standard specifications for safety within its contracts. The Procurement Manager stated that the City has boiler plate requirements and supplemental conditions for safety. The best example of this language may be found in the TPSS Requests for Proposal.

### *Safety Specifications, Terms, Conditions*

The assessment team reviewed the TPSS Request for Proposal (RFP) to verify the safety specifications and requirements. The purpose of the project is to acquire emergency on-call and maintenance services for the Atlanta Streetcar traction power substation. The contract term is a period of six months, with an option for a six month extension. Regarding the Contract Supplemental Conditions mentioned by the Procurement Manager, the RFP included the following safety-related clauses:

- Safety and Health Requirement – requires that all work comply with all applicable state and federal safety and health regulations and industry standards, and be in accordance with the SSPP.
- Track Access Permit System – requires the contractor to follow the streetcar emergency shutdown process and to comply with power distribution, removal and restoration, track access, and lock out/tag out procedures. Also requires the contractor to comply with the SSPP and SEPP.
- Atlanta Streetcar Roadway Worker Protection Training – requires all work to be performed in accordance with the streetcar roadway worker protection procedure and all personnel to be trained on the procedure.
- Drug and Alcohol Policy – stipulates that all personnel conducting business on City property are subject to the City’s drug-free workplace policy.

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- Site Specific Safety and Health Program – specifies the content of the contactor’s safety and health program which must include safety goals, safety responsibilities of personnel, site inspections, protective devices, accident procedures, and substance abuse policy.

The Contract Supplemental Conditions address standard construction safety, security and emergency management requirements for contractors.

To demonstrate that the end user concurs with the language included within the RFP, a concurrence document must be signed by the department head, Finance, Safety, and when applicable, MARTA.

The next step in the procurement process is the evaluation of proposals. The Procurement Manager stated that after bids/proposals are received, Procurement evaluates the bids/proposals to determine the level of responsiveness. Then Procurement conducts a responsibility evaluation which focuses on identification of the bid/proposal that is the most advantageous to the City and also shows the capacity to perform the required services.

### *Quality Assurance / Quality Control*

Following contract award, the end user takes responsibility for the day-to-day management of the contractor’s delivery of the work. When asked who handles the quality assurance and quality control functions for the Atlanta Streetcar System, the Procurement Manager responded that there is no dedicated resource for quality assurance and quality control. The Director of Streetcar Services suggested that a functional manager could possibly perform the role of Project Manager for the contract as well as handle quality assurance and quality control. The assessment team expressed concern that the Atlanta Streetcar System need to develop a quality assurance and quality control program and ensure the individual responsible for its implementation is trained and qualified to perform this role, and understands and accepts this responsibility. In addition, the SSPP must be updated to accurately reflect the Atlanta Streetcar management accountability for quality assurance and quality control, if in fact the Director of Streetcar Services will not be fulfilling this role.

The assessment team reviewed the *Quality Maintenance Program Handbook – Basic Facilities, Vehicle Preventative Maintenance Inspection, Vehicle Cleanliness and Routine Vehicle Maintenance Inspection Procedures* dated November 5, 2014. The handbook includes the purpose, scope, policy, processes, roles and responsibilities, standards, and tools for the Atlanta Streetcar Maintenance Quality Assurance program. The handbook also includes example forms that are used in the implementation of the quality assurance program, such as the Streetcar Stop QA Inspection, Streetcar/Readiness/Cleanliness Inspection, Non-Revenue Service Readiness/Cleanliness Inspection, and the Facility and Grounds Readiness Inspection.

The handbook further describes the random quality assurance audit in which every shift supervisor must complete a random quality assurance inspection daily on 10% of all work-related repairs completed in the shop. In addition, there is also an overall quality maintenance audit where a QA inspector, who will report directly to the Superintendent of Maintenance, will review the overall vehicle maintenance program. The areas that will be reviewed include the following:

1. Vehicle Appearance
2. Vehicle Cleanliness
3. Vehicle Reliability
4. Preventative Maintenance Performance
5. PMI Quality Assurance Process
6. Vehicle Records
7. Overall Site Maintenance Procedures

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The guidelines within the handbook require that a designated maintenance/QA person will be assigned to review all forms completed and calculate the results. The QA Designee will also perform a weekly tally of all inspection forms and provide these to the Superintendent of Maintenance.

The performance assessment standard based on the total score is as follows:

0 – 75	Unsatisfactory
76 – 85	Needs Improvement
86 – 95	Meets Expectations
96 – 100	Recognition and Commend Excellence

The assessment team determined that the quality assurance program is comprehensive and adequate for the purposes of performing quality audits of the vehicle and facility maintenance program; however, in the 10 months of passenger service operations, the assessment team only found evidence of inspections having been performed on one day, October 19, 2015.

The assessment team reviewed one set of completed reports which detailed the results of *Quality Assurance Inspections* conducted on October 19, 2015. The results of the inspection were as follows:

LOCATION	SCORE (%)	Standard
Overall System	88	Meets Expectations
Yard	84	Needs Improvement
Dobbs Plaza	80	Needs Improvement
Vehicle 1002	87	Meets Expectation
Vehicle Maintenance Facility	99	Recognition, Commend Excellence

The assessment determined from its review that there was no evidence of follow through by the Superintendent of Maintenance to address the ‘needs improvement’ quality assurance audit findings for the yard or Dobbs Plaza.

### *Contract Close Out*

The Procurement Manager indicated that there have been no contracts administered by the City that have reached the final procurement step of contract close out for the Atlanta Streetcar. Up to this point, the only closed contracts have been administered by MARTA. When the active contracts do reach this stage, the Procurement Manager expects the Atlanta Streetcar to confirm that all deliverables have been met and to submit a financial affidavit.

### **Configuration Management**

#### *As-Builts*

For this discussion item, the assessment team was seeking a status update on the receipt of all as-builts for the final configuration of the Atlanta Streetcar System. The Director of Streetcar Services reported the status as follows:

System / Facility	As Built Status	Comments
Vehicle	100%	
Track	100%	
OCS	80%	Atlanta Streetcar received red-line drawings from the design/builder.
TPSS	100%	
Stations	100%	

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System / Facility	As Built Status	Comments
Bar Signals	100%	Atlanta Streetcar/MARTA requested a design modification to add a diagonal bar after the completion of the construction phase.
Vehicle Maintenance Facility	80%	
Pavement Markings	Unknown	Atlanta Streetcar identified pavement markings for the dynamic envelope as an unacceptable hazard mitigation in the pre-revenue service phase.

The assessment team commented during interview that the Atlanta Streetcar System did not have a complete set of as-built drawings necessary to form an adequate baseline for the implementation of its configuration management program. Configuration Management is a core management process that accommodates changes and continually documents how the physical characteristics (facilities, systems, and equipment) of a rail transit system is configured. It also ensures that documents, records, and data remain concise and valid for the purposes of safe and effective operations and maintenance of the transit system.

### *Diagonal Bar Signal*

The Director of Streetcar Services further explained the current status of the diagonal bar signal. The assessment team was told that the diagonal bar signal was not in use and would not be in use until rules were developed and employees were trained on the new rules. Following the interview, the Director of Streetcar Services re-approached the assessment team and corrected his earlier statement. The diagonal bar signal was in effect; however, there were no written operating rules, procedures, or training in place directing its use.

The assessment team reviewed documentation from the Design/Build Contractor to Atlanta Streetcar and MARTA requesting a change order at the Fort Street intersection. The request describes the pricing for design, purchase, installation and setup of three additional train control signals at this intersection. These additional signals were not part of the base scope, but were added after discussion of the operation of the signals at Fort Street. The transit signal was designed to have the yard movement of the streetcar guided by the transit signal. The normal revenue move of the streetcar would be guided by the red, yellow, and green lights of the traffic signal. The streetcar movement to yard would be indicated by a vertical bar on the transit signal. The traffic signal plans were designed according to this assumption that the vertical bar would be associated with a yard move. At the time of the request, there were no operating procedures that provided a standard.

During testing and commissioning, the Operators provided feedback that they preferred that the vertical bar give them the indication to go straight, and that a flashing or diagonal bar would indicate a yard move. The Design/Build Contractor attempted in a laboratory situation to develop a usable flashing bar, but it was determined to not be possible because the wiring would cause conflicts in operations. Therefore, the diagonal signal was proposed to address Operator feedback.

The assessment team reviewed the *Record Drawings, Traffic Signal Installation* dated December 5, 2014 which verified the implementation of the diagonal signal phase, including the signal at Auburn Avenue and Fort Street.

The assessment team reviewed the *Atlanta Streetcar Transit Signal Operations Training Agenda* which was established in response to design modifications of transit signals to include the diagonal bar. Selected information relative to safe operations from the training included the following:

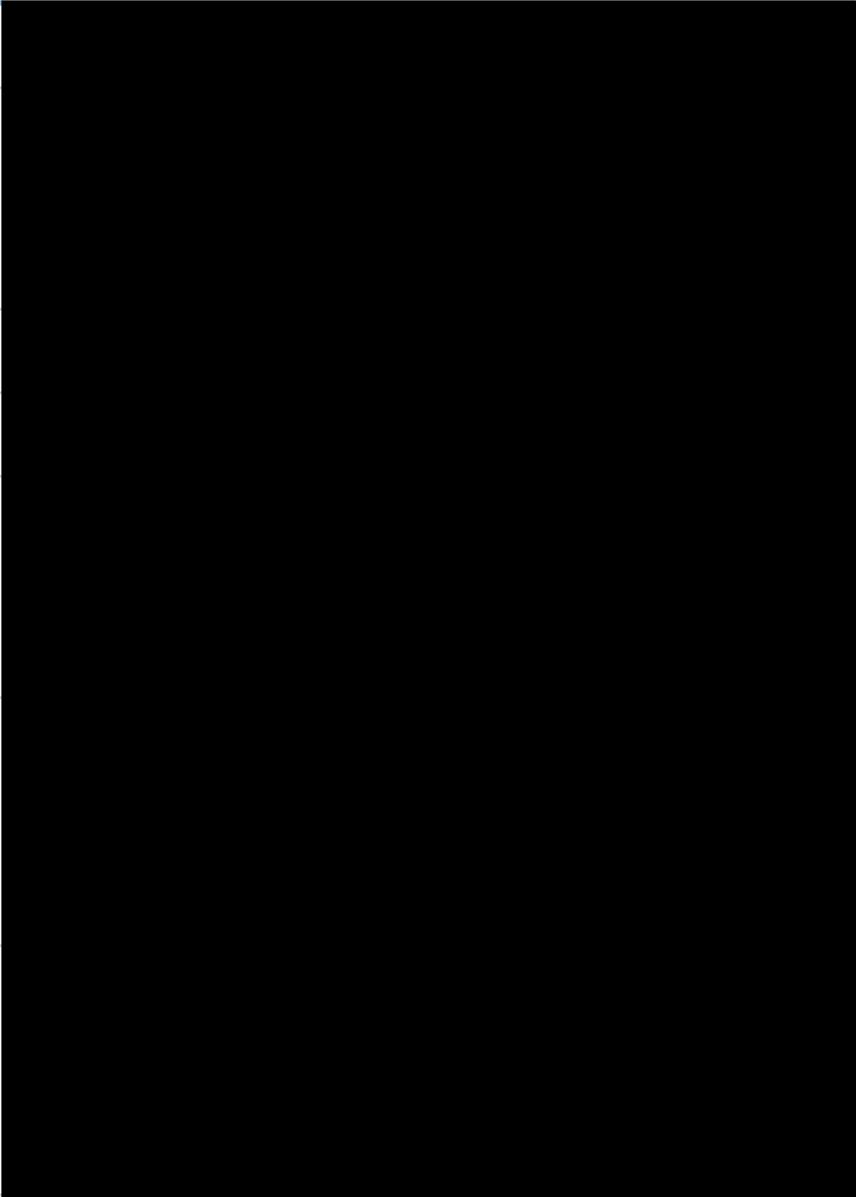
- The Opticom devices consist of transmitters for each streetcar and receivers for each intersection where the streetcar would need assistance from the traffic signal in making a movement at the intersection.

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- The streetcar can either be detected when it passes through a zone drawn by Temple (option A), or it can place a special call using an Opticom push button within the streetcar when the streetcar is also in a defined zone (option B).
- At intersections with a transit signal where the streetcar must make a turning movement, the streetcar operator should wait for the phase to change from not clear (horizontal) to clear (vertical) before proceeding with the movement.

The training includes the following information on the operation of transit signals at the following intersections:

LOCATION	SIGNAL OPERATION
Edgewood Avenue at Park Place	
Edgewood Avenue at Fort Street	
Edgewood Avenue at Jackson Street	
Auburn Avenue at Jackson Street	
Auburn Avenue at Fort Street	
Auburn Avenue at Bell Street	
Auburn Avenue at Park Place	

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LOCATION	SIGNAL OPERATION
Peachtree Street at Ellis Street	
Andrew Young International (AYI) Boulevard at Carnegie Way	
Andrew Young International (AYI) Boulevard at Centennial Olympic Park (COP) Drive	
Vehicle Maintenance Facility	

The assessment team noted that the diagonal bar signal appears on the drawings, but there is no specific language within the training agenda associated with the unique operating rules, procedures and requirements for this signal. In addition, to modifying the training module to include the diagonal bar signal, the Atlanta Streetcar System must update the signal descriptions within the SSPP to be consistent with this new training.

### *Parts and Inventory*

Concerning parts and inventory management, the Interim Executive Director and Procurement Manager replied that the Maintenance Superintendent, when hired, will be responsible for this function.

### **Management Structure**

The Interim Executive Director provided an overview of the safety and security related positions on the Atlanta Streetcar System's organizational chart. The positions consist of the Director, Safety, Security and Training and consultant support. He acknowledged that the organizational chart was not the same as the one presented at the FTA Region IV quarterly meeting in September 2015. For example, he was of the opinion there was no need for a Security Coordinator, even though this was presented to FTA and GDOT at the previous meeting, and therefore, he removed it from the management structure. He also described the two consultant contracts in place to provide safety and security support. The scope of work for the first contract provided general safety and security consultation and on-site visits to the Atlanta Streetcar, as needed. The scope of work for the second contract supported the internal safety and security audit program. The Procurement Manager added that because the second contract was set to expire, a solicitation for a long term contract was developed earlier this summer. However, the solicitation was placed on hold to allow the new management team an opportunity to provide input.

The assessment team reviewed emails between the Procurement Manager and the Atlanta Streetcar System dated October 22, 2015 regarding Contract No. C-900, System Safety and Security Support. The emails verified the Atlanta Streetcar System has taken steps to initiate a contract extension for a System Safety and Security Support contractor. While the contract will be extended for an additional six months, providing

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support through May 2016, there is a new solicitation for a long-term contract ready to proceed for advertisement.

Next, the Director, Safety, Security and Training described his background and experience in safety. His experience includes military service, firefighting and investigating, as well as public safety for facilities such as schools and airports.

#### **Hazard Management**

The assessment team asked the Director, Safety, Security and Training to describe how the Atlanta Streetcar System implements the hazard notification, investigation, tracking and reporting, training, and corrective action plan process. For notification, employees complete and submit a Hazard Identification and Risk Assessment (HIRA) form to the Operations Superintendent. The Operations Superintendent forwards the completed HIRA forms to the Director for investigation and verification. The Director reported that he uses a checklist to investigate the reported hazard. If verified, he will enter the hazard on the Hazard Tracking Log. The FTA members of the assessment team asked at what point are hazards brought before the SCSC. The Director responded that during his tenure he has not raised any hazards to the level of SCSC review. His actions have involved immediately resolving the issue at his level or coordinating with operations and maintenance personnel to do so.

For the remainder of the discussion concerning the hazard management process, each tab of the Corrective Action Plan tracking log was projected for review by the assessment team. The Director discussed the corrective action plans for internal audits, hazards, accidents, FTA audits, and action items from GDOT/Atlanta Streetcar monthly hazard management meetings. During the demonstration, the assessment team asked the Director a series of questions to ascertain the quality and effectiveness of the implementation of the hazard management program.

As a result of the discussion, the assessment team advised the Director that the CAP log must be corrected to accurately reflect the initial and final risk assessment ratings as defined in the SSPP. The CAP log must also document all the mitigations activities undertaken to address identified hazards. For example, the CAP log did not include any of the corrective actions related to improvements in procedures, training, and track allocation methods from the OCS studies performed by MARTA and C3M. Also absent from the CAP log were two unacceptable hazards – sand in switch and bar signal defect. The assessment team also noticed that the CAP log did not include unacceptable security threats and vulnerabilities such as threats to Operators by disorderly passengers. In all cases, the Director confirmed that these hazards and threats would be added to the CAP log and the associated investigation reports would be submitted to GDOT as required by the Program Standard.

The Director stated that he follows the same notification, investigation, tracking and reporting process for threats as he does for hazards. [REDACTED]

[REDACTED]

The FTA members of the assessment team reminded the Atlanta Streetcar System participants that GDOT has identified unacceptable hazards in Table 5.6.1 of the Program Standard. With these hazard requirements established, FTA expected that there would be far more identification and reporting of hazards by the transit system to the State. GDOT and Atlanta Streetcar personnel confirmed that coordination meetings have taken place in response to FTA's last audit and Atlanta Streetcar is fully aware of the required hazard reporting that must occur going forward. The assessment team closed the session by reiterated that the hazard management program is not yet sufficiently implemented as required by the Program Standard, specifically notification, investigation, assessment, tracking, and reporting.

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### *Hazard Identification & Risk Assessment, Management Response Form, Revision 8.7.15*

The assessment team reviewed the Hazard Identification and Risk Assessment (HIRA) Management Response Form which summarizes the results from a hazard investigation. The information captured on this form includes the following:

- Name of person investigating report
- Result of investigation
- Corrective action taken and date of completion
- If corrective action is a system modification
- What information was communicated to the employee who identified the hazard

### *Operations Log Instructions*

The assessment team reviewed the instructions for making a new operations/maintenance log. The instructions detail how to create a new log, properly save it, and then edit it. The form includes specific instructions on the content of the log, such as the initials of any individual making changes to the log, time of editing, and details on any unusual events. The maintenance log records any repair-related issues for both streetcars and the ROW. In addition, all safety-related incidents and hazards are required to be reported to the safety and officer. A review of the log instructions verified that the Atlanta Streetcar System has established a written procedure for the documentation of safety-related incidents and hazards by Operations personnel and their transmittal to Safety; however, the procedure is not being consistently followed as the Director of Safety, Security, and Training only received logs and reports the week of the special assessment.

### **Accident / Incident Investigation**

#### *Atlanta Streetcar Post Accident Decision Tree*

The assessment team reviewed Atlanta Streetcar System's *Post Accident Decision Tree* which sets forth a series of questions to determine if FTA post-accident drug and alcohol testing is required following an adverse transit event. The decision questions include the following:

- Was the accident/incident associated with the operation of a mass transit vehicle?
- Was the occurrence associated with the manner of operation?
- Was there a fatality?
- Was anyone immediately transported to a medical treatment facility?
- Was there any disabling damage to any vehicle?
- Was the vehicle or car removed from service?
- Can operators' performance be completely discounted as a contributing factor?
- Could any other covered employee have contributed to the accident?

According to this decision tree, if the operator's actions could have contributed to the accident/incident – for example, failure to follow an operating rule – then the Atlanta Streetcar System is required by FTA regulation to immediately perform a drug and alcohol test and document the results. During the interviews, the assessment team voiced its concern with the lack of post-accident drug and alcohol testing given the fact that the root cause of several accidents were determined to be the result of operator rule violation, such as Object Fouling Track and Line of Sight Operations. This concern was validated following the review of the established post-accident decision tree.

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### *Accident Investigation Procedure Verification*

On August 17, 2015, GDOT transmitted the verification checklist of the Atlanta Streetcar System's Incident Investigation Procedure and its Final Investigation Report for the GDOT-reportable collision that occurred on April 25, 2015. The purpose of the checklist was to provide the Atlanta Streetcar with details on the Department's actions to improve the quality of the investigation and reporting of both existing and future investigations of all Atlanta Streetcar safety related incidents.

The first increased oversight investigation activity for the Department included the following: The Department will conduct a series of Accident/Incident Investigation Field Verifications. This involved the review and verification of all information and associated proofs related to accidents that have occurred as well as hazardous incidents as of January 1, 2015. This review included all formal reports, Operator, witness and supervisor statements, log books, video and audio recording, photographs and access to all related staff.

On June 29, 2015, the Department SSO issued a formal email advising Atlanta Streetcar of its non-compliance with the GDOT Program Standard for notification and submission of reports related to four GDOT reportable accidents, including the event that occurred on April 25, 2015.

On July 6, 2015, the City of Atlanta submitted the April 25, 2015 final investigation report. On August 3-4, the Department assembled its investigation team, scheduled and conducted the on-site portion of the Accident/Incident Field Verification, and gathered supporting documentation to verify the implementation of the Investigation Procedure and content of the Final Investigation Report. In less than two weeks following the on-site visit, the Department completed its review and prepared the verification checklist to document its observations and actions required to obtain the Department's review and approval of the April 25, 2015 final investigation report.

As a result of its review, the Department required three major actions on the part of the Atlanta Streetcar System:

- Review the verification checklist, including the actions required and supporting materials, and use this information to revise the April 25, 2015 final investigation report and resubmit it to the Department for review and approval. (The report was resubmitted during the on-site portion of the assessment).
- Withdraw the April 13, 2015 and April 17, 2015 final investigation reports and conduct an internal review process to determine if any of the investigation steps and actions required for the April 25, 2015 event apply to these earlier events and revise and resubmit the investigation reports to the Department for review and approval. (These reports were withdrawn as requested).
- Ensure that all future final investigation reports submitted to the Department for review and approval meet the minimum requirements of the City of Atlanta's investigation procedure and that these activities are adequately documented within the final investigation report prior to submittal to the Department for review and approval.

The responses provided by the Atlanta Streetcar to the actions required by GDOT to implement the investigation procedure are currently under review. A summary of the actions required and Atlanta Streetcar's responses appear in **Appendix B**. At the end of the interview session, the assessment team reiterated the need for the Atlanta Streetcar to identify the individual or department with responsibility for implementing the open actions required as well as a due date for their completion.

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### *Accident Investigation Final Reports*

As required by the Department, the Atlanta Streetcar resubmitted all final investigation reports that had occurred since the revenue service date to the Department for review and approval. The goal of the resubmission was for the Atlanta Streetcar System to demonstrate the capability to meet the minimum requirements of its investigation procedure and to show that these activities were adequately documented within the final investigation report prior in order to obtain the Department's approval. A summary of the resubmitted incident investigation reports appears as **Appendix C**.

To verify compliance to this requirement, the assessment team reviewed the investigation reports and concluded that the probable causes are not consistent with the GDOT Program Standard, Table 6.7. In addition, there are instances, particularly in the case of the April 25, 2015 incident, that no causal factor was included for the Operators failure to follow the operating rules for line of sight and obstruction in the trackway or the lack of the pavement markings for the dynamic envelope (although identified as a hazard mitigation measure in the pre-revenue phase hazard analysis). Equally important, there is no discussion of improved Operator training and increased supervision in order to ensure compliance with established rules and procedures. The assessment team views these to be a global corrective actions that are systemic issues applicable to the Atlanta Streetcar System as a whole. In addition, it is important that the Atlanta Streetcar System comply with the reporting requirements specified in the Atlanta Streetcar System's SSPP, as well as those outlined in Section 6, Accident / Incident Notification, Investigation, and Reporting of the Program Standard.

The Atlanta Streetcar must expand corrective action plans to address systemic as a result of the incident investigation process to include the following:

- Revamp the training program to ensure all Operators are aware of their responsibilities and are equipped to follow the rules, actions, and procedures required to avoid collisions and other hazards when operating the streetcar.
- Develop a public awareness campaign to educate pedestrians, bicyclists, and motorists on the safe conduct when driving around the streetcar.
- Expand the design of the operational environment for the streetcar to include revised and/or additional signage, delineation posts, or other traffic control devices to protect the dynamic envelope of the streetcar.
- Train all persons responsible for conducting investigations on the operations, maintenance, safety and security policies, procedures, and activities required to effectively investigate accidents and develop sufficient corrective action plans to prevent recurrence.

### **Safety and Security Certification**

The assessment team reviewed the *Atlanta Streetcar Certifiable Items List (CIL) Status Sheet as of: December 17, 2014*. The assessment team noted the following shortcomings in the accuracy and completeness of the tracking sheet. As it relates to the diagonal bar signal, the Traffic Signals certifiable element shows closed; however, the design modification indicates that the element should be shown as open pending the development of the required rules, procedures and training. The open items do not have a schedule of completion or the completion date has passed. Work Arounds should identify a schedule of completion and individual/department responsible for its closure.

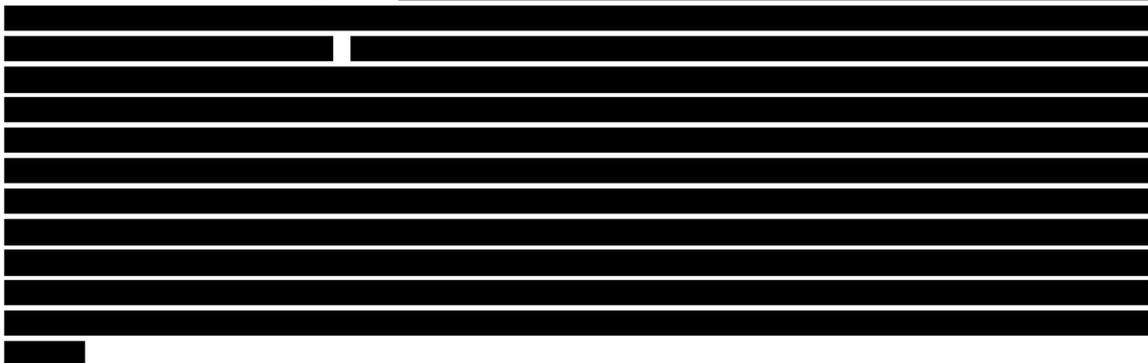
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<b>Certifiable Element</b>	<b># Open Items</b>	<b>Status</b>	<b>Work Around</b>
Communications	0	Closed	
Fare Collection	1	Open	
Streetcar Vehicles	0	Closed	
Traction Electrification	0	Closed	
Track Alignment	0	Closed	
Trackwork	0	Closed	
Safety	0	Closed	
Security	1	Open	
Operations / Maintenance	3	Open	
System Integration	1	Open	
Hazard & Threat / Vulnerability	2	Open	
Traffic Signals	0	Closed	
Vehicle Maintenance Facility Shop	0	Closed	
Vehicle Maintenance Facility Yard	1	Open	
Civil and Utilities	0	Closed	
Structural	0	Closed	
Corrosion Control	0	Closed	
Architectural - Urban	0	Closed	

**Fare Collection / Enforcement**

The assessment mentioned they were aware that the interface between the Atlanta Police Department and the Atlanta Streetcar System was evolving based on the introduction of ticket vending machines, fares, and fare enforcement into the transit system. 





# System Security

## **Fare Collection / Enforcement**

The session began with an introduction of the Deputy Chief of the Atlanta Police Department. The Deputy Chief stated that he is responsible for police operations in all the zones within the City of Atlanta, including Zone 5, which is the largest police zone in the City and employs 75 additional police officers. He advised the assessment team that the Atlanta Streetcar System is within Zone 5 and Zone 6.

With respect to code enforcement strategies, the ADID Vice President informed the group that two legal strategies were in development: establishment of a new disorderly conduct code and augmentation of the existing code to specifically address the Atlanta Streetcar System.

The assessment team reviewed *Ordinance 14-O-1251* in which the City Council of Atlanta established a schedule of fees for the Atlanta Streetcar System, authorized the Department of Public works to collect them, allowed for an increase of up to \$1 without City Council approval, and set aside 18 days per calendar year for free or reduced fares.

The assessment team reviewed *Ordinance 14-O-1170* in which the City Council of Atlanta amended the previous language prohibiting individuals from evading payment to include use of the streetcar transit system without payment, or fraudulent use of the Breeze Card or the University Pass Program Card.

The Deputy Chief confirmed that code enforcement and law enforcement within the City of Atlanta were under the purview of the Atlanta Police Department. Any police officer has the authority to write any ticket for code violation, and APD has also established a dedicated unit for code enforcement. The City of Atlanta has also amended its panhandling ordinance to prohibit panhandling within the area of breeze vending machines on the Atlanta Streetcar System. He also advised the assessment team that an existing ordinance will enable APD officers to enforce the fare policy for the Atlanta Streetcar.

## **Accident / Incident Response**

The assessment team asked the Deputy Chief to describe the typical role of the APD in response to accidents and emergencies on the Atlanta Streetcar System. [REDACTED]

The assessment team shared concerns expressed by Atlanta Streetcar employees related to the length of time for APD to respond to Atlanta Streetcar calls. [REDACTED]

Ideally, the Deputy Chief would like to transition the Atlanta Streetcar System to a new communications procedure [REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED] The APD is also reviewing the law that will allow APD to act as a legal agent of the Atlanta Streetcar System, which would also expand the APD's capacity for enforcement of transit system policies.

[REDACTED]

The assessment team also asked the Deputy Chief to describe potential strategies to address system security issues on the Atlanta Streetcar System. [REDACTED]

[REDACTED]

The assessment team asked if the Deputy Chief considered the establishment of a dedicated liaison between the APD and the Atlanta Streetcar System. [REDACTED]

[REDACTED]

**Threat and Vulnerability Management**

The assessment team also asked the Deputy Chief how threat and vulnerability assessments fit within the system security strategies for the Atlanta Streetcar. [REDACTED]

[REDACTED]

# MARTA

## Active Management

### **Organizational Structure / Staffing Resources**

The assessment team held a group interview with MARTA executives responsible for active management of the operations, maintenance, and safety of the Atlanta Streetcar System. As an initial step, the assessment team reviewed its preliminary observations and concerns from the week's interviews, inspections, and other on-site activities.

The COO shared the assessment team's concerns regarding the dual roles of Supervisors and the temporary dispatchers. He indicated that the lack of hiring was a source of frustration for MARTA and the Atlanta Streetcar and has been repeatedly discussed in weekly meetings with the Executive Director.

The Director of Streetcar Services added that he reviews the Atlanta Streetcar's maintenance practices every two weeks to make sure inspections are documented. The assessment team recounted the insights gathered from the maintenance interviews and observation of early morning preventative maintenance inspections. In an effort to bring the Atlanta Streetcar into compliance with its preventative maintenance program, the COO and Sr. Director of Operations responded that MARTA has exceeded its active management responsibilities by providing staff and contractors to directly perform vehicle, TPSS, OCS, and track inspections. The COO concluded that the issue is how long MARTA can sustain this kind of support that is so far outside of MARTA's original assumptions of resource commitments to the Atlanta Streetcar System.

### **OCS Unacceptable Hazard / System Shutdown**

The FTA members of the assessment team asked MARTA to delve into the specifics of the shutdown of the Atlanta Streetcar System in late July. The Director of Streetcar Services explained that the shutdown occurred as a result of observations from the OCS inspections. MARTA observed problems, raised them to the Atlanta Streetcar, and Atlanta Streetcar did not adequately address MARTA's concerns. In response, MARTA shut down the system. The FTA asked MARTA if any thresholds have been established to decide whether to continue or suspend service. While there was no direct response to thresholds for the suspension of service, the MARTA participants did agree that there may be an opportunity to reduce service to levels that are consistent with the available operations, maintenance, dispatch and supervisory staff. In addition, MARTA has been advising the Atlanta Streetcar System to establish a Sustainability Action Plan (also referred to as a Strategic Plan, Balanced Scorecard, or Performance Management System) and was discouraged that the assessment team did not uncover evidence of its development.

In response to the request for read ahead materials prior to the on-site portion of the assessment, the Atlanta Streetcar System provided an overview of the OCS studies which shed some additional light on the actions taken by MARTA and the Atlanta Streetcar following the system shutdown to resolve the unacceptable hazard.

The assessment team learned that two formal reviews of the OCS were made during the summer of 2015, following the suspension of service due to the broken bridles unacceptable hazard. One was commissioned by MARTA and covered several areas in addition to the OCS. The report is titled "MARTA Streetcar

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Activity" and was prepared by independent consultant (referred to in this report as the Clarner report). A summary of the findings from the Clarner report are discussed later in this section.

At approximately the same time, the City of Atlanta retained an electrical contractor experienced in streetcar OCS to examine the condition of the OCS wire and identify repairs. The August 2015 report prepared by C3M immediately follows the Clarner report, also within this section of the report. Table 1 lists categories of priority issues to be addressed. The City of Atlanta advised that the "High-Medium-Low" hazard severity rating does not conform to the FTA hazard severity rating. Efforts are underway to correlate the C3M evaluation with the industry standard rating.

### *OCS Inspection – TransDev (September 2015)*

Lastly, to determine if there were any hazardous conditions, an additional inspection was performed by the Superintendent of Rail I Traction Power for the New Orleans streetcar operation, in September 2015. The Superintendent's inspection was part of the TransDev scope of services. His inspection covered a wide range of Atlanta Streetcar operational activities and infrastructure. A summary of his conclusions after a walking inspection of the OCS was as follows:

- Many of the turnbuckles have loose or missing jam nuts, bridles with less than 3 crimps, and two different styles of strut insulators were used with one particular type showing signs of deflection.
- The majority of the OCS discrepancies noted are a result of improper installation and not due to lack of maintenance.
- The system is safe to operate, but a corrective action plan must be developed, prioritized by severity of repairs and implemented as soon as possible.
- The design-build contractor recently (October 2015) did repairs and corrections to track, OCS, and other items on the MARTA-generated list of items needing correcting.
- The documentation for those repairs is in progress.
- Once it is complete and accepted, the Atlanta Streetcar will prioritize any remaining repair/correction/preventative maintenance needs with its OCS contractor, C3M.

### *Overhead Contact System (OCS) Inspection Report - Clarner*

The report was prepared at the request of MARTA in response to concerns and service interruptions occurring with Overhead Contact System (OCS) on the Atlanta Streetcar. The report states that a few incidents have occurred since startup (roughly 9 months) which caused service interruptions or a system shut down for the 2.7 mile system. These incidents were cause for concern for the operational management team at MARTA and as such, a review of the system was requested to assist in determining the causes and prevention of future incidents. The review was conducted with assistance of MARTA staff from management and individuals who work out of the vehicle maintenance facility with meetings at the maintenance offices, MARTA Headquarters and in the field. Field inspections were carried out on foot and in a bucket truck. The findings are summarized in the table on the next page:

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Area of Focus	Finding
<b>Overhead Contact System</b>	1. Cut in new contact wire as necessary or place a bolt on splice over the burned wire location if possible
	2. Create or update the maintenance plan to ensure compliance with APTA requirements or OEM requirements
	3. Provide updated documents/drawings to maintenance personnel and update any redline drawings as field adjustments are made as necessary
	4. Provide document control for drawings, O&M manuals, and additional documents.
	5. Provide engineering oversight for configuration management and maintenance support, as there does not seem to be substantial support for maintenance crews other than oversight from MARTA.
	6. Provide the proper materials for the overhead contact system.
	7. Monitor the use of parts or inventory quantity on hand, including a review of the recommended spare parts list to ensure that all spare parts are procured in accordance with the bill of material.
	8. Check all fasteners on the OCS to ensure they are tight and set to the proper torque value, including a torque mark to ensure that the fasteners are not vibrating loose
	9. All turnbuckles should be inspected and noted for loose or missing jamb nuts
	10. Phillystran bridle supports should be evaluated to ensure the proper number of Nicopress sleeves is present, as these were responsible for the failures at curve locations
	11. Evaluation of each steady arm should be done to check the loading of the arm and the heal setting, as the double arms appear to be unevenly loaded and the heal setting appears to be too low
	12. Review all drawings in the field to ensure all information regarding the as-built conditions is documented accurately
<b>Planning for Track Allocation to Meet Maintenance Requirements</b>	13. The trucks are not equipped with the required tools and equipment (bucket truck and required hand tools) for performing the required maintenance
	14. Increase inspection frequency as appropriate for conditions
<b>System Failures</b>	15. System failures should be corrected as soon as possible and returned to as built condition
	16. For example, bridle assemblies were broken for over three weeks, and instead of being repaired immediately, were removed from the system affecting the contact wire height at certain locations
	17. Engineering should be involved in equipment/system failures to assist in determining the nature of the failure and providing recommendations to avoid further failures of the same nature
<b>Manpower</b>	18. Most serious problem affecting maintenance is lack of qualified manpower
	19. Adjust available man-hours as determined by the maintenance plan requirements for performing maintenance tasks
<b>Training Requirements</b>	20. Create a training plan to ensure proper training of personnel, including OCS components and assemblies, working conditions around the OCS, and how to perform maintenance and heavy repair
	21. Create a system to ensure that employees providing training are properly qualified
	22. Hire additional personnel or retain contractors to resolve the lack of qualified personnel
<b>Safety Concerns</b>	23. Establish a Lock-Out, Tag-Out procedure for power downs, as observed in the field, during a power down the technicians were not utilizing a live dead test of the OCS voltage meter

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To facilitate the closure of the identified findings, the Clarner report included the following recommendations:

- **Build Industry Knowledge.** Personnel should participate in industry safety and standards organizations to keep current with transit industry standards.
- **Increase Maintenance Staffing Levels.** Staffing Maintenance staffing levels should be increased or supplemental contractor assistance implemented to complete maintenance tasks.
- **Develop Maintenance Program.** Develop a comprehensive maintenance program with documentation methods and accessibility to all staff.
- **Establish Maintenance Controls.** Establish method of control for ensuring completion of maintenance tasks.
- **Develop and Issue Maintenance Safety Procedures.** Safety procedures should be reviewed and directives or instructional documents issued.
- **Develop Maintenance Training Program.** Training programs must include all OCS employees and be per industry standards.
- **Provide Maintenance Engineering.** Ensure engineering participation and oversight in maintenance and construction.

### *Overhead Contact System Inspection – C3M (August 2015)*

On August 8 and 9, 2015, C3M Power Systems, LLC completed a survey of the existing Atlanta Streetcar Overhead Contact System (OCS). Within this document are the observations of presented conditions, proposed improvements, and maintenance concerns. The observations are from two inspections performed; one inspection performed at ground level and the other at contact wire height. Proposed improvements were generated for each discrepant condition, ranked in severity from greatest to least. Lastly, continuing maintenance concerns were noted. All the findings are within the document. As the Atlanta Streetcar is an active system, the inspection report states that the items described are dynamic and of growing concern. The report asserts that the Atlanta Streetcar should create a proper maintenance plan. The report advises that a proper maintenance plan covers regular inspection and adjustment of OCS assemblies and that OCS specific tools must be purchased to successfully complete maintenance by Atlanta Streetcar personnel. It also describes the purpose of OCS maintenance is to maintain proper contact wire tension, registration and stagger.

### **Atlanta Streetcar / MARTA System Safety Interface**

The Interim AGM System Safety and Quality Assurance described her management activities with the Atlanta Streetcar since being appointed to her role. Her primary focus has been spending time with the Atlanta Streetcar personnel to understand their safety and security processes. In her opinion, a gap analysis of where Atlanta Streetcar is and where it is required to be was high on her priority list. She was equally concerned with the lines of authority for safety and the freedom for the Director of Safety, Security and Training to act on safety and security matters. She believed that the decision making authority for safety appeared to be compromised by key members of management functioning in multiple roles due to the staffing shortages. She held other concerns including the lack of a comprehensive training program being delivered by certified trainers.

When asked about her participation in safety and security committees, the Interim AGM replied that she temporarily suspended the SCSC meetings in order to implement strategies and tools to increase the effectiveness of the group. For example, the appropriate role of the SCSC is to review and decide upon process and procedural changes rather than a specific outcome of a procedure or activity. At the last emergency meeting of the SCSC, the committee was approving specific Operator Training Certifications which is not the level of decision making she understands is suitable for a committee of this nature. The assessment team remarked that MARTA should continue to work with the Atlanta Streetcar System to

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improve the decision making process for the SCSC and position the system to independently implement an effective safety and security program.

The assessment team continued by asking the Interim AGM to discuss MARTA Safety's role in ensuring the Atlanta Streetcar's compliance to its established rules and procedures. She informed the assessment team that MARTA Safety prepared the final investigation report for the April 25, 2015 accident and also provided the responses to the corrective actions identified by GDOT to implement the Atlanta Streetcar incident investigation procedure. The idea behind directly performing these tasks for Atlanta Streetcar was to provide them with templates and examples that could be applied to the remaining safety open items and corrective actions. She confirmed that MARTA Safety has been working to educate and support the Atlanta Streetcar as much as possible.

*The Intergovernmental Agreement (IGA) for the Operation and Maintenance of the Atlanta Streetcar Project, executed November 13, 2014*

To verify MARTA's committee management roles and responsibilities, the assessment team reviewed the IGA, Section 2.2, Safety Certification and Security Committee (SCSC). The IGA confirms that MARTA shall have at least 51% of the voting rights on the SCSC for the first year of operation and its voting power shall not be reduced until the City assumes all operation and maintenance duties from MARTA. The SCSC is responsible for addressing, deciding, and resolving all issues related to safety, security, and all certification requirements.

### Needs and Priorities

In the remainder of the interview the assessment team sought MARTA's input on two questions. If MARTA could do one thing to address the challenges at the Atlanta Streetcar System, what would MARTA do? Can this one thing be accomplished by the Atlanta Streetcar System in a reasonable timeframe? The MARTA participants responded as follows:

- **Establish a Formal Training Program.** The program should be written and delivered by certified trainers. For example, MARTA prohibited Atlanta Streetcar personnel from performing lock-out / tag-out of electrical equipment. Lock-out / tag-out must only be performed by qualified MARTA or a contractor designated by MARTA. This decisive action was taken because Atlanta Streetcar personnel did not demonstrate a consistent understanding of the OCS system.
- **Develop a Sustainability Action Plan.** The plan should address all facets of transit management and be commensurate with the number of employees and their technical capabilities and qualifications.
- **Develop Administrative and Operational Plans and Procedures.** The development of day-to-day administrative procedures are as important to the success of the system as those for operations.
- **Define the Decision-Making Authority of Atlanta Streetcar, MARTA, and ADID.** Define and adhere to the roles and responsibilities of the stakeholders involved in the management of the Atlanta Streetcar System so that MARTA can make effective decisions regarding operations, maintenance scheduling, layovers, hiring, etc.
- **Ensure Adequate Staffing Levels.** Hire and train an adequate level of operators, dispatchers, supervisors, superintendents, or maintenance personnel to support the level of service. MARTA recognized and accepted its role as mentor and coach, but is challenged by the fact that the staffing levels are so low that there are limited individuals to professionally develop.

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- **Comply with all Established Policies and Procedures.** Ensure that all operations, maintenance, state and federal requirements, including scheduled overtime and drug and alcohol regulations, are complied with at all levels.
- **Rebuild and Strengthen Relationships with Internal Partners.** Atlanta Police Department and Atlanta Fire and Rescue are critical safety, security, and emergency management partners and these relationships that should be fostered and strengthened.
- **Define and Stabilize the Organizational Structure.** For several months the organizational structure has been fluid in terms of the positions and the qualifications, experience and training of the individuals within those positions. The lack of a defined and stable organization is an obstacle to promoting a safety culture and effectively implementing the safety and security plans. Atlanta Streetcar must give serious consideration to the management structure and resources necessary to be a rail transit agency.

While MARTA participants were swift to describe what needed to be done, a timeframe for doing so was less clear. After some consideration, the group believed a 6-month timeframe was realistic and if these goals could not be accomplished within that time, they likely would not be accomplished at all.

MARTA was not without positive impressions of the Atlanta Streetcar System. Most notably, MARTA was impressed with the Atlanta Streetcar's ability to tap into the broader knowledge, leadership and resources of the City of Atlanta as a whole, particularly the Offices of the Mayor, Chief Operating Officer, and Performance Management. Also, the weekly meetings with the Interim Executive Director have been a forum for productive and open dialogue and problem-solving.

# Exit Briefing

## Assessment Team

The assessment team opened the session and thanked all of the participants for their candid responses and spirit of cooperation during the weeks leading up to and during the site visit. Next, the assessment team shared a series of preliminary observations and corrective actions based upon the interviews and documentation that was reviewed prior to and during the site visit. These corrective actions were further validated, refined, and expanded as discussed in the next section; however, a summary of the major issues at the time of the exit briefing included the following:

- Thresholds for minimum staffing to support safe and reliable operations should be defined in a staffing plan
- Qualifications, capability and training requirements for each position should be clarified in a staffing plan
- Staff supporting multiple roles/positions should be assessed and clarified in a staffing plan
- Resources should be evaluated to support the required operations and level of service
- Dispatch and communications are not sufficiently logged, evaluated or described in the SSPP
- Dedicated trainers and clear training criteria should support maintenance and operations
- Resources to support maintenance activities should be evaluated, including resources for preventative maintenance inspections and repairs
- Maintenance contracts should be implemented as required by SSPP and Intergovernmental Agreement, which has been a GDOT concern since December 2014.
- A public outreach plan should be developed to ensure outreach resources are consistent with prioritized safety and security concerns for operations
- Operations and maintenance requirements for breeze vending machines should be defined in the SSPP and
- Hazards should be identified, reported to Safety, mitigated, and tracked as required by the SSPP and Hazard Management Plan
- Lock-out/tag-out and other safety critical maintenance procedures should be prioritized, including procedural updates and retraining
- Procurement process should be implemented as required by the SSPP, including quality assurance and quality control of the deliverables for each contract
- Configuration management changes should be made according to the requirements of the SSPP, including the transit signal bar and pavement marking changes
- As-built drawings and other final documentation should be received and certified as required by Safety and Security Certification Plan and SSPP
- Threats and vulnerabilities should be implemented as required by the Security and Emergency Preparedness Plan
- Measures should be taken to prevent assaults on Operators and patrons
- Emergency management should be implemented as specified in the SEPP, including the required annual tabletop and emergency drill
- Resources required by the IGA should be provided to the Atlanta Streetcar System as agreed
- Thresholds should be clearly defined for MARTA to provide resources to the Atlanta Streetcar System, including infrastructure and vehicle inspections, accident investigation and auditing
- A sustainability action plan should be provided to MARTA that demonstrates the safety and effective delivery of streetcar service within the available resources

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### **Atlanta Streetcar System**

The Deputy Chief Operating Officer offered several comments and updates to the assessment team following its discussion of the preliminary findings. The Deputy began by thanking the Department and the Federal Transit Administration for their significant work efforts toward a safer and stronger operation. The Deputy continued by acknowledging that the Atlanta Streetcar System has experienced challenges in its first year of operations and has been working to eliminate them. She believed that many issues had been corrected and they were on a path toward safety and security compliance.

The Deputy highlighted some of the actions taken in the last two months leading up to the special assessment to demonstrate the Atlanta Streetcar's commitment to continuous improvement:

- Engaging a transit management services firm to provide technical support and professional resources;
- Continuing to prioritize safety-critical positions and functions;
- Contracting with a qualified firm to provide emergency maintenance and inspection services for the OCS;
- Reaching out to all departments within the City of Atlanta to garner further support for the Atlanta Streetcar System;
- Continuing with pipeline of longer-term procurements for traction power substations, vehicle body repair, and long-term OCS maintenance; and
- Taking steps to improve the flow of information between to and from the Atlanta Streetcar System's safety and security function, including weekly meetings with operations, maintenance, and public information personnel.

The Deputy continued by acknowledging there was a gap between the adopted procedures within the System Safety Program Plan and the actual day-to-day operational practices at the Atlanta Streetcar System. To address this, she confirmed that the revised System Safety Program Plan would be a more accurate reflection of the re-assessed roles and responsibilities for each position within the transit system.

The Deputy closed by stating the City's commitment to instill a culture of safety and continuous operational improvement at the Atlanta Streetcar System.

### **MARTA**

The MARTA Chief Operating Officer thanked the Department and the Federal Transit Administration for taking the time to conduct a comprehensive assessment.

### **ADID**

The ADID President emphasized the importance of a balanced report and continued patience with the Atlanta Streetcar System. He added that the streetcar system was an innovation for the City of Atlanta and reaffirmed his organization's commitment to its success.

### **FTA**

The FTA Regional Administrator asked the assessment team to restate the estimated timeframe for the development of the draft and final report. The assessment team responded that the draft report completion was anticipated by the last week in November. To expedite the process before the end of the year, the Atlanta Streetcar System would be provided 14 calendar days to conduct a factual review of the report, and the Department would complete the final report by mid/late December. At that point the exit briefing concluded.

# Corrective Action Plans

As specified in Section 8.5.3, GDOT SSO Initiated CAPs, of the adopted Program Standard, GDOT may initiate CAPs during revenue service operations to the rail transit agencies within the scope of its oversight program. As further specified in Section 7.3, Other GDOT SSO Reviews, at its discretion, the Department may conduct reviews or special assessments of issues related to system safety and system security at the Atlanta Streetcar System. In addition to the specific readiness reviews, the Department may initiate a review of a particular subject matter areas in response to a given hazard, accident, or incident or trend of such events. On September 25, 2015, the Department notified the City of Atlanta of the reasons the Department believed that it was appropriate and beneficial to conduct a special assessment of safety and security at the Atlanta Streetcar System.

Section 8.5.3 further specifies that in the course of carrying out its oversight responsibilities, such as the conduct of special assessments, if the Department determines that corrective action plans are required, the Department must notify the Atlanta Streetcar System in writing. The Department submits this draft Special Assessment Report as formal notification by the Department to the Atlanta Streetcar System that corrective action plans are required. The previous sections of this report identified the Department's findings and concerns and the remainder of this section provides guidance and direction to the Atlanta Streetcar System on the development of an appropriate CAP. In response, the Atlanta Streetcar System is required to prepare the CAP and submit it to GDOT for review and approval within 30 calendar days or longer at GDOT's discretion, depending upon the scale and complexity of the concerns. Detailed guidance on the submittal, review, and approval process for corrective action plans may be found in Section 8.5, 8.6, and 8.7 of the Program Standard.

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## OPERATIONS

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### **SA-CAP.OPS.001**

The Atlanta Streetcar System must provide stable and adequate staffing resources with the requisite training, qualifications and experience to perform the required supervision and rules compliance activities of all operations and maintenance functions as specified within the System Safety Program Plan, Security and Emergency Preparedness Plan, and related plans and procedures. The assignment of duties must ensure clear division of roles and responsibilities between the Superintendent, Supervisor, Dispatcher and Technicians. Atlanta Streetcar must also ensure that the level of supervision for operations and maintenance activities is safely and sufficiently balanced with the level of passenger service delivered.

In addition, the Atlanta Streetcar System must follow through with its commitment to review its operations and maintenance job descriptions, to review of the System Safety Program Plan and Security and Emergency Preparedness Plan (and other related plans and procedures as applicable), to revise the plans and procedures accordingly for consistency, and to ensure all roles and responsibilities are clarified to adequately address the issues and concerns raised in the entirety of the Special Assessment Report.

### **SA-CAP.OPS.002**

The Atlanta Streetcar System must ensure that any consolidation of duties and responsibilities in order to "flatten" the organizational structure does not result in any given position being faced with a conflict of

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interest. To explain, in order to preserve the integrity of the independent auditor function as defined within the Internal Audit Program Plan adopted by the Atlanta Streetcar System, a position may not directly manage a function and also perform compliance audits for adherence to safety and security requirements for that same function.

### **SA-CAP.OPS.003**

The Atlanta Streetcar System must fulfill the organizational resource for a Rail Engineering Consultant with the requisite expertise to support streetcar-specific systems, facilities, and infrastructure as identified in the adopted SSPP for the Atlanta Streetcar System. This corrective action is imperative in light of the findings and recommendations from multiple reports, studies, and inspections performed by subject matter experts retained at the direction of the Atlanta Streetcar System and MARTA. These studies concluded that the Atlanta Streetcar System must provide engineering oversight for configuration management and maintenance support, as there does not seem to be substantial support for maintenance crews. The studies also concluded engineering should be involved in equipment and system failures to assist in determining the nature of the failure and providing recommendations to avoid further failures of the same nature. Yet another study concurred that the Atlanta Streetcar must ensure engineering participation and oversight in maintenance and construction.

### **SA-CAP.OPS.004**

The Atlanta Streetcar System must fulfill the organizational resource for a Data Reporting Analyst. In doing so, the Atlanta Streetcar System must ensure the qualifications and experience of this resource enables full compliance with transit agency, state, and federal reporting requirements for operations, maintenance, safety and security as identified in the SSPP, SEPP and related procedures for the Atlanta Streetcar System. This corrective action is important given the lack of timely and accurate reporting to the Department in a number of required areas including the notifications, status reports, final investigation reports, and corrective action plans for reportable accidents, security incidents, and unacceptable hazards.

### **SA-CAP.OPS.005**

The Atlanta Streetcar System must fulfill the organizational resource for a Contracting Officer. The rationale for this corrective action is based upon the fact that the Procurement Manager is serving in a dual role because the Contracting Officer position is vacant. This has resulted in the procurement function for the Atlanta Streetcar System being inadequately staffed. As such, there is not a dedicated resource charged with responsibility for ensuring adherence to safety features and standards in the procurement process. Moreover, there is no dedicated Contracting Officer to assist the Procurement Manager with a series of safety-critical procurements, namely the development of a procurement strategy for long-term vehicle maintenance and accurate cost estimation and procurement options for TPSS and OCS maintenance. The issue of cost estimation bears repeating as there has been more than one instance where inaccurate cost estimation has led to the inability of the Atlanta Streetcar to move forward with the award to maintenance contracts for its safety-critical infrastructure. This corrective action is also supported by the circumstances surrounding the roles and responsibilities of the Director of Streetcar Services. While the SSPP and other relevant plans indicate that this position will provide technical assistance to other departments to ensure that assigned equipment/material procurement contracts are implemented in accordance to contractual requirements; this position is in fact not fulfilling these roles as described in the SSPP. This is all the more reason that the Atlanta Streetcar System must ensure that the Contracting Officer resource is filled.

### **SA-CAP.OPS.006**

As discussed during the interviews, body repair alone is not an adequate long term, comprehensive vehicle maintenance program for all components and subcomponents of the streetcar vehicle which include, but are

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not limited to: car body; operator's cab; passenger doors; heating, ventilation and air conditioning; lighting; general electrical equipment; propulsion system and control; truck assemblies; brake systems; vehicle communications, passenger information, closed circuit television; event recorder; and interior and exterior appointments. The Atlanta Streetcar System must ensure that the Maintenance Plan, procedures, checklists, and forms as well as third-party contracts are developed and implemented to address this safety-critical function.

### **SA-CAP.OPS.007**

The Atlanta Streetcar System must fulfill the organizational resource for Track Maintenance. The Atlanta Streetcar System acknowledged that there have been recurring track maintenance issues involving the buildup of debris in the switches and the temporary cleaning measures do not represent a long-term track maintenance solution, which may also need to include drainage re-design, in addition to adequate track maintenance and equipment. The Atlanta Streetcar System also acknowledged that the safety hazard of debris in the switches was noted on various track inspection forms, but that the track inspection results have not been reported to Safety nor have they been entered into the hazard management process for assessment, resolution, and tracking the mitigations to closure.

In September 2015, senior officials from the FTA Transit Safety Office voiced concern over the proposed organizational structure because it did not identify a track maintenance contract as a resource to the Atlanta Streetcar System. During the MARTA/Atlanta Streetcar Interface meetings, this topic was also raised. MARTA indicated that the procurement of the following must be implemented quickly: spare power truck, OCS, TPSS, and track emergency services to provide reliable uninterrupted service. Nonetheless, the Interim Executive Director opposed executing a track maintenance contract, but provided no rationale for not securing the resource. Subsequently, in response to the assessment team's request for materials, the Atlanta Streetcar System responded that switch inspection by an outside firm can occur at five-year intervals as there is no significant track work for an outside contractor with embedded track.

A corrective action that ensures periodic inspection and corrective maintenance (more frequent than five-year intervals), including procedures, training, and equipment is necessary considering the potential safety hazards of derailment and/or injury to patrons and personnel that may result due to improper or inadequate track maintenance.

### **SA-CAP.OPS.008**

The Atlanta Streetcar System must fulfill the organizational resource for long-term OCS Maintenance. While the Atlanta Streetcar System procured the emergency services of a qualified electrical contractor for OCS maintenance, the term of the services expires in approximately 60 days, February 2016. During the MARTA/Atlanta Streetcar Interface meetings, MARTA, the active manager of the Atlanta Streetcar System, identified the need for OCS long term inspection, repair, and maintenance contract as a priority.

A corrective action that ensures periodic inspection and corrective maintenance (more than in the case of emergencies), including procedures, training, and equipment is crucial considering the potential safety hazards of shock, catastrophic injury to patrons or personnel, and the loss of system service or major delays that may result due to improper or inadequate OCS maintenance.

### **SA-CAP.OPS.009**

At the time of the assessment, the Atlanta Streetcar System was in the process of reallocating Code Enforcement Officers from the Atlanta Police Department to the Atlanta Streetcar to support the system security and fare enforcement program. Upon doing so, the Atlanta Streetcar System must update its organizational charts, position reports, System Safety Program Plan, Security and Emergency Preparedness

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Plan, and relevant safety, security, and operations procedures. These plans must adequately describe the safety and security roles and responsibilities of this new function. The Atlanta Streetcar System must also ensure that the Code Enforcement Officers receive the necessary vehicle familiarization, standard operations, maintenance, safety, security, and emergency management procedures established for the transit agency.

### **SA-CAP.OPS.010**

The Atlanta Streetcar System must integrate the transit signal maintenance program into its day-to-day performance management, operations, maintenance, and system safety activities, particularly the hazard management process. This corrective action is important for several reasons, including the circumstance where Atlanta Streetcar System operators were experiencing a daily failure of a transit signal at a specific location and at the time of the assessment there was no coordinated process between the third party contractor, the City's contract administrator, and the Atlanta Streetcar System's operations and safety personnel for the identification, reporting, and resolution of signal defects and hazards. This corrective action is equally important because of the need to develop and implement a comprehensive and integrated maintenance management information system for all safety-critical assets, including transit signals. The corrective action plan must ensure that the tracking and reporting of safety deficiencies and defects from routine inspections and maintenance performed by third party contractors as well as daily observation reports from Atlanta Streetcar operations personnel, are effectively coordinated with the hazard tracking log managed by Atlanta Streetcar safety personnel. Atlanta Streetcar System must update the System Safety Program Plan and related operations and maintenance plans and procedures to describe the processes, roles, and responsibilities for transit signal maintenance.

### **SA-CAP.OPS.011**

The Atlanta Streetcar System must identify all of the decision-making groups and committees (internal and external) that have authority to make decisions related to the implementation of the System Safety Program Plan, Security and Emergency Preparedness Plan, and related operations and maintenance plans and procedures. Once identified, the Atlanta Streetcar System must evaluate the quality and effectiveness of these groups, restructure as required, and revise the System Safety Program Plan and other related plans to describe each committees' roles and responsibilities.

### **SA-CAP.OPS.012**

The Atlanta Streetcar System must finalize job descriptions, including the minimum qualifications, training, and experience required for all personnel, particularly Superintendents, Supervisors, Dispatchers and pending positions under review. The corrective action is necessary because the Atlanta Streetcar System has not established the minimum qualifications and training standards of supervisory personnel who are responsible for ensuring compliance to safety, operations, and maintenance rules and procedures.

For example, while in recent months leading up to the assessment the street of Streetcar Services, Operations Superintendent, Maintenance Superintendent, Dispatcher, and Director, Safety, Security and Training performed ride checks, none of these positions shared Operator qualification and certification classroom and field training as a minimum qualification and training standard set by the Atlanta Streetcar System.

Moreover, at the time of the assessment, an Operations Supervisor was experienced in maintenance rather than operations, and because of his lack of qualifications and training in operations, he was not performing the rules compliance activities mandated by the System Safety Program Plan. The Atlanta Streetcar System admitted this was an issue that their intent was to reclassify the Dispatchers to Service Supervisors and transition the current Supervisors into Maintenance Supervisors only, aligning their jobs with their skill set. The corrective action must ensure that the Atlanta Streetcar fulfills these organizational commitments.

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### SA-CAP.OPS.013

The Atlanta Streetcar System must review the organizational chart and the implementation of the active management duties and responsibilities of MARTA for operations, namely the Director of Streetcar Services and Deputy Director of Streetcar Services, to make certain that their roles and responsibilities are accurate and consistent with the adopted agreements and plans, including the System Safety Program Plan and Security and Emergency Preparedness Plan. This corrective action is significant because of the inaccuracies in the actual practices for executive decision-making and day-to-day management of the Atlanta Streetcar by MARTA with the organizational structure, roles and responsibilities described within the IGA and adopted SSPP and SEPP. In other words, the Atlanta Streetcar System must rectify the many instances throughout the SSPP that assigned operations responsibilities to MARTA that were not what MARTA understood its role and responsibilities to be and ensure appropriately trained and qualified personnel fulfill these responsibilities.

### SA-CAP.OPS.014

The Atlanta Streetcar System must develop a written process that ensures the action items and concerns resulting from the weekly and monthly management meetings with MARTA, are prioritized, have management accountability assigned to manage their implementation, have timely due dates for completion, have adequate resources allocated to resolve them, and are sufficiently documented and tracked to closure. At the time of the assessment, examples of these action items and concerns included the following:

- Management
  - Ensure Manager of Streetcar Services has flexibility to actively manage the operating budget to support small-to-medium administrative, operational, infrastructural and maintenance procurements, to avoid shortages of basic consumable materials and supplies.
  - Ensure Atlanta Streetcar System has adequate policies and procedures and support documentation for governing the unique aspects of a transit operation, including fare collection.
- Procurement
  - Quickly procure spare power truck, OCS, TPSS, and track emergency services to provide reliable uninterrupted service.
  - Determine track, long-term OCS, vehicle body, and TPSS procurements.
- Maintenance
  - Complete development of maintenance program process and procedures.
  - Complete the Maintenance Action Plan to bring preventative maintenance programs current. Address staffing shortages that are negatively impacting the performance of scheduled maintenance.
- Operations
  - Ensure staffing levels are sufficient to safely meet the required level of service.
- Incident Investigations
  - Provide timely incident notification and reports.
  - Initiate a call system to ensure required individuals are notified of incidents.
- Training
  - Ensure Operator training is performed by certified trainer.

### SA-CAP.OPS.015

The Atlanta Streetcar System must establish and implement a formal, written and comprehensive Training Program Plan and standards of proficiency for the Operations Superintendent, Operations Supervisors, Maintenance Superintendent, Maintenance Supervisors, Maintenance Technicians, Dispatchers, and Operators. This corrective action is based upon several factors including the determination by MARTA's

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training subject matter experts that there is a need for the development (and redevelopment) of training courses that must be delivered by a certified trainer.

The corrective action is further supported by the general consensus of Atlanta Streetcar and MARTA personnel that there is a lack of knowledge, equipment and training to adequately perform the wide range of job duties and responsibilities necessary to safely operate and maintain the Atlanta Streetcar System. This deficiency to adequately train staff and provide the required equipment extends to all areas of operations and maintenance, explicitly track, OCS, traction power substations, and vehicles.

In addition, the corrective action is validated by the assessment team's review of the training records for the Operations Superintendent, Operations Supervisor, Maintenance Technicians, and Operators against the requirements of the SSPP. None of the training required by the SSPP had been fully completed or documented in a consistent manner. Specifically, no supervisor, maintenance technician, or operator had completed all of the training as specified in the SSPP. In addition, there were no standards identified for job specific safety training. Finally, across the board for all positions, training-related documentation was missing such as streetcar operating cards, random drug and alcohol testing, and medical renewal exams. To the extent possible, the Atlanta Streetcar System must update and complete its training records to address the gaps identified in **Appendix A** and develop a process to ensure that training records are accurately maintained and routinely audited against the requirements to the System Safety Program Plan. This may involve coordination with Human Resources.

With respect to procedural training for operations, maintenance and safety, the Atlanta Streetcar System must ensure that the Training Program includes training for flagging as there are rules that indicate a need for flagged moves and flagged moves are happening, yet there is no flag person initial or refresher training curriculum.

The Training Program Plan must ensure that Operators build the competencies for line of sight operations, operating at restricted speeds, and know the safe actions to take when there are obstructions on the track. The Training Program Plan must also build the corresponding supervisory and management skills necessary to ensure adherence to the rules and procedures.

### **SA-CAP.OPS.016**

The Atlanta Streetcar System must coordinate with MARTA System Safety and Quality Assurance to develop implementation strategies and tools to effectively identify issues, including unacceptable safety hazards and security threats, which must be elevated to the Safety Certification and Security Committee for management review, risk assessment and resolution.

### **SA-CAP.OPS.017**

The Atlanta Streetcar System must coordinate with MARTA to complete the review and update of the Rule Book, paying special attention to the incorporation of Special Notices, Bulletins, or corrective actions identified within this report, as new or revised rules.

### **SA-CAP.OPS.018**

Atlanta Streetcar System must reassess the frequency of field observations and rules compliance checks to ensure adequate field supervision and the daily assurance of safe operations.

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### **SA-CAP.OPS.019**

Develop a comprehensive Operations and Maintenance Plan that defines the operational and staffing requirements for peak periods, special event operations, abnormal and emergency operations. As guidance for this corrective action plan, an Operations and Maintenance Plan for a system of the size, scope and complexity of the Atlanta Streetcar System typically includes a discussion of the following:

- Overview
  - Purpose of Plan
  - Relationship to Existing Transit Systems
  - Organization of Plan
- System Description
  - Alignment
  - Interface with other transportation modes (general traffic)
  - Hours of Operations
  - Vehicle Loading Standards
  - Travel Times
  - Ridership
- Facilities and Systems
  - Track/Switches
  - Vehicles
  - Stops/Stations
  - Yard and Shop
  - Signals/Communications
  - Traction Power
- Transportation Operations
  - Normal Operations
  - Terminal Operations
  - Special Event Operations
  - Emergency Operations
  - Failure Management
- Maintenance Operations
  - Preventative Maintenance
  - Facilities and Systems Maintenance

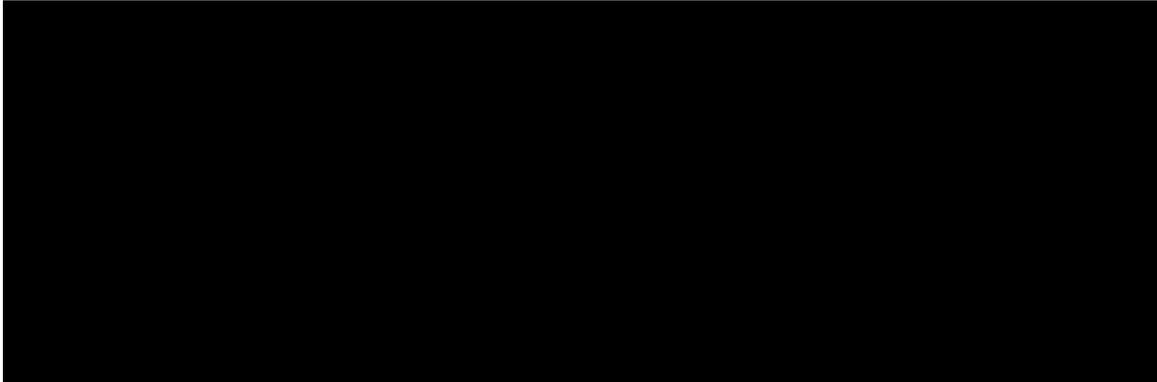
### **SA-CAP.OPS.020**

The Atlanta Streetcar System must assess the safety hazards and security threats identified by its Operations personnel in accordance with its adopted System Safety Program Plan and Hazard Management Plan and develop appropriate mitigation measures to lower these risks to acceptable levels. At the time of the assessment, these safety hazards and security threats included the following:

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### **SA-CAP.OPS.021**

The Atlanta Streetcar System must improve the safety hazard and security threat reporting relationship and coordination mechanisms between the Operations, Safety, and Training personnel, including the timely transmittal of incident data, Operator Reports, Supervisor Reports, and Daily Operations Logs.

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## MAINTENANCE

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### **SA-CAP.MAINT.022**

The Atlanta Streetcar System must prioritize, assign management accountability, identify timely due dates for completion, ensure adequate resources allocated, and sufficiently document and track to closure the actions necessary to address the findings and recommendations included in the Clarner and C3M OCS Studies. In addition to the specific repairs identified, the Atlanta Streetcar System must ensure that the following program management concerns are also addressed:

- Provide updated OCS drawings and operations and maintenance manuals to maintenance personnel and ensure a document control process for drawings.
- Provide engineering oversight for OCS configuration management and maintenance support
- Monitor the use of OCS parts or inventory quantity on hand, including a review of the recommended spare parts list to ensure all materials available to support maintenance program.
- Provide OCS-specific tools and equipment for required OCS maintenance.
- Increase OCS inspection frequency.
- Correct OCS system failures and return the OCS system to the as built condition.
- Address the most serious OCS problem by providing qualified manpower to conduct proper OCS maintenance.
- Create an OCS training plan, including training for OCS components and assemblies.
- Build industry knowledge for transit, OCS, and safety standards.
- Develop a comprehensive maintenance program and controls.
- Develop and issue maintenance safety procedures, including lock-out/tag-out procedures.

### **SA-CAP.MAINT.023**

Atlanta Streetcar System must ensure that the successful candidate for Maintenance Superintendent is aptly qualified and trained to perform the following:

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- Contributing to the determination of the strategy to ensure a long term vehicle maintenance program.
- Ensuring the necessary training resources for maintenance personnel is established.
- Quality Assurance / Quality Control for maintenance.
- Routinely completing the Maintenance Rules Compliance Checklist and following through the necessary corrective actions.
- Parts and inventory management for vehicles, systems, and infrastructure.

### **SA-CAP.MAINT.024**

The Atlanta Streetcar System must review the organizational chart and the implementation of the active management duties and responsibilities of MARTA for maintenance, namely the Director of Streetcar Services and Deputy Director of Streetcar Services, to make certain that their roles and responsibilities are accurate and consistent with the adopted agreements and plans, including the System Safety Program Plan and Security and Emergency Preparedness Plan. This corrective action is significant because of the inaccuracies in the actual practices for executive decision-making and day-to-day management of the Atlanta Streetcar by MARTA with the organizational structure, roles and responsibilities described within the IGA and adopted SSPP and SEPP. In other words, the Atlanta Streetcar System must rectify the many instances throughout the SSPP that assigned maintenance responsibilities to MARTA that were not what MARTA understood its role and responsibilities to be and ensure appropriately trained and qualified personnel fulfill these responsibilities.

### **SA-CAP.MAINT.025**

The Atlanta Streetcar System must re-evaluate the frequency at which the Maintenance Compliance Checklist is performed to ensure timely assessment of critical areas such as electrical safety and also to ensure there is timely management follow up on the identified deficiencies.

### **SA-CAP.MAINT.026**

The Atlanta Streetcar System must follow through on the development and implementation of the Hansen maintenance management information system. The maintenance management information system must capture contractor work orders and repairs, such as the emergency repairs made to the OCS to address the OCS unacceptable hazard. The system must also be expanded to include all safety-critical assets, specifically the track, OCS, traction power, and transit bar signals.

### **SA-CAP.MAINT.027**

The Atlanta Streetcar System must continue to ensure that daily, weekly, monthly, quarterly, semi-annual, and annual preventative maintenance inspections are occurring as required for track, vehicles, traction power substations, OCS, and stops. This corrective action is supported by the assessment results included as **Appendix B** of this report. The most significant results were related to the following:

- TPSS – The Atlanta Streetcar System does not have daily access to TPSS 3 in order to complete the required inspections. The Atlanta Streetcar System must work with MARTA to establish a process that ensures daily access by qualified maintenance personnel or develop an interagency agreement with MARTA for MARTA personnel to perform such work (or other viable alternative).
- Facility / Fire Life Safety – The Atlanta Streetcar System must ensure that facility / fire life safety inspections are occurring as required, as there is no documented evidence that these inspections are occurring at all.
- Stops – Two consecutive days of inspections did not occur within a given week and no explanation was provided. The Atlanta Streetcar System must ensure that the all stop inspections occur on a daily basis and adequate resources are available to fulfill this maintenance requirement.

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### HUMAN RESOURCES

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#### SA-CAP.HR.028

The Atlanta Streetcar System must develop a written standard that establishes the minimum staffing thresholds for safety-critical operations and maintenance positions and develop a procedure for monitoring and tracking the adherence to these levels. In doing so, the Atlanta Streetcar System should continue to coordinate with Human Resources to prioritize the hiring and recruiting of its safety-critical positions.

#### SA-CAP.HR.029

The Atlanta Streetcar System must coordinate with Human Resources to ensure the post-accident drug and alcohol test reports are revised to include adequate information that enables the Atlanta Streetcar System to complete and document the accident/incident investigation process as specified by the System Safety Program Plan and the Investigation Procedure.

#### SA-CAP.HR.030

The Atlanta Streetcar System must coordinate with Human Resources to ensure that all safety-sensitive personnel and non-safety sensitive personnel subject to drug and alcohol testing are appropriately subject to random and post-accident drug and alcohol testing. This corrective action is essential because the random drug and alcohol testing methodology complies with FTA requirements. This may be accomplished by directly consulting with the FTA Transit Safety Office for technical guidance, assistance, and direction on best practices and other methods to achieve compliance.

#### SA-CAP.HR.031

The Atlanta Streetcar System must coordinate with Human Resources to ensure that organizational resource is identified to perform timely and independent audits of compliance to the drug and alcohol program for the Atlanta Streetcar System.

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### COMMUNICATIONS

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#### SA-CAP.COMM.032

The Atlanta Streetcar System must update the System Safety Program Plan and Security and Emergency Preparedness Plan to describe the safety, security, and emergency communication strategies and coordination groups of the City of Atlanta and the Atlanta Downtown Improvement District. The description of the coordination groups must include the Interagency Law Enforcement Forum, Communications Committee along with the communications tools such as the Public and media communication protocols during emergency events and service disruptions, Crisis Communications Plan, Community Liaison, and Customer Call Log, and coordination with the Atlanta Streetcar System to resolve safety and security related concerns.

#### SA-CAP.COMM.033

The Atlanta Streetcar System must develop and implement transit security awareness and quality of life campaigns targeted toward internal and external audiences, such as *See Something, Say Something, Not on*

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*My Shift*, or Passenger Bill of Rights. When doing so, the Atlanta Streetcar System is encouraged to access the resources available from FTA and DHS related to security awareness initiatives for public transit.

### **SA-CAP.COMM.034**

The Atlanta Streetcar System must follow through with the development of a formal, written Strategic Communications Plan that describes the all of the relevant communications goals, objectives, target audiences, strategies and performance measures for the Atlanta Streetcar System.

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## **SYSTEM SAFETY**

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### **SA-CAP.SAFE.035**

The Atlanta Streetcar System must fulfill the organizational resource for Engineering. This corrective action plan is required because the safety-critical engineering functions required by the System Safety Program Plan are not being consistently and effectively managed and implemented. These required engineering functions include:

- Participation and guidance from the Atlanta Streetcar System's asset engineers in reviews of technical specifications and design criteria;
- Project safety analysis by Atlanta Streetcar System's engineers in conjunction with third party contractors;
- Proper administration of quality-related goals and objectives by confirming that products are designed, engineered, manufactured, installed, and tested in accordance with specified contractual, industry and governmental requirements;
- Monitoring, auditing, assessing, evaluating, testing and measuring contracts and operations; and
- Implementing all configuration management requirements and approving configuration management changes to the physical and functional characteristics of Atlanta Streetcar assets by engineering personnel.

### **SA-CAP.SAFE.036**

The Atlanta Streetcar System must implement quality assurance audit activities defined in the *Quality Maintenance Program Handbook – Basic Facilities, Vehicle Preventative Maintenance Inspection, Vehicle Cleanliness and Routine Vehicle Maintenance Inspection Procedures*. These activities include performance of a random quality assurance audit in which every shift supervisor must complete a random quality assurance inspection daily on 10% of all work-related repairs completed in the shop. In addition, there is the requirement for the performance of an overall quality maintenance audit where a QA inspector reviews the overall vehicle maintenance program. The areas reviewed must include Vehicle Appearance, Vehicle Cleanliness, Vehicle Reliability, Preventative Maintenance Performance, PMI Quality Assurance Process, Vehicle Records, and Overall Site Maintenance Procedures. The Atlanta Streetcar System must fulfill the requirement that a designated maintenance/QA person be assigned to review all forms completed and calculate the results. And that the QA Designee will also perform a weekly tally of all inspection forms and provide these to the Superintendent of Maintenance for action as required. Lastly, the Atlanta Streetcar System must show documented evidence of inspections having been performed as required.

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### **SA-CAP.SAFE.037**

The Atlanta Streetcar System must establish and implement a Configuration Management Plan that accommodates changes and continually documents how the physical characteristics (facilities, systems, and equipment) of a rail transit system is configured. The plan must also ensure that documents, records, and data remain concise and valid for the purposes of safe and effective operations and maintenance of the transit system. As the foundation of this plan, the Atlanta Streetcar System must obtain a complete set of as-built drawings necessary to form an adequate baseline for the implementation of its configuration management program. The Atlanta Streetcar System should continue to coordinate with MARTA when implementing this corrective action to ensure its direction to provide a plan and engineering oversight for configuration management is adequately addressed.

### **SA-CAP.SAFE.038**

The Atlanta Streetcar System must develop a formal training course and training standards of proficiency for the diagonal bar signal operations. The training must also be accompanied by the signal operating rules and procedures that govern mainline and yard moves. The Atlanta Streetcar System must also update the signal descriptions within the System Safety Program Plan to be consistent with this new training.

### **SA-CAP.SAFE.039**

The Atlanta Streetcar System must secure an organizational resource for safety and security program management. While the Atlanta Streetcar System has two professional services contracts in effect to provide limited safety and security support for a short-term duration, the Atlanta Streetcar System is in need of long term resources with specialized expertise and experience to support the implementation of the safety and security requirements of the System Safety Program Plan and Security and Emergency Preparedness Plan. The identified resource should provide demonstrated leadership and skill in the implementation of rail transit system safety and security programs; hazard, accident, and security incident notification, investigation, and reporting; internal safety and security audit; emergency preparedness and response as well as strong familiarity and working knowledge of rail operations and rail maintenance.

### **SA-CAP.SAFE.040**

The Atlanta Streetcar System must ensure that the Corrective Action Plan (CAP) Tracking Log which includes corrective actions resulting from internal audits, hazards and monthly hazard management meetings, accidents, security incidents, must be corrected to accurately reflect the initial and final risk assessment ratings as defined in the System Safety Program Plan and Hazard Management Plan.

In addition, the CAP log must also document all mitigation measures for each hazard on the log such as increased inspection and maintenance, revised operating procedures, improved training and supervision, increased public education, facility or system redesign, installation of additional traffic controls or warning devices, and signage.

The CAP log must contain all identified hazards, including the sand in switch hazard and bar signal defect. The CAP log must also contain all security threats and vulnerabilities, including the threats to personal security of Operators and security breach of the yard. The CAP log should be comprehensive and consist of hazards, threats, and other findings identified from all sources including Operator Reports, Supervisor Reports, quality assurance audits, defect reports, inspections, and special studies such as the Clarner, C3M, and this Special Assessment Report.

Additional guidance on the preparation and submittal of the CAP Log may be found in Section 8 of the Program Standard.

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### SA-CAP.SAFE.041

The Atlanta Streetcar System must comply with the hazard notification requirements of the Program Standard, Section 5.6.1, which requires notification to the Department when the following events occur:

GDOT-Reportable Hazards
Broken or missing safety or security-critical equipment, infrastructure, or systems that could result, or have resulted, in employee or passenger injury, or damage to rail transit agency property
Discoveries of systemic or patterns of employees or contractors (in safety- or security-sensitive positions) non-compliance with rail transit agency rules and procedures
Employee, contractor, or patron electric shock
Exposed energized electrical conductors or equipment that can be contacted by passengers or employees
Facility or track closures due to safety or security-related reasons
Fire or smoke on the track, on a vehicle, or in a rail transit agency facility
Improper door opening of an in-service rail transit vehicle (wrong side, off platform, or while moving)
Incidents involving individuals working in / around rail transit agency right-of-way that are investigated by the rail transit agency or its contractors
Malfunctions of safety- or security-critical systems that could result, or have resulted, in a catastrophic incident
Rail transit agency vehicle – broken or loose wheel or axle
Rail transit agency vehicle – collisions with fixed objects on the mainline or in the yard
Rail transit agency vehicle – derailments
Rail transit agency vehicle – face-up or near miss of rail transit vehicles
Rail transit agency vehicle – malfunctions of safety critical systems
Operator incapacitated during revenue service

### SA-CAP.SAFE.042

The Atlanta Streetcar System must continue to track and report the status of corrective actions identified in **Appendix C**, including making an assignment of individuals/groups responsible for implementation of the corrective action and estimated date of completion. The current open items require the submittal of supporting documentation or the development and implementation of various activities and procedures as described in the list below and in more detail in **Appendix C**:

- Atlanta Streetcar must ensure all future accident investigation final reports include:
  - Timeline of events
  - Summary of interviews with all persons essential to the incident
  - Damage estimates
  - Vehicle event recorder analysis report
  - Detailed measurements of the scene
  - Information concerning responders to the scene
  - Name/title of the Investigator in Charge
  - Verification that all required vehicle inspections have been performed and compared to the engineering limits / specifications.
  - Determination of all applicable operating instructions, regulations, and laws at the location of the event.
  - Post-accident drug and alcohol tests results reports.
  - Credible root cause analysis
  - Minimum content requirements for final reports as specified by the Program Standard

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- Atlanta Streetcar must submit documented evidence of the following to GDOT:
  - Staffing coverage
  - Revised courtesy cards or other witness collection document
  - Scheduled Maintenance Action Indexes
  - As-built documents for all facilities and systems
  - Chain of Custody procedure
  - Standards for maximum allowable work hours and required rest periods
  - Results of Atlanta Streetcar System’s review of its organizational structure, staffing requirements, and adjustments made that ensure that core safety, operations, and maintenance functions are performed.
  - The delivery of management and supervisory training in retrieval and analysis of vehicle data
  - Consideration and disposition by the Atlanta Streetcar System of options for radio communications that could enhance the accident investigation process and to determine if the flow of information is of significance.
  - Procedure to gather transit signals data from third party contractor as part of the accident investigation process.

There are several open items noted in **Appendix C** that will remain open until the corrective actions from the Special Assessment for operations and maintenance, training, and CAP log are closed.

Upon completion of each open item, the Atlanta Streetcar System must submit documented evidence verifying closure to GDOT for review and approval. This information may be submitted with the monthly CAP log.

### **SA-CAP.SAFE.043**

The Atlanta Streetcar must expand the corrective action plans from the re-submitted final accident investigation reports summarized in **Appendix D** to address systemic issues which include the following:

- Revamp the training program to ensure all Operators are aware of their responsibilities and are equipped to follow the rules, actions, and procedures required to avoid collisions and other hazards when operating the streetcar.
- Develop a public awareness campaign to educate pedestrians, bicyclists, and motorists on the safe conduct when driving around the streetcar.
- Expand the design of the operational environment for the streetcar to include revised and/or additional signage, delineation posts, or other traffic control devices to protect the dynamic envelope of the streetcar.
- Train all persons responsible for conducting investigations on the operations, maintenance, safety and security policies, procedures, and activities required to effectively investigate accidents and develop sufficient corrective action plans to prevent recurrence.

The Department anticipates issuing a ‘pending approval’ for the individual accident final investigation reports summarized in the **Appendix D** until such time the corrective action planning requirements are met.

### **SA-CAP.SAFE.044**

The Atlanta Streetcar System must identify an individual/department responsible for closure and an estimated schedule of completion for open certifiable items with no due dates or expired due dates.

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The Atlanta Streetcar System must re-open the Traffic Signal certifiable element and diagonal bar signal certifiable item until the development of the corresponding rules, procedures and training have been documented and completed.

The Atlanta Streetcar System must ensure the completion of the safety and security certification process for the Breeze Vending Machines prior to initiating the equipment into revenue service. This process includes the development and implementation a Safety and Security Certification Plan, Design Criteria Conformance Checklists and Design Exceptions (if any), Manufacturing / Installation Conformance Checklists and Workarounds (if any), Testing Plan, Operations and Maintenance Readiness (including procedures and training), Hazard Analysis, Threat/Vulnerability Assessment, and Safety and Security Certification Verification Report.

Certifiable Element	# Open Items	Status	
Fare Collection	1	Open	
Security	1	Open	
Operations / Maintenance	3	Open	
System Integration	1	Open	
Hazard & Threat / Vulnerability	2	Open	
Traffic Signals	0	Open	
Vehicle Maintenance Facility Yard	1	Open	

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**SYSTEM SECURITY**

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**SA-CAP.SEC.045**

The Atlanta Streetcar System must continue to coordinate with the Atlanta Police Department to identify and implement strategies to transition the Atlanta Streetcar System to a more effective communications system and procedure. [REDACTED]

**SA-CAP.SEC.046**

The Atlanta Streetcar System must continue to coordinate with the Atlanta Police Department to identify and implement law enforcement strategies that will enhance Atlanta Streetcar System’s security program. [REDACTED]

**SA-CAP.SEC.047**

The Atlanta Streetcar must coordinate with the Atlanta Police Department to determine the scope, methodology, participants, and implementation schedule for the threat and vulnerability assessment program for the Atlanta Streetcar System. [REDACTED]

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**MARTA ACTIVE MANAGEMENT**

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**SA-CAP.MGMT.048**

The Atlanta Streetcar System must address MARTA’s major concerns identified during the Special Assessment including the following: *Establish a Formal Training Program.*

The program must be written, delivered by certified trainers, and have measurable results, including the result that Atlanta Streetcar personnel are able to safely and effectively perform lock-out / tag-out procedures on electrical systems including the OCS.

**SA-CAP.MGMT.049**

The Atlanta Streetcar System must address MARTA’s major concerns identified during the Special Assessment including the following: *Develop a Sustainability Action Plan.*

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The Atlanta Streetcar System must develop a Sustainability Action Plan, also referred to as a Performance Management System or Balanced Scorecard, for a period of at least 12 months, but preferably a multi-year program. The plan should address all facets of transit management and be commensurate with the number of employees and their technical capabilities and qualifications. As further guidance for this corrective action, the following background information is provided:

A balanced scorecard is a strategic planning and management system that is used to align management activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. It is a performance measurement framework that builds a framework that not only provides performance measurements, but helps management identify what should be done and measured.

The balanced scorecard suggests that the organization be viewed from four perspectives, and to develop metrics, collect data and analyze it relative to each of these perspectives:

- Learning and Growth - This perspective includes employee training and corporate culture related to both individual and agency self-improvement; people are the main resource. Learning includes mentorship, ease of communication, technological tools, and high performance work systems.
- Business Process - This perspective refers to internal business processes, in the case of the Atlanta Streetcar and this Special Assessment, this refers to operations, maintenance, system safety and system security processes. Measures based on this perspective allow the managers to know how well their function is running, and whether its processes conform to the mission – the delivery of safe, secure, reliable transit service, for example.
- Customer Perspective - This perspective focuses on the importance of customer focus and customer satisfaction. If customers are not satisfied, they will eventually find other means that will meet their transportation needs. Performance in this perspective is a leading indicator of future decline. In developing measures for satisfaction, customers should be analyzed in terms of kinds of customers, the kinds of services provided, and expectations of those customer groups.
- Financial Perspective – While financial considerations are not within the purview of the State Safety Oversight Program, the industry standard for performance frameworks of this nature do not disregard the traditional need for financial data. Timely and accurate funding data will always be a priority. The emphasis on financials tends leads to the "unbalanced" situation with regard to other perspectives, so there is a need to include other financial-related data such as cost-benefit data in this category.

### **SA-CAP.MGMT.050**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Develop Administrative and Operational Plans and Procedures.*

The Atlanta Streetcar System must develop day-to-day administrative procedures in addition to operational plans and procedures.

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### **SA-CAP.MGMT.051**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Define the Decision-Making Authority of Atlanta Streetcar, MARTA, and ADID.*

The Atlanta Streetcar System must define and adhere to the roles and responsibilities of the stakeholders involved in the management of the Atlanta Streetcar System in accordance to the adopted intergovernmental agreements and plans so that MARTA can make effective decisions regarding operations, maintenance, scheduling, layovers, hiring, etc.

### **SA-CAP.MGMT.052**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Ensure Adequate Staffing Levels.*

The Atlanta Streetcar System must hire and train an adequate level of operators, dispatchers, supervisors, superintendents, or maintenance personnel to support the level of service.

### **SA-CAP.MGMT.053**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Comply with all Established Policies and Procedures.*

The Atlanta Streetcar System must ensure that all operations, maintenance, state and federal requirements, including scheduled overtime and drug and alcohol regulations, are complied with at all levels.

### **SA-CAP.MGMT.054**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Rebuild and Strengthen Relationships with Internal Partners.*

Atlanta Police Department and Atlanta Fire and Rescue are critical safety, security, and emergency management partners and these relationships that should be fostered and strengthened.

### **SA-CAP.MGMT.055**

The Atlanta Streetcar System must address MARTA's major concerns identified during the Special Assessment including the following: *Define and Stabilize the Organizational Structure.*

For several months the organizational structure has been fluid in terms of the positions and the qualifications, experience and training of the individuals within those positions. The lack of a defined and stable organization is an obstacle to promoting a safety culture and effectively implementing the safety and security plans. Atlanta Streetcar must give serious consideration to the management structure and resources necessary to be a rail transit agency.

Appendix A  
Training Records Review Checklist



## Appendix B

### Preventative Maintenance Inspections Compliance Checklist

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The assessment team reviewed the inspection reports for the vehicles and infrastructure of the Atlanta Streetcar system against the requirements of the Preventative Maintenance Compliance Matrix. The results are summarized in the following table:

Inspection Type	Date of Performance									Weekly	Compliant (Y/N)
	9/15	9/16	9/17	9/18	9/19	9/20	9/21	9/22	9/23		
Track	✓	✓	✓	✓	✓	✓	✓	✓	Not provided	Not provided	N
Vehicle 1001	✓	✓	✓	✓	✓	✓	✓	✓	✓	Not provided	Y
Vehicle 1002	✓	✓	✓	✓	✓	✓	✓	✓	✓	Not provided	Y
Vehicle 1003	✓	✓	✓	✓	✓	✓	✓	✓	✓	Not provided	Y
Vehicle 1004	Not provided	Not provided	✓	✓	✓	Not provided	✓	✓	✓	Not provided	N
[REDACTED]			✓	✓	✓	✓	✓	✓	✓	Not provided	N
			✓	✓	✓	✓	✓	Not provided	✓	Not provided	N
			✓	✓	✓	✓	✓	✓	✓	Not provided	N
OCS	✓	Not provided	✓	✓	✓	✓	✓	✓	✓	Not provided	N
Facility / Fire Life Safety	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	Not provided	N
King Historic District Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Dobbs Plaza Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Auburn at Piedmont Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Woodruff Park Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Peachtree Center Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Carnegie at Spring Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Centennial Olympic Park Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Luckie at Cone Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Park Place Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Hurt Park Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Sweet Auburn Market Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N
Edgewood at Hilliard Stop	✓	✓	✓	✓	✓	✓	Not provided	Not provided	✓	n/a	N

Assessment team notes:

- Track – daily inspections are occurring as required; however, the weekly inspection (where the Track Inspector is required to walk the length of the alignment) was not provided.
- Vehicle – Records for Vehicle 1004 were incomplete; assessment team will follow up to determine if vehicle was out of service due to post-accident repairs.
- [REDACTED]
- OCS – daily inspections are occurring for the most part; the weekly inspection was not provided.
- Facility / Fire Life Safety – these inspections are not occurring at all. If they are occurring they are not being documented.
- Stops – Two consecutive days of inspections did not occur. No explanation was provided.

Appendix C  
Accident / Incident Investigation Field Verification Checklist

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<b>ACCIDENT / INCIDENT INVESTIGATION FIELD VERIFICATION CHECKLIST</b>					
<b>#</b>	<b>Investigation Procedural Requirement</b>	<b>Responsibility</b>	<b>GDOT Finding 08/13/15</b>	<b>Atlanta Streetcar Response 10/21/15</b>	<b>STATUS</b>
2	GDOT notified within six (6) hours of reportable event through fax or email, including following information: <ul style="list-style-type: none"> <li>Name and job title of person reporting</li> <li>Event type</li> <li>Location and time of event</li> <li>Fatalities and injuries</li> <li>Rail Transit Vehicle(s) involved</li> <li>Other vehicle(s) involved</li> <li>Corrective Action Plan</li> <li>Atlanta Streetcar Point-of-Contact</li> <li>Property Damage</li> <li>NTSB reportable?</li> </ul>	Director of Safety, Security and Training	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must provide notification to GDOT within 6 hours of any GDOT reportable incident to meet the requirements of its investigation procedure.</li> </ul>	ASC agrees to comply with 6 hour notification procedures	<b>RESPONSE ACCEPTED</b>
3	GDOT received Preliminary Report within forty-eight (48) hours of a reportable event, including following information: <ul style="list-style-type: none"> <li>Initial findings of fact</li> <li>Investigation Plan</li> <li>NTSB involvement?</li> <li>Ad hoc investigation committee convened?</li> </ul>	Director of Safety, Security and Training	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must provide a preliminary report within 48 hours of a GDOT-reportable event to meet the requirements of its investigation procedure.</li> </ul>	ASC agrees to provide a preliminary report within 48 hours as required.	<b>RESPONSE ACCEPTED</b>
4	GDOT received monthly status reports until the investigation is completed, including the following information at a minimum: <ul style="list-style-type: none"> <li>Minutes of any meeting held by agency's ad hoc investigation committee</li> <li>Disclosure of actions taken or planned by the agency</li> <li>Status of the investigation</li> <li>Principal issues or items currently being evaluated</li> </ul>	Director of Safety, Security and Training	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must provide monthly status reports on the incident investigation for all GDOT-reportable events until the investigation is completed to meet the requirements of its investigation procedure.</li> </ul>	ASC will provide monthly status update on all investigations that exceed 30 days or more.	<b>RESPONSE ACCEPTED</b>
8	FTA Regional Administrator notified of any accident/incident that is reported to GDOT or the NTSB	Director of Safety, Security and Training	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must notify the FTA Regional Administrator of any accident/incident that is reported to GDOT or the NTSB to meet the requirements of its investigation procedure.</li> </ul>	ASC agrees to follow and adhere to the SSPP section 10 Accident/Incident Notification, Investigation and Reporting	<b>OPEN</b> Provide documented evidence of notifications to GDOT for review.
11	Accident and emergency incident reported as soon as possible to the Streetcar Supervisor on Duty	Manager, Supervisor, Operator, or Contractor	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must review and address its management structure, job descriptions, duties and responsibilities to ensure that there is adequate and consistent coverage of all safety-sensitive positions during the response to an accident/incident/hazard including Supervision and Dispatch to meet the requirements of the Investigation Procedure.</li> </ul>	ASC agrees to ensure that there is adequate and consistent coverage of all safety-sensitive positions during the response to an accident/incident/hazard including Supervision and Dispatch to meet the requirements of the Investigation Procedure.	<b>OPEN</b> Provide documented evidence of staffing coverage to GDOT for review.
12	After arriving at accident/incident location, perform the following tasks: <ul style="list-style-type: none"> <li>Secure the scene</li> <li>Ensure emergency responders have been notified</li> <li>Preserve short-term physical evidence</li> <li>Collect information on persons treated on scene or transported to hospital</li> <li>Develop a preliminary sequence of events</li> </ul>	On-Scene Investigator	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must ensure that all available evidence, data, and information is collected and reviewed in a timely manner in order to create a timeline of events and to accurately identify causal and contributing factors, findings, and a probable cause.</li> <li>ASC must conduct, document, and be able to produce the results of drug and alcohol testing to GDOT upon request for</li> </ul>	ASC will ensure that all evidence, data and information is collected and reviewed in a timely manner. A timeline will be created for each incident moving forward.  ASC contacted Beverly Ashley COA Nurse and administrator of drug screening information. Ms. Ashley forwarded a report that verified that post-	<b>OPEN</b> Action item will remain open until GDOT verifies that future report is submitted with timeline.

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	<ul style="list-style-type: none"> <li>Contact appropriate ASC personnel</li> <li>Obtain preliminary statements and contact information</li> <li>Conduct post-event drug and alcohol testing if necessary</li> </ul>		all GDOT-reportable events where drug and alcohol testing is necessary to meet the requirements of its investigation procedure.	accident drug screening was completed and the results were negative.	
13	<p>Complete on-scene investigation by accomplishing the following tasks:</p> <ul style="list-style-type: none"> <li>Place a “hold” on the scene if incident is determined not to be criminal in nature or police related</li> <li>Evaluate the scene to determine what occurred – position of employee, type and severity of injury, position of vehicles and equipment, other relevant data</li> <li>Collect and preserve evidence for analysis</li> <li>Determine any mechanical, physical, and environmental conditions that may have contributed to the accident/incident</li> <li>Conduct interviews of persons deemed essential to the incident</li> <li>Evaluate what job the employee was performing, the employee’s training, and employee’s qualification</li> <li>Determine whether an unsafe action or unsafe condition contributed to the event</li> <li>Determine what personal protective equipment was required, whether it was being utilized, and whether it was in good condition</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must include interviews with all persons essential to the incident in the final investigation report for all GDOT-reportable events to meet the requirements of its investigation procedure.</li> </ul>	<p>ASC is providing the initial information provided by the former Director of Safety, Security and Training. After research, the information attached to the final report is all that is available.</p> <p>ASC will include interviews with all persons essential to the incident in the final investigation reports for all future GDOT reportable accidents/incidents to meet the investigation procedure requirements.</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies that future report is submitted with interviews of all persons essential to the incident.</p>
15	<p>Obtain eyewitness information, including:</p> <ul style="list-style-type: none"> <li>Name, address, telephone number</li> <li>Witness category (employee, passenger, and bystander)</li> <li>Status of witness (principal involved in event, observer or post-occurrence)</li> <li>Brief description or account of relevant facts that were observed</li> <li>Location of person while witnessing the event</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must collect and document the witness category, status of witness, account of facts, and location while witnessing of each eyewitness relevant to the incident to meet the requirements of its investigation procedure.</li> </ul>	ASC will revise our Courtesy Cards or develop a witness collection document to include the collection information needed to meet investigation procedure requirements.	<p align="center"><b>OPEN</b></p> <p>Submit revised courtesy cards, witness collection document to GDOT for review.</p>
17	<p>Document the damage and condition of the vehicle elements as follows, including monetary damage estimates of each item:</p> <ul style="list-style-type: none"> <li>Vehicle body condition (visible damage)</li> <li>Position of all operator controls (controller position and brake handle, headlight and other switches, air gauge readings, etc.)</li> <li>Wheels and trucks assemblies</li> <li>Brake systems</li> <li>Door positions or other entry/exit location conditions</li> <li>Headlights, marker lights, indicator lights status</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must include the supporting documentation that informed the monetary damage estimate of the incident in its final investigation report.</li> </ul>	ASC will provide a damage estimate of the equipment involved in future reports.	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies future report is submitted with damage estimate.</p>
18	Document evidence relative to vehicle travel/speed as follows:	Investigator in Charge	<b>ACTION REQUIRED</b>	ASC has event recorders installed in all vehicles and will utilize the analysis report to document relevant	<b>OPEN</b>

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	<ul style="list-style-type: none"> <li>Secure rail car event log data</li> <li>Identify wheel marks on track or street</li> <li>Identify wheel marks on track or street</li> <li>Identify wheel marks on track or street</li> <li>Identify operational highway traffic signal systems</li> <li>Identify evidence indicating area of contact/collision</li> <li>Determine line-of-sight distances</li> <li>Identify gouge marks on street, equipment or structure</li> <li>Determine length of skid marks</li> <li>Arrange to secure all recorded communication data</li> </ul>		<ul style="list-style-type: none"> <li>ASC must prepare a vehicle event recorder analysis report to document evidence relevant to vehicle travel/speed for all GDOT-reportable events.</li> </ul>	evidence to meet the requirements for all GDOT reportable events.	Action item will remain open until GDOT verifies that future report is submitted with vehicle event recorder analysis report.
19	<p>Document observable damage to infrastructure and environmental conditions, including a monetary damage estimate, as follows:</p> <ul style="list-style-type: none"> <li>Damage to track, signals, bridges, structures, buildings, and other infrastructure</li> <li>Evidence of a recent environmental event, vandalism, or criminal activity</li> </ul>	Investigator in Charge	Refer to item #13.	ASC will ensure relevant information is documented to meet the element requirement.	<b>RESPONSE ACCEPTED</b>
21	<p>Establish measurements, including points of reference, resting positions of objects, of the following:</p> <ul style="list-style-type: none"> <li>Each vehicle involved: exterior four sides, interior compartment, operating control compartment</li> <li>Resting position of wheels</li> <li>All visible points of infrastructure damage</li> <li>Any visibly evident contributing obstructions, objects, or conditions</li> <li>Position of casualties, if stationary</li> <li>Evidence of skid marks, gouge marks, and derailment marks</li> <li>Position of vehicles relevant to centerlines, stop lines, lane markings, etc.</li> <li>Any other subject that appears out of the ordinary</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must collect and document detailed measurements of the scene of the incident, including the vehicles involved, infrastructure, objects, casualties, lane markings, and other relevant details, and include the results in its final investigation report to meet the requirements of its investigation procedure.</li> </ul>	ASC will ensure that measurements are taken to document the elements outlines and include the results in the final reports to meet the investigation procedure requirements.	<p><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies that future report is submitted with detailed measurements of the scene of the incident, including the vehicles involved, infrastructure, objects, casualties, lane markings, and other relevant details.</p>
22	<p>Document the current status of all known casualties, including:</p> <ul style="list-style-type: none"> <li>Injuries: Total number, personal information</li> <li>Fatalities: Total number, personal information</li> <li>Identification of responder units that treated or transported casualties</li> <li>Identification of hospitals where casualties were transported</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC should record information concerning the responders to the scene in its final investigation report for all GDOT-reportable events.</li> </ul>	ASC will record information concerning the responders to the scene in its final investigation report for all GDOT-reportable events.	<p><b>OPEN</b></p> <p>Action will remain open until GDOT verifies that future report is submitted with information concerning the responders to the scene.</p>
23	Coordinate post-event research and analysis	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must ensure that all final investigation reports include the name and title of the Investigator-in-Charge.</li> </ul>	ASC will ensure that all final investigation reports include the name and title of the Investigator-in-Charge.	<p><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies that reports include name/title of Investigator in Charge.</p>
24	<p>Collect long-term information by accomplishing the following tasks:</p> <ul style="list-style-type: none"> <li>Conduct interviews</li> <li>Inspect physical evidence</li> </ul>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must collect and document onboard vehicle CCTV data, vehicle event log data, and on-the-job training records for all</li> </ul>	Operator on-the-job training information is posted on the final report. CCTV data was collected and stored in a secure place for your review.	<p><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies availability of CCTV data.</p>

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	<ul style="list-style-type: none"> <li>Analyze collected data gathered</li> <li>Reconstruct the event</li> <li>Perform reenactment</li> <li>Review training records and certifications</li> <li>Determine probable cause and contributing factors</li> </ul>		<p>GDOT-reportable incidents to meet the requirements of its investigation procedure.</p>	<p>ASC will ensure the collection of information necessary to meet the investigation procedure requirements.</p>	
25	<p>Coordinate needed research, analysis, and specialized technical support within the respective Atlanta Streetcar area disciplines and supporting departments, and/or contracting assistance from independent outside agencies</p>	<p>Manager of Streetcar Services</p> <p>Superintendent of Operations</p> <p>Superintendent of Maintenance</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must ensure that the roles and responsibilities for coordinating research, analysis, and specialized technical support for GDOT-reportable accident investigations are fulfilled as required by its procedure.</li> </ul>	<p>ASC has adapted a procedure that when an incident happens, the data is pulled and saved. The analysis is completed and sent with the final report. Moving forward, this procedure will allow us to meet the investigation requirement.</p>	<p align="center"><b>OPEN</b></p> <p>Submit procedure for GDOT review.</p>
26	<p>Conduct and document inspections/tests on vehicles as needed to determine if pre-existing conditions contributed to the accident/incident, including, at a minimum:</p> <ul style="list-style-type: none"> <li>Operator controls</li> <li>Wheels/axles/trucks</li> <li>Braking systems: pneumatic, dynamic, track brakes, sanders</li> <li>On-board signal/speed control systems</li> <li>Communication system</li> <li>Lights</li> <li>Whistle/horn/bell</li> </ul>	<p>Superintendent of Maintenance</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must conduct and document monthly, quarterly, semi-annual, and annual vehicle inspections to meet the requirements of its maintenance and system safety programs, including activities associated with accident investigations.</li> <li>ASC must review and address its maintenance practices to ensure that discrepancies identified from all vehicle maintenance inspections result in work orders (or other means) that resolve identified problems.</li> </ul>	<p>ASC has completed the 5k on the vehicle 1003 and the 10k preventative maintenance and safety system requirements for all other streetcar vehicles. ASC will provide the appropriate documentation requested.</p>	<p align="center"><b>RESPONSE ACCEPTED</b></p>
27	<p>Research the vehicle or component's prior maintenance history to determine if any significant conditions or deficient performance levels existed prior to the event, identify relevant protocols and inspection frequency; identify activities performed or omitted, their dates, and who performed them</p>	<p>Superintendent of Maintenance</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>As discussed in item #26, ASC must conduct and document monthly, quarterly, semi-annual, and annual vehicle inspections to meet the requirements of its maintenance and system safety programs, including activities associated with accident investigations.</li> <li>GDOT requests ASC provide the Scheduled Maintenance Action Indexes as verification that Siemens' review is complete and that the maintenance schedules have been established.</li> </ul>	<p>ASC has is currently conducting and documenting required vehicle inspections. The Scheduled Maintenance Action Indexes will be provided on separated documents.</p>	<p align="center"><b>OPEN</b></p> <p>Provide Scheduled Maintenance Action Indexes to GDOT for review.</p>
28	<p>Gather applicable engineering specifications and drawings to be included in the final report</p>	<p>Superintendent of Maintenance</p> <p>Investigator in Charge</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must obtain all applicable drawings including OCS as-builts to meet the requirements of its maintenance and system safety programs as well as activities associated with accident investigations.</li> </ul>	<p>As built documents are in the possession of MARTA MATC Team and will be delivered to ASC at closeout.</p>	<p align="center"><b>OPEN</b></p> <p>Provide evidence that ASC has received all as built documents, including OCS.</p>
29	<p>Compare systems performance data (inspections/tests, maintenance history) versus prescribed engineering limits/specifications to determine if there are any contributing factors to the event</p>	<p>Superintendent of Maintenance</p> <p>Investigator in Charge</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>As discussed in item #26, ASC must conduct and document all required vehicle inspections and compare them to the engineering limits / specifications (depending upon the incident) to meet the requirements of its accident investigation procedure.</li> </ul>	<p>ASC will conduct and document all required vehicle inspections and compare them to the engineering limits / specifications (depending upon the incident) to meet the requirements of its accident investigation procedure.</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies that report includes verification that all required vehicle inspections have been performed and compared to the engineering limits / specifications.</p>
30	<p>Inspect vehicle damage and submit a written report verifying replacement components, scope of work and labor and material costs for repair</p>	<p>Superintendent of Maintenance</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>As discussed in item #26, ASC must conduct and document all required vehicle inspections and compare them to the engineering limits / specifications (depending upon the</li> </ul>	<p>ASC will conduct and document all required vehicle inspections and compare them to the engineering limits / specifications (depending upon the incident) to meet the requirements of its accident investigation procedure.</p>	<p align="center"><b>RESPONSE ACCEPTED</b></p> <p>(see Item #29)</p>

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			incident) to meet the requirements of its accident investigation procedure.		
31	Recover event log data, if available, to determine actual vehicle performance prior to and at the time of the event	Superintendent of Maintenance	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>At the time of each event, ASC must retrieve event log data, perform data analysis, and produce reports for all GDOT-reportable events to meet the requirements of its accident investigation procedure.</li> </ul>	When an accident occurs that meet the GDOT threshold ASC will retrieve event log data, perform data analysis, and produce reports for all GDOT-reportable events to meet the requirements of its accident investigation procedure.	<b>OPEN</b> Action item will remain open until GDOT verifies that report includes event log data analysis.
32	Recover recorded radio or other communication to determine if flow of information is of significance	Superintendent of Maintenance  Manager of Streetcar Services	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC should explore options to record its radio communications in order to enhance the accident investigation process and to determine if the flow of information is of significance.</li> </ul>	ASC will consider this recommendation.	<b>OPEN</b> Action item will remain open until ASC provides a status update on the consideration and disposition of this item.
33	Receive any photographs or recorded video from closed circuit cameras on Atlanta Streetcar vehicles and facilities	Investigator in Charge  Operations and Maintenance Supervisors	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>At the time of each event, ASC must retrieve the onboard vehicle CCTV camera hard drive, perform a review and analysis of the event, and extract stills for all GDOT-reportable events in order to determine the sequence of events and operator's field of vision before and after the event, and to meet the requirements the of its accident investigation procedure.</li> <li>ASC should develop and implement a Chain of Custody Procedure for all evidence that must be reviewed and analyzed as part of the accident investigation process.</li> </ul>	ASC will retrieve the onboard vehicle CCTV camera hard drive, perform a review and analysis of the event, and extract stills for all GDOT-reportable events in order to determine the sequence of events and operator's field of vision before and after the event, and to meet the requirements the of its accident investigation procedure.  ASC explore the develop and implement a Chain of Custody Procedure for all evidence that must be reviewed and analyzed as part of the accident investigation process	<b>OPEN</b> Action item will remain open until GDOT verifies that report includes CCTV analysis.  <b>OPEN</b> Provide the Chain of Custody Procedure for GDOT review.
34	Conduct and/or document timely post-event inspections/tests on infrastructure as needed to determine if pre-existing conditions contributed to the event. Infrastructure components to be tested will include, as a minimum or as applicable, the following: <ul style="list-style-type: none"> <li>Track structure</li> <li>Traction power system</li> <li>Signal systems</li> <li>Buildings and other structures</li> <li>Pedestrian and/or vehicle crossing protection apparatus</li> </ul>	Director of Streetcar Services  City of Atlanta Engineering Department  System Maintenance Contract Managers  Superintendent of Maintenance	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must ensure that the necessary tools, equipment, and effective checklists are available to ASC maintenance technicians in order to effectively perform the required preventative maintenance inspections for ASC vehicles and infrastructure.</li> <li>ASC must conduct and document all required track, TPSS, and OCS inspections in a timely manner to determine if pre-existing conditions contributed to all GDOT reportable events, and to meet the requirements of its accident investigation procedure.</li> </ul>	ASC has established policy and procedures routine Track, TPSS and OCS inspections. These are conducted and documented daily and the information can be retrieved through our Hansen System.  Some debris in track is normal condition and cannot be prevented. ASC inspects for excessive debris build-up. ASC depends on periodic street sweeping by DPW.	<b>OPEN</b> Action Item will remain open until corrective actions within the Special Assessment for operations and maintenance are closed.
35	Retrieve any data from any event recorder (if available) such as signal systems and CCTV video systems	Superintendent of Maintenance	Refer to item #33.	ASC has CCTV and data from incident. Signal info not applicable to ASC.	<b>OPEN</b> Transit signals are applicable to ASC although not integrated with the vehicle. Action item will remain open until procedure established for ASC to gather transit signals data as part of its investigation process.
36	Obtain all applicable engineering specifications and drawings	Superintendent of Maintenance	Refer to item #28.	As built documents are in the possession of MARTA MATC Team and will be delivered to ASC at closeout.	<b>OPEN</b> Provide evidence that ASC has received all as built documents.
37	Research infrastructure or component's prior maintenance history to determine if any significant conditions or deficient performance levels existed prior to the event	Superintendent of Maintenance	Refer to item #34.	ASC has established policy and procedures routine Track, TPSS and OCS inspections. These are conducted and documented daily and the information can be retrieved through our Hansen System	

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38	Identify relevant protocols and recommend inspection frequency	Superintendent of Maintenance	Refer to items #26, #27, and #34.	ASC has established policy and procedures for routine Track, TPSS and OCS inspections. These are conducted and documented daily and the information can be retrieved through our Hansen System	<b>OPEN</b> Action Item will remain open until corrective actions within the Special Assessment for operations and maintenance are closed.
39	Identify activities performed or omitted, the dates and who performed them	Superintendent of Maintenance	Refer to items #26, #27, and #34.	ASC has established policy and procedures routine Track, TPSS and OCS inspections. These are conducted and documented daily and the information can be retrieved through our Hansen System	<b>OPEN</b> Action Item will remain open until corrective actions within the Special Assessment for operations and maintenance are closed.
40	Compare systems performance data (inspections/tests, maintenance history) versus prescribed engineering limits/specifications to determine if there were any contributing factors to the event	Investigator In Charge  Superintendent of Maintenance	Refer to #29.	ASC will conduct and document all required vehicle inspections and compare them to the engineering limits / specifications (depending upon the incident) to meet the requirements of its accident investigation procedure.	<b>OPEN</b> Action item will remain open until GDOT verifies that report includes verification that all required vehicle inspections have been performed and compared to the engineering limits / specifications.
42	Identify all applicable transit operating instructions, regulations, and laws at the location of the event, including, but not limited to, the following: <ul style="list-style-type: none"> <li>Maximum authorized speed and speed restrictions</li> <li>Operating signs and locations</li> <li>Signal locations and aspects capable of being displayed</li> <li>Bulletins or other special operating orders in effect at the time of the event</li> <li>Any special operating conditions</li> </ul>	Superintendent of Operations	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>ASC must ensure all applicable operating instructions, regulations, and laws at the location of the event are determined and discussed in the final investigation report for GDOT-reportable events.</li> </ul>	ASC will ensure all applicable operating instructions, regulations, and laws at the location of the event are determined and discussed in the final investigation report for GDOT-reportable events.	<b>OPEN</b> Action item will remain open until GDOT verifies that report determines all applicable operating instructions, regulations, and laws at the location of the event.
43	Research and obtain applicable federal and state rules/regulations to determine compliance and effect on accident dynamics, including, at a minimum, the following: <ul style="list-style-type: none"> <li>Motor Vehicle Code</li> <li>Operating standards and practices</li> <li>Equipment standards</li> <li>Qualification/certification level requirements</li> <li>Inspection/maintenance standards</li> <li>Safety standards and practices</li> </ul>	Investigator in Charge	Refer to item #47.	Post incident drug and alcohol report is now available and results are on attached spreadsheet.  ASC will ensure testing information relevant to GDOT reportable accidents and incidents are attached to final reports in order to meet the investigation procedure requirements.	<b>OPEN</b> Action item will remain open until GDOT verifies that post-accident reports are included with the final reports.
44	Conduct drug and alcohol testing based upon regulatory requirements, collective bargaining agreements, City of Atlanta Drug and Alcohol Testing Policy and the Atlanta Streetcar System Safety Program Plan. Types of required testing include the following: <ul style="list-style-type: none"> <li>FTA (For Cause, Post-Accident)</li> <li>City of Atlanta Police Department</li> </ul>	Atlanta Streetcar	<b>ACTION REQUIRED</b> <ul style="list-style-type: none"> <li>Refer to item #12.</li> </ul>	ASC contacted the COA Nurse and administrator of drug screening information. The COA Nurse forwarded a report that verified that post- accident drug screening was completed and the results were negative.	<b>RESPONSE ACCEPTED</b>
45	Conduct detailed face-to-face interviews as needed to determine the sequence of events leading up to and at the time of the event. Interviews will include, at a minimum or as applicable: <ul style="list-style-type: none"> <li>Operators and other operating personnel</li> </ul>	Investigator in Charge	Refer to items #12 and #13.	Refer to items #12 and #13.	<b>OPEN</b> Action item will remain open until GDOT verifies that future report is submitted with interviews of all persons essential to the incident.

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	<ul style="list-style-type: none"> <li>Other employees directly involved in the sequence of events</li> <li>Non-employee event principals</li> <li>Passengers</li> <li>Bystander witnesses</li> </ul>				
47	<p>Obtain post incident reports and/or testing from the following Atlanta Streetcar personnel, departments, and documents:</p> <ul style="list-style-type: none"> <li>On Scene Investigator reports</li> <li>Operations Departments and Maintenance Departments</li> <li>City of Atlanta Police</li> <li>Drug and Alcohol test results</li> </ul>	Investigator in Charge	<ul style="list-style-type: none"> <li>Drug and Alcohol test results                             <ul style="list-style-type: none"> <li>Refer to item #12.</li> </ul> </li> </ul>	<p>Post incident drug and alcohol report is now available and results are on attached spreadsheet.</p> <p>ASC will ensure testing information relevant to GDOT reportable accidents and incidents are attached to final reports in order to meet the investigation procedure requirements.</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies that post-accident reports are included with the final reports.</p>
49	<p>Research employee records for performance history or incidents relating to accident dynamics, including, but not limited to, the following:</p> <ul style="list-style-type: none"> <li>Operating and safety practices compliance</li> <li>Qualification/certification levels and experience</li> <li>Training and continuing education history</li> <li>Accident/incident history</li> <li>Medical history</li> <li>Attendance/discipline history</li> </ul>	Superintendent of Operations	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must establish and document passing score and field-based test standards for the Operator Training Program for Certification.</li> </ul>	<p>ASC attached operator training record information inside of the final report.</p> <p>ASC is re-evaluating our training program to ensure field based test standards for Operator Training Program Certification meets the requirements.</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until the corrective actions within the Special Assessment Report for training are closed.</p>
50	<p>Research and document employee hours of service before the event, including the following:</p> <ul style="list-style-type: none"> <li>Time employee reported for duty</li> <li>Elapsed time from on-duty time until time of event</li> <li>Break periods before the event</li> <li>Available off-duty hours before reporting for assignment</li> <li>Number of consecutive days worked prior to day of the event</li> <li>Nature of off-duty activity prior to the event</li> </ul>	Superintendent of Operations	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC should establish standards for maximum allowable work hours and required rest periods rather than have this determination be based solely upon management judgment.</li> </ul>	No response required	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until ASC submits standards for maximum allowable work hours and required rest periods for GDOT review.</p>
51	<p>Research and document the employee's fitness for duty. This will include the following:</p> <ul style="list-style-type: none"> <li>Visual acuity</li> <li>Pre-existing medical conditions</li> <li>Consumption of prescription/non-prescription medication</li> </ul>	Superintendent of Operations	Refer to item #50.	No response required	<p align="center"><b>OPEN</b></p> <p>Refer to item #50</p>
52	Compare research data to event log and communication data to determine performance level	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC should review its organizational structure and staffing requirements and make necessary adjustments to ensure that core safety, operations, and maintenance functions, including documentation of all communications during GDOT-reportable events, are performed consistently during accidents and emergencies.</li> </ul>	ASC will review its organizational structure and staffing requirements and make necessary adjustments to ensure that core safety, operations, and maintenance functions, including documentation of all communications during GDOT-reportable events, are performed consistently during accidents and emergencies.	<p align="center"><b>OPEN</b></p> <p>Provide written results of ASC's review of its organizational structure, staffing requirements, and adjustments made that ensure that core safety, operations, and maintenance functions are performed.</p>
55	<p>Conduct Root Cause Analysis investigations on two levels:</p> <ol style="list-style-type: none"> <li>First, the IIC will be responsible for properly documenting the event in the investigation report.</li> </ol>	Investigator in Charge	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must ensure that all required investigation activities and relevant accident data have been collected and reviewed by responsible parties in order to conduct a credible root cause analysis for GDOT-reportable events.</li> </ul>	ASC will ensure that all required investigation activities and relevant accident data have been collected and reviewed by responsible parties in order to conduct a credible root cause analysis for GDOT-reportable events.	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies credible root cause analysis are included within the final reports.</p>

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	<p>2. Second, wherever possible, the IIC will be responsible for identifying underlying causes and contributing factors.</p> <p>When conclusive root cause information is not available, the IIC may also identify additional areas for further study and analysis.</p> <p>In all cases, the IIC should be as specific as possible in identifying cause.</p>				
56	<p>As considered relevant, reconstruct the dynamics and sequence of events based upon all data developed from on-site investigation and off-site research to establish facts that were contributory to the event, including, as a minimum, the following categories:</p> <ul style="list-style-type: none"> <li>• Actual vehicle performance</li> <li>• Actual infrastructure performance</li> <li>• Actual employee performance</li> <li>• Mathematical calculations</li> <li>• State drawings/diagrams</li> <li>• Photographic evidence</li> </ul>	<p>Investigator in Charge</p> <p>Manager of Streetcar Services</p> <p>Superintendent of Transportation</p> <p>Superintendent of Maintenance</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>• ASC must ensure that all management and supervisory personnel with accident/investigation responsibilities are trained in the retrieval and analysis of vehicle data, including on-board vehicle CCTV camera data and vehicle event log data.</li> </ul>	<p>ASC will provide training to all management and supervisory personnel to ensure they are trained in the retrieval and analysis of vehicle data to meet the requirement.</p>	<p align="center"><b>OPEN</b></p> <p>Provide evidence of management and supervisory training in retrieval and analysis of vehicle data to GDOT for review.</p>
57	<p>Obtain their respective reports, including preliminary, interim, and final reports and supporting information. The IIC will assemble a final investigation report, containing the following information:</p> <ol style="list-style-type: none"> <li>1. Executive summary</li> <li>2. Sequence of events</li> <li>3. Findings and analysis</li> <li>4. Conclusions</li> <li>5. Probable and contributory causes</li> <li>6. Recommendations to prevent reoccurrence</li> <li>7. Implementation of a Corrective Action Plan (CAP)</li> </ol>	<p>Investigator in Charge</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>• ASC must ensure that the final investigation report includes the minimum content requirements – including an executive summary, full sequence of events, findings and analysis based on evidence and data, conclusions, probable and contributory causes, recommendations and corrective action plans to prevent recurrence – as specified in its incident investigation procedure.</li> </ul>	<p>No response required</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until GDOT verifies minimum content requirements are included in the final reports.</p>
58	<p>Formulate a corrective action plan, as defined in the <i>Atlanta Streetcar Corrective Action Plan (CAP)</i>.</p> <p>The CAP focuses on the systematic investigation of root causes of identified problems and procedures or unacceptable risks in an attempt to prevent their recurrence or to prevent occurrence.</p> <p>Address findings address related systemic problem and recommendations from formal hazards analysis, Failure Mode and Effects Analysis and Fault Tree Analysis.</p> <p>A description of each CAP will identify:</p> <ul style="list-style-type: none"> <li>• Identified hazard or deficiency</li> <li>• Planned activities or actions to resolve deficiency or hazard</li> <li>• The department and personnel responsible for implementing corrective action</li> </ul>	<p>Investigator In Charge</p> <p>Director of Safety, Security and Training</p>	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>• ASC must include all relevant corrective actions with the final investigation report and all ensure that CAP log submitted to the state for review and approval include CAPs resulting from accident investigations and documentation verifying closure for any CAPs identified as complete.</li> </ul>	<p>ASC will include all relevant corrective action with the final investigation report and all ensure that CAP log submitted to the state for review and approval include CAPs resulting from accident investigations and documentation verifying closure for any CAPs identified as complete.</p>	<p align="center"><b>OPEN</b></p> <p>Action item will remain open until the corrective actions in the Special Assessment Report for the CAP log and accident/incident investigations are closed.</p>

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	<ul style="list-style-type: none"> <li>Schedule of completion for implementation.</li> </ul>				
59	Manage the overall CAP process	Director of Safety, Security and Training	Refer to item #57.	ASC has established and is currently maintaining a CAP Log for all accidents.	<b>OPEN</b> Action item will remain open until the corrective actions in the Special Assessment Report for the CAP log and accident/incident investigations are closed.
60	Keep the Director of Safety, Security and Training informed of the status of corrective action(s) and when the planned actions have been implemented	Superintendents of Operations and Maintenances	Refer to item #57.	ASC will meet this requirement moving forward.	<b>OPEN</b> Action item will remain open until the corrective actions in the Special Assessment Report for the CAP log and accident/incident investigations are closed.
61	<p>CAPs will also be developed to address findings address related systemic problem and recommendations from formal hazards analysis, Failure Mode and Effects Analysis and Fault Tree Analysis. A description of each CAP will identify:</p> <ul style="list-style-type: none"> <li>Identified hazard or deficiency</li> <li>Planned activities or actions to resolve deficiency or hazard</li> <li>The department and personnel responsible for implementing corrective action</li> <li>Schedule of completion for implementation</li> </ul>	Director of Safety, Security and Training	Refer to item #57.	ASC has established and is currently maintaining a CAP Log for all identified hazards, which include all elements to requirement #61.	<b>OPEN</b> Action item will remain open until the corrective actions in the Special Assessment Report for the CAP log and accident/incident investigations are closed.
62	Monitor the progression of the corrective action plan implementation progress is through the CAP Tracking Log with monthly review	Director of Safety, Security and Training	Refer to item #57.	ASC has establish a CAP Tracking as required	<b>OPEN</b> Action item will remain open until the corrective actions in the Special Assessment Report for the CAP log and accident/incident investigations are closed.
63	Establish an Accident / Incident Tracking Log which reflects the consolidation of information in the accident investigation process	Director of Safety, Security and Training	<p><b>ACTION REQUIRED</b></p> <ul style="list-style-type: none"> <li>ASC must prepare and maintain an accident/incident tracking log, which is a tab on the GDOT Quarterly CAP Log spreadsheet, that includes all GDOT-reportable events that have occurred since the revenue service date, including the following: <ul style="list-style-type: none"> <li>April 13, 2015 Collision Car 1003</li> <li>April 17, 2015 Collision Car 1002</li> <li>April 17, 2015 Collision Car 1003</li> <li>May 20, 2015 Collision Car 1002</li> <li>July 2, 2015 Collision Car 1001</li> <li>July 4, 2015 Collision Car 1004</li> <li>July 13, 2015 Collision Car 1003</li> </ul> </li> </ul>	ASC has prepared an accident/incident tracking log, which is a tab on the GDOT Quarterly CAP Log spreadsheet. Log and spreadsheet is available for review.	<b>RESPONSE ACCEPTED</b>

Appendix D  
Accident / Incident Final Investigation Reports  
(Resubmitted)

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ACCIDENT INVESTIGATION FINAL REPORTS - RESUBMITTED							
DATE	TIME	ID NUMBER	LOCATION	SYNOPSIS	PROBABLE CAUSE	CAUSAL FACTORS	CAP
13-Apr-15	6:56pm	2015-04-13-AE1003	Luckie St. @ Forsyth St.	At approximately 6:56 p m., streetcar #1003 was traveling east on Luckie St. After clearing the intersection at Forsyth St., the ASC Operator stopped the streetcar as he observed a Ford Taurus automobile heading westbound on Luckie St. cross over the yellow double dividing line while attempting to drive around a parked car. The Taurus automobile continued moving west in the path of the streetcar, making contact with the streetcar approximately 26 feet east of the intersection. The Operator radioed dispatch and one ASC manager, one ASC superintendent, and one APD Officer responded to the accident. There was minor damage to both the streetcar and the automobile; there were no injuries reported.	Automobile driver failed to maintain lane	Automobile Drivers actions, vehicles parked in no parking zone.	<ul style="list-style-type: none"> <li>No CAP provided</li> <li>Recommendations included continuing public awareness efforts to make motorists aware of the street's dynamic envelope and ensuring review of post incident maintenance records review and analysis of onboard equipment.</li> </ul>
17-Apr-15	4:45pm	2015-04-17-1-AE1003	Auburn Ave. @ Courtland St.	At approximately 4:45 p m., streetcar #1003 was traveling west on Auburn Ave. A GMC Yukon automobile was traveling east on Auburn Ave. The motorist driving the Yukon attempted to move around a parked Enterprise rental van according to a witness. This resulted in the Yukon crossing over the yellow line into the path of streetcar #1003. According to the automobile driver, the streetcar blew its horn twice, but continued to advance forward. The driver attempted to turn her wheels and move back into her lane, but could not because of traffic congestion. This resulted in the automobile striking the streetcar on the left side panel. The ASC Operator radioed Dispatch and two ASC Supervisors as well as an APD Officer were dispatched to the accident.	Automobile driver failed to maintain lane	Automobile driver failed to maintain lane, vehicles parked in no parking lane.	<ul style="list-style-type: none"> <li>No CAP provided</li> <li>Recommendations included continuing public awareness efforts to make motorists aware of the street's dynamic envelope and ensuring review of post incident maintenance records review and analysis of onboard equipment.</li> </ul>

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ACCIDENT INVESTIGATION FINAL REPORTS - RESUBMITTED							
DATE	TIME	ID NUMBER	LOCATION	SYNOPSIS	PROBABLE CAUSE	CAUSAL FACTORS	CAP
17-Apr-15	10:65pm	2015-04-17-2-AE1002	Andrew Young Int'l (AYT) Blvd@ Williams St.	At approximately 10:56 p m., streetcar #1002 was traveling west on Andrew Young International Blvd. approaching the intersection at Williams St. An automobile (Dodge Nitro) was also traveling west in the far right lane of Andrew Young International Blvd. which is a right turn only lane. As both the streetcar and the automobile neared the intersection, the driver of the automobile attempted to continue driving straight instead of turning, striking the streetcar on the right front bumper and lower panel causing minor damage to the streetcar. The ASC Operator radioed dispatch and one ASC Superintendent and one APD Officer responded to the scene. The automobile sustained damage to the driver side rear quarter panel. There were no reported injuries.	Automobile driver failed to maintain lane	Streetcar Operator, Automobile Driver.	Collaborate with COA Traffic Engineers to research solution(s) at: 1) AYT @ Williams St.
25-Apr-15	1:50pm	2015-04-25-AE1003	Auburn Ave. NE	At approx. 1:50 p.m., streetcar #1003 was traveling west on Auburn Ave. After leaving the King Historic District stop, the streetcar Operator observed an automobile parked in a designated parking area in front of the funeral with part of the vehicle extending outside of the white line defining the parking space. The Operator felt that he could clear the parked automobile and continued toward the next stop. The ASC Operator made contact with the parked automobile coming to a stop approximately 20 feet after making contact with the automobile. The Operator notified dispatch and one ASC Supervisor and one APD Officer responded to the scene. There was major damage to the streetcar. Several passengers reported injuries, but no required transport to the hospital.	Automobile illegally Parked in ROW, Operator failed to adhere to SOPs	ASC Operator Speed, Visibility or glare	Striping lines for dynamic envelope.

**GEORGIA DEPARTMENT OF TRANSPORTATION**

ATLANTA STREETCAR SYSTEM  
2015 SAFETY AND SECURITY SPECIAL ASSESSMENT  
FINAL REPORT

ACCIDENT INVESTIGATION FINAL REPORTS - RESUBMITTED							
DATE	TIME	ID NUMBER	LOCATION	SYNOPSIS	PROBABLE CAUSE	CAUSAL FACTORS	CAP
20-May-15	12:57pm	2015-05-20-AE1002	Luckie St. @ Forsyth St.	At approximately 12:57 p m., streetcar # 1002 was traveling eastbound on Luckie St. The ASC Operator observed a GSU Shuttle waiting for the traffic light to change headed in a westbound direction. As the ASC approached the intersection, the Operator observed automobile stopped at the traffic light with a portion of the rear of the shuttle over the double yellow line. The ASC Instructor riding with the Operator advised him to proceed thinking that the ASC could clear the vehicle. The streetcar made contact with the automobile while attempting to pass. There was minor damage to the streetcar and no damage reported to the automobile. There were no reported injuries.	The Operator and Instructor failed to adhere to ASC Rulebook.	Operator, Instructor, GSU Shuttle	<ul style="list-style-type: none"> <li>No CAP provided.</li> <li>Recommendations included ensuring the Operator received refresher training on the safe operation of the streetcar and the ASC Rulebook.</li> </ul>
2-Jul-15	3:05pm	215-07-02-AE1001	Peachtree St. @ Ellis St.	At approximately 3:05 p m. streetcar #1001 was departing the Peachtree St. stop at the intersection of Ellis St. After receiving an Opticom signal to proceed, the streetcar Operator stopped when she noticed a taxi stopped too far out into the intersection at Ellis St. The Operator blew her horn, signaling the taxi driver to back up. After the automobile backed up, the streetcar proceeded to turn onto Ellis St. making contact with the taxi. During the investigation by APD it was determined that the ASC Operator was driving on a suspended CDL license. She was relieved from duty by the ASC manager on the scene. There was minor damage to both vehicles; no injuries were reported.	The Operator failed to adhere to numerous requirements within the ASC Rulebook.	Operator, traffic congestion, taxi driver	<ul style="list-style-type: none"> <li>Operator terminated for violation of ASC Rulebook.</li> <li>Collaborate with COA Traffic Engineers to research solutions.</li> </ul>
4-Jul-15	8:40pm	2015-07-04-AE1004	Auburn Ave. @ VMF	At approximately 8:40 p m. ASC #1004 was departing out of the VMF yard onto Auburn Ave. at the Dobbs Plaza stop for passenger service with the assistance of a Flagger. After receiving a proceed signal from the Flagger, the streetcar Operator proceeded onto Auburn Ave. heading east. The driver of an automobile turned left onto Auburn Ave. from Bell St. and subsequently make contact with the streetcar. The automobile driver reported not seeing the streetcar because he took his eyes off of the road. There was minor damage to the streetcar and moderate to major damage to the automobile. There were no injuries reported.	Automobile driver was driving while under the influence	Automobile Driver, alcohol, drugs	<ul style="list-style-type: none"> <li>Create policy requiring the activation of the "all call signal" whenever a streetcar is leaving the VMF. If the call signal is inoperable, two flaggers will be used.</li> </ul>

**GEORGIA DEPARTMENT OF TRANSPORTATION**

ATLANTA STREETCAR SYSTEM  
2015 SAFETY AND SECURITY SPECIAL ASSESSMENT  
FINAL REPORT

ACCIDENT INVESTIGATION FINAL REPORTS - RESUBMITTED							
DATE	TIME	ID NUMBER	LOCATION	SYNOPSIS	PROBABLE CAUSE	CAUSAL FACTORS	CAP
13-Jul-15	6:05pm	2015-07-13-AE1003	Andrew Young Intl. Blvd. @ Williams St.	At approximately 6:05 p m., streetcar #1003 was traveling west on Andrew Young International Blvd. approaching Williams St. and coming to a complete stop. An unknown delivery truck was headed west in the right turn lane and made contact with the streetcar while making a right turn onto Williams St. The automobile left the scene after hitting the streetcar. After reporting the hit and run to dispatch; the Operator was directed to proceed to the Centennial Olympic Park stop because of the heavy traffic in the area and wait for APD and ASC Supervisor. There was moderate damage to the streetcar; no injuries were reported.	Automobile driver failed to yield right of way	Automobile Driver	Collaborate with COA Traffic Engineers to research solution(s) at: 1) <b>AYI @ Williams St.</b> , 2) Auburn Av. westbound @ Peachtree St., 3) Peachtree St northbound @ Ellis St., 4) Luckie St. @ Centennial Olympic Park Dr., and 5) Park Pl. @ Edgewood Ave. to expand the public awareness efforts to educate public on streetcar dynamic envelope and maintaining clearance.
18-Jul-15	12:00pm	2015-07-18-AE1001	Luckie St. @ Spring St.	At approximately 12:00 p m., streetcar #1001 was proceeding east on Luckie St. After receiving a green signal, the ASC Operator proceeded into the intersection of Spring St. and was struck by an automobile making a left turn at the red light. There was moderate damage to the streetcar; there was one passenger reporting an injury, but he left the scene on his own.	Automobile driver failed to obey traffic signal	Automobile Driver	<ul style="list-style-type: none"> <li>No CAP provided</li> <li>Recommendations included expanding public awareness and ensuring review of post incident maintenance records review and analysis of onboard equipment.</li> </ul>
12-Sep-15	5:24pm	2015-09-12-AE1004	Andrew Young Intl. Blvd. @ Centennial Olympic Park Dr.	At approximately 5:24 p m., ASC #1004 was traveling west on Andrew Young International Blvd. After clearing the Williams St intersection, the streetcar was rear ended by an automobile. The rear bumper of streetcar was shattered and there was substantial damage to automobile. There were approximately 30 passengers on the streetcar with two passengers requiring transport to the hospital by Grady EMS. The automobile driver admitted to falling asleep at the wheel.	Automobile driver fell asleep at the wheel	Automobile Driver	Expand the use of the public awareness campaign to educate the public on the streetcars dynamic envelope and maintaining clearance.

Appendix E  
City of Atlanta Response to Immediate Concerns  
dated November 16, 2015



## CITY OF ATLANTA

55 TRINITY AVE, S.W.  
ATLANTA, GEORGIA 30335-0300

KASIM REED  
MAYOR

November 16, 2015

Ms. Carol Comer  
Director, Division of Intermodal  
Georgia Department of Transportation  
One Georgia Center, 600 West Peachtree Street  
Atlanta, Georgia 30308

Dear Ms. Comer:

The City of Atlanta and MARTA appreciate the opportunity to respond to GDOT's immediate concerns arising out of the recently completed Special Assessment of System Safety and System Security of the Atlanta Streetcar. Your team, under the direction of Michael Somersall and with the support of Mignon Allen and Dovetail Consulting, has been a tremendous resource.

### **SAFE OPERATION IN THE STREETS**

With your support, the Atlanta Streetcar has made significant progress in its documented adherence to the GDOT Program Standard and adopted safety and security plans. While we continue improving our documentation and reporting processes, we believe the overall system of the Atlanta Streetcar is safe, supported by the low severity of our accident record in the first year.

The Atlanta Streetcar has experienced an average of less than one collision per month. More specifically, the Atlanta Streetcar has had ten collisions over its first eleven months. The collisions are largely the fault of auto drivers encroaching into the streetcar dynamic space. The accidents have been minor sideswipes for the most part, with two automobiles striking the Atlanta Streetcar in the side and the rear. Most accidents caused no injuries to anyone. Of the three accidents where injuries were claimed, they were minor. Only one accident required an Atlanta Streetcar to be out of service for more than a few days.

We operate in heavy urban traffic on a mixed traffic track configuration. Compared to similar streetcar systems around the country that operate continuously with mixed traffic, and realizing the increased opportunities that presents for traffic flow problems and collisions, the Atlanta Streetcar accident record is consistent with, if not better, than many other systems.

Even though all of the collisions have been minor, ten accidents is a larger number than we would like, and as such, our highest priority is to continuously improve with zero accidents as the goal of any streetcar or rail system. As such, we greatly appreciate opportunities such as the Special Assessment in our pursuit of this goal.

## **AREAS OF IMMEDIATE CONCERN**

As we continue to monitor, evaluate and integrate lessons learned, GDOT's guidance and instruction is invaluable. Our detailed response to the three areas of immediate concern following the Special Assessment is below.

### *1. Supervision and Rules Compliance*

Consistent with its System Safety Program Plan (SSPP) and Security and Emergency Preparedness Plan (SEPP), and relevant supporting documents, the Atlanta Streetcar has the organization and staffing resources, including support from MARTA, to enable it to fulfill the safety-related tasks of the SSPP and SEPP as summarized in Table 1 of the SSPP. Despite staffing challenges, there has not been a single day of operation without sufficient qualified staff to safely manage operations and maintenance (O&M).

Employee turnover is a fact of life at any organization, and the Atlanta Streetcar has responded in appropriate ways as a new start-up. As you know, the Atlanta Streetcar secured the services of a transit management firm with global resources in August. Transdev has provided an Interim Executive Director as well as an Interim Maintenance Manager to review and coach various supervisory and compliance functions including safety planning and training, maintenance management, and preventive maintenance procedures for track, OCS, and vehicles.

Additionally, the Atlanta Streetcar has increased its pool of operators to the point where we can operate cars at a frequency of 15 minutes or less throughout the week. Despite some turnover in maintenance staff, vehicle inspections, repairs and preventive maintenance checks are being performed at proper levels and are up to date. A 15,000-

mile Preventive Maintenance inspection was performed last week. With the October graduation of the most recent operator class, we began interviewing for another class to be trained in December 2015. We have promoted two experienced operators to be Dispatchers with an expanded service quality assurance role that will provide needed support to the operators and Superintendent of Operations. In addition, we are in the process of interviewing and hiring an additional Streetcar Technician and a replacement Streetcar Supervisor. We also added [REDACTED] an Interim Superintendent of Maintenance from Transdev, while we recruit a full time replacement Superintendent of Maintenance.

Overall, we feel confident that recent staffing actions are ensuring that O&M supervisory and direct functions are provided at a level matching the requirements of the Atlanta Streetcar's service delivery. Additional resources provided by Transdev and MARTA have provided assistance for analyzing and preparing proposed updates to Standard Operating Procedures, the SSPP and other manuals and guides, including a review of the duties and roles and responsibilities for the Superintendent, Supervisor, Dispatcher and Technician positions as outlined in the SSPP to ensure a clear division of responsibility.

That said, if GDOT is concerned that the SSPP does not adequately spell out the assignment of duties, division of roles and responsibilities among the various positions, we welcome your input during our planned revision to the SSPP which will be completed in January 2016 and submitted to the Safety Certification and Security Committee before coming to GDOT for review.

Action items of highest priority for this immediate focus area include the following:

Action	Description	Delivery Date	Owner
Review O&M job descriptions	Review SSPP with position job descriptions; revise accordingly for consistency & to clarify roles & responsibility	Draft: Dec. 10, 2015 Final: Jan. 31, 2016	Executive Director (ED) with Director of Streetcar Services, & Safety Certification & Security Committee (SCSC)/MARTA support
Secure / hire & train maintenance personnel	Streetcar Technician (1) Streetcar Supervisor (1) Begin training of new maintenance personnel	Dec. 15, 2015	ED with Director of Safety Security & Training (DSST) & Maintenance Superintendent

Hire & train operators	Enlist 3 additional operators for training with certification complete by early 2016	Dec. 15, 2015	ED with DSST & Operations Superintendent
Finalize executive management	Finalize executive management hiring per proposed SSPP revisions	Feb. 15, 2016	Commissioner of Public Works with COA input from Management Committee

## 2. Sustainability Action Plan

We would appreciate clarification from GDOT on the request for a formal Sustainability Action Plan specific to the Atlanta Streetcar. We have not found guidelines for such a plan in the GDOT Program Standard or in underlying FTA circulars or regulations and in consultation with other streetcar systems, have not found an appropriate example of a similar regulatory request that we could model. We welcome your further input and respectfully request an example to help us satisfy this request.

## 3. Training Program Plan

The Atlanta Streetcar has made great progress in the formalization of its training program. Certainly, work remains and we are resourcing to further formalize the program and plan in parallel with our system's continued maturity. We presented the present-day ASC Training Program Plan during the interview and verification period during the week of October 26, 2015. We believe it represents a significant improvement over the earlier training material and curricula. We are reviewing additional guidance and examples provided by MARTA, Kensington Consultants, and Transdev to further improve the training program plan. Also, we will work with MARTA and Transdev to increase the number of certified instructors (both in-house and via contract or inter-agency agreement) available to train and retrain all positions with safety and security responsibilities. The objective is to have a Training Program Plan that is aligned with the Atlanta Streetcar's organizational structure.

Action items of highest priority for this immediate focus area include the following:

Action	Description	Delivery Date	Owner
Review SSPP & SEPP training requirements	Review SSPP & SEPP training requirements with organization structure	Draft: Dec. 10, 2015 Final:	ED with Director of Streetcar

		Jan. 31, 2016	Services, DSST & SCSC / MARTA support
Review Existing Training Modules	Modules include: Maintenance (priority 1) Supervisors/Superintendents (priority 1) Operations Accident/Hazard/Security Incident Invest.	December 31, 2015	Director of Safety, Security & Training with SCSC / MARTA support
Revise Section 16 of the SSPP	Seek to clarify job-specific safety training requirements by position per SSO guidance	Jan. 31, 2016	ED with Director of Streetcar Services, DSST & SCSC / MARTA support
Formalize & incorporate revisions into Training Program Plan	Formalize & incorporate revisions into Training Program Plan	March 15, 2016	Director of Safety, Security & Training with SCSC / MARTA review

**CONCLUSION**

We hope this letter fully addresses your immediate concerns and that the action items above are in line with your expectations. If there are any items that you believe should be added, please let us know as we welcome your feedback. Lastly, we hope the upcoming report will not only include areas for improvement, but also will reflect overall our system's safety and areas where we have demonstrated progress.

Thank you for your continued support of the Atlanta Streetcar. We look forward to GDOT's Special Assessment draft report in early December, and remain highly committed to the Atlanta Streetcar and any efforts we can take to improve for our customers and employees.

Sincerely,

Dan Gordon  
Chief Operating Officer  
City of Atlanta



Richard Krisak  
Chief Operating Officer  
MARTA

CC: Federal Transit Administration, Region IV  
Dr. Yvette Taylor, Regional Administrator  
Dudley Whyte, Deputy Regional Administrator

MARTA  
Keith Parker, Administration, TSO

Georgia Department of Transportation  
Russell McMurray, P.E., Commissioner  
Meg Pirkle, P.E. Chief Engineer  
Nancy Cobb, Administrator, Division of Intermodal  
Michael Somersall, SSO Program Manager

CAP/ADID  
A.J. Robinson, President  
Angie Laurie, Transportation Planning Director

Appendix F  
Corrective Action Plan (CAP) Log

**GEORGIA DEPARTMENT OF TRANSPORTATION**  
 2015 Safety and Security Special Assessment of the Atlanta Streetcar System  
 Corrective Action Plan (CAP) Tracking Log  
 Reviewed by GDOT 02/05/16

**I. GENERAL COMMENTS**

**January/February 2016**

On January 29, 2016, Atlanta Streetcar submitted its responses to the 2015 Safety and Security Special Assessment Corrective Action Plan (CAP) Tracking Log. On February 5, 2016, the Department completed its review of the CAP Log and determined the following:

<b>TOTAL CAPs</b>	55
<b>TOTAL CLOSED</b>	0
<b>TOTAL OPEN</b>	55

The Program Standard and the Atlanta Streetcar's Corrective Action Plan Program require the Atlanta Streetcar to provide a response for each CAP that includes the following information:

- CAP Requirements – refers to the description of the corrective action required by the Atlanta Streetcar to address the finding. *Note:* This column header has been added to the CAP Log below for consistency with the Atlanta Streetcar CAP Program.
- Individual / Department Responsible for CAP Implementation – refers to the individual (name and title and department) responsible for the implementation of the CAP.
- CAP Verification – the CAP log must indicate when and how the Atlanta Streetcar verified implementation of completed CAPs
- CAP Due Date – refers to the estimated completion date for the CAP
- CAP Completion Date – refers to the actual completion date of the CAP

The Department has provided the clarifications and detailed responses to the Atlanta Streetcar in Section II of this CAP log. It is important to point out that the Atlanta Streetcar's CAP Program requires that the Safety and Security Certification Committee (chaired by MARTA) to address, decide, and resolve, all issues related to safety and security, including the adoption and resolution of CAPs. The Department expects this requirement to be met prior to submittal of the CAP log to the Department for review and approval. The Department also expects that the CAP log be accompanied with the supporting documentation verifying the steps taken to effectively close the findings. Regrettably, this initial CAP log submission raised concerns with the Department and FTA because the overwhelming majority of the responses lacked specificity of the required action steps, resources and timeframes for implementation of the proposed corrective actions and did not consistently adhere to the requirements of the Program Standard and the Atlanta Streetcar CAP Program. Consequently, all CAPs remain open.

With the next CAP log submittal, ensure the following information is completed:

- For 'CAP Requirement' update the CAP log with a response that addresses the Departments 'GDOT Response' comments. At a minimum, this will require consideration of the details provided within the body of the Department's Assessment Report as well as the FTA SSO Audit Report.
- For 'Party Responsible for CAP Implementation' update the CAP log with the name, title, and department of the individual responsible for the implementation of the CAP.
- For 'Title / Date of Documents that Verify CAP Implementation' update the CAP log with the document(s) that will be provided to verify closure.
- For 'Proposed CAP Completion Date' update the CAP log with a specific due date that is in MM/DD/YY format.

Because many of the safety-critical open items have persisted for several months, the Department asks that the Atlanta Streetcar expedite the completion of the CAP log by consulting with MARTA, the Safety and Security Certification Committee, and individuals responsible for CAP implementation, and resubmit the revised and completed CAP Log on **Monday, February 15, 2015**.

Once the Department has determined that all responses on the CAP log are acceptable, the Atlanta Streetcar will be asked to continue providing monthly CAP log updates by the 10<sup>th</sup> of each month along with all applicable supporting documentation verifying closure.

**II. CAP LOG**

FINDINGS					CORRECTIVE ACTION PLANS						
Finding #	Description of Finding	Required Action to Close Finding	Corrective Action Plan	GDOT Response 02/05/16	Status	(CAP Requirement) Atlanta Streetcar Response 01/29/16	Party Responsible for CAP Implementation	Title / Date of Documents that Verify CAP Implementation	Proposed CAP Completion Date MM/DD/YY	Issues Preventing CAP Resolution (if any)	Actual CAP Completion Date MM/DD/YY
1	Atlanta Streetcar and MARTA are consolidating duties and reallocating resources to create a smaller organization with clearer lines of duty.	Atlanta Streetcar must develop a stable organizational structure to support ongoing, consistent, and safe management of streetcar operations and maintenance.	SA-CAP.OPS.002, Flatten the Organizational Structure	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit an action plan and schedule for developing a stable organization structure with clear lines of duty.</li> </ul>	OPEN	<b>Jan 2016:</b> This is a positive finding and activity, and one that has been conducted with FTA and GDOT awareness and understood support.	Management Committee (including Executive Director)	TBD	Q2	TBD	TBD
			SA-CAP.OPS.009, Implement Code Enforcement Officers	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must update its organizational charts, position reports, System Safety Program Plan, Security and Emergency Preparedness Plan, and relevant safety, security, and operations procedures. These plans must adequately describe the safety and security roles and responsibilities of this new function. ASC must also ensure that the Code Enforcement Officers receive the necessary</li> </ul>	OPEN	<b>Jan 2016:</b> Code Enforcement Officers were implemented January 1, 2016. Code Enforcement Officer Training was conducted in December 2015. Complete with the exception of document updates.	Executive Director & DSST	TBD	Q3	TBD	TBD

**GEORGIA DEPARTMENT OF TRANSPORTATION**  
 2015 Safety and Security Special Assessment of the Atlanta Streetcar System  
 Corrective Action Plan (CAP) Tracking Log  
 Reviewed by GDOT 02/05/16

FINDINGS						CORRECTIVE ACTION PLANS					
Finding #	Description of Finding	Required Action to Close Finding	Corrective Action Plan	GDOT Response 02/05/16	Status	(CAP Requirement) Atlanta Streetcar Response 01/29/16	Party Responsible for CAP Implementation	Title / Date of Documents that Verify CAP Implementation	Proposed CAP Completion Date MM/DD/YY	Issues Preventing CAP Resolution (if any)	Actual CAP Completion Date MM/DD/YY
				vehicle familiarization, standard operations, maintenance, safety, security, and emergency management procedures established for the transit agency.							
			SA-CAP.MGMT.055, Define and Stabilize the Organizational Structure	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit an action plan and schedule for developing a stable organization structure with clear lines of duty and this organization structure must address MARTA's concerns which included the following: "For several months the organizational structure has been fluid in terms of the positions and the qualifications, experience and training of the individuals within those positions. The lack of a defined and stable organization is an obstacle to promoting a safety culture and effectively implementing the safety and security plans. Atlanta Streetcar must give serious consideration to the management structure and resources necessary to be a rail transit agency."</li> </ul>	OPEN	<b>Jan 2016:</b> Under review and in process; see CAP.OPS.002 Comments.	Management Committee (including Executive Director)	TBD	Q2	TBD	TBD
2	The organizational structure, roles and responsibilities between the Atlanta Streetcar and MARTA as described within the IGA and adopted SSPP and SEPP are inconsistent with the actual practices for executive decision-making and day-to-day management of the Atlanta Streetcar.	Atlanta Streetcar must identify and outline the roles and responsibilities of all the decision-making authorities involved with streetcar operations and maintenance activities.	SA-CAP.OPS.011, Identify/Evaluate Decision-Making Groups and Committees	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit a revised IGA, revised SSPP, and revised SEPP that address the requirements of the CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar will review and updates is documentation.	Executive Director with Management Committee input	TBD	Q3	TBD	TBD
			SA-CAP.OPS.013, Reconcile MARTA Active Management for Operations with IGA, SSPP, SEPP	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit a revised IGA, revised SSPP, and revised SEPP that address the requirements of the CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar will review and updates is documentation.	Executive Director with Management Committee input	TBD	Q3	TBD	TBD
			SA-CAP.MAINT.024, Reconcile MARTA Active Management for Maintenance with IGA, SSPP, SEPP	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit a revised IGA, revised SSPP, and revised SEPP that address the requirements of the CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar will review and updates is documentation.	Executive Director with Management Committee input	TBD	Q3	TBD	TBD
			SA-CAP.MGMT.051, Define Decision-Making Authority for Atlanta Streetcar, MARTA, And ADID	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit a revised IGA, revised SSPP, and revised SEPP that address the requirements of the CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar will review and updates is documentation.	Executive Director with Management Committee input	TBD	Q2	TBD	TBD
3	Management transition from MARTA to Atlanta Streetcar and responsibilities of each agency are uncertain and not clearly defined.	Atlanta Streetcar must ensure that the operational transition from MARTA to the City of Atlanta is clearly specified in the SSPP and other applicable documents.	FTA SSO Finding 4, Update SSPP with Appendix for Transition Plan	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>As required by FTA, to close this Finding, ASC must address FTA SSO Finding 4 as described in the Final Report, dated 02/02/16, which states:</li> <li>To close this finding:                             <ul style="list-style-type: none"> <li>GDOT must approve the revised COA SSPP including a comprehensive transition plan.</li> </ul> </li> <li>Deliverables:                             <ul style="list-style-type: none"> <li>Approved COA Streetcar SSPP with comprehensive Streetcar Operations Transition Plan</li> </ul> </li> </ul>	OPEN	<b>Jan 2016:</b> As noted for Finding #1, this is a current activity and will be covered by the SSPP update.	Executive Director with Management Committee input	TBD	TBD	TBD	TBD

**GEORGIA DEPARTMENT OF TRANSPORTATION**  
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 Corrective Action Plan (CAP) Tracking Log  
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FINDINGS						CORRECTIVE ACTION PLANS					
Finding #	Description of Finding	Required Action to Close Finding	Corrective Action Plan	GDOT Response 02/05/16	Status	(CAP Requirement) Atlanta Streetcar Response 01/29/16	Party Responsible for CAP Implementation	Title / Date of Documents that Verify CAP Implementation	Proposed CAP Completion Date MM/DD/YY	Issues Preventing CAP Resolution (if any)	Actual CAP Completion Date MM/DD/YY
				<ul style="list-style-type: none"> <li>o Transition plan must include formal notification to GDOT and FTA that includes schedule of transition activities.</li> <li>• Performance Measure:                             <ul style="list-style-type: none"> <li>o FTA will review the MARTA to COA transition plan and updated SSPP</li> </ul> </li> <li>• Verification Method:                             <ul style="list-style-type: none"> <li>o GDOT's SSPP approval checklist and follow-up FTA interviews as needed.</li> </ul> </li> </ul>							
4	There is an absence of the assignment of due dates in nearly all cases of coordination meetings.	Atlanta Streetcar must develop and implement procedures for Committees or follow existing Committee procedures as outlined in the SSPP, and ensure accountability for action items discussed during meetings.	SA-CAP.OPS.014, Develop Written Process for Management Meeting Action Items/Concerns	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>• To close this CAP, ASC must develop and implement procedures for Committees as required by this CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Assignment of "due dates" is handled in various ways. The requirement of due dates is important yet a responsibility of Atlanta Streetcar.	Executive Director & DSST	TBD	Q2	TBD	TBD
			FTA SSO Finding 8, Update SSPP to Describe Active Committee Structure, Membership, Roles	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>• As required by FTA, to close this Finding, ASC must address FTA SSO Finding 9 as described in the Final Report, dated 02/02/16, which states:</li> <li>• FTA Response:                             <ul style="list-style-type: none"> <li>o The safety certification committee (SCSC) is typically replaced by safety operational committee upon project service, as certification is completed. The Safety Operational committee (Executive Safety Committee) members maybe different than the SCSC), as described in the COA SSPP.</li> </ul> </li> <li>• To close this finding:                             <ul style="list-style-type: none"> <li>o GDOT must ensure COA clearly establishes the Executive Safety Committee (ESC) or equivalent, and demonstrates implementation over a 6-month period.</li> </ul> </li> <li>• Deliverables:                             <ul style="list-style-type: none"> <li>o Approved COA Streetcar SSPP outlining the ESC (or equivalent) practices and removal of SCSC</li> <li>o ESC meetings minutes for 6-month period</li> </ul> </li> <li>• Performance Measure:                             <ul style="list-style-type: none"> <li>o ESC authority, responsibilities, and practices of the ESC are clearly outlined</li> <li>o ESC demonstrates compliance with outlined practices over a 6-month period</li> </ul> </li> <li>• Verification Method:                             <ul style="list-style-type: none"> <li>o GDOT's SSPP approval checklist and follow-up FTA interviews as needed.</li> <li>o FTA to review submitted ESC meeting minutes</li> </ul> </li> </ul>	OPEN	<b>Jan 2016:</b> Assignment of "due dates" is handled in various ways. The requirement of due dates is important yet a responsibility of Atlanta Streetcar.	Executive Director & SCSC	TBD	TBD	TBD	TBD
5	Atlanta Streetcar has not developed a Sustainability Action Plan per MARTA's review	Atlanta Streetcar must develop a Sustainability Action Plan for a period of at least 12	SA-CAP.MGMT.049, Develop a Sustainability Action Plan	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>• To close this CAP, ASC must develop a Sustainability Action Plan and schedule for implementation as required by this CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar is reviewing options for the completion of an appropriate plan.	Executive Director with Management Committee input	TBD	Q3	TBD	TBD

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	and response to the OCS unacceptable hazard and subsequent system shut down.	months to address all facets of transit management and be commensurate with the number of employees and their technical capabilities and qualifications.									
6	There is disconnect between the established rules and the Operator's response to obstructions on the track when in operations, as evident by the probable cause of several accidents.	Atlanta Streetcar must complete the revisions to the Rule Book and other governance documents to ensure that they incorporate the relevant corrective actions identified within this report.	SA-CAP.OPS.017, Update Rule Book	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit the updated Rule Book which addresses the requirements of this CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> A final draft of the updated Rule Book is ready for SCSC review.	DSST & Operations Superintendent	TBD	Q2	TBD	TBD
			SA-CAP.MGMT.50, Develop Administrative and Operational Plans and Procedures	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes action plan and schedule for developing administrative and operational plans and procedures.</li> </ul>	OPEN	<b>Jan 2016:</b> In Process	DSST & Operations Superintendent	TBD	Q2	TBD	TBD
			SA-CAP.MGMT.53, Comply with All Established Policies and Procedures	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for compliance with established policies and procedures.</li> </ul>	OPEN	<b>Jan 2016:</b> The Compliance Manager position has been hired.	Compliance Manager	TBD	Q2	TBD	TBD
7	Rules compliance ride checks have not been performed in a manner consistent with the SSPP. Formally documented observations of rules compliance only take place twice per month.	Atlanta Streetcar must reexamine the frequency of field observations and rules compliance checks to ensure adequate field supervision and daily assurance of safety operations.	SA-CAP.OPS.018, Reassess Frequency of Field Observations and Rules Compliance Checks	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that the frequency of ride checks should be increased and that changes should be made to the SSPP and Rulebook.</li> <li>To close this CAP, ASC must complete and implement the revisions to the SSPP and Rulebook that reflect increased observations of rules compliance, which includes a minimum of six months of documented observations.</li> </ul>	OPEN	<b>Jan 2016:</b> In progress. (A) Documentation of ride checks is being maintained. ASC is currently in compliance with the SSPP's requirement of 2 ride checks per month. ASC agrees the frequency should be increased and as a practice, more ride checks are already being made in advance of changes to the SSPP and Rulebook.	DSST & Operations Superintendent	TBD	Q2	TBD	TBD
8	Peak period and special event operations descriptions have not been included in the Operations and Maintenance Plan.	Atlanta Streetcar must develop a comprehensive Operations and Maintenance Plan to include staffing requirements for peak periods, special events, and emergency operations.	SA-CAP.OPS.019, Develop a Comprehensive Operations and Maintenance Plan	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit a revised Operations and Maintenance Plan that addresses peak periods, special events, and emergency operations.</li> </ul>	OPEN	<b>Jan 2016:</b> The Operations & Maintenance Plan speaks to Extra Service (Section 3.2.3), which acknowledges special service scenarios. Additional discussion will be added to this section based upon first year experiences in serving special event operations.	Executive Director	TBD	Q2	TBD	TBD
9	The diagonal bar signal is in effect; however, there are no written operating rules.	Atlanta Streetcar must develop operating rules and procedures that govern mainline and	SA-CAP.SAFE.038, Develop Training Course and Standards for Diagonal Bar Signal	<b>Jan 2016:</b> <b>Response Accepted, Action Required:</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit the revised Rulebook, procedures, and training that includes the diagonal bar signal.</li> </ul>	OPEN	<b>Jan 2016:</b> This will be resolved with SCSC approval of modifications to the Rulebook and certification / approval of Training Program Plan	DSST with Operations Superintendent	TBD	Q2	TBD	TBD

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	procedures, or training in place directing its use.	yard movements, including the diagonal bar signal operations. (Note: Training is addressed in a later CAP.)				and instructor binders. The Rulebook, procedures and training have been updated to include the diagonal bar signal.					
10	Atlanta Streetcar is not currently capturing contractor work orders and repairs, maintenance activities for bar signals, and accident repairs, among other data.	Atlanta Streetcar must ensure a Maintenance Plan, procedures, checklists, forms, and functioning maintenance management information (Hansen) system are developed and implemented to address maintenance practices.	SA-CAP.OPS.006, Develop a Long Term, Comprehensive Vehicle Maintenance Program	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for developing a Long Term, Comprehensive Vehicle Maintenance Program.</li> </ul>	OPEN	<b>Jan 2016:</b> In Process	Executive Director & Maintenance Superintendent	TBD	Q2	TBD	TBD
			SA-CAP.MAINT.026, Develop and Implement Maintenance Management Information System	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must update the Hansen Management Information System, procedures, checklists, and forms to capture contractor work orders and repairs, maintenance activities for bar signals, and accident repairs. ASC must also retrain its personnel accordingly.</li> </ul>	OPEN	<b>Jan 2016:</b> Training in the Info Hansen Management Information System was conducted January 25 and 26 for the system's inventory module. Staff were previously trained in Hansen preventive maintenance modules and reporting.	Executive Director, Director of Performance Management & Maintenance Superintendent	TBD	Q2	TBD	TBD
11	Contractors for vehicle maintenance, track maintenance, and TPSS maintenance are vacant, as well as the internal Maintenance Superintendent position.	Atlanta Streetcar must secure organizational resources for track maintenance and OCS maintenance.	SA-CAP.OPS.007, Fulfill Organizational Resource for Track Maintenance	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule to fulfill the organization resources for track maintenance and OCS maintenance.</li> </ul>	OPEN	<b>Jan 2016:</b> Researching Emergency on-call firm	Executive Director	TBD	Q2	TBD	TBD
			SA-CAP.OPS.008, Fulfill Organizational Resource for Long-Term OCS Maintenance.	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that a long-term OCS/TPSS contractor will be procured in Q1 2016. However, as required by Section 8.7.1 of the Program Standard, GDOT requires a specific date for the completion of this CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> A long-term OCS/TPSS contractor will be procured in Q1 2016. Appropriate resources for track maintenance are being identified, in concert with third-party advisement. Preventive and routine maintenance of track switches and special trackwork is occurring.	Executive Director	TBD	Q2	TBD	TBD
			FTA SSO Finding 6, Update SSPP with Appendix for Maintenance Contractor/Personnel Resources	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule to submit a revised SSPP with an Appendix for Maintenance Contractor/Personnel Resources. GDOT expects the submittal to follow the completion of the procurement of third-party maintenance contractors.</li> </ul>	OPEN	<b>Jan 2016:</b> In Progress	Executive Director & Maintenance Superintendent	TBD	TBD	TBD	TBD

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12	Preventative maintenance inspections are inconsistently implemented and documentation is incomplete.	Atlanta Streetcar must ensure preventative maintenance inspections are conducted as required for track, vehicles, traction power substations, OCS, and stops.	SA-CAP.MAINT.027, Ensure Preventative Maintenance Inspections are Occurring As Required	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that they are implementing additional internal audit processes.</li> <li>To close this CAP, ASC must ensure that the preventative maintenance program is conducted for track, vehicles, traction power substations, OCS, and stops. Refer to Appendix B of the Final Report for additional information on maintenance compliance. This CAP is related to the maintenance function, not internal audits.</li> </ul>	OPEN	<b>Jan 2016:</b> Implementing additional Internal Audit process  Preventive Maintenance procedures have been performed per ASC standards since September 2015.	Maintenance Superintendent	TBD	Q2	TBD	TBD
13	The maintenance rules compliance activities are not being executed on a regular basis as required and results are not being forwarded to the Maintenance Superintendent to take necessary corrective actions.	Atlanta Streetcar must reexamine the frequency of maintenance compliance checks to ensure maintenance deficiencies are managed timely and effectively.	SA-CAP.MAINT.025, Reevaluate the Frequency of Maintenance Compliance Checks	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that they are implementing additional internal audit processes.</li> <li>To close this CAP, ASC must reevaluate the frequency of maintenance compliance checks as required by this CAP. This CAP is related to the maintenance function, not internal audits.</li> </ul>	OPEN	<b>Jan 2016:</b> Implementing additional Internal Audit process	Maintenance Superintendent	TBD	Q2	TBD	TBD
14	Bar signals are not included as system assets identified in the SSPP.	Atlanta Streetcar must integrate the transit signal maintenance program into its day-to-day performance management and hazard management process, and update the SSPP, training program, and procedures as appropriate.	SA-CAP.OPS.010, Integrate Transit Signal Maintenance Into Daily System Management	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must integrate the transit signal maintenance program into its day-to-day performance management, operations, maintenance, and system safety activities, particularly the hazard management process.</li> <li>This corrective action is important for several reasons, including the circumstance where ASC operators were experiencing a daily failure of a transit signal at a specific location and at the time of the assessment there was no coordinated process between the third party contractor, the City's contract administrator, and ASC's operations and safety personnel for the identification, reporting, and resolution of signal defects and hazards.</li> <li>This corrective action is equally important because of the need to develop and implement a comprehensive and integrated maintenance management information system for all safety-critical assets, including transit signals.</li> <li>The corrective action plan must ensure that the tracking and reporting of safety deficiencies and defects from routine inspections and maintenance performed by third party contractors as well as daily observation reports from ASC operations personnel, are effectively coordinated with the hazard tracking log managed by ASC safety personnel.</li> <li>ASC must update the System Safety Program Plan and related operations and maintenance plans and procedures to describe the processes, roles, and responsibilities for transit signal maintenance.</li> </ul>	OPEN	<b>Jan 2016:</b> Bar signal heads are components of the traffic signal infrastructure within the City's right of way, just like pedestrian signal heads. "Traffic Signals" are identified as one of the elements of the system in the SSPP (Section 15, page 72).	DSST & Maintenance Superintendent	TBD	Q3	TBD	TBD

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15	Maintenance deficiencies and recommendations from two independent OCS assessments (Clamer report and C3M report) remain open.	Atlanta Streetcar must address, document, and track to closure the findings and recommendations identified in the Clamer and C3M OCS studies.	SA-CAP.MAINT.022, Address the Findings and Recommendations in the Clamer and C3M Studies	<p><b>Jan 2016:</b>  <b>Response Accepted, Action Required</b></p> <ul style="list-style-type: none"> <li>To close this CAP, ASC must prioritize, assign management accountability, identify timely due dates for completion, ensure adequate resources allocated, and sufficiently document and track to closure the actions necessary to address the findings and recommendations included in the Clamer and C3M OCS Studies. In addition to the specific repairs identified, ASC must ensure that the following program management concerns are also addressed:                             <ul style="list-style-type: none"> <li>Provide updated OCS drawings and operations and maintenance manuals to maintenance personnel and ensure a document control process for drawings.</li> <li>Provide engineering oversight for OCS configuration management and maintenance support</li> <li>Monitor the use of OCS parts or inventory quantity on hand, including a review of the recommended spare parts list to ensure all materials available to support maintenance program.</li> <li>Provide OCS-specific tools and equipment for required OCS maintenance.</li> <li>Increase OCS inspection frequency.</li> <li>Correct OCS system failures and return the OCS system to the as built condition.</li> <li>Address the most serious OCS problem by providing qualified manpower to conduct proper OCS maintenance.</li> <li>Create an OCS training plan, including training for OCS components and assemblies.</li> <li>Build industry knowledge for transit, OCS, and safety standards.</li> <li>Develop a comprehensive maintenance program and controls.</li> <li>Develop and issue maintenance safety procedures, including lock-out/tag-out procedures.</li> </ul> </li> <li>GDOT expects that the action plan and schedule provide clarification on the contractor scope of services and method of verification to ensure close out of the Clamer and C3M open items.</li> </ul>	OPEN	<p><b>Jan 2016:</b>                      MARTA coordinated repairs conducted by URS in response to the Clamer &amp; C3M reports. C3M is under contract to perform maintenance beginning in February to address additional report recommendations.</p>	Executive Director, Maintenance Superintendent & DSST	TBD	Q3	TBD	TBD
16	Challenges persist in prioritizing the recruiting and hiring of Atlanta Streetcar System positions and not all positions have been designated safety-critical as required.	Atlanta Streetcar must perform a staffing assessment to identify all safety-critical positions, minimum staffing thresholds for safety-critical operations and maintenance positions, as well as	SA-CAP.HR.028, Establish Minimum Staffing Thresholds and Monitoring Procedures for Safety-Critical Positions	<p><b>Jan 2016:</b>  <b>Response Not Accepted, Action Required</b></p> <ul style="list-style-type: none"> <li>To close this CAP, ASC must develop a written standard that establishes the minimum staffing thresholds for safety-critical operations and maintenance positions and develop a procedure for monitoring and tracking the adherence to these levels. In doing so, ASC should continue to coordinate with Human Resources to prioritize the hiring and recruiting of its safety-critical positions.</li> <li>GDOT expects that the action plan and schedule for establishing minimum staffing thresholds be coordinated with</li> </ul>	OPEN	<p><b>Jan 2016:</b>                      Atlanta Streetcar submitted a draft minimum staffing threshold to GDOT in relation to the Assessment. Procedures for these positions are in process.</p>	Human Resources & Executive Director	TBD	Q2	TBD	TBD

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		develop and implement a written standard to establish and monitor this threshold for operations and maintenance positions.		the development of SA-CAP.OPS.002 and SA-CAP.OPS.019.							
			SA-CAP.MGMT.052, Ensure Adequate Staffing Levels	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>Atlanta Streetcar did not submit an adopted policy, procedure or other documentation that identified the minimum staffing criteria or fulfillment such criteria for applicable Atlanta Streetcar positions.</li> <li>To close this CAP, ASC must submit an action plan and schedule for ensuring adequate staffing levels and this action plan must address MARTA's concerns which included the following: "The Atlanta Streetcar System must hire and train an adequate level of operators, dispatchers, supervisors, superintendents, or maintenance personnel to support the level of service."</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar submitted a draft minimum staffing threshold to GDOT in relation to the Assessment. Procedures for these positions are in process.	Human Resources & Executive Director	TBD	Q2	TBD	TBD
17	Atlanta Streetcar has updated job descriptions for safety-critical positions for multiple positions.	Atlanta Streetcar must finalize job descriptions, including minimum qualifications, training, and experience required for safety-critical positions.	SA-CAP.OPS.012, Finalize Job Descriptions for All Personnel	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must develop job descriptions including minimum qualifications, training, and experience required for safety-critical positions.</li> <li>GDOT expects that the action plan and schedule for establishing the required job descriptions be coordinated with the development of SA-CAP.OPS.002, SA-CAP.OPS.019, and SA-CAP.MGMT.50.</li> </ul>	OPEN	<b>Jan 2016:</b> All positions have job descriptions, and revisions do occur in response to SSO and other comments.	Human Resources & Executive Director	TBD	Q2	TBD	TBD
18	Atlanta Streetcar has a vacancy rate of 48% for safety-critical positions.	Atlanta Streetcar must fulfill the organizational resources for vacant, safety-critical positions and ensure individuals are aptly qualified and trained to complete their tasks.	SA-CAP.OPS.003, Fulfill Organizational Resource for Rail Engineering	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>The ASC Streetcar System Position Report, dated October 28, 2015, establishes the vacancy rate for safety-sensitive positions as 48%.</li> <li>To close this CAP, ASC must develop an action plan and schedule to fulfill the organizational resources for vacant, safety-critical positions and ensure individuals are aptly qualified and trained to complete their tasks as required by this CAP.</li> </ul>	OPEN	<b>Jan 2016:</b> Per SSPP staffing commitments for direct operations, the vacancy rate is 18%.  New hires and third-party contracts are being explored and secured as appropriate, in combination with additional coordination among City technical resources.	Executive Director	TBD	Q3	TBD	TBD
			SA-CAP.OPS.004, Fulfill Organizational Resource for Data Reporting Analyst	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must develop an action plan and a schedule for hiring the permanent Data Reporting Analyst. In addition, ASC must provide documentation verifying the hiring of interim staff to fulfill this technical resource.</li> </ul>	OPEN	<b>Jan 2016:</b> The permanent Data Reporting Analyst will be hired Q1. An interim staff is presently in place	Executive Director	TBD	Q1	TBD	TBD
			SA-CAP.OPS.005, Fulfill Organizational Resource for Contracting Officer	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must develop an action plan and a schedule for hiring the permanent Contracting Officer. In addition, ASC must provide documentation verifying coordination among City departments to fulfill this technical resource.</li> </ul>	OPEN	<b>Jan 2016:</b> New hires and third-party contracts are being explored and secured as appropriate, in combination with additional coordination among City technical resources.	Executive Director	TBD	Q3	TBD	TBD
			SA-CAP.HR.031, Ensure Organizational Resource for	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b>	OPEN	<b>Jan 2016:</b> New hires and third-party contracts are being explored and secured as	DSST	TBD	Q2	TBD	TBD

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			Drug and Alcohol Program Compliance Audits	<ul style="list-style-type: none"> <li>To close this CAP, ASC must develop an action plan and a schedule for conducting Drug and Alcohol Program Compliance Audits. In addition, ASC must provide documentation verifying coordination among City departments to fulfill this technical resource.</li> </ul>		appropriate, in combination with additional coordination among City technical resources.					
			SA-CAP.SAFE.035, Fulfill Organizational Resource for Engineering	<b>Jan 2016: Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must develop an action plan and a schedule for the permanent Engineering resource. In addition, ASC must provide documentation verifying coordination among City departments to fulfill this technical resource.</li> </ul>	OPEN	<b>Jan 2016:</b> New hires and third-party contracts are being explored and secured as appropriate, in combination with additional coordination among City technical resources.	Executive Director	TBD	Q2	TBD	TBD
			SA-CAP.SAFE.039, Secure Organizational Resource for Safety and Security Program Management	<b>Jan 2016: Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must secure an organizational resource for safety and security program management. While ASC has two professional services contracts in effect to provide limited safety and security support for a short-term duration, ASC is in need of long term resources with specialized expertise and experience to support the implementation of the safety and security requirements of the System Safety Program Plan and Security and Emergency Preparedness Plan. The identified resource should provide demonstrated leadership and skill in the implementation of rail transit system safety and security programs; hazard, accident, and security incident notification, investigation, and reporting; internal safety and security audit; emergency preparedness and response as well as strong familiarity and working knowledge of rail operations and rail maintenance.</li> </ul>	OPEN	<b>Jan 2016:</b> Safety & Security Program Management services will be advertised in Q1 2016.	Executive Director	TBD	Q2	TBD	TBD
			SA-CAP.MAINT.023, Fulfill Organizational Resource for Maintenance Superintendent	<b>Jan 2016: Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must provide documented evidence of the hiring of the permanent Maintenance Superintendent.</li> </ul>	OPEN	<b>Jan 2016:</b> A Maintenance Superintendent has been hired.	Executive Director	TBD	Q1	TBD	TBD
19	Atlanta Streetcar is not implementing the random and post-accident drug and alcohol testing practices in accordance with FTA requirements.	Atlanta Streetcar must ensure random and post-accident drug and alcohol tests are in compliance with FTA, SSPP, and accident investigation requirements. Atlanta Streetcar must ensure independent audits of compliance to the drug and alcohol program are performed.	SA-CAP.HR.029, Ensure Compliant Post-Accident Drug and Alcohol Test Reports	<b>Jan 2016: Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>Operators of streetcar vehicles have been involved in adverse events which met the post-accident testing criteria; however, ASC did not subject the Operators to the required tests as defined by the Atlanta Streetcar Post-Accident Decision Tree.</li> <li>To close this CAP, ASC must submit an action plan and schedule that ensures its compliance with FTA's post-accident testing guidelines.</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar Drug and Alcohol Testing Policies and Procedures do meet FTA requirements. Regarding post-accident and random testing, Atlanta Streetcar and COA HR staff are working with MARTA to ensure practices in the policies' implementation are fully compliant.	DSST	TBD	Q1	TBD	TBD
			SA-CAP.HR.030, Ensure Compliant Drug and Alcohol Testing for All Applicable Personnel	<b>Jan 2016: Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>The methodology for the selection of safety-sensitive employees for random drug and alcohol testing is not being made using a scientifically valid method that ensures each covered employee will have an equal chance of being selected each time selections are made. In addition, ASC is not implementing the testing requirements as required for three positions – Manager of Streetcar, Director of Streetcar</li> </ul>	OPEN	<b>Jan 2016:</b> Atlanta Streetcar Drug and Alcohol Testing Policies and Procedures do meet FTA requirements.	DSST	TBD	Q1	TBD	TBD

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				<p>Services, and Deputy Director of Streetcar Services. In addition, the drug and alcohol policy requires update to include new positions that are subject to the testing program, namely Dispatchers.</p> <ul style="list-style-type: none"> <li>To close this CAP, ASC must submit an action plan and schedule that ensures its compliance with FTA's post-accident testing guidelines.</li> </ul>							
			<p><b>FTA SSO Finding 12, Ensure All Relevant Testing Information Included in Accident Investigation Reports.</b></p>	<p><b>Jan 2016:</b>  <b>Response Partially Accepted, Action Required</b></p> <ul style="list-style-type: none"> <li>As required by FTA, to close this finding:                             <ul style="list-style-type: none"> <li>GDOT must ensure ASC investigation submittals are complete and meet all requirements over a 6-month period.</li> </ul> </li> <li>Deliverables:                             <ul style="list-style-type: none"> <li>GDOT review and approval of ASC accident/incident investigations submittals for a 6-month period</li> </ul> </li> <li>Performance Measure:                             <ul style="list-style-type: none"> <li>ASC consistently provides comprehensive accident/incident investigations over a 6-month period (for investigations completed during this time)</li> <li>GDOT is effectively monitoring and verifying reports over a 6-month period (for investigations completed during this time)</li> </ul> </li> <li>Verification Method:                             <ul style="list-style-type: none"> <li>Documentation and interviews for GDOT approval of investigation reports</li> <li>FTA to review accident/incident investigation documentation and conduct follow-up reviews as needed</li> </ul> </li> <li>While GDOT is in the process of completing the Final Report Review Checklists for the 10 open accident/incident investigations, as discussed on page 70 of the Final Report, GDOT reviewed the investigation reports and concluded that the probable causes are not consistent with the GDOT Program Standard, Table 6.7. In addition, there are instances, particularly in the case of the April 25, 2015 incident, that no causal factor was included for the Operators failure to follow the operating rules for line of sight and obstruction in the trackway or the lack of the pavement markings for the dynamic envelope (although identified as a hazard mitigation measure in the pre-revenue phase hazard analysis). Equally important, there is no discussion of improved Operator training and increased supervision in order to ensure compliance with established rules and procedures. The assessment team views these to be a global corrective actions that are systemic issues applicable to ASC as a whole. In addition, it is important that ASC comply with the reporting requirements specified in ASC's SSPP, as well as those</li> </ul>		<p><b>Jan 2016:</b>                      Final 2015 reports have been submitted to GDOT, and ASC awaits GDOT's response.</p>	TBD	TBD	TBD	TBD	TBD

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				outlined in Section 6, Accident / Incident Notification, Investigation, and Reporting of the Program Standard. <ul style="list-style-type: none"> <li>To close this CAP, ASC must expand corrective action plans of the 10 open investigations to address systemic as a result of the incident investigation process to include the following:                             <ul style="list-style-type: none"> <li>Revamp the training program to ensure all Operators are aware of their responsibilities and are equipped to follow the rules, actions, and procedures required to avoid collisions and other hazards when operating the streetcar.</li> <li>Develop a public awareness campaign to educate pedestrians, bicyclists, and motorists on the safe conduct when driving around the streetcar.</li> <li>Expand the design of the operational environment for the streetcar to include revised and/or additional signage, delineation posts, or other traffic control devices to protect the dynamic envelope of the streetcar.</li> <li>Train all persons responsible for conducting investigations on the operations, maintenance, safety and security policies, procedures, and activities required to effectively investigate accidents and develop sufficient corrective action plans to prevent recurrence.</li> </ul> </li> </ul>							
20	None of the training required by the SSPP had been fully completed or documented in a consistent manner.	Atlanta Streetcar must implement a comprehensive <i>Training Program Plan</i> outlining the standards and required proficiencies for safety-critical operations and maintenance positions.	SA-CAP.OPS.015, Establish and Implement Comprehensive Training program Plan and Standards	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>Appendix A, Training Records Review Checklists of this report accurately documents the verification of the implementation of the training required by the System Safety Program Plan, Section 16, Training. Training required by the SSPP is applicable to Superintendents, Supervisors, Technicians, and Operators.</li> <li>ASC reported that a Training Program Plan is in progress.</li> <li>To close this CAP, ASC submit an action plan and schedule that ensures the development and implementation of a comprehensive Training Program Plan and Standards.</li> </ul>	OPEN	<b>Jan 2016:</b> The finding mischaracterizes the amount of training completed for the Atlanta Streetcar system, and the work completed and in process to accurately document each successive training class. A Training Program Plan has been developed and is 85% complete, pending input from this Assessment.  The Streetcar Tabletop Exercise was conducted December 18, 2015, among streetcar staff and safety and security personnel. The training was organized collaboratively with the City's Director of Emergency Preparedness.  A refresher Lock-out, Tag-out Training is scheduled for Q1.	DSST	TBD	Q2	TBD	TBD
			SA-CAP.MGMT.048, Establish a Formal Training Program	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC submit an action plan and schedule that ensures the development and implementation of a comprehensive Training Program Plan and Standards.</li> </ul>	OPEN	Training Program Plan has been developed and is 85% complete, pending input from this Assessment.	DSST	TBD	Q2	TBD	TBD

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			FTA SSO Finding 5, Ensure Rail Transit Agency Resources are Qualified and Trained	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC submit an action plan and schedule that ensures the development and implementation of a comprehensive Training Program Plan and Standards.</li> </ul>	OPEN	Training Program Plan has been developed and is 85% complete, pending input from this Assessment.	TBD	TBD	TBD	TBD	TBD
21	Maintenance and operations rules compliance activities are being performed by personnel without the qualifications, knowledge, and information necessary to assess compliance.	Atlanta Streetcar must ensure positions required to perform supervision and rules compliance activities have appropriate training and knowledge and have access to necessary documents with respect to their areas of management and oversight.	SA-CAP.OPS.001, Provide Stable and Adequate Staffing for Supervision and Rules Compliance	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule that ensures the positions required to perform supervision and rules compliance activities have appropriate qualification, training, knowledge, and information necessary to assess compliance.</li> </ul>	OPEN	Jan 2016: In Process	DSST	TBD	Q3	TBD	TBD
22	The diagonal bar signal is in effect; however, there are no written operating rules, procedures, or training in place directing its use.	Atlanta Streetcar must train all relevant operations and maintenance employees on the mainline and yard movement operating rules and procedures including the diagonal bar signal operations and ensure this content is incorporated into applicable operations and maintenance initial and refresher training curriculums.	SA-CAP.SAFE.038, Develop Training Course and Standards for Diagonal Bar Signal	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>As discussed on page 66 of this report, while the diagonal bar signal appears on the drawings, there is no specific language within the training agenda associated with the unique operating rules, procedures and requirements for the diagonal bar signal. In addition, to modifying the training module to include the diagonal bar signal, ASC must update the signal descriptions within the SSPP to be consistent with this new training.</li> <li>ASC reported that the Rule Book, procedures, and training have been updated to include the diagonal bar signal.</li> <li>To close this CAP, submit documented evidence verifying completion of the SSPP, Rule Book, Training, and Procedures updates for the diagonal bar signal.</li> </ul>	OPEN	Jan 2016: The Rulebook, procedures and training have been updated to include the diagonal bar signal.	DSST	TBD	Q3	TBD	TBD
23	Public outreach communication tools have been established, but no formal <i>Public Outreach Plan</i> has been developed for Atlanta Streetcar nor are such activities described within the SSPP.	Atlanta Streetcar must develop and implement a <i>Strategic Communications Plan</i> to outline roles, responsibilities, goals, strategies, and performance measures for reaching target audiences and	SA-CAP.COMM.032, Update SSPP, SEPP with Communication Strategies and Groups	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that the SSPP and SEPP will be updated to reflect critical communications strategies.</li> <li>To close this CAP, ASC must submit the revised SSPP and SEPP.</li> </ul>	OPEN	Jan 2016: The SSPP and SEPP can be updated to reflect critical communication strategies. In Process	DSST & Comm. / Public Outreach Manager	TBD	Q3	TBD	TBD
			SA-CAP.COMM.034, Develop and Implement a Strategic Communications Plan	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that a Strategic Communications Plan has been developed and is under review.</li> </ul>	OPEN	Jan 2016: A Strategic Communications Plan has been drafted and is under review. A revised Customer Service Information and	Comm. / Public Outreach Manager	TBD	Q2	TBD	TBD

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		update the SSPP and SEPP accordingly.		<ul style="list-style-type: none"> <li>To close this CAP, ASC must submit the Strategic Communications Plan.</li> </ul>		Procedures Plan was distributed to GDOT in October 2015.					
24	There are no communication campaigns or activities related to security awareness for the riding public.	Atlanta Streetcar must develop and implement a transit security awareness campaign and quality of life campaigns targeted toward internal and external audiences and update the SSPP and SEPP accordingly.	SA-CAP.COMM.033, Develop and Implement a Transit Security Awareness and Quality of Life Campaigns	<b>Jan 2016:</b> <b>Response Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that a campaign for riders and rider information is in development.</li> <li>To close this CAP, ASC must provide an action plan and schedule for the development and implementation of Transit Security Awareness/Quality of Life Campaign for Riders.</li> </ul>	OPEN	<b>Jan 2016:</b> As part of the introduction of the Atlanta Streetcar fare, Code of Conduct legislation was adopted. As an initial step, stop and vehicle signage are in place to inform riders of the new streetcar-specific rules (enforceable by law).  A broader campaign for riders and rider information is in development for Q1/Q2.	Comm. / Public Outreach Manager with DSST	TBD	Q3	TBD	TBD
25	The <i>Quality Maintenance Program Handbook</i> activities are not being performed. No designated Quality Assurance resource exists to manage these activities.	Atlanta Streetcar must implement quality assurance activities defined in the <i>Quality Maintenance Program Handbook</i> .	SA-CAP.SAFE.036, Implement the Quality Maintenance Program Handbook	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for implementing the Quality Maintenance Program Handbook.</li> </ul>	OPEN	No response provided.	Maintenance Superintendent	TBD	Q2	TBD	TBD
26	The hazard management process is not being followed. No hazards have been brought to the Safety Certification and Security Committee nor have hazards been reported effectively and consistently to the Department.	Atlanta Streetcar must ensure safety hazards and security threats are effectively identified and communicated through internal reporting relationships and a practice is developed for elevating certain hazards to the Safety Certification and Security Committee (SCSC) for review and resolution. Atlanta Streetcar must comply with the hazard notification, investigation, and reporting	SA-CAP.OPS.016, Ensure SCSC Reviews, Accepts, Resolves Safety Hazards and Security Threats	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for ensuring SCSC reviews, accepts, resolves hazards and threats</li> </ul>	OPEN	Jan 2016: In Process	DSST	TBD	Q2	TBD	TBD
			SA-CAP.OPS.020, Assess and Resolve Safety Hazards and Security Threats Identified by Operations	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for assessing and resolving hazards and threats identified by Operations.</li> </ul>	OPEN	Jan 2016: In Process	DSST	TBD	Q2	TBD	TBD
			SA-CAP.OPS.021, Improve Internal Safety Hazard and Security Threat Reporting	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for improving internal hazard and threat reporting.</li> </ul>	OPEN	Jan 2016: In Process	DSST	TBD	Q1	TBD	TBD
			SA-CAP.SAFE.041, Comply with Hazard Notification Requirements of Program Standard, Section 5.6.1	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>As discussed on page 67 of this report, the Department has identified unacceptable hazards in Table 5.6.1 of the Program Standard. With these hazard requirements established, FTA expected that there would be far more identification and reporting of hazards by the transit system to the State. ASC confirmed that coordination meetings have taken place with the Department in response to FTA's last audit and ASC is fully aware of the required hazard reporting that must occur going forward. The Department and FTA reiterated that the</li> </ul>	OPEN	Jan 2016: Complete. Hazard notification procedures are in place and being followed.	DSST	TBD	Q1	TBD	TBD

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		requirements established in the Department's Program Standard. Atlanta Streetcar must follow the SSPP hazard management process to ensure identified hazards are documented and mitigated to the lowest acceptable risk levels.		hazard management program is not yet sufficiently implemented as required by the Program Standard, specifically notification, investigation, assessment, tracking, and reporting. <ul style="list-style-type: none"> <li>To close this CAP, ASC must provide documentation verifying compliance to the hazard notification requirements of Program Standard, Section 5.6.1. The Department expects this CAP to have been coordinated with FTA SSO Finding 10.</li> </ul>							
			FTA SSO Finding 10, Comply with Hazard Notification Requirements of Program Standard Section 5.6.1. Review Pre-Revenue OHA, PHA, and TVA and Update Hazard Tracking Log.	Jan 2016: Action Required <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule for the review of Pre-Revenue OHA, PHA, and TVA and Update Hazard Tracking Log.</li> </ul>	OPEN	Jan 2016: In Process	DSST with Superintendent Support	TBD	TBD	TBD	TBD
27	Atlanta Streetcar is not following the procedure for proper documentation and transmittal of accident/incident information to the Department.	Atlanta Streetcar must notify and submit accident/incident investigations to the Department which meet the required thresholds.	FTA SSO Finding 11, Re-investigate and Re-submit All Open Accident and Hazard Investigations. Ensure Investigation Reports Comply with and Document Post-Accident Drug and Alcohol Testing	Jan 2016: Response Partially Accepted, Action Required <ul style="list-style-type: none"> <li>As required by FTA, to close this finding:                             <ul style="list-style-type: none"> <li>GDOT must ensure the RTAs provide notification of all reportable accidents and investigation reports for a 6-month period. <i>Note: The closure of this finding closely coordinates with the corrective actions proposed in Finding 12.</i></li> </ul> </li> <li>Deliverables:                             <ul style="list-style-type: none"> <li>GDOT review and approval of ASC accident/incident investigations submittals for a 6-month period</li> </ul> </li> <li>Performance Measure:                             <ul style="list-style-type: none"> <li>ASC consistently provides comprehensive accident/incident investigations over a 6-month period (for investigations completed during this time)</li> <li>GDOT is effectively monitoring and verifying reports over a 6-month period (for investigations completed during this time)</li> </ul> </li> <li>Verification Method:                             <ul style="list-style-type: none"> <li>Documentation and interviews for GDOT approval of investigation reports</li> <li>FTA to review accident/incident investigation documentation and conduct follow-up reviews as needed</li> </ul> </li> </ul>	OPEN	Jan 2016: Final 2015 reports have been submitted to GDOT, and ASC awaits GDOT's response.	DSST	TBD	TBD	TBD	TBD
28	The CAP log is missing required information elements and CAPs created for identified systemic issues.	Atlanta Streetcar must include responsible parties, schedules of completion, initial risk assessment ratings, and final risk assessment	SA-CAP.SAFE.040, Ensure CAP Tracking Log Complies with SSPP, HMP Risk Assessment Process	Jan 2016: Action Required <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule that ensures the CAP Tracking Log complies with SSPP, HMP Risk Assessment Process.</li> </ul>	OPEN	Jan 2016: In Process	DSST	TBD	Q2	TBD	TBD
			SA-CAP.SAFE.042, Track and Report Status of CAPs in	Jan 2016: Action Required	OPEN	Jan 2016: In Process	DSST	TBD	Q2	TBD	TBD

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		ratings for all existing CAPs as outlined in the SSPP and Hazard Management Plan, and continue to track CAPs to closure.	Appendix C of Assessment Report	<ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule that ensures ASC is tracking and reporting the status of CAPs in <b>Appendix C, Accident / Incident Field Verification Review Checklist</b>, of this report.</li> </ul>							
			SA-CAP.SAFE.043, Expand CAPs on Re-Submitted Investigation Reports to Address Systemic Issues	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must expand corrective action plans of the 10 open investigations to address systemic as a result of the incident investigation process to include the following:                             <ul style="list-style-type: none"> <li>Revamp the training program to ensure all Operators are aware of their responsibilities and are equipped to follow the rules, actions, and procedures required to avoid collisions and other hazards when operating the streetcar.</li> <li>Develop a public awareness campaign to educate pedestrians, bicyclists, and motorists on the safe conduct when driving around the streetcar.</li> <li>Expand the design of the operational environment for the streetcar to include revised and/or additional signage, delineation posts, or other traffic control devices to protect the dynamic envelope of the streetcar.</li> <li>Train all persons responsible for conducting investigations on the operations, maintenance, safety and security policies, procedures, and activities required to effectively investigate accidents and develop sufficient corrective action plans to prevent recurrence.</li> </ul> </li> <li>GDOT expects this CAP to be coordinated with <b>FTA SSO Finding 12.</b></li> </ul>	OPEN	<b>Jan 2016:</b> Final reports have been submitted to GDOT.	DSST	TBD	Q2	TBD	TBD
			FTA SSO Finding 14, Ensure All Required CAP Information included on CAP Tracking Log	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule that ensures all required CAP information is included on CAP Tracking Log.</li> </ul>	OPEN	<b>Jan 2016:</b> In Process	TBD	TBD	TBD	TBD	TBD
			FTA SSO Finding 15, Ensure that CAPs include Accurate Schedules and are Prioritized	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>Provide a response that describes the action plan and schedule that ensures CAPs include accurate schedules and are prioritized.</li> </ul>	OPEN	<b>Jan 2016:</b> In Process	TBD	TBD	TBD	TBD	TBD
29	Atlanta Streetcar does not have a complete set of as-built drawings necessary to form an adequate baseline for the implementation of its configuration management program.	Atlanta Streetcar must establish and implement a <i>Configuration Management Plan</i> that documents the physical characteristics of the streetcar system and outlines the practice program.	SA-CAP.SAFE.037, Establish and Implement a Configuration Management Plan	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that MARTA is in possession of as-built drawings.</li> <li>To close this CAP, ASC must establish and implement a Configuration Management Plan, in addition to obtaining all necessary as built drawings as the adequate baseline for the implementation of the configuration management program.</li> </ul>	OPEN	<b>Jan 2016:</b> Revised As-Built drawings were provided by URS to MARTA in Q4 2015.	Executive Director	TBD	Q2	TBD	TBD

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		for managing system changes.									
30	The <i>Atlanta Streetcar Safety Certifiable Items List Status Sheet</i> is incomplete and one element needs to be reopened.	Atlanta Streetcar must review all open certifiable elements without due dates or expired due dates, reopen the Traffic Signals element with respect to the diagonal bar signal, and identify responsible parties and schedules of completions for all open items.	SA-CAP.SAFE.044, Update and Complete the Safety Certifiable Items List, including Traffic Signals and Fare Collection/Enforcement	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>ASC reported that a modified Certifiable Items List was submitted with the latest GDOT CAP Log.</li> <li>GDOT reviewed the CAP Log for period ending December 31, 2015. GDOT observed that a new Tab 7, SSCVR has been added; however, this tab does not reflect any of the required changes specified by SA-CAP.SAFE.044. GDOT observed that a new Tab 7a, Fare Collection has also been added. GDOT noted that the majority of the items on Tab 7a are identified as SCSC conditional approval.</li> <li>To close this CAP, ASC must update and complete (implement the required actions) for the certifiable items lists, including Traffic Signals and Fare Collection. ASC must fully satisfy any and all requirements of the SCSC prior to the initiation of any reviews by GDOT.</li> </ul>	OPEN	<b>Jan 2016:</b> A modified list has been submitted to GDOT with the latest "GDOT log," including the Fare Collection / Enforcement certifiable elements.	DSST	TBD	Q3	TBD	TBD
31	Project completion for the Breeze Vending Machines is scheduled for January 2016, however safety certifications, operations, maintenance, and security procedure updates were not underway as of October 2015.	Atlanta Streetcar must ensure the completion of the safety and security certification process for the Breeze Vending Machines prior to initiating the equipment into revenue service.	SA-CAP.SAFE.044, Update and Complete the Safety Certifiable Items List, including Traffic Signals and Fare Collection/Enforcement	<b>Jan 2016:</b> <b>Response Partially Accepted, Action Required</b> <ul style="list-style-type: none"> <li>To close this CAP, ASC must update and complete (implement the required actions) for the certifiable items lists, including Traffic Signals and Fare Collection. ASC must fully satisfy any and all requirements of the SCSC prior to the initiation of any reviews by GDOT.</li> </ul>	OPEN	<b>Jan 2016:</b> Fare Collection was successfully initiated January 1, 2016, and safety and security certification documentation is available to GDOT for its review. A CAP log has been created by the SCSC to track remaining items for the fare system's certification.	DSST	TBD	Q3	TBD	TBD
32	Atlanta Streetcar in coordination with the Atlanta Police Department (APD) are in the process of improving streetcar security through multiple enhancements.	Atlanta Streetcar in coordination with APD must continue to implement law enforcement strategies in compliance with the Security and Emergency Preparedness Plan (SEPP) to enhance public safety and emergency response to streetcar events such as improving communications systems and procedures, and designating an APD Executive Liaison to	SA-CAP.SEC.045, Coordinate with APD to Improve Emergency Communication Systems and Procedures	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>As discussed on pages 73-74 of this report, APD seeks to enhance public safety and emergency response through improved communication systems and procedures.</li> <li>Provide a response that describes the action plan and schedule for coordination with APD to improve emergency communication systems and procedures.</li> </ul>	OPEN	<b>Jan 2016:</b> This is a positive finding. Atlanta Streetcar and Atlanta Police Department (APD) coordination is occurring well. Fare enforcement has been implemented, code of conduct legislation is adopted, and communication protocols are in place.  In parallel with and support of fare and streetcar code of conduct enforcement activities, a satellite Zone 5 Precinct facility has opened in the space of the Sweet Auburn Curb Market, and houses APD segways and bicycles used by sworn officers in the immediate area.	DSST	TBD	Q2	TBD	TBD

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		the Atlanta Streetcar.  Atlanta Streetcar in coordination with APD must examine the benefits of modifying the communications system to be independent of the 9-1-1 system for improved response to streetcar incidents and issues.				Reference Fare Collection System Safety and Security Certification information for additional support documentation.					
			SA-CAP.SEC.046, Coordinate with APD to Implement Law Enforcement Strategies	<b>Jan 2016: Action Required</b> <ul style="list-style-type: none"> <li>As discussed on pages 73-74 of this report, ASC in coordinate with APD must continue to implement law enforcement strategies in compliance with the SEPP such as laws allowing APD to act as legal agent for ASC.</li> <li>Provide a response that describes the action plan and schedule for coordination with APD to implement law enforcement strategies, including updates to the SEPP and procedures that describe these strategies (legal agent, satellite precinct).</li> </ul>	OPEN	<b>Jan 2016:</b> This is a positive finding. Atlanta Streetcar and Atlanta Police Department (APD) coordination is occurring well. Fare enforcement has been implemented, code of conduct legislation is adopted, and communication protocols are in place.  In parallel with and support of fare and streetcar code of conduct enforcement activities, a satellite Zone 5 Precinct facility has opened in the space of the Sweet Auburn Curb Market, and houses APD segways and bicycles used by sworn officers in the immediate area.  Reference Fare Collection System Safety and Security Certification information for additional support documentation.	DSST	TBD	Q1	TBD	TBD
			SA-CAP.MGMT.054, Rebuild and Strengthen Relationships with Internal Partners	<b>Jan 2016: Action Required</b> <ul style="list-style-type: none"> <li>As discussed in the MARTA Active Management section on pages 79-80 of this report, MARTA identified rebuilding and strengthening relationships with internal partners, including Atlanta Police Department and Atlanta Fire and Rescue as a major need and priority because these are critical safety, security, and emergency management partners of the ASC.</li> <li>Provide a response that is coordinated with MARTA, that describes the action plan and schedule to rebuild and strengthen relationships with APD and AFD.</li> </ul>	OPEN	<b>Jan 2016:</b> This is a positive finding. Atlanta Streetcar and Atlanta Police Department (APD) coordination is occurring well. Fare enforcement has been implemented, code of conduct legislation is adopted, and communication protocols are in place.  In parallel with and support of fare and streetcar code of conduct enforcement activities, a satellite Zone 5 Precinct facility has opened in the space of the Sweet Auburn Curb Market, and houses APD segways and bicycles used by sworn officers in the immediate area.  Reference Fare Collection System Safety and Security Certification information for additional support documentation.	DSST	TBD	Q1	TBD	TBD

**GEORGIA DEPARTMENT OF TRANSPORTATION**  
 2015 Safety and Security Special Assessment of the Atlanta Streetcar System  
 Corrective Action Plan (CAP) Tracking Log  
 Reviewed by GDOT 02/05/16

FINDINGS						CORRECTIVE ACTION PLANS					
Finding #	Description of Finding	Required Action to Close Finding	Corrective Action Plan	GDOT Response 02/05/16	Status	(CAP Requirement) Atlanta Streetcar Response 01/29/16	Party Responsible for CAP Implementation	Title / Date of Documents that Verify CAP Implementation	Proposed CAP Completion Date MM/DD/YY	Issues Preventing CAP Resolution (if any)	Actual CAP Completion Date MM/DD/YY
33	Atlanta Streetcar has not identified the Threat and Vulnerability Assessment (TVA) scope, methodology, and frequency per the requirements of the SEPP.	Atlanta Streetcar must develop and implement a Threat and Vulnerability Assessment program for the streetcar system.	SA-CAP.SEC.047, Coordinate with APD to Determine TVA Scope, Methodology, Participants, and Schedule	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>As discussed on page 74 of this report, ASC must coordinate with APD's DHS unit to identify the TVA scope, methodology, and frequency to implement the requirements of its SEPP.</li> <li>Provide a response that describes the action plan and schedule to determine the TVA scope, methodology, participants, and schedule for the ASC system.</li> </ul>	OPEN	The initial TVA was completed prior to opening December 2014. An updated TVA was completed in December 2015 in advance of the system's fare introduction.	DSST	TBD	Q1	TBD	TBD
			FTA SSO Finding 7, Submit SEPP that Defines TVA Process	<b>Jan 2016:</b> <b>Action Required</b> <ul style="list-style-type: none"> <li>As required by FTA, to close this finding:                             <ul style="list-style-type: none"> <li>GDOT must ensure the ASC has current, approved SEPP and outlined TVA practices are comprehensive.</li> </ul> </li> <li>Deliverables:                             <ul style="list-style-type: none"> <li>Approved/current ASC SEPP</li> <li>Updated ASC TVA</li> </ul> </li> <li>Performance Measure:                             <ul style="list-style-type: none"> <li>Approved SEPP that reflect current practices</li> <li>The TVA process is defined in SEPP including: frequency, development methods, and approvals</li> </ul> </li> <li>Verification Method:                             <ul style="list-style-type: none"> <li>GDOT's SEPP approval checklist and follow-up FTA interviews as needed</li> <li>FTA to review the TVA</li> <li>GDOT to conduct audit of the TVA process in next review</li> <li>GDOT three-year review and/or ASC internal security audit schedules showing TVA element during 2016</li> </ul> </li> <li>Provide a response that describes the action plan and schedule for the SEPP/TVA process.</li> </ul>	OPEN	Jan 2016: In Process	TBD	TBD	TBD	TBD	TBD
34	Atlanta Streetcar internal security audits are not scheduled until 2017 and are not conducted in an ongoing manner, such that security audits are conducted annually at minimum.	Atlanta Streetcar must ensure internal security audits are conducted in an ongoing manner over a three-year cycle.	FTA SSO Finding 9, Conduct Ongoing Internal Security Audits over Three Year Cycle	<b>Jan 2016:</b> <b>Response Not Accepted, Action Required</b> <ul style="list-style-type: none"> <li>Atlanta Streetcar internal security audits are not scheduled until 2017 and are not conducted in an ongoing manner, such that security audits are conducted annually at minimum.</li> <li>GDOT reminds ASC that its practices and procedures must comply with the Georgia Program Standard and ASC's adopted SSPP/IAPP.</li> <li>To close this CAP, ASC must develop and implement an internal audit schedule that shows the internal audit of security elements of the SEPP each year of the three-year audit cycle. ASC must conduct and document the SEPP internal audits each year of the three year cycle.</li> </ul>	OPEN	<b>Jan 2016:</b> The internal audit schedule was revised in June 2015 and submitted to GDOT. The revised schedule addresses all functional areas (including Safety and Security) audited on a schedule, using the same format as the New Orleans RTA.	TBD	TBD	TBD	TBD	TBD

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