

## **PMOC MONTHLY REPORT**

### **Second Avenue Subway Phase 1 (MTACC-SAS) Project** Metropolitan Transportation Authority New York, New York

December 1 to December 31, 2014



PMOC Contract No. DTFT60-09-D-00007

Task Order No. 7, Project No. DC-27-5235, Work Order No. 1

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Length of time on project: 4 years

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### **THIRD PARTY DISCLAIMER**

This report and all subsidiary reports are prepared solely for the Federal Transit Administration (FTA). This report should not be relied upon by any party, except FTA or the project sponsor, in accordance with the purposes as described below.

For projects funded through FTA Full Funding Grant Agreements (FFGAs) program, FTA and its Project Management Oversight Contractor (PMOC) use a risk-based assessment process to review and validate a project sponsor's budget and schedule. This risk-based assessment process is a tool for analyzing project development and management. Moreover, the assessment process is iterative in nature; any results of an FTA or PMOC risk-based assessment represent a "snapshot in time" for a particular project under the conditions known at that same point in time. The status of any assessment may be altered at any time by new information, changes in circumstances, or further developments in the project, including any specific measures a sponsor may take to mitigate the risks to project costs, budget, and schedule, or the strategy a sponsor may develop for project execution.

Therefore, the information in the monthly reports may change from month to month, based on relevant factors for the month and/or previous months.

### **REPORT FORMAT AND FOCUS**

This monthly report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60-09-D-00007, Task Order No. 004. Its purpose is to provide information and data to assist the FTA as it continually monitors the grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the grantee continues to be ready to receive federal funds for further project development.

This report covers the project management activities on the MTACC (Capital Construction) Second Avenue Subway (SAS) Mega-Project managed by MTACC and MTA as the grantee and financed by the FTA FFGA.

### **MONITORING REPORT**

The contents of this report are cumulative in nature, and may reference or build upon topics discussed in previous reports. All comments received pertaining to previous reports have been incorporated in this report.

### **EXECUTIVE SUMMARY**

#### **1. PROJECT DESCRIPTION**

The Second Avenue Subway project will include a two-track line under Second Avenue from 125th Street to the Financial District in lower Manhattan. It will also include a connection from Second Avenue through the 63rd Street tunnel to existing tracks for service to West Midtown and Brooklyn. Sixteen new ADA accessible stations will be constructed. The Second Avenue Subway will reduce overcrowding and delays on the Lexington Avenue line, improving travel for both city and suburban commuters, and provide better access to mass transit for residents of the far East Side of Manhattan. Stations will have a combination of escalators, stairs, and, in compliance with the Americans with Disabilities Act, elevator connections from street-level to station mezzanine and from mezzanine to platforms.

Phase One of the project includes the construction of new tunnels from 92nd Street and Second Avenue to 63rd Street and Third Avenue, with new stations along Second Avenue at 96th , 86th and 72nd Streets and new entrances to the existing Lexington Ave./63rd Street Station at 63rd Street and Third Avenue. New track and rail systems will extend from the 63rd Street Station through the new tunnels and previously constructed tunnels to 105th Street; facilitating intermediate service at the completion of Phase 1 between 96th Street and Brooklyn via the connection to the existing Broadway Line.

## **2. CHANGES DURING 4<sup>th</sup> Quarter 2014**

### **a. Engineering/Design Progress**

The Design Consultant continues to provide contract administrative and technical support for ongoing construction contracts, develop design modifications as required and provide technical support throughout the construction phase of the project.

### **b. New Contract Procurements**

Procurement of all design and construction services required for the execution of SAS, Phase 1 has been completed.

### **c. Construction Progress**

All construction is approximately 73.7% complete (overall project completion is approximately (72.8%) as of December 30, 2014. Summary progress for each contract is as follows:

- The 96th Street Station Heavy Civil/Structural Contractor (Contract C2A) achieved Substantial Completion on November 5, 2013. Contract closeout is ongoing.
- The 96<sup>th</sup> Street Station Finishes, Mechanical, Electrical, and Plumbing Systems and Ancillary Building and Entrances (Contract C2B) Construction activity is ongoing in the Station Area, Ancillary #1 and #2, Entrance #1, #2 and #3, and at the Street Level.
- At the 86th Street Station (Contract C5B). Full turnover of the site to the C5C contractor was completed on schedule. The contractor is completing demobilization and punch list work is ongoing.
- 86th Street Station Architectural and MEP (Contract C5C). Work in the east & west tunnels, including embedded duct benches are complete with change order MC cables and handrails the only remaining items. Placement of the main Mezzanine slab from south to north is complete.
- The 72nd Street Station Heavy Civil/Structural (Contract C4B) achieved Substantial Completion on January 14, 2014. Final inspection of the completed work is ongoing by Construction Management and New York City Transit personnel.
- The 72nd Street Station Finishes, MEP Systems, Ancillary Buildings and Entrances (Contract C4C). Construction of Ancillary #2 has reached street level and the street decking has been removed. Construction of concrete walls and slabs continues in Entrance #2. Mining/excavation continues in the garage at Entrance #1 and waterproofing is ongoing in the incline.
- Rehabilitation of the 63rd Street Station (Contract C3). Continued setting traction elevator equipment in the Elevator Machine Rooms and the Elevator Shafts. Moving

platforms have been installed. The load tests for the mini-piles at Entrance #1 were completed and excavation has resumed.

- The Track, Signal, Traction Power, and Communication Systems Contract (C6) is approximately 44.6% complete. Installation of track, communications, traction power and signal systems throughout the whole alignment is ongoing.

**d. Continuing and Unresolved Issues**

- Availability of NYCT resources to support testing, commissioning and acceptance activities. Based on resource requirements on other projects, SAS has been notified that NYCT cannot consider supporting SAS until January 2015. Availability beyond that time is a concern, especially in light of the excessive duration required for these activities on other MTA major projects.

**e. New Cost and Schedule Issues**

- The increasing number of “near-critical” schedule paths generally suggests an increase in risk of project delay.
- Ongoing delays to construction at 96<sup>th</sup> Street Station (C2B) has now created a risk of project delay independent of rail systems (C6) construction progress.
- Steady erosion of project budget contingency.

**3. PROJECT STATUS SUMMARY AND PMOC ASSESSMENT**

**a. Grantee Technical Capacity and Capability**

The Grantee has generally demonstrated the technical capacity and capability to execute Phase 1 of the SAS project. With overall project completion nearing 75%, the Grantee has successfully managed the project through several “phases” of construction. Significant staffing changes have been made with negligible adverse impact on performance. While several elements of the project and construction management effort have not been optimally executed, MTACC has generally demonstrated the effort and ability to respond and resolve deficiencies.

**b. Real Estate Acquisition**

All real estate for the SAS Phase 1 Project has been acquired. Real estate acquisition and tenant relocation was performed in accordance with the approved SAS Real Estate Acquisition Management Plan, and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and FTA real estate requirements 5010.1C.

**c. Engineering/Design**

The final design phase of the project was completed in late November 2010. Construction phase support by the design engineer has involved the usual submittal review and approval and technical assistance activities. Several significant redesign efforts were also required in response to unforeseen conditions.

While some delays in technical submittal processing have been noted, the design engineer has generally provided adequate support to the project during the construction phase in a timely fashion.

#### **d. Procurement**

All design and construction services required for the execution of SAS, Phase 1 have been completed.

#### **e. Railroad Force Account (Support and Construction)**

The Force Account requirements are documented in the SAS Force Account Plan. The plan gives a description and a cost estimate of the NYCT services required for the design of the track and signal elements of the system and to support construction activities for each individual contract (general orders, work trains, and flagging support) and start-up and commissioning.

#### **f. Vehicles**

No additional vehicles will be procured for the SAS Phase 1 Project. MTA has previously demonstrated to FTA, and FTA has agreed, that the rolling stock needed for Phase 1 SAS operations can be provided from the existing fleet of New York City Transit (NYCT).

#### **g. Systems Testing and Start-Up**

Due to the size and complexity of the project it is crucial for the project to follow a comprehensive systems integration and test program to manage and monitor the testing of systems components, systems and the integration and interconnectivity of the systems. Each Station MEP Contractor (C-26006, C-26010, C 26011 and C26012) will install, integrate and test the equipment via a Test Plan. Interconnectivity of systems in each station is under the scope of the C-26009 Systems Contractor. The C-26009 Systems Contractor has a Systems Integration Manager (SIM) supported by Systems Engineering Specialists (SES) who will coordinate the efforts of the Systems Contractor and the Stations MEP Contractors in the preparation of their Plans. Testing of the equipment provided by the C-26009 Systems contractor and the interconnectivity of the equipment installed by the Station MEP Contractors will be per a three volume System Test Plan. Volume 1 is the Management Plan, Volume 2 is the Interface Control Plan, and Volume 3 is the System Test Procedures. Tests that will be performed, including, but not limited to Factory Acceptance Tests (FAT), Field Installation Acceptance Test (FIAT), Facilities Integrated Systems Testing (FIST), and Systems Integrated Testing (SIT).

#### **h. Project Schedule**

During the 4th Quarter 2014, progress was made in advancing the project to a timely completion. MTACC continues to forecast a Revenue Service Date (RSD) of December 30, 2016. In the opinion of the PMOC, this remains an achievable goal; however this will require reversal of several current trends:

- Significant erosion in schedule contingency has occurred. The increase in “near-critical” schedule paths has been significant, increasing the risk of project-level delay.
- Many construction activities have not achieved forecast completion dates. Turnover of station spaces allocated to railroad systems was identified as a key goal for the 4<sup>th</sup> Quarter 2014 by MTACC. Some success has been achieved but too many delays have been realized.



- Schedule risks associated with station and system testing, commissioning and acceptance by NYCT have been identified, however, as yet no mitigation efforts have been implemented.
- Despite these challenges, the PMOC remains confident that all construction can be completed within the risk-adjusted RSD of February 2018.

**Table 1: Summary of Critical Dates**

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	December 31, 2013	October 5, 2016	October 2017
Revenue Service	September 30, 2014	December 30, 2016	February 2018

**i. Project Budget/Cost**

The Current Working Budget (Estimate Revision 10) for the SAS Phase 1 Project is still \$4,451.000M (exclusive of \$816.614M financing cost). The MTA Board has approved Local Funds totaling \$3,509.000M. Total Federal participation in the SAS Phase 1 Project is \$1,350.693M of which \$1,250.508 has been obligated. Drawdowns on 2012 obligated funds (\$186.566 M) have been restricted until NYMTA and FTA execute an amended FFGA for Phase 1 of the SAS Project (Reference Grant NY-03-0408-9). See Table 2 below for additional details.

MTA's Estimate at Completion (EAC) and the PMOC's analysis currently indicate the project can be built within the limits of the Current Working Budget, assuming substantial completion of all construction in general conformance with the current IPS.

**Table 2: Project Budget/Cost Table** 

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of December 31, 2014	
	\$ Millions	% of Total	Obligated (\$ Millions)	TBD	\$ Millions	% of Total	\$ Millions	% of Total
<b>Grand Total Cost:</b>	<b>4,866.614</b>	<b>100</b>	<b>4,572.942</b>		<b>5,267.614</b>	<b>100</b>	<b>3,241.124</b>	<b>61.53</b>
Financing Cost	816.614	16.78			816.614	15.50		
<b>Total Project Cost:</b>	<b>4,050.000</b>	<b>83.22</b>	<b>4,572.942</b>		<b>4,451.00</b>	<b>84.50</b>	<b>3,241.124</b>	<b>61.53</b>
<b>Total Federal:</b>	<b>1,350.693</b>	<b>27.75</b>	<b>1,250.508*</b>		<b>1,350.693</b>	<b>24.60</b>	934.435	17.74
<b>Total FTA share:</b>	<b>1,300.000</b>	<b>96.25</b>	<b>1,176.615*</b>		<b>1,300.000</b>	<b>23.68</b>	860.542	16.34
5309 New Starts share	1,300.000	100	1,176.615		1,300.000	23.68	860.542	15.76
<b>Total FHWA share:</b>	<b>50.693</b>	<b>3.75</b>	<b>73.893*</b>		<b>50.693</b>	<b>0.96</b>	73.893	1.40
CMAQ	48.233	95.15	71.433		48.233	0.88	71.433	1.35
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	.05
<b>Total Local share:</b>	<b>2,699.307</b>	<b>55.47</b>	<b>3,509.000**</b>		<b>**3,509.000</b>	<b>63.92</b>	<b>2,306.689</b>	<b>43.79</b>
State share	450.000	16.67	100.000		450.000	8.20		
Agency share	2,249.307	83.33	1,145.782		3,059.000	55.72		
City share	0	0			0	0		
<p>* Obligated amounts obtained from the Transportation Electronic Award Management (TEAM) system and MTACC's Grant Management Department.</p> <p>** Current MTA Board approved budget is \$3,509,000,000.</p>								

## j. Project Risk

Major issues that have either increased or decreased the risk of project schedule and cost increases during the 4<sup>th</sup> Quarter 2014 have been summarized as follows:

Decrease	Increase
<ul style="list-style-type: none"><li>• MTACC has generally been successful in resolving technical issues (i.e. water mister system, escalator drive system) that posed significant risk to schedule performance.</li></ul>	<ul style="list-style-type: none"><li>• Due to resource conflicts with other MTACC projects, NYCT personnel are not expected to be available to participate in startup and commissioning planning for SAS until 1st Quarter 2015.</li><li>• The increasing number of “near-critical” schedule paths generally suggests an increase in risk of project delay.</li><li>• Ongoing delays to construction at 96<sup>th</sup> Street Station (C2B) has now created a risk of project delay independent of rail systems (C6) construction progress.</li><li>• Steady erosion of project budget contingency.</li></ul>

## MONTHLY UPDATE

The information contained in the body of this report is limited, in accordance with Oversight Procedure 25, to “inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations.” Where a section is included with no text, there are no new “critical project occurrences [or] issues” to report this month.

## ELPEP SUMMARY

The 4th Quarter 2014 meeting to review MTACC's compliance with ELPEP requirements was held on October 2, 2014. With respect to SAS, the current status of each of the main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** The update of the TCC Plan is still pending awaiting MTACC to finalize the ESA's Cost Control Committees procedure. Once the ESA CCC procedure has been updated, the TCC plan can be finalized.
- **Schedule Management Plan (SMP):** There is no 4<sup>th</sup> Quarter 2014 ELPEP-SMP Compliance Checklist. FTA and its PMOC will schedule a follow-up meeting to discuss checklist and ELPEP compliance.
- **Cost Management Plan (CMP):** There is no 4<sup>th</sup> Quarter 2014 ELPEP-CMP Compliance Checklist. MTACC is updating the CMP and a draft submittal to FTA is expected in December 2014.
- **Risk Mitigation Capacity Plan (RMCP) and Risk Management Plan (RMP):** There is no 4<sup>th</sup> Quarter 2014 ELPEP-CMP Compliance Checklist.

During the 4th Quarter of 2013, MTACC indicated its intent to perform an internal audit of its SMP and CMP. Modifications to these plans would be based on the audit findings. To date, no documentation of these audits or revisions to these plans has been made public.

## **1.0 GRANTEE'S CAPABILITIES AND APPROACH**

### **1.1 Technical Capacity and Capability**

#### **1.1.1 Organization, Personnel Qualifications and Experience**

Status:

No significant changes noted.

Observation:

MTACC continues to make select changes to improve the organization's ability to respond to the evolving needs and challenges of the project.

Concerns and Recommendations:

Select enhancements to the SAS project team's technical capability appear to provide satisfactory capacity to manage and resolve technical challenges.

#### **1.1.2 Grantee's Work Approach, Understanding, and Performance Ability**

##### **a) Adequacy of Project Management Plan and Project Controls**

Status:

PMOC enhanced review comments for PMP Update #10 were transmitted to FTA on November 5, 2014.

Observation:

PMOC review comments do not impact critical cost, schedule or quality processes and procedures for the project. At this stage of the project, the SAS PMP satisfactorily reflects the vast majority of the project's processes and procedures.

Concerns and Recommendations:

Final acceptance of PMP Update #10 should occur during 1<sup>st</sup> Quarter 2015.

##### **b) Grantee's Approach to FFGA and other FTA/Federal Requirements**

Status:

MTACC continues to utilize the ELPEP and its various sub-plans in management of the FFGA. A collaborative effort with FTA-RII and the MTACC to update the original ELPEP document, dated January 15, 2010, to reflect the current status of the SAS projects' scope, schedule and budget baselines is in progress.

Observation:

None.

Concerns and Recommendations:

None.

### **c) Grantee's Approach to Force Account Plan**

#### **Status:**

As of December 31, 2014, New York City Transit (NYCT) Engineering Force account expenditures are \$44,798,964 of the \$95,400,000 budget. NYCT labor expenditures are \$10,259,068 of the \$25,600,000 budget.

#### **Observation:**

The Force Account requirements are documented in the SAS Force Account Plan. The plan gives a description and a cost estimate of the NYCT services required for the design of the track and signal elements of the system and to support construction activities for each individual contract. NYCT labor expenditures are for general orders, work trains, and flagging support.

The Force Account budget appears to be adequate and has not changed in Revision 10 of the SAS Cost Estimate. In order to support the SAS project as it transitions into the testing and commissioning phase additional NYCT force account personnel will be required.

#### **Concerns and Recommendations:**

The ability of NYCT to supply force account personnel for the SAS project is of concern and has been identified in the SAS Risk Register. There are three major capital projects currently vying for NYCT force account personnel. MTACC is currently developing a mitigation strategy. It is recommended that the strategy be expedited and presented to the FTA/PMOC.

### **d) Grantee's Approach to Safety and Security Plan**

#### **Status:**

Each construction contractor continued implementation of its Safety, Security and Health Programs during the 4th Quarter 2014. First aid, recordable and lost time incidents are reported and corrective action taken to address deficiencies and negative trends.

The SAS Project Safety Team (CCM and OCIP representatives) continued its oversight of the construction contractors' Safety, Security and Health Programs by performing daily/weekly inspection of work areas, investigation of incidents, and performing quarterly safety audits.

The Monthly Project Wide Safety Meeting continues to be held the first Friday of each month. Lessons learned from incidents/accidents are being shared such that the total project can benefit. OCIP observations are being trended to focus uniform corrective action across the project.

#### **Observation:**

Section 4 of the PMP includes the required project Health and Safety Plan (HASP) that describes the responsibility and protocols to maintain a safe environment throughout the construction of the SAS Project. The Monthly Project Wide Safety Meeting is ongoing and is a good forum in providing "Lessons Learned" in order to promote safe practices across the entire project.

Section 4 of the PMP also outlines the Project Safety and Security Management Plan (SSMP) as required by 49 CFR Part 659, which includes the Safety and Security Certification Plan (SSCP) and the Systems Safety and Reliability Assurance Program Plan (SSRA).

Concerns and Recommendations:

None

**e) Grantee's Approach to Asset Management**

Status:

Asset Management – Identification and control of project assets will be coordinated among the Track, Power, Signals and Communications Systems Contractor (C6), Station Contractors (C2B, C4C and C5C) and NYCT's Department of Subways.

Observation:

The Station contractors and the Systems contractor are developing databases which will capture the identification, configuration, and installed location of the assets. NYCT will utilize the database as part of its asset management process.

Concerns and Recommendations:

None

**f) Grantee's Approach to Community Relations**

Status:

MTACC continues its efforts to provide up-to-date information and improve community access to SAS project staff and provide transparency to the project. Additional details are contained within Section 2.6 of this report.

Observation:

The MTACC's approach to community relations is set forth in detail in Section 12 of its Project Management Plan for SAS Phase 1. This plan is focused on the pre-construction activities generally involving dissemination of project-related information to the affected community and public hearings to support the NEPA process. Construction phase activities are described in Section 12.3.3 of the PMP as "appropriate outreach activities."

Conclusions and Recommendations:

MTACC's approach to Community Relations has been successful in addressing and mitigating the adverse impacts of the construction process on the adjacent community. The PMOC notes that the overall goals and approach involved in this effort have not been formally documented. The PMOC has recommended MTACC update its Project Management Plan with a more comprehensive plan for construction phase community relations. MTACC has not acted on this recommendation.

**1.1.3 Grantee's Understanding of Federal Requirements and Local Funding Process**

**a) Federal Requirements**

During the 4th Quarter 2014, MTA continued its grant management process by issuing monthly financial reports and updating the Transportation Electronic Award Management (TEAM) System to reflect disbursements from the active grants and status of pending grants.

## **b) Uniform Property Acquisition and Relocation Act of 1970**

Real estate acquisition and tenant relocation has been completed in accordance with the approved SAS Real Estate Acquisition Management Plan and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and FTA real estate requirements 5010.1C.

## **c) Local Funding Agreements**

Funds totaling \$2.964 billion were allocated in MTA's 2000-2004 and 2005-2009 Capital Plans. The balance of \$1.487 billion to complete SAS Phase 1 was budgeted in the 2010-2014 Capital Plan. On April 28, 2010, the MTA Board approved the 2010-2014 Capital Plan. The Capital Program Review Board (CPRB) approved the plan on June 1, 2010. The MTA Board and CPRB approved amendments (latest July 2013) to the 2010-2014 Capital Plan and retained the \$1.487 billion to complete SAS Phase 1.

### **1.2 Project Controls**

#### **1.2.1 Scope Definition and Control**

##### Status:

The scope of the SAS Project – Phase 1 is formally defined by the FEIS, ROD and the FFGA. Using these documents as guides, the scope was further detailed in ten construction packages (contracts). During the 4th Quarter 2014, there has been no material change in the scope of the SAS Project.

##### Observation:

The PMOC continues to monitor the scope of work to ensure compliance with the FEIS, ROD, FFGA and other reference documents and plans. Several design changes and construction operation scenarios have required formal review and approval by the FTA.

The SAS Project Team continues to effectively manage the project scope to maintain compliance with governing documentation and provide a cost-effective final product.

##### Concerns and Recommendations:

None

#### **1.2.2 Quality**

##### Status:

During December 2014, the Second Avenue Subway Quality Management team continued holding Quality Meetings and Quarterly Quality Oversight of the Contractor with CCM, MTACC, and PMOC participation. They participated in the job progress meetings, monitored quality matters in the field for each construction contract, reviewed and provided comments for Quality Work Plans, and participated in Preparatory Phase Sessions for numerous construction processes.

##### Observations:

**Project Quality Manual:** Revision 3 of the SAS Project Quality Manual (PQM) was issued in April 2009. The SAS Quality Manager prepared a draft of Revision 4 to reflect the new



MTACC QOQ checklist requirements and other changes that have occurred since Revision 3 was issued. The PMOC received a draft of Revision 4 to review. Comments were returned to the SAS Project Quality Manager in October 2014. The SAS Quality Manager indicated that Revision 4 will be issued in March 2015.

**Inspection Daily Reports:** At the end of December 2014, the C2B and C4C contractors are both three weeks behind entering their Daily Inspection Reports into the Contractor Management System (CMS). Last month the C5C contractor was three weeks behind and is now current.

**Nonconformance Reports (NCRs):** Most SAS contractors are now adhering to the established Nonconformance Reporting System. They are generating NCRs for concrete that is out of specification every week per direction of the SAS Program Executive. The exception is the C4C Contractor who is two months behind.

**C4C Contractor:** The C4C contractor hired a new Quality Manager in November 2014. C4C Contractor Management stated that entry of Daily Inspection Reports and generation of NCRs in the required time frame would improve. This did not happen. At the end of December 2014, the PMOC recommended that a meeting be convened with SAS and C4C Contractor Project and Quality Managers. All parties agreed and a meeting is scheduled for January 7, 2015.

**C6 Contractor:** The contractor submitted Waiver #23 to extend the placement time from 90 minutes to 120 minutes. The Designer of Record will not approve this waiver. The Designer of Record has approved an extension of placement time from 90 minutes to 120 minutes on other SAS contracts and the PMOC recommends that SAS Management resolve this issue.

<b>Contract Package C2B</b>	
<b>Status:</b>	Through December 31, 2014, a total of 72 NCRs have been issued. 35 have been closed and 37 NCRs are still open. In December 2014, five new NCRs were written and none were closed. One of the five NCRs that were written in December was for concrete that was out of specification the previous week.
<b>Observation:</b>	Of the 37 open NCRs, 28 are for concrete that was out of specification. A concrete analysis is expected to be prepared by the end of the first quarter of 2015. Entry of Inspection Daily Reports into CMS is three weeks behind.
<b>Concerns and Recommendations:</b>	The PMOC recommends that the contractor establish a schedule to close the nine non-concrete NCRs and expend the necessary effort to enter Daily Reports within one week.
<b>Contract Package C3</b>	
<b>Status:</b>	Through December 31, 2014, a total of 94 NCRs have been issued. 78 have been closed and 16 NCRs are still open. In December 2014, two new NCR were written and one was closed.
<b>Observation:</b>	Six of the open NCRs were written by the contractor on one of their subcontractors. All of these NCRs have been open 3 to 12 months. Entry of Inspection Daily Reports into CMS is current.

<b>Concerns and Recommendations:</b>	The PMOC is still concerned that all of the NCRs against that one subcontractor have been opened for more than three months even though the SAS C3 Quality Manager had stated that he and the C3 Contractor's Quality Manager would try to close most of them in October and then again in November and December. The PMOC recommends that a meeting be convened with the subcontractor and a schedule be developed to close these NCRs.
<b>Contract Package C4C</b>	
<b>Status:</b>	Through December 31, 2014, a total of 79 NCRs have been issued. Eight have been closed and 71 NCRs are still open. In December 2014, six NCRs were written and none were closed.
<b>Observation:</b>	66 of the 71 open NCRs are for concrete that was out of specification. All six of the NCRs generated in December were for concrete that failed in September 2014. The contractor has performed two concrete analyses, one for each of its suppliers. The concrete analyses are awaiting approval from the Designer of Record. Submittal of Inspection Daily Reports is three weeks behind.
<b>Concerns and Recommendations:</b>	The PMOC is concerned that the contractor is still three months behind in generating NCRs and is three weeks behind in entering Inspection Daily Reports into CMS. At the end of December 2014, the PMOC suggested that a meeting be convened with SAS and C4C Contractor Project and Quality Managers. All parties agreed and a meeting is scheduled for January 7, 2015.
<b>Contract Package C5B</b>	
<b>Status:</b>	Through December 31, 2014, a total of 91 NCRs have been issued. Of the 91 that have been issued, 88 have been closed and 3 NCRs are still open. In December 2014, no new NCRs were written and one was closed.
<b>Observation:</b>	Entry of Inspection Daily Reports into CMS was two months behind schedule. Entry is now through December 14, 2014 which is acceptable since no work has been done since then. Only punch list work is now being done.
<b>Concerns and Recommendations:</b>	The PMOC has no concerns.
<b>Contract Package C5C</b>	
<b>Status:</b>	Through December 31, 2014, 48 NCRs have been issued. . Of the 48 that have been issued, 3 have been closed and 45 NCRs are still open. In December 2014, 6 new NCRs were written and none were closed.
<b>Observation:</b>	Four of the six NCRs that were written in December were for concrete that was out of specification the previous week. This complies with the direction of the SAS Program Executive. Submittal of Inspection Daily

	Reports were three weeks behind last month and are now current.
<b>Concerns and Recommendations:</b>	The PMOC was concerned that nonconformance reports for concrete that was out of specification in May, June, and July 2014 were not written until August 2014. The PMOC recommended that the contractor generate NCRs for out of specification concrete each week as directed by the SAS Program Executive. This recommendation has been followed and preparation of NCRs for out of specification concrete is now up to date. The PMOC was concerned that ten NCRs entered in the September NCR log were listed "have not been issued". The PMOC recommended that when a nonconformance occurs, the NCR be documented and issued immediately. The contractor has now issued these NCRs and is preparing NCRs when the nonconformance occurs. The PMOC is concerned that the 15 non-concrete NCRs are still open, 12 of them are three months or older. The PMOC recommends that the contractor establish a schedule to close the 15 non-concrete NCRs.
<b>Contract Package C6</b>	
<b>Status:</b>	Through December 31, 2014, a total of 23 NCRs have been issued. Seven have been closed and 16 NCRs are still open. In December 2014, no new NCRs were written and one was closed. Entry of Inspection Daily Reports into CMS is current.
<b>Observation:</b>	The contractor submitted Waiver #23 to extend the placement time from 90 minutes to 120 minutes. The Designer of Record will not approve this waiver.
<b>Concerns and Recommendations:</b>	The PMOC is concerned that this waiver will not be approved and recommends that SAS Management resolve this issue.

#### Concerns and Recommendations:

Refer to previous section.

### **1.2.3 Project Schedule**

#### Status:

A summary of project schedule information is as follows:

	<b>FFGA</b>	<b>Forecast Completion</b>	
		<b>Grantee</b>	<b>PMOC</b>
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	December 31, 2013	October 5, 2016	October 2017
Revenue Service	September 30, 2014	December 30, 2016	February 2018

MTACC established December 30, 2016 as its target Revenue Service Date (RSD) and bases its schedule and schedule contingency reporting on this target. Based on risk assessment,

FTA/ELPEP identified February 28, 2018 as its target RSD with the condition that a minimum 240 CD of contingency be maintained against this target through September 30, 2016. To date, the MTACC criteria has been the more stringent and has therefore been the basis of routine schedule and schedule contingency reporting.

Observation/Concerns and Recommendations:

None

#### 1.2.4 Project Budget and Cost

Status:

Total project cost in the approved FFGA (\$4,866,614,000) and Current Working Budget (CWB) which is based on Revision 9 to the Project Cost Estimate, are allocated into the Standard Cost Categories (SCC) as shown below in Table 1-1.

**Table 1-1: Standard Cost Categories**

<b>Std. Cost Category (SCC)</b>	<b>Description</b>	<b>FFGA</b>	<b>MTA's Current Working Budget (Sept. 30,, 2014)</b>
10	Guideway & Track Elements	\$612,404,000	\$622,478,000
20	Stations, Stops, Terminals, Intermodal	\$1,092,836,000	\$1,277,642,000
30	Support Facilities	0	\$0
40	Site Work & Special Conditions	\$276,229,000	\$524,561,000
50	Systems	\$322,707,000	\$250,134,000
60	ROW, Land, Existing Improvements	\$240,960,000	\$281,500,000*
70	Vehicles	\$152,999,000	0**
80	Professional Services	\$796,311,000	\$1,185,742,929
90	Unallocated Contingency	\$555,554,000	\$308,942,010
Subtotal		\$4,050,000,000	\$4,451,000,000
Financing Cost		\$816,614,000	\$816,614,000
<b>Total Project</b>		<b>\$4,866,614,000</b>	<b>\$5,267,614,000</b>

Table 1-2 lists the associated grants in the Transportation Electronic Award Management (TEAM) System with respective appropriated, obligated, and disbursed amounts as of June 30, 2014. During the 4th Quarter 2014, grant amendment NY-03-0408-09 in the amount of \$186,566,000 was awarded by the FTA and executed by the MTA. Total Federal Funds obligated as of December 30, 2014 is \$1,250,508,200.

**Table 1-2: Appropriated and Obligated Funds**

<b>Grant Number</b>	<b>Amount (\$)</b>	<b>Obligated (\$)</b>	<b>Disbursement (\$) thru December 31, 2014</b>
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$167,810,300
NY-03-0408-06	\$274,920,030	\$274,920,030	\$274,920,030
NY-03-0408-07	\$237,849,000	\$237,849,000	\$237,849,000
NY-03-0408-08	\$197,182,000	\$197,182,000	\$67,674,951
NY-03-0408-09***	\$186,566,000	\$186,566,000	0
NY-03-0408-10**	\$123,384,621	0	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$78,870,000
NY-95-X009-00	\$25,633,000	\$25,633,000	\$25,633,000
NY-95-X015-00	\$45,800,000	\$45,800,000	\$45,800,000
<b>Total</b>	<b>\$1,373,892,821.00</b>	<b>\$1,250,508,200.00</b>	<b>\$934,435,151.00</b>



\* Denotes American Recovery and Reinvestment Act (ARRA) funds. \*\*Appropriated. \*\*\*Disbursement from this grant is restricted until NYMTA and FTA issue an amendment to the FFGA for Phase 1 of the SAS Project.

A total of \$3,241,123,688 has been expended on the project through December 31, 2014, of which \$482,329,692 has been spent on design and \$2,034,274,526 on construction (MTACC's December 2014 Cost and Schedule Summary Input).

#### Observation:

Local funds totaling \$2,306,688,537 have been spent as of December 31, 2014.

#### Concerns and Recommendations:

None

### **1.2.5 Project Risk Monitoring and Mitigation**

#### Status:

The SAS Project Team employs a variety of risk management techniques to identify, quantify and manage risks that may impact the project cost or schedule. A full-time Risk Manager supervises implementation of specific risk monitoring and mitigation techniques as prescribed by Section 6.0 of the PMP and the SAS Risk Management Plan. Monthly reports documenting project risk management activities are published.

Observation:

The SAS risk management process has been instrumental in the development of strategies and techniques to manage a variety of retained risks including inter-contract interfaces, safety and security certification and submittal processing, among others.

The SAS Project Management Team has focused its risk management effort on those risk issues with potential to delay the project beyond its currently scheduled RSD.

Concerns and Recommendations:

None.

### **1.2.6 Project Safety and Security**

Status:

Safety – The OSHA Lost Time Injury Rate and Recordable Injury Rate from the start of construction until November 30, 2014 are 1.83 and 5.07, respectively. Both rates are above the Bureau of Labor Statistics (BLS) national Lost Time Injury Rate of 1.7 and the Recordable Injury Rate of 3.2. The cumulative construction time worked since the project inception is 9,745,362 hours. Total lost time injuries since project inception is 89 and other recordable injuries are 158. The total number of recordable injuries is 247 (sum of the lost time injuries and the other recordable injuries).

Security – Implementation of the Contractor's Site Security Plans are ongoing.

Observation:

The high rate of recordable incidents is being driven by five contractors and the lost time rate is being driven by four contractors. Tool box meetings, increased training and increased monitoring of construction activities are being performed in order to highlight safety awareness.

Concerns and Recommendations:

None

### **1.3 FTA Compliance**

Status:

The PMOC's enhanced comments and explanations resulting from its review of MTACC's PMP Update #10 were transmitted to FTA on November 5, 2014.

Based on its internal compliance reviews, MTACC has generally complied with ELPEP and its associated sub-plans throughout the 4th Quarter 2014. Any PMOC issues are specifically discussed in Section 4.4 (Compliance With Schedule Management Plan), Section 5.4 (Project Cost and Contingency) and Section 6.3 (Risk Management Status) of this report.

Observation:

MTACC has previously discussed updating major sub-plans to the PMP, specifically the Schedule Management Plan, Project Cost and Contingency Management Plan and Risk Management Plan, based upon the results of its internal audit.

Concerns and Recommendations:

The PMOC recommends that MTACC develop a schedule for updating these sub-plans.

### **1.3.1 FTA Milestones Achieved**

The last key FTA milestone achieved was entry into the Full Funding Grant Agreement on November 19, 2007.

The ELPEP Hold Point “90% Project Bid/50% Construction Complete” was achieved in March 2013.

The next ELPEP Hold Point “100% Project Bid/85% Construction Complete” is currently forecast for the 2nd Quarter 2015.

### **1.3.2 Readiness for Revenue Operations**

Status:

No change this period.

## **2.0 PROJECT SCOPE**

### **2.1 Status & Quality: Design/Procurement/Construction**

#### **2.1.1 Engineering and Design**

##### Status:

The design phase of SAS Phase 1 was completed in late November 2010. Engineering activities are currently focused on supporting the construction activities.

##### Observation:

The primary role of the design team currently includes:

- Construction Administration, generally including shop drawing review, responding to RFIs, providing design clarifications where needed and technical support during construction package bidding.
- Detailing and documentation of design changes as may be required.
- Supporting AWO evaluation and resolution.

##### Concerns and Recommendations:

Incorporation of user-requested and third-party agency design changes during the construction phase continues as a significant risk to the overall project schedule. The SAS project staff should continue to minimize and prioritize the design changes to ensure that only necessary changes are incorporated and that their impact to construction cost and schedule is limited.

#### **2.1.2 Procurement**

##### Status:

Procurement of all design and construction services required for the execution of SAS, Phase 1 has been completed.

##### Observations:

None

##### Concerns and Recommendations:

None

#### **2.1.3 Construction**

##### Status:

All 10 construction contracts for SAS Phase 1 Project have been awarded with two contracts being closed. Accomplishments during this reporting period on the eight open contracts are summarized as follows:

##### Observations:

##### Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation

- Substantial Completion was achieved on November 5, 2013. Punchlist and contract closeout activities are ongoing.



#### Contract C-26010 (C2B) 96th Street Station Concrete, MEP/Finishes, Utilities, and Restoration

- Station Area (Milestones 6, 7, and 8)
  - Installation of HVAC ducts, masonry walls, and electrical conduit is ongoing
  - Two escalators delivered and installed in the main station
- Entrance #1
  - Upper and lower staircase installed
  - Roof slab installed
- Entrance #2
  - Concrete placement for the escalator ramp and street slab completed
  - Placement of case in place walls ongoing
- Entrance #3
  - Masonry wall installation ongoing
- Ancillary #1
  - The Contractor poured the first floor walls. Began formwork and rebar installation for the 2<sup>nd</sup> floor slab.
- Ancillary #2
  - The Contractor installed the basement walls and cap beam. Waterproofing installation was completed.
- Street Level
  - Installation of permanent utilities on the Eastside of 2<sup>nd</sup> Avenue between 96<sup>th</sup> and 99th Street completed.
  - Installation of water main north of 95<sup>th</sup> Street and tie-in of 30” gas main at 94<sup>th</sup> Street completed.
  - Between 92<sup>nd</sup> and 93<sup>rd</sup> Streets installation of permanent utilities ongoing.

#### Contract C-26006 – (C3) 63rd Street Station Upgrade

- Surveying of the Deformation Monitoring Points (DMPs) is ongoing and will continue throughout the project.
- Area 5
  - Area 5 is the focus of the work effort along with progress at Entrance #1.
  - Continued setting traction elevator equipment in the Elevator Machine Rooms and the Elevator Shafts. Moving platforms have been installed.
  - Continued running power connections to the elevators.
  - Continued installation of power & communication conduits throughout.
  - Continued erecting CMU walls on the 6th Mezzanine.
- Entrance #1
  - Completed micro-pile load testing and resumed excavation down to the station penetration area.
- Platforms

- Continuing installation of platform pavers at both the G3 & G4 platforms.
- Continued installation of porcelain platform wall tiles on the inactive side of the G4 platform and continued installation of track wall tiles on the inactive G3 & G4 platform levels.
- Continued installation of ceiling panels and column cladding at the
- G3 (Upper) platform.
- Contract C6 Coordination
  - The C6 contractor has completed splicing new track to the existing track at the G3 (Upper) platform.
  - Room Turnover and cable pulling is ongoing.
  - C6 workers now comprise approximately 30% of the site workforce.

#### Contract C-26007 (C4B) 72nd Street Station Mining and Lining

- Substantial Completion was achieved on January 14, 2014. Punchlist and contract closeout activities are ongoing.

#### Contract 26011 (C4C) 72nd St Station Finishes, MEP Systems Ancillary Buildings & Entrances

- Ancillary 2/ Entrance 2
  - Work has reached street level with the placement of basement walls at Ancillary #2. Removal of the street decking began. Permanent concrete stair construction began from the mezzanine to basement level.
  - Began removing the temporary stair so that work can advance at Entrance #2.
- Ancillary #1
  - Continued placing concrete walls and slabs up to street level.
- Mezzanine
  - Continued work on the Upper Mezzanine.
  - Continuing with concrete curbs and CMU walls in the Public Mezzanine.
  - Chillers have been delivered to the site.
  - Continued painting block walls, conduit & wiring and installing light fixtures in the South Mezzanine.
- Entrance #3
  - Continued placement of walls to the upper street level.
- Entrance #1
  - Rock excavation and mining continued in the garage. Continued placing Support of Excavation (SOE) walls. Continuing with the mud slab on the Cavern incline.
- Platform Level

- The platform deck was completed. Continued installation of acoustical material under the outer platform deck and dampers at the track walls.
- Continued with CMU walls erection.

Contract C-26008 (C5B): 86th Street Station Cavern & Heavy Civil

- The work at Entrance #2 was completed and the site has been totally turned over to the C5C contractor. Punch list work is ongoing and contractor demobilization continues.

Contract C-26012 (5C) – 86th St. Station Finishes, MEP Systems, Ancillary Buildings & Entrances

- Tunnels (east & west)
  - Construction of both the low & high benches/embedded ducts in the East & West Tunnels is complete. NYCT inspections are underway.
- Ancillary #1
  - Continuing with the erection of walls and slabs.
- Ancillary #2
  - Continued with waterproofing to street level. Continued with floor slabs and walls erection.
- Mezzanine
  - The Main Mezzanine slab placement is complete. Continued with placement of the North Upper Mezzanine slab.
  - Continued with CMU wall erection in the South Mezzanine & 1<sup>st</sup> Upper Mezzanine rooms.
- Platform Level
  - The architectural precast panel installation at the Platform Level is substantially complete.
  - Continued forming and placing platform deck and began platform CMU walls.

Contract C-26009 (C6): Systems – Track, Power, Signals and Communications

Coordination:

- Coordination
  - Review of Station contractors' shop drawings for work coordination and to avoid conflicts during field installation is ongoing
- Track
  - Completed concrete pour on the northbound Track S2 between 86<sup>th</sup> and 96<sup>th</sup> Street Station
  - Concrete placement for southbound Track S1 between 86<sup>th</sup> and 96<sup>th</sup> Street is ongoing
  - Rail required for special track work at 96<sup>th</sup> Street was delivered

- **Communication**
  - Fiber optic cable testing for 63<sup>rd</sup> Street Milestone 5A/5B Wide Area Network (WAN) and Local Area Network (LAN) is ongoing
  - Cables required for inter-station communication room connectivity between 63<sup>rd</sup> and 72<sup>nd</sup> Streets have been installed
  - Emergency Alarm (EA) and sound power phones end devices with associated conduit between 63<sup>rd</sup> and 72<sup>nd</sup> Street station tunnels have been installed
- **Signal (63<sup>rd</sup> Street Station)**
  - Installation of wayside signal conduits and wayside signal equipment in the 63<sup>rd</sup> Street Station and north of 96<sup>th</sup> Street Station is ongoing
  - Cable tray installation und the platform at 63<sup>rd</sup> Street Station is ongoing
  - Installation of line and local cables, conduits and wayside signal equipment is ongoing
  - Installation of racks and wall equipment in 147 Central Instrument Room at 63<sup>rd</sup> Street Station
  - Continued installation of rack steel in the relay room at the 96<sup>th</sup> Street Station

#### Concerns and Recommendations:

SAS is continues to focus on completing the construction of various station electrical spaces and turning them over to the Systems Contractor. The Project Team' ability to maintain schedule, coordinate turnover activities and provide the Systems Contract access to the various areas in a timely fashion is a key concern.

#### **2.1.4 Force Account (FA) Contracts**

##### Status:

As of December 31, 2014, New York City Transit (NYCT) Engineering Force account expenditures are \$44,798,964 of the \$95,400,000 budget. NYCT labor expenditures are \$10,259,068 of the \$25,600,000 budget.

The Force Account budget appears to be adequate and has not changed in Revision 10 of the SAS Cost Estimate. In order to support the SAS project as it transition into the testing and commissioning phase additional NYCT force account personnel will be required.

##### Concerns and Recommendations:

The ability of NYCT to supply force account personnel for the SAS project is of concern and has been identified in the SAS Risk Register. There are three major capital projects currently vying for NYCT force account personnel. MTACC is currently developing a mitigation strategy. It is recommended that the strategy be expedited and presented to the FTA/PMOC.

### **2.1.5 Operational Readiness**

#### Status:

NYCT has developed a Concept of Operations Plan for the SAS Project. NYCT will validate SAS Phase 1 readiness during Pre-Revenue Service Operations Training and Testing scheduled from October 25, 2016 to December 15, 2016.

#### Observation:

Customer Service Centers are being deleted at various stations. Completion of the Safety and Security Certification Program is a major activity prior to Revenue Service. Coordination of the Safety and Certification Program has greatly improved during this reporting period. Technical Work Group is effectively working with the station contractors to capture the body of evidence need for the certifiable items for each element.

#### Concerns and Recommendation:

The SAS Project Team needs to expedite the update of the Concept of Operations Plan to reflect how the stations will function with the deletion of the Customer Service Centers.

### **2.2 Third-Party Agreement**

#### Status:

During the 4th Quarter 2014, the SAS Project Team continued its Interagency Coordination as defined in Section 12 of the SAS PMP. Switchgear design issues have been resolved with Con Ed which was affecting the available of permanent power for the stations.

Through December 31, 2014, \$52,387,237 of the \$91,586,000 Third-Party reimbursement budget (Rev. 10 Current Working Budget) has been spent.

#### Observation:

MTACC/NYCT has entered into cooperative and force account agreements as needed with other agencies and utility providers to perform construction work for the Project. The Third-Party Agreement budget appears to be adequate to support the remaining construction.

#### Concerns and Recommendation:

None

### **2.3 Contract Packages and Delivery Methods**

Phase 1 of the Second Avenue Subway is being delivered via ten separate construction packages. Each construction contract package utilizes the design-bid-build process based upon a fixed price construction contract. Competitive procurements are based on NYCT standard procedures. There was no change to the procurement or delivery method for any of the construction packages during the 4th Quarter of 2014.

### **2.4 Vehicles**

No change. No additional vehicles will be procured for the SAS Phase 1 Project.

## **2.5 Property Acquisition and Real Estate**

### Status:

Real estate acquisition and tenant relocation was performed in accordance with the approved SAS Real Estate Acquisition Management Plan and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and FTA real estate requirements 5010.1C.

All real estate acquisitions required for the construction of SAS Phase 1 have been completed.

### Observation:

None

### Conclusions and Recommendations:

None

## **2.6 Community Relations**

### Status:

During the 4th Quarter 2014, Community Outreach activities included the following:

- Production of a monthly newsletter updating residents and business owners on construction progress, major milestones achieved, and providing a forward looking schedule so the community will know what to expect as the project progresses. These newsletters are available in electronic and hard copy formats.
- Continued meeting with area stakeholders at quarterly Construction Advisory Committee (CAC) meetings. Station area issues and project wide updates are discussed. Follow up reports are provided for stakeholders to share with their tenants/members.
- A lighting survey along the entire Second Avenue Subway corridor was conducted to address any community lighting concerns and identify any new lighting deficiencies.
- An interagency meeting to address concerns with members of the NY Police Department, NY Fire Department, NY Department of Sanitation, Department of Transportation, Business Integrity Commission, Con Edison, and Department of Health.
- In response to a Safe Streets report issued by Councilman Ben Kallos' office, any SAS intersection mentioned in that report was investigated and corrective action implemented if needed.
- Conducted community tours of the underground work area.
- Conducted a site visit and tour for 15 members of the Urban Land Institute.
- Participated in Council Member Ben Kallos' *Town Hall* meeting on October 29<sup>th</sup>, serving as a panelist to deliver a construction progress update and field questions on the project.
- To address community concerns over input in the final "vision" for Second Avenue once the SAS project is completed, a "Streetscape Visioning" workshop was held, with 40 "stakeholders" of the community. This meeting discussed items such as lighting, street trees, benches, bike racks, tree guards, and sidewalk pigment

### Observation:

MTACC expends a significant amount of effort in maintaining community relations, which has generally been effective in facilitating the resolution of adverse construction impacts and communicating with community stakeholder groups.

Conclusions and Recommendations:

None

### **3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS**

#### **3.1 Project Management Plan**

Status:

The PMOC's enhanced comments and explanations resulting from its review of MTACC's PMP Update #10 were transmitted to FTA on November 5, 2014.

Observation:

PMOC comments associated with its review of MTACC's PMP Update #10 do not materially impact any activities associated with management of project scope, schedule or cost. Evaluation of the need for a meeting to review these comments with MTACC is underway.

Concerns and Recommendations:

None.

#### **3.2 PMP Sub Plans**

Status:

FTA internal audits may result in revisions to PMP sub-plans.

Observations:

SAS Sub-Plan documents consist of: Project Quality Manual, Risk Management Plan, Design Criteria Manual, Cost Management Plan, Schedule Management Plan, Project Design Quality Manual, Real Estate Acquisition Plan, Real Estate Acquisition Management Plan, Contingency Management Plan, Safety and Security Management Plan and Quality Implementation Procedures.

Concerns and Recommendations:

Any non-compliance issues identified by the PMOC are specifically discussed in Section 4.4 (Schedule), Section 5.4 (Cost Contingency) and Section 6.3 (Risk Management Status) of this report.

#### **3.3 Project Procedures**

Status:

The MTACC has issued all the procedures required to effectively manage the SAS Phase 1 project.

Observations:

SAS Project team members have been trained in the various procedures issued by the MTACC.

Concerns and Recommendations:

None



## 4.0 PROJECT SCHEDULE STATUS

### 4.1 Integrated Project Schedule

#### Status:

The Integrated Project Schedule (IPS) is a management level schedule that integrates all ten construction packages along with design, procurement, startup and other support activities. IPS Update #101 was received on December 31, 2014 and is based on a Data Date of December 1, 2014. This update contained the “.XER” schedule file for the IPS and a narrative report. The IPS forecasts the completion of all construction and NYCT Pre-Revenue Training & Testing activities by October 5, 2016. The available schedule contingency of 87 calendar days (CD) or 62 work days (WD) is then added, resulting in a forecast completion date of December 30, 2017. Table 4-1 presents a summary of schedule dates based on IPS Update #98.

**Table 4-1: Summary of Schedule Dates**

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	December 31, 2013	October 5, 2016	October 2017
Revenue Service	September 30, 2014	December 30, 2016	February 2018

Table 4-2 provides a tabulation of schedule performance and current completion status for each construction contract.

**Table 4-2: Summary Schedule Performance by Construction Package**

Pkg.	Award Date	Contract S/C	% Complete			Upd. #98 Forecast S/C	Upd. #101 Forecast S/C	Schedule Duration	Quarterly Change
			Contract Time %	Payment %	Δ Time v. Money				
C1	3/20/07	3/20/12	100%	100.0%	0.0%	3/20/12A	3/20/12A	609 CD	0 CD
C2A	5/28/09	4/17/13	114%	99.8%	14.4%	11/5/13A	11/5/13A	202 CD	0 CD
C2B	6/22/12	12/22/15	70%	47.2%	22.6%	8/23/16	10/4/16	287 CD	42 CD
C3	1/13/11	5/13/14	117%	81.6%	35.0%	10/1/15	12/21/15	587 CD	81 CD
C4B	10/1/10	1/14/14	127%	99.9%	26.8%	1/14/14A	1/14/14A	42 CD	0 CD
C4C	2/14/13	6/17/16	54%	26.5%	27.2%	6/17/16	9/16/16	91 CD	91 CD
C5A	7/9/09	11/16/11	100%	100.0%	0.0%	11/16/11A	11/16/11A	313 CD	0 CD
C5B	8/4/11	9/4/14	108%	97.7%	10.1%	1/15/15	12/16/14	103 CD	-30 CD
C5C	6/12/13	11/13/15	61%	11.9%	48.8%	5/31/16	7/27/16	257 CD	57 CD

Pkg.	Award Date	Contract S/C	% Complete			Upd. #98 Forecast S/C	Upd. #101 Forecast S/C	Schedule Duration	Quarterly Change
			Contract Time %	Payment %	Δ Time v. Money				
C6	1/18/12	8/18/16	63%	36.1%	26.5%	8/18/16	8/22/16	4CD	4 CD
<p>1. Quarterly Change reflects schedule gain/loss over most recent calendar quarter. Negative sign denotes time gain and positive sign denotes time loss.</p> <p>2. Schedule Duration reflects schedule gain/loss based on current contract duration. Negative sign denotes time increase and positive sign denotes time decrease.</p>									

#### Observations and Analysis:

Table 4-2 compares the percentage of contract time expended versus the percent complete based upon progress payments. It also calculates total time overrun/underrun and the quarterly change in forecast substantial completion date. These metrics result in the following observations:

- Contracts C1, C2A, C4B and C5A have all achieved Substantial Completion. Schedule dates and variances indicated for these contracts are “final”.
- The “Time v. Money” variance for the C3 Contract is reflective of the forecast 587 CD delay in Substantial Completion.
- The “Time v. Money” variances for the C5C is significantly more than expected and suggests this contract may experience substantial delay.
- The forecast Substantial Completion date for Contract C4C includes all work at Entrance #1 and includes the implementation of the schedule acceleration initiative for work in that area.
- The forecast Substantial Completion date for Contract C5B includes all work at Entrance #2 and includes the implementation of the schedule acceleration initiative for work in that area.

**Milestone Summary:** A tabulation of current schedule performance against contractual milestones is presented in the following table.

**Table 4-3: Schedule Milestone Performance**

Pkg	MS	Description	Dates				Variance		Sch.
			Contract	Adjusted	UD #100	UD #101	Contract	Month	Float 101
C2B	MS #2	Shared site access @ 93rd Street shaft	03/22/14	03/22/14	11/01/14	12/01/14	-254	30	479
C2B	MS #4	Shared access in East & West track-ways thru Sta (1238+50 ->1225+25); 97th -> 99th St Tunnel in 99th to 105th St Tunnels	09/21/14	09/21/14	01/23/15	02/06/15	-138	14	293

Pkg	MS	Description	Dates				Variance		Sch.
			Contract	Adjusted	UD #100	UD #101	Contract	Month	Float 101
C2B	MS #6A	Full access to Comms Rooms & Closets	08/21/14	08/21/14	01/20/15	01/27/15	-159	7	22
C2B	MS #6B	Full access to Comms Rooms & Closets		08/21/14	03/16/15	01/27/15	-159	-48	34
C2B	MS #6C	Full access to Comms Rooms & Closets		08/21/14	03/16/15	01/27/15	-159	-48	34
C2B	MS #7A	Full access to Signals Rooms	08/21/14	08/21/14	01/29/15	01/27/15	-159	-2	22
C2B	MS #7B	Full access to Signals Rooms	08/21/14	08/21/14	12/15/14	12/16/14	-117	1	472
C2B	MS #7C	Full access to Signals Rooms	08/21/14	08/21/14	12/15/14	12/16/14	-117	1	472
C2B	MS #8A	Full access to Traction Power Rooms:	08/21/14	08/21/14	02/04/15	02/04/15	-167	0	16
C2B	MS #8B	Full access to Traction Power Rooms:	08/21/14	08/21/14	12/15/14	12/16/14	-117	1	472
C2B	MS #8C	Full access to Traction Power Rooms:	08/21/14	08/21/14	12/15/14	12/16/14	-117	1	472
C2B	MS #9	Full access to Station Service Centers	11/21/14	11/21/14	08/06/15	08/06/15	-258	0	164
C2B	MS #10	Complete all remaining Comms, Signal , & Traction Power work	09/21/14	09/21/14	04/17/15	04/21/15	-212	4	188
C2B	SS	Substantial Completion	12/21/15	12/21/15	10/04/16	10/04/16	-288	0	1
C3	#3d	Mezz 6 & Platform Level Conduit & Station Fare Array		04/15/13	02/20/15	02/20/15	-676	0	244
C3	#4c	Compl Lwr/Uppr Platforms & Signal Rms		10/14/13	05/14/15	04/17/15	-550	-27	266
C3	SS	Substantial Completion	05/13/14	05/13/14	12/04/15	12/21/15	-587	17	208
C4C	MS #3	Shared access thru 72nd Street Station 1172+40 - >1163+00	11/17/14	11/27/14	12/22/14	01/05/15	-39	14	99
C4C	MS #7	Turnover of Communications Rooms to Systems Contractor	8/15/14	8/28/14	12/05/14	12/19/14	-113	14	175
C4C	MS#7A	Complete Work in all Comm Rooms			04/01/16	04/01/16	-42461	0	130
C4C	MS #8	Turnover of Signal Rooms South of station to C6	7/4/14	7/15/14	11/26/14	12/05/14	-143	9	45
C4C	MS #9	Complete all Signal Roms except M8	9/15/14	9/29/14	12/12/14	12/12/14	-74	0	75
C4C	MS #10	Complete north power rooms	10/15/14	2/25/15	12/12/14	01/30/15	26	49	125
C4C	MS #11	Complete south power rooms	11/17/14	03/24/15	11/26/14	12/05/14	109	9	161

Pkg	MS	Description	Dates				Variance		Sch.
			Contract	Adjusted	UD #100	UD #101	Contract	Month	Float 101
C4C	MS #12	Full access @ Station Service Center(s)	08/15/14	08/28/14	<b>01/08/15</b>	<b>02/23/15</b>	-179	46	247
C4C	MS #13	Full access @ Lubrication Room(s)	08/15/14	08/28/14	<b>11/21/14</b>	<b>12/05/14</b>	-99	14	177
C4C	MS #14	Complete all remaining Comm, Signal & Traction Power Rooms	08/15/14	08/28/14	<b>12/12/14</b>	<b>12/12/14</b>	-106	0	75
C4C	SS	<i>Substantial Completion w/o Ent. #1</i>		11/13/15	<b>09/08/16</b>	<b>09/16/16</b>	-308	8	20
C4C	SS	<i>Substantial Completion - Ent. #1</i>		10/07/16	<b>10/07/16</b>	<b>09/16/16</b>	21	-21	13
C5B	SS	<i>Substantial Compl/All Work incl. Ent. #2</i>		12/26/14	<b>12/22/14</b>	<b>12/16/14</b>	10	-6	101
C5C	MS #2	Limited Access; Sta. 1209+00->1198+00		01/22/15	<b>01/22/15</b>	<b>03/11/15</b>	-48	48	171
C5C	MS #3	Shared Access; Sta. 1209+00->1198+00		05/22/15	<b>04/29/15</b>	<b>05/13/15</b>	9	14	125
C5C	MS #4	Shared Access; Sta. 1198+00->1172+00		10/23/14	<b>01/16/15</b>	<b>01/13/15</b>	-82	-3	62
C5C	MS #5	Turnover of Comm. Rooms		09/23/14	<b>12/22/14</b>	<b>01/06/15</b>	-105	15	47
C5C	MS #6	Turnover of Comm. Rooms		03/24/15	<b>05/26/15</b>	<b>06/26/15</b>	-94	31	95
C5C	MS #6A	Room-to-Room Conduit Ready		03/24/15	<b>06/29/15</b>	<b>07/29/15</b>	-127	30	310
C5C	MS #7	Turnover of Signal Rooms		02/25/15	<b>03/27/15</b>	<b>03/27/15</b>	-30	0	12
C5C	MS #7a	Room-to-Room Conduit Ready				<b>04/27/15</b>			377
C5C	MS #8	Turnover of Signal Rooms		02/25/15	<b>03/27/15</b>	<b>03/27/15</b>	-30	0	12
C5C	MS #8A	Room-to-Room Conduit Ready		02/25/15	<b>04/27/15</b>	<b>04/27/15</b>	-61	0	377
C5C	MS #9	Turnover Traction Power Rooms		02/26/15	<b>03/03/15</b>	<b>04/06/15</b>	-39	34	26
C5C	MS #9A	Room-to-Room Conduit Ready		02/26/15	<b>04/02/15</b>	<b>05/06/15</b>	-69	34	370
C5C	MS #10	Turnover Traction Power Rooms		02/25/15	<b>04/23/15</b>	<b>05/05/15</b>	-69	12	187
C5C	MS #10A	Room-to-Room Conduit Ready		02/25/15	<b>05/22/15</b>	<b>06/04/15</b>	-99	13	349
C5C	MS #11	Full access @ Station Service Center(s)	03/18/15	03/24/15	<b>03/16/15</b>	<b>04/22/15</b>	-29	37	344
C5C	MS#14b	Limited Access all locations		09/23/14	<b>05/05/15</b>	<b>06/02/15</b>	-252	28	342
C5C	MS#15	Comp. Permanent Power			<b>12/18/15</b>	<b>12/16/15</b>	-42354	-2	20

Pkg	MS	Description	Dates				Variance		Sch.
			Contract	Adjusted	UD #100	UD #101	Contract	Month	Float 101
C5C		Substantial Completion		05/31/16	<b>06/30/16</b>	<b>07/27/16</b>	-57	27	49
C6	#2A	Complete LAN - 96th St. Station	05/18/15	05/18/15	<b>01/11/16</b>	<b>01/11/16</b>	-238	0	104
C6	#2B	Complete WAN - 96th St. Station	05/18/15	05/18/15	<b>01/11/16</b>	<b>01/11/16</b>	-238	0	104
C6	#3A	Complete LAN - 86th St. Station	07/18/15	07/18/15	<b>02/22/16</b>	<b>02/18/16</b>	-215	-4	85
C6	#3B	Complete WAN - 86th St. Station	07/18/15	07/18/15	<b>02/22/16</b>	<b>02/18/16</b>	-215	-4	85
C6	#4A	Complete LAN - 72nd St. Station	02/18/15	02/18/15	<b>05/02/16</b>	<b>01/28/16</b>	-344	-95	88
C6	#4B	Complete WAN - 72nd St. Station	02/18/15	02/18/15	<b>05/02/16</b>	<b>01/28/16</b>	-344	-95	88
C6	#5A	Complete LAN - 63rd St. Station	04/18/14	04/18/14	<b>01/20/15</b>	<b>02/17/15</b>	-305	28	280
C6	#5B	Complete WAN - 63rd St. Station	04/18/14	04/18/14	<b>01/20/15</b>	<b>02/17/15</b>	-305	28	280
C6	#5C	Complete all 63rd St. Station work	04/18/14	04/18/14	<b>11/16/15</b>	<b>12/10/15</b>	-601	24	214
C6	SS	Substantial Completion	08/18/16	08/18/16	<b>10/10/16</b>	<b>08/22/16</b>	-4	-49	<b>14</b>

**Milestone Summary:** For contracts actively under construction, periodic progress of construction and schedule-related issues based on changes to contractual milestones includes the following.

1. Milestones completed this update period (11/1/14 to 12/1/14): None.
2. Milestones forecast for completion during this update period:

Pkg.	MS	Description	UD #100 Forecast	UD #101 Forecast
C4C	11	Complete south power rooms	<b>11/26/14</b>	<b>12/5/14</b>

3. Milestones forecast for completion during the next update period (12/1/14 to 12/31/14):

Pkg.	MS	Description	UD #101 Forecast	Float
C2B	MS #2	Shared site access @ 93rd Street shaft	<b>12/01/14</b>	479
C4C	MS #13	Full access @ Lubrication Room(s)	<b>12/05/14</b>	177
C4C	MS #8	Turnover of Signal Rooms South of station to C6	<b>12/05/14</b>	45
C4C	MS #11	Complete south power rooms	<b>12/05/14</b>	161
C4C	MS #9	Complete all Signal Roms except M8	<b>12/12/14</b>	75

C4C	MS #14	Complete all remaining Comm, Signal & Traction Power Rooms	<b>12/12/14</b>	75
C5B	SS	<i>Substantial Compl/All Work incl. Ent. #2</i>	<b>12/16/14</b>	101
C2B	MS #7B	Full access to Signals Rooms	<b>12/16/14</b>	472
C2B	MS #7C	Full access to Signals Rooms	<b>12/16/14</b>	472
C2B	MS #8B	Full access to Traction Power Rooms:	<b>12/16/14</b>	472
C2B	MS #8C	Full access to Traction Power Rooms:	<b>12/16/14</b>	472
C4C	MS #7	Turnover of Communications Rooms to Systems Contractor	<b>12/19/14</b>	175

4. Milestones with unusual schedule variances, generally defined as a forecast date change approximately equal to or exceeding the duration of the reporting period are listed in the following table.

<b>Pkg</b>	<b>MS</b>	<b>Description</b>	<b>UD #100</b>	<b>UD #101</b>	<b>Variance</b>
C4C	MS #10	Complete north power rooms	<b>12/12/14</b>	<b>01/30/15</b>	49
C5C	MS #2	Limited Access; Sta. 1209+00- >1198+00	<b>01/22/15</b>	<b>03/11/15</b>	48
C4C	MS #12	Full access @ Station Service Center(s)	<b>01/08/15</b>	<b>02/23/15</b>	46
C5C	MS #11	Full access @ Station Service Center(s)	<b>03/16/15</b>	<b>04/22/15</b>	37
C5C	MS #9	Turnover Traction Power Rooms	<b>03/03/15</b>	<b>04/06/15</b>	34
C5C	MS #9A	Room-to-Room Conduit Ready	<b>04/02/15</b>	<b>05/06/15</b>	34
C5C	MS #6	Turnover of Comm. Rooms	<b>05/26/15</b>	<b>06/26/15</b>	31
C5C	MS #6A	Room-to-Room Conduit Ready	<b>06/29/15</b>	<b>07/29/15</b>	30
C2B	MS #2	Shared site access @ 93rd Street shaft	<b>11/01/14</b>	<b>12/01/14</b>	30
C5C	MS#14b	Limited Access all locations	<b>05/05/15</b>	<b>06/02/15</b>	28
C6	#5A	Complete LAN - 63rd St. Station	<b>01/20/15</b>	<b>02/17/15</b>	28
C6	#5B	Complete WAN - 63rd St. Station	<b>01/20/15</b>	<b>02/17/15</b>	28
C5C	SS	Substantial Completion	<b>06/30/16</b>	<b>07/27/16</b>	27
C6	#5C	Complete all 63rd St. Station work	<b>11/16/15</b>	<b>12/10/15</b>	24

<b>Pkg</b>	<b>MS</b>	<b>Description</b>	<b>UD #100</b>	<b>UD #101</b>	<b>Variance</b>
C4C	SS	Substantial Completion - Ent. #1	10/07/16	09/16/16	-21
C3	#4c	Compl Lwr/Uppr Platforms & Signal Rms	05/14/15	04/17/15	-27
C2B	MS #6B	Full access to Comms Rooms & Closets	03/16/15	01/27/15	-48
C2B	MS #6C	Full access to Comms Rooms & Closets	03/16/15	01/27/15	-48
C6	SS	Substantial Completion	10/10/16	08/22/16	-49
C6	#4A	Complete LAN - 72nd St. Station	05/02/16	01/28/16	-95
C6	#4B	Complete WAN - 72nd St. Station	05/02/16	01/28/16	-95

5. Milestones with unusual float variances, generally defined as a forecast date change approximately equal to or exceeding the duration of the reporting period are listed in the following table.

<b>Pkg</b>	<b>MS</b>	<b>Description</b>	<b>UD #100</b>	<b>UD #101</b>	<b>Variance</b>
C2B	MS #2	Shared site access @ 93rd Street shaft	54	479	425
C2B	MS #4	Shared access in East & West track-ways thru Sta (1238+50 ->1225+25); 97th -> 99th St Tunnel in 99th to 105th St Tunnels	32	293	261
C2B	MS #9	Full access to Station Service Centers	91	164	73
C6	#4A	Complete LAN - 72nd St. Station	27	88	61
C6	#4B	Complete WAN - 72nd St. Station	27	88	61
C2B	MS #6B	Full access to Comms Rooms & Closets	0	34	34
C2B	MS #6C	Full access to Comms Rooms & Closets	0	34	34
C5C	MS#14b	Limited Access all locations	363	342	-21
C5C	MS #5	Turnover of Comm. Rooms	68	47	-21
C5C	MS #2	Limited Access; Sta. 1209+00->1198+00	194	171	-23
C2B	MS #10	Complete all remaining Comms, Signal , & Traction Power work	211	188	-23
C5C	MS #9	Turnover Traction Power Rooms	50	26	-24
C5C	MS #6A	Room-to-Room Conduit Ready	334	310	-24
C5C	MS #9A	Room-to-Room Conduit Ready	396	370	-26

<b>Pkg</b>	<b>MS</b>	<b>Description</b>	<b>UD #100</b>	<b>UD #101</b>	<b>Variance</b>
C4C	MS #10	Complete north power rooms	156	125	<b>-31</b>
C5C	MS #11	Full access @ Station Service Center(s)	388	344	<b>-44</b>
C4C	MS #13	Full access @ Lubrication Room(s)	250	177	<b>-73</b>
C4C	MS #7	Turnover of Communications Rooms to Systems Contractor	254	175	<b>-79</b>
C5C	MS#15	Comp. Permanent Power	134	20	<b>-114</b>
C6	#5A	Complete LAN - 63rd St. Station	422	280	<b>-142</b>
C6	#5B	Complete WAN - 63rd St. Station	422	280	<b>-142</b>
C5C	MS#14b	Limited Access all locations	363	342	<b>-21</b>

#### Observations and Analysis:

- Of the 58 active schedule milestones, 21 experienced extraordinary variance in forecast date over this reporting period. Of those variances, 14 were delays to the forecast date and 7 were improvements to the forecast date.
- Twenty two milestones experienced extraordinary variance in schedule float over this reporting period. Of those variances 7 were increases in schedule float and 15 were decreases in schedule float.
- The extraordinary variances in forecast date and schedule float are attributed to both schedule performance and the ongoing reforecast of the IPS based upon major changes to the System Contract schedule. Based on previous MTACC commitments, all reforecast changes should be complete and incorporated in Update #102. It is anticipated that extraordinary schedule and float variances will be substantially reduced in subsequent updates.
- Twelve of the 58 active milestones are forecast for completion during the next update period (December 2014).
- As previously noted, numerous milestones have been added to the IPS. Generally, they represent completion of electric conduits between signals, power or communication rooms within the 86<sup>th</sup> Street Station. MTACC has divided these milestones to model the fact that the systems contractor has been able to start limited work in these rooms prior to complete installation of these conduits.
- The PMOC previously noted the extremely high float values associated with these new milestones. These values appear to be the result of incomplete schedule logic. Successor relationships to these new milestones have not been identified. Several of these milestones' successor relationships are limited to the respective contract substantial completion date. Consequently, these new milestones provide no information as to the relative criticality of the room-to-room conduit installations at the 86<sup>th</sup> Street Station. As



several of the original milestones are “near-critical”, the PMO considers this to be a major flaw in the IPS update.

## 4.2 90-Day Look-Ahead

### Status:

Based on the Integrated Project Schedule (IPS) Update#101 (DD=12/01/14), major activities that can be anticipated to either start or complete over the upcoming 90 days include the following:

**Table 4-4: 90-Day Look-Ahead Schedule**

Activity ID	Start	Finish
<b>C2B – 96th Street Station Concrete, Finishes &amp; Utilities</b>		
Deliver Medium Voltage Switchgear		01/09/15
Install Wet Pipe Sprinkler at Platform – Station Area S2		03/09/15
Install and Test Mist Sprinkler System – (93-95 St.)	3/10/15	
FAT Testing Escalators E07, E08, E09 @ Entrance #2		03/05/15
FAT Testing Escalator E06 @ Entrance #1		01/13/15
<b>C3 – 63rd Street Station Rehab</b>		
FAT Testing for Traction Elevators		01/23/15
Conduct pre-final inspection for sprinkler system		03/17/15
Architectural finishes – Area 1		02/04/15
Structural Work – Entrance #4		03/04/15
Conduct Field Acceptance Test for Fan Coil Units		01/08/15
<b>C4C—72nd Street Station Finishes</b>		
ANC#1 Street Level Slab & Walls		03/27/15
ANC#2 Street Level Slab & Walls		02/24/15
Deliver MV Switchgear & Transformer		01/09/15
ENT#3 Elevator Shaft Walls		02/04/15
<b>C5B – 86th St. Station Mining &amp; Lining</b>		
Entrance #2/Project Substantial Completion		12/16/14
<b>C5C – 86th St. Station Finishes &amp; MEP</b>		
FAT for MV Transformers & Switchgear	03/23/15	
Block Walls for Mezz Level TPSS		02/20/15
Platform Concrete Walls Column Line 11 -> 20		03/02/15
Mezzanine Level Concrete Column Line 15 -> 18		02/03/15

Activity ID	Start	Finish
<b>C6 – Systems</b>		
Wayside @ 63 <sup>rd</sup> – Perform Punchlist Work		03/11/15
TPSS @ 72 <sup>nd</sup> – Install Switchgear		03/17/15
TPSS @ 96 <sup>th</sup> – Install Switchgear		02/20/15
Train Dispatch Equipment @ 72 <sup>nd</sup> - Install		02/13/15
Fiber Optics @ 63 <sup>rd</sup> – Install Cable, Splice and Terminate		02/03/15

Observations and Analysis:

Significant work forecast for the upcoming period involves installation of major MEP equipment and the start of testing and commissioning of station facilities and systems at select locations. MTACC continues to focus on the turnover of equipment rooms and work areas to the systems contractor from the respective general contractors.

Concerns and Recommendations:

Refer to See Section 4.3 of this report for additional comments and recommendations.

#### **4.3 Critical Path Activities**

Status:

This period project Critical Path recovered 2 work days and is reporting 62 WD (87 CD) contingency compared to 60 WD (84 CD) days reported in UD100. This is due to effective mitigation of delays in the rock excavation of the 72nd Station Entrance 1 and by initiating waterproofing and concrete lining work from bottom-up concurrent with top-down rock excavation. Additional schedule improvement options are under review.

Observations and Analysis:

MTACC's schedule narrative identifies four independent float paths as "critical". Each of these paths has no more than 15 WD of schedule float. The PMOC concurs with MTACC's evaluation of the relative importance of these paths and for consistency, will follow the same reporting format.

**1<sup>st</sup> Critical Path (TF=0):** The "critical" portion of this path is initiated by the start of traction power substation work by the Systems Contractor (C6) at the 86<sup>th</sup> Street Station on April 23, 2015. The start of this work is controlled completion of traction power substation rooms by the C5C Contractor (MS#9). This path includes installation of Epoxy Floors, Switchgear, Transformers, wiring, and field component testing through July 29, 2015. This is followed by FIST and IST for traction power systems and is forecast to complete on August 19, 2016, at which time operational testing starts, with forecast completion on October 5, 2016.

**2<sup>nd</sup> Critical Path (TF=1):** The longest continuous path extends through construction of Ancillary #2 at the 96<sup>th</sup> Street Station. The path is initiated by structural construction up to street level and through 4<sup>th</sup> level parapet walls, forecast to complete on November 3, 2015. From that date, the path follows mechanical installation of fans and ducts for tunnel ventilation,

electrical power and lighting installation through June 28, 2016. The path then follows testing of station lighting systems through C2B Substantial Completion on October 4, 2016.

This path is unique in that it is solely controlled by the C2B Contractor, with no component of this work performed by the Systems (C6) Contractor.

**3<sup>rd</sup> Critical Path (TF=10/11):** This path begins with Track installation for Zone G3 followed by track installation in Zones 4, 5, 6, 7, 8, 10, and 11 which is forecast to complete on April 12, 2016. The Path then follows wayside installation of riser boxes, boards, signs, ladders, and handrails in and around the 86<sup>th</sup> Street Station followed by MTA inspections and punch-list, all of which is forecast for completion on August 17, 2016. The path then joins the TF=12 path completing the signal system at 86<sup>th</sup> Street on August 22, 2016, followed by operational testing and the operational RSD of October 5, 2016.

**4<sup>th</sup> Critical Path (TF=12):** This path is initiated by structural construction of the mezzanine and subsequent room construction at the 86<sup>th</sup> Street Station. Completion of C5C, concrete and installation of block walls, currently forecast for February 10, 2015, followed by turnover of the spaces to the systems contractor on March 27, 2015 (satisfying C5C Milestones # 7 and 8) will allow signal system work to commence. This path then continues through the installation of the signals equipment, racks, pulling, megger and termination of cables through September 9, 2015, followed by installation of relays, breakdown testing, FIST, & FSIT by August 22, 2016, when Station signal Systems are ready for operational testing to be conducted through September 23, 2016 followed by operational RSD of October 5, 2016.

**Secondary Paths:** Other secondary float paths of significance to the overall status of the project include:

- +13/+14 WD:** This path represents the construction of Entrance #1 at the 72nd St. Station. Structural excavation and underpinning is forecast to complete on April 7, 2016. The path then follows finish construction, which is concurrent with escalator installation through testing and commissioning. All work at Entrance #1 is forecast to be complete by September 16, 2016.
- +15 WD:** This path represents elevator construction, inspection and testing at Entrance #3 of the 72nd St. Station. Installation is forecast for completion on April 29, 2016, with inspection and testing completed by June 10, 2016.
- +17 WD:** This path represents structural concrete and interior partition work required for the construction of Ancillary #1 at the 86<sup>th</sup> Street Station. Schedule logic requires completion of this work, forecast for May 7, 2015, to be completed to satisfy C5C Milestones # 7, 8, 9 and 11. The IPS overrides the schedule logic through the use of “negative lags” which allow system installation work in the signal and traction power rooms to commence before their construction is complete.
- +20 WD:** This path represents procurement, installation and testing of permanent power equipment at the 86<sup>th</sup> Street Station. Following the forecast “Permanent Power Available” date of December 16, 2015, the path follows component and system testing of mechanical and electrical equipment throughout the station.
- +33 WD:** This path represents structural, architectural and electrical construction of Ancillary #1 specifically required for permanent power at the 72<sup>nd</sup> Street

Station. Following the “Permanent Power Available” date of November 23, 2015, this path merges with numerous other paths involving the testing and acceptance of equipment throughout the station.

**+34 WD:** This path represents installation and testing of signal system equipment in the south end of the 72<sup>nd</sup> Street station. The start of this work is controlled by C4C Milestone #8, which is forecast to complete on December 8, 2014. Work to install and test signal system equipment on this path extends continuously until July 21, 2016, at which date, the signal system in this area is ready to support Systemwide operational testing.

**+93 WD:** This path represents procurement, installation and testing of permanent power equipment at the 86<sup>th</sup> Street Station. Following the forecast “Permanent Power Available” date of November 6, 2015, the path follows component and system testing of mechanical and electrical equipment throughout the station.

#### Concerns and Recommendations:

IPS Update #101 reportedly represents an upgraded depiction of testing and commissioning activities for the 72<sup>nd</sup>, 86<sup>th</sup> and 96<sup>th</sup> Street Stations.

- The trend of an increasing number of “near-critical” float paths continues, generally increasing the risk of project-level delay.
- Delays to construction at 96<sup>th</sup> Street Station have resulted in independent schedule paths which now may control the project RSD. Previously, systems installation and testing was believed to control all paths leading to the RSD.
- Vertical transportation installation and testing is a major schedule driver at three of four stations.
- Work at 63<sup>rd</sup> Street Station has gained substantial schedule float and does not appear to influence the project RSD.

#### **4.4 Compliance with Schedule Management Plan**

##### Status:

Based on the current status of the IPS, SAS Phase 1 can be considered conditionally compliant with the metrics, deliverables and intangible goals enumerated in the Enterprise Level Project Execution Plan (ELPEP), dated January 15, 2010 (Section IV. b, page 8) and as further described by the Schedule Management Plan (SMP).

##### Observations and Analysis:

- Forecast Revenue Service Date (RSD) and minimum schedule contingency:
  - ELPEP Requirement: February 28, 2018 (RSD)
  - ELPEP Requirement: 240 CD (measured against February 28, 2018)
- Minimum Allowable Float; Real Estate Acquisition
  - ELPEP Requirement: 60 CD
    - Current Forecast: All Real Estate takings are complete as of November 1, 2011 with the last “Title Vesting” occurring on October 25, 2011.

- Minimum Allowable Secondary Float Path
  - ELPEP Requirement: 25 Calendar Days (approximately 18 WD).
  - There are no less than 7 independent secondary float paths with Total Float (TF) less than 25 CD.
- Secondary Schedule Mitigation (critical path compression)
  - ELPEP Requirement: 125 CD
  - Mitigation opportunities will be pursued as they are identified.
  - Evaluation of the C6 Contractor's comprehensive schedule acceleration/proposal is currently on hold.

Observation:

The PMOC notes that an increase in “near-critical” paths is likely as project completion nears and that satisfaction of this requirement may not be consistent with maintaining the project budget.

Concerns and Recommendations:

MTACC considers the IPS and the associated schedule management procedures to be in compliance with the ELPEP and Schedule Management Plan. The PMOC has identified those areas where it believes current SAS schedule practices compromise the accuracy and usefulness of the IPS.

## 5.0 BUDGET/COST

### Status:

The FFGA baseline budget and current working budget are broken down into Standard Cost Categories in year of expenditure dollars as follows:

**Table 5-1: Allocation of FFGA and Current Working Budget to Standard Cost Categories**

<b>Std. Cost Category (SCC)</b>	<b>Description</b>	<b>FFGA</b>	<b>MTA's Current Working Budget (Sept. 30,, 2014)</b>
10	Guideway & Track Elements	\$612,404,000	\$622,478,000
20	Stations, Stops, Terminals, Intermodal	\$1,092,836,000	\$1,277,642,000
30	Support Facilities	0	\$0
40	Site Work & Special Conditions	\$276,229,000	\$524,561,000
50	Systems	\$322,707,000	\$250,134,000
60	ROW, Land, Existing Improvements	\$240,960,000	\$281,500,000*
70	Vehicles	\$152,999,000	0**
80	Professional Services	\$796,311,000	\$1,185,742,929
90	Unallocated Contingency	\$555,554,000	\$308,942,010
Subtotal		\$4,050,000,000	\$4,451,000,000
Financing Cost		\$816,614,000	\$816,614,000
<b>Total Project</b>		<b>\$4,866,614,000</b>	<b>\$5,267,614,000</b>

### Observation and Analysis:

Table 5-1 represents MTACC's most recent update September 30, 2014 of its CWB into the FTA Standard Cost Categories. Revisions to the SCC allocations incorporate the Revision 10 modifications to the MTACC's CWB. MTACC converts the CWB to the SCC format quarterly.

### Conclusions and Recommendations:

MTACC continues to execute Phase 1 of the SAS within the constraints of its CWB. The PMOC will continue to monitor MTACC's conformance to its budget.

## 5.1 Project Cost Management and Control

### Status:

The SAS Project Team accumulates and reports actual cost expenditures against MTACC's established cost categories on a monthly basis. The aggregate budget value of the cost categories equals the CWB of \$4.451B. In general, MTACC cost categories correspond to

individual contracts or groups of contracts for products or services supplied by a 3rd party vendor. Values within the MTACC Cost Categories are mapped to the FTA Standardized Cost Categories on a Quarterly basis.

Observation:

MTACC continues to demonstrate that its cost reporting and management processes and procedures are adequate for and responsive to the needs of the project. No new observations this period.

Concerns and Recommendations:

None

## 5.2 Project Expenditures and Commitments:

Status:

As of December 31, 2014, a summary comparison of the SAS Current Working Budget (Estimate Revision #10) and expenditures is as follows:

Description	CWB	Expended	%
Total Construction (1)	\$2,674,814,299	\$2,167,260,413	73.7%
Total Soft Cost	\$1,308,108,085	\$1,073,863,275	82.1%
Contingency	\$468,077,616	(Included above)	
<b>Subtotal</b>	<b>\$4,451,000,000</b>	<b>\$3,241,123,688</b>	<b>72.8%</b>

(1) % complete includes AWOs executed to date.

Observations:

The PMOC notes that expenditures are generally representative of the level of completion of each project element. It is noted that “soft costs” as defined on this project, include significant front-end costs (property acquisition, OCIP, etc.) which skew the percentage of those categories expended to date.

Based upon financial expenditures reported by the MTACC during June 2014, SAS Phase 1 is approximately 72.8% complete. The completion status of the active construction contracts through December 31, 2014, also based upon reported expenditures through that date, is as follows:

- C26002 (Tunnel Boring) – 100%
- C26005 (96th Street Station) – 99.8%
- C26010 (96<sup>th</sup> Street Station) – 56.5%
- C26013 (86th Street Station) – 100%
- C26008 (86<sup>th</sup> Street Station) – 99.2%
- C26012 (86<sup>th</sup> Street Station) – 24.2%
- C26006 (63<sup>rd</sup> Street Station) – 85.0%

- C26007 (72nd Street Station) – 99.9%
- C26011 (72<sup>nd</sup> Street Station – 37.6%
- C26009 (Systems) – 45.1%

**Aggregate Construction % Completion:**

- 100% of all construction work is under contract
- 76.1% of all base construction (not including AWOs) is complete.
- 73.7% of all construction is complete

**Based upon cost data received from MTACC for December 2014:**

- Value of construction in place this period = \$51,509,576
- Estimated value of construction remaining = \$505,553,886
- Target construction completion = October 5, 2016
- # Months remaining = 21.2

**Conclusions and Recommendations:**

The estimated average rate of construction required to achieve target completion date = \$25,964,757/MO. The average progress (payments) achieved over the most recent six month period is \$39,101,743/MO. At a summary level, it appears adequate progress continues to be made to support project schedule goals.

Professional Services (as generally defined by SCC Category 80) during December 2014 totaled approximately \$9.8M. This rate of expenditure is somewhat higher than that experienced during recent periods. This rate of expenditure is slightly higher than established via Revision 10 to the CWB.

### **5.3 Change Orders**

**Status:**

As of December 31, 2014, the status of Additional Work Orders (AWOs) on Phase 1 of the Second Avenue Subway Project is summarized as follows:



**Table 5-2: AWO Summary**

Contract / (Package)	% Complete	Award	Exposure		Executed	
			\$	% of Award	\$	% of Award
<b>C26002 (1)</b>	<b>100.00%</b>	<b>\$337,025,000</b>	<b>\$41,086,647</b>	<b>12.19%</b>	<b>\$41,086,647</b>	<b>12.19%</b>
C26005 (2A)	99.84%	\$325,000,000	\$47,581,409	14.64%	\$46,945,746	14.44%
C26010 (2B)	56.48%	\$324,600,000	\$41,198,489	12.69%	\$13,709,379	4.22%
C26006 (3)	85.02%	\$176,450,000	\$15,732,753	8.92%	\$10,541,985	5.97%
C26007 (4B)	99.94%	\$447,180,260	\$1,325,639	0.30%	\$1,289,639	0.29%
C26011 (4C)	37.64%	\$258,353,000	\$24,113,183	9.33%	\$4,586,852	1.78%
<b>C26013 (5A)</b>	<b>100.00%</b>	<b>\$34,070,039</b>	<b>\$6,525,471</b>	<b>19.15%</b>	<b>\$6,525,471</b>	<b>19.15%</b>
C26008 (5B)	99.16%	\$301,860,000	\$22,770,441	7.54%	\$16,137,522	5.35%
C26012 (5C)	24.20%	\$208,376,000	\$5,526,639	2.65%	\$293,000	0.14%
C26009(6)	45.13%	\$261,900,000	\$6,997,332	2.67%	\$4,026,104	1.54%
<b>TOTAL TO DATE</b>		<b>\$2,674,814,299</b>	<b>\$212,858,003</b>	<b>7.96%</b>	<b>\$145,142,345</b>	<b>5.43%</b>

**Bold type indicates completed contracts**

To date, approximately \$2,034,274,525 (76.1%) of all base contract construction work has been completed. As a % of work completed, the AWO exposure for these contracts = 10.46% and the executed AWO % = 7.13%. Based on performance to date, a forecast of total AWO expenditure for all base contract work in the range of \$250M to \$260M appears reasonable.

Observation and Analysis:

If the AWO Exposure continues to increase in a manner similar to what has been experienced throughout 2014, the existing budget of \$229M may not be adequate.

The value of AWOs reported by MTACC/NYCT in December 2014 is summarized as follows:

	<u>Executed AWOs</u>	<u>AWO Exposure</u>
December-14	\$152,636,363	\$212,858,003
November-14	\$145,142,345	\$210,214,458
Δ	\$7,494,018	\$2,643,545
Δ	5.16%	1.26%

The changes in AWO Exposure for each construction contract reported through December 2014 are summarized as follows:

Const. Pkg.	AWO Exposure			
	14-Dec	14-Nov	Period Δ	Changes this Period

Const. Pkg.	AWO Exposure			
	14-Dec	14-Nov	Period Δ	Changes this Period
Completed Packages	\$47,612,118	\$47,612,118	\$0	Final values for Packages C1 and C5A as reported by MTACC.
C2A	\$47,581,409	\$47,581,409	\$0	No change reported this period.
C2B	\$41,198,489	\$39,409,539	\$1,788,950	Net increase is based on revised estimates for AWO # 47, 52, 82, 84, 111, 115 and initial estimates for AWO # 116, 117, 122, 124 and 129.
C3	\$15,732,753	\$15,197,467	\$535,286	Net increase is based on revised estimates for AWO # 132, 146, 153, 155, 167, 179 and initial estimates for AWO # 184 through 189.
C4B	\$1,325,639	\$1,325,639	\$0	No change reported this period.
C4C	\$24,113,183	\$27,915,064	-\$3,801,881	Net decrease is based on revised estimates for AWO # 10, 51, 54, 68, 73, 90 and 97 as well as initial estimates for AWO # 40, 77, 82, 87, 89, 93, 100, 102, 103, 105, 106, 107, 109 and 111.
C5B	\$22,770,441	\$20,692,972	\$2,077,469	Net increase is based on revised estimates for AWO # 7, 40 and 62 as well as initial estimates for AWO # 52, 59, 71, 93, 98, 102 through 105 and 107.
C5C	\$5,526,639	\$3,417,151	\$2,109,488	Net increase is based on revised estimates for AWO # 9, 10, 39, 43, 44 and 50 as well as initial estimates for AWO # 13, 53 and 57.
C6	\$6,997,332	\$7,063,099	-\$65,767	Net decrease is based on revised estimates for AWO # 35, 37, 48, 61 and initial estimates for AWO # 55, 59, 62, 63 and 66.
	\$212,858,003	\$210,214,458	\$2,643,545	

The changes in Executed AWO Value for each construction contract reported through December 2014 are summarized as follows:

Const. Pkg.	Executed AWOs			
	14-Dec	14-Nov	Period Δ	Changes this Period
Completed Packages	\$47,612,118	\$47,612,118	\$0	Final values for Packages C1 and C5A as reported by MTACC.
C2A	\$46,945,746	\$46,945,746	\$0	No change reported this period.
C2B	\$16,273,372	\$13,709,379	\$2,563,993	Increase is based on the execution of AWO # 53, 70 and 111.
C3	\$10,614,985	\$10,541,985	\$73,000	Increase is based on the execution of AWO # 129.
C4B	\$1,325,639	\$1,289,639	\$36,000	Increase is based on the execution of AWO # 101.
C4C	\$5,900,252	\$4,586,852	\$1,313,400	Increase is based on execution of AWO # 24, 29, 35, 61, 70, 73, 79 and 98
C5B	\$17,453,722	\$16,137,522	\$1,316,200	Increase is based on the execution of AWO # 7, 72, 91 and 92.
C5C	\$679,500	\$293,000	\$386,500	Increase is based on execution of AWO # 39, 42, 43, 44, 50, 53 and 57.
C6	\$5,831,029	\$4,026,104	\$1,804,925	Increase is based on the execution of AWO # 17, 35, 37, 48, 59, 61, 62 and 63.
	\$152,636,363	\$145,142,345	\$7,494,018	

MTACC, with support from NYCT, has generally demonstrated a disciplined and diligent approach to effectively negotiating additional work orders for a fair and reasonable price. Credits for deleted or reduced work scope are pursued aggressively.

Concerns and Recommendations: None at this time.

## 5.4 Project Funding

Status:

Total Federal participation is currently \$1,373,892,821. Appropriated, obligated and disbursed totals are shown in Table 5-3 below.

**Table 5-3: Appropriated and Obligated Funds (Federal)**

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru December 31, 2014
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165

<b>Grant Number</b>	<b>Amount (\$)</b>	<b>Obligated (\$)</b>	<b>Disbursement (\$) thru December 31, 2014</b>
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$167,810,300
NY-03-0408-06	\$274,920,030	\$274,920,030	\$274,920,030
NY-03-0408-07	\$237,849,000	\$237,849,000	\$237,849,000
NY-03-0408-08	\$197,182,000	\$197,182,000	\$67,674,951
NY-03-0408-09***	\$186,566,000	\$186,566,000	0
NY-03-0408-10**	\$123,384,621	0	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$78,870,000
NY-95-X009-00	\$25,633,000	\$25,633,000	\$25,633,000
NY-95-X015-00	\$45,800,000	\$45,800,000	\$45,800,000
<b>Total</b>	<b>\$1,373,892,821.00</b>	<b>\$1,250,508,200.00</b>	<b>\$934,435,151.00</b>



\* Denotes American Recovery and Reinvestment Act (ARRA) funds. \*\*Appropriated. \*\*\*Disbursement from this grant is restricted until NYMTA and FTA issue an amendment to the FFGA for Phase 1 of the SAS Project.

A total of \$3,092,812,023 has been expended on the project through December 30, 2014, of which \$479,003,293 has been spent on design and \$1,916,224,390 on construction (MTACC's December 2014 Cost and Schedule Summary Input).

#### Observation and Analysis:

The New York State Legislature has agreed to fund the remaining three years of MTA's 2010 – 2014 Capital Program which will provide adequate funds to support the SAS Phase 1 Project's current working budget.

Concerns and Recommendations: None

#### **5.4.1 Overall Project Funding**

Refer to Section 5.2 of this Report.

#### **5.4.2 Local Funding**

Refer to Section 5.2 of this Report.

#### **5.5 Cost Variance Analysis**

Events that represent major project milestones for measuring cost variances include:

- Full Funding Grant Agreement (FFGA) – 11/19/2007
- Enterprise Level Project Execution Plan – 01/15/2010

- MTACC Current Working Budget – 6/2011
- MTACC Current Working Budget – 8/2013 (Revision 10)
- Contemporaneous EAC forecasts.

Budget variances identified at these milestones provide insight to the internal and external forces shaping the project and their impact on the final cost of the project. The PMOC has analyzed and presented its analysis of cost variances through CWB Revision 10. This analysis has documented a 12.13% cost growth between FFGA and CWB Revision 10.

Observation and Analysis: A summary comparison of CWB Revision 10 and a current EAC forecast is shown in Table 5-4.

**Table 5-4: CWB vs. EAC**

<b>Category</b>	<b>Current Working Budget</b>	<b>EAC Forecast</b>
<b>Total Construction</b>	\$2,674,814,299	\$ 2,954,695,713
<b>Engineering Services Subtotal</b>	\$622,862,000	\$ 652,862,000
<b>Third Party Expenses</b>	\$554,086,273	\$ 574,086,273
<b>TA Expenses</b>	\$131,160,085	\$130,775,000
<b>Contingency</b>	\$308,077,343	
<b>Executive Reserve</b>	\$160,000,000	
<b>Subtotal</b>	\$4,451,000,000	\$4,312,418,986

Based on the information available, the PMOC's EAC validates the reasonableness of the MTACC's Current Working Budget of \$4.451B.

#### Conclusions and Recommendations:

Based upon current information, this effort suggests the project can be built within the limits of the Current Working Budget, absent any major delays to the currently forecast RSD. This effort will be revisited periodically, to incorporate updated information and evaluate its effect on the overall EAC.

## **5.6 Project Contingency**

### Status:

The ELPEP requires the MTACC to maintain specific contingency funds in accordance with the following "achievement driven" schedule:

- \$220M through 90% Bid and 50% Construction
- A linear reduction in contingency from \$220M to \$140M through 100% Bid and 85% Construction
- \$45M from 100% Bid and 85% Construction through Start Up and Pre-Revenue Operations

The independent analysis of contingency drawdown maintained by the PMO is generally consistent with that maintained by the SAS Project team and confirms it to be in compliance with the estimated minimum contingency balance of \$158,461,538.

Observations and Analysis:

During 4<sup>th</sup> Quarter 2014, contingency changes included routine incorporation of AWOs into the individual project and overall program reporting systems. Cost models maintained by both the PMOC and the SAS Project Team verify that the current contingency balance is greater than the Planned Balance and exceeds the ELPEP Required Balance.

<u>Contingency Analysis</u>			
	<u>Current</u>	<u>@ Completion</u>	
Phase 1 Budget	\$ 4,451,000,000	\$ 4,451,000,000	
Construction Awards	\$ 2,674,814,299	\$ 2,674,814,299	
Soft Cost Expended	\$ 1,073,863,275	\$ 1,073,863,275	
Soft Cost Forecast to Complete	\$ 234,244,810	\$ 284,244,810	
AWO Exposure	\$ 212,858,003	\$ 279,881,414	
Total Contingency	\$ 255,219,613	\$ 138,196,202	(1)
Reserved Contingency	\$ 160,000,000	\$ 138,196,202	(2)
Available Contingency	\$ 95,219,613	\$	

Notes:

(1) Total Contingency = budget balance after forecast expenditures.

(2) Reflects \$21,803,798 transfer from “Reserved Contingency”.

Conclusions based upon this analysis include:

- The project can be completed within the current MTACC CWB of \$4.451B.
- It will be necessary to transfer funds from the “Executive” or “Reserved” Contingency in order to cover forecast project costs.

Concerns and Recommendations:

This evaluation is based on a thorough review of construction contingency. Soft cost contingency is evaluated periodically and the analysis adjusted accordingly. At this time, it appears the available contingency is adequate to support completion of the Project.

## **6.0 PROJECT RISK**

### **6.1 Initial Risk Assessment**

No change this period.

### **6.2 Risk Updates**

#### Status:

There was no change in status during this period.

#### Observation and Analysis:

Issues observed by the PMOC this period which may represent a risk to project cost or schedule performance include:

- MTACC has identified the supply of permanent power for station facilities at 96th, 86th, and 72nd Street Stations to be a significant risk. The IPS currently forecasts permanent power will be available in time to support the startup and commissioning of station MEP systems, however, at the 86<sup>th</sup> Street Station, this work has only 20 WD of schedule float.
- MTACC has jointly developed an accelerated schedule for construction of Entrance #1 at 72nd Street Station with the construction schedule that will not impact the overall project RSD. However, this schedule does involve significant risk and continual monitoring is required.
- MTACC has modified its short-term approach to schedule improvement and delay mitigation. The “all-in-one” systems installation and testing acceleration approach will be temporarily tabled until such time as specific status and issues at each station location can be better forecast. Until then, the focus will be on immediate opportunities to improve the schedule and expedite construction in key project locations.

#### Conclusions and Recommendations:

In general, MTACC has utilized the risk management process to identify major risks to project performance and develop mitigation plans to address those risks.

### **6.3 Risk Management Status**

#### Status:

Risk Management Meeting #43 was conducted on December 29, 2014. Discussions and decisions resulting from that meeting are incorporated throughout this section as appropriate.

#### Observation and Analysis:

The risk management process generally includes:

- Contract Risk Registers are maintained and updated periodically.
- Information from the risk registers is used in the updating of the cost and schedule drawdown curves to provide risk-informed cost and schedule forecasts
- Formal risk mitigation meetings on a monthly basis.
- Issuance of the Monthly Risk Report.

Management of contract interfaces has been one of the major risks for which active mitigation efforts have been concentrated over 2014. Critical contract interface activities will be largely completed by mid-2015. Looking forward, timely execution and management of the testing, commissioning and turnover process appear to be the major risk for the project team.

#### Conclusions and Recommendations:

The SAS Project Team continues to utilize the Risk Management Process as a means to identify threats to the project cost performance and schedule goals and actively manage retained risks.

## **6.4 Risk Mitigation**

#### Status:

Risk Mitigation efforts have been concentrated on those risks identified in the following table. This process has proven to be valuable in managing risks such as contract interface management, availability of permanent power, and others.

#### Observation and Analysis:

The process through which risks are elevated from the Risk Register to more active management and evaluation at the monthly risk mitigation meetings is not completely defined.

The most significant risks are identified in the following table. Also included are descriptions of the current mitigation strategy and an update of the status of the mitigation actions as of Risk Mitigation Meeting #43.

<u><b>Risk Description</b></u>	<u><b>Mitigation Summary</b></u>	
<b>Risk CNS 4 (C6):</b> Delay resulting from management of contractual interfaces during construction.	<b>Risk Type</b>	
	<b>Cost</b>	<b>Schedule</b>
<b>Mitigation Strategy:</b> 1. The mitigation strategy has been implemented and is being continuously monitored and enhanced as needed.	<b>Current Status:</b> 1. Recent MTACC initiative to expedite turnover of equipment rooms to Systems Contractor has not been completely successful. 2. The basic mitigation strategy appears to remain valid. Senior management intervention appears needed to resolve overarching performance and staffing problems. 3. Not discussed @ RMM #43.	
<b>Risk C3, C2B, C4C, C5C and C6 Schedules:</b> Construction contract delays that will extend Project Completion beyond the current RSD.	<b>Risk Type</b>	
	<b>Cost</b>	<b>Schedule</b>
<b>Mitigation Strategy:</b> 1. Ongoing schedule improvement and delay mitigation will focus on “targets of	<b>Current Status:</b> 1. Acceleration of specific “targets of opportunity” will continue to be identified	



<b><u>Risk Description</u></b>	<b><u>Mitigation Summary</u></b>	
opportunity” where specific action directed to critical or near-critical work tasks will result in measurable schedule improvement.	and addressed. 2. Recommend MTACC document specific schedule improvements associated with each accelerated task.	
<b>Risk C4C Entrance 1 (301 E 69<sup>th</sup> Street):</b> Work on Entrance 1 will be delayed due to delays in obtaining design approval from Owner for utility relocation in the building.		<b>Risk Type</b>
		<b>Cost      Schedule</b>
<b>Mitigation Strategy:</b> 1. The mitigation strategy has been implemented.	<b>Current Status:</b> 1. For IPS Update #101, Entrance #1 is no longer on the overall project critical path. 2. Frequent monitoring and active management of this work by senior management will continue.	
<b>Risk COM 2 (C6):</b> Frequent late changes to the design of station and rail systems could delay C6 and the RSD.		<b>Risk Type</b>
		<b>Cost      Schedule</b>
<b>Mitigation Strategy:</b> 1. The current CCG/ CCB approval process has been helpful in limiting discretionary design changes. 2. MTACC has indicated significant concern regarding this issue over the remaining duration of the project.	<b>Current Status:</b> 1. Monitoring of the effectiveness of the risk mitigation strategy is ongoing. 2. This risk is applicable to all major operating systems. 3. This risk was redefined @ RMM #43 to involve the AWO approval process.	

#### Concerns and Recommendations:

The PMOC does not concur that risk associated with late design changes requested by NYCT can be effectively mitigated through improvements in the AWO management process. The PMOC recommends revisiting the “root causes” of this risk and refining management efforts to address those issues.

### **6.5 Cost and Schedule Contingency**

#### **6.5.1 Cost Contingency**

Status: Refer to Section 5.4 of this report.

#### **6.5.2 Schedule Contingency**

Status:

Via IPS Update #98, MTACC continues to forecast all Phase 1 construction and pre-revenue testing to be complete on October 3, 2016. This results in 87 CD (62 WD) of contingency when measured against the MTACC’s target RSD of December 30, 2016 and a 511 CD contingency when measured against the FTA Risk-Informed RSD of February 28, 2018.

Observations:

Major risks previously identified in the construction contractor schedules and not represented in the IPS have been reconciled. As such, the current risk-mitigated forecast and a risk-realized forecast are equivalent. The RSD forecast by IPS #101 results in the following contingencies:

**Table 6-1: Schedule Contingency**

<b>IPS Update #</b>	<b>92</b>	<b>95</b>	<b>98</b>	<b>99</b>	<b>100</b>	<b>101</b>
<b>Data Date</b>	03/1/14	6/1/14	9/1/14	10/1/14	11/1/14	12/1/14
	Contingency (CD)					
RSD=12/31/2016						
Risk Mitigated	102	102	85	81	84	87
Risk Realized	44	52	85	81	84	87
RSD=02/28/2018						
Risk Mitigated	526	526	509	505	508	511
Risk Realized	446	478	509	505	508	511

Concerns and Recommendations:

The PMOC concerns regarding schedule are enumerated in Section 4 of this report.

## 7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column      1 – Critical 2– Near Critical

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-09-Jan10	3.0 PMP	<p>The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP.</p> <p><u>PMOC Recommendation:</u> Update the PMP and its sub-plans within the timeframes established in the ELPEP.</p> <p><u>Update (June 2014):</u> MTACC is addressing FTA/PMOC review comments.</p> <p><u>Update (September 2014):</u> MTACC's review comments associated with PMP Update #9 were incorporated into PMP Update #10. A draft copy of PMP Update #10 was forwarded to the FTA/PMOC for review during this reporting period. PMP Draft Update #10 does not adequately address the PMOC's comments associated with Update #9. FTA/PMOC will schedule a meeting with MTACC to review each area of concern so that any misunderstandings are resolved.</p> <p><u>Update (December 2014):</u> The PMOC's enhanced comments and explanations resulting from its review of MTACC's PMP Update #10 were transmitted to FTA on November 5, 2014. Reconciliation of any outstanding issues is being evaluated.</p>	2
SAS-20-Dec10	5.1.3 Change Orders	<p>Processing duration for AWOs is excessive. The average processing duration currently equals the published MTA maximum duration of 90 days. Improvement is required to facilitate contractor cooperation and reduce risk of "backlash" through perceived unfair treatment.</p> <p><u>Update (June 2014):</u> PMOC monitoring of AWO process is ongoing.</p> <p><u>Update (September 2014):</u> PMOC monitoring of AWO process is ongoing.</p> <p><u>Update (December 2014):</u> Processing duration remains excessive when evaluated against MTACC existing procedure. However, SAS has demonstrated the capability to manage</p>	1

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		this process without incurring adverse consequences based on processing duration. This issue will be closed.	
SAS-22-Jun 12	2.6 Community Relations	<p>The community relations effort has proven to be an important element of the management of this project. It is the recommendation of the PMOC that the community relations effort be fully incorporated into the mainstream of project scope, budget and risk management activities to support the goals of cost-effective and transparent decision making and the related goals of the ELPEP.</p> <p><b><u>Update (June 2014):</u></b> Revision of the SAS PMP will be coordinated with the Amendment of the FFGA. Efforts are ongoing.</p> <p><b><u>Update (September 2014):</u></b> SAS-09-Jan10 above.</p> <p><b><u>Update (December 2014):</u></b> This issue was not addressed in the PMP Revision 10 update. MTACC has shown no indication that it considers this recommendation relevant. This issue will be closed.</p>	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-27- Jun 12	3.2 PMP Sub Plans	<p>The PMOC has noted that community relations activities continue to be a very significant element of the overall management of this project. However, neither the PMP nor any applicable sub plan identify this work, the manner by which it will be managed or executed, the scope of the work or any budgetary or financial controls.</p> <p>The PMOC recommends the development or update of applicable plans and procedures governing such work during the next PMP update period.</p> <ul style="list-style-type: none"> <li>▪ <b><u>Update (June 2014):</u></b> Revision of the SAS PMP will be coordinated with the Amendment of the FFGA. Efforts are ongoing.</li> <li>▪ <b><u>Update (September 2014):</u></b> SAS-09-Jan10 above.</li> <li>▪ <b><u>Update (December 2014):</u></b> See SAS-22-Jun 12 above.</li> </ul>	2

## 8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

### Priority in Criticality column

1 – Critical 2– Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
SAS-A17-Aug08	2.4 Vehicles	<p>The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan:</p> <ul style="list-style-type: none"> <li>▪ NYCT should provide a test plan for increasing the period between inspections of the new technology fleet.</li> <li>▪ NYCT should explain why, in light of the ongoing state of good repair fleet replacement program, the cars financed under the SAS project are no longer needed.</li> <li>▪ MTACC should explain why they are considering removing the vehicles from the project scope without reducing the project funding.</li> </ul> <p><b><u>Update:</u></b> Vehicle requirements and associated cost to be addressed as part of the FFGA amendment.</p> <p><b><u>Update:</u></b> No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project has been reflected in the Rail Fleet Management Plan which was accepted by FTA Region II. A "zero" dollar budget for the procurement of vehicles is reflected in the projects Current Working Budget (CWB) and also in the latest cost estimate (Rev. 9). No further action is planned by the PMOC.</p> <p><b><u>Update (December 2014):</u></b> This issue will be closed.</p>	2	7/30/10

## APPENDIX A -- LIST OF ACRONYMS

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
AWO	Additional Work Order
BCE	Baseline Cost Estimate
BFMP	Bus Fleet Management Plan
CCM	Consultant Construction Manager
CD	Calendar Day
CMAQ	Congestion Mitigation and Air Quality
CPM	Critical Path Method
CPRB	Capital Program Review Board
CR	Candidate Revision
CSJV	Comstock Skanska Joint Venture
CWB	Current Working budget
DC	Design Consultant
DOB	New York City Department of Buildings
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
FAT	Factory Acceptance Testing
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
GC	General Contractor
HASP	Health and Safety Plan
HLRP	Housing of Last Resort Plan
IFP	Invitation for Proposal
IFB	Invitation to Bid
IPS	Integrated Project Schedule
LF	Linear Feet
MEP	Mechanical, Electrical, Plumbing
MTACC	Metropolitan Transportation Authority – Capital Construction
N/A	Not Applicable
NEPA	National Environmental Policy Act
NTP	Notice to Proceed
NYCDEP	New York City Department of Environmental Protection
NYCT	New York City Transit
OCIP	Owner Controlled Insurance Program
PE	Preliminary Engineering
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PQM	Project Quality Manual
RAMP	Real Estate Acquisition Management Plan
RFMP	Rail Fleet Management Plan
RFP	Request for Proposal

RMCP	Risk Mitigation Capacity Plan
RMP	Risk Management Plan
ROD	Record of Decision
ROD	Revenue Operations Date
RSD	Revenue Service Date
SAS	Second Avenue Subway
SCC	Standard Cost Category
SCIT	Systems Commissioning and Integration Testing
SES	Systems Engineering Specialists
SIM	Systems Integration Manager
SOE	Support of Excavation
SSCP	Safety and Security Certification Plan
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSRA	Systems Safety and Reliability Assurance Program Plan
SOE	Support of Excavation
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TEAM	Transportation Electronic Award Management System
TF	Total Float (schedule)
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability Plan
TIA	Time Impact Analyses
UNO	Unless Noted Otherwise
WBS	Work Breakdown Structure
WD	Work Day



## APPENDIX B-- PROJECT OVERVIEW AND MAP

### Project Overview and Map – Second Avenue Subway



### Scope

**Description:** The project will connect Manhattan’s Central Harlem area with the downtown financial district, relieving congested conditions on the Lexington Avenue line. The current project scope includes: tunneling; station/ancillary facilities; track, signal, and electrical work; vehicle procurement; and all other subway systems necessary for operation. The current phase, Phase 1 of 4, will provide an Initial Operating Segment (IOS) from 96th Street to 63rd Street, and will connect with the existing Broadway Line that extends to Lower Manhattan and Brooklyn. Subsequent phases will extend the line northward to 125th Street and to the southern terminus at Hanover Square in Lower Manhattan.

**Guideway:** Phase 1 is 2.3 miles long, from 63rd Street to 105th Street. It is a two-track project that is below grade in tunnels, and does not include any shared use track.

**Stations:** In Phase 1 there are: two new mined stations located at 72nd and 86th Streets, one new cut and cover station at 96th Street, and major modifications of the existing 63rd Street Station on the Broadway Line.

**Support Facilities:** There are no additional support facilities planned for Phase 1 of the project.

**Vehicles:** MTA envisions the need for eight-and-one-half train sets to satisfy the Phase 1 operating requirements (7) and to provide sufficient spares (1½).

**Ridership Forecast:** Upon completion of Phase 1, ridership is expected to be 191,000 per average weekday (MTA’s Regional Travel Forecast Model).

**Schedule**

12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTACC schedule)		
73.7%	Percent Complete Construction at December 30, 2014		
78.02%	Percent Complete Time based on Rev Ops Date of December 30, 2016		

**Cost (\$)**

3,839 M	Total Project Cost (\$YOE) at Approval Entry to PE (w/o Financing Costs)
3,880 M	Total Project Cost (\$YOE) at Approval Entry to FD (w/o Financing Costs)
4,866 M	Total Project Cost (\$YOE) at FFGA signed (w/ \$816 M Financing Costs)
4,451 M	Total Project Cost (\$YOE) at Revenue Operations (w/o Financing Costs)
5,267 M	Total Project Cost (\$YOE) at date of this report including \$816 M in Finance Charges
3,241M	Amount of Expenditures at date of this report from Total Project Budget of \$4,451M
72.8%	Percent Complete based on Expenditures at date of this report
273M	Total Project Contingency remaining (allocated and unallocated contingency)

\* Being revisited as a result of the Enterprise Level Project Execution Plan

## APPENDIX C – LESSONS LEARNED

There were no Lessons Learned to report for 4th Quarter for 2014

#	Date	Phase	Category	Subject	Lessons Learned
1	Oct-09	Construction	Schedule	Delays to excavation caused by adjacent Fragile Buildings	The PMOC recommended and MTACC adopted a plan to review the stability of all of the buildings affected by the Second Avenue Subway project. MTACC instructed the DC to review all the buildings along the project. Furthermore, they have the designer developing shoring plans for the fragile buildings and including this work in the future contracts. In this way the stabilization work cannot delay the contracts as it is part of the contract.
2	Nov-09	Construction	Schedule	3 <sup>rd</sup> Party Utilities changed the size of an electric vault after construction began.	The PMOC recommended that MTACC get the utility companies to agree that once they have approved the plans, they cannot make major changes after award. MTACC's SAS Project Executive is meeting with the utilities to work out this problem.

**APPENDIX D – PMOC STATUS REPORT**  
**(to be transmitted in a separate file)**

## APPENDIX E – SAFETY AND SECURITY CHECKLIST

<b>Project Overview</b>			
Project mode (Rail, Bus, BRT, Multimode)	Rail		
Project phase (Preliminary Engineering, Design, Construction, or Start-up)	Design and Construction		
Project Delivery Method (Design/Build, Design/Build/Operate/Maintain, CMGC, etc.)	Design/Bid/Build		
<b>Project Plans</b>	<b>Version</b>	<b>Review by FTA</b>	<b>Status</b>
Safety and Security Management Plan	7041.01.007308-0	11/15/07	Approved by FTA
Safety and Security Certification Plan	7041.01.007308-0 Appendix D		Certification by New York State Public Transportation Safety Board (NYSPTSB)
System Safety Program Plan			
System Security Plan or Security and Emergency Preparedness Plan (SEPP)			
Construction Safety and Security Plan		N	Each active construction contractor's Construction Safety and Security Program Plan has been approved by MTACC.
<b>Safety and Security Authority</b>			
Is the grantee subject to 49 CFR Part 659 state safety oversight requirements?	Y		
Has the state designated an oversight agency as per Part 659.9?	Y		NYSPTSB
Has the oversight agency reviewed and approved the grantee's SSPP as	Y		The NYSTB issued a letter of recertification

<b>Project Overview</b>		
per Part 659.17?		on September 2, 2010.
Has the oversight agency reviewed and approved the grantee's Security Plan or SEPP as per Part 659.21?		
Did the oversight agency participate in the last Quarterly Program Review Meeting?	N	
Has the grantee submitted its safety certification plan to the oversight agency?	N	Certification is within the scope of the C6 Systems Contract.
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	Y	
<b>SSMP Monitoring</b>	Y/N	<b>Notes/Status</b>
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	
Grantee reviews the SSMP and related project plans to determine if updates are necessary?	Y	
Does the grantee implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y	
Does the grantee maintain a regularly scheduled report on the status of safety and security activities?	Y	Activity included in the monthly and quarterly reports from the grantee and is reported at each contractor's Job Progress Meeting.
Has the grantee established staffing requirements, procedures and authority for safety and security	Y	Responsibilities during the design and construction phases

<b>Project Overview</b>		
activities throughout all project phases?		identified
Does the grantee update the safety and security responsibility matrix/organizational chart as necessary?	Y	
Has the grantee allocated sufficient resources to oversee or carry out safety and security activities?	Y	
Has the grantee developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y	Included in Appendix F of the SSMP
Does the grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	Frequency to be increased
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Nine active construction contracts are being monitored daily by the CCM with oversight being performed by the grantee.
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	Y	Hazard and Vulnerability Analysis
Has the grantee ensured the development of safety design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured the development of security design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured conformance	Y	Ongoing part of design

<b>Project Overview</b>		
with safety and security requirements in design?		review process
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	Y	Verification is ongoing with the procurement of equipment by the Station Contractors (C3, C2B, C4C, and C5C) and the Systems Contractor (C6).
Has the grantee verified construction specification conformance?	Y	Reference Section D3.4 Construction Criteria Conformance of the SSMP
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	Y	Reference Section D3.2 Certification Items List of SSMP
Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	Y	Certifiable elements have been identified. Verification of requirement will be performed as part of the certification process which includes factory acceptance testing, installation testing and integration testing. Efforts are ongoing.
Does the grantee evaluated change orders, design waivers, or test variances for potential hazards and /or vulnerabilities?	Y	Part of formal configuration control process. Efforts are ongoing.
Has the grantee ensured the performance of safety and security analyses for proposed work-arounds?	NA	



<b>Project Overview</b>		
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: Activation Plan and Procedures Integrated Test Plan and Procedures Operations and Maintenance Plan Emergency Operations Plan	Y	Referenced plans are being developed as part of the Systems Contract (C6).
Has the grantee issued final safety and security certification?	N	To be covered as part of the testing in Systems Contract (C6)
Has the grantee issued the final safety and security verification report?	N	To be covered as part of the testing in Contract 6
<b>Construction Safety</b>		
Does the grantee have a documented/implemented Contractor Safety Program with which it expects contractors to comply?	Y	
Does the grantee's contractor(s) have a documented companywide safety and security program plan?	Y	
Does the grantee's contractor(s) have a site-specific safety and security program plan?	Y	Reference sections 011150 Safety Requirements and 011160 Security Requirements of the Contract Terms and Conditions
Provide the grantee's OSHA statistics compared to the national average for the same type of work?	Safety – The OSHA Lost Time Injury Rate and Recordable Injury Rate from the start of construction until August 31, 2014 are 1.79 and 5.14, respectively. Both rates are still above the Bureau of Labor Statistics (BLS) national Lost Time Injury Rate of 1.7 and the Recordable Injury Rate of	BLS National Lost Time Rate for Heavy and Civil Construction is 1.7 and for Recordable Injury is 3.2

<b>Project Overview</b>		
	<p>3.2. The cumulative construction time worked since the project inception is 9,144,319 hours. Total lost time injuries since project inception is 82 and other recordable injuries are 153. The total number of recordable injuries is 235 (sum of the lost time injuries and the other recordable injuries).</p>	
<p>If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?</p>	<p>MTACC has expanded its safety program to include a monthly walk-thru of the various work zones by the SAS Project Management Team. In addition the SAS Project Safety Manager holds a monthly meeting with the Contractor's Project Managers and Safety Managers, OCIP Representative, insurance carrier representative, MTACC Construction Managers and PMOC representative in order to make all aware of the safety concerns on the project and to exchange lessons learned. Each contractor is also holding its own "tool box" meetings focusing on various safety topics. Corrective Action Plans have been requested from contractors with high safety incident rates.</p>	
<p>Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?</p>	<p>Y</p>	
<b>Federal Railroad Administration</b>		

<b>Project Overview</b>		
If shared track: has grantee submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested)	NA	
If shared corridor: has grantee specified specific measures to address shared corridor safety concerns?	NA	
Is the Collision Hazard Analysis underway?	NA	
Other FRA required Hazard Analysis – Fencing, etc.?	NA	
Does the project have Quiet Zones?	NA	
Does FRA attend the Quarterly Review Meetings?	NA	

**APPENDIX F – ON-SITE PICTURES**  
**(to be transmitted in a separate file)**

Appendix G -- Core Accountability Items				
Project Status:		Original at FFGA	Current*	ELPEP**
Cost	Cost Estimate	\$4,050M	\$4,451M	\$4,980M
Contingency	Unallocated Contingency	\$555.554M	\$0M	\$0M
	Total Contingency (Allocated plus Unallocated)	\$555.554M	\$255M (Sept. 2014)	\$158.5M
Schedule	Revenue Service Date	September 30, 2014	December 30, 2016	February 28, 2018
Total Project Percent Complete	Based on Expenditures	72.8%		
	Based on Earned Value	N/A		
Major Issue		Status	Comments	
Safety and Security Certification		Open	The C6 Contractor is now staff with a Systems Integration Manager (SIM) supported by Systems Engineering Specialists (SES) to coordinate its efforts with the Stations MEP Contractors in the preparation of their Systems Commissioning and Integration Testing (SCIT) Plans.	
Date of Next Quarterly Meeting:		TBD		

\* MTACC's Current Working Budget

\*\* Enterprise Level Project Execution Plan (ELPEP), reflecting medium level of risk mitigation

All data based on December 30, 2014 reporting.