PMOC MONTHLY REPORT

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

March 1 to March 31, 2013

PMOC Contract No. DTFT60-09-D-00007
Task Order No. 2, Project No. DC-27-5115, Work Order No. 02

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Length of time on project: 2 years

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THIRD PARTY DISCLAIMER

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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. 003. 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 will include 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 1st *QUARTER 2013*

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 procurement process.

b. New Contract Procurements

The 86th Street Station Finishes & MEP Package, C-26012 (C5C) was advertised for construction bids on December 24, 2012. This bid opening is currently scheduled for April 10, 2013 and contract award forecast for June 5, 2013. This is the last construction package to be procured as part of SAS, Phase 1.

c. Construction Progress

All construction is approximately 47.8 % complete as of March 31, 2013. Summary progress for each contract is as follows:

- *At the 86th Street Station, excavation of the main cavern is underway at both the north and the south shafts. As of March 31, 2013, 119,987 BCY (77.5%) of the total 154,623 BCY had been excavated.*
- *The 96th Street Station Heavy Civil/Structural Contractor (Contract C2A) is approximately 84.0% complete with all mass excavation. Installation of reinforced concrete invert slabs have started with placements being made north of 95th Street and south of 92nd Street.*
- *The 96th Street Station Finishes, Mechanical, Electrical, and Plumbing Systems and Ancillary Building and Entrances (Contract C2B) is approximately 5.5% complete. The contractor has completed 100% of contract lead abatement work inside the existing SAS tunnel between 99th and 105th Street. Demolition of the high and low concrete benches in the existing tunnel is ongoing.*
- *The 72nd Street Station Heavy Civil/Structural Contractor (Contract C4B) is approximately 71.0% complete. The contractor has completed 100.00% of the rock excavation for the project (173,394 Bank Cubic Yards). Ongoing work includes arch, invert and walls concrete placement with subsequent waterproofing at Main Cavern, North/South Crossover, G3/G4 Caverns, 63rd St Stub, G3/G4 TBM Tunnels and Horseshoe Tunnel.*
- *At the 63rd Street Station, Area 5 structural steel installation failed to maintain the previously published "recovery schedule" for completion on February 16, 2013. As of*

March 31, 2013 Area 5 steel erection is nearing completion at approximately 95% complete. Work at Ancillary #1 ongoing. Work at Entrance #1 has started.

- *The Track, Signal, Traction Power, and Communication Systems Contract (C6) is approximately 5.9% complete. Ongoing work includes the removal of out of service wayside equipment and signal relay room equipment at the 63rd Street Station, installation of conduits and cable tray brackets.*

d. Continuing and Unresolved Issues

- *Closeout of construction contracts C1 and C5A. Substantial completion was achieved on November 16, 2011 and March 20, 2012 respectively. The time required to closeout these contracts has been excessive.*
- *Structural steel fabrication and erection at the 63rd Street Station (C3) has progressed to the point that follow-on activities now control the contract critical path. Mitigation actions should permit C6 access to communications rooms (Milestone #3) in sufficient time to avoid actual delays to systems installation activities.*
- *A new lawsuit was filed by Yorkshire Towers regarding the design of Entrance #1 at the 86th Street Station. MTACC reported that this is essentially a copy of the previous lawsuit, which was dismissed by the court. MTACC has taken the position that the lawsuit has no merit and is seeking to have it dismissed.*
- *Scaffolding for Local Law 7 inspection of Yorkshire Towers is interfering with Entrance #2 construction. Work-arounds implemented to date have minimized delay; however delay is likely if the scaffolding interference cannot be mitigated. Efforts to coordinate directly with Yorkshire representatives have not been successful.*
- *Determination of the conformance of the Low Vibration Track "booted block" pedestal with "Buy America" provisions.*
- *Resolution of the manner and location by which signal conduit will be embedded in the structure has remained unresolved for an extended period. MTACC abandoned its efforts to pass this configuration change requested by NYCT through to the C6 contractor at no cost.*
- *Continuing "discretionary" change requests are being made by NYCT. These changes typically add scope and cost to the C6 package and, if they continue unabated, may pose a direct challenge to achieving the scheduled Revenue Service Date (RSD).*

e. New Cost and Schedule Issues

- *None.*

3. PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

During the 1st Quarter 2013, MTACC initiated a complete review of its construction management capacity and capability, with specific emphasis on the completion, turnover and closeout of individual work elements as well as overall contracts. It is anticipated that this effort will improve the efficiency with which contracts are administered by increasing staff

awareness of the critical technical and contractual issues to be aware of when work is accepted and areas turned over to follow-on contractors.

The SAS Project Team continues to operate as an integrated project organization. Personnel from MTACC, NYCT, the Consultant Construction Management and Design Consultant are utilized throughout the five (5) functional groups in an efficient and cohesive manner that facilitates the efficient overall execution of the project.

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. However, d*uring the 1st Quarter 2013, MTACC determined it was necessary to redesign Entrance #1 at the 72nd Street Station due to an irreconcilable dispute with the adjacent building owner at* 301 E. *69th Street.*

Construction phase engineering support continued with:

- *Technical support through completion of the bid phase and construction contract award for the 72nd Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26011 (C4C).*
- *Bid phase support for the 86th Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26012 (C5C).*
- *Review and approval of construction contractor technical submittals for six (6) active contract packages.*
- *Assistance in evaluating and resolving contractor requests for additional compensation (AWOs).*

d. Procurement

Procurement activity during the 1st Quarter 2013 included the award of the 72nd Street Station Concrete Finishes & MEP Package, Contract C-26011 (C4C). Nine of the ten construction packages (C1, C2A, C2B, C3, C4B, C4C, C5A, C5B, C6) for SAS Phase 1 Project have been awarded to date. Award of the final Contract C-26012 (C5C) 86th Street Station Concrete, MEP/Finishes, Utilities, and Restoration is schedule for June 5, 2013. Close out of Contracts C1 and C5A has slipped to the 2nd Quarter 2013.

e. Railroad Force Account (Support and Construction)

Force Account labor on the SAS Phase 1 Project is being provided by NYCT employees and is budgeted at $43,000,000. *Through the 1st Quarter 2013, $3,709,978 of the $43,000,000 budget has been expended. The majority of the expenditure, $3,411,336 is still associated with the 63rd Street/Lexington Avenue Station Restoration Contract (C3).*

f. Vehicles

No additional vehicles will be procured for the SAS Phase 1 Project. MTACC has confirmed that spare vehicles resulting from service reductions within the NYCT system will be utilized to meet the SAS Phase 1 Project Concept of Operation.

g. Systems Testing and Start-Up

Responsibility for Systems testing and start-up is allocated to the Track, Power, Signals and Communications Systems Contract C-26009 (C6). The scope of the contract calls for the hiring of a Systems Integration Manager (SIM) supported by Systems Engineering Specialists (SES) to coordinate the efforts of the Systems Contractor and the Stations MEP Contractors in the preparation of their Systems Commissioning and Integration Testing (SCIT) Plans. The SCIT Plan provides the roadmap for the way forward for systems integration to ensure that the systems elements are integrated and tested in a structured, managed, comprehensive manner that enables MTACC/NYCT to confirm that the SAS system installation is "built-up" on a segment-by-segment basis and is compliant with the SAS plans and specifications. The plans will be developed based on the MTA Capital Construction Guidelines for a Systems Commissioning and Integrated Test Plan.

During the 1th Quarter 2013, the contractor continued submission and review of submittals under contract and coordination of shop drawings by Stations Contractors to avoid conflict during installation.

h. Project Schedule

The Grantee's (MTA) forecasted Revenue Service Date of December 30, 2016 (see Table 1 below) continues to be achievable based on completion of construction activities and implementation of risk mitigation measures during the 1st Quarter 2013.

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 25, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

i. Project Budget/Cost

No additional Federal Funds were obligated to the MTA for the SAS Phase 1 Project during the 1st Quarter 2013. Grant amendment NY-03-0408-09 in the amount of $186,566,000 is pending FTA approval. This amount represents the full FFY 2012 allocation published in the Federal Register on January 11, 2012. Total Federal Funds obligated as of March 31, 2013 is $1,063,942,000. See Table 2 below for additional details.

Table 2: Project Budget/Cost Table

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of *March 31, 2013*	
	$ Millions	% of Total	Obligated ($ Millions)	TBD	$ Millions	% of Total	$ Millions	% of Total
Grand Total Cost:	**4,866.614**	**100**	**4,572.942**		**5,267.614**	**100**	***2,259.208***	***42.89***
Financing Cost	816.614	16.78			816.614	15.50		
Total Project Cost:	**4,050.000**	**83.22**	**4,572.942**		**4,451.00**	**84.50**	***2,259.208***	***42.89***
Total Federal:	**1,350.693**	**27.75**	**1,063.942**		**1,350.693**	**24.60**	***685.986***	***13.02***
Total FTA share:	**1,300.000**	**96.25**	**990.049**		**1,300.000**	**23.68**	***621.734***	***11.80***
5309 New Starts share	1,300.000	100	990.049		1,300.000	23.68	*621.734*	*11.80*
Total FHWA share:	**50.693**	**3.75**	73.893		**50.693**	**0.96**	**64.252**	**1.22**
CMAQ	48.233	95.15	71.433		48.233	0.88	61.792	1.17
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	0.05
Total Local share:	**2,699.307**	**55.47**	**3,509.000****		****3,509.000**	**63.92**	***1,573.222***	***29.87***
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		

** Obligated amounts obtained from the Transportation Electronic Award Management (TEAM) system and MTACC's Grant Management Department.*

*** Current MTA Board approved budget is $3,509,000,000.*

j. Project Risk

Major issues that have either increased or decreased the risk of project schedule and cost increases during the 1st Quarter 2013 have been summarized as follows:

Decrease	***Increase***
• *Entrance #1 at the 72nd Street Station will be redesigned, with construction scope transferred from C4B to C4C. This reduces the risk of delay on the C4B construction package.* • *Plans to provide access to the 63rd Street Station communications rooms (C3 Milestone #3) for the C6 contractor should enable the C6 Contractor to pursue all work that is required and otherwise available at that location in conformance with milestone dates.*	▪ *A new lawsuit was filed by Yorkshire Towers regarding the design of Entrance #1 at the 86th Street Station.* ▪ *Determination of the conformance of the Low Vibration Track "booted block" pedestal with "Buy America" provisions. MTACC has stated that cost/schedule impacts will be incurred by the C6 Contractor if this determination is not made by April 1, 2013.* ▪ *Coordination of conduit installation between station contractors (provider) and*

Decrease	*Increase*
	C6 contractor (user) with respect to specific locations and requirements appears excessively complicated and time-consuming, resulting in additional exposure to delay and additional cost.

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

Status:

The Quarterly ELPEP meeting to review continuing MTACC compliance with ELPEP was held on March 13, 2013. With respect to SAS, the current status of each of the main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** *The TCC Plan update is nearing completion. Draft update of the SAS PMP (Rev. 9) is planned to be completed in late April 2013.*
- **Schedule Management Plan (SMP)**: The PMOC continues to monitor and verify SAS substantial compliance with the SMP. *An updated schedule contingency drawdown curve, which incorporates the 4th Qtr. 2012 Risk Register Update, is being reviewed internally and will be submitted as part of the PMP update process.*
- **Cost Management Plan (CMP)**: The PMOC continues to monitor and verify SAS substantial compliance with the CMP. *An updated cost contingency drawdown curve, which incorporates the 4th Qtr. 2012 Risk Register Update, is being reviewed internally and will be submitted as part of the PMP update process.*
- ***Risk Mitigation Capacity Plan (RMCP) and Risk Management Plan (RMP)**: Monthly Risk Review Meetings continue. The SAS Risk Register was updated for the 4th Quarter 2012.*
- ***Conformance and Compliance Demonstration**: An update of the ELPEP document is under development and consideration. Potential modifications to conformance and compliance will be addressed in this update.*

Observation:

The SAS Project Team has implemented the majority of the principles and requirements embodied in the ELPEP. The procedural changes initiated by the ELPEP have become an integral part of the management of the project.

Specific observations with respect to compliance of one or more of these plans are discussed in the appropriate section of this report.

Concerns and Recommendations:

None

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

Status:

During the 1st Quarter 2013, MTACC added additional construction management personnel to in order to enhance its technical capacity and capability to execute the project through:

- Implementing fundamentally sound decisions based upon a set of integrated project controls and a complete consideration of applicable risks and impacts.
- Effective management of project scope, schedule, budget and product quality.
- *Mitigation of interface issues as work areas are turned over from one contractor to another.*
- General compliance with policies, plans and procedures which govern and guide the execution of the project.
- Documentation of all relevant activities and actions.

Observation:

The Field Construction Staff for C5C position must be filled in the near future.

Concerns and Recommendations:

None

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

a) Adequacy of Project Management Plan and Project Controls

Status:

Proposed enhancements to the PMP are being documented via the Candidate Revision process. Update of the PMP is anticipated in the summer of 2013.

Observation:

The SAS PMP and its sub-plans are a comprehensive set of documents which provides an effective process in managing the SAS Project.

Concerns and Recommendations:

None

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 being initiated.*

Observation:

MTACC has presented its position with respect to the LVT "booted block assembly" and its conformance with "Buy America" provisions. MTACC's internal analysis concluded this to be a sub-component and thereby acceptable.

MTACC has been diligent in informing contractors of "Buy America" requirements

Concerns and Recommendations:

None

c) Grantee's Approach to Force Account Plan

Status:

Through the 1st Quarter 2013, $3,709,978 of the $43,000,000 budget has been expended. The majority of the expenditure, $3,411,336 is still associated with the 63rd Street/Lexington Avenue Station Restoration Contract (C3).

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. *The Force Account budget appears to be adequate and it is anticipated that SAS Cost Estimate Revision 10 will not increase the Force Account budget.*

Concerns and Recommendations:

None

d) Grantee's Approach to Safety and Security Plan

Status:

Each construction contractor continued implementation of its Safety, Security and Health Programs during the 1st Quarter 2013. First aid, recordable and lost time incidents were 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.

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 requirements for the contractor's security program are delineated. The section 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). The Monthly

Project Wide Safety Meeting is a good forum in providing "Lessons Learned" in order to benefit the entire project.

Concerns and Recommendations:

None

e) Grantee's Approach to Asset Management

Status:

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

Observation:

The SAS project team has developed a project asset inventory list which will be integrated into the NYCT property management system.

Concerns and Recommendations:

None

f) Grantee's Approach to Community Relations

Status:

On January 26, 2013 two community tours of the underground cavern at 72nd Street were conducted and the first two community tours of the 86th Street cavern were held on February 23, 2013. All were extremely well-received by attendees.

On January 30th, a Public Workshop was held with residents and stakeholders in the SAS corridor at Temple Israel, 112 East 75th Street (between Park and Lexington Avenue).

Meetings were held with political officials in order to brief them on expanded construction activities in the 96th Street Station area.

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:

The PMOC recommends MTACC update its Project Management Plan (Revision 9) with a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities. This update is forecast for mid-2013. [Ref: SAS-22-Jun 12].

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

a) Federal Requirements

During the 1st Quarter 2013, MTA continued its grant management process by issuing monthly finical reports and updating the Transportation Electronic Award Management System (TEAM)

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 Polices Act of 1970, as amended, and FTA real estate requirements 5010.1C.

c) Local Funding Agreements

On March 26, 2012, it was announced that the New York State Legislature has agreed to fully fund the Metropolitan Transportation Authority's five-year capital budget, allowing several major projects, including the Second Avenue subway to proceed as planned. No further updates were reported this period.

1.2 Project Controls

1.2.1 Scope Definition and Control

Status:

During the 1st Quarter 2013, there has been no material change in the scope of the SAS Project. Selected work elements are being transferred among construction packages in order to mitigate delays and minimize additional cost to the project.

Observation:

Transfer of work from one contract to another is an effective means of mitigating schedule impact and subsequent project cost. The SAS Project Team is performing effectively in managing this activity. The scope of the SAS Project is still defined by the FEIS, ROD and the FFGA. The project scope is being delivered via ten (10) construction packages. NYCT is providing support for rail systems engineering, installation and overall operating systems inspection and testing.

Concerns and Recommendations:

None

1.2.2 Quality

Status:

During the 1st Quarter 2013 the Second Avenue Subway Quality Management team continued holding Quality Meetings and Quarterly Quality Oversights 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.

Observation:

Implementation of the Quality Management System as defined in the contract specification is ongoing. Quality control activities are being performed by the contractors per their Contractor's Quality Plans (CQP). The MTACC's SAS Quality Managers and Project Quality Managers are performing quality assurance activities. *The PMOC attends Monthly Quality Management Meetings and Quarterly Quality Oversights on each SAS contract. The major issues noted by the PMOC during the first quarter of 2013 are delinquent submittals of Inspection Daily Reports on the C2A and C2B contracts and out of specification conditions for concrete on the C3 and C4B contracts. Details are provided in the following matrix:*

Contract Package C1	
Status:	There were 40 Nonconformance Reports (NCRs) written on the C1 contract. 16 of them involved concrete installation involving the following structural elements: • Invert Slab – seven NCRs • Slurry wall – five NCRs • Concrete Tunnel Liner Arch – four NCRs
Observation:	Of the 40 NCRs written on the C1 contract, two related to the slurry wall are still open. *A survey was performed, by the C2B contractor in March 2013 and the results were forwarded to AAJV for review and action. The two NCRs are expected to be closed in April 2013.* The status of the 16 NCRs involving concrete installation is as follows: • Invert Slab – None of the seven NCRs are still open • Slurry wall – Two of the five NCRs are still open • Concrete Tunnel Liner Arch – None of the four NCRs are still open
Concerns and Recommendations:	Contract C1 has been Substantially Complete since March 2012. The Contractor has demobilized and has a limited presence on site. The SAS Project Team continues to emphasize the closure of the remaining NCRs and has reduced the number of open NCRs to two. The PMOC recommends that the SAS Project Team continue their efforts to close these remaining two NCRs.
Contract Packages C2A and C2B	
Status:	*On C2A, through March 31, 2013, a total of 23 NCRs had been issued. 12 have been closed by both the contractor and MTACC. 11 NCRs are still open. About seven NCRs that have been open for more than five months should be resolved in April. Before these old NCRs could be closed, the contractor had to wait until mass excavation was complete or nearly completed in order to see the slurry wall panels.* *On C2B, through March 31, 2013, a total of 3 NCRs had been issued.*

	None have been closed and all 3NCRs are still open. The contractor was behind in submitting their Daily Inspection Reports on both contracts. *Based on a concern raised by the PMOC, the SAS Quality Manager stressed that the C2A/C2B contractor must submit Inspection Daily Reports within a week of being written.*
Observation:	*The contractor provided additional support and as of the end of March 2013, the contractor had eliminated the backlog of Inspection Daily Reports.*
Concerns and Recommendations:	*Although there are many open NCRs on C2A, the PMOC believes that the SAS C2A Quality Manager and the C2A Contractor Quality Manager are managing this issue effectively.* *The PMOC recommends the contractor continue to provide additional support as needed so that the Inspection Daily Report issue does not recur.*
Contract Package C3	
Status:	*Through March 31, 2013 a total of 29 NCRs have been issued. 28 have been closed by both the contractor and MTACC and one is still open with MTACC.* *Upon reviewing the concrete matrix from the period May 24, 2012 to December 31, 2012, the SAS Quality Manager identified out-of-spec conditions regarding slump (11 instances), air entrainment (2 instances), and placement time (6 instances).*
Observation:	*Cylinder breaks exceeded the minimum strength in all instances that slump, air entrainment, and placement time were out of spec. However, the SAS Quality Manager directed that the remaining out-of-spec conditions be documented on NCRs.*
Concerns and Recommendations:	None at this time.
Contract Package C4B	
Status:	*Through March 31, 2013 a total of 32 NCRs have been issued. 26 have been closed by both the contractor and MTACC. 6 NCRs are open. Upon reviewing the concrete matrix from the period May 7, 2012 to February 5, 2013, the SAS Quality Manager identified out-of-spec conditions regarding slump (3 instances), air entrainment (52 instances), and placement time (39 instances).*
Observation:	The contractor issued Nonconformance Reports (NCRs) for slump (3 instances) and air entrainment (3 instances) in July 2012 at the suggestion of the PMOC but has not issued NCRs since. *Cylinder breaks exceeded the minimum strength in all instances that slump, air entrainment, and placement time were out of spec. However, the SAS*

	Quality Manager directed that the remaining out-of-spec conditions be documented on NCRs.
Concerns and Recommendations:	The PMOC is satisfied that SAS Project Management has elevated this issue and recommends that the contractor document all instances when concrete parameters are out of specification. It is further recommended that this issue remains on the agenda for the Monthly Quality Management Meeting until the SAS Project Management Team is satisfied that this is happening.
Contract Package C5B	
Status:	*Through March 31, 2013 a total of 12 NCRs have been issued. 10 have been closed by both the contractor and MTACC. 2 NCRs are open.*
Observation:	*It is the PMOC's opinion that the Quality System is functioning properly on this contract at this time.*
Concerns and Recommendations:	*None at this time.*

Concerns and Recommendations:

Refer to previous section.

1.2.3 Project Schedule

Status:

A summary of project schedule information is as follows:

	FFGA	**Forecast Completion**	
		Grantee	**PMOC**
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	December 31, 2013	October 4, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

MTACC established December 30, 2016 as its target RSD and bases its schedule and schedule contingency reporting on this target. FTA/ELPEP used 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:

The Revenue Service Date (RSD), as forecast by Update #80 of the MTACC's Integrated Project Schedule (IPS), has remained December 30, 2016. For the 1st Quarter 2013, the calculated completion of Phase 1 construction and testing is October 4, 2016, with 90 calendar

days (CD) of schedule contingency when measured against the MTACC's target RSD of December 30, 2016.

MTACC continues to review, refine and adjust the IPS based upon receipt of contractor construction schedules and in response to the impact of construction delays and interaction with external stakeholders.

Concerns and Recommendations:

The SAS Project Team continues to demonstrate its capability and capacity to actively manage the project schedule. No concerns were identified this period.

1.2.4 Project Budget and Cost

Status:

Total project cost in the approved FFGA is $4,866,614,000 and is allocated into the Standard Cost Categories (SCC) as shown below in Table 1-1.

Table 1-1: Standard Cost Categories

Standard Cost Category (SCC) #	Description	Year of Expenditure $000
10	Guideway & Track Elements	612,404
20	Stations, Stops, Terminals, Intermodal	1,092,836
30	Support Facilities: Yards, Shops, Admin Bldgs.	0
40	Site Work & Special Conditions	276,229
50	Systems	322,707
60	ROW, Land, Existing Improvements	240,960
70	Vehicles	152,999
80	Professional Services	796,311
90	Unallocated Contingency	555,554
Subtotal		4,050,000
Financing Cost		816,614
Total Project		4,866,614

Table 1-2 lists the associated grants in the Transportation Electronic Award Management (TEAM) System with respective appropriated, obligated, and disbursed amounts as of March 31, 2012. No additional Federal Funds were obligated to the MTA for the SAS Phase 1 Project during the 1st Quarter 2013. Grant amendment NY-03-0408-09 in the amount of $186,566,000 is pending FTA approval. This amount represents the full FFY 2012 allocation published in the Federal Register on January 11, 2012. Total Federal Funds obligated as of March 31, 2013 is $1,063,942,000.

Table 1-2: Appropriated and Obligated Funds

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *March 31, 2013*
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	*$61,755,421*
NY-03-0408-08	$197,182,000	$197,182,000	0
NY-03-0408-09	*$186,566,000*	Pending	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	*$41,120,000*
Total	*$1,250,508,200.00*	$1,063,942,200.00	*$685,986,621.00*

* Denotes American Recovery and Reinvestment Act (ARRA) funds.

A total of $2,259,208,044 has been expended on the project through March 31, 2013, of which $439,458,769 has been spent on design and $1,337,089,604 on construction (MTACC's March 2013 Cost and Schedule Summary Input).

Observation:

Local funds totaling $1,637,474,000 have been spent as of March 31, 2013.

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.

In January 2013, the Risk Register was updated through the 4th Quarter, 2012. The results of this update are discussed elsewhere in this report.

Active risks are reviewed at the monthly Risk Management Meeting. Additional efforts are being made to ensure that the risk process includes the input of construction field staffs.

Concerns and Recommendations:

The updated Risk Register emphasized the transition of the project from heavy civil and geotechnical construction to architectural, MEP and systems installation. The PMOC recommends the SAS Project Management Team refresh its collective understanding of the scope, schedule and key issues associated with this work in an effort to better identify and anticipate risk associated with this "new" phase of work.

1.2.6 Project Safety and Security

Status:

Safety – The OSHA Lost Time Accident Rate and Recordable Accident Rate from the start of construction until February 28, 2013 are 2.08 and 5.50, respectively. Both rates showed an improvement from the previous reporting period. The Lost Time Accident rate is slightly above the national average of 2.0 and the Recordable Accident Rate is above the national average of 3.5. The cumulative construction time worked since the project inception is 5,383,388 hours. Total lost time injuries since project inception is 56 and other recordable injuries are 92.

The have been 148 total recordable injuries (the sum of the lost time injuries and the other recordable injuries).

On March 19, 2013, a construction worker was seriously injured after he became trapped in chest-high mud between 95th and 96th Streets. Approximately 155 first-responders responded and began the operation to rescue the worker. Some four hours later, the half-submerged man was finally freed from the mud and transported to a medical facility.

MTACC and OSHA have conducted independent evaluations of the incident. Additional work zone controls and safety measures have been implemented by the contractor.

Security – Implementation of the Contractor's Site Security Plans are ongoing. *During the 1st Quarter 2013, no security incidents were noted.*

Observation:

Although the February 2013 rates are above the National Average, each contractor's rate has decline from the previous reporting period.

Concerns and Recommendations:

None

1.3 FTA Compliance

Status:

On September 27, 2012, MTACC transmitted SAS PMP Revision 8.1, which incorporates all FTA/PMOC comments to date. A log of "Candidate Revisions" for PMP Revision 9, is being maintained.

Observation:

The SAS Project Team has substantially complied with ELPEP and its associated sub-plans throughout the 1st Quarter 2013. Any non-compliance issues are specifically discussed in Section 4.4 (Schedule), Section 5.4 (Cost Contingency) and Section 6.3 (Risk Management Status) of this report.

Concern has been expressed that MTACC's redesign of the 72nd Street Station, Entrance #1 must be reviewed for compliance with the SAS EIS. Using its standard methodology, SAS will develop a TAC paper describing all aspects of this redesign and the steps taken to ensure compliance with the EIS. This TAC paper will be sent to the FTA for review and approval.

Concerns and Recommendations:

None.

1.3.1 FTA Milestones Achieved

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

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. *Relocated Entrance 1 (72nd Street Station) will require a significant redesign effort.*

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:

None

2.1.2 Procurement

Status:

Updated procurement status includes:

- *Construction contract C-26011 (C4C) "72nd Street Station Architectural, MEP and Finishes Package" was awarded on February 14, 2013.*
- *Construction documents were made available to interested contractors for the 86th Street Station Architectural, MEP and Finishes Package, C-26012 (C5C), on December 24, 2012. Receipt of bids is currently scheduled for April 10, 2013.*

Observations and Analysis:

Award of the C5C construction package will complete all construction procurement for SAS Phase 1.

Concerns and Recommendations:

Although there is schedule contingency built into the C5C procurement, the PMOC is concerned about any delays to the procurement of this package due to its proximity to the project critical path.

2.1.3 Construction

Status:

Nine (9) of the 10 construction contracts for the SAS Phase 1 Project have been awarded. Construction progress on the active contracts through March 31, 2013 includes:

Contract C-26002 (C1) – TBM tunnels from 92nd Street to 63rd Street

- *Substantial Completion was achieved on March 30, 2012 and contract closeout is ongoing.*
- *Time Impact Cost for two additional work orders are being finalized with the contractor.*
- *Final As-Built Drawings have been submitted and are being reviewed by Construction Manager's office.*
- *Contractor is currently re-surveying the tunnel in order to revise the previously submitted tunnel alignment as-built drawings.*
- *Acceptance by the User Group (NYCT) is pending resolution of Nonconformance Reports and a final walkthrough in the tunnel.*
- *Final Acceptance letters are awaited from third-party agencies.*

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

- *Completed approximately 93.4% of the mass excavation, which includes spoils disposal from the main station box, Entrance #1, 2, and 3 and Ancillary 1 and 2.*
- *Excavation of contaminated material from a former Manufactured Gas Plant (MGP) was completed. Approximately 6,500 tons of spoils were removed.*
- *Concrete for the structural base of the station is 32.4% complete (12 of 37 invert slab pours inside the former TBM launch box are complete).*
- *Completed installation of 20 micropiles at Entrance 1. Completed demolition of 1st floor concrete slab and continued with structural demolition at basement and street level.*
- *Started demolition of secant Soldier Pile Tremie Concrete (SPTC) wall to install the K-frame and continued installation of walers and struts at Ancillary #1.*
- *Started installation of Grace waterproofing membrane between grid lines 36 and 37 inside the launch box.*
- *Completed installation of last Cast-In-Place (CIP) slab and continued to install waler and struts at Ancillary #2.*

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

- *MTACC conditionally approved the contract's baseline schedule on January 25, 2013.*
- *Completed 100% of contract lead abatement work inside existing SAS tunnel between 99th and 105th Street. Issued AWO to CTJV to remove lead paint on steel columns encased in concrete along the high and low benches -50% complete.*
- *Completed application of shotcrete along the secant pile Support of Excavation within the launch box between GL 36 and 37.*
- *Continued to demolish concrete high and low benches in existing tunnel – 80% complete.*
- *Set up of the office trailer complex at the southeast corner of 97th Street and 2nd Avenue was completed.*

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

- *Surveying of the Deformation Monitoring Points (DMPs) is ongoing and will continue throughout the project.*
- *MPT*
  - *New MPT has been setup at the corner of 3rd Ave. & E. 63rd St. for the work at Entrance #1.*
- Quality
  - *The next Quarterly Quality Audit is scheduled for April 11, 2013. The contractor has scheduled 2 internal audits for 2013.*
- Schedule
  - *The contractor's forecast continues to show approximately 138 days delay, extending the forecast substantial completion date to November 2014.*
  - *With the Area 5 structural steel nearing completion the critical path now goes through the Area 5 concrete floor slab placements.*
  - *The schedule for Milestone #3has slipped considerably from April 2014 to the contractor's forecast of approximately November 2014. MTACC and the contractor are working on mitigation measures to insure that the C6 contractor has access to the site to begin necessary work.*
  - *The first coordination meeting with the C6 contractor took place on March 8, 2013.*
  - *A schedule meeting took place on March 20, 2013 with the contractor and the new MTACC scheduler. An MTACC internal meeting took place on Thursday, March 21, 2013 to discuss further coordination with the C6 contractor.*
- Structural Steel
  - *The last delivery for Area 5 steel took place on March 19, 2013.*
  - *Completion of Area 5 steel erection continued to be forecast for the end of March 2013, However as of March 31, 2013 the completed steel was at approximately 95%. It should be noted that a portion of the roof/Plaza Deck steel will remain uninstalled for the near future to accommodate the plaza opening that is the primary access to Area 5 for material and equipment.*
- Area 5 (Reconstruction consists of 6 mezzanines and the deck plaza roof)
  - *Continued with temporary and permanent structural steel erection at the 6th Mezzanine and Roof.*
  - *Completed 2nd Mezzanine floor slab placement and the east 4th Mezzanine slab. Began placement of the west 4th Mezzanine floor slab.*
  - *Continued with intumescent paint in the Area 5 upper invert.*
- Entrance #1
  - *Basement wall demolition began.*

- *Support of Excavation began at the building corner.*
- *Excavation for exterior pier foundations began for the building corner structural support.*

- Ancillary #1
  - *At Ancillary #1 the 3 weekend street closures on 63rd St. between Lexington and Park Avenues were completed in only 2 weeks. All structural steel was erected and the new cooling tower was placed on the roof.*
  - *Continued with excavation for cooling tower piping in the basement of Ancillary #1.*
- Platforms
  - *Completed service carrier frame installation at the G4 level.*
  - *Water leaks along the Upper (G4) Platform are preventing continuation of intumescent painting.*
- Fan Plants
  - *Completed installation and began running the ejector system in the West Fan Room.*
  - *Continued delivery/installation ductwork for south & east fans in West Fan Room.*
  - *Continued duct, pipe and conduit in East Fan Room.*
- Contract C6 Coordination
  - *The first coordination meeting with the C6 contractor took place on March 8, 2013 at the C6 contract office on E. 94th St.*
  - *The issues covered in this initial meeting included:*
    - *CAD base coordination drawings*
    - *Extent of Judlau work at the Communication Rooms*
    - *Status of Signal Drawings*
    - *Elevations of Ductwork/Diffusers in Room 2161*
    - *Fire Alarm Power Feed*
    - *Rooms 2161, 2446, 2653, 1399 & CBH (1396)*
  - *The first activity for the C6 contractor at the 63rd St. Station will be to make the connection to this direct feed and route it to Rm 2161. There will be a "redundant" feed that routes back to the other 3 stations from which the respective data will be routed to/from Rm 2161. Judlau requested a priority list from CSJV going forward.*

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

- *Rock excavation has been completed. 183,591 Bank Cubic Yards of rock were removed.*
- *Rebar installation and permanent concrete pours is ongoing in the Main Cavern. Waterproofing of arch and south end wall has commenced.*
- *South Crossover – Waterproofing of arch is ongoing*
- *G4 Tunnel – Arch form assembly is ongoing.*

- *Stub Cavern –Permanent concrete installation of arch is ongoing.*
- *Entrance 2: Completed the excavation for the elevator shaft. STJV has partially shifted the work zone to the north side of 86th Street and began installing the remaining Support of Excavation walls for the escalator entrance. This work is now on hold pending the removal of the sidewalk shed on the north sidewalk by the building owner who is performing Local Law 11 work.*
- *Building remediation ongoing at 1405 2nd Ave. and 259 East 71st Street.*

Contract C-26011 (C4C) 72nd Street Station Excavation, Utility Relocation and Road Decking

- *The construction contract was awarded on February 14th, 2013 to Judlau Contracting.*
- *Contract Milestones*
  - *Project Duration (with 14 Interim Milestones): 33 months*
  - *Substantial Completion: November 13, 2015*
  - *Operations and Maintenance Period : 12 month period after Substantial Completion*
  - *Pre-Revenue Start-up Period: 2 months prior to Operations and Maintenance*
- *Meetings held:*
  - *General Kick Off: Discuss of contract (overview), contract management, roles and responsibilities, organization, interface with other contracts, permits and agency coordination, community relations, Quality Management, Safety / Security Requirements, Schedule Requirements, Environmental Requirements and Schedule Overview.*
  - *Schedule Kick Off: Judlau's Project Scheduler was approved for the project. The preliminary schedule was conditionally accepted and requires a re-submittal. The preliminary schedule was conditionally accepted and requires a re-submittal. The detail schedule was due 3/31/2013, but advice was given that if necessary, take extra days to ensure that it is as close to complete so as not to have multiple submittals.*
  - *Building Information Modeling (BIM) Meeting: The Contractor is required to build from scratch a 3D Master Model of the Project based off of the existing 2D contract drawings. The purpose of the 3D Master Model is to verify clearances, identify potential conflicts, and generate 2D shop drawings. The 3D Model is also to be coordinated with the schedule, staging sequence, and overall construction progress. An As-built Master Model is to be turned over to the Authority at the end of the project to be used for maintenance purposes during the entire life of the constructed subway station.*

Contract C-26013 (C5A) 86th Street Station Excavation, Utility Relocation and Road Decking

- *Substantial Completion was achieved on November 16, 2011.*
- *Coordination with the Office of Civil Rights (OCR) is ongoing to obtain DBE/WMBE compliance letter which is required prior to final payment.*
- *Awaiting acceptance letters and final invoices from Con Edison and ECS.*

- *Final position letter for AWO #27 was submitted to JDSI for acceptance which was prepared after coordinating with Procurement & MTACC Legal. Time Impact Costs under AWOs #59 and #84 are under Audit and Procurement review.*

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

- *Work continued with 3 shifts.*
- *All surface operations end at 10:00PM daily.*
- *MPT*
  - *Bi-Monthly meetings with the NYPD are ongoing.*
  - *The contractor has erected the MPT along the work zone between E. 78th and 79th Streets and completed the abatement for the abandoned steam line for ConEd abatement.*
  - *The MPT along E. 86th St., east of 2nd Ave. has been moved from the south to the north side of the street. The elevator shaft has been decked over to allow for vehicle traffic.*
- *Quality*
  - *The contractor is continuing to increase the testing of the rock bolts to catch up to the required total of 3%. However, the overall average is above 3%. This is ongoing until rock bolting is complete throughout the mining operations.*
- *Schedule*
  - *The MTACC scheduler advised that continuous blasting at the Entrance #2 area has helped the schedule, but there are no more mitigation measures available at Entrance #2. This remains the most critical schedule issue. Currently the forecast is for a 6 week delay.*
  - *Ancillary #2 is ahead by 4 weeks as of March 1, 2013. Entrance #1 is projected to lose approximately 2 weeks of float due to delays in starting placement of footings due to the time consumed in the mechanical excavation. The overall progress in the blasting/ excavation/mucking to the bottom bench in the caverns continues to help mitigate some of the overall delays.*
- *Main Cavern*
  - *Continuing with excavation and lowering the "bench" to the final invert in the Cavern.*
  - *Continuing with muck removal and shotcreting in the main cavern.*
- *South Open Cut Area*
  - *Removed the west side construction stair in the South Open Cut in preparation to lower the bench. Erected a new construction stair at the west end, Ancillary #1 area for access to the south side of the site*
  - *Continued with mining and shotcreting in the CIR room in the South Open Cut.*
- *Ancillary #1*

- *Completed the rock excavation down to approximate Elevation 80 (from the previous Elevation 90).*

- *Ancillary #2*
  - *Completed the rock excavation in the open cut shaft.*
  - *Continued select blasting and rock excavation sequence at the cavern access.*
- *Entrance #1*
  - *Continued mechanical rock breakup & excavation at the breakthrough opening at Entrance #1.*
  - *Continued demolition of the street level slab at Entrance #1.*
- *Entrance #2*
  - *Completed mining in the cavern for Entrance #2. SOE walls and vertical rock excavation from the street level continues to be on hold.*
- *Rock Excavation (for the week ending March 31, 2013)*

  As reported to the PMOC by the MTACC C-26008 Project Office
  - *Total rock (estimated) for complete project – 154,623 BCY*
  - *Total rock excavated to date – 119,987 BCY (77.5%)*
- *Summary by Area (As of March 31 area breakdown data was only available to March 22, 2013:*

  North Cavern – 55,686 BCY (total); *42,078BCY (to date); 75.6%*
  South Cavern – 54,302 BCY (total); *47811 BCY (to date); 88%*
  Ancillary #1 – 11,725 BCY (total); *9,137 BCY (to date); 77.9%*
  Ancillary #2 – 4,830 BCY (total cut & cover)*; 4,830 BCY (to date); 100%*
  Ancillary #2 – 7,480 BCY (total from cavern); *4,263 BCY (to date); 57%*
  Entrance #1 – 1,990 BCY (total from cut & cover); *1,482 BCY (to date); 74.5%*
  Entrance #1 – 1,800 BCY (total from cavern); *1,800 BCY (to date); 100%*
  Entrance #2 – 14,237 BCY (total from cut & cover); *2,675 BCY (to date); 18.8%*
  Entrance #2 – 2,573 BCY (total from cavern)*; 2,573 BCY (to date); 100%*
- *The tracking of total rock excavation (actual) from April 6, 2012 through March 22, 2013 vs. planned excavation shows the cumulative rock excavation production to date to be tracking with the baseline schedule. This represents a reduction in progress due to the inability to access the Entrance #2 cut and cover work area.*

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

- *Continued submission and review of submittals under contract and coordination of shop drawings by Stations Contractors to avoid conflict during installation.*
- *MTACC approval of key contractor personnel is ongoing.*
- *The Contractor continues survey for the track, traction power, signals and communications work.*
- *Performed survey of signal equipment for asbestos prior to removal work.*

- *Completed removal of out of service wayside equipment and inside the signal relay rooms at 63rd Street Station.*
- *Continued installation of conduits and cable tray brackets at 63rd Street Station.*
- *Delivered approximately 23,600' of running rail and associated fasteners to offsite yard.*

Observations:

Key elements of work or issues requiring resolution in the near future to avoid delays to the work are described below:

For Contract C2A:

- *Mitigation of any activity impacting invert placement CTJV is currently projecting the critical path through the mainline invert work (rebar, waterproofing and invert pours).*

For Contract C2B:

- *Resolution of MTACC's comments associated with Update No. 1 of the Baseline Schedule (Revision R6.2). Tracking of long lead items by CTJV.*

For Contract C3:

- *Structural steel fabrication and erection progress has been an area of concern for several months.*
- *The PMOC has also observed that in late November 2012 the original schedule for completion of Area 5 steel erection in mid-December was re-baselined to February 16, 2013. However, the contractor's erection totals once again slipped behind the weekly planned/goals and was re-forecast to the end of March/early April 2013. As of March 31, 2013 the structural steel erection in Area 5 was reported by the Project Office to be approximately 95% complete. Coordination with the C6 contractor has begun to mitigate Milestone #3 delay and allow access to the site for the C6 work as soon as possible.*

For Contract C4B:

- *Entrance No. 1 scope incorporated into Contract C4C.*
- *Recovery of Milestone #1 and Substantial completion required by contractor.*

For Contract C5B:

- *The schedule mitigations undertaken at the Entrance #2 work zones (proceeding with rock excavation at the elevator shaft ahead of schedule and completing Entrance #2 mining in the cavern, to mitigate Con-Ed utility delays and delays caused by the impasse with Yorkshire Towers) have been expended. No new mitigation measures are available at this area of the site. This issue is beyond the efforts of the Project Office and can only be resolved by MTA upper management/MTA Legal.*

For Contract C6:

- *Ongoing review of 63rd, 72nd 86th, and 96th Street Station contractor's shop drawings for coordination and to avoid construction and equipment installation conflicts.*

Concerns and Recommendations:

The SAS Project Team continues to identify, prioritize and address construction problems which have the potential to delay the project. There are no new concerns or recommendations at this time.

2.1.4 Force Account (FA) Contracts

Status:

As of March 31, 2013, force account expenditures are $3,884,711 of the $43,000,000 budget. The majority of the expenditure ($3,563,633) is in support of the 63rd Street/Lexington Avenue Station Restoration Contract (C3).

Observation:

Force account labor is being provided by NYCT. The principal source of force account expenditures are for general orders, work trains, and flagging support for the modification of the 63rd Street/Lexington Avenue Station.

Concerns and Recommendation:

None

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 June 15, 2016 to October 25, 2016.

Observation:

The IPS will be updated to reflect any adjustments or changes in pre revenue service activities.

Concerns and Recommendation:

None

2.2 Third-Party Agreement

Status:

During the 1st Quarter 2013, the SAS Project Team continued its Interagency Coordination as defined in Section 12 of the SAS PMP. MTACC, PB/CCM and contractors meet with Con Edison and ECS representatives bi-weekly to discuss and resolve utility related issues. Coordination with Verizon, DEP, NYCDOT, and NYC Fire Department is ongoing.

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 current working budget for third-party agreements is $76,768,950. As of March 31, 2012 reimbursements totaling $40,817,167 have been made. It is anticipated that SAS Cost Estimate Revision No. 10 will increase the budget to $90,000,000.*

Concerns and Recommendation:

None

2.3 Contract Packages and Delivery Methods

Status:

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 1st Quarter of 2013.*

Table 2-1 below shows specific procurement procedures for each open construction contract package and its current status.

Table 2-1 Construction Procurement Method and Status

			Procurement	
Pkg.	**Contract**	**Description**	**Type**	**Status**
C4C	C-26011	72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.	IFB	*Awarded this Period*
C5C	C-26012	86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.	IFB	*Bid Period*

Observation:

By adding schedule contingency to the procurement process, MTACC has substantively addressed the PMOC's concern about delay during procurement and significantly reduced the risk of delaying the award of the last construction contract.

Concerns and Recommendations:

None

2.4 Vehicles

Status:

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:

The root cause of major delays in implementing cost-to-cure work resulting from real estate transactions have either been resolved or "work-around" solutions have been implemented. Real estate acquisition is not currently impacting construction operations.

Conclusions and Recommendations:

None at this time.

2.6 Community Relations

Status:

On January 26, 2013 two community tours of the underground cavern at 72nd Street were conducted and the first two community tours of the 86th Street cavern were held on February 23rd. All were extremely well-received by the attendees.

On January 30th, a Public Workshop was held with residents and stakeholders in the SAS corridor at Temple Israel, 112 East 75th Street (between Park and Lexington Avenue).

Meetings were held with political officials in order to brief them on expanded construction activities in the 96th Street Station area

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:

The PMOC has previously recommended that the community relations effort be more completely integrated 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. [Ref: SAS-26-Jun 12]. *This concern will be addressed as part of Revision 9 to the PMP.*

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

3.1 Project Management Plan

Status:

On September 27, 2012, MTACC resubmitted the SAS Project Management Plan as Revision 8.1. This revision formally incorporated all FTA/PMOC comments made to Revision 8, which was originally issued in January 2011. *MTACC is currently updating the SAS PMP (Rev. 9).*

Observation:

"Candidate Revisions" are being reviewed and the specific means by which they will be addressed identified. Candidate Revisions are scheduled to be fully incorporated in the PMP draft revision by June 2013.

Concerns and Recommendations:

As previously noted, the current phase of construction has progressed to a point that now involves certain activities and processes not addressed in detail by previous revisions of the PMP. The updated PMP should include these activities and processes.

3.2 PMP Sub Plans

Status:

As part of the ongoing PMP update, any revisions in the PMP which have a "ripple impact" to the PMP Sub Plans will require updating.

Observations:

SAS Sub-Plan documents consist of: Project Quality Manual, Quality Assurance Plan, 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, and Quality Implementation Procedures.

Concerns and Recommendations:

Any non-compliance issues 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:

MTACC is currently conducting an audit of 21 of the total of 79 project procedures that are referenced by the SAS PMP or its sub-plans (particularly the CMP and SMP) and the ELPEP.

Observations:

Results of this audit should be available by June 2013. This audit may initiate additional revisions to the PMP and/or its major sub-plans.

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 #80 was received on April 2, 2013 and is based on a Data Date of March 1, 2013. This update contained ".PDF" schedule reports for all remaining work, the critical/longest path, variance tabulation between Updates # 79 and 80, summary schedule and ".XER" schedule files for the IPS and all active construction contracts. The IPS still reflects the forecasted completion of all construction and NYCT Pre-Revenue Training & Testing activities by October 4, 2016, with 90 calendar days (CD) or 64 work days (WD) of contingency when measured against MTACC's target Revenue Service Date (RSD) of December 30, 2016.*

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 4, 2016	October 2017
Revenue Service	June 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. #77 Forecast S/C	Upd. #80 Forecast S/C	Schedule Duration	Change
			Time	Progress ($)	Δ Time v. Money				
C1	3/20/07	3/20/12	100%	97.0%	3.0%	3/20/12A	3/20/12A	609 CD	0 CD
C2A	5/28/09	4/22/13	99%	*91.6%*	8.0%	7/9/13	*7/17/13*	*86 CD*	*8 CD*
C2B	*6/22/12*	11/25/15	23%	*6.5%*	16.9%	12/22/15	*12/22/15*	*27 CD*	*0 CD*
C3	1/13/11	5/13/14	67%	*41.7%*	25.6%	10/22/14	*10/22/14*	*162 CD*	*0 CD*
C4B	10/1/10	12/3/13	80%	*74.8%*	4.8%	1/31/14	*2/5/14*	*64 CD*	*5 CD*
C4C	2/14/13	10/5/15	6%	*0.0%*	5.8%	11/4/15	*11/13/15*	*39 CD*	*9 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*	55%	*50.1%*	4.5%	9/18/14	*9/18/14*	*14 CD*	*0 CD*
C5C	Future	7/11/16	0%	*0.0%*	0.0%	5/16/16	*5/16/16*	*-56 CD*	*0 CD*

Pkg	Award Date	Contract S/C	% Complete			Upd. #77 Forecast S/C	Upd. #80 Forecast S/C	Schedule Duration	Change
			Time	Progress ($)	Δ Time v. Money				
C6	1/18/12	8/18/16	27%	*5.9%*	20.9%	8/16/16	*8/16/16*	*-2 CD*	*0 CD*

1. "Future" contracts use MTACC estimated dates based upon preliminary schedules.

2. Monthly Change reflects schedule gain/loss over most recent reporting period. Negative sign denotes time gain and positive sign denotes time loss.

3. The contracts marked as Future have not been awarded.

Observations and Analysis:

Table 4-2 indicates that schedule slippage for all construction contracts was minimal during the 1st Quarter of 2013. This table provides a comparison between percentage contract time elapsed to date and the estimated percentage of work complete based upon payments to the contractor. This comparison results the following observations:

- *Contract C2A, C4B and C5B exhibit a variance between the two metrics of less than 10%. The percentage of work completed compares favorably with the percentage of contract time elapsed to date. The risk of an extended delay in contract completion for these contracts appears low.*
- *Contract C2B and C6 exhibit a much greater variance between percentage of work completed and the percentage of contract time elapsed to date. This variance is the result of access restraints from predecessor contracts and was anticipated based upon the overall structure of the IPS.*
- *Contract C3 exhibits the greatest variance between percentage of work completed and the percentage of contract time elapsed to date. This can be attributed to delays previously discussed and suggests a much higher risk to the delayed completion of this contract and associated follow-on work.*

Schedule progress through the current update period (March 1, 2013) was adequate to support the forecast RSD of December 30, 2016.

- *C2A: The forecast Substantial Completion date improved by 1 WD to July 17, 2013. The stability of the schedule combined with the high level of project completion suggests a low level of schedule risk associated with the completion of this package. "Handoffs" to follow-on contract C2B are currently forecast to complete on or before milestone dates.*
- *C3: During March 2013, the contract CPM was completely revised. There is no mapping of old activities to new activities available. Consequently, with the exception of contractual milestones, progress reporting must be completely revised using new activities.*
- *C4B: Substantial Completion slipped by 8 WD, from January 24, 2014 to February 5, 2014. With the transfer of Entrance #1 work to the C4C contract, structural concrete*

installation in the main cavern arches and endwalls is the most critical path involving C4B, with +15 WD of schedule float.

- *C4C: Construction based upon MTACC preliminary schedule. Activities added this period to represent the full scope of work required to design and construct revised Entrance #1.*
- *C5B: South Cavern Excavation is currently behind schedule by approximately 8 WD. Entrance #2 construction continues to be impacted by interference with façade inspections conducted by Yorkshire Towers.*
- *C6: Additional detail added to IPS for track and traction power preconstruction and procurement activities in response to PMOC request.*

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		Affected	Var.	Sch.	Notes
			Adjusted (2)	Forecast (4)	Pkg.	(CD) (5) = (2) - (4)	Float	
C2A	MS #1	99th to 97th Street; surface and underground work complete including Ancillary #2	03/09/13	*07/18/13*	C2B	*-131*	*89*	MTACC and Contractor have reached tentative agreement on delays to Substantial Completion through 7/15/13. Cost of delay is TBD.
C2A	MS #2	92nd to 95th Street; surface and underground work complete including Ancillary #1, Entrances 1 & 2	08/07/12	*07/10/13*	C2B	*-337*	*79*	
C2A	SS	Completion of all remaining work - 95th to 97th Streets including Entrance #3.	04/22/13	*07/18/13*	C2B	*-87*	*152*	
C3	MS #3	Completion of all Work on the Mezzanine levels associated with the installation of conduits, raceways, and other installations necessary to allow for cable pulling related to communications work	*04/15/13*	*12/23/13*	C6	*-252*	118	Driven primarily by structural steel delay. Structural steel forecast completion = mid-February 2013.
C3	MS #4	Completion of all Work on the Lower and Upper Platforms. Completion of all Signals Rooms.	*10/14/13*	*01/06/14*	C6	*-84*	182	Driven primarily by structural steel delay. Structural steel forecast completion = mid-February 2013.
C3	MS #5	Completion of all work within the underground parking garage at 188 East 64th Street	*08/30/13*	*08/30/13*		*0*	333	

Pkg	MS	Description	Dates		Affected	Var.	Sch.	Notes
			Adjusted (2)	Forecast (4)	Pkg.	(CD) (5) = (2) - (4)	Float	
	MS #6	Complete work @ Ancillary #1	07/09/12	06/13/13		*-339*	387	Delayed start of work (11/28/12) due to access agreement with parking garage owner.
C3	SS	Substantial Completion	05/13/14	10/30/14	C6	*-170*	42	Driven by delays to Entrance #1. Delay impacts "unimpeded access" for C6 @ track level.
C4B	MS #1	Completion of Ancillary #2 shaft & adits, availability of cavern from Grid Line 17 north, west of Entrance #2 adit	*06/25/13*	*08/01/13*	C4C	*-37*	*103*	*Substantial Completion now calculated without Entrance #1.*
C4B	SS	Substantial Completion	*12/03/13*	*02/05/14*	C4C	*-64*	*16*	
C5B	*MS #1*	*Complete all Station Cavern work south of Grid Line 15 and all surface work south of 85th Street centerline.*	*03/04/14*	*03/17/14*	*C5C*	*-13*	*40*	*Progress delays to be evaluated.*
C5B	*SS*	*Substantial Completion*	*09/04/14*	*09/17/14*	*C5C*	*-13*	*40*	
C6	**MS #1**	**Completion of Signal Block Design**	**08/18/12**	**9/4/12A**	**C6**	**N/A**	**N/A**	Work Complete.
C6	MS #2A	Complete LAN - 96th Street Station	05/18/15	05/18/15	C2B	0	187	Forecast dates do not exceed contract dates.
C6	MS #2B	Complete WAN - 96th Street Station	05/18/15	05/18/15	C2B	0	187	
C6	MS #3A	Complete LAN - 86th Street Station	07/18/15	07/17/15	C5C	1	139	
C6	MS #3B	Complete WAN - 86th Street Station	07/18/15	07/17/15	C5C	1	139	
C6	MS #4A	Complete LAN - 72nd Street Station	02/18/15	02/18/15	C4C	0	255	
C6	MS #4B	Complete WAN - 72nd Street Station	02/18/15	02/18/15	C4C	0	255	
C6	MS #5A	Complete LAN - 63rd Street Station	04/18/14	04/18/14	C3	0	97	
C6	MS #5B	Complete WAN - 63rd Street Station	04/18/14	04/18/14	C3	0	97	
C6	MS #5C	Complete all 63rd Street Station work	04/18/14	04/18/14	C3	0	97	
C6	SS	Substantial Completion	08/18/16	08/18/16		0	97	

Notes:

1. All schedule dates based upon March 1, 2013 update (IPS Update #80)
2. Contract packages 1 and 5A have completed all work and follow-on activities are proceeding w/o impact.
3. Contract packages 2B, 4C and 5C; no variances with contract milestones to date.

Concerns and Recommendations:

Based on the sampling of activities in the Milestone Summary, the PMOC notes the following:

- *Work-around solutions to delays involving C3, MS #3 should mitigate the impacts of these delays. Mitigation plans for other C3 delays need to be developed.*
- *Work involving Entrance #1 @ the 72nd Street Station has been transferred from C4B to C4C, and this work no longer impacts the C4B schedule. Remaining MS #1 and MS #2 variances for the C4B package are significant and recovery plans should be investigated.*

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update#80 (DD=3/01/13), 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
C2A – 96th Street Station Sitework& Heavy Civil		
Stage 6 Excavation – South End 95-97 (SC)		*3/29/13*
Demo/Rainbow Hardware/Struct Survey/Renovate		*4/3/13*
Pour Invert + Embedded MEP 97-99 (MS #1)		*7/17/13*
C2B – 96th Street Station Concrete, Finishes & Utilities		
Fire Proof Steel		*5/31/13*
Tunnel Traction Power Conduit/Supports		*5/31/13*
Demo Benches/Build New Benches		*3/28/13*
C3 – 63rd Street Station Rehab		
P/S/R/A- FAT Procedures for Fan Coil Units		*5/24/13*
Structural work @ Entrance #3		*5/10/13*
Arch Finishes @ Ancillary #1		*6/12/13*
MEP Work @ Ancillary #1		*6/12/13*
C4B – 72nd Street Station Mining & Lining		
Ancillary 2 Relocate Gas Main/Install Con-Ed Ducts		*3/15/13*
F/R/P/S G4 TBM Arch		*4/18/13*
F/R/P/S North Crossover Arch		*3/4/13*
F/R/P/S G3/S1 Cavern II Arch		*3/7/13*
C4C—72nd Street Station Finishes		
Ent#1: Complete TAC Paper/FTA Concurrence		*5/31/13*
C5B – 86th St. Station Mining & Lining		
Complete Ancillary #2 Excavation		*5/10/13*
North Cross Passage; Conc. Lining Sta. 1193+03		*3/31/13*
South Cavern Exc: Public Cavern Bottom Bench		*7/8/13*

Activity ID	Start	Finish
North Cavern Exc: Public Cavern Bottom Bench		*6/18/13*
C5C – 86th St. Station Finishes & MEP		
Bid Opening		*4/10/13*
Award Contract		*6/5/13*
C6 – Systems		
Fiber Optic Cable Procurement		*6/6/13*

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *C2B continues to perform contract work earlier than planned through cooperation with the C2A contractor.*
2. *The duration of many C6 preconstruction design and procurement activities is excessive. "Near-critical" preconstruction design and procurement activities should be divided into meaningful activities of smaller duration to facilitate short-term monitoring and progress evaluation.*

Concerns and Recommendations:

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

4.3 Critical Path Activities

Status:

Based on Update #80 of the IPS, the calculated date for completion of all SAS Phase 1 activities is October 3, 2016. This results in 90 calendar days of contingency when compared against the MTACC's revenue service goal of December 30, 2016.

The IPS contains numerous contractual milestones and schedule constraints which support modeling the interaction of the construction packages. Accurate modeling of the interaction of the active construction packages complicates the identification and interpretation of the overall project critical path. Due to the inherent limits in the accuracy of CPM methodology and the information developed in a complicated project of this nature, the schedule model can never be a 100% accurate representation of the project. As such, the PMOC monitors and evaluates all "near-critical" paths with a schedule float value of 60 work days or less.

Based on an analysis of the critical path(s), the PMOC considers the primary "critical" or "near-critical" schedule drivers of the project to be:

1. *Construction of the 86th Street Station*
2. *Design, manufacture and installation of traction power systems at the 96th and 86th Street Stations.*
3. *Design, manufacture and installation of signal system equipment at 96th and 63rd Street Stations.*
4. *Design, manufacture and installation of signal system equipment.*

Observations:

Project Critical Path: *The most "critical" or longest schedule path that spans between the current data date of March 1, 2013 and the project completion date (RSD) consists of three distinct elements:*

1. *The initial portion of this path involves procurement activities for the C5C construction package, which is currently in progress. There are several paths which precede the "critical" (TF=0) path. This path contains the lowest schedule float value of all paths preceding the "critical" path. C5C procurement currently has 18 WD of schedule float and concludes with the contract award on June 5, 2013.*
2. *A schedule "lag" of 447 WD connects the C5C contract award to C5C MS#9, Complete Work in all Traction Power Rooms (North). C5C MS#9 initiates Activity #C6AR86-06, which is the C6 contractual "full access" date to traction power rooms at the north end of the 86th Street Station. This milestone defines a time period during which the C5C contractor will construct necessary elements of the 86th Street Station to support follow-on C6 installation activities and serves to constrain subsequent C6 work activities so they cannot start before March 18, 2015. This "lag" will be replaced with the actual C5C construction schedule when it is available.*
3. *The final portion of this path involves traction power installation and testing at the 86th Street Station, which is scheduled for completion on August 17, 2016. NYCT "Proof of Operation" testing is concurrent with Traction Power System Testing and also is scheduled for completion on August 17, 2016. All third party construction is completed as of August 18, 2016, when the C6 Packages is scheduled for completion. NYCT operational testing, including dispatch tower testing, proof of route familiarity and new systems and equipment familiarization are the final activities for SAS, Phase 1, with scheduled completion on October 3, 2016. Adding the current schedule contingency of 64 WD results in the target RSD of December 30, 2016.*

Secondary Paths: *Major secondary or "near-critical" float paths of significance to the overall status of the project include the following:*

+2 WD: *This path is initiated by equipment submittal and approval, design, manufacture and delivery of traction power equipment at the 96th Street Station. It then follows the installation of the traction power system at the 96th Street Station through its local and integrated test activities. This path merges with the critical path on May 18, 2016 with the start of Proof of Operation testing.*

In response to requests made by the PMOC, the IPS has been enhanced with significantly greater detail for traction power preconstruction and manufacture activities. However, the PMOC remains concerned about the use of schedule "lags" where definable, traceable activities and logic could be employed. Specifically, it is unclear why a 100 WD lag follows "Submit DC Breaker Schematics" when 20 WD approval activities are used subsequent to several other submittals within the same float path.

+7 WD: *This path is initiated by equipment submittal and approval, manufacture and delivery of traction power equipment at the 86th Street Station. This path merges*

with the critical path, installation of traction power equipment at the 86th Street Station, on April 1, 2015.

Similar to the +2WD path, an 85 WD schedule lag is used between approval of switchgear schematics and submission of switchgear wiring diagrams. It is unclear why 85 WD of inactivity between these tasks is "planned" in the schedule.

+17 WD: *This path is initiated by the "design" of the communications system at the 96th Street Station, which is reportedly underway. This path is the most critical path in the IPS involving communications systems. The original duration of this activity exceeds two years. MTACC has committed to breaking this activity into more definable and traceable elements in Update #81 of the IPS. Following design, installation of hardware and software is forecast to require approximately 11 months, completing on January 11, 2016 and followed by local communications system testing at 96th Street Station which is scheduled to complete on July 25, 2016 and is a part of the overall integrated system & stations testing, which is scheduled for completion on August 17, 2016.*

There was no change to this path this update period. It is not possible to verify the status of an activity when its scope is indeterminate and its duration excessive. As previously noted, the PMOC is extremely concerned that this lack of definition and excessive duration of certain IPS activities near the critical path such as described here compromises the value and usefulness of the IPS.

+16 WD: *This path is initiated by the construction of the G3/S1 structural concrete followed by G4/S2 structural concrete and the construction of cavern electrical benches and end walls. Contract C4B substantial completion and turnover to C4C is scheduled to occur on January 24, 2014. C4C has until November 10, 2014 to construct the required elements of Ancillary 1, at which time this area is made available to the C6 contractor. This path then follows signal system installation at the 72nd Street Station through June 24, 2016, at which time the signal system is made available for operational and integrated testing activities.*

+23 WD: *NYCT Pre-Revenue Operation Activities scheduled to start on August 18, 2014. This path is unchanged this period.*

+ 38 WD*: The detail design and development of signal system shop drawings controls the start of this path and should complete in mid-July 2013. The start of signal equipment manufacture is staggered in the following order; 63rd St. → 72nd St. → 96th St. → 86th St. Development and review of system shop drawings is currently in progress, with equipment delivery for 86th St. currently scheduled for October 2, 2015. Installation work at 86th St. is scheduled to be completed on March 18, 2016 and is followed by local and system testing. This path merges with the project critical path on August 17, 2016 with the completion of integrated testing and commissioning of systems and stations.*

The PMOC remains concerned about two specific issues found on this path:

- *The excessive duration of activities representing the manufacture and delivery of signal equipment at each of the four SAS station locations. This condition is expected to be addressed in IPS Update 81.*

- *The start of equipment manufacture for 86th Street Station has the least schedule float (+38 WD) yet its start is intentionally delayed until approximately 4 months after the completion of signal system design.*

+40 WD: *This path is initiated by excavation of the south cavern of the 86th Street Station, which is currently being performed by the C5B contractor. Following cavern excavation, drainage, waterproofing and structural concrete work, control of this area is transferred to the C5C contractor. This handoff is currently scheduled to occur at C5B Substantial Completion on September 17, 1014. The C5C contractor has until March 18, 2015 to construct the required elements of the 86th Street Station to support subsequent systems installation and to provide access to the C6 contractor. At this point in the schedule, this path joins the critical path (TF=0) and follows traction power system installation and testing at the 86th Street Station.*

+50 WD: *This path is initiated by excavation and structural concrete at the 86th Street Station, entrance #1, currently being performed by the C5B contractor. Responsibility for completing Entrance #1 is transferred to the C5C contractor on September 14, 2014, at which time this path merges with the +40 WD path and subsequently with the +18 WD path and finally with the critical path on March 18, 2015. Each of these three paths are discussed above.*

+60 WD: *Signals installation at the 96th Street Station follows equipment installation in the 96th Street Relay Room from its start on August 26, 2014 through testing and availability for service on April 27, 2016. Predecessors to this path include construction of Ancillary #1 (+74 WD float) and Ancillary #2 (+64 WD float), both by C2B.*

+78 WD: *After the complete rework of the C3 schedule, work at Entrance #1 is now the "most critical" work at the 63rd Street Station. This path is initiated by escalator fabrication, installation, startup and testing and also includes architectural and MEP construction at that location.*

Work at Entrance #3 is no longer dependent on completion of work at Entrance #1; however substantial completion of C3 and start of subsequent systems installation work at the G3 & G4 trackway is dependent on submission and approval of O&M manuals for the escalators. MTACC is working to resolve this inexplicable logic with the C3 contractor. This logic refinement will result in C3 Substantial Completion and the access restraint for the start of the G3 & G4 trackside work to essentially align and remove a previously note PMOC concern.

The PMOC notes that the access restraint between Entrance #1 and the G3/G4 trackside work does not appear to be a "true" physical restraint. Rather than neutralizing this logic through the use of negative lags, MTACC should clarify the relationship in that area with the affected contractors and utilize more conventional schedule logic to model the activities and relationships in that area at that time.

<u>Concerns and Recommendations</u>:

Based on its review of the critical and near-critical paths, the PMOC offers the following:

1. *It is understood that the IPS is not a "production" schedule, and the usual concerns regarding the use of schedule lags are not completely applicable. However, for "near*

critical" paths (reference the +2 WD path) excessive periods of no activity created by lags should be replace with documentable work activities and defensible schedule logic.

2. *As previously noted, where activities with excessive durations are found on "near-critical" paths (reference the +17 and +38 paths), they should be broken down in a reasonable manner to facilitate tracking and evaluation of acceleration or work-around options if needed.*
3. *The PMOC considers Items #1 and #2 above to be necessary prerequisites to MTACC's compliance with ELPEP Section IV.b, which states that "near critical" schedule float paths shall contain at least 25 CD of schedule float.*
4. *It is noted that in several instances, contract schedule do not appear to contain adequate time for "punchlist", "cleanup" or "demobilization" type activities. For example, C4B Substantial Completion is currently forecast for February 5, 2014. Main Cavern Electrical Bench Concrete (Activity 72C1845) has a scheduled completion date of February 4, 2014. The PMOC is concerned that adequate time is scheduled for necessary activities of this type. Failure to do so increases the risk of delay to inter-contract turnovers.*
5. *The schedule logic involving the relationship between Entrance #1 and Entrance #3 at the 63rd Street Station and their relationship to signal equipment installation is has been partially resolved. The PMOC recommends the relationship and sequencing of Entrance #1 work and signal equipment installation in the G3 and G4 trackway be clarified with both the C3 and C6 contractors.*

4.4 Compliance with Schedule Management Plan

Status:

Since August 2010, the PMOC has monitored and evaluated the SAS Project Team's compliance with its Schedule Management Plan, developed as part of the overall ELPEP process.

Observations and Analysis:

In the opinion of the PMOC, SAS Phase 1 is in compliance 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). Specifically:

- *Forecast Revenue Service Date*
  - *ELPEP Requirement: February 28, 2018*
  - *Current Forecast: December 30, 2016*
- *Minimum schedule contingency (measured against February 28, 2018 RSD)*
  - *ELPEP Requirement: 240 CD*
  - *Current Forecast:* 513 *CD.*
- *Minimum Allowable Float; Real Estate Acquisition*
  - *ELPEP Requirement: 60 CD*

- *Current Forecast: All Real Estate Takings are complete as of November 1, 2011. Delays associated with cost-to-cure work have been resolved.*

- *Minimum Allowable Secondary Float Path*
  - *ELPEP Requirement: 25 CD*
  - *Current Forecast: Independent "near critical" paths @ +2 WD (3 CD), +7 WD (10 CD) and +17 WD (24 WD). It does not appear to be economically reasonable to mitigate (accelerate) work on these paths to achieve full ELPEP compliance.*
- *Secondary Schedule Mitigation (critical path compression)*
  - *ELPEP Requirement: 125 CD*
  - *Current Forecast: Not Available.*

MTACC continues to demonstrate that it is using the IPS to actively plan, organize, direct and control individual packages and the overall project, and to provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments.

Concerns and Recommendations:

With respect to project schedule management, the MTACC has realized the beneficial outcomes envisioned by the ELPEP on SAS. MTACC has generally been in compliance with its Schedule Management Plan, however, the PMOC recommendations made in Section 4.3 of this Report should be reviewed and addressed in order to assure MTACC's continued compliance with its SMP.

No further concerns or recommendations in this section.

5.0 PROJECT COST STATUS

5.1 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 Current Working Budget to Standard Cost Categories

Std. Cost Category (SCC)	Description	FFGA	*MTACC's Current Working Budget (Dec. 31, 2012)*
10	Guideway & Track Elements	$612,404,000	*$638,107,000*
20	Stations, Stops, Terminals, Intermodal	$1,092,836,000	*$1,294,629,000*
30	Support Facilities	$0	*$0*
40	Site Work & Special Conditions	$276,229,000	*$534,865,000*
50	Systems	$322,708,000	*$265,792,000*
60	ROW, Land, Existing Improvements	$240,960,000	*$281,500,000**
70	Vehicles	$152,999,000	*$0***
80	Professional Services	$796,311,000	*$973,000,000*
90	Unallocated Contingency	$555,554,000	*$463,107,000*
Subtotal		$4,050,000,000	*$4,451,000,000*
Financing Cost		$816,614,000	*$816,614,000*
Total Project		**$4,866,614,000**	***$5,267,614,000***

* Includes $47M Cost-to-Cure

** FTA Region II has accepted MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project.

The PMOC notes that the MTACC's CWB omits the cost for new Rolling Stock or corresponding reduction in funding and that this CWB does not represent an approved budget modification in any form.

Observation and Analysis:

Table 5-1 represents MTACC's most recent update (December 2012) of its CWB into the FTA Standard Cost Categories.

Conclusions and Recommendations:

MTACC is executing Phase 1 of the SAS within the constraints of its CWB. PMOC will continue to monitor MTACC conformance to its budget.

5.1.1 Project Cost Management and Control

Status:

The SAS Project Team accumulates and reports actual cost expenditures against MTACC-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 can be mapped to the FTA Standardized Cost Categories. Budget and cost are reported using 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.

5.1.2 Project Expenditures and Commitments:

Status:

As of March 31, 2013, a summary comparison of the SAS Current Working Budget (Estimate Revision #9) and expenditures is as follows:

Description	CWB	Expended	%
Total Construction (1)	$2,710,354,299	*$1,337,089,604*	*47.8%*
Total Soft Cost	$1,255,727,995	*$922,118,440*	*73.4%*
Contingency	$484,917,706	*(Included above)*	
Subtotal	$4,451,000,000	*$2,259,208,044*	*50.8%*
(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 March 2013, SAS Phase 1 is approximately 50.8 % complete. The completion status of the active construction contracts through March 2012, also based upon reported expenditures through that date, is as follows:

- C26002 (Tunnel Boring) – 97.1%
- *C26005 (96th Street Station) – 91.6%*
- *C26010 (96th Street Station) – 6.5%*

- C26013 (86th Street Station) – 100%
- *C26008 (86th Street Station) – 50.09%*
- *C26006 (63rd Street Station) – 41.7%*
- *C26007 (72nd Street Station) – 74.8%*
- *C26009 (Systems) – 5.9%*

Aggregate Construction % Completion:

- *91% of all construction work is under contract*
- *54.2% of active construction contracts are complete*
- *47.8% of all construction is complete*

Based upon cost data received from MTACC for March 2013:

- *Value of construction in place this period = $55,110,558*
- *Estimated value of construction remaining = $1,373,264,695*
- *Target construction completion = August 18, 2016*
- *# Months remaining = 40.7*

Average rate of construction required to achieve target completion date = $33,776,090/MO

Soft Cost expenditures (not including real estate, OCIP, etc.) during March 2013 totaled approximately $5.01M. This expenditure is higher than that experienced in recent months and reflects an increase in design, construction administration and construction management expenses. If soft cost expenditures continue at this rate for an extended period of time, some contingency transfer to soft cost categories may be required.

Conclusions and Recommendations:

The average progress (payments) achieved over the most recent six month period is $48,870,829. Based on a review of cost data for March 2013, it appears that adequate overall progress was made on the project to achieve the RSD of December 30, 2016.

5.1.3 Change Orders

Status:

As of March 31, 2013, 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
C26002 (1)	97.00%	$337,025,000	$53,095,231	15.75%	$45,212,443	13.42%
C26005 (2A)	*91.60%*	$325,000,000	*$48,395,294*	*14.89%*	$35,363,514	10.88%
C26010 (2B)	*6.50%*	$324,600,000	*$1,213,542*	*0.37%*	$120,073	0.04%
C26006 (3)	*41.70%*	$176,450,000	*$6,617,278*	*3.75%*	*$3,056,430*	*1.73%*

Contract / (Package)	% Complete	Award	Exposure		Executed	
			$	% of Award	$	% of Award
C26007 (4B)	*74.80%*	$447,180,260	*$1,290,518*	*0.29%*	*$3,904,332*	*0.87%*
C26011 (4C)	*0.00%*	*$258,353,000*	*$0*	*0.00%*	*$0*	*0.00%*
C26013 (5A)	*100.00%*	$34,070,039	*$6,388,055*	18.75%	$4,285,471	12.58%
C26008 (5B)	*50.09%*	$301,860,000	*$8,245,361*	2.73%	*$2,055,188*	*0.68%*
C26009(6)	*5.90%*	$261,900,000	$1,210,283	*0.46%*	$269,360	0.10%
TOTAL		*$2,466,438,299*	*$126,455,562*	*5.13%*	*$94,266,811*	*3.82%*

To date, approximately $1,337,089,604 (54.21%) worth of awarded construction work has been completed. As a % of work completed, the AWO exposure for these contracts = 9.46% and the executed AWO % = 7.05%. Based on performance to date, a forecast of total AWO expenditure of approximately $200M appears reasonable. This compares favorably with the $229M AWO contingency contained in the MTACC CWB. The PMOC notes that AWO expenditures for certain construction contract packages are trending above established budget values and industry "standards". The PMOC continues to recommend that all AWOs be critically reviewed, evaluated and documented on a contemporaneous basis to determine if compensable responsibility exists for some of these expenditures.

Observation and Analysis:

The value of AWOs reported by MTACC/NYCT in March 2013 is summarized as follows:

	Executed AWOs	*AWO Exposure*
March-2013	*$94,266,811*	*$126,455,562*
February-2013	*$91,499,896*	*$128,242,045*
Monthly Change	*$2,766,915*	*- $1,786,483*
Monthly Change	*3.03%*	*-1.44%*

The change in AWO Exposure during March 2013 is summarized as follows:

Const. Pkg.	***AWO Exposure $***			***Changes this Period***
	Feb-13	***March-13***	***Period Δ***	
C1	*$53,095,231*	*$53,095,231*	*$0*	*No change. Close-out negotiation of outstanding AWOs in progress.*
C2A	*$48,513,899*	*$48,395,294*	*-$118,605*	*Reduction is based upon updated valuations of AWO # 85, 131, 137 and 141. No new AWOs were added this period.*
C2B	*$1,014,962*	*$1,213,542*	*$198,580*	*Net increase based on initial valuation of AWOs #10 and 11 as well as reductions in valuation of AWOs #5 and 14. No new AWOs were added this period. Five of the total fourteen AWOs do not have exposure values.*

Const. Pkg.	*AWO Exposure $*			*Changes this Period*
	Feb-13	*March-13*	*Period Δ*	
C3	*$5,847,505*	*$6,617,278*	*$769,773*	*Net increase based on revised valuation of AWOs # 21 and 30, as well as the initial valuation of AWOs # 37 and 39 through 51. Twelve new AWOs were added this period. All AWOs have exposure values.*
C4B	*$3,209,337*	*$1,290,518*	*-$1,918,819*	*Net reduction based on updated valuation of AWOs # 26, 53, 62 and 63. Three new AWOs were added this period. Five of 68 AWOs do not have exposure values, including AWO # 67 which represents the deletion of Entrance #1 from this contract.*
C4C	*$0*	*$0*	*$0*	*No AWO exposure to date.*
C5A	*$6,717,318*	*$6,388,055*	*-$329,263*	*Reduction based upon revised valuation of AWO #27. No new AWOs added this period. All AWOs have exposure values.*
C5B	*$8,633,510*	*$8,245,361*	*-$388,149*	*Net reduction based on the revised valuation of AWO #31, and initial valuation of AWOs #14, 15, 37 and 41. No new AWOs were added this period. Fifteen of a total of 53 AWOs do not have exposure values.*
C5C	*$0*	*$0*	*$0*	*No AWO exposure. Bid Phase*
C6	*$1,210,283*	*$1,210,283*	*$0*	*No change this period. No new AWOs were added this period. Four of a total of 14 AWOs do not have exposure values.*
	$128,242,045	*$126,455,562*	*-$1,786,483*	

Concerns and Recommendations:

MTACC, with support from NYCT, has 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.

Based on a review of the MTACC/NYCT AWO logs updated through March 2013:

1. *The PMOC has previously commented on the need to update AWO Exposure Values in a timely manner in order to maintain the validity of the financial reporting and forecasting systems. Considerable improvement in this effort has occurred. Only C5B exhibits a significant number of AWOs that do not have an associated Exposure Value.*
2. *Cost associated with transfer of Entrance #1 work from C4B to C4C has been incorporated in the C4C contract value; however an estimated value of the corresponding credit from C4B has not been identified. To maintain an accurate financial assessment of the project, an estimated credit for deletion of this work should be provided.*

5.2 Project Funding

Status:

Total Federal participation is currently $1,350,692,821. 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 *March 31, 2013*
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	*$61,755,421*
NY-03-0408-08	$197,182,000	$197,182,000	0
NY-03-0408-09	*$186,566,000*	Pending	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	*$41,120,000*
Total	$1,250,508,200.00	$1,063,942,200.00	*$685,986,621.00*

* Denotes American Recovery and Reinvestment Act (ARRA) funds.

A total of $2,259,208,044 has been expended on the project through March 31, 2013, of which $439,458,769 has been spent on design and $1,337,089,604 on construction (MTACC's March 2013 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

5.2.1 Overall Project Funding

Refer to Section 5.2 of this Report.

5.2.2 Local Funding

Refer to Section 5.2 of this Report.

5.3 Cost Variance Analysis

Status:

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*
- *Current Estimate At Completion – 3/2013*

Cost 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.

This analysis will be updated upon receipt of MTACC's Revision 10 to the SAS Phase 1 Cost Estimate. This update will primarily involve soft cost revisions required to complete the project.

Observation and Analysis:

Each milestone has been matched to the revised SAS Phase 1 Cost Estimate that was "current" at that time. In several instances, information from these estimates was used to support development of key agreements or documents. Cost information is based upon MTACC documentation and has been summarized into the categories previously used by the PMOC to report cost variances and EAC updates.

Milestone Estimate Date	FFGA Rev. 5d Jun-07	ELPEP Rev. 7 Oct-09	CWB Rev. 9 Jun-11	EAC Mar-13	Variance FFGA→EAC
Construction	$ 2,692,000,000	$3,177,079,000	$3,000,000,000	$ 2,987,359,473	$ 295,359,473
Δ (%)		18.02%	-5.57%	-0.42%	9.89%
Eng./Prof. Services	$ 491,000,000	$ 541,000,000	$ 592,000,000	$ 591,500,000	$ 100,500,000
Δ (%)		9.24%	8.61%	-0.08%	20.47%
3rd Party Expenses	$ 626,000,000	$ 747,000,000	$ 535,000,000	$ 534,800,000	$ (91,200,000)
Δ (%)		16.20%	-39.63%	-0.04%	-17.05%
TA Expenses	$ 75,000,000	$ 103,000,000	$ 124,000,000	$ 128,160,085	$ 53,160,085
Δ (%)		27.18%	16.94%	3.25%	41.48%
Contingency	$ 160,000,000	$ 104,844,687	$ 200,000,000	$ 209,180,442	$ 49,180,442
TOTAL	$ 4,044,000,000	$4,672,923,687	$ 4,451,000,000	$ 4,241,819,558	$ 197,819,558
TOTAL (rounded)	$ 4,050,000,000	$4 ,673,000,000	$ 4,451,000,000		4.66%

AFI and AWO contingencies are included as part of Construction budget values (FFGA, ELPEP and CWB)

Period	***Variance***	***Comments***
FFGA→ELPEP	*13.46%*	1. *Saturated construction market combined with economic uncertainty resulted in unfavorable construction bid results.* 2. *Project estimates and schedules were adjusted to reflect market factors experienced in 2007 bids including escalation, contingencies, profit and risk factors.* 3. *Project estimates revised to incorporated project delays and forecast material price increases. Project completion date revised to December 2016 (MTACC).*
ELPEP→CWB	*-4.99%*	1. *MTACC to provide additional railcars from existing fleet rather than provide approximately 80 new cars as part of SAS Phase 1. 3rd Party Expenses reduced by 39.63%* 2. *MTACC increases the number of construction contracts from 6 to 10; limits size of any construction contract to approximately $400M.* 3. *Favorable bid results, forecast construction cost reduced by 5.57%*
CWB→EAC	*-4.93%*	1. *Forecast construction cost reduced by 0.42%*
FFGA→EAC *(Net Variance)*	*4.66%*	1. *Net reduction of 17.05% in 3rd Party Expenses is primarily the result of MTACC's ability to provide additional railcars from existing fleet.* 2. *Net increase of 20.47% in Eng. & Prof. Services primarily the result of increases in design/construction administration services, which have been consistently increasing over the FFGA→EAC time period.* 3. *TA expenses have experienced the highest percentage increase; however represent a minimal impact, as they represent approximately 3% of the total EAC.*

Using the MTACC financial reporting format contained in its Capital Construction Reports, the PMOC maintains an independent Estimate-At-Completion (EAC) report for Phase 1 of the Second Avenue Subway Project until such time as the MTACC assumes this reporting function in accordance with its Cost Management Plan. This EAC is based on:

1. *Contract awards, AWOs and actual expenditures.*

2. *Forecasts and projections based upon Item 1.*
3. *The results of MTACC's cost estimate (Rev. 9) for SAS Phase 1, where needed.*
4. *Cost information provided by the SAS project team through established contemporaneous reporting.*
5. *Events, Issues, and trends with a high risk of cost impact as identified by the PMOC.*

A summary of the SAS Phase 1 EAC, based on values developed as noted above is as follows:

Table 5-4: Estimate @ Completion

	CWB	***EAC***
Total Construction	$2,710,354,299	*$2,952,369,392*
Engineering Services	$591,298,960	*$591,500,000*
Third Party Expenses	$536,268,950	*$534,800,000*
TA Expenses	$128,160,085	*$128,160,085*
Contingency	$324,917,706	
Executive Reserve	$160,000,000	
TOTAL	$4,451,000,000	*$4,206,829,477*

Conclusions and Recommendations:

Based on the information available, the PMOC's EAC validates the reasonableness of the MTACC's Current Working Budget of $4.451B. Based upon current information, this effort suggests the project can be built within the limits of the Current Working Budget. This effort will be revisited periodically, to incorporate updated information and evaluate its effect on the overall EAC.

5.4 Project Contingency

Status:

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

- $220 million through 90% Bid and 50% Construction
- $140 million through 100% Bid and 85% Construction
- $45 million 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 required minimum contingency balance of $220,000,000.

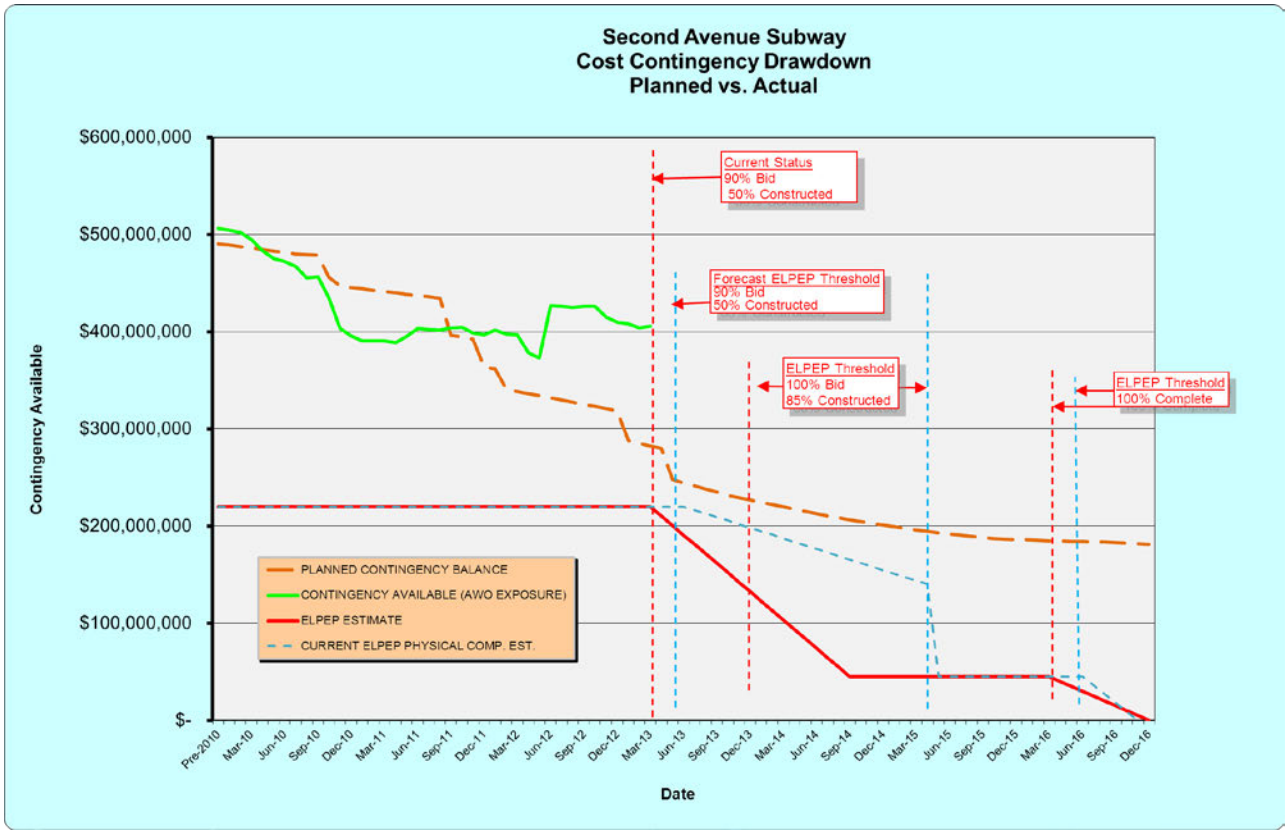
Observations and Analysis:

During December 2012, contingency changes were limited to routine incorporation of AWOs into the individual project and overall program reporting systems. No other significant changes in the SAS construction program have been reported that materially affected the forecast cost contingency baseline against which the current contingency balance is measured.

The PMOC has updated and adjusted its contingency drawdown and utilization model to reflect changes made this period. 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.

	December 2012	***March 2013***
Required Balance (ELPEP):	*$220,000,000*	*$220,000,000*
Planned Contingency Balance:	*$318,629,661*	*$282,457,737*
Actual Contingency Balance (PMOC):	*$409,467,114*	*$405,935,333*
Actual Contingency Balance (MTACC):	*$422,693,000*	*$392,055,000*

In graphic form:



During March 2013, based upon the actual physical % completion of the work, it was agreed that MTACC had achieved the initial "hold point" on the contingency drawdown curve. From this point forward, the ELPEP required minimum contingency balance will be reduced monthly.

Concerns and Recommendations:

This evaluation is based on a thorough evaluation 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:

During the 1st Quarter 2013, results of the C5C Risk Workshop were reviewed and evaluated. When complete this analysis will:

- *Verify that adequate contingency funds are contained in the project budget*
- *Confirm that adequate schedule duration has been included in the contact document.*
- *Provide insight into the probability of the project achieving cost and schedule goals*
- *Assist in updating package risk registers.*

Observation and Analysis:

None at this time.

Conclusions and Recommendations:

None at this time

6.3 Risk Management Status

Status:

Risk Management includes the manner by which the project team identifies and copes with risks retained by the MTACC. The SAS Risk Manager supports and coordinates specific risk management efforts, which may involve a wide range of senior project management personnel.

Observation and Analysis:

Specific Risk Management activities observed by the PMOC during the 1st Quarter 2013 include:

- *Utilization of the Integrated Project Schedule (IPS) to actively manage the work and to develop work-around scenarios to mitigate the effect of delays encountered. Examples include C4B – Entrance #1, Transfer of Scope to C4C, C3 – mitigation of MS #3 delays.*
- *Ongoing investigation of schedule alternative to accelerate testing and commissioning activities and generate additional schedule float.*

During the 1st Quarter of 2013, the Risk Registers for each active construction contract were updated to identify current risks and their estimated impact on cost and schedule performance. The PMOC has summarized the cost consequences and probability of occurrence for each risk in the register and obtained the following project summary:

	Cost Exposure ($M)	
	High Mitigation	Low Mitigation
3rd Qtr. 2012	23.077	175.310
4th Qtr. 2012	10.630	54.850
Δ	**-12.447**	**-120.460**

Based on the 4th Quarter 2012 update, cost exposure with a high degree of risk mitigation decreased by $12.447M and cost exposure with a low degree of mitigation decreased by $120.460M.

Major additions or changes to the risk register include the following:

ID	Title	Risk	Comments
C2A			
46	Damage to existing building structures	Construction of entrances within or below existing buildings may cause damage to existing structure (Rainbow). Contractor successfully claims it was not his responsibility	Added. Probability=10% Low Est=$0 High Est=$1M
133	Rework due to quality issues	Rework due to quality issues that is above than normal expected results in schedule delay	Revised Probability=85%. Schedule: Low Est = 15WD High Est = 45 WD
C2B			
600	Service period after completion	Delay of integrated testing and/or Contract 6 (Systems) may require additional funds to cover the cost per month for service beyond Substantial Completion to cover the cost per month for service of contract 2B beyond substantial completion.	Added. Probability=40% Low Est=$0 High Est=$.7M
302	Integrated Testing	Testing of 96th may be delayed due to other delayed contracts tied in resources.	Added. Probability=40% Low Est=$0 High Est=$1.5M
87	Community unrest with surface restoration work	DOT and Stakeholders reaction to the surface restoration plan which is not yet approved adds additional cost.	Revised. Probability=30% Low Est=$1M High Est=$2M
C0	Third Party Utilities	Changes requested by Utilities after the award of the Contract resulting in scope changes,	Added. Probability=40%

ID	Title	Risk	Comments
	changes	cost impact and contract time extensions	Low Est=$0 High Est=$3M
C3			
26	Buy America	The material/ equipment specified is challenged as not complying with Buy-America standard requiring long waiver approval process. This may cause schedule delay (Note: This item was added to multiple contract packages as part of this update.)	Added. Probability=10% Low Est=30 WD High Est=60 WD
137	Untimely RFI responses lead to claims	Changes to design as a result of field conditions and/or potential E&O lead to additional cost & schedule delay	Revised. Probability=30% Low Est=$1M High Est=$5M
301a	MEP Installation Delays	MEP installation may be delayed due to interface issues, lower productivity than planned, etc.	Added. Probability=10% Low Est=$0 High Est=$1M
302	Integrated Testing	Testing of 96th may be delayed due to other delayed contracts tied in resources. (Note: This item was added to multiple contract packages as part of this update.)	Added. Probability=40% Low Est=$0 High Est=$1.5M
C4B			
147	Vibration from mining operation	Negative community reaction to the mining operation (vibration, noise, overpressure) forces the contractor to modify the planned operation resulting in lower productivity. This may result in delay and related claims.	Revised: Minor
64a	Cavern over-break	Contractor experiences cavern over-break for which he seeks recovery through a claim based on the Project's specifying some means and methods and/or a claim for differing site conditions. This could also lead to delay.	Revised: Minor
89	Different site conditions during mining	Different site conditions during mining lead to lost productivity and contractor delay resulting in claims.	Revised: Minor
C4C			
24	ConEd electrical line diagram approval	ConEd approval of electrical single line diagram is delayed and may change equipment components	Added. Probability=30% Low Est=$0 High Est=$1M
184	Final Acceptance	Delay in final acceptance of Station and Tunnel from NYCT	Added. Probability=30% Low Est=15 WD High Est=60 WD
15AA	Interface	The present working relationship between the	Added.

ID	Title	Risk	Comments
	with Utilities	Project and ConEd, ECS & DEP results in the following, all of which have the potential for delay and/or cost increases:· Untimely approval of the Project's design documents· Last minute changes to requirements. Changes requested by Utilities after the award of the contract resulting in scope changes, cost impact and contract time extensions.	Probability=25% Low Est=$0 High Est=$3M
C5B			
500		Tunnel Dewatering	Revised. Probability=30% Low Est=$0 High Est=$.5M
501		Availability of power from C2B	Revised. Probability=20% Low Est=30 WD High Est=60 WD
89	Different site conditions during cavern mining	Ground conditions during cavern mining lead to lost productivity and contractor delay resulting in claims.	Revised. Probability=10% Low Est=$1M High Est=$3M
89b	Catastrophic Different site conditions during mining	Catastrophic Different site conditions during mining lead to lost productivity and contractor delay resulting in claims.	Revised. Probability=1% Low Est=$5M High Est=$20M
C5C			
21	EDRs- Stn. Testing & Commission	EDRs- Station Testing and Commissioning take longer than anticipated.	Revised. Probability=60% Low Est=0 WD High Est=30 WD
304	Shop Drawing Review by C6	Items identified as "best practice" by CSJV during shop drawing review but not part of the C5C`s scope of work cause delay and additional cost	Revised. Probability=40% Low Est=$250K High Est=$1M
C6			
CNS 3	Interface among contractors	Shared access for material delivery (96th Street track delivery/install)	Revised. Probability=25% Low Est=$0 High Est=$.5M
COM2	Comm. Submittals	Additional Changes to Communications Equipment Design	Revised. Probability=80% Low Est=$1M High Est=$5M
COM7a	Comm.	Delayed Completion of Communications	Revised.

ID	Title	Risk	Comments
	Testing @63rd St.	*Testing @ 63rd Street Stn.*	*Probability=60% Low Est=30 WD High Est=90 WD*
COM9	*Interface Comm. with Operations*	*Coordination of Software Installation/Testing with Operations*	*Revised. Probability=50% Low Est=$0 High Est=$ 2M*
TRK 1	*Track installation issues*	*Track/Equipment Installation Problems*	*Revised. Probability=20% Low Est=$0 High Est=$.5M*

Based on this update of the Risk Register, the PMOC notes the following:

1. *Numerous risk items are common to more than one contract package, although probability of occurrence and cost/schedule consequences may vary.*
2. *Despite the advanced state of "infrastructure" construction, considerable risk remains with respect to utility interfaces, coordination and discretionary scope changes by the utility operator.*
3. *Remaining geotech risk appears "minor" for all contract packages except C5B, where probability of occurrence estimates have been significantly reduced.*
4. *The high probability of occurrence and cost/schedule consequences suggests that Risk COM 2 (Contract C6) cannot be effectively mitigated.*
5. *The high number of risks involving communications and their relatively high probabilities of occurrence and cost/schedule consequences suggest that this system could represent the largest overall risk to project cost and schedule performance.*
6. *The PMOC notes that this update of the Risk Register does not place an estimated cost or schedule consequence on "unknown unknowns". This is a change in methodology that may significantly impact forecast risk exposures.*

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.

The PMOC notes that the overall high level of risk associated with the communication system may justify additional effort to better identify the source of the numerous individual risks included in the register and formulate strategies for their mitigation.

6.4 Risk Mitigation Actions

Status:

Risk Mitigation Meeting No. 23 was held on March 27, 2013. Recent risk management activities reviewed included an update of the program-wide risk analysis with accompanying updates to the EAC forecast, schedule contingency and cost contingency drawdown curves.. It was agreed that the documentation of these updates would be a part of the Monthly Risk Report.

Observation and Analysis:

Risks reviewed during this period include:

Risk	***Discussion Summary***
Risk CNS 4 (C6) Problems related to managing the contractual interfaces during construction may result in delays and related claims.	*Enhancements to the management strategy for managing these risks include:* 1. *Development of a more robust process to manage these interfaces.* 2. *Additional detail in the definition of each interface including better understanding among SAS staff regarding roles and responsibilities in achieving the handoff or milestone.* 3. *Development of checklists of the items necessary for the handoff or milestone*
Risk 304 & 701 (C6) Lack of a plan for managing areas where contractors must share access and workspaces.	*Generally involves the same enhancements discussed under Risk CNS 4 (C6).*
Risk COM 2 (C6) Continuous and potentially late changes to the communications systems could delay C6 and the RSD.	*This risk is primarily a consequence of changes requested by NYCT. It is anticipated this is a risk that will continue through the construction phase of the project.* *Currently, requests for changes are reviewed by MTACC and A/A in an effort to minimize scope and resulting cost and schedule impacts where possible. When changes in NYCT Standards are cited as the reason for the change request, MTACC has offered little resistance to implementation. It appears the favorable financial position of the project is a contributing factor to the current approach.* *At present, there appear to be limited opportunities to mitigate this risk, other than that cited above. It is acknowledged that at some time, proposed changes that impact the project schedule may have to be elevated for executive review and disposition.*
Risk C5B, C2B, C4C, C5C and C6 Schedules There is the risk that the Project schedule will be delayed beyond the present revenue service date.	*Strategies for increasing schedule contingency were presented and approved via TAC Paper 2012/144. These strategies have been pursued; the best option currently available involves select acceleration of certain system testing and commissioning activities. A cost proposal for this acceleration has been requested.* *The most critical construction still involves C5B, where there appear to be no opportunities currently available for significant schedule mitigation.*

Risk	***Discussion Summary***
	Opportunities to mitigate further delays have primarily involved "lessons learned" from the #7 Line Project. This project is currently in the final year of construction and staff from this project are generally not available for assistance.
Risk 302 Change Order management process is not well understood by all project personnel	*This discussion primarily involved expediting the existing CCB/CCG processes by combining individual meetings into one meeting.*
Risk C4B Entrance 1 (301 E 69th) There is a risk that work on Entrance 1 will be delayed due to delays in obtaining design approval from Owner for utility relocation in the building at 301 E 69th Street.	*This issue has been resolved via transfer of the work from C4B to C4C and redesign of the Entrance. At this time, risks associated with this work are the more generic schedule/time of performance risk.* *PMOC requested a full depiction of the work required resulting from the transfer and relocation of this entrance be included in the IPS.* *This risk will be removed from active review at subsequent Risk Mitigation Meetings.*
Risk CNS 8 (C6) Delayed Safety Certification delays RSD	*Progress/risk mitigation over the recent periods appears to be good. Certifiable item checklists for each contract are being reviewed and distributed to CCM/QC/Contractor field staff. Directories in EDMS for storage and retrieval of relevant documents are being set up. Revision of the SSMP should be completed in April 2013. A meeting of the SSCC, including the NYS safety certification representative is anticipated in late April/early May 2013.*
Risk C3 Entrance 1 (200 E 63rd Street) There is a risk that work on Entrance 1 will be delayed due to delays in obtaining design approval from Owner for utility relocation in the building at 200 E 63rd Street	*Issues with the building owner have been resolved, permits have been acquired and work is underway. A directive for the Contractor to accelerate this work via overtime hours will be sent.* *This work will now be monitored for schedule and performance risk, but not reviewed as a separate item at future Risk Mitigation Meetings.*
Buy America – LVT Low-Vibration Track (LVT) pedestal conformance with "Buy America" requirements	*No update on this risk was available.* *MTACC directed fabrication of the low vibration track (LVT) pedestals to be stopped pending resolution of this issue. The fabricator has informed MTACC through the prime*

Risk	***Discussion Summary***
has been challenged and requires a ruling from FTA.	*contractor that unless fabrication can start by April 1, 2013, it will not be able to support the September/October 2013 delivery (C2B-MS#1).*

Prior to the next Risk Mitigation Meeting, the Risk Manager will meet with two CMs in an effort to solicit their input and ensure their concerns are represented at the Risk Mitigation Meeting.

Concerns and Recommendations:

The SAS Project Management Team continues to utilize the risk mitigation process to reduce the adverse cost and schedule impact of identified risks. MTACC is in the process of refining and enhancing its risk mitigation process in response to changing project conditions and challenges.

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:

Schedule contingency reported by MTACC, based upon Update #80 of the SAS IPS, conforms to schedule contingency threshold limits established by the ELPEP. Based on this update, schedule contingency measured against MTACC's RSD commitment date of December 30, 2016 is 90 CD. When measured against the FTA/PMOC RSD estimate of February 28, 2018, the contingency is currently 513 CD vs. the 240 CD stipulated by ELPEP.

Observations:

Tracking available schedule contingency over recent schedule updates is summarized in the following table:

Table 6-1: Schedule Contingency

IPS Update #	**65**	**68**	**71**	***74***	***77***	***80***
Data Date	12/01/11	03/01/12	06/01/12	*09/01/12*	*12/01/12*	*3/1/13*
Contingency (CD)						
RSD=12/31/2016	67	80	90	*No*	*90*	*90*
RSD=02/28/2018	490	503	513	*Report*	*513*	*513*

Concerns and Recommendations:

None.

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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	The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP. PMOC Recommendation: Update the PMP and its sub-plans within the timeframes established in the ELPEP. ***Update (September 2012):*** On September 27, 2012, MTACC resubmitted the SAS Project Management Plan as Revision 8.1. This revision formally incorporated all FTA/PMOC comments made to Revision 8, which was originally issued in January 2011. PMOC is waiting authorization from FTA Region II to perform selected audits of the Project for compliances. ***Update (December 2012):*** *Future refinements to the PMP will be documented via the candidate revision process. Revision 9.0 of the PMP is forecasted for mid-2013.* ***Update (March 2013):*** *PMP Revision 9.0 is still anticipated for mid-2013.*	2
SAS-10-Jan10	3.1 PMP Sub-Plans	MTACC is required to develop and finalize a Cost and Schedule Management Plan, and a Cost and Schedule Contingency Management Plan for the SAS in conformance with ELPEP requirements within 60 days of January 15, 2010. The PMOC is concerned that the 60-day requirement may not be met. **Update (September 2012):** The CMP has been accepted by FTA Region II. PMOC will continue to monitor the Project for compliance. ***Update (December 2012):*** *Monitoring is ongoing. Compliance is discussed during FTA/PMOC Monthly Cost/Schedule Meeting with the SAS Project Team. Compliance is also addressed in the monthly updates of the IPS. This item has been adequately addressed and is considered closed.*	2
SAS-11-	3.3	The PMOC is concerned whether the new procedures will actually be utilized by the	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
Jan10	Procedures	different operating agencies within the MTACC, given that NYCT will implement SAS, and the procedures of the SAS PMP reflect the NYCT quality management system. PMOC Recommendation: The PMOC recommends that the MTACC develop a process to assure itself that all of these procedures are in use on all of its projects. An example of such a process would be a new procedure distribution system that would require the recipients (the individual Project Managers) to acknowledge receipt of each new procedure as it is released for implementation. This system could be monitored by the parent MTACC to assure implementation across all its organizations and provide it with the opportunity to correct any non-conformances as they develop. **Update (September 2012):** On September 28, 2012 the MTACC issued Program Change Control Procedure AD.15. The total number of procedures issued to date is 77. Three other procedures are being considered however, they are not required for the project to be compliant with the PMP. No further action is required. ***Update (December 2012):*** *All procedures required for effective management of the SAS Phase 1 Project have been issued. This item has been adequately addressed and is considered closed.*	
SAS-20-Dec10	5.1.3 Change Orders	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. **Update (February 2011):** Meeting to be set up with MTACC/SAS/ESA for review and comparison of AWP processing procedures and identification of specific ways to accelerate SAS process. **Update (March 2011):** Meeting with MTACC/SAS/ESA not scheduled. No improvement in processing observed to date. Open Item. **Update (April 2011):** With regard to the procurement of additional work orders (AWO's),	1

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		NYCT and MTACC have jointly implemented a more streamlined approach to approving Procurement Staff Summaries. This adjustment has reduced the number of signatures necessary for approval and should save time during the approval phase of the AWO process. Specifically, NYCT has removed the following 4 executive level signatures: NYCT President, NYCT Executive Vice President, NYCT General Counsel, and NYCT Chief Officer - Civil Rights. Additionally, the NYCT VP Capital Programs and the NYCT VP Subways have been replaced with lower level designees who should cut down further the amount of time necessary for approval. ***Update (December 2012):*** *PMOC monitoring of the AWO process is on-going. PMOC audit of selected AWO files will be performed when authorized by FTA Region II.* ***Update (March 2013);*** *PMOC monitoring of the AWO process is on-going*	
SAS-22-Jun 12	1.1.2 f Community Relations	MTACC's community outreach efforts have had a positive impact on relations with the affected community. Many of the specific issues and resulting actions may have been beyond contemplation prior to the start of construction. Based upon the "lessons learned" to date, the PMOC recommends the MTACC develop a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities ***Update (December 2012):*** *PMOC will coordinate with the MTACC to issued Candidate Revisions for Update No. 9 to the SAS PMP to address this concern. Update to the PMP is forecasted for mid-2013.* ***Update (March 2013):*** *PMP Revision 9.0 is still anticipated for mid-2013.*	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-24-Jun 12	2.3 Contract Packages and Delivery Method	Despite the delays experienced to date, the SAS Project Team does not consider it worthwhile to accelerate the procurement schedule of either of the remaining finish packages (C4C, C5C). Each of these packages have several months of "preconstruction time" built into their schedules where access to work areas is not available due to the work of predecessor contracts. This "preconstruction time" is necessary for purchase and fabrication of long lead items, etc. Delays that absorb some of this "preconstruction time" have the potential to delay completion of these packages. The PMOC recommends the SAS Project Team reconsider acceleration of the procurement schedule for one or both of the remaining construction packages. ***Update (December 2012:*** *By including several weeks of schedule float to the procurement schedule for the 72nd Street Station (C4C) finishes package. The SAS Project Team has significantly reduces the risk of delaying the contract award date of February 4, 2013. A similar approach has been implemented for the C5C package. This item is considered closed.* ***Update March 2013:*** *Procurement for Package C4C was executed on schedule and procurement of package C5C should be completed during 2nd Qtr 2013. This item will be closed unless delays unforeseen at this time are encountered.*	2
SAS-25-Jun 12	2.5 Property Acquisition and Real Estate	The PMOC recommends the total cost-to-cure process be modeled and updated in a much greater level of detail than currently exists in the IPS. The PMOC also recommends establishment of threshold date(s) for the 72nd Street work which would trigger either a more aggressive approach in resolving the issue by MTACC or full implementation of scope transfer to the C4C package. **Update September (2012):** For Entrance No. 1 of the 72nd Street Station, MTACC has terminated the agreement and is seeking additional easement through eminent domain condemnation proceeding. The alternative of deferring some portion of the work to the	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		C4C package is a viable contingency. ***Update (December) 2012:*** *Three options were added to the C4C bid package to address the easement issue associated with Entrance No. 1. The option that best mitigate the delay will be selected.* ***Update March 2013:*** *Delays associated with cost-to-cure issues have been overcome. This item will be closed unless delays unforeseen at this time are encountered.*	
SAS-26-Jun 12	2.6 Community Relations	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 **Update (September 2012):** See item SAS-22-Jun 12 above. ***Update (December) 2012:*** *PMOC will coordinate with the MTACC to issued Candidate Revisions for Update No. 9 to the SAS PMP to address this concern. Update to the PMP is forecasted for mid-2013.* ***Update March 2013:*** *No update this period.*	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-27-Jun 12	3.2	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. The PMOC recommends the development or update of applicable plans and procedures governing such work during the next PMP update period. **Update (September 2012):** The PMOC will request a Candidate Revision be issued to address this recommendation. Candidate Revisions" for SAS PMP Revision 9 are being assembled now as issues are identified. Revision 9 to the SAS PMP is tentatively scheduled for initial distribution in the summer of 2013. ***Update (December) 2012:*** *PMOC will coordinate with the MTACC to issued Candidate Revisions for Update No. 9 to the SAS PMP to address this concern. Update to the PMP is forecasted for mid-2013.*	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	The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan: ▪ NYCT should provide a test plan for increasing the period between inspections of the new technology fleet. ▪ 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. ▪ MTACC should explain why they are considering removing the vehicles from the project scope without reducing the project funding. **Update:** The supply of vehicles for SAS Phase 1 will be addressed in the Draft Fleet Management Plan, scheduled for distribution in July 2010. **Update:** A Draft Fleet Management Plan was not submitted during July 2010. This item remains open. **Update:** As of August 31, 2010, a Draft Fleet Management Plan has not been submitted. **Update:** A Draft Fleet Management Plan was received, reviewed with comments provided to the FTA.	2	7/30/10

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
		Update: Vehicle requirements and associated cost to be addressed as part of the FFGA amendment. **Update:** 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.		
SAS-A18-Aug08	ELPEP Updates	The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified. **Update**: At the quarterly meeting, a new contingency drawdown curve was presented. Management of the contingency is being addressed in the newly required Cost Contingency Management Plan. **Update:** The latest submission of the Cost Contingency Management Plan is under review. MTACC has initiated contingency management and reporting which generally conforms to the requirements of the ELPEP. **Update:** Review and resolution of all issues is anticipated to be completed in February 2011. **Update:** See ELPEP section of report.	2	6/30/10

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
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
ROD	Record of Decision

ROD	Revenue Operations Date
RSD	Revenue Service Date
S3	Skanska, Schiavone and Shea, JV
SAS	Second Avenue Subway
SCC	Standard Cost Categories
SSCP	*Safety and Security Certification Plan*
SOE	Support of Excavation
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)		
49.3%	*Percent Complete Construction at March 31, 2013*		
75.1%	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/ $816 M Financing Costs)
4,673 M	Total Project Cost ($YOE) at Revenue Operations (w/o Financing Costs)
5,489 M	Total Project Cost ($YOE) at date of this report including $ 816 M in Finance Charges
$2,259M	Amount of Expenditures at date of this report from Total Project Budget of *$4,451M*
50.8%	Percent Complete based on Expenditures at date of this report
$405M	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 1st *Quarter for 2013*

#	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	3rd 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

(Transmitted separately)

APPENDIX E – SAFETY AND SECURITY CHECKLIST

Project Overview			
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		
Project Plans	**Version**	**Review by FTA**	**Status**
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.
Safety and Security Authority			
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 per Part 659.17?	Y		The NYSTB issued a letter of recertification on September 2, 2010.
Has the oversight agency reviewed and approved the grantee's Security			

Project Overview		
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	
SSMP Monitoring	Y/N	**Notes/Status**
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 activities throughout all project phases?	Y	Responsibilities during the design and construction phases identified
Does the grantee update the safety and security responsibility matrix/organizational chart as necessary?	Y	

Project Overview		
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 with safety and security requirements in design?	Y	Ongoing part of design review process
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	Y	Verification will continue with the procurement of equipment during the Station contracts (C2B, C4B, and C5B).
Has the grantee verified construction specification conformance?	Y	Reference Section D3.4 Construction Criteria Conformance of the

Project Overview		
		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 and are currently being verified during equipment factory acceptance testing. Effort is 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	
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 Contract 6
Has the grantee issued the final safety and security verification report?	N	To be covered as part of the testing in Contract 6
Construction Safety		
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	

Project Overview		
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?	*The OSHA Lost Time Accident Rate and Recordable Accident Rate from the start of construction until February 28, 2013 are 2.08 and 5.50, respectively. Both rates showed an improvement from the previous reporting period. The Lost Time Accident rate is slightly above the national average of 2.0 and the Recordable Accident Rate is above the national average of 3.5. The cumulative construction time worked since the project inception is 5,383,388 hours. Total lost time injuries since project inception is 56 and other recordable injuries are 92.*	*National Average 2.0 and 3.5 respectively*
If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?	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 all Contractor Safety Managers, OCIP Representative, and the insurance carrier representative in order to make all aware of the safety concerns on the project and to exchange lessons learned. *Each contractor is also*	

Project Overview		
	holding its own "tool box" meetings focusing on various safety topics. Corrective Action Plans have been requested from contractors with high safety incident rates.	
Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?	Y	
Federal Railroad Administration		
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

(transmitted separately)

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	*$392M*	*$220M*
	Total Contingency (Allocated plus Unallocated)	$555.554M	*$405M (March 2013)*	*$220M*
Schedule	Revenue Service Date	June 30, 2014	December 30, 2016	February 28, 2018
Total Project Percent Complete	Based on Expenditures	50.8%		
	Based on Earned Value	N/A		

Major Issue	Status	Comments
Buy America	*Open*	*Evaluation of the LVT "boot and pedestal assembly and its conformance to "Buy America" must be resolved.*
Safety and Security Certification	*Open*	*Revision of SSMP is underway to incorporate construction phase information. Applicable testing information for certifiable elements is "captured" during submittal process. FAT has started.*
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 March 31, 2013 reporting.