PMOC MONTHLY REPORT

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

June 1 to June 30, 2012

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

Urban Engineers of New York, P.C., 2 Penn Plaza, Suite 1103, New York, New York 10121
PMOC Lead, Charles A. Halboth, PE, 212-736-9100; cahalboth@urbanengineers.com
Length of time on project: 2 years

TABLE OF CONTENTS

Page No.

SECOND AVENUE SUBWAY (SAS)

THIRD PARTY DISCLAIMER **1**

REPORT FORMAT AND FOCUS **1**

MONITORING REPORT **1**

EXECUTIVE SUMMARY **1**

ELPEP SUMMARY **8**

1.0 GRANTEE'S CAPABILITIES AND APPROACH **8**

1.1 TECHNICAL CAPACITY AND CAPABILITY 8

1.2 PROJECT CONTROLS 12

1.3 FTA COMPLIANCE DOCUMENTS 16

2.0 PROJECT SCOPE **17**

2.1 STATUS & QUALITY: DESIGN/PROCUREMENT/CONSTRUCTION 17

2.2 THIRD-PARTY AGREEMENT 23

2.3 CONTRACT PACKAGES AND DELIVERY METHODS 23

2.4 VEHICLES 24

2.5 PROPERTY ACQUISITION AND REAL ESTATE 24

2.6 COMMUNITY RELATIONS 25

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS **26**

3.1 PROJECT MANAGEMENT PLAN 26

3.2 PMP SUB PLAN 26

3.3 PROJECT PROCEDURES 27

4.0 PROJECT SCHEDULE STATUS **27**

4.1 INTEGRATED PROJECT SCHEDULE 27

4.2 90-DAY LOOK-AHEAD 31

4.3 CRITICAL PATH ACTIVITIES 32

4.4 COMPLIANCE WITH SCHEDULE MANAGEMENT PLAN 35

5.0 PROJECT COST STATUS **36**

5.1 BUDGET/COST 36

5.2 PROJECT FUNDING 40

5.3 COST VARIANCE ANALYSIS 41

5.4 PROJECT CONTINGENCY 42
6.0 PROJECT RISK 43
6.1 INITIAL RISK ASSESSMENT 43
6.2 RISK UPDATES 43
6.3 RISK MANAGEMENT STATUS 44
6.4 RISK MITIGATION ACTIONS 44
6.5 COST AND SCHEDULE CONTINGENCY 46
7.0 LIST OF ISSUES AND RECOMMENDATIONS 47
8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS 55

TABLES

TABLE 1: SUMMARY OF CRITICAL DATES 5
TABLE 2: PROJECT BUDGET/COST TABLE 6
TABLE 1-1: STANDARD COST CATEGORIES.... 13
TABLE 1-2: APPROPRIATED AND OBLIGATED FUNDS 14
TABLE 2-2 CONSTRUCTION PROCUREMENT METHOD AND STATUS.... 23
TABLE 4-1: SUMMARY OF SCHEDULE DATES 27
TABLE 4-2: SUMMARY SCHEDULE PERFORMANCE BY CONSTRUCTION PACKAGE.... 28
TABLE 4-3: QUARTERLY SCHEDULE TARGET COMPARISON 29
TABLE 4-4: 90-DAY LOOK-AHEAD SCHEDULE.... 31
TABLE 5-1: ALLOCATION OF CURRENT WORKING BUDGET TO STANDARD COST CATEGORIES 36
TABLE 5-2: AWO SUMMARY 39
TABLE 5-3: APPROPRIATED AND OBLIGATED FUNDS (FEDERAL).... 40
TABLE 5-4: ESTIMATE @ COMPLETION.... 42
TABLE 6-1: SCHEDULE CONTINGENCY 46

APPENDICES

APPENDIX A – LIST OF ACRONYMS

APPENDIX B – PROJECT OVERVIEW AND MAP

APPENDIX C – LESSONS LEARNED

APPENDIX D – PMOC STATUS REPORT

APPENDIX E – SAFETY AND SECURITY CHECKLIST

APPENDIX F – ON-SITE PICTURES

APPENDIX G – CORE ACCOUNTABILITY ITEMS

THIRD PARTY DISCLAIMER

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

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

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

REPORT FORMAT AND FOCUS

This monthly report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60-09-D-00007, Task Order No. 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 along 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 tunnels from 105th 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.

2. CHANGES DURING 2nd QUARTER 2012

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

- *Bids were received for the 96th Street Station Structural, Architectural and MEP Contract (C2B) and were opened on April 24, 2012. The low bid of $324,600,000 was submitted by EE Cruz/Tully JV, which is also the contractor for the 96th Street Station Heavy Civil (C2A) package. This contract was awarded on June 22, 2012.*
- *The 72nd Street Station Finishes & MEP Package, C26011 (C4C) is scheduled for advertisement on July 31, 2012. Early procurement and technical "dustoff" activities required for Authorization to Advertise have started.*

c. Construction Progress

All construction is approximately 33.9 % complete as of June 30, 2012. Summary progress for each contract is as follows:

- *The 86th Street Station Civil/Structural Work Contractor (Contract C5B) completed the installation and testing of the north shaft muck conveying system. Excavation, demolition and similar activities are underway at Entrances 1 and 2 as well as Ancillaries 1 and 2.*
- *The 96th Street Station Heavy Civil/Structural Contractor (Contract C2A) slurry wall installation continues from 95th to 99th Streets on the east side of 2nd Ave. Support of excavation activities continue at Ancillaries 1 and 2 and Entrances 1 and 2.*
- *The 72nd Street Station Heavy Civil/Structural Contractor (Contract C4B) has excavated 153,797 Bank Cubic Yards (BCY) of the total 184,657 BCY (83.3%) for the project. Support-of-excavation work is ongoing at Ancillary #1, and Entrance #3.*
- *At the 63rd Street Station, Area 5 structural steel installation continued on the lower 1st mezzanine with the erection of jacking towers to facilitate structural steel installation on the upper 1st and 2nd Mezzanines. Other work includes demolition of slabs and walls in the ejector room of the West Fan Plant, installation of conduit on the G4 Track and crack repair at the G3 and G4 Tracks.*

d. Continuing and Unresolved Issues

- *Resolution of change order associated with the deletion of tunnel lining between 72nd and 86th Streets (Contract C1).*
- *"Cost-to-Cure" construction delays at C4B, Entrance #1.*

e. New Cost and Schedule Issues

- *Potential reductions in the time periods allowed for rock blasting may adversely impact the C5B construction schedule.*
- *Access issues at C3, Entrance #1 is prohibiting necessary field measurements required for escalator procurement.*
- *Development of the C6 baseline schedule and its incorporation into the IPS.*

3 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

During the 2nd Quarter 2012, MTACC enhanced its technical capacity and capability to execute the project as follows:

- *An "Interface Coordinator" was assigned to expedite and support the execution of those activities where one or more prime contractors are involved.*
- *A full-time "Certification Manager" has been hired to directly supervise and support field QA staff in performing construction phase inspection and documentation activities necessary to support the safety certification process.*
- *The commitment has been made to utilize 4-D Modeling at the 63rd Street Station as an aid in coordination of all structural and system installations and interfaces. If this tool proves beneficial at 63rd Street, it may be applied to other elements of the project.*

The SAS Project Team operates as a completely integrated project organization. Personnel from MTACC, NYCT, the Consultant Construction Management and Design Consultant are utilized throughout the functional groups of: (1) Design Services Management; (2) Construction; (3) Construction Support; (4) Budget, Administration and Accounts; and (5) Program Controls.

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. *During the 2nd Quarter 2012, engineering support continued with the updating of the drawings/specifications for the 72nd Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26011 (C4C), responding to contractor's request for information, review of contractor's submittals and support of AWO activities.*

d. Procurement

Procurement activity during the 2nd Quarter 2012 included the award of the 96th Street Station Finishes Package, Contract C-26010 (C2B) and commencement of pre-bid technical activities to support construction procurement for the 72nd Street Station Finish Package, Contract C-26011 (C4C). The award of this contract is scheduled for January 2013. Eight of the 10

construction packages (C1, C2A, C2B, C3, C4B, C5A, C5B, C6) for SAS Phase 1 Project have been awarded to date.

e. Railroad Force Account (Support and Construction)

As of June 30, 2012, the force account expenditure has reached $2,650,601 of the $43,000,000 budget. The majority of the expenditure ($2,309,721) is associated with 63rd Street/Lexington Avenue Station Restoration Contract (C3).

f. Vehicles

No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's has stated that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project. This proposal was accepted by FTA Region II.

g. Systems Testing and Start-Up

Systems testing and start-up is allocated to the Track, Power, Signals and Communications Systems Contract C-26009 (C6). The C6 contract was awarded at a value of $261,900,000. 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.

The tests that are to be conducted can be separated into three categories:

- ***Proof of Construction Tests****: These tests include contractual specified material and equipment tests, factory/plant acceptance tests, post-installation checkout tests, inspections, and various site acceptance tests which provide verification of standalone functional performance and contract compliance. Successful execution of these tests is a pre-requisite for initiating the systems integration testing.*
  - Tests are to be conducted by the Stations Contractors for the MEP and other systems installed under their contracts.
  - Tests of the communication infrastructure, systems and equipment included in the Systems Contract to verify the robustness of the network and the interface between the network and the MEP equipment.
  - The Systems contractor will support the MEP Contractors with the LAN network for end-to-end tests.
- ***Integrated System Tests:*** *These tests demonstrate and document that the individual systems perform as an integrated whole and function as a rail system in accordance with the design. These tests demonstrate the operational characteristics of the various subsystems in the shared, system environment. These tests will generally be conducted by the Systems Contractor with the support of and coordination with the Stations*

Contractors. During this period, additional proof of construction tests may be scheduled and completed by the Stations Contractors. The MEP Contractors will support the Systems Contractors with their hardware and software for debugging any software and traffic interference between subsystems.

Following successful completion of the System Integrations Tests, the maintenance contracts and the extended warranties, as included in the Stations contract, will hold the Stations contractors responsible for their equipment until the Project is turned over to NYCT for Pre-Revenue Operations.

- ***Pre-Revenue Testing:*** *These tests are overlaid with service operations which allow the integration of the validated system with approved operating procedures. These tests and operations can also be utilized to provide familiarization and training for operating and maintenance personnel, as well as the emergency responders who must be prepared to provide support when needed during revenue operations. These tests will be conducted by the Systems Contractor and will provide the NYCT Operations and Maintenance departments with the opportunity to simulate and respond to normal, abnormal and emergency operating scenarios (conditions) without the constraints imposed by "live" revenue/passenger service.* Although not specifically part of the SCIT Plan program, the Systems Safety Certification process relies on obtaining and utilizing a significant body of testing data from the SCIT Plan to verify and validate the certifiable elements. All MTACC and NYCT areas that are responsible for the System Safety Certification process will be active agency members of the Contractor-Agency SCIT Plan team to ensure that the detailed requirements of the System Safety Certification process are included in the SCIT Plan and associated test and documentation procedures. *During the 2nd Quarter 2012, the Systems contractor submitted and had approved by MTACC its proposed Safety Engineer and Supervisor, Quality Engineer, and Project Scheduler. MTACC's evaluation of the contractor's proposed Systems Integration Manager and Systems Engineering Specialists in on going.*

h. Project Schedule

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 4, 2016*	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

**Based on Integrated Project Schedule Update #71 dated 6/1/12 completion of construction and testing*

i. Project Budget/Cost

Table 2: Project Budget/Cost Table

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of *June 30, 2012*	
	$ Millions	**% of Total**	**Obligated ($ Millions)**	**TBD**	**$ Millions**	**% of Total**	**$ Millions**	**% of Total**
Grand Total Cost:	**4,866.614**	**100**	**4,137.911**		***5,267.614***	**100**	***1,805.149***	***34.27***
Financing Cost	816.614	16.78			816.614	14.88		
Total Project Cost:	**4,050.000**	**83.22**	**4,137.911**		***4,451.000*****	**85.12**	***1,805.149***	***40.56***
Total Federal:	**1,350.693**	**27.75**	****1,063.942***		**1,350.693**	**24.60**	***584.045***	***13.12***
Total FTA share:	**1,300.000**	**96.25**	***1,035.849***		**1,300.000**	**23.68**	***572.923***	***12.87***
5309 New Starts share	1,300.000	100	*1,035.849*		1,300.000	23.68	***572.923***	*12.87*
Total FHWA share:	**50.693**	**3.75**	28.093		**50.693**	**0.92**	**11.112**	***0.25***
CMAQ	48.233	95.15	25.633		48.233	0.88	8.652	*0.19*
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	*0.06*
Total Local share:	**2,699.307**	**55.47**	****3,509.000**		****3,509.000**	**63.92**	***1,221.104***	***27.43***
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, updated June 2012 to reflect removal of $222 M for vehicles*

j. Project Risk

The overall risk of project schedule and cost increases has been reduced during the 2nd Quarter 2012 as a result of:

- *Award of Contract C2B on June 22, 2012. The fact that both construction contracts for the 96th Street Station are being performed by the same contractor greatly improves schedule flexibility and reduces construction phase coordination risk at the 96th Street Station site.*
- *Plaintiff's decision not to pursue further legal action in Yorkshire Towers Company, LP, et al, versus United States Department of Transportation, et al. (C5B, Entrance #1).*

The overall risk of project schedule and cost increases has been increased during the 2nd Quarter 2012 as a result of:

- *Unresolved construction access issues at C4B Entrance #1 resulting from property acquisition (cost-to-cure).*

- *Construction problems associated with the excavation of the last slurry wall panel due to over-pour and end stop improperly constructed by Contract C1.*
- *Potential work hour restrictions to blasting on C5B. Discussions between MTACC and affected community groups are ongoing to develop a mutually satisfactory compromise to this issue.*
- *Delays to structural steel fabrication at the 63rd Street Station (C3). MTACC has reported the contractor has accepted responsibility for this delay.*
- *Unresolved access to 200 East 63rd Street (Pookie & Sebastian's) continues to delay construction of Entrance #1 at 63rd Street Station (C3).*

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:

There were no ELPEP meetings held during June 2012. With respect to SAS, the current status of each of the main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** The PMOC completed its review of the Revision 8 SAS PMP and has verified incorporation of all Candidate Revisions with FTA. The PMOC recommendations regarding approval were forwarded to FTA in February 2012.
- **Schedule Management Plan (SMP)**: The PMOC continues to monitor and verify SAS substantial compliance with the SMP. The process of transferring the compliance verification process to the MTACC is discussed below.
- **Cost Management Plan (CMP)**: FTA conditional approval of the Cost Management Plan, including five (5) Candidate Revisions was provided on September 1, 2011. The PMOC is monitoring and verifying compliance with this plan.
- ***Risk Mitigation Capacity Plan (RMCP) and Risk Management Plan (RMP)****: On February 2, 2012, the FTA/PMOC consolidated comments on the SAS Risk Management Plan were forwarded to the MTACC. PMOC recommendations regarding approval were forwarded to FTA.*
- ***Conformance and Compliance Demonstration****: A target date for the transfer of compliance verification to MTA of July 1, 2012 was established. FTA and the PMOC will meet separately to develop the plan to monitor/validate ELPEP compliance.*

Observation:

The SAS Project Team has implemented the majority of the principles and requirements embodied in the ELPEP. The procedural changes instigated 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:

Development of formal implementation verification and reporting process for each of these ELPEP elements should be given priority. The verification process will ensure that all benefits associated with the ELPEP are realized to the greatest extent possible.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

Status:

During the 2nd Quarter 2012, several issues occurred which materially affect MTACC's technical capacity and capability to support of the SAS Phase 1 Project.

- *The SAS Quality Manager resigned. Potential replacements have been identified and the offer process initiated.*

- *A full-time Safety Certification Manager was hired. This individual will be responsible for construction phase verification activities to support system security and safety certification.*

The SAS project organization consists of two operational groups and is further divided into five (5) functional groups:

- *Design Services Management*
- *Construction Management*
- *Construction Support*
- *Budget, Administration and Accounts*
- *Program Control*

Members of the dedicated project team are supplemented by MTACC and NYCT staff when appropriate.

Observation:

The SAS Project Management Team continues to be an integrated project organization utilizing personnel from MTACC, NYCT, *Consultant Construction Management (CCM)* and *Design Consultant (DC*), *with virtually no distinction between the employee's actual employers. The organization is effectively managing SAS Phase 1. Adjustments in the organizational structure and staffing levels are made as needed.*

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:

PMOC review of the updated SAS Project Management Plan (Revision 8) has been completed. The PMOC has continued to evaluate the specific issues that resulted in a Candidate Revision, whether the proposed PMP revision has been implemented and whether the original issue was ultimately satisfied.

Observation:

The PMOC has reviewed its findings and forwarded a list of recommendations to the MTACC. A meeting with FTA and MTACC to review and reconcile these recommendations is scheduled for July 17, 2012.

Concerns and Recommendations:

None at this time

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.

Observation:

Because the baseline cost and schedule have been exceeded, FTA and MTACC have started the process of amending the FFGA. Various attachments have been submitted to FTA Region II for review.

Concerns and Recommendations:

None at this time

c) Grantee's Approach to Force Account Plan

Status:

While MTACC is heavily involved in construction activities, it does not have its own employees to support these activities. It relies on NYCT in-house labor for this purpose As of June 30, 2012 the force account expenditure has reached $2,650,601 of the $43,000,000 budget. The majority of the expenditure ($2,309,721) is associated with 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 has been revised and updated as part of the review of Revision 9 of the SAS Cost Estimate.

Concerns and Recommendations:

None

d) Grantee's Approach to Safety and Security Plan

Status:

MTACC's approach to Safety and Security is defined in Section 4 – Safety, Security and Health Programs of the SAS PMP. During the 2nd Quarter 2012, each construction contractor continued recording and reporting first aid, recordable and lost time incidents. Corrective Action plans have been requested from contractors that have exceeded OSHA national averages.

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 (SSPC) and the Systems Safety and Reliability Assurance Program Plan (SSRA).

Concerns and Recommendations:

None

e) Grantee's Approach to Asset Management

Status:

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

Observation:

SAS Asset Management Plan must be integrated with NYCT's Property Management System.

Concerns and Recommendations:

None

f) Grantee's Approach to Community Relations

Status:

During the 2nd Quarter of 2012, MTA continued its community information and outreach efforts.

The MTA'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."

Observation:

In the PMOC's opinion, community relations efforts are well-intentioned and generally effective; however, they appear to be spontaneous and reactionary to the immediate situation.

The SAS Project Organization Chart identifies Community Relations as a support activity sponsored by both NYCT and MTA-HQ. Despite the fact that full time community relations personnel are assigned to the project, they are not included on the Organization Chart.

Conclusions and Recommendations:

MTA'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 MTA develop a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities. [Ref: SAS-22-Jun 12].

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

a) Federal Requirements

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

Status:

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 2nd Quarter 2012, there has been no change in the scope of the SAS Project. The scope of the SAS Project is defined by the FEIS, ROD and the FFGA. The project scope will be delivered via ten (10) construction packages, with support from NYCT for rail systems engineering, installation and overall operating systems inspection and testing.

Observation:

None

Concerns and Recommendations:

None

1.2.2 Quality

Status:

During the 2nd Quarter 2012 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:

The QA/QC processes are well-defined and are being implemented per the various quality plans and procedures. Hiring of additional Quality Project Managers, to support new procurements is in progress.

Concerns and Recommendations:

None

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

**Based on Integrated Project Schedule Update #71 dated 6/1/12 completion of construction and testing*

Observation:

The Revenue Service Date (RSD), as forecast by Update #71 of the MTACC's Integrated Project Schedule (IPS), has remained December 30, 2016. For the 2nd Quarter 2012, 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 31, 2016.

MTACC uses December 31, 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 been the basis of routine schedule and schedule contingency reporting.

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

Standard Cost Category (SCC) #	Description	Year of Expenditure $000
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 and obligated amounts as of *June 30, 2011*.

Table 1-2: Appropriated and Obligated Funds

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *June 30, 2011*
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	*$230,053,496*
NY-03-0408-07	$237,849,000	$237,849,000	0
NY-03-0408-08	*$197,182,000*	*$197,182,000*	0
NY-03-0408-09	*Pending*	*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	$45,800,000
Total	*$1,063,942,200.00*	*$1,063,942,200.00*	*$584,044,666.00*

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

A total of $1,805,149,346 has been expended on the project through June 30, 2012, of which $428,101,884 has been spent on design and $871,203,438 on construction (MTACC's June 2012 Cost and Schedule Summary Input).

Observation:

Local funds totaling $1,221,104,686 ($1,805,149,346– $584,044,660) have been spent as of June 30,, 2012.

In March 2012, the New York State Legislature approved the means by which all local funding required to complete SAS Phase 1 will be provided.

Concerns and Recommendations:

None

1.2.5 Project Risk Monitoring and Mitigation

Status:

A variety of risk management techniques are utilized by the SAS Project Staff 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:

Active risks are reviewed at the monthly Risk Management Meeting. There are typically twelve (12) risks under active review and analysis. The risk register is continuously reviewed for risks that need to be "elevated" to active consideration. Conversely, risks that do not pose a short-term threat to project cost or schedule may be deferred for future consideration. At a minimum, the complete risk register is reviewed and updated quarterly.

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

Concerns and Recommendations:

The SAS Project Team has integrated risk management into the standard processes and procedures used to manage the project. Technical Advisory Committee (TAC) approval is the principal process through which SAS evaluates alternative design and construction scenarios for cost and schedule risk as well as conformance to baseline documents. This process has been successful in managing and mitigation project risk.

1.2.6 Project Safety and Security

Safety – *The Lost Time Accident Rate and OSHA Recordable Accident Rate from the start of construction until May 31, 2012 are 2.08 and 5.16, respectively. The Lost Time Accident rate is below the national average of 2.2 and the OSHA Recordable Accident rate is above the national average of 4.2. The cumulative construction time worked since the project inception is 3,836,996 hours. Cumulative lost time injuries since project inception is 35 and the cumulative recordable injuries are 59.*

Security – *Implementation of the Contractor's Site Security Plans are ongoing. During the 2nd Quarter 2012, no security incidents were noted.*

Observation:

The majority of the Recordable and Lost Time incidents are associated with two contractors. The Tunnel Boring Contractor (C1) Contract 26002 has the highest number of lost time and recordable injuries on the project, 16 and 32, respectively. Contract C1 has logged the highest number of construction hours (1,972,862) on the project. The 72nd Street Station Cavern Mining Contractor (C4B) C26007 has logged 787,383 construction hours on the project and has reported 10 Recordable and 4 Lost Time injuries. Contract C1 has been completed. However, the negative impact on the Recordable and Lost Time rates will continue until additional construction hours are accumulated by the other contractors. Contractor C4B has implemented a corrective action plan which includes additional and on-going training to address its high rates.

The monthly Project-wide Safety Meeting and Site Walk Through are ongoing and are beneficial in providing lessons learned across the project.

Concerns and Recommendations:

None

1.3 FTA Compliance Documents

Status:

No change this period.

1.3.1 Readiness to Enter PE

Status:

Preliminary Engineering (PE) began in December 2001.

1.3.2 Readiness to Enter Final Design

Status:

Final Design began in April 2006.

1.3.3 Record of Decision

Status:

The Record of Decision (ROD) was dated July 8, 2004.

1.3.4 Readiness to Execute FFGA

Status:

The Full Funding Grant Agreement (FFGA) was dated November 19, 2007.

1.3.5 Readiness to Bid Construction Work

Status:

No reviews conducted this period.

1.3.6 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.

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.*
- *Updating of station finish packages (C4C, C5C) with "as-built" information from predecessor packages and updates or modifications involving utilities, MPT, etc.*
- *Detailing and documentation of design changes as may be required.*
- *Supporting AWO evaluation and resolution.*

Concerns and Recommendations:

Maintaining the timely flow of technical submittals is a primary engineering function at this time. Although established contract threshold values for submittal review are not being consistently achieved by the design team, the active review and prioritization of time-sensitive submittals has resulted in no actual reports of construction delay resulting from the extended duration of the submittal review to date. The PMOC recommends this issue be continuously reviewed by project senior management to ensure continued performance.

2.1.2 Procurement

Status:

Updated procurement status includes:

- ***C-26010 (C2B): 96th Street Station Concrete, MEP & Finishes** – This contract was awarded to EE Cruz/Tully JV on June 22, 2012.*
- ***C-26011 (C4C): 72nd Street Station Finishes & MEP Package** – This package is scheduled for advertisement for construction bids on July 31, 2012.*

Observations and Analysis:

Construction Package C2B was advertised on December 5, 2011. At that time, the contract award date was forecast to be April 30, 2012. The actual award date of June 22, 2012 resulted in an overall procurement duration of 200 CD. This duration compares favorably with the average of all IFB procurements to date:

Pkg.	Type	Advertise/ Issue RFP	Award	Duration (CD)
C1	IFB	10/19/2006	3/20/2007	152
C2A	RFP	3/10/2008	5/28/2009	444
C5A	IFB	3/2/2009	7/8/2009	128
C4B	IFB	12/21/2009	10/1/2010	284
C3	IFB	6/24/2010	1/13/2011	203
C5B	IFB	10/25/2010	8/4/2011	283
C6	RFP	3/2/2011	12/28/2011	301
C2B	IFB	12/5/2011	6/22/2012	200
Average: IFB Procurements to date =				208

.

The estimated procurement durations contained in Update #71 of the IPS for the remaining construction packages (C4C, C5C) are 157 CD and 163 CD respectively.

Concerns and Recommendations:

The PMOC is concerned that the estimated procurement durations contained in the project schedule do not reflect the experience and "lessons learned" on the project to date. If the actual procurement durations for these remaining packages are consistent with past experience, it will result in schedule "delays" of approximately 48 CD for each of these construction packages.

The PMOC recommends an evaluation of the time available for these remaining procurements and consideration of schedule adjustments to mitigate or eliminate potential schedule delays. [Ref: SAS-24-Jun 12]

2.1.3 Construction

Status:

Eight (8) of the 10 construction contracts for the SAS Phase 1 Project have been awarded. Construction progress on the active contracts through June 30, 2012 includes:

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

- *Substantial Completion was achieved on March 30, 2012.*
- *Contract close-out is on-going.*

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

- *Continued east side slurry operations with 2 rigs. Completed 28 out of the 47 (59.6%) total panels, as of 6/20/2012.*
- *South of 95th St., prep work underway including installation of diagonal bracing adjacent to Ancillary #1 and soldier pile and diagonal bracing adjacent to Ancillary #1 and soldier pile and lagging continues at the Sump Drainage Pit at Grid Line #10.*
- *Continued secant piles installation at Ancillary #1; 92 of 121 piles (76.0%) complete as of 6/20/2012.*
- *At Ancillary #2, excavation/clean-out of top of secant piles for cap beam, in preparation for 1st tier strut installation.*

- *At Entrance #1, 6 of 7 slurry wall panels complete; Excavation of last panel (107) continues due to difficulty with removal of over-pour and left behind end stop (LBES) by Contract C1.*
- *At Entrance #2, deck installation completed and demolition of existing Con Ed MH underway*

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

- *Continue DMPs survey at Street Level*
- *Continue permanent and temporary steel installation at lower 1st Mezzanine*
- *Installation of jacking towers (Area 5, 1st and 2nd Mezzanines) in preparation for permanent and temporary steel erection.*
- *Form upper invert walls and platform slabs at Stair 045 and 042 (G3) and form lower invert platform slabs at Stair 045 (G4)*
- *Continue demolition in West Fan Plant: walls and ceiling*
- *Continue installation of conduit on Track G4*
- *Continue test pits and exploratory borings at Entrance 1*
- *Continue scraping and priming walls in the West Fan Plant*
- *Continue lead abatement of steel and apply intumescent paint on platform*
- *Continue chemical grouting and lead removal at various locations*

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

- *Through June 28, 2012, 153,797 cy were mined representing 83.3% of the overall total 184,657 cy.*
- *Status of Mining Operations:*
  - *Main Station Cavern;*
    - *Center Drift & West Slash; 100% complete;*
    - *East Slash; 92% complete (16,492 cy of 17,932 cy);*
    - *Bench; 81% complete (23,340 cy of 28,871 cy)*
- *G3/S1 Cavern I & II, G4/S2 Cavern I & II; and Horseshoe Tunnel; North Crossover; 63rd St. Stub; South Crossover (East/West/Bench) - 100% complete*
- *Ancillary #2 / Entrance #2; 45.0% complete (8,844 cy of 19,780 cy)*
- *Ancillary #1; 40.0% complete (5,693 cy of 14,150 cy)*
- *Entrance #1; 80.2% complete (4,500 cy of 5,614 cy) (currently on-hold pending access issue)*
- *Entrance #3; 41.0% complete (2,982 cy of 7,270 cy) (Remaining work is shaft area)*
- *Ancillary #1;*

- *Support-of-Excavation and Excavation removal in progress; working to Stage 1A – Elevation 143 to 136*

- *Ancillary #2;*
  - *Excavation Continues to Elevation 128.5 (2nd half) w/standard routine of "Bolting/Shotcreting/Drilling/Blasting/Mucking" in progress*
- *Entrance #3*
  - *Building Demolition complete, Chimney repair complete, tie-back installation complete. Support of Excavation in progress. Production drilling & blasting to begin July 2012.*

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

- *Substantial Completion was achieved on November 16, 2011.*
- *Contract close-out is on-going.*

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

- *North and South Shaft blasting continues. Through June 15th 2012, 830 cy of rock excavated at North Shaft and 1,979 cy at the South; Including Ancillary #1, 4,726 cy overall*
- *At North Shaft, installation of the Muck Conveying System is complete. Paneling installation nearing completion and production blasting has commenced*
- *At South Shaft, installation of the Muck Conveying System is complete and system testing is underway.*
- *Stage 2 utility work continues at Entrance 2. Gas line installation continues, and electric, ECS ducts adjacent to Elevator Shaft were installed & SOE wall south of elevator shaft was poured.*
- *Architectural demo for Entrance 1 at 303 East 83rd St complete. STJV mobilized & started piles installation for the underpinning.*
- *Ancillary 1 SOE wall complete & shotcreting of shaft ongoing. Rock blasting continued to El. 110 w/ 1,916 cy excavated to date.*
- *At Ancillary 2 Architectural Demo is complete and structural demo is underway. Shoring installation and SOE wall along 2nd Ave are complete; and excavation for SOE wall at 86th Street is underway.*

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

- *Field Surveys for Signals and Traction Power continue in the existing 63rd St Station Tunnels*
- *MTACC approval of Key Personnel for CSJV Project Management Team included:*
  - *Project Scheduler*
  - *Safety Engineer and Supervisor*
  - *Quality Engineer*

- *MTACC pending approval of Key Personnel for CSJV Project Management Team includes:*
  - *Systems Integration Manager (SIM)*
  - *Systems Engineering Specialists (SES)*
  - *Site Security Supervisor*
- *Preparation of Key Submittals, including:*
  - *Accident Prevention Program/Hazardous Communication Program – Reviewed with comments, resubmittal required*
  - *Detailed Cost Breakdown - reviewed with comments, resubmittal required*
  - *Detailed Baseline CPM Schedule - reviewed with comments, resubmittal required*
  - *Contractor's Quality Plan –approval pending submission of the Inspection and Testing Plan*
  - *Site Security Plan –MTACC to review after acceptance and concurrence of plan by CSJV's Site Security Supervisor*

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:

- *Late completion of slurry panel 107 at Entrance 1 could impact milestone #2. CTJV currently trying to remove (or cut below invert elevation) the left behind end stop (LBES) installed by Contract 1.*
- *Resolution of Time Impacts after 22-Apr-13. Time Impact Analysis (TIA) underway and will address all time related issues through June 1st, 2012.*

For Contract C3:

- Investigation of existing conditions of basement and street levels at 200 East 63rd Street (Pookie & Sebastian).
- Changes in Structural Steel connection drawings require resubmittal of previously (and future) approved shop drawing submittals.

For Contract C4B:

- *Access agreements for 301 E.69th Street and 1322 2nd Ave have not been obtained. Resolution of technical issues involving utility relocations is reported to be near completion. Final Design for 301 E. 69th St is nearing completion for submittal to Building owners by early July 2012.*

For Contract C5B:

- *Access delays to Ancillary #2 resulted in 7 WD of schedule slippage. STJV is overlapping structural demolition with various activities to mitigation the 7 WD delay by early July 2012.*

- *30 CD of proposed schedule recovery due to late award of Contract received June 15th, 2012 from STJV. Review underway.*
- *Restrictions to the hours of the day during which blasting will be permitted have been discussed between MTACC, the Contractor and affected community groups. Compromise hours of work that support the current construction schedule are under consideration.*
- *MTACC has formally requested documentation demonstrating that structural steel and crane components used in the muck houses were shipped in conformance with "Ship America" contract provisions. This information had previously been informally requested with no response from the Contractor.*

For Contract 6:

- *Resolution of "embedded" Conduit Issue - part of Contract or not.*
- *Post Award Communications Design Changes per Mod. 67.*
- *Finalization and acceptance of Contractors Detailed Baseline Schedule.*

Concerns and Recommendations:

The SAS Project Team continues to identify, prioritize and address construction problems which have the potential to delay the project.

2.1.4 Force Account (FA) Contracts

Status:

As of June 30, 2012, the force account expenditure has reached $2,650,601 of the $43,000,000 budget. The majority of the expenditure ($2,309,721) is associated with 63rd Street/Lexington Avenue Station Restoration Contract (C3).

Observation:

Force account expenditures have increased as additional general orders, work trains, and flagging support have been required to support the 63rd Street Station Upgrade. This will remain the principal source of force account expenditures for the foreseeable future.

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 2nd Quarter 2012, the SAS Project Team continued its Interagency Coordination as defined in Section 12 of the SAS PMP.

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. *As of June 30, 2012, third-party reimbursements totaling $35,591,005 have been made, a sufficient increase from the previous reporting period.*

Concerns and Recommendation:

The PMOC had expressed concerned about the apparent delay in the utility companies submitting its invoices. The PMOC recommended that the SAS Project Team investigate and report on all outstanding invoices. This issue is reviewed during the SAS Cost and Schedule meeting held each month and is being adequately addressed.

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. Procurement of general construction packages has been primarily based on the IFB (lump-sum bid) process. There was no change to the procurement or delivery method for any of the construction packages during the 2nd Quarter of 2012.

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**
C2B	C-26010	96th Street Station: construction of the entrances and ancillary facilities, architectural finishes and MEP equipment.	IFB	*Awarded this period*
C4C	C-26011	72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.	IFB	*Design "Dust-off" Ongoing*
C5C	C-26012	86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.	IFB	Design Completed

Observation:

NYCT procurement procedures and guidelines do not reflect activity durations that are necessary for the procurement of large packages such as those included in SAS. Significant schedule delays have been encountered during the procurement of the last five (5) construction packages (C4B, C3, C5B, C6 and C2B). Procurement delays have made a significant contribution to the overall shift of construction activity later in the project. As the project schedule is compressed, the project's ability to absorb procurement delays without major schedule impact is reduced.

Concerns and Recommendations:

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. [Ref: SAS-25-Jun 12]

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:

During June 2012, MTA reported that the plaintiff in Yorkshire Towers Company, LP, et al, versus United States Department of Transportation, et al. determined it would not appeal the existing decision. This matter is now closed and construction of Entrance 1 at the 86th Street Station can proceed.

Delays in implementing cost-to-cure work resulting from real estate transactions is affecting construction progress at Entrance No.1 of the 72nd Street Station and Entrance No. 1 of the 63rd Street Station. In each instance relocation of utilities has been delayed by a lack of cooperation by property owners. MTA's approach to date has been to attempt to satisfy owner demands through development of acceptable technical solutions.

The SAS Project Team is fully aware of these delays and is monitoring progress and schedule in each instance. At 72nd Street, the alternative of deferring some portion of the work to the C4C package is a viable contingency.

Conclusions and Recommendations:

With approximately 274 WD of schedule float, delays to Entrance 1 at the 63rd Street Station will not foreseeably impact the project critical path. Continuing with MTA's current approach in this instance appears to be the appropriate course of action.

Entrance 1 at the 72nd Street Station has emerged as a "near-critical" path for the entire SAS Project, with approximately 64 WD of schedule float. This calculation assumes the completion of all cost-to-cure work no later than January 29, 2013. At the current rate of progress, the PMOC questions that assumption.

In both instances, 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 MTA or full implementation of scope transfer to the C4C package. [Ref: SAS-25-Jun 12]

2.6 Community Relations

Status:

During the 2nd Quarter of 2012, MTACC continued its community information and outreach efforts which included:

- *Developed and transmitted construction schedules describing the planned work for all active contracts to affected groups.*
- *Provided community stakeholders monthly newsletters for each active SAS contract via print, email and posting on MTA website.*
- *Conducted monthly Construction Advisory Meetings with stakeholders from each station area. Attendees include building owners, merchant associations, Community Board Members, MTACC and NYCT staff*
- *Initiated the posting of major SAS project milestones on the MTA Facebook and Twitter (MTA Insider) pages.*
- *Responded to questions via the Field Office Telephone, SAS Hotline, and MTA web mail regarding construction impacts.*
- *Notified elected officials and Community Boards 8 and 11 of significant upcoming work via e-mail.*
- *Maintained ongoing partnership with Manhattan Chamber of Commerce and the Mayor's Office of Operations on city inter-agency and SAS coordination.*

Observation:

MTA expends significant effort in its community relations efforts, which have generally been effective in in responding to community concerns and mitigating major construction impacts.

Conclusions and Recommendations:

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. [Ref: SAS-26-Jun 12]

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

3.1 Project Management Plan

Status:

PMOC recommended FTA Region II conditionally accept Revision 8 of the SAS PMP. Open items will be resolved during a meeting of the FTA and PMOC with the SAS Project Team in July 2012.

Observation:

In general Revision 8 of the SAS PMP was updated in accordance with the "PMP Update" process defined in the ELPEP. Candidate Revisions were issued and approved by the Technical Advisory Committee for all "Material Decisions", i.e., project decisions that affect scope, cost, schedule or funding.

Concerns and Recommendations:

The PMOC is concerned that the processes identified in the PMP might not be implemented as defined by the recently developed procedures. The PMOC recommends that selected sections of the PMP be audited to verify implementation. [Ref: SAS-09-Jan10]

3.2 PMP Sub Plans

Status:

As part of the ongoing PMP review, the referenced Sub-Plans are reviewed to verify conformance of ongoing project activities with the appropriate governing document.

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:

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 identifies 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. [Ref: SAS-26-Jun 12].

3.3 Project Procedures

Status:

As of June 30, 2012, the MTACC has implemented a total of 76 revised project procedures, with several others under development. One of these, AD.15 – Program Change Control, is critical to MTACC's program management of the SAS project.

Observation:

The PMOC believes that all of the remaining procedures, especially AD.15, should be implemented as soon as possible.

Concerns and Recommendations:

The PMOC is still concerned that the MTACC has not implemented all of its revised project procedures, which have been in development since 2009. [Ref: SAS-11-Jan10]

4.0 PROJECT SCHEDULE STATUS

4.1 Integrated Project Schedule

Status:

The IPS is a management level schedule that integrates all ten construction packages along with design, procurement, startup and other support activities. *IPS Update #71 was received on July 9, 2012 and is based on a Data Date of June 1, 2012.* Update #71 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports. *MTACC is forecasting completion of all construction and pre-revenue testing activities on October 4, 2016, with 90 calendar days (64 WD) of contingency as measured against its target Revenue Service Date (RSD) of December 31, 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

**Based on Integrated Project Schedule Update #71 dated 6/1/12 completion of construction and testing*

During the 2nd Quarter 2012, progress was made on eight (8) active construction packages:

- *C26002 (C1) (Tunnel Boring) – Substantially complete, closeout activities.*
- *C26005 (C2A) (96th Street Station – Heavy Civil) – Construction continues.*
- *C26010 (C2B) (96th Street Station – Finishes) – Contract Awarded 6/22/12*
- *C26013 (C5A) (86th Street Station – Sitework) – Substantially complete, closeout activities.*
- *C26008 (C5B) (86th Street Station – Heavy Civil) – Construction continues.*

- *C26006 (C3) (63rd Street Station) – Construction continues.*
- *C26007 (C4B) (72nd Street Station – Heavy Civil) – Construction continues.*
- *C26009 (C6) (Systems – Track, Power, Signals and Communications) – Mobilization*

No major additions, deletions or significant changes were made to the schedule during the latest update period. Changes were limited to routine updating to reflect the current status of the ongoing activities. The schedule status of individual construction contracts is illustrated in the table below.

Table 4-2: Summary Schedule Performance by Construction Package

Pkg.	Award Date	Contract S/C	Upd. #68 Forecast S/C	Upd. #71 Forecast S/C	% Complete	Contract Schedule Status	Quarterly Change
C1	3/20/07	7/20/10	3/20/12	*3/20/12A*	100.0%	609 CD	0 CD
C2A	5/28/09	1/7/13	7/23/13	*7/15/13*	69.9%	189 *CD*	-8 CD
C2B	6/22/12	11/25/15	11/25/15	*11/25/15*	0.0%	0 *CD*	0 CD
C3	1/13/11	5/13/14	5/13/14	*6/19/14*	18.2%	37 *CD*	37 CD
C4B	10/1/10	10/31/13	11/21/13	*1/14/14*	48.4%	75 *CD*	54 CD
C4C	Future	10/5/15	10/2/15	*10/5/15*	0.0%	0 *CD*	3 CD
C5A	7/9/09	1/7/11	11/16/2011A	*11/16/11A*	100.0%	313 *CD*	0 CD
C5B	8/4/11	*9/4/14*	9/4/14	*9/4/14*	*13.7%*	0 *CD*	0 CD
C5C	Future	7/11/16	7/11/16	*7/11/16*	0.0%	0 *CD*	0 CD
C6	8/18/16	8/18/16	8/18/16	*8/18/16*	1.5%	0 *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.
4. C5A Substantial Completion achieved on 11/16/2011.
5. C1 Substantial Completion achieved on 3/30/12

Observations and Analysis:

Schedule progress through the current update period (June 1, 2012) was adequate to support the forecast RSD of December 30, 2016.

- *C2A: The forecast Substantial Completion date recovered an additional three (3) days this period to July 15th, 2013. MTACC continues to report May 13th, 2013 as the forecast completion date for MS#1. Milestone (MS) No. 2 experienced additional schedule slippage as a result of Additional Work Order (AWO #98 – Cost to cure at Rainbow Hardware) issues at Entrance #1. This work is now underway however the forecast completion date has slipped to April 25th, 2013.*

- *C3: The Contractor's schedule continues to reflect delays to its Substantial Completion date due to structural steel fabrication delays. MTACC maintains that this is a contractor delay from which full recovery is required. Access delays at Entrance #1 may partially offset the steel delay.*
- *C4B: Substantial Completion slipped by 18 WD to January 14th , 2014 due to a "slow start" to concrete operations in the tunnel area south of the 72nd Street main cavern. There was a 16 WD loss to Milestone (MS) No. 1 due to slow progress for excavation at Ancillary #2.*
- *C5B: Full operation of the north and south muck handling systems was delayed. Limited blasting and rock excavation at both shafts has started. Work at Entrance #2 was delayed approximately two weeks due to utility relocations. Otherwise, contract substantial completion and turnover milestones stayed on schedule.*

At the request of the FTA, the PMOC has initiated quarterly tracking of major schedule activities and/or "milestones" that are in progress during that quarter as a means of reviewing and evaluating the project's ability to achieve short-term schedule goals. Due to the one-month lag in reporting schedule update progress, the 2nd Quarter 2012 baseline and intermediate results are published in this report and shown in the following table:

Table 4-3: Quarterly Schedule Target Comparison

			Milestone Updates			
Pkg.	**Act.**	**Description**	**Baseline**	**M-2**		**Δ**
3rd Qtr 2011 Tracking Milestones (Carryover)			**1-Jul-11**	**1-Jun-12**		
C4B	*72C1185*	Excavate Top Heading Area 2	30-Jun-12	*6-Apr-12*	*A*	*-85*
4th Qtr 2011 Tracking Milestones			**1-Oct-11**	**1-Jun-12**		
C2A	*A117*	Complete ANC #1 Secant Piles	11-Jul-12	*23-Jul-12*		*12*
C2B	*PR40*	Award C2B Contract	30-Apr-12	*22-Jun-12*	*A*	*53*
C3	*LP025*	Complete Demo – Lower Platform	31-May-12	*1-Oct-12*		*123*
	UP040	Complete Demo – Upper Platform	11-Apr-12	*24-Aug-12*		*135*
C4B	*72C1225*	Excavate Cavern Bench	9-May-12	*5-Jun-12*		*27*
1st Qtr 2012 Tracking Milestones			**1-Jan-12**	**1-Jun-12**		
C2A	*6S235*	Start Invert Inst. 93rd -> 95th Streets	8-Feb-12	*2-Apr-12*	*A*	*54*
C3	*005*	Complete Sub/App Struct. Steel Shop Dwgs	20-Jul-12	*24-Oct-12*		*96*
	A1010	Begin Demo - Ancil #1	2-May-12	*31-Aug-12*		*121*
	EN105	Begin Structural Work - Ent #1	22-May-12	*24-Sep-12*		*125*
	MZB05	Compl. Asbestos/Lead Abatement - Fan Plant	27-Mar-12	*13-Jul-12*		*108*
	010	Begin Elevator Fab	7-Mar-12	*18-Jul-12*		*133*
C4B	*SCC1000*	South Crossover Excavate	31-Jul-12	*9-May-12*	*A*	*-83*
	G3S11060	G3 TBM F/P/S Tunnel Invert	28-Mar-12	*10-Jul-12*		*104*
	ENT1200A	Contractor (Start) Cost to Cure Work	2-Mar-12	*10-Aug-12*		*161*
	ETA1000	Ent #2 Adit Excavation Complete	11-Jan-12	*4-Jun-12*		*145*

			Milestone Updates		
Pkg.	**Act.**	**Description**	**Baseline**	**M-2**	**Δ**
	E3C1010	Ent #3 Bldg Demo Complete	29-Mar-12	*25-May-12 A*	*57*
C5B	*S110a*	Complete Installation of Mucking Sys-S	25-Apr-12	*26-Jun-12*	*62*
	S100a	Complete Installation of Mucking Sys-N	10-Apr-12	*8-Jun-12*	*59*
	S150	N. Cavern Exc: Develop & Top Heading	11-Apr-12	*7-May-12 A*	*26*
	S110b	S. Cavern Exc; Develop & Top Heading	26-Apr-12	*11-Apr-12 A*	*-15*
2nd Qtr 2012 Tracking Milestones			**1-Apr-12**	**1-Jun-12**	
C2A	E226	*Install Stage 4 SOE Slurry Panel - Ent #2*	*29-May-12*	30-Jul-12	*62*
	E105	*Relocate MEP @ Rainbow Hardware (AWO98)*	*25-Jun-12*	12-Jun-12	*-13*
C3	MZB15	*Start Interior Work/Finishes M6 Utility Rms*	*5-May-12*	17-Jun-12	*43*
	MZC01/MZC05	*Asbestos/Lead Abatement & Demo-Lower Mezz*	*27-Apr-12*	14-Jun-12	*48*
	MZ5001/010/015	*Lead Abatement/Demo -M1->M6*	*10-Jul-12*	27-Jul-12	*17*
	UP025	*Begin Structural const; CBH Control Rm*	*2-Apr-12*	22-Jun-12	*81*
C4B	72C1430	*Start Main Cavern Invert F/R/P/S*	*24-Jul-12*	22-Aug-12	*29*
	NCC1035	*Start North X-Over Invert WP*	*9-May-12*	5-Jul-12	*57*
	63S1050	*Complete 63rd St Stub Cavern Invert F/R/P/S*	*8-Jun-12*	16-Jul-12	*38*
C5B	AN100	*Compl. Ancil 2;SOE (Piles & Lagging)*	*13-Apr-12*	14-Jun-12	*62*
	E210/240/242	*Complete Entrance 2; Utility Relocations*	*4-Oct-12*	17-Sep-12	*-17*
	E110	*Complete Entrance 1; Structural Demo*	*26-Jun-12*	1-Aug-12	*36*

2nd Qtr. Milestone Summary

# Activities Forecast this Qtr.	*12*
# Activities forecast to complete this Qtr.	*9*
# Activities completed this Qtr.	*0*
# Activities on/ahead of schedule	*2*
# Activities behind schedule	*10*

Carryover Milestone Summary

# Activities Carried Over	*21*
# Activities forecast to complete during/before this Qtr.	*18*
# Activities completed this Qtr.	*7*
# Activities on/ahead of schedule	*0*
# Activities behind schedule	*14*

Concerns and Recommendations:

Based on the sampling of activities in the Milestone Summary, overall construction progress and performance is experiencing significant delays. Although the forecast RSD and schedule contingency experienced little change this period, there are numerous delay situations which need to be resolved in the near-term in order to avoid significant challenges to maintaining the project RSD. Based upon the PMOC's review of schedule activity, the following areas of concern have been identified:

- *Contracts C2A, C3, C4B and C5B are each experiencing construction delays at entrances and/or ancillaries that could potentially threaten the respective package and project level schedule(s).*
- *C3 appears to be experiencing delays to activities not directly related to the reported steel fabrication delay. The PMOC is concerned that delays other than steel fabrication are impacting progress on this project.*
- *Completion of C5B muck removal systems is now behind schedule. Time restrictions on blasting have the potential to contribute to further schedule delays.*

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update#71 (DD=06/01/12), 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 5 Slurry Wall Const.95-97 East		*08/10/12*
SOE Wall/Secant Piles – Ancillary #1		*07/23/12*
Install Stage 4 Slurry Panels – Entrance #2		*07/30/12*
C2B – 96th Street Station Concrete, Finishes & Utilities		
Pre- Construction Meeting		*07/10/12*
C3 – 63rd Street Station Rehab		
Elevator Fabrication	*07/18/12*	
Demolition – Ancillary #1	*08/31/12*	
Demo – Upper Platform & Track T1		*08/05/12*
Complete steel shop drawing review/approval		*10/24/12*
C4B – 72nd Street Station Mining & Lining		
Cost-to-Cure; Entrance #1; Owner Approval for Utility Relocation (AWO #5, 11)		*07/02/12*
F/R/P/S Main Cavern Invert	*08/22/12*	
Ent #3; SOE & Decking Installation		*07/19/12*
C4C—72nd Street Station Finishes		
Advertise for Construction		*07/31/12*

Activity ID	Start	Finish
C5B – 86th St. Station Mining & Lining (IFB)		
South Shaft – Complete F/D/I Muck House/System		*06/26/12*
Entrance #1: Structural Demo		*08/01/12*
Anc#2-Complete Lower Level Demo (Chase Bldg).		*08/30/12*
C6 – Systems		
Complete Signal Block Design (MS#1)		*08/31/12*

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *Development, review and approval of the C6 Baseline Schedule are in progress. Key submittals for track, communication, signals and traction power are scheduled to complete by the end of 2012, according to the preliminary schedule for this package. All are in progress according to Update #71 of the IPS.*
2. *Submittal and approval of all structural steel for C3 has slipped from 07/23/12 (IPS Update #63) to 10/24/12 (IPS Update #71).*
3. *Owner approval of utility relocations at C4B, Entrance #1 has slipped from 03/30/12 (IPS Update #68) to 07/02/12 (IPS Update #71).*
4. *C5B blasting and rock excavation progress must increase significantly this period to avoid package and project level delays.*

Concerns and Recommendations:

Refer to See Section 4.3 of this report.

4.3 Critical Path Activities

Status:

Project Critical Path: *The project critical path is initiated by three (3) independent, concurrent paths leading to follow-up Contract C5C.*

"Path 1" starts with the fabrication-delivery-installation of the South Muck Handling System (ACT. # C5B S110a). It then travels directly into the South Cavern Excavation from the South Shaft, continuing through completion of the C5B South Cavern mining and concrete operations (C5B Milestone No. 1). Upon achieving MS #1 in early March 2014, the critical path shifts to start and completion of Contract C5C mezzanine and platform concrete work, followed by the start of concrete work in early September 2014, then shifting to 1st and 2nd fix work in the 86th Street Station South Ancillary (No. 1), where it is handed over to C6 in April 2015. The critical path continues into C6 Systems Signal and Traction Power work for the next six (6) months within the 86th Street Station, followed by Integrated Testing of the Traction Power system beginning in mid-December 2015. Upon completion, this area is handed over for Pre-Revenue Operations Testing beginning in late June 2016 and is forecast to complete by October 13, 2016.

The MTACC's forecast RSD remains as December 30, 2016. "Path #1" can be considered the "true" critical path with 0 days schedule float.

"Path #2" involves the demolition, underpinning, excavation (both cut-and-cover, and escalator tunnel) and structural concrete construction of Entrance #1. Heavy civil construction performed by C5B is "handed off" C5C for finish construction (at Entrance #1) via HO2.2 on March 3, 2014. Handoff of the southern portion of the cavern from C5B to C5C occurs between March 3 and March 5, 2014 and is controlled by Handoff Activities #1 and #2... Path #2 has +2 days of schedule float...
"Path #3" controls the north cavern excavation and concrete construction activities. It is essentially a mirror image of Path #1. The C5B portion of this path runs through contract substantial completion, at which time the North Cavern is transferred to C5C. Path #3 currently has +8 days of float.

Major secondary float paths of significance to the overall status of the project are presented in Work Day (WD) order, and include the following:

+ 23 WD: *Utility relocation, support of excavation, excavation and structural concrete work at Entrance #2. This path joins the South Cavern for wall waterproofing and concrete installation in July 2013.*

+23 WD: NYCT Pre-Revenue Operation Activities, scheduled to start on August 18, 2014.

+64 WD: C4B, Entrance #1 excavation and heavy civil construction. Start of this work is controlled by utility relocations resulting from cost-to-cure work @ 301 East 69th Street and 1322 2nd Avenue. Seventeen days of schedule float were lost along this path during this update period.

+69 WD: This path extends through the construction of the 96th Street Station (C2A -> C2B -> C6). It is initiated by Stage 5 (95th to 97th Streets) slurry wall installation, forecast for completion on approximately August 10, 2012. Following C2A deck installation, excavation and concrete invert construction this path moves to the C2B Station Finishes package in July 2013. Systems installation and testing (C6) at the 96th Street Station is forecast to start on September 10, 2014 and continue through October 15, 2015, at which time this path merges with the integrated system testing (critical) path. This path gained six (6) days of schedule float during this update period.

C2A work also initiates major secondary paths with +97, +101, days of float, reinforcing the conclusion that the 96th Street Station is currently the "second most critical" element of the project.

+82 WD: C6 contractor mobilization and preconstruction (trackwork) submittals. This preliminary schedule forecasts the completion of C6 preconstruction engineering and submittals by late 2012.

+125 WD: *C5B, SOE, demolition and excavation at Ancillary #2. Cost-to-cure construction at Chase Bank has been reported as complete.*

+147 WD*: C5C Procurement*

+175 WD*: C4C Procurement*

Observations and Analysis:

86th Street Station

- *With three independent, essentially critical paths and one "near-critical" path, the schedule through this package presents an enormous challenge to the on-time completion of the project. Delays to any of these paths will result in a day-for-day delay to the project RSD.*

96th Street Station

- *Several "near-critical" paths not involving the 86th Street Station secondary path continue to run through the 96th Street Station. Modest improvements in schedule float have been achieved over the last two update periods.*
- *Delays have been experienced at Entrance #1 where an improperly constructed "end stop" (installed by Contract 1) is preventing installation of the final slurry wall panel.*

72nd Street Station

- *Problems in resolving utility relocation design details at Entrance #1 with building owners have not been resolved over recent months. Over the past three (3) months, this schedule path has lost 47 WD of float.*
- *Despite the problems that were encountered, overall blasting and excavation schedule progress has been satisfactory. Some delays have been reported during the "transition" to the concrete lining operation. An agreement with the C3 Contractor executed this period should benefit the timeliness and efficiency of concrete placement in the G3/G4 tunnels.*
- *Substantial completion for this package lost 28 WD this period. This activity has +91 WD of schedule float when measured against the December 30, RSD.*

63rd Street Station

- *Significant delays to this package have been documented through IPS Update #71*
- *MTACC reports that these delays are the result of structural steel detailing and fabrication delays, all of which are the responsibility of the contractor to recover.*
- *Some of the delays noted appear to be unrelated and independent of steel fabrication.*

Concerns and Recommendations:

The numerous critical and near-critical schedule paths through the 86th Street Station Cavern Excavation (C5B) Contract schedule greatly limits the opportunities for cost-effective schedule acceleration through the majority of the construction phase of this package. Selective acceleration involving C5C, C6 and their interfaces with C5B may provide better opportunities for mitigation of schedule delays, if needed.

Managing the C5B schedule will be challenging. The SAS Project Team may consider additional staff resources to support this effort. Detailed monitoring of construction progress is necessary to ensure the Contractor is dedicating all appropriate diligence and resources to advancing the work on these critical paths. Priority must be given to support activities (shop drawing review, etc.) associated with critical path activities. Variances from anticipated

conditions must be completely documented to support the evaluation of potential contract adjustments.

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. The PMOC will continue this effort until the MTACC undertakes the role of ELPEP compliance reporting and verification.

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.*
  - *Current Forecast: "Near-critical" cost-to-cure 64 WD (90 CD)*
- *Minimum Allowable Secondary Float Path*
  - *ELPEP Requirement: 25 Calendar Days*
  - *Current Forecast: 70 CD (50 WD) through construction and fit-out of the 72nd Street Station – Ancillary #2.*
- *Secondary Schedule Mitigation (critical path compression)*
  - *ELPEP Requirement: 125 CD*
  - *Current Forecast: Various strategies to achieve this goal are under active consideration by the project team.*

In addition to the metrics above, the 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. These beneficial outcomes are significant components of ELPEP/SMP compliance.

Concerns and Recommendations:

With respect to schedule, the MTACC is realizing the beneficial outcomes envisioned by the ELPEP on SAS. MTACC is generally in compliance with its Schedule Management Plan and the schedule requirements established by the ELPEP.

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	MTA's Current Working Budget
10	Guideway & Track Elements	$612,404,000	$728,617,000
20	Stations, Stops, Terminals, Intermodal	$1,092,836,000	$1,276,632,000
30	Support Facilities	0	$562,000
40	Site Work & Special Conditions	$276,229,000	$537,621,000
50	Systems	$322,708,000	$247,627,000
60	ROW, Land, Existing Improvements	$240,960,000	$292,000,000*
70	Vehicles	$152,999,000	0**
80	Professional Services	$796,311,000	$885,941,000
90	Unallocated Contingency	$555,554,000	$482,000,000
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 this 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:

MTACC periodically updates or adjusts the CWB cost categories and available contingencies within the CWB to reflect contract awards and updated estimates of future cost when appropriate. MTACC has not reported any adjustments to its overall CWB during June 2012.

The PMOC has not observed any activities or events that represent an immediate or obvious challenge to completing the project within the established CWB during this period.

The percent of work complete is estimated using the cumulative payments divided by contract (or budget) value as may be appropriate. As of June 30, 2012, MTACC reports total project expenditures of $1,805,149,346. When compared against the CWB of $4,451,000,000, this results in an estimated total project completion of 40.6%.

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 MTA-established cost categories on a monthly basis. The aggregate budget value of the cost categories equals the CWB of $4.451B. In general, MTA cost categories correspond to individual contracts or groups of contracts for products or services supplied by a 3rd party vendor. Values within the MTA 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:

In March 2012, the PMOC noted that significant costs were being incurred for community relations activities and that these costs were included in modifications to various contracts within the SAS project. The PMOC requested MTACC to utilize standard methodology in identifying a scope of work and budget for these costs and to formally and track costs incurred against its budget.

In June 2012, the MTACC shared its total budget for community relations activities with the PMOC. Total estimated cost for community relations (both expended to date and estimated to the completion of the project) are approximately $8.5M. MTACC declined to segregate and report on these costs as an individual line item within the project cost report. MTACC demonstrated to the satisfaction of the PMOC that estimates of future community relations activities are included in the CWB.

Concerns and Recommendations:

The process through which the SAS Project Team identified the elements of community relations-related budget and cost would have been facilitated via a functional WBS. The MTACC does not use a WBS-type system for cost management on this project. This is not a fatal flaw; on occasion it simply makes the extraction of certain data more difficult.

The WBS was a small point of controversy earlier in the project. For clarity and transparency, the PMOC recommends that the PMP, Cost Management Plan and any other relevant documentation be modified to reflect the actual manner by which budget and costs are maintained on SAS.

5.1.2 Project Expenditures and Commitments:

Status:

As of June 30, 2012, a summary comparison of the SAS Current Working Budget (Estimate Revision #9) and expenditures is as follows:

Description	CWB	Expended	%
Total Construction	$2,702,757,299	*$938,391,275*	*33.9%*
Total Soft Cost	$1,254,460,085	*$866,758,073*	*69.1%*
Contingency	$493,782,616		
Subtotal	$4,451,000,000	*$1,805,149,348*	*40.6%*

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 value expended to date.

Based upon financial expenditures reported by the MTACC during June 2012, SAS Phase 1 is approximately 40.6 % complete. The completion status of the active construction contracts through June 2012, also based upon reported expenditures through that date, is as follows:

- *C26002 (Tunnel Boring) – 96.1%*
- *C26005 (96th Street Station) – 69.9%*
- *C26013 (86th Street Station) – 100%*
- *C26008 (86th Street Station) – 13.6%*
- *C26006 (63rd Street Station) – 18.2%*
- *C26007 (72nd Street Station) – 48.4%*

Aggregate Construction % Completion:

- *82% of all construction work is under contract*
- *41.2% of active construction contracts are complete (C2B added to calculation this month)*
- *33.9% of all construction is complete*

Based upon cost data received from MTACC for June 2012:

- *Value of construction in place this period = $32,558,477*
- *Estimated value of construction remaining = $1,764,365,725*
- *Target construction completion = August 18, 2016*
- *# Months remaining = 50*

Average rate of construction required to achieve target completion date = $35,521,005/MO

Conclusions and Recommendations:

The average progress (payments) achieved over the most recent six month period is $34,329,900. Based on a review of cost data for June 2012, 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 June 30, 2012, 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	% Complete	Award	Exposure		Executed	
			$	% of Award	$	% of Award
C26002 (1)	*96.1%*	$337,025,000	*$53,218,987*	*15.79%*	*$45,527,126*	*13.51%*
C26005 (2A)	*69.9%*	$325,000,000	*$37,531,941*	*11.55%*	*$33,091,712*	*10.18%*
C26010 (2B)	*0%*	$324,600,000	*$0*	*0.00%*	*$0*	*0.00%*
C26006 (3)	*18.2%*	$176,450,000	*$667,000*	*0.38%*	*$122,000*	*0.07%*
C26007 (4B)	*48.4%*	$447,180,260	*$6,382,643*	*1.43%*	*$2,982,875*	*0.67%*
C26013 (5A)	*100%*	$34,070,039	*$6,728,892*	*19.75%*	*$4,010,759*	*11.77%*
C26008 (5B)	*0%*	$301,860,000	*$1,234,344*	*0.41%*	*$794,147*	*0.26%*
C26009(6)	*1.5%*	$261,900,000	*$0*	*0.00%*	*$0*	*0.00%*
TOTAL	*33.9%*	$2,208,085,299	*$105,763,807*	*4.79%*	*$86,528,619*	*3.92%*

Observation and Analysis:

The value of AWOs reported by MTA/NYCT in June 2012 is summarized as follows:

	Executed AWOs	*AWO Exposure*
June-2012	*$86,528,619*	*$105,763,807*
May-2012	*$64,724,584*	*$105,292,728*
Monthly Change	*$21,804,035*	*$471,079*

The change in AWO Exposure was primarily driven by the following:

1. *Contract C1: Adjustments to forecast exposure for AWOs #128, 129, 133, 135, 137, 141, 142 and 146 totaling $887,806.*
2. *Contract C2A: Adjustments to forecast exposure for AWOs #97, 98, 99, 103, 104, 110, 112, and 114 as well as the addition of new AWOs # 120, 121, 122 and 123 totaling $174,150*

3. *Contract C4B: Adjustments to forecast exposure for AWOs # 27 and 34 totaling <$614,520>*

The change in Executed AWO Value was primarily driven by the following:

1. *Contract C1: Execution of AWO # 68 and 128 for a total cost of $262,000.*
2. *Contract C2A: Execution of AWO # 53, 59, 112 and 121 for a total cost of $18,574,135.*
3. *Contract C4B: Execution of AWOs #19, 22, and 40 for a total cost of $2,301,400.*
4. *Contract C5B: Execution of AWOs #4 and 9 for a total cost of $666,000*

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. The low rate of AWO Exposure increase this period is consistent with construction activity.

It is noted that certain activities requiring construction contract AWOs have not been entered into the logs or assigned an exposure value.

AWO Exposure to date, expressed as a percentage of total construction awarded to date, is approaching 5%, which was the "average" construction contingency applied to estimated construction cost for budgeting purposes. Total AWO value can be reasonably expected to exceed 5% of contract award value. PMOC recommends verifying that EAC forecast values are consistent with current project experience. PMOC audit of selected AWO files will be performed during the 3rd Quarter 2012. [Ref: SAS-20-Dec 10]

5.2 Project Funding

Status:

Total Federal participation is currently $1,350,692,821. Appropriated, obligated and disbursed totals are shown below:

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

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *June 30, 2011*
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	*$230,053,496*
NY-03-0408-07	$237,849,000	$237,849,000	0
NY-03-0408-08	*$197,182,000*	*$197,182,000*	0

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *June 30, 2011*
NY-03-0408-09	*Pending*	*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	$45,800,000
Total	*$1,063,942,200.00*	*$1,063,942,200.00*	*$584,044,666.00*

* Denotes American Recovery and Reinvestment Act (ARRA) funds

A total of $1,805,149,346 has been expended on the project through June 30, 2012, of which $428,101,884 has been spent on design and $871,203,438 on construction (MTACC's June 2012 Cost and Schedule Summary Input).

Observation and Analysis:

Availability of local funding had been identified as a major concern. However with the New York State Legislature agreeing to fund the remaining three years of MTA's 2010 – 2014 Capital Program this issue is no longer a concern.

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:

Using the MTACC financial reporting format contained in its Capital Construction Reports, the PMOC will maintain 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 recently submitted Cost Management Plan.

This EAC is based on the following:

- *The results of MTACC's cost estimate (Revision 9) for SAS Phase 1.*
- *Cost information provided by the SAS project team through established contemporaneous reporting.*

Observation and Analysis:

During the 2nd Quarter 2012, MTA reported the following changes that affected the project EAC.

- *The C2B contract award value of $324,600,000 was lower than the escalated cost estimate + AFI by $73,231,000.*

A summary of the EAC estimated by the PMOC, based on values supplied by MTA is as follows:

Table 5-4: Estimate @ Completion

	CWB	***EAC***
Awarded Const. Contracts	*$2,208,085,299*	*$2,415,240,000*
Const. Contracts to be bid	*$494,672,000*	*$519,405,600*
Total Construction	*$2,702,757,299*	*$2,934,645,600*
Engineering Services	*$576,541,264*	*$591,338,287*
Third Party Expenses	*$534,800,000*	*$534,800,000*
TA Expenses	*$125,160,085*	*$128,160,085*
Contingency	*$351,741,352*	
Exec Reserve	*$160,000,000*	
TOTAL	*$4,451,000,000*	*$4,199,709,553*

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

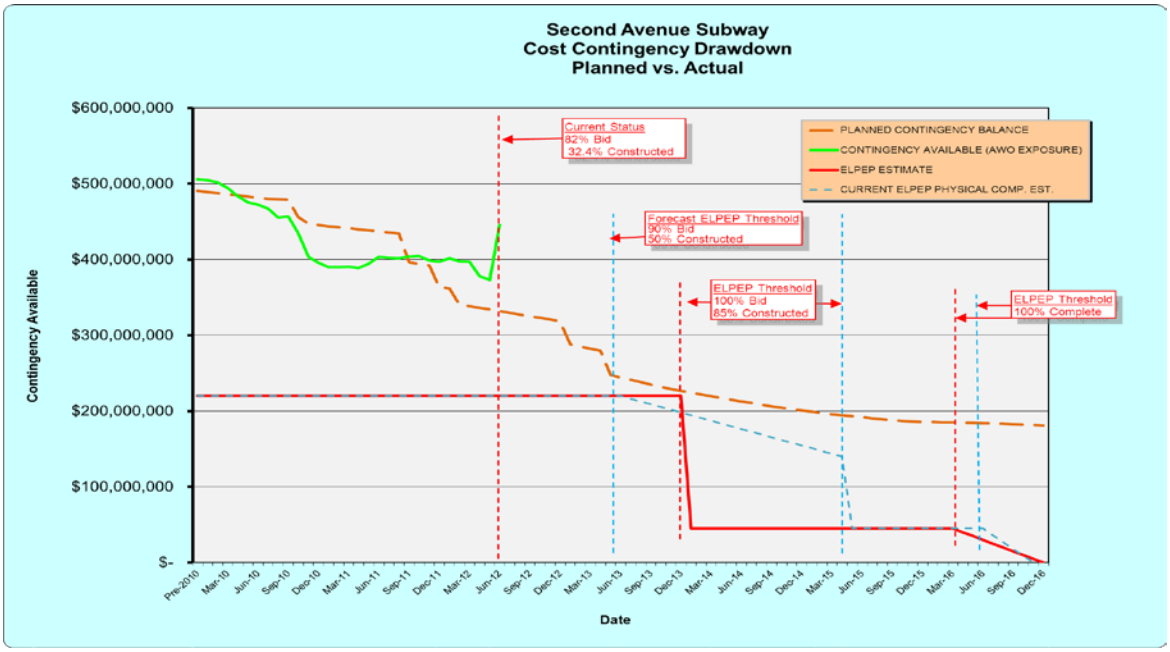
The independent analysis of contingency drawdown maintained by the PMO is generally consistent with that maintained by the SAS Project team and confirms it to be in compliance with the required minimum contingency balance of $220,000,000.

Observations and Analysis:

Using the monthly AWO Tracking Logs, the PMOC has estimated the contingency balance based on AWO Exposure. The current contingency balance exceeds both the planned balance and the ELPEP Threshold.

Required Balance (ELPEP):	*$ 220,000,000*
Planned Contingency Balance:	*$ 331,895,066*
Actual Contingency Balance (PMOC):	*$ 445,601,524*
Actual Contingency Balance (May 2012):	*$ 448,717,000 (includes C2B Award)*

In graphic form:



Concerns and Recommendations:

This evaluation is driven by a thorough evaluation of construction contingency. Soft cost contingency is evaluated periodically and the analysis adjusted accordingly.

6.0 PROJECT RISK

6.1 Initial Risk Assessment

No change this period.

6.2 Risk Updates

Status:

Risk Analysis workshops will be conducted for construction packages C4C and C5C as part of established pre-construction activities. The results of these analyses 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 deals with retained risks. 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 include:

- *The risk of procurement delay to construction procurement of the remaining finish packages has been "devalued" by the project team. At this time there are no plans to advance the advertisement of these packages, although additional efforts have been initiated to ensure they are advertised in accordance with the current schedule.*
- *Four dimensional modeling of the 63rd Street Station Renovation (C3) and Systems Installation (C6) at 63rd Street will be developed and implemented on a trial basis in an effort to determine if it provides a value-added tool for the coordination and management of interfaces between multiple prime construction contracts.*
- *Initiation of staff training on construction phase activities and procedures necessary to support the completion of the Safety and Security Management Plan. Additionally, hiring a full time coordinator for this task is expected to be of great benefit it executing this task.*

Conclusions and Recommendations:

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

The PMOC notes that some of the peripheral elements of the project could be better integrated in this process. Examples include:

- Identification of preparatory tasks and inclusion of the Safety Certification Program into the IPS.
- Inclusion of public relations activities into the risk based decision and cost forecasting efforts.

6.4 Risk Mitigation Actions

Status:

Risk Mitigation Meeting (Nos. 17) was held on June 28, 2012. Recent risk management activities reviewed include:

- *Completed May EAC forecast.*
- *Finalized the schedule for C4C and C5C Risk Analysis Workshops.*
- *Met with the C6 Contractor to review perceived risks to C6Contract execution.*

Observation and Analysis:

The SAS Project Team is actively engaged in the mitigation of project risk, including those risks directly retained by the MTACC as well as those risks for which direct responsibility has been transferred to other parties. Major risks reviewed and updated during this Quarter include:

1) **Contract Interfaces (Risk CNS 4 (C6))**: *Managing contractual interfaces during construction. To date, the tools and procedures to track the relevant schedule activities associated with the interfaces have been developed. These tools will be refined over the next several months.*

   Four dimensional modeling will be implemented on a trial basis for the 63rd Street Station (C3)/Systems (C6) packages to determine if this methodology could be valuable for the remainder of the project.

2) **System Safety Certification (Risk CNS 8 (C6)):** *MTA's Chief of Quality, Safety & Security developed a training program for the CM field staff that will assure that all parties understand their role, responsibility and function in the safety certification process. The 63rd Street Station CM staff received the first training on June 27, 2012.*

   Setting up a meeting with OSS/NYCT and NYS to present the SAS System Safety Certification Process for their review, familiarization and hopeful approval has been difficult. It was suggested that a session of the System Safety Certification Committee (SSCC) be scheduled for this purpose.

   A full-time safety certification coordinator has been employed. Having a full-time staff member dedicated to this task will be of great assistance in successful execution.

3) **Shop Drawing Processing (Risk ID TBD):** Having reviewed this issue for several months, *it has been determined that the contract threshold value of turnaround within 20 WD has been exceeded on numerous occasions, but that no harm (schedule delay) has resulted. Further review is unlikely to reveal any new, relevant information at this time. It was determined that this risk would continue to be monitored and revisited should circumstances warrant.*

4) **Cost-To-Cure Utility Relocations (Risk C4B 77 and C4B C14)**: *Relocating utilities that service buildings adjacent to Entrance No. 1 (301 East 69th Street, 1322 Second Avenue) may delay construction at this location. If the current forecast of seven (7) months to complete the work can be achieved, the overall project and C4B schedules will not be delayed; however the process of dealing with building owners through design and construction has been difficult and many opportunities for additional delay remain. Contingency plans are actively being considered.*

A complete tabulation of risks, their impact on the project and their probability of occurrence is contained in the contract and overall project risk registers. These risks are updated regularly and provide a comprehensive tabulation of the project risk "status".

Concerns and Recommendations:

In the PMOC's opinion, the SAS Project Team is actively working to avoid and contain the effect of retained risks and controlling the overall growth of the total project cost. The Risk Mitigation effort has been successful in identifying issues that have the potential to negatively affect project cost and schedule and provide a forum for developing alternatives and solutions.

6.5 Cost and Schedule Contingency

6.5.1 Cost Contingency

Status:

Refer to Section 5.4 of this report.

6.5.1 Schedule Contingency

Status:

Schedule contingency reported by MTACC, based upon Update #71 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 12/30/16 is 90 CD. When measured against the FTA/PMOC RSD estimate of 02/28/18, 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 #	**59**	***62***	***65***	***68***	***71***
Data Date	06/01/11	*09/01/11*	*12/01/11*	*03/01/12*	*06/01/12*
Contingency (CD) RSD=12/30/2016 RSD=02/28/2018	 67 490	 *67* *490*	 *67* *490*	 *80* *503*	 *90* *513*

Concerns and Recommendations:

Schedule contingency has remained fairly constant over the 2nd Quarter of 2012.

The PMOC notes that most of the changes in schedule contingency are the result of refinement to the "downstream" activities, with few improvements in contingency resulting from better-than-anticipated construction performance.

.

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:** This effort is underway. MTACC has initiated new management processes in the areas of schedule, cost and risk management in advance of the formal completion of new plans or procedures. Candidate Revisions to the PMP have been identified and the associated sections of the PMP are being updated. **Update (January 2011):** Revised draft PMP issued and currently being reviewed by PMOC. Review anticipated to be completed by February 2011. **Update (March 2011):** PMOC review of PMP update is substantially complete. **Update (April 2011):** The PMOC has completed its review of PMP Revision 8 (update). The PMOC will review its findings with the FTA and compare findings with the corresponding PMP review which is currently underway for the East Side Access Project. After these tasks are complete, the PMOC and FTA will present findings and recommendations to the MTACC. **Update (May 2011**): No additional information this period. **Update (June 2011)**: PMOC is monitoring the implementation and effectiveness of Candidate Revisions per discussions with FTA. Results to be included in review comments. **Update (Sept 2011):** In general, Revision 8 of the SAS PMP was updated in accordance with the "PMP Update" process defined in the ELPEP. Candidate Revisions were issued and approved by the Technical Advisory Committee for all "Material Decisions", i.e., project decisions that affect scope, cost, schedule or funding. **Update (December 2011)*:*** Resolution of PMOC comments/recommendation and FTA concurrence is anticipated by mid-February 2012.	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		Update (March 2012): Review of recommendation is on-going. ***Update (June 2012):*** *Resolution of PMOC's concerns will be addressed during a meeting with SAS Project Team during July 2012.*	
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:** This process is ongoing. Schedule Management Plan complete; conditional approval forwarded by FTA on October 25, 2010. Review of Cost and Cost Contingency Management Plan is in progress. **Update (March 2011)**: SMP outstanding comments resolved. Updated CMP submitted and PMOC comments returned. Reconciliation of comments to be scheduled in April 2011. **Update (April 2011)**: Revisions to the CMP are anticipated on May 3, 2011 and will be discussed at the ELPEP meeting on May 5, 2011. Based upon the clarifications and understandings achieved at this meeting, MTACC will revise the CMP accordingly and resubmit it on or about May 13, 2011. **Update (May 2011)**: A final revision to the CMP will be published in June 2011 based upon comments received to date. The CMP is at a high level of completion. Final comments should be developed in June leading to a conditional approval of the plan. **Update (June 2011)**: PMOC final review comments transmitted to MTACC. **Update (September 2011)**: **Schedule & Schedule Contingency Management Plan** – The PMOC has verified SAS substantial compliance with the SMP since August 2010. The process of transferring the verification process to the respective project teams has been generally discussed in several recent ELPEP meetings. Refer to "Conformance Demonstration" for additional information. **Cost & Cost Contingency Management Plan (CMP)** –Conditional approval of this plan	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		was transmitted to the MTACC from the FTA on September 1, 2011. The MTACC is working to address the five (5) Candidate Revisions upon which final approval is conditioned. **Update (December 2011)**: MTACC has submitted its final revisions to the CMP, which incorporate its responses to those Candidate Revisions. FTA/PMOC final review of these revisions is in progress. **Update (March 2012)**: Review is ongoing. ***Update (June 2012)**: Review is ongoing.*	
SAS-11-Jan10	3.3 Procedures	The PMOC is concerned whether the new procedures will actually be utilized by the 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 (April 2011):** The MTACC is behind schedule in developing the revised project procedures. To date, it has adopted a total of 69 revised procedures of 75. MTACC originally committed to have all revised procedures adopted by April 12, 2010. **Update (May 2011):** No update this period. **Update (June 2011):** No update this period. **Update (Sept 2011):** The MTACC released one additional procedure during September 2011. The total number of revised procedures is now 73 of a potential 75. **Update (December 2011)*:*** Two procedures were issued, which brings the total number of	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		procedures issued to 75. Four additional procedures are under development with no specific time period identified for their completion. **Update (March 2012):** No additional procedures have been issued. ***Update (June 2012):*** *As of June 30, 2012, the MTACC has implemented a total of 76 revised project procedures, with several others under development. One of these, AD.15 – Program Change Control, is critical to MTACC's program management of the SAS project.*	
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), 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 (May 2011):** Some marginal improvement in AWO processing has been noted –	1

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		see Section 5 of this report. PMOC will continue to monitor and report. **Update (June 2011):** Some marginal improvement in AWO processing has been noted – see Section 5 of this report. PMOC will continue to monitor and report. **Update (September 2011):** In recent months, the MTACC has implemented certain staffing changes and process improvements directed at reducing the time required to estimate, negotiate and administratively process Additional Work Orders (AWOs). The PMOC is monitoring and evaluating the quantifiable indicators associated with AWO processing in an effort to evaluate the effectiveness of the MTA's improvement efforts. **Update (December 2011):** PMOC monitoring of the AWO process is on-going. To date, no significant reduction in the time to process an AWO has been noted. **Update (March 2012):** PMOC monitoring of the AWO process is on-going. AWO status and processing is discussed during each construction contract Job Progress Meeting. ***Update (June 2012):*** *PMOC monitoring of the AWO process is on-going. PMOC audit of selected AWO files will be performed during the 3rd Quarter 2012*	
SAS-21-Dec10	2.1.2 Procurement	Excessive recent delay to C-26009 package is noted. PMOC recommends MTACC initiate corrective action and/or develop "recovery schedule" to regain time lost. **Update (February 2011):** Additional delays noted. **Update (March 2011):** RFP documents were made available to the qualified proposers on March 7, 2011 and the pre-proposal meeting was held on March 31, 2011. **Update April 2011:** Receipt of proposals has already been delayed from May 18, 2001 to June 3, 2011. Further, unspecified delays are forecast for the receipt of proposals for this package as a result of MTA's intention to "coordinate" systems procurement among the three "mega-projects" (No. 7 Line, SAS, and ESA). **Update (May 2011):** Additional one-month delay to package award was realized during	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		May 2011 as a result of ongoing "coordination" with other systems procurements. MTA Executive Management is apparently directing this effort. **Update (June 2011):** Additional one-month delay to package award was realized during June 2011 as a result of bidder requests for a time extension. Criticality of other delays have superseded this issue. PMOC to continue monitoring progress of this procurement. **Update (September 2011):** Additional one-month delay to package award was realized during June 2011 as a result of bidder requests for a time extension. Criticality of other delays have superseded this issue PMOC to continue monitoring progress of this procurement. **Update (December 2011):** On December 21, 2011 the MTA Board approved the Track, Power, Signals and Communication Systems Contract C-26009 (C6) for award. Notice of Award is scheduled for mid-January 2012. This concern is closed with no further action planned by the PMOC. **Update (March 2011):** Contract C-26009 (C6) was awarded to Comstock/Skanska JV on *January 18, 2012.* **Update (March 2012):** Contract C-26009 (C6) was awarded to Comstock/Skanska JV on January 18, 2012.	
SAS-22-Jun 12	*1.1.2 f Community Relations*	*MTA'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 MTA develop a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities*	*2*

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-23-Jun 12	*2.1.2 Procurement*	*The PMOC is concerned that the estimated procurement durations contained in the project schedule do not reflect the experience and "lessons learned" on the project to date. If the actual procurement durations for these remaining packages are consistent with past experience, it will result in schedule "delays" of approximately 48 CD for each of these construction packages.* *The PMOC recommends an evaluation of the time available for these remaining procurements and consideration of schedule adjustments to mitigate or eliminate potential schedule delays.*	*2*
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.*	*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 MTA or full implementation of scope transfer to the C4C package.*	*2*

Number with Date Initiated	Section	Issues/Recommendations	Criticality
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*	*2*
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.*	*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
CWB	Current Working budget
DC	Design Consultant
DOB	New York City Department of Buildings
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
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
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
SOE	Support of Excavation
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
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 (MTA schedule)		
29.8%	Percent Complete Construction at March 31, 2012		
68.5%	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
1,805M	Amount of Expenditures at date of this report from Total Project Budget of *$4,451M*
40.6%	Percent Complete based on Expenditures at date of this report
445M	Total Project Contingency remaining (allocated and unallocated contingency)

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

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

[redacted]

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]

FOIA Exemption 5 U.S.C. 552 (b) (4)

[redacted]