PMOC MONTHLY REPORT

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

September 1 to September 30, 2012

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

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Length of time on project: 2 years

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THIRD PARTY DISCLAIMER

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

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

2. CHANGES DURING *3rd 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

- *The 72nd Street Station Finishes & MEP Package, C26011 (C4C) documents were made available for construction bidding on August 13, 2012. Receipt of bids is currently scheduled for October 23, 2012.*
- *The 86th Street Station Finishes & MEP Package, C-26012 (C5C) is scheduled for advertisement for construction bids on November 28, 2012, bid opening on April 5, 2013 and contract award on May 24, 2013.*
- *Award of these packages will complete construction procurement for Phase 1 of the Second Avenue Subway project.*

c. Construction Progress

All construction is approximately 37.6 % complete as of September 30, 2012. Summary progress for each contract is as follows:

- *At the 86th Street Station, excavation of the main cavern is underway at both the north and the south shafts. Excavation, underpinning, demolition and utility relocation 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) support of excavation (SOE) work is substantially complete. Decking and excavation are now the primary construction activities.*
- *The 72nd Street Station Heavy Civil/Structural Contractor (Contract C4B) has excavated 166,929 Bank Cubic Yards (BCY) of the total 184,657 BCY (90.4%) 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. In process 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.*
- *The Systems contractor (C6) continued surveying for insulated joint placement at the 63rd Street Station.*

d. Continuing and Unresolved Issues

- *Closeout of construction contracts C1 and C5A.*
- *Delays to structural steel fabrication and erection at the 63rd Street Station (C3) have been identified. Corrective action has been initiated but the matter remains unresolved as of the writing of this report.*
- *Technical problems delayed the incorporation of the C6 construction baseline into the IPS.*

e. New Cost and Schedule Issues

- *Construction costs for waterproofing modifications and communication systems modifications developed under Contract Modification #67 to the designer's contract both result from design changes that were incorporated after the design documents were complete.*

3 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

a. Grantee Technical Capacity and Capability

During the 3rd Quarter 2012, MTACC continued to demonstrate that it possessed the technical capacity and capability to execute the project through:

- *Implementing fundamentally sound decisions based upon a set of integrated project controls and a complete consideration of applicable risks and impacts.*
- *Effective management of project scope, schedule, budget and product quality.*
- *General compliance with policies, plans and procedures which govern and guide the execution of the project.*
- *Documentation of all relevant activities and actions.*

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

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 3rd Quarter 2012, engineering support continued with:*

- *Developing responses to contractor questions and preparation of addenda during the bid phase for the 72nd Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26011 (C4C).*

- *Updating of the design package for the 86th Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26012 (C5C).*
- *Review and approval of construction contractor technical submittals for six (6) active contract packages.*
- *Assistance in evaluating and resolving contractor requests for additional compensation (AWOs).*

d. Procurement

Procurement activity during the 3rd Quarter 2012 included the advertisement of the 72nd Street Station Finishes & MEP Package, Contract C-26011 (C4C) for construction bids and continuation of pre-bid technical activities for this contract. Currently eight of the 10 construction packages (C1, C2A, C2B, C3, C4B, C5A, C5B, C6) for SAS Phase 1 Project have been awarded to date. Contracts C1 and C5A are in the close-out phase and are expected to be closed by year end.

While delays in construction procurement have been experienced, they can generally be attributed to the size, scope and complexity of SAS contract packages. NYCT Procurement has supported the SAS Project throughout the construction procurement process.

e. Railroad Force Account (Support and Construction)

Force Account labor on the SAS Phase 1 Project is being provided by NYCT employees and is budgeted at $43,000,000. During the 3rd Quarter 2012, force account expenditure reached $3,215,957. The majority of the expenditure, $2,928,843.00 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 has confirmed that spare vehicles resulting from service reductions within the NYCT system will be utilized to meet the SAS Phase 1 Project Concept of Operation.

g. Systems Testing and Start-Up

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

During the 3rd Quarter 2012, the contractor submitted and had approved key contract personnel including, System Integration Manager, Environmental Manager, Site Security Supervisor, Quality Engineer, and General Foreman for Signal work.

h. Project Schedule

Completion of construction activities during the 3rd Quarter 2012 continues to support MTACC's forecasted Revenue Service Date of December 30, 2016 (see Table 1 below).

Table 1: Summary of Critical Dates

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	December 31, 2013	October 25, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

i. Project Budget/Cost

During the 3rd Quarter 2012, New Start Funds of $197,182,000.00 (Reference grant NY-03-0408-08) was awarded to the MTA. Federal Funds obligated to date total $1,063,942,000.

Table 2: Project Budget/Cost Table

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of *September 30, 2012*	
	$ Millions	% of Total	Obligated ($ Millions)	TBD	$ Millions	% of Total	$ Millions	% of Total
Grand Total Cost:	**4,866.614**	**100**	***4,572.942***		***5,267.614***	**100**	***1,927.939***	***36.60***
Financing Cost	816.614	16.78			816.614	15.50		
Total Project Cost:	**4,050.000**	**83.22**	***4,572.942***		**4,451.00**	**84.50**	***1,927.939***	***36.60***
Total Federal:	**1,350.693**	**27.75**	***1,063.942***		**1,350.693**	**24.60**	***622.437***	***11.82***
Total FTA share:	**1,300.000**	**96.25**	***990.049***		**1,300.000**	**23.68**	***558.185***	***10.60***
5309 New Starts share	1,300.000	100	*990.049*		1,300.000	23.68	***558.185***	***10.60***
Total FHWA share:	**50.693**	**3.75**	*73.893*		**50.693**	**0.96**	**64.252**	**1.22**
CMAQ	48.233	95.15	*71.433*		48.233	0.88	61.792	1.17
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	0.05
Total Local share:	**2,699.307**	**55.47**	**3,509.000****		****3,509.000**	**63.92**	***1,305.502***	***24.78***
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.

j. Project Risk

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

Decrease	***Increase***
• *Adjusted schedule for C4C construction procurement will decrease the risk of not achieving the scheduled contract award date of January 4, 2013.* • *Construction access and design issues involving Ancillary# 2 (C3) have been resolved with no apparent cost/schedule impacts.*	▪ *Unresolved delay to structural steel erection at the 63rd Street Station (C3) as well as other apparently unrelated delays to construction.* ▪ *Potential design changes at Entrance #2 (C5B/C) to accommodate Yorkshire Towers.* ▪ *Changes to the waterproofing specification initiated by NYCT will impact cost for Contract C2A/B, C4B/C and C5B/C.* ▪ *Water leakage through the SOE walls at the launch box may require remediation.* ▪ *Uncooperative building owners have necessitated a change in plan at Entrance #1 (C4B/C) that includes obtaining access through an eminent domain condemnation.*

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:

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 SAS PMP. MTACC has addressed all FTA/PMOC comments and reissued the PMP as Revision 8.1. Candidate Revisions for the next PMP update are being developed.*
- **Schedule Management Plan (SMP)**: *The PMOC continues to monitor and verify SAS substantial compliance with the SMP.*
- **Cost Management Plan (CMP)**: *The PMOC continues to monitor and verify SAS substantial compliance with the CMP.*
- **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 Compliance Checklist was distributed and reviewed at the ELPEP Meeting of September 12, 2012.*

Observation:

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

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

Concerns and Recommendations:

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 3rd Quarter 2012, MTACC continued to demonstrate that it possessed the technical capacity and capability to execute the project through:

- *Implementing fundamentally sound decisions based upon a set of integrated project controls and a complete consideration of applicable risks and impacts.*
- *Effective management of project scope, schedule, budget and product quality.*
- *General compliance with policies, plans and procedures which govern and guide the execution of the project.*
- *Documentation of all relevant activities and actions.*

Observation:

There were no significant changes during the 3rd Quarter 2012 which materially affected the SAS Project Team or its ability to execute this project.

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:

During the 3rd Quarter 2012 Revision 8.1 of the SAS PMP was issued to address FTA/PMOC review comments associated with Revision 8. Any additional enhancements to the PMP will be per the Candidate Revision process and is anticipated to occur in the summer of 2013.

Observation:

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

Concerns and Recommendations:

None

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

Status:

MTACC continues to utilize the ELPEP and its various sub-plans in management of the FFGA.

Observation:

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

Concerns and Recommendations:

None

c) Grantee's Approach to Force Account Plan

Status:

During the 3rd Quarter 2012, force account expenditure reached $3,215,957 of the $43,000,000 budget. The majority of the expenditure, $2,928,843.00 is still 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 3rd Quarter 2012, each construction contractor continued recording and reporting first aid, recordable and lost time incidents and participating in the Monthly Project Wide Safety Meeting. 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 (SSCP) and the Systems Safety and Reliability Assurance Program Plan (SSRA). The Monthly Project Wide Safety Meeting is a good forum in providing "Lessons Learned" in order to benefit the entire project.

Concerns and Recommendations:

None

e) Grantee's Approach to Asset Management

Status:

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

Observation:

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

Concerns and Recommendations:

None

f) Grantee's Approach to Community Relations

Status:

During the 3rd Quarter of 2012, MTACC continued its community information and outreach efforts. In general, MTACC's community outreach efforts have had a positive impact on relations with the affected community.

Observation:

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

Conclusions and Recommendations:

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. Based upon the "lessons learned" to date, the PMOC recommends MTACC update its Project Management Plan (Revision 9) with a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities. [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

Status

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.

Observation:

None

Concerns and Recommendations:

None

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.

Observation:

None

Concerns and Recommendations:

None

1.2 Project Controls

1.2.1 Scope Definition and Control

Status:

During the 3rd 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 3rd 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.

Observation:

During September 2012, the PMOC continued performing a series of "mini-audits" focusing on the control of discrepant material via the Nonconformance Report (NCR) process. An update of the initial findings for contract packages C1 and C4B follows:

During September 2012 the PMOC initiated separate meetings with the new SAS Quality Manager and the SAS and contractor Quality Managers from the C2A, C3, C4B, and C5B

contracts. The purpose of these meetings was to determine if there are any trends with quality issues within each contract and/or among the four contracts.

Contract Package C1	
Status:	*There were 40 NCRs written on the C1 contract. 16 of them involved concrete installation involving the following structural elements:* • *Invert Slab – seven NCRs* • *Slurry wall – five NCRs* • *Concrete Tunnel Liner Arch – four NCRs*
Observation:	*Of the 40 NCRs written on the C1 contract, seven are still open, including three of those involving concrete installation noted above:* • *Invert Slab – None of the seven NCRs are still open* • *Slurry wall – All five of the NCRs are still open; two are in process of resolution.* • *Concrete Tunnel Liner Arch – None of the four NCRs are still open*
Concerns and Recommendations:	*Contract C1 has been Substantially Complete since March 2012. The Contractor has demobilized and has a limited presence on site. The SAS Project Team has made significant progress in September2012, reducing the number of open NCRs from 14 to 7. The PMOC recommends that the SAS Project Team continue their efforts to close the remaining NCRs.*
Contract Package C4B	
Status:	*The independent test lab for the C4B contract did not follow the ASTM reporting format when submitting concrete break reports, e.g., the reports did not identify concrete mix identification and failures after seven days.*
Observation:	*Recent reports from the independent test lab indicate that this issue has been resolved. However, to assure consistency in reporting, the SAS CCM requested at the August 28, 2012 Monthly Quality Management Meeting that the C4B contractor invite a representative from the independent test lab to the next monthly meeting. There was no representative from the independent test lab at the September 25, 2012 meeting.*
Concerns and Recommendations:	*The PMOC recommended that a representative from the independent test lab be invited to the October 30, 2012 Monthly Quality Management Meeting.*
Contract Package C4B	

Status:	*The submittal of As-Builts were not current and there were problems with some of those that were submitted.*
Observation:	*The C4B contractor has assigned a new member of their Quality Staff to assist with the as-built submittal process and improvement with on-time submittals and quality of the submittals has improved.*
Concerns and Recommendations:	*The PMOC recommends that the involvement of the Quality Staff member continue.*

Concerns and Recommendations:

Refer to previous section.

1.2.3 Project Schedule

Status:

A summary of project schedule information is as follows:

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

Observation:

Update #74 of the SAS IPS was incomplete and did not contain a forecast of the Revenue Service Date (RSD). Based on the PMOC's evaluation of the schedule information provided by MTACC, the forecast RSD of December 30, 2016 will not change, however the estimated completion of Phase 1 construction and testing may extend beyond the previous date of October 4, 2016, with a corresponding reduction in schedule contingency.

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

Concerns and Recommendations:

Problems in completing Update #74 are considered a one-time anomaly. The SAS Project Team has demonstrated its capability and capacity to actively manage the project schedule. No concerns were identified this period.

1.2.4 Project Budget and Cost

Status:

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

Table 1-1: Standard Cost Categories

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

Table 1-2 lists the associated grants in the Transportation Electronic Award Management (TEAM) System with respective appropriated and obligated amounts as of September *30, 2012*.

During the 3rd Quarter 2012, New Start Funds of $197,182,000.00 (Reference grant NY-03-0408-08) was awarded to the MTA. Total Federal Funds obligated to date is $1,063,942,000.

Table 1-2: Appropriated and Obligated Funds

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *September 30, 2012*
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	*$268,445,828*

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *September 30, 2012*
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	*$622,436,998.00*

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

A total of $1,927,939,142 has been expended on the project through September 30, 2012, of which $431,008,302 has been spent on design and $970,293,021 on construction (MTACC's September 2012 Cost and Schedule Summary Input).

Observation:

Local funds totaling $1,305,502,144 ($1,927,939,142 – $622,436,998) have been spent as of September 30, 2012.

Concerns and Recommendations:

None

1.2.5 Project Risk Monitoring and Mitigation

Status:

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

Observation:

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

Active risks are reviewed at the monthly Risk Management Meeting. The risk register is updated quarterly. Risks that have been realized or that do not pose a short-term threat to project cost or schedule may be deferred for future consideration. There is no established methodology for selecting risks from the register for more detailed review at the monthly Risk Management Meeting

Concerns and Recommendations:

The PMOC recommends selection criteria be developed and used to choose a subset of "major" risks from the register for review at the monthly Risk Management Meeting. Use of objective

selection criteria would ensure all risks exceeding specified limits would be periodically reviewed.

1.2.6 Project Safety and Security

Status:

Safety – *The Lost Time Accident Rate and OSHA Recordable Accident Rate from the start of construction until September 30, 2012 are 2.22 and 5.61, respectively. The Lost Time Accident rate is slightly above 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 4,316,963 hours. Cumulative lost time injuries since project inception is 48 and the cumulative recordable injuries are 73.*

Security – *Implementation of the Contractor's Site Security Plans are ongoing. During the 3rd 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 31, respectively. Contract C1 has logged the highest number of construction hours (1,972,858) on the project. *The 72nd Street Station Cavern Mining Contractor (C4B) C26007 has logged 1,002,814 construction hours on the project and has reported 21 Recordable and 22 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 and the replacement of the Safety Manager. 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

On September 27, 2012, MTACC transmitted SAS PMP Revision 8.1, which incorporates all FTA/PMOC comments to date. A log of "Candidate Revisions" for PMP Revision 9, is being maintained. The SAS Project Team has substantially complied with ELPEP and its associated sub-plans throughout the 3rd Quarter 2012. Any non-compliance issues are specifically discussed in Section 4.4 (Schedule), Section 5.4 (Cost Contingency) and Section 6.3 (Risk Management Status) of this report.

1.3.1 FTA Milestones Achieved

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

1.3.2 Readiness for Revenue Operations

Status:

No change this period.

2.0 PROJECT SCOPE

2.1 Status & Quality: Design/Procurement/Construction

2.1.1 Engineering and Design

Status:

The design phase of SAS Phase 1 was completed in late November 2010.

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:

None.

2.1.2 Procurement

Status:

Updated procurement status includes:

- *C26011 (C4C): 72nd Street Station Finishes & MEP Package - documents were made available for construction bidding on August 13, 2012. Receipt of bids is currently scheduled for October 23, 2012.*
- *C-26012 (C5C): 86th Street Station Finishes & MEP Package – advertisement for construction bids is scheduled for November 28, 2012, bid opening on April 5, 2013 and contract award on May 24, 2013.*

Observations and Analysis:

For the C4C bid package, MTACC has reported that it has built-in sufficient contingency to the procurement schedule to absorb delays similar to those previously documented and still maintain its scheduled award date of January 4, 2013. Similar schedule contingency will be incorporated into the C5C bid schedule.

Concerns and Recommendations:

The PMOC has previously expressed concern over the adequacy of the scheduled duration of construction contract procurement for SAS Phase 1 contracts and recommended an acceleration of the procurement schedule. MTACC's approach of adding schedule contingency to the procurement process substantively addresses the PMOC's concern and significantly reduces the risk of delays in the award of the remaining construction contracts.[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 September 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 and is expected to be completed by year end.*

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

- *East side slurry wall installation was completed and mass excavation initiated.*
- *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.*
- *Secant piles installation at Ancillary #1 was completed and mass excavation started.*
- *At Ancillary #2, excavation is ongoing with walers and struts being installed.*
- *At Entrance #1, slurry wall installation was completed and jet grouting and mini-pile work started.*
- *At Entrance #2 guide walls are being installed as part of the secant pile process.*

Contract C-260010 (C2B) 96th Street Station Concrete, MEP/Finishes, Utilities, and Restoration

- *MPT initiated for work in 102 St. tunnel section*
- *Temporary power and lights being installed*
- *Lead abatement started*
- *Resolution of intrusions left in wall face by S3 is ongoing.*
- *Submission of submittals is ongoing.*

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

- *DMP surveying at street level is ongoing.*
- *Continued with temporary and permanent structural steel fabrication & erection in Area 5 at the 3rd Mezzanine and prepared for steel erection at the 4th Mezzanine.*
- *The contractor has submitted a recovery schedule for the structural steel in Area 5 and is discussing adding a 3rd shift.*
- *Continued with Special Inspections at the steel fabrication plant (Ohio).*
- *Continued with Special Inspections at the site, particularly structural steel.*
- *Continuing with lead abatement of steel in Area 5.*
- *Continuing with installation of conduits from EDR #2 to West Fan Room.*
- *Continuing with CMU walls in the East Fan Room.*

- *Completed concrete pads in EDR #1.*
- *Continued with installation of the service carrier and conduit at the G4 level.*
- *Completed asbestos work at Entrance #1.*
- *Completed test pits in Entrance #1 basement.*

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

- *Through September 30, 2012, 166,999 bank cubic yards (BCY) were mined representing 90.4% of the overall total 184,657 BCY.*
- *North Crossover –Placement of concrete invert ongoing.*
- *Main Cavern –Installation of drainage layer and invert waterproofing ongoing.*
- *G3 Tunnel –Waterproofing and concrete ongoing.*
- *G3/S1 Cavern –Waterproofing of arch ongoing. Placement of concrete invert completed.*
- *Sub Cavern –Drainage layer in the G3 level is ongoing.*
- *Ancillary #2 (NW corner 72nd St. and 2nd Ave.) Rock excavation by means of blasting has progressed to approximately 37 feet down from the decking.*
- *Ancillary #1 (NW corner 69th St. and 2nd Ave.) Rock excavation by means of blasting has progressed to approximately 46 feet down from the decking.*
- *Entrance #3 (SE corner 72nd St. and 2nd Ave.) Rock excavation by means of blasting has progressed to approximately 25 feet down from the decking.*
- *Building remediation –ongoing at 1405 2nd Ave and final inspection in progress at 239 E 73rd St.*

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 and is expected to be completed by year end.*

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

- *In the North Shaft vertical rock removal has stopped at approximate Elevation 91. Horizontal mining in the cavern, going south is continuing with development of the top heading, including drilling, blasting, mucking, rock bolt installation and shotcreting.*
- *In the South Open Cut Area/Ancillary #1 vertical rock removal has stopped at approximate Elevation 91. Development of the top heading continued with mining in the cavern, going north, including drilling, blasting, mucking, rock bolt installation and shotcreting. The contractor continues with a swing shift at the north and south side of the project.*
- *In the South Open Cut Area/Ancillary #1 continued assembly of "scrubber" air filtration system on the temporary decking.*
- *Continued with drilling, rock bolt installation and shotcreting in Ancillary #2.*

- *At Entrance #1 began demolition of basement column supports and slab north of Column #4.*
- *At Entrance #1 began drilling for rock removal.*
- *At Entrance #2 continued SOE wall both north and south and continued installation of decking.*
- *At Entrance #2 ConEd continued pulling and splicing cable.*
- *At Entrance #2 continued preparations for rock excavation at the elevator shaft.*
- *Rock Excavation(for the week ending September 21, 2012)*
  **As reported to the PMOC by the MTACC C-26008 Project Office*

  Total rock excavation (estimated) for complete project – 154,623 BCY
  Total rock excavated to date – 20,878 BCY (13.5%)

  - *Summary by Area (5 areas have not begun rock excavation)*

    North Cavern – 55,686 BCY (total); 7,496 BCY (to date); 13.4%
    South Cavern – 54,302 BCY (total); 6,625 BCY (to date); 12.2%
    Ancillary #1 – 11,725 BCY (total); 6,041 BCY (to date); 51.5%
    Ancillary #2 – 4,830 BCY (total cut & cover); 716 BCY (to date); 14.8%
  - *The tracking of total rock excavation (actual) from April 6, 2012 through September 21, 2012 vs. planned excavation shows the cumulative rock excavation production to date to be at or near the cumulative baseline schedule.*

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

- *Field surveying at the 63rd St. Station is ongoing in order to identify the IJ locations. No installation work has started to date.*
- *CSJV's new nominee for the position of System Integration Manager (SIM) was approved.*
- *Field Office located at 309 94th Street (between 1st and 2nd Avenue).*
- *Submittals are ongoing.*

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:

- Resolution of Time Impacts after 22-Apr-13. TIA underway and will address all time related issues through June 1st, 2012.

For Contract C3:

- *Structural steel fabrication and erection progress has been an area of concern for several months. A summary of recent progress based on the number of pieces of steel either fabricated or erected includes:*

	Steel Erection (# Pcs.)			*Steel Fabrication (# Pcs)*		
Date	*Installed*	*Total %*	*Period %*	*Fabricated*	*Total %*	*Period %*
7/27/12	*145*	*18.5*	*18.5*	*250*	*31.8*	*31.8*
8/31/12	*252*	*32.1*	*13.6*	*400*	*50.9*	*19.1*
9/28/12	*347*	*44.2*	*12.1*	*440*	*56.1*	*5.2*
Total Pcs of Steel = 785						

- *In August 2012, MTACC stated steel fabrication and field erection delays resulting from the extended time required to review and approve shop drawings and contractor field erection inefficiencies had been resolved. This simple analysis, based on information provided by MTACC suggests steel erection proceeded at approximately the same rate during both August and September, with steel fabrication declining substantially in September.*
- *During September 2012, the agreement with the building owner at 200 East 63rd Street (Pookie & Sebastian) was signed and the Contractor now has access to the basement area.*
- *The scheduled date for garage takeover for Ancillary #2 work is November 14, 2012. Design changes regarding the cooling tower have been resolved.*

For Contract C4B:

- *Final owner agreement to utility relocations contemplated by access agreements for 301 E.69th Street and 1322 2nd Ave have not been obtained. MTACC has terminated the agreement and is seeking additional easement through eminent domain condemnation proceeding.*

For Contract C5B:

- *Late completion of South Shaft Muck Conveyance System delayed Milestone #1 by 11 WD. Through September 2012, no mitigation of this delay has occurred.*
- *No reported change in position of either MTACC or the Contractor regarding the "Ship America" contract provisions and their applicability to the muck handling equipment.*

Concerns and Recommendations:

The SAS Project Team continues to identify, prioritize and address construction problems which have the potential to delay the project. Problems involving steel fabrication and erection at the 63rd Street Station have reportedly been addressed; however progress reporting received this period does not indicate any improvement in the situation. The PMOC is concerned with the amount of time this has been an open issue and the issue's potential to create schedule consequence that may impact other elements of the project.

2.1.4 Force Account (FA) Contracts

Status:

As of September 30, 2012, the force account expenditure has reached $3,215,957 of the $43,000,000 budget. The majority of the expenditure ($2,928,843) is still associated with 63rd Street/Lexington Avenue Station Restoration Contract (C3).

Observation:

Force account labor is being provided by NYCT and 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 3rd 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 September 30, 2012, third-party reimbursements totaling $36,984,830 have been made. The total budget for third-party agreements is $76,768,950.*

Concerns and Recommendation:

None

2.3 Contract Packages and Delivery Methods

Status:

Phase 1 of the Second Avenue Subway is being delivered via ten separate construction packages. Each construction contract package utilizes the design-bid-build process based upon a fixed price construction contract. Competitive procurements are based on NYCT standard procedures. 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 3rd 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**
C4C	C-26011	72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.	IFB	*Bid Period*
C5C	C-26012	86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.	IFB	*Design "Dust-off" Ongoing*

Observation:

The SAS Project Team has included several weeks of schedule float to the procurement schedule for the 72nd Street Station (C4C) finishes package. This approach significantly reduces the risk of additional delay and provides a high degree of assurance that the target contract award date of January 4, 2013 will be achieved. A similar approach will be used for the C5C package.

Concerns and Recommendations:

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

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:

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. Necessary relocation of utilities has been delayed by a lack of cooperation by property owners. MTACC's approach had been to attempt to satisfy owner demands through development of acceptable technical solutions. *However for Entrance No. 1 of the 72nd Street Station, MTACC has terminated the agreement and is seeking additional easement through eminent domain condemnation proceeding. The 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:

The impact of delays in obtaining access to perform utility relocation work adjacent to Entrance 1 at the 72nd Street Station continues to be a concern. MTACC has indicated there may be more than one option available to execute this work. The PMOC recommends the determination of the most advantageous option be expedited so full effort can be devoted to its implementation and completion.

2.6 Community Relations

Status:

During the 3rd Quarter of 2012, MTACC continued its community information and outreach efforts which included:

- *Distribution of information including construction schedules and monthly newsletters to groups affected by construction activity.*
- *The use of electronic media, including the MTA Facebook and Twitter (MTA Insider) pages and direct e-mail to distribute project information to interested groups.*
- *Conducted monthly Construction Advisory Meetings with stakeholders from each station area.*
- *Responded to questions and complaints via the Field Office Telephone, SAS Hotline, and MTA web mail regarding construction impacts.*

Observation:

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

Conclusions and Recommendations:

The PMOC has previously recommended that the community relations effort be more completely integrated into the mainstream of project scope, budget and risk management activities to support the goals of cost-effective and transparent decision making and the related goals of the ELPEP. [Ref: SAS-26-Jun 12].

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

3.1 Project Management Plan

Status:

On September 27, 2012, MTACC resubmitted the SAS Project Management Plan as Revision 8.1. This revision formally incorporated all FTA/PMOC comments made to Revision 8, which was originally issued in January 2011.

Observation:

"Candidate Revisions" for SAS PMP Revision 9 are being assembled as issues are identified. Revision 9 to the SAS PMP is tentatively scheduled for initial distribution in the summer of 2013.

Concerns and Recommendations:

The PMOC is concerned that the project-specific processes specifically defined in the PMP as well as recently revised MTACC standard procedure referenced via the SAS PMP may not be consistently implemented across the SAS Project Team. The PMOC recommends that selected sections of the PMP be audited to verify complete and uniform 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 notes that the project work is transitioning from primarily excavation and temporary construction to permanent construction. As such, the importance of construction quality and the means by which delivery of a quality product is assured have been substantially elevated. The PMOC recommends a corresponding increase in quality-related reviews, audits and investigations to verify conformance with established quality processes and procedures.

3.3 Project Procedures

Status:

On September 28, 2012 the MTACC issued Program Change Control Procedure AD.15. To date, 77 procedures have been updated out of a total out of a total of 81 procedures. The remaining three procedures are not considered to be significant to the current management of SAS.

Observations:

The three additional procedures being considered are not required for the project to be compliant with the PMP.

Concerns and Recommendations:

The PMOC's concerns have been addressed with the issuances of procedure AD.15. Item SAS-11-Jan10 will be closed (See Section 7 Concerns and Recommendation).

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. *Due to unanticipated difficulty incorporating the systems (C6) contractor's construction schedule, the IPS was not fully updated for the period ending September 1, 2012. MTACC has provided a "work-in-progress" copy of the IPS, (designated as Update #74) representing updated construction progress through September 1, 2012; however this schedule does not include a fully incorporated sub-network for C6 and does not contain a complete representation of the work plan for systems installation. This submission consisted of the schedule file only, no report was provided.*

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

During the 3rd Quarter 2012, progress was made on eight (8) active construction packages:

- C26002 (Tunnel Boring) – Substantially complete, closeout activities, *negotiation of outstanding change order requests (AWOs).*
- C26005 (96th Street Station – Heavy Civil) – *Construction continues.*
- C26010 (96th Street Station – Finishes) – *Mobilization activities.*
- C26013 (86th Street Station – Sitework) – Substantially complete, closeout activities.
- C26008 (86th Street Station – Heavy Civil) – Construction continues.
- C26006 (63rd Street Station) – Construction continues.
- C26007 (72nd Street Station – Heavy Civil) – Construction continues.
- *C26009 (Systems – Track, Power, Signals and Communications) – Engineering submittals, equipment procurement.*

Table 4-2: Summary Schedule Performance by Construction Package

Pkg.	Award Date	Contract S/C	Upd. #71 Forecast S/C	Upd. #74 Forecast S/C	% Complete	Contract Schedule Status	Quarterly Change
C1	3/20/07	7/20/10	*3/20/12A*	*3/20/12A*	96.1%	609 CD	0 CD
C2A	5/28/09	1/7/13	*7/15/13*	*7/8/13*	77.0%	182 *CD*	-7 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	*6/19/14*	*9/18/14*	23.6%	128 *CD*	91 CD
C4B	10/1/10	10/31/13	*1/14/14*	*12/17/13*	56.5%	47 *CD*	-28 CD
C4C	Future	10/5/15	*10/5/15*	*10/5/15*	0.0%	0 *CD*	0 CD
C5A	7/9/09	1/7/11	*11/16/11A*	*11/16/11A*	100.0%	313 *CD*	0 CD
C5B	8/4/11	*9/4/14*	*9/4/14*	*9/16/14*	*23.7%*	12 *CD*	12 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*	1.8%	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 March 30, 2012

Observations and Analysis:

Based on the PMOC's review of the intermediate schedule provided by MTACC, additional modifications beyond just the cut-in of the C6 construction schedule are being considered. The PMOC considers it unlikely that any changes made to the IPS will impact the MTACC's target RSD of December 30, 2016 or the FFGA risk-informed RSD forecast of February 28, 2018. It is possible that available schedule contingency will be significantly impacted.

- *C2A: The forecast Substantial Completion date recovered an additional seven (7) CD this period to July 8th, 2013. 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 approaching completion and further delay should be limited.*
- *C3: The Contractor's schedule continues to reflect delays to structural steel fabrication and erection as well as other field installation activity. This period, forecast substantial completion was reported as September 18, 2014. This represents a 91 CD delay over the 3rd Quarter 2012; in effect this contract has achieved no schedule progress towards completion. MTACC maintains that the contractor is responsible for these delays, but acknowledges that access delays at Entrance #1 and Ancillary #1 may partially offset other steel delays.*

- *C4B: The forecast Substantial Completion date recovered 28 CD over the 3rd Quarter 2012, from January 14, 2014 to December 17, 2013. Total schedule improvement was limited by delays to construction to address the safety issues that resulted in the incident of August 21, 2012. MTACC is considering alternate approaches to work at Entrance #1 previously delayed by utility relocation protracted negotiations with adjacent building owners, but has not revised the IPS to reflect this new plan.*
- *C5B: The forecast Substantial Completion date was delayed 12 CD to September 16, 2014. This delay was realized during August 2012, and generally corresponds to delays reported at the North Cavern Excavation. It is likely that this delay would have resulted in a corresponding delay to the Project RSD if a complete update and analysis had been available. Resequencing options to mitigate the impact of utility relocation delays at Entrance #2 do not appear to have been incorporated into the IPS.*

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 3rd Quarter 2012 baseline and intermediate results are published in this report and shown in the following table. *Please note that schedule float values were not available this period due to the incomplete nature of the schedule at this time.*

Table 4-3: Quarterly Schedule Target Comparison

			Milestone Updates			
					Baseline	Monthly
Pkg	**Act.**	**Description**	**Baseline**	**M-2**	**Δ**	**Δ**
4th Qtr 2011 Tracking Milestones (Carryover)			**1-Oct-11**	**1-Sep-12**		
C2A	*A117*	Complete ANC #1 Secant Piles	11-Jul-12	*3-Sep-12*	*54*	*24*
C3	*LP025*	Complete Demo – Lower Platform	31-May-12	*23-Oct-12*	*145*	*12*
C4B	*72C1225*	Excavate Cavern Bench	9-May-12	*5-Sep-12*	*119*	*29*
1st Qtr 2012 Tracking Milestones (Carryover)			**1-Jan-12**	**1-Sep-12**		
C3	*005*	Complete Sub/App Struct. Steel Shop Dwgs	20-Jul-12	*21-Dec-12*	*154*	*10*
	A1010	Begin Demo - Ancil #1	2-May-12	*24-Oct-12*	*175*	*54*
	EN105	Begin Structural Work - Ent #1	22-May-12	*24-Apr-13*	*337*	*0*
	MZB05	Compl. Asbestos/Lead Abatement - Fan Plant	27-Mar-12	*24-Sep-12*	*181*	*27*
	010	Begin Elevator Fab	7-Mar-12	*18-Oct-12*	*225*	*0*
C4B	*G3S11060*	G3 TBM F/P/S Tunnel Invert	28-Mar-12	*17-Jul-12 A*	*111*	*0*
	ENT-1200A	Contractor (Start) Cost to Cure Work	2-Mar-12	*11-Oct-12*	*223*	*0*
	ETA 1000	Ent #2 Adit Excavation Complete	11-Jan-12	*2-Jul-12 A*	*173*	*0*
C5B	*S110a*	Complete Installation of Mucking Sys-South	25-Apr-12	*24-Aug-12 A*	*121*	*17*

			Milestone Updates			
					Baseline	Monthly
Pkg	**Act.**	**Description**	**Baseline**	**M-2**	**Δ**	**Δ**
2nd Qtr 2012 Tracking Milestones			**1-Apr-12**	**1-Sep-12**		
C2A	E105	*Relocate MEP @ Rainbow Hardware (AWO98)*	25-Jun-12	*27-Sep-12*	*94*	*37*
C3	MZC01/ MZC05	*Asbestos/Lead Abatement & Demo-Lower Mezz*	27-Apr-12	*13-Sep-12*	*139*	*34*
	MZ5001 /010/01 5	*Lead Abatement/Demo -M1->M6*	10-Jul-12	*1-Oct-12*	*83*	*49*
	UP025	*Begin Structural const; CBH Control Rm*	2-Apr-12	*23-Jul-12 A*	*112*	*0*
C4B	72C143 0	*Start Main Cavern Invert F/R/P/S (Start)*	24-Jul-12	*21-Nov-12*	*120*	*82*
	NCC10 35	*Start North X-Over Invert WP*	9-May-12	*20-Jul-12 A*	*72*	*0*
C5B	E210/24 0/242	*Complete Entrance 2; Utility Relocations*	4-Oct-12	*28-Sep-12*	*-6*	*18*
	E110	*Complete Entrance 1; Structural Demo*	26-Jun-12	*31-Aug-12 A*	*66*	*21*
3rd Qtr 2012 Tracking Milestones			**1-Jul-12**	**1-Sep-12**		
C2A	5S210	Stage 5 Deck Installation (Complete)	27-Sep-12	*1-Oct-12*	*4*	*0*
	A126	Exc. Upper Level/Install Decking-Accil. #1	27-Sep-12	*24-Oct-12*	*27*	*9*
C3	UP001	Demo Upper Platform (Complete)	19-Aug-12	*30-Sep-12*	*42*	*28*
	MZC15	Structural Work Lower Mezz (Complete)	10-Sep-12	*9-Oct-12*	*29*	*13*
	MZ502 0	Structural Work @ Mezz (Complete)	11-Oct-12	*10-Oct-12*	*-1*	*34*
C4B	NCC-1055	North X-Over Invert F/R/P/S (Complete)	9-Oct-12	*22-Oct-12*	*13*	*27*
	63S107 0	63rd St Stub Cavern Wall F/R/P/S (Finish)	14-Sep-12	*13-Sep-12*	*-1*	*6*
C4C	25d	Bid Opening	27-Nov-12	*27-Nov-12*	*0*	*0*
C5B	S110b	South Cavern Exc. - Dev & Top Heading (Complete)	12-Sep-12	*28-Sep-12*	*16*	*16*
	S150	North Cavern Exc. - Dev & Top Heading (Complete)	12-Oct-12	*1-Nov-12*	*20*	*20*
	E245	Ent #2 South SOE/Decking (Complete)	27-Sep-12	*17-Oct-12*	*20*	*9*
	E120	Ent #1 Underpinning (Complete)	13-Sep-12	*10-Oct-12*	*27*	*27*
C5C	20k	Authorization to Advertise	27-Nov-12	*27-Nov-12*	*0*	*0*

3rd Qtr. Milestone Summary	
# Activities Forecast this Qtr.	*13*
# Activities forecast to complete this Qtr.	*10*
# Activities completed this Qtr.	*0*
# Activities on/ahead of schedule	*2*
# Activities behind schedule	*11*
Carryover Milestone Summary	
# Activities Carried Over	*20*
# Activities forecast to complete during/before this Qtr.	*18*
# Activities completed this Qtr.	*6*
# Activities on/ahead of schedule	*0*
# Activities behind schedule	*18*

Note that schedule float values were not available this period for inclusion in Table 4-3.

Concerns and Recommendations:

Based on the sampling of activities in the Milestone Summary, overall construction progress and performance is experiencing significant delays. As previously noted, there is no update to the forecast RSD this period.

Based on the activities sampled, Contract C3 continues to experience significant delays to steel installation and other activities not directly related to structural steel. Variances between forecast and milestone dates frequently exceed 100 CD. The PMOC is concerned that the root cause for these delays has not been identified.

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update#74 (DD=09/01/12), 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 Deck Installation		*10/01/12*
Exc. Upper Level/Install Decking – Ancillary #1		*10/24/12*
Complete MEP Relocation @ Rainbow Hardware (cost-to-cure)/Complete SOE – Entrance #2		*9/28/12*
C2B – 96th Street Station Concrete, Finishes & Utilities		
Mobilization		*9/18/12*
C3 – 63rd Street Station Rehab		
Division 5: Structural Steel Shop Dwgs.		*12/21/12*
Fabricate Structural Steel/Misc. Metals		*1/30/13*
Demolition – Ancillary #1 (Cooling Tower)		*10/24/12*
MTACC provides access – Entrance #1		*9/28/12*
C4B – 72nd Street Station Mining & Lining		
Cost-to-Cure; Entrance #1; Owner Approval for Utility Relocation (AWO #5, 11)		*10/2/12*
Excavate Cavern Bench		*9/5/12*
Ent #3; Excavate Shaft/Install Mud Mat		*11/7/12*
F/R/P/S Main Cavern North Invert		*11/21/12*
South X-Over Invert WP & WP Protection		*9/17/12*
C4C—72nd Street Station Finishes		
Award construction Contract		*1/4/13*
C5B – 86th St. Station Mining & Lining (IFB)		
South Cavern Excavation: Development & Top Heading		*9/28/12*
Entrance #1: Underpinning		*10/10/12*
Entrance #2: Electric Relocations (Con-Ed) Complete		*9/28/12*
C6 – Systems		
Track & SWP Design		*9/21/12*
Fab/Deliver Communication Equip; All Stations	*9/3/12*	
Fab/Deliver Track/Special Trackwork	*9/24/12*	

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *Schedule activities in the 63rd Street Construction are broadly defined and based on work in large areas of the station rather than specific, definable tasks. As such, the useful information available over a short interval such as this is limited. MTACC has indicated a revised schedule for this contract will be developed.*
2. *It is does not appear that the IPS schedule model is current with respect to work at C4B Entrance #1, C5B Entrance #2 or C3 Entrance #1.*

Concerns and Recommendations:

Refer to See Section 4.3 of this report.

4.3 Critical Path Activities

Status:

As previously noted, IPS Update #74 was incomplete. The information provided in this update did not facilitate a complete evaluation of the project critical and near-critical reports. Based upon a review of the current and previous status of activities on the Update #73 critical path(s), it appears the C5B->C5C->C6 path will remain critical. Erosion of schedule contingency is expected to be approximately 12 WD. Consequently, it appears the MTACC RSD of December 30, 2016 has not changed.

Observations:

None.

Concerns and Recommendations:

The PMOC has several concerns regarding the IPS:

1. *In several instances the IPS does not appear to be up to date or consistent with plans reported by the project team. This has been particularly evident at the entrances for several contracts, where the access problems involving cost-to-cure work have been problematic.*

   The PMOC recognizes that plans in these areas have been subject to frequent, rapid and sometimes tentative revision and constant updating may be difficult. However some form of updating and reporting should be developed to ensure the impact of the current plan is reasonably depicted in the IPS.

2. *Section 6.2 of the Schedule Management Plan states in part, "……...requests for any amount of critical path contingency drawdown during either the design or construction phases will be submitted by the Project Controls Manager to the Program Executive for approval, and to the MTACC Vice President of Project Controls and the MTACC President for discussion and concurrence prior to being presented at the Monthly Progress Meeting". In effect, the MTACC President must approve the use of any schedule contingency prior to its formal incorporation in an IPS update.*

   The PMOC is concerned that strict adherence to this section of the SMP will lead to manipulation of the IPS in order to avoid reporting incremental delays along the IPS critical path. The PMOC recommends this practice be revised in a way that better supports accurate and transparent reporting of schedule status.

4.4 Compliance with Schedule Management Plan

Status:

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

Observations and Analysis:

In the opinion of the PMOC, SAS Phase 1 is in compliance with the metrics, deliverables and intangible goals enumerated in the Enterprise Level Project Execution Plan (ELPEP), dated January 15, 2010 (Section IV. b, page 8) and as further described by the Schedule Management Plan (SMP). Specifically:

- *Forecast Revenue Service Date*
  - *ELPEP Requirement: February 28, 2018*
  - *Current Forecast: December 30, 2016*
- *Minimum schedule contingency (measured against February 28, 2018 RSD)*
  - *ELPEP Requirement: 240 CD*
  - *Current Forecast:* 513 *CD (estimated, based on best available information).*
- *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 of Cost-to-Cure construction: Not Available*
- *Minimum Allowable Secondary Float Path*
  - *ELPEP Requirement: 25 Calendar Days*
  - *Current Forecast: Not Available*
- *Secondary Schedule Mitigation (critical path compression)*
  - *ELPEP Requirement: 125 CD*
  - *Current Forecast: Not Available.*

Because it impacts every element of the project, the integration of the C6 construction schedule into the IPS is a very significant "milestone" in the execution of the project. The technical problems completing and validating this effort are not surprising and do not diminish the positive impact the IPS has had on the management of the project. MTACC has demonstrated that it is using the IPS to actively plan, organize, direct and control individual packages and the overall project, and to provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments.

Concerns and Recommendations:

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

5.0 PROJECT COST STATUS

5.1 Budget/Cost

Status:

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

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

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

* Includes $47M Cost-to-Cure

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

The PMOC notes that 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:

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

Conclusions and Recommendations:

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

5.1.1 Project Cost Management and Control

Status:

The SAS Project Team accumulates and reports actual cost expenditures against MTACC-established cost categories on a monthly basis. The aggregate budget value of the cost categories equals the CWB of $4.451B. In general, MTACC cost categories correspond to individual contracts or groups of contracts for products or services supplied by a 3rd party vendor. Values within the MTACC Cost Categories can be mapped to the FTA Standardized Cost Categories. Budget and cost are reported using the FTA Standardized Cost Categories on a Quarterly basis.

Observation:

MTACC has demonstrated that its cost reporting and management processes and procedures are adequate for and responsive to the needs of the project. MTACC does not routinely report on every category of cost that may be of interest; however it has demonstrated the capability to extract those costs in sufficient detail and precision to satisfy PMOC inquiries.

Concerns and Recommendations:

None.

5.1.2 Project Expenditures and Commitments:

Status:

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

Description	CWB	Expended	%
Total Construction (1)	$2,702,757,299	*$1,043,864,632*	*37.6%*
Total Soft Cost	$1,255,727,995	*$884,074,511*	*70.4%*
Contingency	$492,514,706	*(Included above)*	
Subtotal	$4,451,000,000	*$1,927,939,143*	*43.3%*
(1) % complete includes AWOs executed to date.			

Observations:

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

Based upon financial expenditures reported by the MTACC during September 2012, SAS Phase 1 is approximately 43.3 % complete. The completion status of the active construction contracts through September 2012, also based upon reported expenditures through that date, is as follows:

- C26002 (Tunnel Boring) – 96.1%
- *C26005 (96th Street Station) – 77.0%*

- *C26010 (96th Street Station) – 0.0%*
- C26013 (86th Street Station) – 100%
- *C26008 (86th Street Station) – 23.6%*
- *C26006 (63rd Street Station) – 18.2%*
- *C26007 (72nd Street Station) – 56.5%*
- *C26009 (Systems) – 1.78%*

Aggregate Construction % Completion:

- *82% of all construction work is under contract*
- *47.3% of active construction contracts are complete*
- *37.6% of all construction is complete*

Based upon cost data received from MTACC for September 2012:

- *Value of construction in place this period = $24,192,828*
- *Estimated value of construction remaining = $1,658,892,667*
- *Target construction completion = August 18, 2016*
- *# Months remaining = 46.6*

Average rate of construction required to achieve target completion date = $35,564,413/MO

It is noted that no progress was reported this period for active contracts C2A, C2B and C6.

Soft Cost expenditures (not including real estate, OCIP, etc.) during September 2013 totaled $2.8M. Assuming this rate of expenditure to be reasonably constant over the remainder of the project, no additional contingency transfers to soft cost categories will be required, although some budget redistribution within soft cost categories may be necessary.

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 September 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 September 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)	*96.10%*	$337,025,000	*$53,095,231*	*15.75%*	*$44,131,443*	*13.09%*
C26005 (2A)	*77.00%*	$325,000,000	*$38,113,571*	*11.73%*	*$34,140,712*	*10.50%*

Contract	% Complete	Award	Exposure		Executed	
			$	% of Award	$	% of Award
C26010 (2B)	*0.00%*	$324,600,000	*$0*	*0.00%*	*$0*	*0.00%*
C26006 (3)	*23.60%*	$176,450,000	*$2,273,166*	*1.29%*	*$399,000*	*0.23%*
C26007 (4B)	*56.50%*	$447,180,260	*$4,333,605*	*0.97%*	*$2,626,638*	*0.59%*
C26013 (5A)	*100.00%*	$34,070,039	*$6,717,318*	*19.72%*	*$4,285,471*	*12.58%*
C26008 (5B)	*23.66%*	$301,860,000	*$1,708,938*	*0.57%*	*$1,140,547*	*0.38%*
C26009(6)	*1.78%*	$261,900,000	*$0*	*0.00%*	*$0*	*0.00%*
TOTAL		$2,208,085,299	*$106,241,829*	*4.81%*	*$86,723,811*	*3.93%*

Observation and Analysis:

The value of AWOs reported by MTACC/NYCT in September 2012 is summarized as follows:

	Executed AWOs	*AWO Exposure*
September-2012	*$86,723,811*	*$106,241,829*
August-2012	*$87,674,031*	*$107,528,531*
Monthly Change	*< $950,220>*	*<$1,286,702>*
Monthly Change	*-1.08%*	*-1.20%*

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

1. *Contract C2A: Adjustments to forecast exposure for AWO #123 and the initial valuation of AWO #124 totaling $328,083.*
2. *Contract C3: Adjustments to forecast exposure for AWOs #9, 10, 18 and 19 as well as the addition of new AWOs # 20, 21, 22 and 23 totaling $993,700.*
3. *Contract C4B: Initial valuation of AWOs # 44, 46, 49, 51, 52, 53, 54, 55 and 56 resulting in a net credit of $2,578,904.*
4. *The PMOC notes that AWOs for Drug and Alcohol Testing were added to the logs of contract packages C3, C4B, 5B, 2B and C6.*

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

1. *Contract C1: Execution of AWO # 143 and 146 for a net credit of $1,395,683.*
2. *Contract C2A: Execution of AWO # 98 for a total cost of $700,000.*
3. *Contract C4B: Execution of AWOs #32, 34, 45, and 48 a net credit of $356,237.*

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 PMOC has previously noted that a significant number of AWOs do not contain "Exposure Values" in the respective logs. Significant progress in addressing this concern has been made and continued improvement is anticipated.

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. Due to the fact that two major contracts (C2A, C6) have not really started active construction this number can be reasonably anticipated to increase substantially.

Adequate project contingency funds currently appear to be available to fund these costs, however the PMOC is concerned that the final AWO value may be excessive, and reflect certain defects in the project design for which the MTACC may be entitled to full or partial compensation. The PMOC recommends that AWOs which are the result of shortcomings in the design be critically reviewed, evaluated and documented on a contemporaneous basis as part of a complete evaluation of the adequacy of the design documents.

5.2 Project Funding

Status:

Total Federal participation is currently $1,350,692,821. Appropriated, obligated and disbursed totals are shown in Table 5-3 below.

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

*Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *September 30, 2012*
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	*$268,445,828*
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	*$622,436,998.00*

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

A total of $1,927,939,142 has been expended on the project through September 30, 2012, of which $431,008,302 has been spent on design and $970,293,021 on construction (MTACC's September 2012 Cost and Schedule Summary Input).

Observation and Analysis:

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

Concerns and Recommendations:

None

5.2.1 Overall Project Funding

Refer to Section 5.2 of this Report.

5.2.2 Local Funding

Refer to Section 5.2 of this Report.

5.3 Cost Variance Analysis

Status:

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 3rd Quarter 2012, the EAC was revised as follows:

- *MTACC provided preliminary results of the C4C Risk Analysis Update. While these results are still preliminary, they suggest some upward pressure on the EAC for this package. Similar results can be reasonably anticipated for the C5C package, which is similar in scope and size. A corresponding adjustment has been made in the value of the contracts to be bid.*
- *The EAC for all construction contracts awarded to date was adjusted in accordance with the September 2012 financial report provided by the SAS Project Team.*

A summary of the SAS Phase 1 EAC, based on values supplied by MTACC is as follows:

Table 5-4: Estimate @ Completion

	CWB	***EAC***
Awarded Const. Contracts	$2,208,085,299	*$2,432,055,585*
Const. Contracts to be bid	$494,672,000	*$543,898,648*
Total Construction	$2,702,757,299	*$2,975,954,233*
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	
Executive Reserve	$160,000,000	
TOTAL	$4,451,000,000	*$4,230,252,605*

Conclusions and Recommendations:

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

5.4 Project Contingency

Status:

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

- $220 million through 90% Bid and 50% Construction
- $140 million through 100% Bid and 85% Construction
- $45 million through Start Up and Pre-Revenue Operations

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

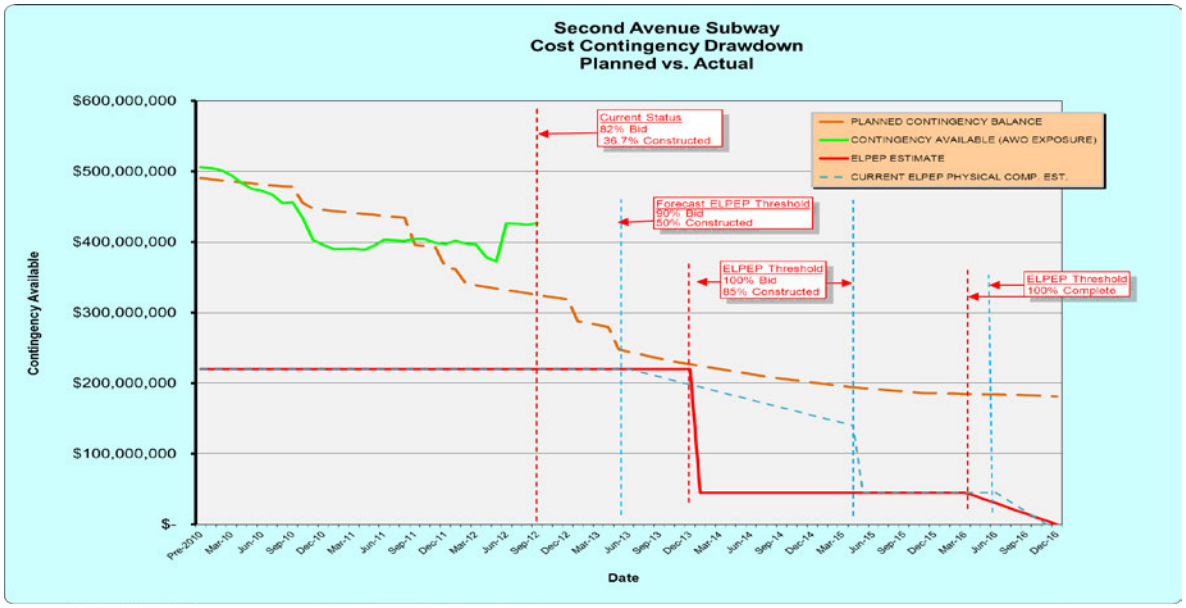
Observations and Analysis:

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

The PMOC has updated and adjusted its contingency drawdown and utilization model to reflect changes made this period. Models maintained by both the PMOC and the SAS Project Team verify that the current contingency balance is greater than the Planned Balance and exceeds the ELPEP Required Balance.

	August 2012	***September 2012***
Required Balance (ELPEP):	*$220,000,000*	*$220,000,000*
Planned Contingency Balance:	*$327,473,264*	*$325,262,364*
Actual Contingency Balance (PMOC):	*$424,862,364*	*$426,149,066*
Actual Contingency Balance (MTACC):	*$425,864,000*	*TBD*

In graphic form:



Concerns and Recommendations:

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

6.0 PROJECT RISK

6.1 Initial Risk Assessment

No change this period.

6.2 Risk Updates

Status:

During the 3rd Quarter 2012, the PMOC commenced an update to the 2009 PG47 Cost Risk Analysis. This analysis is a top down assessment of the remaining project risks using Transportation Cooperative Research Panel (TCRP) data and FTA experience.

Observation and Analysis:

The PG47 process looks at the project risks in several categories (Construction, Professional Services, Real Estate, Rolling Stock and Contingency). The data is accumulated to a common expenditure year (2008) so that equal comparisons can be made. The PMOC's knowledge of the project, risk experience and overall status are evaluated against standardized reference risk profiles to determine the magnitude of remaining risk on the project. The risk trending and contingency reserves can then be evaluated for effectiveness.

Because the analysis is a high level look at the project, the PG47 has been developed to give ranges of risk based upon the MTACC's ability to manage and control the risk parameters. Three ranges of risk are presented; They are referred to as Low Degree of Mitigation Capacity (LDM) in which the MTACC SAS is not able to effectively mitigate the risk; Medium Degree of Mitigation Capacity (MDM) in which the MTACC SAS is able to mitigate some of the risk and; High Degree of Mitigation Capacity (HDM) in which the MTACC SAS is able to effectively mitigate most of the risk.

This update to the PG47 utilized project as of July 2012 and utilized information from SAS Phase 1 Cost Estimate, Revision 9 where appropriate. The results of this analysis are then compared to the 2009 analysis as well as the FFGA estimate. The risk profile for individual categories has varied but the overall risk growth has decreased significantly from the 2009 level. In short, the project has realized less risk in specific categories (i.e. Geotechnical) than predicted by the 2009 Analysis.

	Forecast Project Cost (1)		
	High Degree of Mitigation	***Medium Degree of Mitigation***	***Low Degree of Mitigation***
2009 PG47	*$4,744M*	*$4,981M*	*$5,214M*
2012 PG47	*$4,197M*	*$4,257M*	*$4,367M*
Difference	*-$548M*	*-$725M*	*-$846M*

(1) Financing costs are not included in this analysis

Conclusions and Recommendations:

The results of this analysis are preliminary; however, they are consistent with other analyses prepared by the PMOC and the SAS Project Team all of which indicate the MTACC's CWB of $4.451 is adequate to complete Phase 1 of the Second Avenue Subway.

6.3 Risk Management Status

Status:

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

Observation and Analysis:

Specific Risk Management activities observed by the PMOC during the 3rd Quarter 2012 include:

- *Utilization of the Integrated Project Schedule (IPS) to actively manage the work and to develop work-around scenarios to mitigate the effect of delays encountered. Examples include C5B – Entrance #1, C4B – Entrance #1, C4C Procurement,*
- *Implementation of an Interface Management System which identifies measures and track "Delivery Dates" and "Need Dates" where two or more prime contractors are involved. An escalation process based upon defined thresholds provides for appropriate action by senior management.*
- *Implementation of additional safety protocols in response to the accidental blast exhaust on August 21, 2012.*

During the 3rd Quarter of 2012, the Risk Registers for each active construction contract were updated. The PMOC has summarized the cost consequences and probability of occurrence for each risk in the register and obtained the following project summary:

	Cost Exposure ($M)	
	High Mitigation	*Low Mitigation*
2nd Qtr. 2012	*14.579*	*176.490*
3rd Qtr. 2012	*23.077*	*175.310*
Δ	***8.498***	***-1.180***

Based on the 3rd Quarter 2012 update, cost exposure with a high degree of risk mitigation increased by $8.498M whereas cost exposure with a low degree of mitigation decreased by $1.18M. Major additions or changes to the risk register include the following:

ID	***Title***	***Risk***	***Comments***
C2A			
2A02	*Change in Waterproofing specs*	*Change in Waterproofing specs initiated by NYCT*	*Increased cost estimate (both low and high)*
29b	*Ineffective interfacing between contract packages*	*1->2A: Contract 1 hand off milestones are delayed; this delays Contract 2A. Back charge to C1. Claim*	*Increased probability to 80%. Added low ($200K) and high ($500K) estimates*

ID	Title	Risk	Comments
C2B			
302	*Shop Drawing Review by C6*	*Items identified as "best practice" by C6 during shop drawing review but not part of the C2B's scope of work*	*Added. Probability=60% Low Est=$250K High Est=$1M*
C3			
135	*General contractor issues*	*General contractor issues; bankruptcy, merger and acquisition events, changing project supervision, substantial non-performance by station contractors, termination and re-bid initiatives*	*Increased. Probability = 40%. Schedule: Low Est = 10WD High Est = 90 WD*
22	*Delay in real estate process- Pookie & Sebastian*	*200 E 63rd- Relocating of tenants will cause additional cost*	*Increased. Probability = 50% Low Est=$500K High Est=$1M*
303	*Delay in real estate process- Han Garage*	*Han Garage- Delayed agreement*	*Added. Probability=20% Low Est=$200K High Est=$1M*
301	*Completion of Structural Steel Work*	*Delay in completion of structural steel work may result in claims*	*Added. Probability=20% Low Est=$250K High Est=$1M*
302	*Shop Drawing Review by C6*	*Items identified as "best practice" by CSJV during shop drawing review but not part of the C3`s scope of work*	*Added. Probability=60% Low Est=$250K High Est=$1M*
C4B			
C14	*Cost to Cure*	*Cost to Cure work (design, approval, agreement, and work) does not meet schedule resulting in delay and claims for delay. (Entrance 1)*	*Increased. Probability = 100% Consequence: Low Est=$2M High Est=$3M*
303	*Quality of thin concrete*	*Quality of thin concrete liner through steel lined areas of existing tunnels*	*Added. Probability = 40%*
C4C			
304	*Shop Drawing Review by C6*	*Items identified as "best practice" by CSJV during shop drawing review but not part of the C3`s scope of work*	*Added. Probability=60% Low Est=$250K High Est=$1M*
C5B			
130	*Contractor unable to satisfy air*	*Contractor may be unable to satisfy air quality regulations causes delay due to community complains*	*Reduced. Probability=50% Low Est=$500K*

ID	Title	Risk	Comments
	quality regs		*High Est=$3M*
303	*Yorkshire Towers*	*Entrance 2 Potential Design Change to accommodate Yorkshire Towers*	*Added.* *Probability=40%* *Low Est=$1M* *High Est=$3M*
C5C			
304	*Shop Drawing Review by C6*	*Items identified as "best practice" by CSJV during shop drawing review but not part of the C3`s scope of work*	*Added.* *Probability=60%* *Low Est=$250K* *High Est=$1M*

Conclusions and Recommendations:

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

The PMOC recommends establishing selection criteria that can be used to select risks to be reviewed at the monthly risk mitigation meetings. This will assist in ensuring that the status of significant risks to project cost and schedule performance are periodically reviewed and updated.

6.4 Risk Mitigation Actions

Status:

Risk Mitigation Meetings are held on a monthly basis. The meeting is generally attended by senior members of the SAs Management Team. Select risks from the risk register are reviewed in detail. Follow-up actions are assigned and subsequently reported.

Observation and Analysis:

For the past several months, the following risks have been the primary focus of the risk mitigation meetings:

1. *Contract Interfaces (Risk CNS 4 (C6))*
2. *System Safety Certification (Risk CNS 8 (C6))*
3. *Shop Drawing Processing (Risk ID TBD)*
4. *Cost-To-Cure Utility Relocations (Risk C4B 77 and C4B C14)*
5. *Construction Related Damage (Risk C4B 65)*
6. *C4C Procurement (Risk C4C 79)*

These risks are among the top challenges to achieving project cost and schedule goals, however the PMOC is concerned that other significant risks are not being considered as part of this effort. As an example, the SAS Risk Register was updated during the 3rd Quarter 2102 (July) however none of the new or modified risks have been elevated for consideration at the monthly meeting.

Concerns and Recommendations:

The PMOC recommends the use of an objective criteria for both cost and schedule risk as the basis for selection of risks from the register for initial consideration at the Risk Mitigation Meeting. After initial consideration, subsequent action, including deferral, can be determined.

6.5 Cost and Schedule Contingency

6.5.1 Cost Contingency

Status:

Refer to Section 5.4 of this report.

6.5.2 Schedule Contingency

Status:

MTACC did not report schedule contingency this period. Based on a review of schedule information provided by MTACC, the PMOC estimates minor schedule contingency usage during September 2012. Neither the MTACC's RSD commitment date of 12/31/16 nor the FTA/PMOC risk-informed RSD estimate of 02/28/18 is adversely affected. Full schedule reporting is anticipated to resume next period.

Observations:

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

Table 6-1: Schedule Contingency

IPS Update #	**62**	**65**	**68**	**71**	***74***
Data Date	09/01/11	12/01/11	03/01/12	06/01/12	*09/01/12*
Contingency (CD)					
RSD=12/31/2016	67	67	80	90	*No*
RSD=02/28/2018	490	490	503	513	*Report*

Concerns and Recommendations:

None.

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7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column 1 – Critical 2– Near Critical

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-09-Jan10	3.0 PMP	The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP. PMOC Recommendation: Update the PMP and its sub-plans within the timeframes established in the ELPEP. **Update:** 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. ***Update (September 2012):*** *On September 27, 2012, MTACC resubmitted the SAS Project Management Plan as Revision 8.1. This revision formally incorporated all FTA/PMOC comments made to Revision 8, which was originally issued in January 2011. PMOC is waiting authorization from FTA Region II to perform selected audits of the Project for compliances.*	
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** –	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		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 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. ***Update (September 2012):*** *The CMP has been accepted by FTA Region II. PMOC will continue to monitor the Project for compliance.*	
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	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		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 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. ***Update (September 2012):*** *On September 28, 2012 the MTACC issued Program Change Control Procedure AD.15. The total number of procedures issued to date is 77. Three other procedures are being considered however, they are not required for the project to be compliant with the PMP. No further action is required.*	
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.	1

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		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 – 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	

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		Update (September 2012): *PMOC awaiting authorization from FTA Region II to perform audit of AWO process.*	
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 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	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		planned by the PMOC. **Update (March 2012):** Contract C-26009 (C6) was awarded to Comstock/Skanska JV on January 18, 2012. No additional action required this concern is closed.	
SAS-22-Jun 12	1.1.2 f Community Relations	MTACC's community outreach efforts have had a positive impact on relations with the affected community. Many of the specific issues and resulting actions may have been beyond contemplation prior to the start of construction. Based upon the "lessons learned" to date, the PMOC recommends the MTACC develop a more comprehensive plan for construction phase community relations going forward, including an overall execution plan and proposed scope of activities ***Update (September 2012):*** *Plan development is ongoing. Cost associated with opening an office in the work area to provide better communications with the residents and to address their concerns is being accumulated.*	2
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. ***Update (September 2012):*** *The PMOC has previously expressed concern over the adequacy of the scheduled duration of construction contract procurement for SAS Phase 1 contracts and recommended an acceleration of the procurement schedule. MTACC's approach of adding schedule contingency to the procurement process substantively*	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		addresses the PMOC's concern and significantly reduces the risk of delays in the award of the remaining construction contracts. No further action required.	
SAS-24-Jun 12	2.3 Contract Packages and Delivery Method	Despite the delays experienced to date, the SAS Project Team does not consider it worthwhile to accelerate the procurement schedule of either of the remaining finish packages (C4C, C5C). Each of these packages have several months of "preconstruction time" built into their schedules where access to work areas is not available due to the work of predecessor contracts. This "preconstruction time" is necessary for purchase and fabrication of long lead items, etc. Delays that absorb some of this "preconstruction time" have the potential to delay completion of these packages. The PMOC recommends the SAS Project Team reconsider acceleration of the procurement schedule for one or both of the remaining construction packages. ***Update September (2012):*** *The PMOC has previously expressed concern over the adequacy of the scheduled duration of construction contract procurement for SAS Phase 1 contracts and recommended an acceleration of the procurement schedule. MTACC's approach of adding schedule contingency to the procurement process substantively addresses the PMOC's concern and significantly reduces the risk of delays in the award of the remaining construction contracts. No further action required.*	2
SAS-25-Jun 12	2.5 Property Acquisition and Real Estate	The PMOC recommends the total cost-to-cure process be modeled and updated in a much greater level of detail than currently exists in the IPS. The PMOC also recommends establishment of threshold date(s) for the 72nd Street work which would trigger either a more aggressive approach in resolving the issue by MTACC or full implementation of scope transfer to the C4C package. ***Update September (2012):*** *For Entrance No. 1 of the 72nd Street Station, MTACC has terminated the agreement and is seeking additional easement through eminent domain*	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		condemnation proceeding. The alternative of deferring some portion of the work to the C4C package is a viable contingency.	
SAS-26-Jun 12	2.6 Community Relations	The community relations effort has proven to be an important element of the management of this project. It is the recommendation of the PMOC that the community relations effort be fully incorporated into the mainstream of project scope, budget and risk management activities to support the goals of cost-effective and transparent decision making and the related goals of the ELPEP ***Update (September 2012):*** *See item SAS-22-Jun 12 above.*	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. ***Update (September 2012):*** *The PMOC will request a Candidate Revision be issued to address this recommendation. Candidate Revisions" for SAS PMP Revision 9 are being assembled now as issues are identified. Revision 9 to the SAS PMP is tentatively scheduled for initial distribution in the summer of 2013.*	2

8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

Priority in Criticality column

1 – Critical

2 – Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
SAS-A17-Aug08	2.4 Vehicles	The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan: ▪ NYCT should provide a test plan for increasing the period between inspections of the new technology fleet. ▪ NYCT should explain why, in light of the ongoing state of good repair fleet replacement program, the cars financed under the SAS project are no longer needed. ▪ MTACC should explain why they are considering removing the vehicles from the project scope without reducing the project funding. **Update:** The supply of vehicles for SAS Phase 1 will be addressed in the Draft Fleet Management Plan, scheduled for distribution in July 2010. **Update:** A Draft Fleet Management Plan was not submitted during July 2010. This item remains open. **Update:** As of August 31, 2010, a Draft Fleet Management Plan has not been submitted. **Update:** A Draft Fleet Management Plan was received, reviewed with comments provided to the FTA.	2	7/30/10

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
		Update: Vehicle requirements and associated cost to be addressed as part of the FFGA amendment. **Update:** No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project has been reflected in the Rail Fleet Management Plan which was accepted by FTA Region II. A "zero" dollar budget for the procurement of vehicles is reflected in the projects Current Working Budget (CWB) and also in the latest cost estimate (Rev. 9). No further action is planned by the PMOC.		
SAS-A18-Aug08	ELPEP Updates	The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified. **Update**: At the quarterly meeting, a new contingency drawdown curve was presented. Management of the contingency is being addressed in the newly required Cost Contingency Management Plan. **Update:** The latest submission of the Cost Contingency Management Plan is under review. MTACC has initiated contingency management and reporting which generally conforms to the requirements of the ELPEP. **Update:** Review and resolution of all issues is anticipated to be completed in February 2011. **Update:** See ELPEP section of report.	2	6/30/10

APPENDIX A -- LIST OF ACRONYMS

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

RSD	Revenue Service Date
S3	Skanska, Schiavone and Shea, JV
SAS	Second Avenue Subway
SCC	Standard Cost Categories
SSCP	*Safety and Security Certification Plan*
SOE	Support of Excavation
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSRA	*Systems Safety and Reliability Assurance Program Plan*
SOE	Support of Excavation
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TBD	To Be Determined
TBM	Tunnel Boring Machine
TCC	Technical Capacity and Capability Plan
TIA	Time Impact Analyses
UNO	Unless Noted Otherwise
WBS	Work Breakdown Structure
WD	Work Day

APPENDIX B-- PROJECT OVERVIEW AND MAP

Project Overview and Map – Second Avenue Subway

Scope

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

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

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

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

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

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

Schedule

12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTACC schedule)		
43.3%	*Percent Complete Construction at September 30, 2012*		
71.7%	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
1,928M	Amount of Expenditures at date of this report from Total Project Budget of *$4,451M*
43.3%	Percent Complete based on Expenditures at date of this report
425M	Total Project Contingency remaining (allocated and unallocated contingency)

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