PMOC MONTHLY REPORT

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

February 1 to February 28, 2011

PMOC Contract No. DTFT60-09-D-00007
Task Order No. 2, Project No. DC-27-5115, Work Order No. 02
OPs Referenced: OP20-OP26, OP33, OP34, OP37, OP40, OP41, OP53, OP54

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Length of time on project: 1 year

TABLE OF CONTENTS

Page No.

TABLES

APPENDICES

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

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

Phase One of the project will include tunnels from 105th Street and Second Avenue to 63rd Street and Third Avenue, with new stations along Second Avenue at 96th, 86th and 72nd Streets and new entrances to the existing Lexington Ave./63rd Street Station at 63rd Street and Third Avenue.

COST BASELINE

FFGA $4.87 billion (Federal = $1.35; Local = $3.52 billion including financing cost of $817 million).

SCHEDULE BASELINE

Key Milestones:

- Preliminary Engineering (PE): December 2001
- Final EIS Record Of Decision (ROD): July 8, 2004
- FFGA: November 19, 2007
- Final Design: April 2006
- Original FFGA Revenue Service Date (RSD): June 30, 2014
- Current MTA RSD: December 30, 2016
- Current FTA/PMOC RSD: February 2018

COMPLETION STATUS

A summary of the completion status of the four (4) active construction contracts as of February 28, 2011 is as follows:

- *C26002 (Tunnel Boring) – 80.20%*
- *C26005 (96th Street Station) – 28.70%*
- *C26013 (86th Street Station) – 56.6%*
- *C26007 (72nd Street Station) – 2.40%*

Aggregate Construction % Completion:

- *34.40% of active construction contracts are complete (C3 not included)*
- *15.30% of all construction is complete*

PROGRESS AND ISSUES

Contract C-26002 completed the West Bore on February 4, 2011. The next two months will primarily involve the extraction of the TBM from the West Bore and remobilization for the start of the East Bore.

During February 2011, bids were received for C-26008 (86th Street Station Excavation & Heavy Civil). The low bid of $301,860,000 was well within estimates prepared by MTACC for the package.

Seven teams have been qualified by NYCT to submit proposal for C-26009 (Systems). Proposals are due on approximately May 18, 2011.

MTACC presented the redesign of the proposed 69th and 72nd Street Muck Handling facilities to the FTA in mid-February. The next step is for the MTACC to solicit local community feedback regarding this element of the project.

Production blasting/excavation has progressed at both the 69th and 72nd Street shafts as a result of coordination between the respective contractors and the NYFD to ensure that excavation and TBM/TBM extraction activities could proceed safely.

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:

As of February 2011, MTACC continued to work with the FTA to produce Management Plans and to demonstrate compliance with the Enterprise Level Project Execution Plan (ELPEP). As reported previously, the original schedule for accomplishment of portions of the ELPEP implementation has consistently not been met; *however, progress continues to be made in several key areas. The MTACC requirement for intermediate deliverables to establish mutual and complete understanding of the concepts and requirements of the ELPEP, which in many cases differs from the original MTACC interpretation, has significantly delayed implementing the ELPEP. At the end of February, the remaining intermediate deliverable is the Risk Mitigation Capacity Plan, which describes the processes MTACC has implemented to provide the level of Risk Mitigation Capacity required to meet the requirements of the ELPEP. Also in process are the final revisions to the Cost Management Plan and the post – acceptance revisions to the Schedule Management Plan.*

October 12, 2010 marked the official goal for complete implementation of the ELPEP, which has not been achieved as of this writing. The PMOC continues to project that the full implementation of the ELPEP will require several more months of cooperative effort between the FTA and MTACC. However, the four primary plans that are in various stages of development should be able to be completed within the next month.

This month, the PMOC, MTACC, ESA and SAS Management attended the following ELPEP meetings:

- *02/03/11 – ELPEP Implementation Bi-Weekly Meeting*
- *02/10/11 – ELPEP Implementation Bi-Weekly Meeting*
- *02/09/11 – Cost Management Plan (CMP) Review*
- *02/18/11 – Schedule Management Plan (SMP) – MTACC revisions Review*

This past month, MTACC provided an SAS approved revised PMP containing input from the TCC Implementation Plan Candidate Revisions (CRs). The Top Ten CR implementation was a requirement of the TCC Implementation Plan approval letter. Subsequently, the PMOC began its review.

MTACC and FTA continued discussions of the draft CMP in February 2011, with the final review meeting held on February 9, 2011. The PMOC provided MTACC with a listing of all discussion points from the comment review sessions with both SAS and ESA during January and February 2011. MTACC has begun the final re-writing of the CMP. The PMOC anticipates a final CMP to be developed for FTA review based on the implementation of these discussion points into the CMP document.

On February 3rd, MTACC provided further revisions to the SMP in response to PMOC comments. At the February 18, 2011 SMP meeting, the PMOC and MTACC reviewed these draft revisions and agreed upon final revisions. Once MTACC provides these final revisions, the SMP October 25, 2010 acceptance letter action items will be closed out.

This month, MTACC continued the development of their intermediate deliverable for demonstration of ELPEP conformant Construction Risk Mitigation Capacity. On February 17,

2011, MTACC provided an update to their document, addressing PMOC comments from the February 3rd ELPEP meeting discussion. The PMOC has provided additional comments and is finalizing its review with FTA.

Based on the ELPEP effective date of January 15, 2010, the following items continue to be overdue:

- MTA will finalize the Cost and Cost Contingency Management Plan in conformance with ELPEP requirements.
- MTA to demonstrate a functioning process for achieving the traceability of contract package scope from the design basis documentation through pre-construction planning into the contract package cost estimate, and schedule through a contract package level WBS or functional equivalent for one active SAS contract package (4B). MTA will provide the FTA with a plan to demonstrate similar ELPEP conformance on all other un-awarded contract packages for both projects except for construction risk mitigation capacity.
- MTA demonstrates an ELPEP conformant Construction Risk mitigation capacity for active awarded contracts for SAS.
- MTA establishes internal control baselines for ELPEP conformance reviews for SAS with the first oversight report delivered to FTA.
- MTA achieves full, across the board, ELPEP conformance.

Observation:

Based on ELPEP requirements, the overall progress remains behind schedule; however, in February 2011 the MTACC made further progress in the completion of the TCC PMP review, the Acceptance Letter requirements for the Schedule Management Plan, the writing of the Construction Risk Mitigation Intermediate Deliverable and the final revision of the Cost Management Plan. FTA has received the ESA and SAS revised Recovery Plans and is reviewing them with MTACC.

The FTA and MTACC continue to participate in a cooperative process to produce the deliverables described in the ELPEP. The bi-weekly ELPEP progress meetings continue to serve to review progress and look ahead to upcoming milestones. The PMOC worked closely with MTACC on the draft CMP and the revised SMP, as well as the Construction Risk Mitigation Plan.

The PMOC notes that MTACC has provided the complete SAS revised PMP to date. This deliverable exceeds the minimum requirements of the TCC acceptance letter.

Concerns and Recommendations:

- *The PMOC had recommended that the MTACC develop its proposed method to demonstrate compliance with the ELPEP requirements for risk mitigation capacities in the form of an intermediate deliverable. MTACC has delivered its draft plan of this deliverable, which has been commented on by the PMOC with revisions made to some sections. The PMOC Notes that once this intermediate deliverable is acceptable; FTA and the PMOC will need to validate its implementation and functional use in order to meet the ELPEP requirement.*

- *The PMOC has recommended revisions to the draft CMP which have been discussed with SAS project management in January and February 2011. The PMOC has provided a detailed account of these discussions, which will aid in the re-write of the Plan.*
- *The PMOC has provided its final recommendations for revision to the SMP to meet the Acceptance Letter requirements.*

Table 1: Project Budget/Cost Table

	FFGA			**FFGA Amendments**	**MTA's Current Working Budget (CWB)**		**Expenditures as of *February 28, 2011***	
	($ Millions)	**(%) Grand Total Cost**	**Obligated ($ Million)**	**TBD**	**($ Millions)**	**(%) Grand Total Cost**	**($ Millions)**	**% of Grand Total Cost**
Grand Total Cost:	**4,866.614**	**100**	**4,137.911**		**5,489.614**	**100**	***1,148.683***	***20.92%***
Financing Cost	816.614	16.78			816.614	14.88		
Total Project Cost:	**4,050.000**	**83.22**	**4,137.911**		**4,673.000**	**85.12**	***1,148.683***	***20.92***
Total Federal share:	**1,350.693**	**27.75**	***628.911**		**1,350.693**	**24.60**	***356.383***	***6.49***
Total FTA share:	**1,300.000**	**96.25**	**600.818**		**1,300.000**	**23.68**	***345.271***	***6.29***
5309 New Starts share	1,300.000	100	600.818		1,300.000	23.68	*345.271*	*6.29*
Total FHWA share:	**50.693**	**3.75**	28.093		**50.693**	**0.92**	**11.112**	**.20**
CMAQ	48.233	95.15	25.633		48.233	0.88	8.652	.16
Special Highway Appropriation	2.460	4.85	2.460		2.460	0.04	2.460	.04
Total Local share:	**2,699.307**	**55.47**	****3,509.000**		****3,509.000**	**63.92**	***792.300***	***14.43***
State share	450.000	16.67	100.000		450.000	8.20		
Agency share	2,249.307	83.33	1,145.782		3,059.000	55.72		
City share	0	0			0	0		

*Obligated amounts obtained from the Transportation Electronic Award Management (TEAM) system and MTACC's Grant Management Department. **Current MTA Board approved budget see Section 1.1.3 b for details.

Table 2: Summary of Critical Dates

	FFGA	**Forecast Completion**	
		Grantee	**PMOC**
Begin Construction	January 1, 2007	03/20/2007A	03/20/2007A
Construction Complete	December 31, 2013	May 23, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016(1)	February 2018*

(1) SAS Phase 1 Integrated Project Schedule, Revision 3; Update #54, and data date of February 1, 2011.
* From ELPEP

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

Status:

The Design staff is being reduced as the remaining work is completed. Construction support services have not been adversely affected. The Construction Manager is adding staff as construction activity increases.

MTACC is currently utilizing consultant staff to fill positions it has otherwise been unable to fill through direct hire.

The current project team acts as an integrated organization with virtually no distinction between the employee's actual employers.

Observation:

The current project organization appears well integrated and very cohesive.

Concerns and Recommendations:

The PMOC had reservations about the Quality Manager reporting to the Program Manager of Construction Support. To address the PMOC's concern, MTACC's Quality Management agreed that the SAS Project Quality Manager will report to the Vice President/Deputy Program Executive. *As of February 28, 2011, the organization chart has not been revised to reflect this change.* PMOC will continue to periodically review project staffing to verify its adequacy.

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

a) Adequacy of Project Management Plan and Project Controls

Status:

PMOC review of the updated SAS Project Management Plan (draft Revision 8) is ongoing. Comments have been provided for candidate revisions associated with the following sections of the PMP: Section 5 –Management Control Systems; Section 6 –Risk Management; Section 8 – Design Process; Section 12 –Community Relations; and Section 16 –Maintenance of Plan.

Observation:

Integration of the ELPEP requirements into the SAS PMP will allow the MTACC to more effectively manage the SAS project. It will also give the FTA/PMOC a greater level of assurance that the SAS project can proceed through the construction phases and be delivered to the start-up phase consistent with the estimated total project cost and schedule.

Concerns and Recommendations:

Any concerns will be documented as comments and tracked for resolution prior to PMOC's recommendation for FTA's approval of the revised PMP.

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:

Efforts are underway to amend the FFGA because the baseline cost and schedule have been exceeded.

Concerns and Recommendations:

See section 1.1.2 a

c) Grantee's Approach to Community Relations, Asset Management, and Force Account Plan

Status:

Community Relations –*During February 2011, the community relations representative continued to support the bi-weekly job progress meetings. Any concerns of the community that needed to be addressed were made known.* The Good Neighbor Initiative is ongoing to standardize the look of construction barriers, paint barriers, increase the use of signage and improve overall cleanness of all work zone areas.

Asset Management –Identification and control of project assets will be coordinated between the System Contractor (Contract 6) and NYCT's Department of Subways. Development of the plan is on-going.

Force Account –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. *As of February 28, 2010, the MTACC has expended $142,637 of the $33,000,000 Force Account budget.*

Observation:

The Community Relations Program is meeting its objective to encourage an exchange of ideals and information on issues related to the project, to identify and resolve public issues and concerns as they arise, and to generate interest in and support for the project. The project recognizes that more community buy-in is needed to minimize the probability of community distress. SAS Asset Management Plan must be integrated with NYCT's Property Management System. The Force Account budget remains at $33,000,000 (Cost Estimate Revision 8).

Concerns and Recommendations:

None

d) Grantee's Approach to Safety and Security

Status:

Safety –Each construction contractor continued to implement its Safety Program in compliance with Section 011150 of the General Requirements Section of the Contract.

Security –Each construction contractor continued to implement its Site Security Plan in compliance with Section 011160 of the General requirements of the Contract. The section specifies requirements for the security of the work including: site and office security, and transportation and protection of explosives.

Observation:

During *February 2011,* each construction contractor continued being proactive in implementing its safety program. Weekly tool box meetings were conducted to keep the workforce informed on various safety topics. Root cause analysis is being performed to assure that the actual cause of an incident has been identified and positive corrective actions implemented to prevent recurrence. *The lost time rate and OSHA Recordable Accident Rate from the start of the project until January 2011 is 1.62 and 3.38 respectively. Both rates are below the national average of 2.2 and 4.2 respectively.*

Due to the sensitive nature of the security effort, the proposed 2010-2014 Capital Program identifies a single budgetary reserve of $250M, which will be used to progress the next group of projects. (Reference: Proposed MTA Capital Program 2010-2014, dated September 23, 2009).

Concerns and Recommendations:

None

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

a) Uniform Property Acquisition and Relocation Act of 1970

Real estate acquisition and tenant relocation is being 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 Polices Act of 1970, as amended, and FTA real estate requirements 5010.1C.

b) Local Funding Agreements

MTA's approved 2000-2004 and 2005-2009 Capital Programs provided $2,964 million for SAS Phase 1 ($1,050 million and $1,914 million respectively). The proposed 2010-2014 Capital Program budgets $1,487 million to complete the SAS Phase 1 project. Of the $1,487 million, $545 million was approved for the 2010-2011 timeframe. MTA needs to approve $942 million for the 2012-2014 timeframe.

1.1.4 Scope Definition and Control

Status:

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 installation and overall operating systems inspection and testing.

Active issues involving the management and control of project scope include:

Issue	Description
Deletion of railcars	MTACC has proposed the elimination of the vehicle procurement from the scope of the project. The rationalization for the elimination of the vehicle is presented in the revised NYCT Fleet Management Plan. Approval of the FTA is required for the formal incorporation of this scope deletion. *No update on this issue for this period.*
Transfer of East Bore Tunnel Lining between 72nd and 86th Street Stations	MTACC proposes to transfer this work from construction package C1 to construction package C5B to reduce the risk of delay through construction interferences and priority conflicts. A bid option has been included in the C5B bid package. Negotiations regarding cost and schedule considerations have started with the C1 construction contractor. *No progress this period.*
Additional requests from NYCT operating departments	Final design reviews resulted in numerous requests from the NYCT operating departments for both additions and deletions of scope. The SAS Project Team is in the process of reviewing and evaluating these requests through the Configuration Control Board and, if implemented, the Technical Advisory Committee. *Individual issues are being evaluated and resolved.*

Observation:

The process of utilizing the Configuration Control Board (CCB), the change control process, the Technical Advisory Committee (TAC) and issuing Technical Memorandums has proven to be an effective means of controlling scope and managing the transfer of scope between construction packages.

Concerns and Recommendations:

None. The PMOC will continue to monitor and review these processes to verify effective scope management.

1.1.5 Quality

Status:

During January 2011, PB's Quality Assurance oversight activity for each construction contractor forced on: review and approval of contractor's Quality Work Plans; review of the contractor's Quality Management System (internal audit of contractors and external audit of subcontractors); participation in Preparatory Phase Sessions for construction processes; bi-weekly quality meetings with contractor's management and PMOC; and monitoring the control of non-conforming material.

Observations:

None

Concerns and Recommendations: None

1.1.6 Project Schedule

Status:

A summary of project schedule information is as follows:

	FFGA	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	03/20/2007A	03/20/2007A
Construction Complete	December 31, 2013	May 23, 2016	October 2017
Revenue Service	June 30, 2014	December 30, 2016	February 2018

Observations:

The Revenue Service Date (RSD), as forecast by the Integrated Project Schedule (IPS), has essentially remained constant over the past six months. In maintaining this overall schedule, the SAS Project Team has overcome several individual package delays that could have impacted the overall project. Nevertheless, delays in TBM mining, procurement and utility relocation have extended several paths to "near-critical" status.

The substantial completion of the Design Phase in November 2010 and West Bore contract and added TBM mining in February 2011 represent significant achievements and reductions in the risk of future schedule delays. However, delays to "near-critical" paths continue to push more construction later in the construction phase, increasing the probability of delays.

Conclusions and Recommendations:

The SAS Project Team has demonstrated the capacity and capability to manage and maintain the project schedule. The calculated RSD has remained constant for approximately six months.

Construction logic and physical constraints suggest limited opportunity to significantly resequence construction activities to regain time lost to delay. Efforts to regain lost time through "incentivation" or directed acceleration typically do not produce an acceptable return on investment. The limited opportunity to regain lost time places a premium on execution of the current schedule and minimizing delays.

Construction contract procurement and processing of Additional Work Orders (AWOs) are two areas where the timeliness of MTACC performance could be improved. These issues have been discussed with senior MTACC management and are fully understood. The PMOC will continue to identify specific problem areas and suggest specific enhancements to improve overall project delivery.

1.1.7 Project Budget and Cost

Status:

Total project cost in the approved FFGA is $4,866,614 million 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 *February 28, 2011*.

Table 1-2 Appropriated and Obligated Funds

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *February 28, 2011*
NY-03-0397	$4,980,026	$4,980,026	$4,980,026
NY-03-0408	$1,967,165	$1,967,165	$1,967,165
NY-03-0408-01	$1,968,358	$1,968,358	$1,968,358
NY-03-0408-02	$24,502,500	$24,502,500	$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	$167,810,300	$167,810,300	$167,810,300
NY-03-0408-06	$274,920,030	$274,920,030	*$65,172,633*
NY-03-0408-07	*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	$8,652,432
NY-95-X015-00	$45,800,000	$45,800,000	0
Total	$628,911,200.00	$628,911,200.00	*$356,383,235.00*

* Denotes American Recovery and Reinvestment Act (ARRA) funds

A total of $148,786,991 has been expended on the project through February 28, 2011, of which $404,302,152 has been spent on design and $393,336,565 on construction (MTACC's monthly financial input).

Observation:

Local funds totaling *$792,299,756 ($1,148,682,991- $356,383,235)* have been spent as of *February 28, 2011*. MTA's approved 2000-2004 and 2005-2009 Capital Programs provided $2,964 million for SAS Phase 1 ($1,050 million and $1,914 million respectively). The proposed 2010-2014 Capital Program budgets $1,487 million to complete the SAS Phase 1 project. Of the $1,487 million, $545 million was approved for the 2010-2011 timeframe. MTA needs to approve $942 million for the 2012-2014 timeframe.

Concerns and Recommendations:

Availability of local funding has been identified as a major concern. Current funding appears to support SAS contract awards through mid-2012. Beyond that time, a detailed analysis of funding, obligations and expenditures is required to verify that the current construction schedule can be supported.

1.1.8 Project Risk Monitoring and Mitigation

Status:

Risk monitoring and mitigation is ongoing and being performed per the SAS Risk Management Program, which is documented in Section 6.0 of the PMP. Through February 2011, the project has held eight Risk Mitigation Meetings. A Risk Register has been developed and maintained on the Project since late 2002. The present Risk Register is being updated to include Risk Mitigation Meeting proceedings as of January 2010.

Observation:

SAS Project Management is being proactive in its efforts to monitor and mitigate risk. From the initial Risk Mitigation and through all subsequent meetings held to date, the Project has been focusing on those risks that DHA indicated in its December 2009 Risk Analysis Report as the risks that contribute the most to the contingency requirements.

Concerns and Recommendations:

None

1.1.9 Project Safety

Status:

Each construction contractor continued to implement its Safety Program in compliance with Section 011150 of the General Requirements Section of the Contract. *The lost time rate and OSHA Recordable Accident Rate from the start of the project until January 2011 is 1.62 and 3.38 respectively. Both rates are below the national average of 2.2 and 4.2 respectively.*

Observation:

Each construction contractor conducts weekly tool box meetings to keep the workforce informed on various safety topics. Safety concerns identified by CCM safety personnel and the OCIP representative are quickly addressed by the contractors. When an incident occurs, root cause

analysis is performed to assure that the actual cause has been identified and positive corrective actions implemented to prevent recurrence.

Concerns and Recommendations:

None

1.2 FTA Compliance Documents

Status:

No change this period.

1.2.1 Readiness to Enter PE

Status:

Preliminary Engineering (PE) began in December 2001.

1.2.2 Readiness to Enter Final Design

Status:

Final Design began in April 2006.

1.2.3 Record of Decision

Status:

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

1.2.4 Readiness to Execute FFGA

Status:

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

1.2.5 Readiness to Bid Construction Work

Status:

The PMOC's implementation of the OP53 reviews during *February* 2011 included the following actions:

- Scheduled and conducted two internal progress meetings per week and prepared and issued meeting minutes for SAS *2B* Contract reviews and 4B, updates and general information on other SAS contract reviews to be performed;
- Distributed additional package-level design documents directly, through internal server access, and through an FTP server to OP53 Review Team;
- The OP53 review of the *2B package* and *4B* package *update* continued with the research of needed documents in the EDMS system, and further chronology development;
- Assembled additional *2B* design documents for OP53 reviews;
- Continued analyses and *updated* various Contract 4B report sections;

- Prepared additional analyses and development of Contract *2B* report sections pertaining to *Baseline Data,* Demonstrated Management Capacity and Control in Procurement, Package Chronology and Package Level Verification;
- *Participated in FTA annual Triennial Review Workshop on February 23rd and 24th.*

Observation:

- *The PMOC performed an update of the Package Level Verification of Contract C-26007 for the recently received cost estimates. The Final Estimate for bid comparison is Cost Estimate Revision 7.3 since its budget was used for comparison purpose with the contract award. This was utilized by the PMOC to determine if the cost estimate is prepared consistent with the Plans and Specifications and if it is affordable within the overall Project Budget. Observations include:*
  - ***Price Schedule Form -*** *the function of the Price Schedule is to reconfigure the cost estimate format into a price line item format in order to facilitate the reconciliation process with the awarded contract. The reconfigure process involves converting a CSI division estimate into a Bid Item breakdown. The PMOC noted that the reconfiguration process from the cost estimate into the price schedule is not cited in the MTACC Procedure No. CO.20 (Construction Cost Estimating).* The PMOC noted that the Price Schedule reconfiguration does not follow proper distribution due to the inconsistencies of the following bid items:
    - *Building Remediation Work Allowance - $1,500,000 - The cost estimate does not reflect this allowance as a single category in its breakdown, in addition, the PMOC cannot determine if the cost associated with this allowance was included in the cost estimate in combination with another scope; therefore, the PMOC cannot ascertain the provision of this bid price from the cost estimate.*
    - *Asbestos Abatement - $ 5,977,041 - The PMOC cannot determine how much of this amount is allocated to asbestos abatement work only. No other portion of the cost estimate shows additional asbestos abatement work; therefore, the PMOC cannot determine the basis of this bid item within the cost estimate.*
    - *Geotechnical Instrumentation Work - $1,397,189 - There are no backup calculations in the cost estimate to identify the scope associated with the Instrumentation work. It is not clear to the PMOC whether the bid items identified in the Price Schedule correspond in part to the scope shown in the cost estimate, therefore the PMOC cannot ascertain the basis of the bid item within the cost estimate.*
  - ***Quantities -*** *For this observation, the PMOC has sampled three line items in the Cost Estimate Revision 7.3 and compared those quantities to the HCSS Backup Estimate performed by DHA. The sampled items are chosen due to their quantity extent and include Demo 5 Story Existing Buildings w/Asbestos Abatement, Cut-and-Cover Rock Excavation, and Rock Cavern Excavation (Mined). The PMOC noted that great part of the quantities reviewed in DHA's backup estimate are not consistent with the quantities reported in the cost estimate summary. In conclusion, the PMOC cannot*

be certain that the cost estimate produced for Revision 7.3 was the product of the backup calculations provided with this estimate.

- ***Direct Costs -*** *For this observation, the PMOC has sampled three line items in the Cost Estimate Revision 7.3 and compared those values to the 2010 RSMeans Heavy Construction Cost Data. The PMOC noted that great part of the unit costs reviewed in DHA's backup estimate are not consistent with the values reported in the cost estimate summary. Nevertheless, in comparison with the 2010 RSMeans Heavy Construction Cost Data, the PMOC can assess that the cost estimate may be generally conservative considering the conditions that the project entails (e.g., below groundwork, confined spaces, etc.) due to the substantial amount of inconsistencies among the values reported in the cost estimate versus the backup calculations, the PMOC cannot be certain that the cost estimate produced for Revision 7.3 was the product of the backup calculations provided with this estimate.*

Concerns and Recommendations

None

1.2.6 Readiness for Revenue Operations

Status:

No change this period.

Observation:

None

Concerns:

None

2.0 PROJECT SCOPE

2.1 Status &Quality: Design/Procurement/Construction

2.1.1 Engineering and Design

Status:

MTACC reported the design phase of the SAS Project is to be 100% complete in late November 2010. During this period, the PMOC has received and reviewed 100% Design Memorandums for recently completed packages.

Observation:

PMOC observations include the following:

- There are several elements of design work that are incomplete; however, they are not currently delaying the progress of any of the construction packages. As such, the PMOC considers the term "substantially complete" to be a more accurate description of the current status of the design phase.
- Design work items that are incomplete at this time include:
  - Incorporation of items beyond the scope of the current design contract. These items have been identified as "Design Scope Changes" and are currently being assembled as a final modification to the design contract. Some of this work will be incorporated in the construction packages after award as a change order.
  - Evaluation of scope changes requested by NYCT during the 95% Design Review. Over 50 changes were requested. All must be reviewed by the project team for technical merit as well as cost and schedule impacts. Scope changes that will be added must then be evaluated by the TAC and formally incorporated into the design.
  - Updating the design of station finish packages (C2B, C4C, and C5C). "Dusting off" these designs include final scopes for all utility work, incorporation of "as-built" information from predecessor contracts, and similar updating activities.
- Recent experience with C3 and C5B construction procurements suggest the project team is effectively managing the design process. These packages experienced limited cost and schedule growth during procurement resulting from design quality issues.

Concerns and Recommendations:

The PMOC is concerned that the SAS project team has not fully evaluated the effort required for the "dustoff" of the three station finish packages prior to advertisement.

2.1.2 Procurement

Status:

On February 4, 2011, five (5) bids were received for construction package 5B. The joint venture of Skanska Civil and Traylor Bros. was the apparent low bidder at $301,860,000. No other significant procurement events occurred during February 2011. A summary of future "milestones" for ongoing or near-term procurements are as follows:

Table 2-1: Construction Procurement

Activity #	Description	Date*	Comment
Contract C-26008 (C5B): 86th Street Station Cavern & Heavy Civil			
C5B 20m	Procurement – Advertise C5B Bid Package	10/25/10A	*Bids received on 02/04/11.*
C5B 25d	*Procurement (IFB) Open Bids*	*02/04/11A*	
C5B PR40	Award Contract 5B	03/29/11	
Contract C-26009 (C6): Systems			
SYPR20e	*Authorization to Advertise*	*09/10/10A*	*RFP Documents were made available to teams whose qualifications were deemed acceptable in Step 1.*
SYPR 20k	*Prep RFP Short List (Step 1)*	*11/29/10A*	
SYPR 25t	*Issue RFP (Step 2)*	*03/01/11*	
SYPR30d	*Submit Proposals*	*05/18/11*	
SYPR40	*Award Contract*	*09/29/11*	
Contract C-26010 (C2B): 96th Street Station Concrete, MEP & Finishes			
This procurement has been postponed by approximately six months as a consequence of construction delays to C2A. Bid date is currently forecast for 01/11/12. Contract award is forecast for 04/23/12.			

** Note: All dates reference IPS Update #55 (DD=02/01/11) U.N.O.*

Observations and Analysis:

Based on an evaluation (Step 1) of the team's relevant experience, general responsibility, financial resources and safety record, NYCT qualified the following teams to submit proposals (Step 2) for Contract C-26009:

- *Halmar International, LLC*
- *Judlau/TAP, JV*
- *Skanska USA Civil Northeast, Inc.*
- *Railroad/Citnalta, JV*
- *Kiewit Infrastructure Co.*
- *L.K. Comstock & Co.*
- *Daidone/Aldridge, JV*

Step 2 proposals will be evaluated for "technical approach as well as other matters" and overall project cost. Proposers who are considered to be within a "competitive range" will enter into subsequent negotiations culminating in submission of "Best and Final Offers". Utilization of this approach allows for due consideration of the proposer's technical approach, which is considered to be a key factor in successful execution of this package.

Time allotted in the current IPS to the major procurement functions required is summarized as follows:

- *Prepare proposals – 10 weeks*
- *Evaluate Proposals – 5 weeks*
- *Negotiate – 3 weeks*
- *Administrative Review/Award – 10 weeks*

Concerns and Recommendations:

In mid-2010, Construction Package 6 (C-26009) was forecast to be awarded on 05/03/11. The most recent update of the IPS forecasts a construction contract award on 09/29/11, a delay of nearly five (5) months, ***assuming all subsequent tasks proceed according to schedule****. Based on the current IPS, award of this package is within 40 WD of the overall project critical path.*

SAS has experienced substantial delays throughout construction procurement. Many of these delays have been strictly procedural, with no technical modifications involved.

With respect to C6:

> *The PMOC is concerned that three weeks is not sufficient time to negotiate a technically and commercially complex contract. The submission of proposals will almost certainly be delayed through the issuance of addenda. Additional procurement-related delays will further consume project float and result in a new, independent critical path.*

With respect to Station Finish Packages C2B, C4C and C5C:

> *Construction procurement duration currently included in the IPS is somewhat optimistic and are likely to be exceeded, resulting in further erosion of available float.*

The PMOC recommends investigating ways to streamline administrative process requirements in the award of future construction contracts as a means of offsetting the anticipated procurement delays. Preconstruction "refreshing" of station finish packages needs to be given a high priority to avoid additional delays during construction procurement.

2.1.3 Construction

Status:

There are five (5) active construction contracts on the SAS project. Construction progress on these contracts through February 2011 includes:

- **Contract C-26002(C1) –TBM tunnels from 92nd Street to 63rd Street**
  - *Mining of TBM-1 (including extension) was completed to Station 1149+75 on 2/4/11 during the graveyard shift. Approximately 7,200 LF of tunnel has been mined to date.*
  - *Continuing disassembly and extraction of the TBM through the west tunnel.*
  - *Ground freeze continues. System was activated on January 10, 2011.*
  - *Installation of cellar ties at 1814 Second Avenue has started.*
  - Sidewalk improvements/Good Neighborhood Program initiatives continue.

- **Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation**
  - *Completed the tie-in of the new 8 gas main into existing 8" main at 97th Street.*
  - *Completed the temporary sewer by-pass around entrance #3.*
  - *Con Edison and ECS continued to pulled and spliced cables between 95th and 98th Streets on the east side of Second Avenue (approximately 6 week effort).*
  - *Completed the sawing cutting of the asphalt between 96th and 97th Street for new 36" water main excavation.*
  - *Existing 30" gas main in front of Metropolitan Hospital was capped and purged.*
  - *Continued the relocation of existing ConEd and ECS ducts allowing start of sewer and CFA pile installation. Between MH98-3 and MH98-4 seventeen CFA piles have been installed for the new 48" sewer main.*
  - *Secant pile installation for north wall of Ancillary 2 is on-going, 19 primary piles and 5 secondary piles have been installed.*
- **Contract C-26006 – (C3) 63rd Street Station Upgrade**
  - *Notice to Proceed issued January 13, 2011.*
  - *CPM Baseline Schedule under development.*
  - *Mobilization is underway.*
- **Contract C-26007 (C4B) 72nd Street Station Mining and Lining**
  - *Production blasting at 69th Street shaft continued.*
  - *Test blasting at the 72nd Street Shaft started on February 9, 2011.*
  - *Installation of foundations for the Muck Conveying System(s) as well as procurement of the hoist, hoppers and related equipment. Fabrication of structural steel for the system/building support.*
  - *Started gas and electrical utility relocations.*
- **Contract C-26013 (C5A)86th Street Station Excavation, Utility Relocation and Road Decking**
  - *Installed cap beams and deck beams.*
  - *Installed lagging and tiebacks.*
  - *Began channel drilling on the west side of the 69th Street Shaft.*
  - *Began installation of electrical ductbanks between manhole E and manhole Z*
  - *Began excavation from manhole Z to manholes Q and P.*
  - *Backfilled the new loop section of the 30" gas main loop.*
  - *Continued excavation for sewer service to 1601 Second Avenue (Gothic Cabinet building).*

- *Removed roof of manhole E to support coned work in vaults (pulling and splicing of cables).*

Observations:

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

For Contract C1 - As of February 28, 2011, TBM progress is summarized as follows:

	Second Avenue Subway TBM Summary - PMOC Projection							
	Date	*Station*	*Total Progress*	*Unit*	*Period Progress*	*Work Days/ Period*	*Progress/ Period*	*Unit*
Actual	*6/8/2010*	*Sta 1221+89*	*0.0*					
					261.0	*16*	*16.31*	*LF/WD*
	6/29/2010	*Sta 1219+28*	*261.0*	*LF*				
					374.2	*22*	*17.01*	*LF/WD*
	7/29/2010	*Sta 1215+03*	*635.2*	*LF*				
					1292.8	*18*	*71.82*	*LF/WD*
	8/31/2010	*Sta 1202+61*	*1928.0*	*LF*				
					1054.0	*17*	*62.00*	*LF/WD*
	9/29/2010	*Sta 1192+07*	*2982.0*	*LF*				
					769.0	*24*	*32.04*	*LF/WD*
	11/2/2010	*Sta 1183+85.72*	*3751.0*	*LF*				
					877.0	*20*	*43.85*	*LF/WD*
	11/30/2010	*Sta 1175+09.17*	*4628.0*	*LF*				
					368.0	*4*	*92.00*	*LF/WD*
	12/6/2010	*Sta 1171+93*	*4996.0*	*LF*				
		Original limit, TBM-1			*392.0*	*6*	*65.33*	*LF/WD*
	12/14/2010	*Sta 1167+48.8*	*5388.0*	*LF*				
					883.5	*18*	*49.08*	*LF/WD*
	1/9/2011	*Sta 1158+65.6*	*6271.5*	*LF*				
					943.5	*12*	*78.63*	*LF/WD*
	2/4/2011	*1150+00*	*7215.0*	*LF*	***Completion of TBM-1 (West Bore)***			
	Total To Date		*7215.0*	*LF*		*157*	*45.96*	*LF/WD*
Forecast	***3/4/2011***	*Extract TBM*				*20*		
	4/8/2011	*Remobe/Reset TBM*				*25*		
	4/8/2011	*Sta 1221+89*	*0.0*	*LF*				
					7827	***170***	*45.96*	*LF/WD*
	12/2/2011	*Sta 1143+80*	*7827.0*	*LF*				

- *With an actual completion date of 02/04/11 for TBM-1, the IPS suggests that extraction of the TBM should be complete on or about 03/04/11.*

- Transfer of the concrete lining of the east bore (72nd to 86th Streets) from contract C1 to contract C5B is anticipated to satisfy New York City Fire Department (NYCFD) requirements and coordinate the work of these packages. To date, a proposal detailing the corresponding schedule reduction has not been submitted by the Contractor.

For Contract C2A:

- *Completion of Critical ConEd work on West Side 2nd Ave between 95th & 96th Sts.*
- *A temporary "work around" for the ECS ductbank interference with sewer line at SC 95-2 was approved; the work continues.*
- *ECS MH interference with Slurry wall panel at 95th Street – Additional field investigation to be coordinated with ECS/Verizon after CFA piles installed.*
- *Approval of AWO #48 for Schedule Recovery/Mitigation – Awaiting Contractor concurrence of proposed Excusable & Impactable dates.*
- *Redesign of 1802 2nd Ave Building Stabilization. DHA design under review.*
- *Additional 60" Water Main – DEP approval, Fabrication, Installation requiring Shut-down.*

For Contract C3:

- *None to date.*

For Contract C4B:

- *Concurrent C4B excavation/blasting activities and TBM mining operations south of the C4B site have been facilitated by a Memorandum of Understanding defining operational interfaces and restrictions between the two projects. Cooperation between the two organizations has facilitated progress and is in the best interests of the project.*
- *On February 16, 2011, MTACC presented its modified muck handling system to the FTA for review and comment. This system attempts to address perceived system shortcomings and public objections. FTA planners found the proposed system "not inconsistent" with the EIS and the mitigation techniques contained therein. FTA requested MTACC to solicit public comment ASAP, so that issues raised could be completely evaluated and incorporated into the system if possible. MTACC is planning a series of meetings in early March to inform the public of this operation and solicit input for enhancements to lessen its impact.*

For Contract C5A:

- *Completion of critical ConEd cable pulling and splicing to the east side of 83rd Street and at the Chase Bank Building by mid-March 2011.*

Concerns and Recommendations:

MTACC continues to make progress in resolving problem issues and avoiding major construction delays.

The PMOC considers an improvement in the processing times for AWOs to be an area requiring improvement.

2.1.4 Force Account (FA) Contracts

Status:

During February, 2011 no MTA Force Account expenditures were made.

Observation:

Force account involvement in the project has been very low to date. A substantial portion of Contract 3 will be performed during "General Outages". This will be the first significant Force Account expenditure.

Concerns and Recommendation:

None

2.1.5 Operational Readiness

Status:

NYCT has developed a Concept of Operations Plan for the SAS Project. Operational Readiness will be validated during NYCT's Pre-Revenue Service testing scheduled from March 21, 2016 to June 15, 2016. SAS and NYCT met during February 2011 to start dialog on what tests will be performed and possible generation of a test plan.

Observation:

The specific tests with its associated durations that NYCT will perform during Pre-Revenue Service testing are not identified on the IPS.

Concerns and Recommendation:

The PMOC recommends that the Concept of Operations Plan be updated to reflect any changes from the optimization effort which could affect the SAS project. An Operational Readiness review will be performed as outlined in FTA's OP54.

2.2 Third-Party Agreement

Status:

No change this period.

Observation:

None

Concerns and Recommendation:

None

2.3 Contract Packages and Delivery Methods

Status:

There was no change to the delivery method for any of the construction packages during February 2011.

On February 4, 2011, MTA received and opened bids for Contract C-26008 (5B). Results are as follows:

Rank	***Bidder***	***Bid***
1	*Skanska/Traylor, JV*	*$301,860,000*
2	*Conti/J.H. Reid, LLC*	*$334,777,433*
3	*Shea/Kiewit/Schiavone, JV*	*$391,717,426*
4	*Barnard/Judlau, JV*	*$453,631,980*
5	*Granite/Yonkers/SK, JV*	*$460,443,000*

The estimated construction cost (escalated for YOE) for this package (including the AFI Contingency) contained in Revision 8 of the SAS Construction Cost Estimate was $394,280,000. The NYCT Engineer's Estimate for this package was $402,000,000.

Observation:

The NYCT Engineer's Estimate consists of an evaluation of all construction costs late in the bid period. As such, the difference between the Engineer's Estimate and the Revision 8 Estimate ($7,720,000) can be considered an indicator of cost growth resulting from scope increases and clarifications incorporated late in the design phase and during the bid period (addenda).

In its bid, the low bidder indicated it could not comply with 49 U.S.C. 5323(j) (1), Buy America. The low bidder identified two specific components for which the contract technical specifications could only be satisfied via use of products not manufactured in the United States. NYCT Procurement, with assistance from FTA, are reviewing this matter.

Concerns and Recommendations:

Preliminary investigations suggest this matter can be resolved. However, the PMOC is concerned over the potential for delay involving administrative matters of this nature which should be avoidable. The PMOC recommends that:

- *Design reviews incorporate a "Buy America" review. When technical specifications are based upon the characteristics of specific products, it should be verified that these products conform to 49 U.S.C. 5323(j). Failure to do so should be evaluated as a "design error".*
- *Information regarding "Buy America" and "Ship America" requirements for this project should be distributed with bid documents for upcoming packages. Future packages include a large number of manufactured products (and subcontractors). In addition, some confusion may exist in the contracting community as the No. 7 Line Extension Project does not contain these requirements.*

2.4 Vehicles

Status:

NYCT has stated in their Rail Fleet Management Plan and at project progress meetings that the purchase of vehicles for the SAS program may be cancelled based on NYCT projections for their fleet requirements to support the service including the SAS Phase 1 project. FTA and the PMOC have requested analysis to back up the NYCT calculations which according to the RFMP are based on a change to the NYCT fleet spare factor. A revised RFMP has been generated by NYCT, which bases the justification for not purchasing additional vehicles for the SAS project on the inclusion of service reductions in the calculation of fleet requirements.

Observations:

The PMOC had requested certain clarifications of the decision to decrease the total fleet spare factor and, thereby, the fleet requirement, by increasing the maintenance intervals for new millennium cars.

The NYCT RFMP now indicates that the 80 R-179 Option 2 cars is NYCT's preferred choice for satisfying Phase 1 of SAS, pending funding availability, however the recent service reductions provide ample spare vehicles, allowing NYCT to maintain a higher spare factor than before.

Concerns and Recommendations:

Should NYCT experience future growth or other circumstances that require the reversal of service reductions implemented in 2010, this issue, combined with the inclusion of vehicle orders that are not funded, could present challenges meeting service when the SAS service is initiated, requiring the identification of funds for the purchase of additional vehicles.

The apparent discrepancy between the plan to use the 80 R-179 Option 2 cars and the projected need for 132 cars for Phase 1 should be reviewed. The budget estimate of $153M should also be reviewed, based on the pricing arrived at for the base order of R-179 cars; Contract award for the base order R-179's is imminent.

2.5 Property Acquisition and Real Estate

Status:

Real estate acquisition is ongoing in support of contract procurement.

Observation:

300 East 72nd Street. Two residential tenants have completed their residential relocations. There are 1 residential tenant and 2 commercial tenants remaining. The right of way clear date for construction is the end of 2011.

MTA to re-submit 2 appraisals to FTA, Block 1417, Lot 45 – 200-201 East 63rd Street and Block 1397, Lot 61 – 124-126 East 63rd Street.

MTA RE and Legal working to complete the business relocation of Patsy's Pizzeria at 301 E 69th St by March 30, 2011.

1802 2nd Ave is a fragile building that requires structural remediation, some temp relocations required (possibly 4).

Remaining property acquisitions:

63rd Street Station:

1- 128 E 63rd St – TE - Air space above building needed for crane maneuvering
2- 124-126 E 63rd St – PE/TE in garage for rooftop mounted cooling tower
3- 186 E 64th St – PE/TE in garage for exhaust shaft
4- 200-201 E 63rd St – PE/TE for entrance – commercial relocation required

72nd Street Station:

1- 233 E 69th St – acquisition pending NEPA lawsuit
2- 260 E 72nd St – subsurface PE/TE needed for cavern

86th Street Station:

1- 250 E 87th St – PE/TE needed for ancillary facility

# Parcels Identified	# Parcels Closed	# Parcels Under Contract	# Parcels In Negotiation	# Parcels In Appraisal	# Parcels In Condemnation	# Parcels Right of Occupancy
95	**91**	**0**	**4**	**4**	**94**	**88**

Concerns and Recommendations:

PMOC will conduct a site visit in April 2011 to review status of condemnations and files; verify schedule of completion of all remaining relocations; meet with MTA Real Estate to discuss cost to cure on interior building utilities and how it impacts schedule deliverables; and review property management plan for FTA compliance under OP23. PMOC will review the temporary relocations and verify cost to complete budgets and schedules.

2.6 Community Relations

Status:

In late October, MTACC announced its "Good Neighbor Initiative" throughout the SAS construction area. Elements of this initiative include:

- Implementing way-finding signage for stores that is uniform, legible and clean
- Ensuring sidewalks are in good condition without holes, cracks, and trip hazards
- Replace bent/worn fencing
- Painting all barriers
- Maintaining sidewalks, crosswalks, and safe sight lines for pedestrians/vehicles
- Maintaining full access to businesses/residences

During February 2011, this initiative continued. Sidewalk improvements between 92nd and 93rd Streets have been completed and the area has been promoted as the model block". Similar improvements are planned for much of the area affected by construction.

Observation:

Outreach efforts of this nature are necessary to counter the ongoing complaints of businesses allegedly affected by construction. Responses to community and business concerns are timely. The project recognizes that more community buy-in is needed to minimize the probability of community distress.

Concerns and Recommendations:

None

3.0 PROJECT MANAGEMENT PLANAND SUB-PLANS

Status:

Revision 8 of the SAS Project Management Plan was submitted to the PMP for review and comment on January 21, 2011. *The PMOC is continuing its review of this submission.*

Observations:

The SAS Project Management Team has developed Candidate Revisions to its Project Management Plan. These proposed revisions and accompanying work papers have been provided to the PMOC. The PMOC will utilize the Candidate Revisions in its review of the PMP.

Concerns and Recommendations:

None at this time

3.1 PMP Sub Plan

Status:

As part of the Candidate Revision process for the update of the PMP, the Sub-Plans have been identified and will be referenced in the section of the PMP, which relates to its subject matter. The Sub-Plans will be updated to assure consistency with the PMP.

Observations:

SAS Sub-Plan documents to be referenced 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 Procedure.

Concerns and Recommendations:

None

3.2 Project Procedures

Status:

No change in status this period.

4.0 PROJECT SCHEDULE STATUS

4.1 Schedule Status

Status:

IPS Update #55 was received on February 28, 2011 and is based on a Data Date of February 01, 2011. Update #55 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports. Project schedule completion milestone dates remained essentially unchanged for this period. MTACC continues to forecast completion of all construction on 07/18/16, with 165 calendar days of contingency until its committed RSD of 12/30/16.

Table 4-1: Summary of Schedule Dates

	FFGA	***Forecast Completion***	
		Grantee	***PMOC***
Begin Construction	*January 1, 2007*	*03/20/2007A*	*03/20/2007A*
Construction Complete	*December 31, 2013*	*May 23, 2016*	*October 2017*
Revenue Service	*June 30, 2014*	*December 30, 2016*	*February 2018*

During the month of February 2011, progress continued on the four (4) active construction packages:

- *C-26002 (C1) TBM Tunneling and 96th Street Box,*
- *C-26005 (C2A) 96th Site Work and Heavy Civil,*
- *C-26013 (C5A) Open Cuts and Utility Relocation, and*
- *C-26007 (C4B) 72nd Street station Cavern mining & Lining.*

The IPS does not currently reflect the C4B contractor's work plan. The C4B baseline CPM schedule was not incorporated into the IPS as previously forecast. Field construction is anticipated to commence for contract packages C3 and C5B over the next several months.

The following are some significant changes in this month's IPS compared to previous month:

1. *Seven (7) work days of critical delay to Substantial completion of Contract 5CA from 27-Sep-11 to 05-Oct-11. The overall time for RSD remains unchanged because the PMT adjusted relationships between contracts to absorb the delay.*
2. *Hand-off from C2A to C2B for Station Concrete 95th to 97th Streets was delayed from 25-Apr-13 to 06-May-13.*
3. *The award of the C2B construction package has been delayed to 23-Apr-12 from 11-Oct-11.*
4. *The award of the C6 construction package has been delayed to 29-Sep-11 from 18-Jul-11.*

The IPS is a management level schedule that integrates all ten construction packages along with design, procurement, startup and other support activities. The current IPS update of February 1, 2011 indicates that the project is on schedule to achieve an RSD of December 30, 2016 and

has 165 calendar days of float. Five of the ten contracts are in construction and the status of individual construction contracts is illustrated in the table below.

Table 4-2: Summary Schedule Performance by Construction Package

Pkg. #	*Award Date*	*Contract S/C*	*Forecast S/C*	*% Complete*	*Status*	*Monthly Change (+/-)*
C1	*3/20/07*	*7/20/10*	*6/19/12*		*+100 Weeks*	*-1 week*
C2A	*5/28/09*	*01/07/13*	*4/23/13*		*+15 Weeks*	*+1 week*
C2B	*Future*					
C3	*1/13/11*	*5/13/14*	*5/13/14*		*On Time*	*N/A*
C4B	*10/1/10*	*10/31/13*	*10/31/13*		*On Time*	*N/A*
C4C	*Future*					
C5A	*7/9/09*	*1/7/11*	*9/27/11*		*+36 Weeks*	*No slip*
C5B	*Future*					
C5C	*Future*					
C6	*Future*					

1. *Monthly Change reflects schedule gain/loss over most recent reporting period. Negative sign denotes time gain and positive sign denotes time loss.*
2. *The contracts marked as Future have not been bid or awarded.*
3. *Contract 3 and 4B were recently awarded. Baseline schedules have not been incorporated into the IPS and limited actual progress has occurred to date.*

Observations and Analysis:

Table below summarize the significant changes between IPS Updates #54 and #55.

Table 4-3: IPS Update #55 Changes

	IPS #54			*IPS #55*			
Activity ID	*Work Days*	*Start Date*	*Finish*	*Work Days*	*Start Date*	*Finish Date*	*Finish Variance*
C2 - 96th Street Station	*1577*	***29-May-09***	*15-Jun-15*	*1584*	*29-May-09*	*24-Jun-15*	*7*
Design - 96th Street Station, Architectural + ME	*205*	***12-Jul-10***	*29-Apr-11*	*225*	*12-Jul-10*	*27-May-11*	*20*
C2A - Site Work & Heavy Civil Construction	*1019*	***29-May-09***	*24-Apr-13*	*1026*	*29-May-09*	*3-May-13*	*7*
C2B - Procurement & Award	*210*	*22-Dec-10*	*11-Oct-11*	*191*	*1-Aug-11*	*23-Apr-12*	*139*
C2B - Construction	*960*	*11-Oct-11*	*15-Jun-15*	*828*	*23-Apr-12*	*24-Jun-15*	*7*

	IPS #54			IPS #55			
Activity ID	***Work Days***	***Start Date***	***Finish***	***Work Days***	***Start Date***	***Finish Date***	***Finish Variance***
Hand-off from C2A to C2B Station Concrete 97th to 99th Streets	*0*		*12-Mar-13*	*0*		*21-Mar-13*	*7*
Hand-off from C2A to C2B - Ancillary #2	*0*		*22-Mar-13*	*0*		*2-Apr-13*	*7*
Hand-off from C2A to C2B (Ancillary #2)	*0*		*22-Mar-13*	*0*		*2-Apr-13*	*7*
C2B - Substantial Completion	*0*		*15-Jun-15*	*0*		*24-Jun-15*	*7*
C5A - 86th Station - Excavation & Utility Work	*572*	***08-Jul-09***	*27-Sep-11*	*578*	*8-Jul-09*	*5-Oct-11*	*6*
C5A - Construction	*572*	***08-Jul-09***	*27-Sep-11*	*578*	*8-Jul-09*	*5-Oct-11*	*6*
C6 - Procurement/Award	*222*	***10-Sep-10***	*18-Jul-11*	*275*	*10-Sep-10*	*29-Sep-11*	*53*

1. ***Boldface*** *indicates actual dates*
2. *Negative sign in Finish Variance denotes time gain and positive sign denotes time loss*

Of significance is the change made to the C2B construction activities. The award of this package was delayed from 11-Oct-11 to 23-Apr-12, duration of approximately six months. However, the construction completion date was delayed by only seven (7) days. The C2B package is controlled by two handoff activities originating with Package C2A. These handoff activities are included in Table 4-3. Reduction in C2B contract duration prior to these handoff activities is not considered critical, as major work could not commence until the handoff(s). The delay of seven days to the C2B construction completion is a result of the seven day delay in construction progress to C2A.

The following table identifies milestones or other significant "target activities" that will be monitored over Q12011. IPS #54 will serve as the "baseline" for this near-term evaluation of actual vs. planned schedule performance.

Table 4-4: Quarterly Schedule Target Comparison

Act #	*Description*	*IPS Update #54 DD=01/01/11*	*IPS Update #55 DD=02/01/11*	*Difference (CD)*
C-26002; TBM Mining				
S6100d	*Mine West Tunnel; Launch Box to 65th Street (Complete)*	*22-Feb-11*	*04-Feb-11A*	*-18*
S9100b,c,d	*Mine East Tunnel; 96th Street Launch Box to 63rd Street (Start)*	*02-May-11*	*14-Apr-11*	*-18*
C-26005; 96th Street Station – Site Work/Heavy Civil				
4S200	*Commence Slurry Walls*	*23-May-11*	*02-Jun-11*	*10*
A117	*Commence Temp SOE @ Ancillary #1*	*08-Jun-11*	*14-Jul-11*	*36*
C-26007; 72nd Street Station – Cavern Exc./Heavy Civil				
CS110	*Complete 69th Street Shaft Exc.*	*17-Jan-11*	*11-Feb-11*	*25*
CN110	*Complete 72nd Street Shaft Exc.*	*14-Jan-11*	*22-Feb-11*	*39*
C-26006; 63rd Station Upgrade				
035	*Commence Demo*	*08-Apr-11*	*08-Apr-11*	*0*
C-26013; 86th Street Station – Utility & Site Work				
5N020	*Start Drill/Blast/Exc. – North Shaft*	*07-Jun-11*	*02-Jun-11*	*-5*
HO2	*C5A->C5B Handoff; Mech. Mining @ North Shaft*	*25-Jul-11*	*20-Jul-11*	*-5*

1. *"Baseline" schedule for this quarter is Update #54*
2. *Negative (-) value indicates earlier forecast*

Concerns and Recommendations:

Schedule progress during February 2011, with the exception of construction procurement, generally proceeded in accordance with the previous month's forecast.

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update#55 (DD=02/01/11), major activities that can be anticipated over the upcoming 90 days include the following:

Table 4-5: 90-Day Look-Ahead Schedule

Activity ID	Start	Finish	Note
C1- TBM Construction – Tunnel 96th Box (91st to 95th)			
De-Assemble & Backup TBM	*02/04/11A*	*03/09/11*	*1*
Develop/Verify Freeze Zone complete	*01/10/11A*	*04/01/11*	
Reposition & Reassemble TBM for East Drive	*03/09/11*	*04/13/11*	
C2A – 96th Street Station Sitework & Heavy Civil			2
Begin Slurry Wall Const. (Stage 4; 95th to 97th St, West Side)	*06/02/11*		
C5B – 86th St. Station Mining & Lining (IFB)			
Bid Opening		02/04/11A	
Award		03/29/11	3
C6 – Systems (RFP)			
RFP Available to Proposers (Part 2)	*03/07/11A*		
Submit Proposals	*05/18/11*		*4*

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *Completion of TBM-1 achieved on February 4, 2011. Extraction of TBM proceeding according to schedule.*
2. *Advertisement for C2B delayed by six months as a result of construction delays to C2A.*
3. *Bids received and opened on February 4, 2011. Award scheduled for late March 2011.*
4. *Step 1 (short-list) was completed and RFP documents made available to pre-qualified teams on 03/07/2011.*

Concerns and Recommendations:

The SAS Project Team actively manages the project schedule and has been able to hold the currently calculated RSD for over six months. However, construction delays have significantly eroded float on secondary paths, creating a situation where a delay to the calculated RSD and the reduction in schedule contingency is likely.

Geotechnical and utility-related issues remain the major schedule risks. Managing the interfaces between contracts has been successful to date. Cooperation among contractors (C1/C4B) has resulted in the relaxation of schedule constraints.

4.3 Critical Path Activities

Status:

The project critical path is essentially unchanged this period. Table 4-6 summarizes the critical path contained in IPS Update #55.

Table 4-6: Critical Path Activities

Activity ID		Update #55 Duration	Start	Finish
C5	***86th Street Station***	***1232***	***01-Feb-11***	***27-Sep-15***
C5A	*86th Station - Excavation & Utility Work*	*246*	*01-Feb-11*	*05-Oct-11*
C5B	86th Station - Mining & Lining	551	10-Oct-11	19-Nov-13
C5C	86th Station - Architectural & MEP Finishes	435	19-Nov-13	24-Jul-15
C6	System Installation (86th Street Station)	170	12-Jan-15	4-Sep-15
C6	**Systems (Track, Signal, Traction Power & Communication)**	**185**	**7-Sep-15**	**20-May-16**
C6	Construction	185	7-Sep-15	20-May-16
NYCT	Pre-Revenue Operation Test & Revenue Service	85	21-Mar-16	15-Jul-16
	Phase 1 Substantial Completion	0	15-Jul-16	15-Jul-16
	Phase 1 Schedule Contingency	**120**	**18-Jul-16**	**30-Dec-16**
	Completion w-Schedule Contingency	120	18-Jul-16	30-Dec-16

The formal IPS critical path, as reported, is initiated by Contract 5A utility relocations and shaft excavations. In October 2011, upon completion of the south shaft by C5A, the critical path is "handed off" to Contract 5B where it follows the south cavern excavation and structural concrete work until November 2013, when the critical path shifts to Contract 5C. This Contract continues with the structural construction and turns over select work areas to Contract 6 in September 2015. Systems installation continues through May 2016, followed by system testing and startup activities. *With minor variations resulting from construction delays on C5A, this path has been "critical" for approximately six months.*

The calculated completion of Phase 1 is currently July 15, 2016, which provides 120 WD of contingency (float) for the RSD on December 30, 2016, which is unchanged from the last update.

Observations:

The PMOC has identified the top "near-critical" paths of the IPS:

- *The second most critical path has a total float of 10 days and begins in the Contract 1 TBM excavation. After completion and withdrawal of the TBM, the path connects to the C5B 86th Street Station for cavern mining. From that point forward, the path intersects the current critical path. The MTACC has maintained the overall duration of the TBM East Bore; however, it has increased the "freeze zone" activity by 10 days and correspondingly reduced the durations of subsequent TBM mining to compensate for the account for the loss in time. The PMT did not report this change in their variance report. Variances in TBM production and general CPM accuracy render the 10 days of float difference between these paths as insignificant. For practical purposes, these two paths are concurrent critical paths.*

- *MTACC reported that progress on Contract 2A was delayed as a result of cable TV/sewer line interferences (AWO#066 and 068). C2A continues to encounter problems and delays resulting from utility interferences, which continue to pose a risk to the contract completion and this near-critical paths, which extends through C2B via three handoffs, followed by C6 and project startup and turnover. This near-critical path actually consists of several paths, with float values ranging from 22 to 45.*
- *Based on a construction package award on 29-Sep-11, the C6 Systems packages will be within 37 days of the critical at its Notice-To-Proceed. Traction power system installation and testing appears to be the most critical work installed and commissioned by C6; however, C6 shares responsibility for several other near-critical paths via testing and commissioning of station systems. This path is of great concern due to the numerous risks that remain for delays to subsequent procurement, construction and systems integration and testing activities.*

Concerns and Recommendations:

The trend of gradual erosion of float along secondary paths continues. TBM mining and work at 96th Street Station are generally maintaining their respective schedules, but the Systems Package procurement experienced further delay. As a result of the many exterior constraints on the project as well as the inflexibility of the construction logic, the ability to economically accelerate the schedule to recover lost time appears extremely limited.

4.4 Compliance with Schedule Management Plan

Status:

The PMOC has established a structured review of the MTACC's compliance with its Schedule Management Plan, developed as part of the overall ELPEP process. The initial formal review was conducted this period.

Observations and Analysis:

Schedule Management Plan compliance is based upon achieving four (4) "Beneficial Outcomes" identified in the ELPEP and related documents.

1. Establish the IPS' usefulness as a management tool for the planning and organizing the work, and as a decision support tool for evaluation of alternatives and risk-based scenarios.
2. MTACC is actively managing and controlling individual packages and the overall project with input from and consideration of the project schedule.
3. Provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments.
4. Facilitate communication of project time-related information, priorities, issues, and changes, as may be required.

Specific Processes, Products and Metrics cited in the ELPEP and companion documents, supporting each "Beneficial Outcome" have been summarized and grouped in a worksheet. A summary of the review conducted this period:

- *MTACC "Conforms" to 18 of 24 performance measures. Unchanged from last month.*

- *MTACC "Does Not Conform" to 5 of 24 performance measures. Unchanged from last month*
- *Information was incomplete on 1 of 24 performance measures. The situation wherein the schedule activity linkage to a WBS or functional equivalent has not occurred to date.*

There are several items noted as a part of this review that should receive attention:

- *The IPS lacks adequate activities representing the station finish package "dustoff period" This omission, which has been reported for several periods, is considered a significant nonconformance. It impacts the potential accuracy and reliability of the IPS.*
- *Maintaining the 25 CD float separation between the "critical" path and "near-critical" paths. Recovery of lost time may not be possible due to physical and logical constraints.*
- *Incorporation of construction schedule information for C3 and C4B into the IPS. The IPS is not a "hard" summary of the contractors' schedules. As such, it should not be necessary to wait for an approved baseline to incorporate contractor-based information in the IPS.*
- *It is noted that excessive float exists for certain activities, primarily for the station finish contracts. This suggests incomplete schedule logic and represents a potential compromise to the reliability and accuracy of the IPS forecast.*

Concerns and Recommendations:

In general, the PMOC notes that MTACC is realizing the beneficial outcomes established by the ELPEP. Based upon this analysis, the MTACC's IPS currently "Conforms" to the Schedule Management requirements established by the ELPEP.

The PMOC is concerned that the IPS is not being updated with all available information. As such, its value as a model of the project is compromised. Several of the issues noted above need to be addressed in the immediate future.

5.0 PROJECT COST STATUS

5.1 Budget/Cost

Status:

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

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

Std. Cost Category (SCC)	Description	FFGA	MTA's Current Working Budget
10	Guideway & Track Elements	$612,404,000	$728,617,000
20	Stations, Stops, Terminals, Intermodal	$1,092,836,000	$1,276,632,000
30	Support Facilities	0	$562,000
40	Site Work & Special Conditions	$276,229,000	$537,621,000
50	Systems	$322,708,000	$247,627,000
60	ROW, Land, Existing Improvements	$240,960,000	$292,000,000*
70	Vehicles	$152,999,000	0**
80	Professional Services	$796,311,000	$885,941,000
90	Unallocated Contingency	$555,554,000	$482,000,000
Subtotal		$4,050,000,000	$4,451,000,000
Financing Cost		$816,614,000	$816,614,000
Total Project		**$4,866,614,000**	**$5,267,614,000**

* Includes $47M Cost-to-Cure ** FTA has not approved the removal of the vehicles from the scope of work.

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.

As previously reported in November 2010, the updated Phase 1 Cost Estimate (Revision 8) included a reduction in direct construction cost and escalation of approximately $50.4 million. The PMOC questioned this reduction and considers it inconsistent with recent comparisons of project construction cost estimates vs. bid received. The PMOC requested MTACC to conduct a complete review and validation of these estimate revisions. MTACC has reported that this effort is complete. *Presentation of final results to the PMOC could not be scheduled prior to the completion of this report. The results of this analysis will be presented in the PMOC's next monthly report.*

Observation and Analysis:

For the active construction contracts, AWOs to date are summarized as follows:

Table 5-2: AWO Summary

Contract	% Complete	Award	Exposure		Notes
			$	% of Award	
C26002 (1)	80.20%	$337,025,000	*$52,305,327*	*15.52%*	AWO#92 is included in this evaluation
C26005 (2A)	28.70%	$325,000,000	*$20,965,247*	*6.45%*	Options 1 & 2 included in award value
C26013 (5A)	56.60%	$34,070,039	*$7,222,740*	*21.42%*	
C26007 (4B)	2.70%	$447,180,260	*($124,446)*	*-0.03%*	
C26006 (3)	0.0%	$176,450,000			
TOTAL		$1,319,725,000	*$80,444,071*	*6.10%*	
TOTAL		$696,095,000	*$80,568,517*	*11.58%*	w/o C26007
TOTAL		$696,095,000	*$61,883,517*	*8.89%*	w/o C26007 and C26002, AWO#92

Conclusions and Recommendations:

Construction cost increases will be the primary driver of cost variances. To date, the project has experienced cost growth equal to approximately 9% of the value of construction contracts awarded. This is greater than the AWO contingency contained within the project budget.

AWO expenditures to date have been driven by geotechnical, utility relocation and "fragile buildings". Geotechnical risks will persist throughout cavern excavation (C4B, C5B), however utility and "fragile building" risks will be lessened in subsequent packages as a result of reduced scope and mitigation measures implemented by the SAS Project Team.

Based on available information, total construction cost growth due to AWOs should not exceed 10%. Using the information prepared by MTACC as part of Cost Estimate Update #8, the PMOC will provide a similar evaluation for non-construction cost increases.

5.2 Cost Variance Analysis

Status:

Using the MTACC financial reporting format contained in its Capital Construction Reports, the PMOC prepared an independent Estimate-At-Completion (EAC) for Phase 1 of the Second Avenue Subway Project. This estimate is based on the following:

- *An update construction phase EAC presented in prior Monthly Reports. Updated as appropriate with contemporaneous package award and AWO information.*
- *The results of MTACC's draft cost estimate (Revision 8) for the project and the subsequent validation study.*
- *Cost information provided by the SAS project team through established periodic reporting.*

- *A risk-based evaluation by the PMOC. Each category of cost was evaluated. Risks of future cost growth were evaluated based upon level of completion, inherent volatility and project history. Low, medium and high levels of risk mitigation were considered.*

Observation and Analysis:

The PMOC's Estimate-At-Completion for the SAS (Phase 1) project is summarized in the following table:

Component	Current Working Budget	PMOC EAC	High Mitigation	Medium Mitigation	Low Mitigation	Comment2
EIS	$11,599,831	$11,599,831	$11,500,000	$11,500,000	$11,500,000	Complete
PE & FP Eng.	$227,338,756	$400,000,000	$395,000,000	$397,500,000	$400,000,000	Design phase 99.9% complete. Low risk of major cost increase
Final Design	$199,746,256					
Const Support	Incl	$42,000,000	$27,000,000	$34,500,000	$42,000,000	High mitigation = current budget of $27M. Low mitigation = revised estimate of $42M
Reserve	$6,315,157					
SUBTOTAL	**$445,000,000**	**$442,000,000**				
Construction	$3,034,697,117	$3,326,344,978	$3,066,715,000	$3,150,000,000	$3,326,344,978	High mitigation = current MTACC EAC. Low mitigation = current PMOC EAC
NYCT F/A	$33,000,000	$40,000,000	$40,000,000	$45,000,000	$50,000,000	High mitigation = current MTACC EAC. Low migiation = +$10M
Eng Force Account	$70,000,000	$70,000,000	$70,000,000	$75,000,000	$80,000,000	Maintain current budget as high mitigation. Cost growth mitigated by adding positions under other categories via consultants. Low mitiation = +
Utilities	$64,000,000	$64,000,000	$70,000,000	$75,000,000	$85,000,000	Revised Estimate (Rev 8) = Medium Mitigation.
CCM	$96,000,000	$96,000,000	$105,000,000	$110,000,000	$120,000,000	Revised Estimate (Rev 8) = Medium Mitigation.
Artwork	$6,000,000	$6,000,000	$6,000,000	$6,000,000	$6,000,000	
Rolling Stock	$0	$0				Direction from FTA required.
Real Estate	$245,000,000	$200,000,000	$185,000,000	$200,000,000	$245,000,000	Revised Estimate (Rev 8) = Medium Mitigation.
Cost To Cure	$47,000,000	$20,000,000	$32,000,000	$37,000,000	$47,000,000	Revised Estimate (Rev 8) = Medium Mitigation.
OCIP	$172,000,000	$172,000,000	$172,000,000	$175,000,000	$180,000,000	Current quote thru 12/31/16 = high mitigation. Med/Low mitigation represents estimated increases due to schedule slippage
Exec Reserve	$238,302,883					
TOTAL	$4,451,000,000	$4,436,344,978	$4,180,215,000	$4,316,500,000	$4,592,844,978	

This approach yields a range for the Estimate-At-Completion between $4.180B and 4.593B. This estimate does not include the cost of railcars nor does it include any finance cost.

Conclusions and Recommendations:

Based on the information available, the PMOC's EAC essentially validates the reasonableness of the MTACC's Current Working Budget of $ 4.451B. This effort should be revisited periodically, at a minimum quarterly, to incorporated updated information and evaluate its effect on the overall EAC.

5.3 Project Funding Status

Status:

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

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

Grant Number	Amount ($)	Obligated ($)	Disbursement ($) thru *February 28, 2011*
NY-03-0397	$4,980,026	$4,980,026	$4,980,026
NY-03-0408	$1,967,165	$1,967,165	$1,967,165
NY-03-0408-01	$1,968,358	$1,968,358	$1,968,358
NY-03-0408-02	$24,502,500	$24,502,500	$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	$167,810,300	$167,810,300	$167,810,300
NY-03-0408-06	$274,920,030	$274,920,030	*$65,172,633*
NY-03-0408-07	*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	$8,652,432
NY-95-X015-00	$45,800,000	$45,800,000	0
Total	$628,911,200.00	$628,911,200.00	*$356,383,235.00*

* Denotes American Recovery and Reinvestment Act (ARRA) funds

Local funds totaling *$792,299,756 ($1,148,682,991- $356,383,235)* have been spent as of *February 28, 2011*. MTA's approved 2000-2004 and 2005-2009 Capital Programs provided $2,964 million for SAS Phase 1 ($1,050 million and $1,914 million respectively). The proposed 2010-2014 Capital Program budgets $1,487 million to complete the SAS Phase 1 project. Of the $1,487 million, $545 million was approved for the 2010-2011 timeframe. MTA needs to approve $942 million for the 2012-2014 timeframe.

Observation and Analysis:

Concern over the availability of both local and federal funding has prompted considerable speculation regarding the future of the project. The PMOC's evaluation of funds currently obligated to the project vs. forecast expenditures is summarized as follows:

$4,451 - Project Cost (MTACC Current Working Budget)
$ 222 - Railcars
$4,673 - TOTAL PROJECT COST
$2,964 - Prior NY Local Funding (Capital Plans; 2000-2004, 2005-2009)
$1,709 - Subtotal
$ 545 - Funding received from 2010-2014 Capital Plan
$1,164 - Subtotal
$ 629 - Federal funding to date
$ 535 - Shortfall; with railcars
$ 313 - Shortfall w/o railcars

Without additional funding, no matter what the decision on railcars, SAS can award contracts scheduled through mid-2012 (C2B). Without additional funding, and without railcars, SAS can award contracts through 2012 (C4C).

Concerns and Recommendations:

The availability of funds and its impact on the manner in which the project progresses is a key concern for all parties. PMOC will continue to monitor the situation and assist all parties in evaluating the funding situation.

6.0 PROJECT RISK

6.1 Initial Risk Assessment

No change this period.

6.2 Risk Updates

Status:

No updates for this period.

6.3 Risk Management Status

Status:

Two Risk Analyses are currently underway:

- *MTACC has received preliminary results of the 86th Street Station risk analysis. Minor comments and revisions were provided. Final report should be available in March 2011.*
- *C26009 Systems Risk Analysis will be conducted from March 9 through March 11, 2011.*

Observation and Analysis:

The results of these analyses will be evaluated against IPS schedule and project budgets. Adjustments will be made where warranted.

Conclusions and Recommendations:

None.

6.4 Risk Mitigation Actions

Status:

Mitigation of construction risk is an ongoing process. In recent months, the PMOC has identified the extended duration required by MTACC/NYCT to process construction AWOs. This problem has been acknowledged by MTACC. To date, minimal progress on improving the situation has been achieved.

Observation:

The matter was discussed at the February 24, 2011 Joint ESA/SAS Quarterly Meeting. At that time, it was determined that a follow-up meeting would be held to compare the SAS process with that of ESA. This was considered to be beneficial because ESA has a much more efficient process for administering AWOs.

Concerns and Recommendations:

As noted previously, the prompt and fair management of construction contractor business concerns has been demonstrated to be a critical ingredient in successful execution of the construction phase of a major capital project. Stated another way, efficient contract management is a risk that is unavoidably retained by the owner. An owner's capacity to mitigate construction risk must necessarily address its ability to manage and amend construction packages.

The PMOC considers improvement in the SAS Project's capacity to efficiently process AWOs to be a key element of its Construction Risk Mitigation Capacity and Capability. The PMOC will continue to promote efforts to improve this process.

6.5 Cost and Schedule Contingency

6.5.1 Cost Contingency

Status:

The ELPEP requires the MTACC to develop a Cost Contingency Management Plan (CCMP), which will define how the MTACC will forecast required contingency funds, manage and transfer all project cost contingency funds, and how the minimum level of contingency will be maintained. The MTACC submitted an updated CCMP, which is currently under review. MTACC has agreed to maintain minimum contingency balances referenced in the ELPEP:

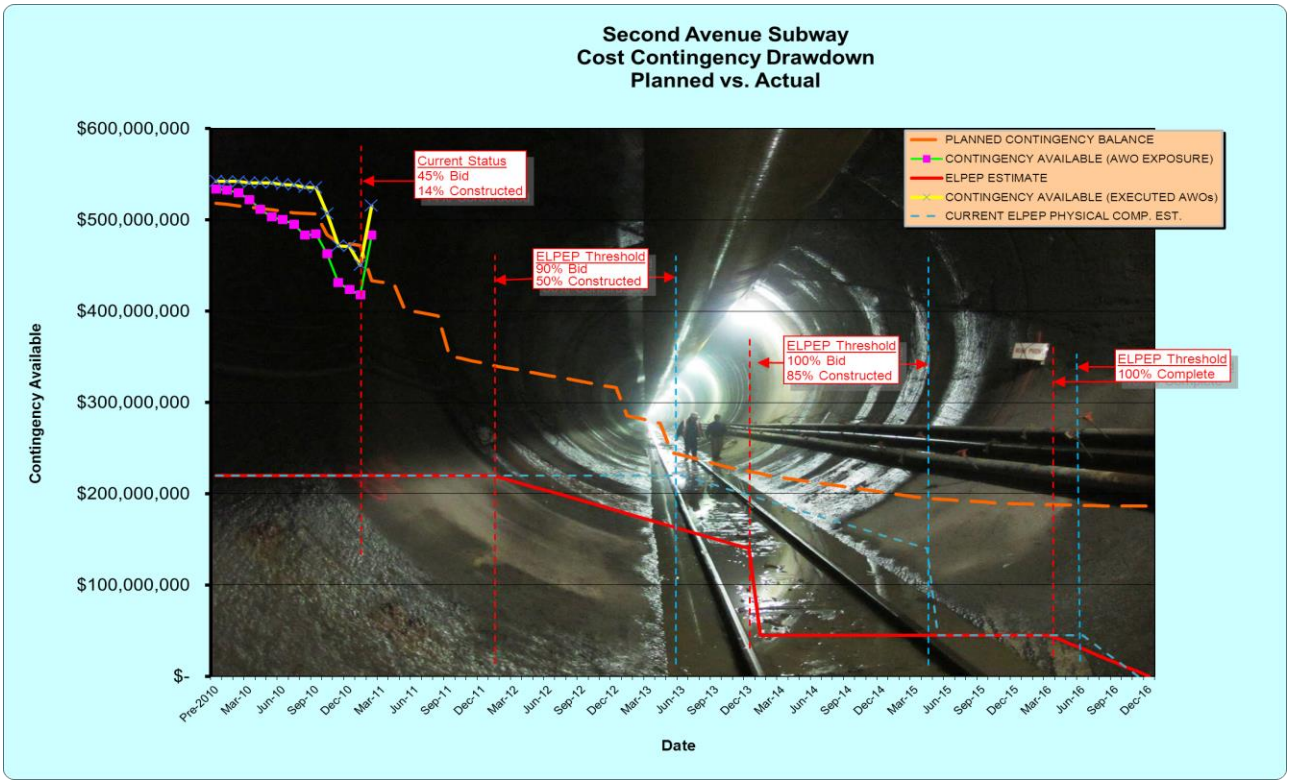
- $220 million through 90% Bid and 50% Construction
- $140 million through 100% Bid and 85% Construction
- $45 million through Start Up and Pre-Revenue Operations

Observations and Analysis:

Using the MTACC's methodology, the PMOC has developed a contingency analysis for the project. Through February 2011, cost contingency status is summarized as follows:

Planned Balance:	*$*	*433,652,667*
Actual Balance (using executed AWOs):	*$*	*515,458,238*
Actual Balance (using AWO Exposure):	*$*	*483,607,827*

In graphic form:



The MTACC Draft Cost Management Plan indicates that Available Contingency is calculated based upon executed AWOs. In the opinion of the PMOC, Available Contingency should be calculated using the "AWO Exposure" value tabulated in the monthly AWO tracking logs. Contingency balance using both "AWO Exposure" and "Executed AWOs" is presented in the graphic above. As demonstrated, using either method, the current contingency balance exceeds both the planned balance and the ELPEP Threshold.

Significant changes which occurred during February 2011 include:

1. *Corrected graphic to accurately reflect AFI contingency usage.*
2. *Incorporated the effect of the C5B bid received on February 4. Although this contract has yet to be awarded, there has been no expression of dissatisfaction in the results by the contractor. For consistency and comparison, both the "Planned Contingency Balance" and the available contingencies have been adjusted in February 2011.*

<u>Concerns and Recommendations:</u>

MTACC is using a rigorous and disciplined methodology for tracking and reporting on construction contract cost growth. The PMOC notes the following:

1. *Contingency usage is based upon an evaluation of the construction phase only. Construction cost is expected to be the primary driver of contingency usage, however, other elements of the project may draw upon (or provide surplus) contingency funds. The*

current methodology should be extended to include all design phase and other project soft costs, to provide a total picture of contingency usage.

2. *Construction contingency usage should be based upon "AWO Exposure" as discussed above.*
3. *Available contingency (based on either executed AWOs or exposure) exceeds the "planned" drawdown. This is primarily due to the inclusion of the favorable C5B bid results.*

6.5.1 Schedule Contingency

Status:

Schedule contingency reported by MTACC, based upon Update #55 of the SAS IPS exceeds threshold limits established by the ELPEP. Schedule contingency measured against MTACC's RSD commitment date of 12/31/16 is 165 CD. When measured against the FTA/PMOC RSD estimate of 02/28/18, the contingency is currently 589 CD.

Observations:

There has been no net change in schedule contingency during this period.

Table 6-1: Schedule Contingency *

IPS Update #	**50**	**51**	**52**	**53**	**54**	***55***
Data Date	09/01/10	10/01/10	11/01/10	12/01/10	01/01/11	*02/01/11*
Contingency (CD)						
RSD=12/31/2016	165	185	172	165	165	*165*
RSD=02/28/2018	589	617	604	589	589	*589*

*Estimated by PMOC based on IPS Update #55, provided by MTACC

It is the PMOC's opinion that the current IPS is a reasonable model of the SAS construction phase and that the contingencies shown above are reasonable indicators of the current schedule status of the project.

Concerns and Recommendations:

The PMOC will continue to evaluate the IPS for reasonableness and suggest improvements to enhance its reliability as a forecasting tool.

PMOC comments and concerns regarding the IPS are contained in Section 4.4 of this report.

7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column 1 – Critical

2 – Near Critical

Number with Date Initiated	Section	Issue/Recommendation	Criticality
SAS-09-Jan10	3.1 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.	2
SAS-10-Jan10	3.2 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.	2
SAS-11-	3.3	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,	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
Jan10	Procedures	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.	
SAS-15-Oct10	4.4 SMP Compliance	The PMOC recommends the addition of schedule activities representing the "dustoff" phase for Contracts 2B, 4C and 5C were not added this period. Adding these activities to the IPS will enhance its usefulness, reliability and provide improved visibility for these tasks. **Update (November 2010):** Not completed to date. PMOC to follow up. **Update (December 2010):** Not completed to date. PMOC to follow up. **Update (January 2011):** Not completed to date. PMOC to continue follow-up effort. **Update (February 2011):** Not completed to date.	2
SAS-16-Oct10	5.1 Budget/Cost	The PMOC recommends validation of the MTACC's Update #8 of the Phase 1 Project Estimate prior to accepting the stated savings generally in excess of $50 million. **Update (November 2010):** MTACC reports this effort is in progress. **Update (December 2010):** No results received to date. PMOC to follow up. **Update (January 2011):** MTACC's validation of "soft cost" associated with Update #8 of the Project Estimate is ongoing. **Update (February 2011)**: Reportedly complete. MTACC and PMOC unable to meet for	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
		presentation discussion of results prior to this report. PMOC to follow-up for next month.	
SAS-18-Oct10	6.5.1 Schedule Contingency	The PMOC will review the SAS Project Team's distribution and allocation of schedule contingency. **Update (November 2010):** MTACC has allocated schedule contingency to select schedule events on a limited basis to reflect a degree of risk or uncertainty in achieving a proposed modification or mitigation to the involved activities. This is not a return to the "handoff activity" contingency distribution methodology. PMOC will monitor this practice monthly to ensure schedule results are not being manipulated through this practice. **Update (December 2010):** The PMOC has reviewed the IPS for indication of manipulation through the use of negative lags or similar processes. It is the PMOC's opinion that the IPS is a reasonable model of the manner in which this project is planned to be performed. PMOC will continue to review. **Update January 2011):** IPS monitoring is ongoing. Currently reviewing Update #54.	2
SAS-19-Dec10	4.3 Critical Path Activities	PMOC will utilize 50-WD threshold for identification of "near-critical" float paths. MTACC to identify and investigate potential mitigation strategies at this level to aid in implementation if the 25 WD threshold is breached. **Update (February 2011):** Proceeding in accordance with item above. See Report.	2
SAS-20-Dec10	2.1.3	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 an 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	1

Number with Date Initiated	Section	Issue/Recommendation	Criticality
		accelerate SAS 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.	2
SAS-22-Dec10	2.1.1 Design	MTACC has reported 100% design complete for several packages for which 100% Design Memorandums have not been published. PMOC requests distribution of these Memorandums ASAP. **Update (February 2011):** Received 100% Design Memorandums for all remaining packages. Review indicates outstanding design work is reasonable in scope, does not present a significant risk to cost or schedule growth and is being reasonably managed by MTACC.	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.		
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.	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
DHA	DMJM+Harris and ARUP
DOB	New York City Department of Buildings
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
HLRP	Housing of Last Resort Plan
IFP	Invitation for Proposal
IPS	Integrated Project Schedule
LF	Linear Feet
MEP	Mechanical, Electrical, Plumbing
MTACC	Metropolitan Transportation Authority – Capital Construction
N/A	Not Applicable
NTP	Notice to Proceed
NYCDEP	New York City Department of Environmental Protection
NYCT	New York City Transit
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
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