

PMOC MINI MONTHLY REPORT

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

October 1 to October 31, 2010



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, OP 41, OP53, OP54

Urban Engineers of New York, P.C., 2 Penn Plaza, Suite 1103, New York, New York 10121

PMOC Lead, Charles A. Halboth, PE, 212-736-9100; cahalboth@urbanengineers.com

Length of time on project: 0.5 years

TABLE OF CONTENTS

	Page No.
SECOND AVENUE SUBWAY (SAS)	
EXECUTIVE SUMMARY	1
ELPEP SUMMARY	3
1.0 GRANTEE’S CAPABILITIES AND APPROACH	5
1.1 TECHNICAL CAPACITY AND CAPABILITY	5
1.2 FTA COMPLIANCE DOCUMENTS	9
2.0 PROJECT SCOPE.....	10
2.1 STATUS & QUALITY: DESIGN/PROCUREMENT/CONSTRUCTION	10
2.2 THIRD-PARTY AGREEMENT	15
2.3 CONTRACT PACKAGES AND DELIVERY METHODS	15
2.4 VEHICLES.....	15
2.5 PROPERTY ACQUISITION AND REAL ESTATE.....	16
2.6 COMMUNITY RELATIONS	17
3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS.....	17
3.1 PROJECT MANAGEMENT PLAN.....	17
3.2 PMP SUB PLAN.....	17
3.3 PROJECT PROCEDURES	17
4.0 PROJECT SCHEDULE STATUS	17
4.1 SCHEDULE STATUS	17
4.2 90-DAY LOOK-AHEAD.....	19
4.3 CRITICAL PATH ACTIVITIES	20
4.4 COMPLIANCE WITH SCHEDULE MANAGEMENT PLAN.....	22
5.0 PROJECT COST STATUS	23
5.1 BUDGET/COST	23
5.2 COST VARIANCE ANALYSIS	25
5.3 PROJECT FUNDING STATUS	25
6.0 PROJECT RISK	26
6.1 INITIAL RISK ASSESSMENT	26
6.2 RISK UPDATES	26
6.3 RISK MANAGEMENT STATUS	27

6.4	RISK MITIGATION ACTIONS	27
6.5	COST AND SCHEDULE CONTINGENCY	28
7.0	LIST OF ISSUES AND RECOMMENDATIONS	31
8.0	GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS	34

TABLES

TABLE 1 PROJECT BUDGET/COST TABLE.....	4
TABLE 2 SUMMARY OF CRITICAL DATES.....	5
TABLE 1-1 STANDARD COST CATEGORIES.....	7
TABLE 1-2 APPROPRIATED AND OBLIGATED FUNDS.....	8
TABLE 2-1 DESIGN COMPLETION DATES	10
TABLE 2-2: CONSTRUCTION PROCUREMENT MILESTONES	11
TABLE 4-1 SUMMARY OF CRITICAL DATES	18
TABLE 4-2 90-DAY LOOK-AHEAD SCHEDULE.....	19
TABLE 4-3 CRITICAL PATH ACTIVITIES	21
TABLE 5-1 ALLOCATION OF CURRENT WORKING BUDGET TO STANDARD COST CATEGORIES	23
TABLE 5-2 ESTIMATE AT COMPLETION COMPARISON	24
TABLE 5-3 BID PRICE COMPARISON	24
TABLE 5-4 APPROPRIATED AND OBLIGATED FUNDS.....	25

APPENDICES

APPENDIX A - LIST OF ACRONYMS

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

PROGRESS AND ISSUES

Contract C-26002 continued Tunnel Boring Machine (TBM) mining activities this month with significant deterioration in production. Progress this period averaged approximately 32 LF/WD. MTACC has reforecast all TBM activities based upon actual production rates achieved in the various rock types to date. For further discussion, see Section 2.1.3 of this report.

On October 29, 2010, the MTACC reached an Agreement-in-Principle with S3 Constructors regarding AWO #92 (TBM tunnel extension). Minor details remain to be finalized. Submission to the December 2010 MTA Board is anticipated. This Agreement ensures continuation of the TBM work through the East Tunnel.

Additionally, Contract Package 4B (72nd Street Mining & Heavy Civil Work) was awarded on October 1, 2010.

Key Issues to be monitored during the upcoming period:

- *Potential startup of the ground freeze system installation of the ground freeze system at the northern limit of the West Bore. The C-26002 (C1) contractor has completed drilling and installing freeze pipes and forecasts the completion of the entire system during the week of November 22, 2010. Coordination with the actual progress of the TBM in the East Tunnel will determine when the actual freeze of the ground starts.*
- *The bid opening for Contract C-26006 (63rd Street Station Upgrade) has been rescheduled to November 4, 2010.*
- Coordination with Contract C-26005 (2A) for the tie-in of the 30” gas main and early access that will enable the contractor to accelerate performance of utility work between 94th and 95th Streets.

MINI 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 the end of October 2010, 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 has been made in all areas. A significant contribution to the delays in implementing the ELPEP has been the requirement for intermediate deliverables by the MTACC to establish mutual and complete understanding of the concepts and requirements of the ELPEP which in many cases differed from the original MTACC interpretation of the ELPEP. October 15 marked the official goal for complete implementation of the ELPEP, which has not been completed as of this writing. The PMOC projects that the full implementation of the ELPEP will require several more months of cooperative effort between the FTA and MTACC. This month, implementation of the PMP Update Procedure and completion of the Technical Capacity & Capability (TCC) Implementation Plan were reported as complete, and near complete by MTACC, respectively. At the October 28, 2010 bi-weekly meeting, SAS has reported that they will issue a revised PMP as individual sections get approved, sending these individual sections to the PMOC/FTA for intermediate review. The goal for completion of SAS PMP revisions is December 2010. On October 26, 2010, FTA provided MTACC the Schedule Management Plan Acceptance Letter. SAS will revise their PMP and MTACC will update their SMP to include the items in the SMP acceptance letter and present them to their Technical Advisory Committee (TAC) prior to Thanksgiving. MTACC has submitted a revised draft Cost and Cost Contingency Management Plan, which the PMOC and FTA are reviewing, with comments to be provided prior to the mid November ELPEP meeting. MTACC has begun work on their demonstration of ELPEP conformant Construction Risk Mitigation Capacity, distributing a draft summary of the processes that address stakeholder issues at the October 28 ELPEP Meeting. The PMOC pointed out that this is a good first step to define processes, with the next step to define how MTACC will demonstrate a functioning program and processes. The SAS demonstration of their Retained Risk management process for the 4B project will be held in early November 2010.

The PMOC, FTA, MTA and SAS staffs held bi-weekly update meetings on October 14 and 28. Based on the ELPEP effective date of January 15, 2010, the following items are overdue:

- MTA will finalize the Cost and Cost Contingency Management Plan for the SAS project in conformance with ELPEP requirements.
- MTA completing the implementation of the PMP Revision Process.
- MTA will 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.

Observation:

Based on ELPEP requirements, the overall progress remains behind schedule; however, this month MTACC has made further progress in the implementation of the PMP Update Process, the completion of the TCC PMP review, and the finalization of the Cost Management Plan. The draft recovery plan is under FTA/PMOC review.

FTA and MTACC continue to participate in a cooperative process to produce the deliverables described in the ELPEP. The bi-weekly ELPEP progress meetings serve to review progress and look ahead to upcoming milestones. MTACC has completed its TCC Implementation Plan PMP review, developed and ranked its CRs and has begun implementing PMP changes. This approach is in line with the TCC Implementation and PMP Update Acceptance Letter. This month, the SAS Project Team has continued to be proactive in the support of the ELPEP implementation effort.

Concerns and Recommendations:

The PMOC has recommended that the MTACC develop their proposed method to demonstrate compliance with the ELPEP requirements for risk mitigation capacities. The OP53 process utilized by the FTA to verify the process in individual contract development does not replace this requirement. MTACC has begun developing the intermediate deliverable, which is a description of their procedures, which can then be verified.

Table 1 Project Budget/Cost Table

	FFGA			FFGA Amendments	MTA's Current Working Budget (CWB)		Expenditures as of August 31, 2010	
	(\$ Millions)	(%) Grand Total Cost	Obligated (\$ Million)	TBD	(\$ Millions)	(%) Grand Total Cost	(\$ Millions)	% of Grand Total Cost
Grand Total Cost:	4,866.614	100	3,592.911		5,489.614	100	1,067.115	19.44
Financing Cost	816.614	16.78			816.614	14.88		
Total Project Cost:	4,050.000	83.22	3,592.911		4,673.000	85.12	1,067.115	19.44
Total Federal share:	1,350.693	27.75	628.911		1,350.693	24.60	288.646	5.26
Total FTA share:	1,300.000	96.25	600.818		1,300.000	94.62	277.534	5.06
5309 New Starts share	1,300.000	100	600.818		1,300.000	94.62	277.534	5.06
Total FHWA share:	50.693	3.75	28.093		50.693	5.38	11.112	.20
CMAQ	48.233	95.15	25.633		48.233	96.67	8.652	.16
Special Highway Appropriation	2.460	4.85	2.460		2.460	3.33	2.460	.04
Total Local share:	2,699.307	55.47	2,964.000		3,322.307	60.52	778.469	14.18
State share	450.000	16.67	100.000		450.000	13.54		
Agency share	2,249.307	83.33	1,145.782		2,872.307	86.46		
City share	0	0			0	0		

Data for this table was obtained from the Transportation Electronic Award Management (TEAM) system and MTACC's grant management department.

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 #51, data date of October 1, 2010.

* From ELPEP

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

a) Grantee's Organization

b) Staff Qualifications

c) Grantee Staffing Plan

Status:

Design: DHA has reduced its staff to coincide with the completion of the final design of the project.

Construction Consultant Management: At each phase of the Project and prior to the award of each construction contract, the CCM (PB) is required to submit to the SAS Program Manager, for review and approval, a staffing plan for each of the construction contracts and the CCM Contract. The CCM is required to manage the Construction Contracts in accordance with NYCT's Project Management Guidelines (PMG) and Project Management Procedures (PMP).

Observation:

Current construction contracts are being adequately staffed. With the award of Contract 3 additional CCM staffing will be required.

Concerns and Recommendations:

None. PMOC will continue to periodically review the plan to ensure that key staff is available in accordance with the needs of the project and that absences do not adversely impact or hinder the execution of the project.

d) Grantee's Physical Resources

Status:

With the reduction in the design staff, efforts are underway to relocate the Project office from 20 Exchange Place to 2 Broadway.

Observation:

The relocation of the Project office will have no adverse effect on the project.

Concerns and Recommendations:

None

e) History of Performance, Adequacy of Management Systems

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

- a) Adequacy of Project Management Plan and Project Controls**
- b) Grantee's Approach to FFGA and other FTA/Federal Requirements**
- c) Grantee's Approach to Community Relations, Asset Management, and Force Account Plan**
- d) Grantee's Approach to Safety and Security**

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

- a) Uniform Property Acquisition and Relocation Act of 1970**
- b) Local Funding Agreements**

1.1.4 Scope Definition and Control

1.1.5 Quality

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 project has experienced delays beyond the current FFGA Revenue Service Date of June 30, 2014 that realistically cannot be recovered. Over the last six months, the MTACC has updated and upgraded the Integrated Project Schedule in a manner which significantly improves the reliability of the forecast dates. The updating process has included TBM forecasts which now feature activity duration estimates based upon actual production rates previously achieved. Unfortunately, production has generally been less than planned, and further delays may result in

tunnel boring becoming “critical”. If this occurs, there is substantial risk of consequential delay to almost every other element of the project.

Conclusions and Recommendations:

Over recent periods, MTACC has actively managed the schedule in an effort to eliminate or mitigate additional delays and potentially recover some of the previous delay time, as well as develop additional schedule contingency (float) to ensure achievement of its current forecasted date of December 30, 2016.

The consequences of additional delay to the TBM mining will impact almost every subsequent element of the project. The PMOC recommends the MTACC begin to consider contingency plans for continued delays to the TBM mining.

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 October 31, 2010.

Table 1-2 Appropriated and Obligated Funds

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru October 31, 2010
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	\$165,245,665
NY-03-0408-06	\$274,920,030	\$274,920,030	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	\$288,645,967.00



* Denotes American Recovery and Reinvestment Act (ARRA) funds

A total of \$1,067,115,291 has been expended on the project through October 31, 2010, of which \$404,043,373 has been spent on design and \$358,174,876 on construction (MTACC's monthly financial input).

Observation:

Local funds totaling \$778,469,324 (\$1,067,115,291 - \$288,645,967) have been spent as of October 31, 2010. MTA's approved 2000-2004 and 2005-2009 Capital Programs included \$1,050 million and \$1,914 million respectively for SAS Phase 1. The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase 1 project.

Concerns and Recommendations:

None

1.1.8 Project Risk Monitoring and Mitigation

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. As of September 30, 2010

the OSHA Recordable Accident Rate increased to 4.07 from the previous rate of 3.77. The OSHA Lost Time Rate also increased from 1.45 to 1.55. Both rates are, however, below the national average of 4.2 and 2.2 respectively.

Observation:

SAS has an effective and proactive safety program.

Concerns and Recommendations:

None

1.2 FTA Compliance Documents

1.2.1 Readiness to Enter PE

1.2.2 Readiness to Enter Final Design

1.2.3 Record of Decision (ROD)

1.2.4 Readiness to Execute FFGA

1.2.5 Readiness to Bid Construction Work

Status:

The PMOC's implementation of the OP53 reviews during October 2010 included the following actions:

- *Scheduled and conducted two internal progress meetings per week and prepared and issued meeting minutes for SAS 4B and 5B Contract reviews, 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 4B and 5B packages continued with the research of needed documents in the EDMS system, and further chronology development;*
- *Assembled the latest 5C design documents and initiated OP53 reviews;*
- *Prepared development of Contract 4B and 5B Management and Control of Procurement evaluations.*

Observation:

None

Concerns and Recommendations:

None

1.2.6 Readiness for Revenue Operations

2.0 PROJECT SCOPE

2.1 Status & Quality: Design/Procurement/Construction

2.1.1 Engineering and Design

Status:

The following table summarizes Final Design Completion Dates as reported by the MTACC via the most recent update of the Integrated Project Schedule (IPS) update #51, dated October 1, 2010.

Table 2-1 Design Completion Dates

Contract	Description	IPS Update #50	IPS Update #51
Contract-26010 (2B)	96 th Street Station Finishes and (MEP)	09/30/2010	10/29/2010
Contract-26011 (4C)	72 nd Street Station Finishes and MEP	06/02/2010A	06/02/10A
Contract-26008 (5B)	86 th Street Station Cavern Construction	09/03/2010	09/03/2010A
Contract-26012 (5C)	86 th Street Station Finishes and MEP	09/30/2010	10/27/2010
Contract-26009 (6)	Systems –Track, Power, Signals and Communications	09/30/2010	10/26/2010

Observation:

Additional schedule slippage in the completion of design work for packages C2B, C5C and C6 was the result of staff reallocations during this period to provide support for active construction projects and/or ongoing construction procurements. The ongoing demobilization of the design team has resulted in isolated staffing shortfalls, which have been actively managed by the MTACC.

Concerns and Recommendations:

As previously noted, design work for all construction packages is “substantially complete”. Delays to station finish packages (C2B, C4C, and C5C) are not significant as these packages will not be advertised for construction bidding for at least 12 months. Completion of outstanding C6 work is being prioritized to support the ongoing procurement.

2.1.2 Procurement

Status:

Major construction procurement achievements during October 2010 include:

Contract C-26007 (C4B) was awarded to the joint venture of Schiavone-Shea-Kiewit (SSK) Constructors, JV, on October 1, 2010. Construction procurement phase for this package is complete.

The bid opening for Contract C-26006 (C3) was postponed until November 4, 2010. Adequate float exists in the schedule to ensure that no delays to the project will result from this additional postponement.

Contract C-26008 (C5B) was advertised on October 25, 2010.

A summary of “milestones” for ongoing or near-term procurements are summarized as follows:

Table 2-2: Construction Procurement Milestones

Activity #	Description	Date*	Comment
Contract C-26006 (C3): 63rd Street Station Upgrade			
C3 PR25	Procurement (IFB) Advertise & Bid	06/24/10A	<i>MTACC has delayed bid opening until 11/04/10.</i>
C3 PR30	Open Bids	11/04/10	
C3 PR40	Award Contract C3	12/17/10	
Contract C-26007 (4B): 72nd Street Station Cavern & Heavy Civil			
C4B PR20	Procurement (Open bids)	06/10/10A	<i>Contract Awarded. Procurement Phase Complete</i>
C4B PR30	Award Contract 4B	10/01/10A	
Contract C-26008 (C5B): 86th Street Station Cavern & Heavy Civil			
C5B 20m	Procurement – Advertise C5B Bid Package	10/25/10A	<i>Substantial contingency time between forecast bid date and award date</i>
C5B 25d	Procurement (IFB) Open Bids	12/21/10	
C5B PR40	Award Contract 5B	03/29/11	
Contract C-26009 (C6): Systems			
SYPR 20e	Authorization to Advertise	09/10/10A	
SYPR 20k	Prep RFP Short List	11/29/10	
SYPR 25t	Issue RFP	12/16/10	
SYPR 30a	Submit Proposals	03/14/11	

* Note: All dates reference IPS Update #51 (DD=10/01/10)

Observations and Analysis:

MTACC has provided the necessary technical resources to respond to bidder questions and generally support the procurement process to the extent possible.

Concerns and Recommendations:

The PMOC is concerned about the quantity of addenda (16) and the extension of the bid phase (2.5 months) for Contract Package 3 (63rd Street Station Upgrade). The PMOC recommends a detailed review and evaluation of the addenda issued in an effort to identify any systemic issues in the design or procurement process that can be improved upon.

2.1.3 Construction

Status:

There are *four* active construction contracts on the SAS project. Construction progress on these contracts through *October 2010* includes:

- **Contract C-26002 (C1) – TBM tunnels from 92nd Street to 63rd Street**
 - *TBM tunneling is continuing. Mining of the west tunnel has advanced to Station 1183+85.72, which is between 77th and 78th Streets. Approximately 3,751 LF (75%) of the 5,006 LF has been completed.*
 - *Completed work on ground freezing between 90th and 92nd Streets. Installation of freeze pipes has been completed; 105 freeze pipes and 5 temperature pipes have been installed. Mobilization of the Freeze Plant commenced on October 19, 2010.*
 - *Completed east side cellar tie work at 1802 and 1830 Second Avenue. Work at 1804 and 1834 Second Avenue is nearing completion. Work at 1814 Second Avenue is currently delayed until the building owner's scaffolding is removed.*
 - *Preparation work at 30" gas valve in advance of final purging and Contract 2A gas tie-in complete.*
- **Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation**
 - *Completed connection of 30" Gas main and slurry wall restoration on east side 2nd Avenue at 95th Street.*
 - *Completed sewer excavation/CFA pile installation, and commenced sewer work between 96th and 97th streets.*
 - *Started excavation between 95th and 96th streets.*
 - *Started "strut" jet grouting at Ancillary 2 and jet grouting at the North wall of building 1873 2nd Avenue.*
 - *Completed commercial and residential structural stabilization work at 1873 2nd Avenue.*
 - *Verizon crews working two shifts to ID cables at 98th Street ECS MH to resolve ECS/Sewer conflict.*
 - *CCB approved additional scope for DEP 60" water pipe at 99th Street.*
- **Contract C-26007 (C4B) 72nd Street Station Mining and Lining**
 - *Notice of Award issued to Schiavone Shea Kiewit (SSK) Constructors, JV, October 1, 2010.*
 - *Schedule Kick-off Meeting between MTACC/CCM & SSK held on October 20, 2010.*
 - *Preliminary CPM Schedule (NOA + 10 WD) submitted Oct 18, 2010. Review comments returned to SSK on Oct 28, 2010 with status "Revise and Resubmit."*
 - *Baseline CPM schedule due November 11, 2010 (NOA + 30 WD).*
 - *Early Construction activities anticipated over the next 90 calendar days include:*
 - *Mobilization*
 - *MPT Setup*
 - *Instrumentation Installation*
 - *Environmental – Noise & Water treatment plant*
 - *Encroachment removals*

- Temp utilities
- Test Blasts
- **Contract C-26013 (C5A) 86th Street Station Excavation, Utility Relocation and Road Decking**
 - North Shaft – Completed installation of new 12” water main interconnection and electrical ducts across 2nd Avenue at 87th Street (north side).
 - Completed electrical ductwork on 82nd to 84th & 83rd St, east of 2nd Ave.; ready for Con Ed cable pulling & splicing.
 - NYCDOT approved 2nd Ave lane reduction to 2 lanes, widening west side work zone to accommodate sewer installation concurrent with west side utility work. This resulted in 48 work day time savings.
 - Completed POE preparation of bus compartment & vaults on south side of 87th St; ready for Con Ed cable pulling and transformer vault work for 2nd week of November 2010.
 - Relocated work zone to center MPT configuration between 86th & 87th St. November 1st to start sewer & electric work at center area.

Observations:

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

For Contract C1:

- As of the end of October 2010, TBM progress can be summarized as follows:

Second Avenue Subway TBM Summary - PMOC Projection							
	Date	Station	Total Progress	Unit	Period Progress	Work Days/Period	Progress/Period
Actual	5/27/2010						
	6/8/2010	Sta 1221+89.0	0		261	16	16.31
	6/29/2010	Sta 1219+28.0	261	LF	374.2	22	17.01
	7/29/2010	Sta 1215+02.96	635.2	LF	1292.8	18	71.82
	8/31/2010	Sta 1202+61.0	1928	LF	1054	17	62.00
	9/29/2010	Sta 1192+07	2982	LF	769	24	32.04
	11/2/2010	Sta 1183+85.72	3751	LF			
	Total To Date		3751.0	LF		97	38.67
	IPS Scheduled To Date		5111.9	LF		97	52.70
	Net Ahead (+) Behind (-)		(1360.9)	LF		(26)	WD

Second Avenue Subway TBM Summary - PMOC Projection							
Forecast				1255	32	38.67	LF/WD
	12/17/2010	Sta 1172+09	5006	LF			
	AWO #92 Agreement in Principle on 10/29/10			2209	57	38.67	LF/WD
	3/7/2011	Sta 1150+00	7215	LF			
	4/4/2011				20		
	5/9/2011				25		
	5/9/2011	Sta 1221+89	0	LF			
				7827	202	38.67	LF/WD
	2/16/2012	Sta 1143+80	7827	LF			

- *TBM production declined significantly during October 2010. The quality of rock encountered during this period has deteriorated somewhat, but remains generally in accordance with conditions predicted by the GBR and other baseline documents. It is anticipated that the worst rock quality will be encountered in the vicinity of the 72nd Street Station during November and December 2010.*
- *As previously reported, the contractor has accepted responsibility for 85 WD of delay through June 1, 2010. To date, no Recovery Plan or other indication how the Contractor intends to recover this time has been presented.*
- *An agreement in principle was achieved with the contractor regarding AWO #92 on October 30, 2010. Based on this agreement, TBM mining of the west tunnel will be extended an additional 2,209 LF. Formal execution of the AWO is anticipated in December, 2010.*
- *The ground freeze plant is forecast to be ready for startup during the week of November 22, 2010. The actual date of startup will be coordinated with TBM progress to ensure efficient continuity of operations.*
- *MTACC continues work to resolve the interference with the TBM power feeders and C2A deck beam splice boxes. Resolution is not anticipated to interrupt the availability of power for the TBM.*

For Contract C2A:

- *Multiple interferences with ECS/Cable ductbanks and sewer lines.*
- *Negotiation and approval of AWO #48 for additional costs associated with schedule recovery plan (which is incorporated in the current IPS Update).*

For Contract C4B:

- *None to date.*

For Contract C5A:

- *Resolution of North Shaft area water and sewer utility amplifying drawings with DEP.*

- *Con Ed coordination agreement for schedule improvement for cable pulling and splicing work at north end for powering Chase Bldg.*
- *Potential schedule impact due to mechanical rock excavation of shafts after TBM is positioned south of the 86th St. Station Shafts.*

Concerns and Recommendations:

MTACC continues to make progress in resolving problem issues and avoiding major construction delays. Specific recommendations include:

- *Delays to overall TBM production continue and may result in a change to the overall project critical path. This contractor is also unwilling to accelerate construction to mitigate their schedule delays. MTACC needs to develop contingency plans for contract (C4B, C5B) coordination issues that may result from continuing delay to this work.*
- *Additional recommendations related to construction activities are contained within other sections of this report.*

a) Force Account (FA) Contracts

2.1.4 Operational Readiness

2.2 Third-Party Agreement

2.3 Contract Packages and Delivery Methods

Status:

Contract packages and the proposed methods of procuring and delivering construction services have not changed this period.

2.4 Vehicles

Status:

NYCT had stated in their draft 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 received and are reviewing the final Rail Fleet Management Plan. Preliminary comments are that

- *Extended SMI intervals will not be used to meet Phase 1 SAS service needs.*
- *The 80 Option 2 R-179 cars are the preferred alternative for meeting SAS Phase 1 service needs, pending funding availability.*
- *As an alternative, fleet growth on other “B” division lines might need to be postponed, per NYCT. Additional cars to support the “Q” line rerouting portion of SAS would reassign service reduction cars as necessary.*

Observations:

The following issues are under discussion with NYCT:

- *Scheduled Maintenance Interval (SMI) Extension Tests. This initiative was confirmed to be primarily a cost-savings and efficiency improvement effort. NYCT has submitted a written summary report on the matter, which the PMOC is reviewing.*
- *Fleet Spare Ratio. The PMOC explained that vehicles for SAS Phase 1 Service must be provided with no net effect on fleet operation and maintenance. NYCT stated that a decision to supply cars for SAS Phase 1 from the existing fleet had already been made. The upcoming R179 purchase was also identified as another near-term source of new vehicles.*

Concerns and Recommendations:

The PMOC noted that the total requirement for SAS Phase 1 service is 132 cars based on additional vehicles for the “W” service. This issue, combined with the inclusion of vehicle orders that are not currently funded, is likely to present challenges meeting service when the SAS service is initiated, requiring the identification of funds for the purchase of additional vehicles.

NYCT has decided that the near-term retirement of the R-32 and R-42 cars will be postponed and the R-44 fleet will be retired immediately. This retirement process has already begun. This decision was based on a structural survey of R-44 and remaining R-42 and R-32 cars conducted in early 2010 that showed “significant structural deterioration ...” in the R-44 fleet. The PMOC remains concerned that no assessment of the R-46 fleet was reported. NYCT noted that additional SMS work may be required to extend the R-46 service life several years beyond 2015-2017 when it reaches 40 years of service.

2.5 Property Acquisition and Real Estate

Status:

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

Real Estate acquisitions and relocation activities, commercial and residential, continue for the subway entrances and ancillary facilities at 96th Street, 86th Street, 72nd Street and 63rd Street. A summary of acquisition activity to date includes:

# Parcels Identified	# Parcels Closed	# Parcels Under Contract	# Parcels In Negotiation	# Parcels In Appraisal	# Parcels In Condemnation	# Parcels Right of Occupancy
95	78	0	17	4	94	88

Observations:

Court papers have been filed for the remaining acquisitions of Contract 4B properties. Court date is set for December 7, 2010.

As per SAS RAMP, two property appraisals and appraisal reviews, Block 1417, Lot 45 – 200-201 East 63rd Street and Block 1397, Lot 61 – 124-126 East 63rd Street, were sent to FTA on 10-28-10 for review and approval based on their appraised values of more than \$2 million.

All residential tenants in the 4 properties acquired in fee in September 2009 have been permanently relocated.

Move out agreements for business tenants: Tony DiNapoli's and Falk Drugs are being finalized.

Appraiser has begun work for 250 E 87th St (Contract 5) appraisal.

Concerns and Recommendations:

PMOC will continue its monitoring of the real estate acquisition and tenant relocation processes. A site visit is being planned to focus on issues associated with condemnation, business tenant relocation, temporary rock bolt easements, and cost to cure of interior building utilities.

2.6 Community Relations

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

3.1 Project Management Plan

3.2 PMP Sub Plan

3.3 Project Procedures

Status:

As part of the Candidate Revision process for the update of the PMP, relevant MTA, MTACC or NYCT procedures will be referenced in the section of the PMP, which relates to its subject matter.

Observation:

MTACC is behind schedule in developing and implementing its revised procedures. These procedures will, in many cases, replace the procedures that are currently referenced in the PMP. In that the procedures will be replacing previous procedures of the same type, the review and update of the PMP through the ELPEP process is not contingent upon the completion of these procedures.

Concerns and Recommendations:

The PMOC will review procedure updating and implementation concurrently with its review of the PMP update.

4.0 PROJECT SCHEDULE STATUS

4.1 Schedule Status

Status:

IPS Update #51 was received on October 29, 2010 and is based on a Data Date of October 1, 2010. Update #51 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 a 07/15/16 RSD, with 165 calendar days of contingency until its committed RSD of 12/30/16.

Table 4-1 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	February 2018

During the month of September 2010, progress continued on the three (3) active construction packages: C-26002 (C1) TBM Tunneling and 96th Street Box, C-26005 (C2A) 96th Site Work and Heavy Civil, and C-26013 (C5A) Open Cuts and Utility Relocation; and the IFB Procurement Process continued for Contract C-26006 “63rd Street Station Upgrades” and C-26007, 72nd Street Station Cavern Mining & Lining.” The award of the 72nd Street package occurred on October 1, 2010. Bid opening for the 63rd Street package has been rescheduled to November 4, 2010.

Observations and Analysis:

Four significant changes were incorporated into Update #51 of the Integrated Project Schedule.

- Forecast durations for TBM mining activities for Contract Package C1 were adjusted based upon actual production experience drilling through the different rock strata indicated in the contract documents. The revised rates incorporated in the schedule are:*

- *Type I & II – 55 LF/WD*
- *Type III – 45 LF/WD*
- *Type IV – 28 LF/WD*
- *Type V – 20 LF/WD*

Incorporation of these revised production rates significantly affected the forecast completion dates for the TBM work and reduced available float available for the handoffs to the 72nd Street (4B) and 86th Street (5B) contracts.

- Incorporation of the Schedule Mitigation Plan for Contract C-26005 “96th Site Work and Heavy Civil Works,” where the negative overlap used previously to represent the mitigation plan was removed and replaced with summary activities representing the Contractors mitigation plan. Incorporation of the mitigation planned recovered over four months of schedule delay. Removing the “negative lag” and incorporating actual schedule logic representing this recovery plan was recommended by the PMOC in its September 2010 Monthly Report.*
- Incorporation of the Schedule Mitigation Plan for Contract C-26013 “86th St. Station Open Cuts & Utility Relocation” where NYDOT approved a lane reduction along 2nd Avenue in order to eliminate a future traffic phase that benefited both the Contract schedule and SAS project Schedule by 48 and 35 WD respectively. As a result of this, the schedule gained 12 WD of schedule contingency for use along this path.*

4. *Incorporation of the “final” Systems Testing and Commissioning (T&C) Logic changes resulting from a combined review effort with MTACC and NYCT Operators. Upon completion, MTACC confirmed the following with NYCT:*
 - *The new logic is representative of what is needed for testing and commissioning of the Second Avenue Subway system*
 - *The forecast duration of T&C activities was reduced by 22 WD.*

On October 29, 2010, the MTACC and S3 Constructors achieved an agreement-in-principle for the incorporation of AWO#93 (Extension of TBM Mining) into the C26002 Construction Contract. This agreement ensures continuous TBM activity throughout the East Bore. Documentation of the Agreement and AWO processing is expected to be completed in December 2010.

Concerns and Recommendations:

Two issues that occurred in October 2010 have significant impact on the Project.

1. *Reforecasting the TBM schedule based upon actual production achieved in similar conditions provides a more realistic estimate of the timing of future TBM activities. TBM mining is now on a secondary critical path that is within 25 CD of the most critical path. Further deterioration of TBM performance could result in this work becoming “critical” and controlling the overall project duration.*
2. *The revised TBM schedule forecast, coupled with the formal agreement to mine an additional 2209 LF in the East Bore, affects the coordination of the ground freeze work at the start of the West Bore. Detailed coordination between TBM and ground freeze activities will be required to ensure efficient and continuous operations.*

4.2 90-Day Look-Ahead

Status:

Based on the Integrated Project Schedule (IPS) Update #51, which was received this period, major activities that can be anticipated over the upcoming 90 days include the following:

Table 4-2 90-Day Look-Ahead Schedule

Activity ID	Start	Finish	Note
C1- TBM Construction – Tunnel 96th Box (91st to 95th)			
TBM 1 st Run – Mine West Tunnel from 96 th Street Launch Box to 65 th Street	05/27/10A	02/15/11	1
Complete Installation of Freeze Plant		11/15/10	
Develop Freeze Zone		02/01/11	
C3 – 63rd Street Station Upgrade (IFB)			
Bids Due		11/04/10	
Award Contract		12/17/10	
C4B – 72nd St. Station Existing Demo/Mining & Lining (IFB)			
Bid Opening		06/10/10A	

Activity ID	Start	Finish	Note
Notice of Award		10/01/10A	2
C5A – 86th Street Station Open Cut/Utility Relocation (C-26013)			
Con Ed Issues Layout Drawings for Gas Main Changes – CRITICAL DELAY-		08/20/10A	
C5B – 86th St. Station Mining & Lining (IFB)			
Advertise	10/25/10A		3
Bid Opening		12/21/10	4
Award		03/29/11	
C6 – Systems (RFP)			
RFP Available	10/13/10A		3
Submit Proposals	03/15/11		
CM1188 – Design Services MOD #57			
PE/FD for Ancillary #2 @ 86 th St Station; Contract 5B	05/17/10A	09/10/10A	
PE/FD for Ancillary #2 @ 86 th St Station; Contract 5C	05/24/10A	10/20/10	
Systems	06/21/10	10/20/10	

Observations and Analysis:

90-Day Look-Ahead Notes:

1. *Revised completion date (approximately 1 month delay from September 2010 Report) for the East Bore is a result of the reforecast of future durations based upon experience to date.*
2. *Actual date of contract award notification.*
3. *Document Availability date as posted on the MTACC Procurement Web Site.*
4. *As posted on the MTACC Procurement Web Site and in IPS Update #51.*

Design work for Packages 5B, 5C and 6 is generally complete. Activities remaining to be completed include completion of all design reviews, 100% design cost estimates and constructability reviews, and similar tasks. Completion of this work is not delaying any related construction procurements.

Concerns and Recommendations:

In late October 2010, the Bid Date for Contract 3 was further extended to November 4, 2010. As previously noted, this contract has substantial float and extending the bid to enhance competitive opportunities is obviously beneficial to the project. However, a total of 16 addenda were issued for this project and the bid date extended by approximately 2.5 months. The PMOC recommends a detailed review of the addenda in an effort to evaluate whether any systematic problems or issues are adversely affecting the bidding process.

4.3 Critical Path Activities

Status:

Table 4-3 summarizes the critical path contained in IPS Update #51.

Table 4-3 Critical Path Activities

<i>Activity ID</i>		<i>Update #51 Duration</i>	<i>Start</i>	<i>Finish</i>
C5	86th Street Station	1286	1-Oct-10	4-Sep-15
C5A	86th Station - Excavation & Utility Work	251	1-Oct-10	11-Oct-11
C5B	86th Station - Mining & Lining	551	11-Oct-11	20-Nov-13
C5C	86th Station - Architectural & MEP Finishes	435	20-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	23-May-16
C6	Construction	185	7-Sep-15	23-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

Observations:

The critical path begins this period with completion of Stage 3S Utility work (electrical and ECS), drill and blast work for the South Access shaft is completed at the SW quadrant, closely followed by South access shaft work in the SE quadrant (Stage 4S), then completion of the South Center portion (Stage 5S) of the access shaft. Upon completion, the C5A South Shaft is formally handed over to C5B to begin mining operations at the south end of the cavern followed by cavern concrete work. The critical path then travels from C5B into Contract C5C mezzanine concrete work, followed by concrete and 1st and 2nd fix work in the south Ancillary (No. 1).

The critical path of the program is still going through contracts C5A, C5B, C5C, and C6. The SAS project management team has changed significant number of activities within contract C5A as a result of incorporating the recently implemented schedule mitigation plan combined with the proposed consolidation of several MPT phases.

Over the past two updates, the TBM activities have lost approximately 44 WD of float as a result of reforecasting future durations based on past experience in similar conditions. Effectively, there are now two concurrent critical paths on the project. Delays to TBM mining have reduced reported float to less than 25 CD, a value which the PMOC considers to be lower than the expected level of accuracy for a schedule spanning six years.

Concerns and Recommendations:

The SAS Project Team continues to take steps to upgrade and enhance the reliability of the IPS. The continuing dialog with NYCT regarding startup and commissioning activities, the 100% Design Phase updates of each package schedule and reforecasting the TBM schedule based upon actual experience are examples of this effort. This effort should continue in order to continue to improve the usefulness of the IPS.

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, and issue 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 to facilitate the review. A summary of the review conducted this period:

- MTACC "Conforms" to 20 of 24 performance measures.
- MTACC "Does Not Conform" to 2 of 24 performance measures.
- Information was incomplete on 2 of 24 performance measures. The concept of "schedule resiliency" may need to be revisited. The lack of an industry standard definition for this concept has presented problems in determining the appropriate means to demonstrate and test it.

In general, the PMOC notes that MTACC is realizing the beneficial outcomes established by the ELPEP and currently "Conforms" to the requirements established by the ELPEP.

Concerns and Recommendations:

MTACC has demonstrated its intent to continue to enhance the IPS and use it as an integral part of managing the project. Updated TBM forecasting has resulted in a secondary critical path with float less than the ELPEP-specified 25 CD minimum. This is one of the more significant schedule management criteria contained within the ELPEP, and the manner by which the MTACC manages this situation may have a significant impact on the project outcome.

As noted last month, additional activities representing the "dustoff" phase for Contracts 2B, 4C and 5C were not added this period. The PMOC recommends this enhancement be incorporated in the IPS as soon as possible. The visibility afforded to these tasks by including them in the IPS significantly reduces the risk of an omission or delay in their completion.

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

Standard 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.

At the October 2010 Monthly Cost and Schedule Meeting, held on November 10, 2010, MTACC provided the following update:

- 1. Update #8 of the Phase 1 Cost Estimate has been completed. This estimate includes 100% Design Cost estimates for all construction packages that have not been bid. This updated estimate will be distributed in the near future.*
- 2. Updated cost estimates currently indicate a reduction in direct construction cost and escalation of approximately \$50.4 million.*
- 3. At this time, there is no net change to the Estimate at Completion value. The additional funds will be held as an additional, unallocated AFL. One transfer to soft cost will be implemented, representing construction work actually performed by MTACC.*

At the summary level, the MTACC's indicated changes to the EAC are as follows:

Table 5-2 Estimate at Completion Comparison

Component	FFGA Budget	MTACC EAC	
		Current	Proposed
<i>Design Services</i>	<i>\$410,000,000</i>	<i>\$445,000,000</i>	<i>\$445,000,000</i>
<i>Construction</i>	<i>\$2,601,211,756</i>	<i>\$2,935,000,000</i>	<i>\$2,925,716,000</i>
<i>Soft Costs & Misc.</i>	<i>\$1,038,788,244</i>	<i>\$1,071,000,000</i>	<i>\$1,080,284,000</i>
<i>Subtotal</i>	<i>\$4,046,810,188</i>	<i>\$4,451,000,000</i>	<i>\$4,451,000,000</i>
<i>Finance Cost</i>		<i>\$816,614,000</i>	<i>\$816,614,000</i>
TOTAL		\$5,267,614,000	\$5,267,614,000

Source: Current Budget Summary, prepared by MTACC, November 10, 2010

The PMOC notes that this EAC omits the cost for new Rolling Stock, or corresponding reduction in funding, that this EAC does not represent an approved budget modification in any form.

Observation and Analysis:

MTACC's update #8 of the Phase 1 Cost estimate for this project should be thoroughly validated prior to formal acceptance. The C3 bids, received on November 4, 2010, were consistent with previous experience on this project; the low bid remained reasonably within budget only through the complete utilization of the AFI contingency. Stated another way, the MTACC construction cost estimates are consistently 10% or more lower than the low bidder's estimate, even though MTACC estimators assert they have priced their estimates "at the high end".

For packages bid to date, a summary of estimated vs. bid price is as follows:

Table 5-3 Bid Price Comparison

Package	Budget \$ (incl. AFI)	Reference	Bid Price	+/- (%)
<i>C1; TBM Tunneling</i>	<i>\$319,000,000</i>	<i>Estimate Rev. 5, 08/30/06</i>	<i>\$337,025,000</i>	<i>5.35</i>
<i>C2A; 96th St. Station Utility & Heavy Civil</i>	<i>\$261,000,000</i>	<i>Estimate Rev. 6, 07/11/08</i>	<i>\$325,000,000</i>	<i>24.52</i>
<i>C5A; 86th St. Station Utilities</i>	<i>\$25,000,000</i>	<i>Estimate Rev. 6, 07/11/08</i>	<i>\$34,070,000</i>	<i>36.00</i>
<i>C4B; 72nd St. Station Heavy Civil & Mining</i>	<i>\$448,035,000</i>	<i>Estimate Rev. 7, 10/08/09</i>	<i>\$447,180,260</i>	<i>-0.19</i>
<i>C3: 63rd St. Station Upgrades</i>	<i>\$175,370,000</i>		<i>\$176,450,000</i>	<i>0.61</i>
	<i>\$1,229,306,000</i>		<i>\$1,319,725,260</i>	<i>7.36</i>

C3 Bid Price assumes approval of low bidder.

As previously noted, as of the writing of this report, Update #8 of the Phase 1 cost Estimate has not been distributed. The estimated savings reported by the MTACC have significant

implications for the project. When this update is received, the PMOC will conduct a more complete evaluation.

Conclusions and Recommendations:

The PMOC is concerned about the MTACC estimating procedures with a particular emphasis on the means by which MTACC ensures that all scope is captured and included in the respective package cost estimates. The PMOC recommends that Update #8 of the Phase 1 Cost Estimate be reviewed and validated by independent estimators before utilizing the revised values as part of the published Estimate-At-Completion.

5.2 Cost Variance Analysis

5.3 Project Funding Status

Federal

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

Table 5-4 Appropriated and Obligated Funds

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru October 31, 2010
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	\$165,245,665
NY-03-0408-06	\$274,920,030	\$274,920,030	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	\$288,645,967.00



* Denotes American Recovery and Reinvestment Act (ARRA) funds

Local

No change from last month.

6.0 PROJECT RISK

6.1 Initial Risk Assessment

No change this period.

6.2 Risk Updates

Status:

Draft results from the risk assessment of Contract Package 3, conducted on July 29, 2010 were received by the PMOC on October 7, 2010. At the time of this analysis, the published cost estimate was update 7.2-63(3), dated June 2010. Key information for this contract is summarized in the following table:

63rd St. Station Cost Estimate Summary	
<i>Direct Cost (2010)</i>	<i>\$143,590,672</i>
<i>Direct Cost w/escalation</i>	<i>\$157,949,739</i>
<i>AFI</i>	<i>\$ 17,421,000</i>
<i>SUBTOTAL</i>	<i>\$175,370,739</i>
<i>Const. Contingency</i>	<i>\$ 8,768,537</i>
<i>Construction Budget</i>	<i>\$184,139,276</i>

Observation:

There are some discrepancies with respect to cost estimate elements used in the risk assessment when compared to the project cost estimate in effect at that time.

The results of this analysis include the following:

- *A greater than 95% confidence level that the budget ((inclusive of TA Labor, third party Utility allowance and MTACC construction administration) of \$179 million will not be exceeded.*
- *Greater than 95% confidence in the current YOE estimate of \$164 million.*
- *A 9% confidence level that the planned substantial completion date of January 10th 2014 will be achieved.*
- *A 6% confidence level of achieving both the current estimated cost and the current planned substantial completion date.*

The C3 risk assessment identified the following issues which posed the greatest threat to the project in terms of cost exposure and schedule delay for which adequate contingency provision should be maintained by MTACC without further mitigation:

<i>Risk ID</i>	<i>Risk Description</i>
<i>115</i>	<i>Procurement delay in Contract C3 – any delays to Contract C3 procurement will impact the general outages (GO) that have been agreed.</i>
<i>122</i>	<i>Contract C3 is delayed resulting from delays in completion and handover of relevant areas of Contract 4B G3/G4 tunnel.</i>
<i>116</i>	<i>Procurement delays in Contract C6 could mean that Local Area Network and Wide Area Network are not ready for Mechanical Electrical Plumbing Testing by Contract C3.</i>
<i>112</i>	<i>Late completion and handover from Contract C6 to C3 (C6 installs support, data infrastructure, data lines, LAN and WAN for C3 ready to use). C6 has a 10 month window. The risk is a schedule delay to C3.</i>
<i>113</i>	<i>Risk that Contract C3 has insufficient time for testing.</i>
<i>119</i>	<i>Unable to actually get the General Outages for the Active Lower and Upper Platform work that have been agreed to.</i>
<i>25</i>	<i>Third Party approvals – Department Of Transportation (DOT) stipulations on traffic maintenance and pedestrian around 2nd and 3rd Ave could impact construction progress.</i>
<i>117</i>	<i>If the building services and utilities at Entrance 1 are not completed within 9 months of the Notice of Award (NOA) then there is an impact to critical path. Risk is that the “cost to cure” for Entrance 1 activities are not complete by NOA + 9 months.</i>
<i>46</i>	<i>Construction of entrances within or below existing buildings may cause damage to existing structure (Ent 1 200 E 63rd St).</i>

Conclusion and Recommendations:

The PMOC is concerned about the apparent disconnect between the cost estimating and risk assessment efforts. The PMOC recommends the reconciliation of the applicable cost estimate values with those used in the risk assessment and, if necessary, adjustment of the results and conclusions of that analysis.

6.3 Risk Management Status

Status:

No updates for this period.

6.4 Risk Mitigation Actions

Status:

No updates for this period.

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:

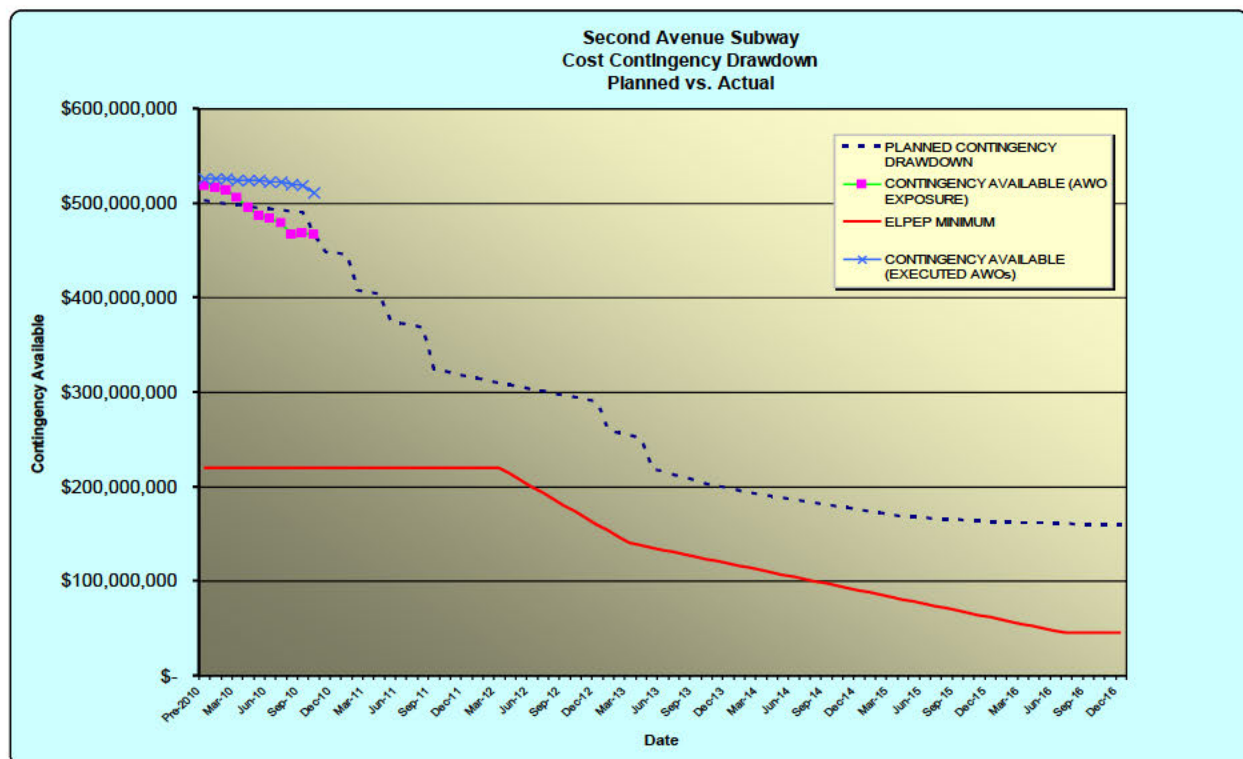
Using the MTACC's methodology, the PMOC has developed a contingency drawdown analysis for the project. Through October 2010, cost contingency status is summarized as follows:

Planned Drawdown: \$ 467,588,990

Actual Drawdown (using executed AWOs): \$ 511,263,274

Actual Drawdown (using AWO Exposure): \$ 466,970,251

In graphic form:



The ELPEP and the MTACC Draft Cost Management Plan do not currently specify how the Actual Drawdown is to be calculated for comparison with the required ELPEP minimum. In the opinion of the PMOC, Actual Drawdown should be calculated using the “AWO Exposure” value tabulated in the monthly AWO tracking logs. This opinion is based on the following:

- 1. As previously presented, the “average” processing time for an AWO exceeds 90 days, with many high-value AWOs greatly exceeding this duration. This processing time builds in an unacceptable lag in the reporting of the financial status of the project.*
- 2. MTACC’s procedure for tracking AWOs filters extraneous issues from the tracking log. Issues entered into the log and assigned an “Exposure Value” have a very high probability of becoming an executed AWO at a value reasonably close to the “Exposure Value”.*

Concerns and Recommendations:

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

- 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.*

6.5.1 Schedule Contingency

Status:

Schedule contingency reported by MTACC, based upon Update #51 of the IPS exceeds threshold limits established by the ELPEP. Schedule contingency measured against MTACC’s RSD commitment date of 12/31/16 is 185 CD. When measured against the FTA/PMOC RSD estimate of 02/28/18, the contingency is currently 617 CD.

Observations:

The increase in schedule contingency contained in Update #51 is the result of the mitigation of previous delay combined with anticipated MPT staging improvements.

Table 6-2 Schedule Contingency

IPS Update #	46	47	48	49	50	51
Data Date	04/30/10	06/01/10	07/01/10	08/01/10	09/01/10	10/01/10
Contingency (CD)						
RSD=12/31/2016	165*	165	165	127	165	185
RSD=02/28/2018	589	589	589	551	589	617

*Estimated by PMOC based on IPS Update #51, provided by MTACC

MTACC has chosen to retain this additional float within the C5A to C5B handoff. The PMOC considers this manipulation to be the result of:

- *A degree of uncertainty as to whether this schedule improvement will actually be realized.*
- *The desire to not maintain positive float in the TBM mining path and not report it as the controlling critical path.*

Concerns and Recommendations:

The PMOC will review the two issues noted above and ensure they are properly represented and reported in next month's IPS update.

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-08-Jan10	2.2 Third Party Agreements	<p>The PMOC is concerned that, in several cases, agreed upon design and scope of work has been revised when later reviewed by other personnel within the agencies.</p> <p>Update: MTACC has stated that no design packages would be considered 100% complete unless formal agreements with utilities had been executed.</p> <p>Update: <i>MTACC has been unable to achieve this goal, but is obtaining agreements prior to construction contract award.</i></p>	2
SAS-09-Jan10	3.1 PMP	<p>The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP.</p> <p>PMOC Recommendation: Update the PMP and its sub-plans within the timeframes established in the ELPEP.</p> <p>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.</p>	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
SAS-10-Jan10	3.2 PMP Sub-Plans	<p>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.</p> <p>Update: <i>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.</i></p>	2
SAS-11-Jan10	3.3 Procedures	<p>The PMOC is concerned whether the new procedures will actually be utilized by the different operating agencies within the MTACC, given that NYCT will implement SAS, and the procedures of the SAS PMP reflect the NYCT quality management system.</p> <p>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.</p>	2
SAS-12-Oct10	2.1.2 Procurement 4.2 Schedule	<p><i>The PMOC is concerned about the quantity of addenda (16) and the extension of the bid phase (2.5 months) for Contract Package 3 (63rd Street Station Upgrade). The PMOC recommends a detailed review and evaluation of the addenda issued in an effort to identify any systemic issues in the design or procurement process that can be improved upon.</i></p>	2
SAS-12-Oct10	2.1.3 Construction	<p><i>MTACC should develop contingency plans for contract coordination issues that may result from continuing delay to TBM mining. This primarily involves Contracts 4B and</i></p>	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
		<i>4C, where TBM mining may impact proposed work sequencing.</i>	
<i>SAS-13-Oct10</i>	<i>2.5 Real Estate</i>	<i>The PMOC proposes to conduct a detailed review of the current status of condemnation, business tenant relocation, temporary rock bolt easements, and cost to cure of interior building utilities. Evaluation of the adequacy of the current Real Estate budget and any potential cost overrun/underrun exposure is included.</i>	<i>2</i>
<i>SAS-14-Oct10</i>	<i>4.1 Schedule Status</i>	<i>Confirm detailed coordination between TBM and ground freeze activities. Confirm active monitoring and forecasting of progress and performance thresholds to support decision making.</i>	<i>2</i>
<i>SAS-15-Oct10</i>	<i>4.4 SMP Compliance</i>	<i>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.</i>	<i>2</i>
<i>SAS-16-Oct10</i>	<i>5.1 Budget/Cost</i>	<i>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.</i>	<i>2</i>
<i>SAS-17-Oct10</i>	<i>6.2 Risk Updates</i>	<i>Reconciliation of the current cost estimate values with those used in the risk assessment for Contract C3 and, if necessary, adjustment of the results and conclusions of that analysis.</i>	<i>2</i>
<i>SAS-18-Oct10</i>	<i>6.5.1 Schedule Contingency</i>	<i>The PMOC will review the SAS Project Team’s distribution and allocation of schedule contingency.</i>	<i>2</i>

8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

Priority in Criticality column

1 – Critical

2 – Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
SAS-A17-Aug08	2.4 Vehicles	<p>The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan:</p> <ul style="list-style-type: none"> ▪ 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. <p>Update: The supply of vehicles for SAS Phase 1 will be addressed in the Draft Fleet Management Plan, scheduled for distribution in July 2010.</p> <p>Update: A Draft Fleet Management Plan was not submitted during July 2010. This item remains open.</p> <p>Update: As of August 31, 2010, a Draft Fleet Management Plan has not been submitted.</p> <p>Update: A Draft Fleet Management Plan was received, reviewed with comments provided to the FTA.</p>	2	7/30/10

Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
SAS-A18- Aug08	ELPEP Updates	<p>The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified.</p> <p>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.</p> <p>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.</p>	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
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
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