

**PMOC MONTHLY REPORT**

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

December 1 to December 31, 2011



**PMOC Contract No. DTFT60-09-D-00007**

Task Order No. 2, Project No. DC-27-5115, Work Order No. 02

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Length of time on project: 1 year

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### **THIRD PARTY DISCLAIMER**

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

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

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

### **REPORT FORMAT AND FOCUS**

This monthly report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60-09-D-00007, Task Order No. 003. Its purpose is to provide information and data to assist the FTA as it continually monitors the grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the grantee continues to be ready to receive federal funds for further project development.

This report covers the project management activities on the MTACC (Capital Construction) Second Avenue Subway (SAS) Mega-Project managed by MTACC and MTA as the grantee and financed by the FTA FFGA.

### **MONITORING REPORT**

The contents of this report are cumulative in nature, and may reference or build upon topics discussed in previous reports. All comments received pertaining to previous reports have been incorporated in this report.

### **EXECUTIVE SUMMARY**

#### **1. PROJECT DESCRIPTION**

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

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

## **2. CHANGES DURING 4<sup>th</sup> QUARTER 2011**

### **a. Engineering/Design Progress**

*The Design Consultant (AECOM/Arup) completed the update of the 96<sup>th</sup> Street Station Concrete, MEP/Finishes, Utilities, and Restoration (C2B) contract documentation, making it available for the procurement process.*

### **b. New Contract Procurements**

- *Construction Contract C2B was advertised for bids on December 5, 2011.*
- *The Track, Power, Signals and Communication Systems Contract (C6) was approved by the MTA Board on December 21, 2011.*

### **c. Construction Progress**

*All construction is approximately 26.3 % complete. Summary progress for each contract is as follows:*

- *The Tunnel Boring Contractor (Contract C1) completed the TBM mining of the tunnels from 92<sup>nd</sup> Street to 63<sup>rd</sup> Street. Surface preparation, waterproofing and lining of the tunnels is ongoing.*
- *The 86<sup>th</sup> Street Station Excavation and Utility Relocation Contractor (Contract C5A) achieved substantial completion and has demobilized.*
- *The 86<sup>th</sup> Street Station Civil/Structural Work Contractor (Contract C5B) started pre-construction condition surveys of building adjacent to the work areas.*
- *The 96<sup>th</sup> Street Station Heavy Civil/Structural Work Contractor (Contract C2A) completed installation of all 51 slurry wall panels on the Westside of 2<sup>nd</sup> Avenue.*
- *The 72<sup>nd</sup> Street Station Heavy Civil/Structural Work Contractor (Contract C4B) has excavated 89,765 Bank Cubic Yards (BCY) of the total 170,507 BCY for the main cavern.*
- *The 63<sup>rd</sup> Street/Lexington Avenue Station Reconstruction Contractor (Contract C3) started the installation of the temporary and permanent structural steel.*

### **d. Continuing and Unresolved Issues**

- *Resolution of change order associated with the deletion of tunnel lining between 72nd and 86th Streets.*
- *Local funding of the 2010 – 2014 MTA Capital Plan.*

### **e. New Cost and Schedule Issues**

- *Development of the C5B baseline schedule and its incorporation into the IPS.*

## **3 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT**

### **a. Grantee Technical Capacity and Capability**

During the 4<sup>th</sup> Quarter 2011 MTACC maintained its technical capacity and capability to support the SAS Phase 1 Project. Additional staff personnel from New York City Transit (NYCT) and PB Americas (Consultant Construction Manager-CCM) are being assigned to support the upcoming award of Track, Power, Signals and Communications Systems Contract C-26009 (C6). The SAS Project Management Team continues to be an effective integrated project organization utilizing personnel from MTACC, NYCT, PB Americas and AECOM/Arup (Design Consultant).

**b. Real Estate Acquisition**

All real estate for the SAS Phase 1 Project has been acquired. Real estate acquisition and tenant relocation was performed in accordance with the approved SAS Real Estate Acquisition Management Plan, and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and FTA real estate requirements 5010.1C.

**c. Engineering/Design**

The final design phase of the project was completed in late November 2010. During the 4<sup>th</sup> Quarter 2011, engineering support continued with the updating of the station finish packages with as-built information from predecessor packages, and updates or modifications involving utilities, MPPT, etc. The drawings/specifications for the 96<sup>th</sup> Street Station Concrete, MEP/Finishes, Utilities, and Restoration Contract C-26010 (C2B) was subsequently updated and made available for the procurement process.

**d. Procurement**

Procurement activity during the 4<sup>th</sup> Quarter 2011 included the MTA Board approval of the Track, Power, Signals and Communication Systems Contract C-26009 (C6). The contract is scheduled to be awarded in mid-January, 2012, pending resolution of a procurement protest from one of the proposers. Also Contract C2B was advertised for bid on December 5, 2011. [REDACTED] Six (C1, C2A, C3, C4B, C5A, C5B) of the 10 construction packages for SAS Phase 1 Project have been awarded.

[REDACTED] FOIA Exemption 5 U.S.C. § 552(b)(4)

**e. Railroad Force Account (Support and Construction)**

As of December 31, 2011 force account expenditure has increased to \$1,715,021. The increase in expenditure reflects NYCT's track outages for upper platform (T1) and lower platform (T2) work at the 63<sup>rd</sup> Street/Lexington Avenue Station.

While MTACC is heavily involved in construction activities, it does not have its own employees to support these activities. It relies on NYCT in-house labor for this purpose. The SAS Construction Support Services Force Account Plan details the services that will be provided by NYCT, including general orders, flagging, work trains, access and protection, inspections, and crowd control.

**f. Vehicles**

No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project has been reflected in the Rail Fleet Management Plan which was accepted by FTA Region II. A "zero" dollar budget for the procurement of vehicles is reflected in the projects Current Working Budget (CWB) and also in the latest cost estimate (Rev. 9).

**g. Systems Testing and Start-Up**

Systems testing and start-up is allocated to the Track, Power, Signals and Communications Systems Contract C-26009 (C6). *The staff recommendation to award this contract to the joint venture of Comstock/Skanska was approved on December 21, 2011. It is valued at \$261,900,000.*

Comprehensive testing of the SAS will be based on a Facilities Systems Test Program (FSTP), which is documented in a four volume submittal; Volume 1 – Management Plan, Volume 2 – Interface Control Plan, Volume 3 - Test Procedures – Factory Acceptance Test (FAT), Field Installation Acceptance Test (FIAT), Simulated Integrated Systems Test (SIST), AND Volume 4 - Test Procedures – Final Systems Integrated Testing (FSIT). FSTP testing and startup functions will be performed at various stages of Contract 6. For example, there will be standalone tests performed by the Stations and (C6) Systems Contractors, independent of each other, at the equipment level. There will be installation work to be performed by the Systems Contractor in both the stations and tunnels that is concurrent with work being performed by the Stations Contractor at both the equipment and the station level. There will be integrated tests in stations that will need to be coordinated between the Stations and Systems Contractors as part of the Station Construction Substantial Completion milestones at the Station Level. There will be integrated systems testing in stations that will be conducted post Station Construction Substantial Completion at the NYCT System wide level, both prior to and with Test Train Operations, during which time the stations may have on-going Contractor maintenance activities which may impede test scheduling or contract testing progress. All these Pre-Revenue Operations periods of testing require formal, advance scheduling and diligent, close coordination among the Contractor, the C-26009 Systems Contractor, and the Authority.

**h. Project Schedule**

**Table 1: Summary of Critical Dates**

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

i. Project Budget/Cost

Table 2: Project Budget/Cost Table 

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of December 31, 2011	
	(\$ Millions)	% of Total	Obligated (\$ Million)	TBD	\$ Millions	% of Total	\$ Millions	% of Total
<del>Grand Total Cost:</del>	<del>4,866.614</del>	<del>100</del>	<del>4,137.911</del>		<del>5,489.614</del>	<del>100</del>	<del>1,538.609</del>	<del>28.02</del>
<del>Financing Cost</del>	<del>816.614</del>	<del>16.78</del>			<del>816.614</del>	<del>14.88</del>		
<del>Total Project Cost:</del>	<del>4,050.000</del>	<del>83.22</del>	<del>4,137.911</del>		<del>4,673.000</del>	<del>85.12</del>	<del>1,538.609</del>	<del>28.02</del>
<del>Total Federal:</del>	<del>1,350.693</del>	<del>27.75</del>	<del>*866.760</del>		<del>1,350.693</del>	<del>24.60</del>	<del>502.552</del>	<del>9.15</del>
<del>Total FTA share:</del>	<del>1,300.000</del>	<del>96.25</del>	<del>838.667</del>		<del>1,300.000</del>	<del>23.68</del>	<del>491.440</del>	<del>8.95</del>
<del>5309 New Starts share</del>	<del>1,300.000</del>	<del>100</del>	<del>838.667</del>		<del>1,300.000</del>	<del>23.68</del>	<del>491.440</del>	<del>8.95</del>
<del>Total FHWA share:</del>	<del>50.693</del>	<del>3.75</del>	<del>28.093</del>		<del>50.693</del>	<del>0.92</del>	<del>11.112</del>	<del>0.20</del>
<del>CMAQ</del>	<del>48.233</del>	<del>95.15</del>	<del>25.633</del>		<del>48.233</del>	<del>0.88</del>	<del>8.652</del>	<del>0.16</del>
<del>Special Highway Appropriation</del>	<del>2.460</del>	<del>4.85</del>	<del>2.460</del>		<del>2.460</del>	<del>0.04</del>	<del>2.460</del>	<del>0.04</del>
<del>Total Local share:</del>	<del>2,699.307</del>	<del>55.47</del>	<del>**3,509.000</del>		<del>**3,509.000</del>	<del>63.92</del>	<del>1,036.057</del>	<del>18.87</del>
<del>State share</del>	<del>450.000</del>	<del>16.67</del>	<del>100.000</del>		<del>450.000</del>	<del>8.20</del>		
<del>Agency share</del>	<del>2,249.307</del>	<del>83.33</del>	<del>1,145.782</del>		<del>3,059.000</del>	<del>55.72</del>		
<del>City share</del>	<del>0</del>	<del>0</del>			<del>0</del>	<del>0</del>		

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

\*\* Current MTA Board approved budget

j. Project Risk

The overall risk of project schedule and cost increases has been reduced during the 4<sup>th</sup> Quarter 2011 as a result of:

- Completion of all real estate acquisition
- Substantial completion of Contract C5A
- NYCDEP approval of the 60" water main redesign

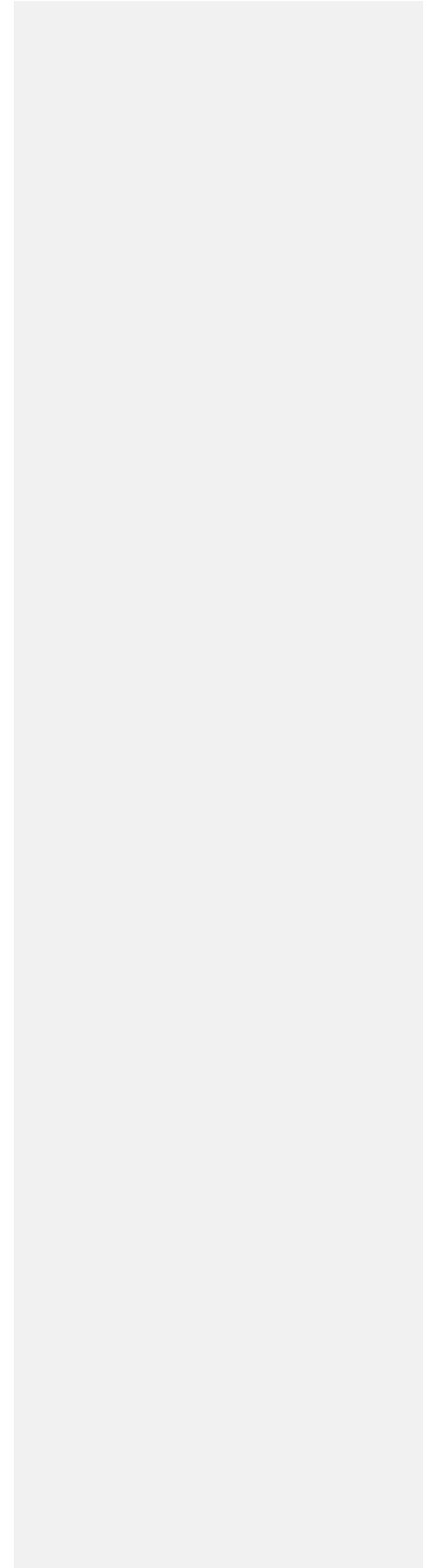
Delays resulting from coordination of work between multiple prime contracts and adverse public reaction to the air quality and noise consequences of blasting and excavation will be major risks that could have adverse cost and schedule impacts for the foreseeable future.

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:

*ELPEP meetings were held on December 6, 2011 and December 8, 2011. The current status of each of the main ELPEP components as discussed and updated during December 2011 is summarized as follows:*

- **Technical Capacity and Capability (TCC):** The TCC for SAS Phase 1 was submitted on 3/11/10 and approved by the FTA on 4/6/10. The PMOC completed its review of the Revision 8 SAS PMP and is monitoring and verifying implementation and compliance with this plan.
- **Schedule Management Plan (SMP):** On November 3, 2011, the FTA confirmed that MTACC has responded to the Candidate Revisions identified in FTA's conditional approval letter, dated October 26, 2010, and that the SMP is fully approved. The PMOC has verified SAS substantial compliance with the SMP since August 2010. The process of transferring the compliance verification process to the MTA is discussed below. *The issue of secondary schedule mitigation was clarified and agreed upon.*
- **Cost Management Plan (CMP):** FTA conditional approval of the Cost Management Plan, including five (5) Candidate Revisions was provided on September 1, 2011. MTACC has submitted its final revisions to the CMP, which incorporate its responses to those Candidate Revisions. FTA/PMOC final review of these revisions is in progress.
- **Risk Mitigation Capacity Plan (RMCP):** Drafts of the ESA and SAS Risk Management Plans were transmitted to FTA Region II during October 2011. MTA addressed all PMOC comments in its submittal of the RMCP on October 28, 2011. Resolution of any final comments to the RMCP will be coordinated and combined with a review of the ESA and SAS Project Risk Management Plans. *PMOC review of these plans has been completed and comments forwarded to FTA-Region II.*
- **Conformance and Compliance:** *Review of MTACC, Cost and Schedule compliance is a relatively straightforward matter and can be accomplished through existing reporting tools. Risk Management compliance is somewhat more complicated due to the qualitative elements of the process. Potential methods for this reporting process were presented and discussed. MTA will further evaluate and present its findings in a subsequent meeting.*

### Observation:

Although overall implementation of the ELPEP is somewhat behind schedule, the MTACC has begun implementation of schedule, cost and risk management plans. *The SAS Phase 1 PMP has been updated to support these management documents and processes.* The PMOC has noted numerous instances where benefits conferred by these enhanced management tools have been realized.

### Concerns and Recommendations:

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

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

### **1.1 Technical Capacity and Capability**

#### **1.1.1 Organization, Personnel Qualifications and Experience**

Status:

*During the 4<sup>th</sup> Quarter 2011, MTACC increased its technical capacity and capability to support the SAS Phase 1 Project. Additional personnel from New York City Transit (NYCT) and PB Americas (Consultant Construction Manager-CCM) were assigned to support Contract C5B and staff personnel have been identified to support Contract C6 when awarded. The SAS Project Management Team continues to be an integrated project organization utilizing personnel from MTACC, NYCT, PB Americas and AECOM/Arup (Design Consultant). There are five primary functional groups: Design Services Management; Construction; Construction Support; Budget, Administration and Accounts; and Program Control. The project has set up a Management Control System such that it can continuously manage, monitor, and report the scope, budget, schedule, and contingency levels of the project in order to ensure that the project progresses in accordance with the Enterprise Level Project Execution Plan (ELPEP).*

Observation:

*MTACC is effectively utilizing consultant staff to fill key positions on the project team. The project team acts as an integrated organization with virtually no distinction between the employee's actual employers. The Project Managers are doing a good job in coordinating the turnover of work area from one contractor to another.*

Concerns and Recommendations:

*The Construction Manager for Contract C6 has yet to be identified. Typically this individual would have been available during construction procurement to assist in resolution of bidder questions. This is a key position on the project team. The PMOC recommends this position be mobilized as soon as possible.*

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

##### **a) Adequacy of Project Management Plan and Project Controls**

Status:

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

Observation:

The PMOC will review its findings with the FTA and subsequently present findings and recommendations to the MTA.

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 *still* underway to amend the FFGA because the baseline cost and schedule have been exceeded. No update this period.

Concerns and Recommendations:

See section 1.1.2 a.

**c) Grantee's Approach to Force Account Plan**

Status:

*Force Account expenditure increased to \$1,715,021 during the 4<sup>th</sup> Quarter 2011 and is expected to continue in support of the activity at the 63<sup>rd</sup> Street/Lexington Avenue Station.*

Observation:

The Force Account requirements are documented in the SAS Force Account Plan. The plan gives a description and a cost estimate of the NYCT services required for the design of the track and signal elements of the system and to support construction activities for each individual contract. The Force Account budget has been validated as part of the review of Revision 9 of the SAS Cost Estimate.

Concerns and Recommendations:

None

**d) Grantee's Approach to Safety and Security Plan**

Status:

*MTACC's approach to Safety and Security is defined in Section 4 – Safety, Security and Health Programs of the SAS PMP.*

Observation:

*Section 4 of the PMP includes the required project Health and Safety Plan (HASP) that describes the responsibility and protocols to maintain a safe environment throughout the construction of the SAS Project. The requirements for the contractor's security program are delineated. The section also outlines the Project Safety and Security Management Plan (SSMP) as required by 49 CFR Part 659 which includes the Safety and Security Certification Plan (SSPC) and the Systems Safety and Reliability Assurance Program Plan (SSRA).*

Concerns and Recommendations:

None

**e) Grantee's Approach to Asset Management**

*Asset Management – Identification and control of project assets will be coordinated between the Systems – Track, Power, Signals and Communications Contractor (Contract 26009) and NYCT's*

*Department of Subways. With the award of the C6 contract, efforts will begin on the development of the Asset Management Plan.*

Observation:

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

Concerns and Recommendations:

None

**f) Grantee's Approach to Community Relations**

Status:

*During the 4<sup>th</sup> Quarter of 2011, MTACC continued community information and outreach efforts which included:*

- *Periodic meetings and information sharing sessions with interested or affected groups.*
- *Staffing and maintaining a community office that responds to community concerns.*
- *Notifications and bulletins through a variety of media outlets.*
- *A quarterly public workshop held on November 30, 2011.*

Observation:

*Construction complaints have increased in both number and significance over the past several months as construction activity has increased. Public concerns over health and safety impacts from excavation and blasting were effectively handled. Where possible, meaningful actions were taken to mitigate objectionable conditions.*

*The public workshop, held on November 30, 2011, was a new initiative which allowed members of the community to interact with members of the MTACC in a collaborative, problem-solving environment. The workshop was opened to 200 members of the community, and was hosted by the President of the MTACC. After a brief introduction, participants broke into smaller groups based upon their area of interest. Each group had a facilitator to moderate the discussion. Most, if not all, of the tables were also joined by representatives of the MTA and contractors working on the project. After about 2 hours, representatives from several tables were invited to step forward to make brief presentations. MTACC stated they would fully consider and evaluate viable suggestions generated from the workshop.*

Conclusions and Recommendations:

*MTACC's community outreach has been proactive in its outreach efforts to the affected community. MTACC executive management has made the commitment to address community concerns and mitigate the effects of construction where possible.*

*The workshop held on November 30, 2011 was a new method to engage the community and work collaboratively towards solutions. The participation of the MTACC President in these events demonstrates the MTA's resolve in this area.*

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

#### **a) Federal Requirements**

#### **b) Uniform Property Acquisition and Relocation Act of 1970**

Real estate acquisition and tenant relocation 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.

#### **c) 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. *A Financial Management Oversight Contractor review has been initiated by FTA Region II.*

### **1.2 Project Controls**

#### **1.2.1 Scope Definition and Control**

##### Status:

*During the 4<sup>th</sup> Quarter 2011, there has been no change in the scope of the SAS Project. The scope of the SAS Project is defined by the FEIS, ROD and the FFGA. The project scope will be delivered via ten (10) construction packages, with support from NYCT for rail systems engineering, installation and overall operating systems inspection and testing.*

##### Observation:

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. This process continues to be used to manage scope refinements and to adjust package scope to react to unanticipated field conditions.

##### Concerns and Recommendations:

Technical processes involving the modification or transfer of scope between construction packages are well-established and have been proven effective. Management processes involving the cost and schedule impacts of scope changes and transfers are less developed. *No additional concerns or recommendations were realized during the 4<sup>th</sup> Quarter 2011.*

#### **1.2.2 Quality**

##### Status:

The Second Avenue Subway Quality Management team held monthly Quality Meetings and Quarterly Quality Oversights of the Contractor with CCM, MTACC and PMOC participation. They participated in the job progress meetings, monitored quality matters in the field for each

construction contract, reviewed and provided comments for Quality Work Plans, and participated in Preparatory Phase Sessions for numerous construction processes.

Observations:

*The QA/QC processes are well defined and are being implemented per the various quality plans and procedures. With the reassignment of Quality Personnel and the hiring of an additional Quality Project Manager, the PMOC feels that the MTACC is adequately staffed to provide quality oversight on the current contracts.*

Concerns and Recommendations:

*The PMOC recommends that MTACC evaluate future quality staff requirements based on the upcoming ward of the C6 Systems contract.*

**1.2.3 Project Schedule**

Status:

A summary of project schedule information is as follows:

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

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Concerns and Recommendations:

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

[REDACTED]

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#### 1.2.4 Project Budget and Cost

Status:

Total project cost in the approved FFGA is \$4,866,614,000 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 *December 31, 2011*.

**Table 1-2: Appropriated and Obligated Funds**

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru <i>December 31, 2011</i>
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	\$157,092,845
NY-03-0408-07	\$237,849,000	\$237,849,000	0



Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru December 31, 2011
NY-03-0408-08	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	\$36,884,999
<b>Total</b>	\$866,760,200.00	\$866,760,200.00	\$502,169,014.00

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

A total of \$1,538,609,469 has been expended on the project through December 31, 2011, of which \$420,921,506 has been spent on design and \$671,084,345 on construction (MTACC's December 2011 Cost and Schedule Summary Input).

Observation:

Local funds totaling \$1,036,440,455 (\$1,538,609,469 – \$502,169,014) have been spent as of December 31, 2011. MTA's approved 2000-2004 and 2005-2009 Capital Programs provided \$2,964 million for SAS Phase I (\$1,050 million and \$1,914 million respectively). The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase I 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 supports the award of construction Contract C6, but local funding of the 2011 – 2014 Capital Program is required to ensure award of subsequent contracts. FTA Region II has initiated a Financial Management Oversight Contractor review of the project.

**1.2.5 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. During the 4<sup>th</sup> Quarter 2011, Risk Mitigation Meeting number 11 was held on December 7, 2011. The risks addressed at the meeting were based on the set of risks identified in the risk analysis as those with the most impact to cost and schedule. The following risks were discussed:

- **Risk CNS 4 (C6):** Problems related to managing contractor during construction.
- **Risk 89 (C5B):** Different site conditions during cavern mining lead to lost productivity and contractor delay resulting in claims.
- **Risk TRP 4 (C6):** Systems Integration Testing Problems (Traction Power SCADA).
- **Risk CNS 8 (C6):** Delayed safety certification.
- **Risk 147 (C4B):** Vibration from mining operation.
- **Risk (TBD):** Shop Drawing review process.

- *Risk (TBD): Several C4B risks involving gaining access to entrances and ancillaries due to various third-party issues.*

*From the discussions, action items have been assigned and the responsible individual identified to complete the action.*

Observation:

*SAS Project Management is proactive in its efforts to monitor and mitigate the risk of cost and schedule increases. Risks are routinely re-evaluated and updated. Mitigation strategies are developed and vetted through senior project managers. The processes currently utilized have been effective in elevating the awareness of risk issues among project staff.*

Concerns and Recommendations:

*The SAS Project Team is currently refining and implementing several initiatives directed toward managing and mitigating several of the major risks. The PMOC considers these initiatives to be extremely important elements in the overall achievement of project cost and schedule goals.*

### 1.2.6 Project Safety and Security

Status:

*Safety – The Lost Time Accident Rate and OSHA Recordable Accident Rate from the start of construction until November 31, 2011 are 1.92 and 4.60, respectively. The Lost Time Accident rate is below the national average of 2.2 and the OSHA Recordable Accident rate is above the national average of 4.2. The cumulative construction time worked since the project inception is 2,914,378 hours. Cumulative lost time injuries since project inception is 28 and the cumulative recordable injuries are 39.*

*Security – During the 4th Quarter 2011 the construction contractors continued implementing their site security plans. Personnel rosters were updated and security gates with electronic access to selected areas were installed.*

Observation:

*The Tunnel Boring Contractor (C1) Contract 26002 still has the highest number of lost time injuries and recordable injuries on the project, 13 and 28, respectively. The contractor also has the highest amount of construction hours (1,772,879) worked on the project. The nature of the tunnel boring operation (mining, surface preparation, waterproofing and concrete lining) lends itself to greater risk of injury. The contractor has provided additional training and equipment to address the unacceptable rates.*

*MTACC has expanded its safety program to include a monthly walk-thru of the various work zones by the SAS Project Management Team. In addition, the SAS Project Safety Manager holds a monthly meeting with all Contractor Safety Managers, OCIP Representative, and the insurance carrier representative in order to make all aware of the safety concerns on the project and to exchange lessons learned.*

*Overall, the SAS Project Team is being proactive in implementing its safety program.*

Concerns and Recommendations:

None

### **1.3 FTA Compliance Documents**

Status:

No change this period.

#### **1.3.1 Readiness to Enter PE**

Status:

Preliminary Engineering (PE) began in December 2001.

#### **1.3.2 Readiness to Enter Final Design**

Status:

Final Design began in April 2006.

#### **1.3.3 Record of Decision**

Status:

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

#### **1.3.4 Readiness to Execute FFGA**

Status:

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

#### **1.3.5 Readiness to Bid Construction Work**

Status:

Readiness to Bid Reviews have been “on hold” in accordance with direction received from FTA Region II.

Observations:

None this period.

Concerns and Recommendations:

None this period.

#### **1.3.6 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:

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

Observation:

*The primary role of the design team currently includes:*

- *Construction Administration, generally including shop drawing review, responding to RFIs, providing design clarifications where needed and technical support during construction package bidding.*
- *Geotechnical mapping and support. Due to the nature of the work, geotechnical engineers from the design team are on site to provide an evaluation of actual subsurface conditions encountered and any consequential design modifications.*
- *Updating of station finish packages (C4C, C5C) with “as-built” information from predecessor packages and updates or modifications involving utilities, MPT, etc.*
- *Detailing and documentation of design changes as may be required.*

Concerns and Recommendations:

*Engineering support of the project has remained adequate to support the ongoing construction effort and execute isolated design enhancements or modifications.*

#### **2.1.2 Procurement**

Status:

*Updated procurement status includes:*

- **C-26009 (C6): Transit & Rail Systems** – *The final steps of the two-stage RFP process were completed this period. Best and Final Offers were received from the four (4) technically preferred teams. The MTA Board approved the staff recommendation to award this contract to Comstock/SKANSKA, JV on December 21, 2011.*
- **C-26010 (C2B): 96<sup>th</sup> Street Station Concrete, MEP & Finishes** – *Construction documents were made available to prospective bidders for this contract on December 5, 2011. The mandatory pre-bid meeting and site tour were held on December 20, 2011. Bids are currently scheduled to be received on February 6, 2012.*

*No other construction packages will be advertised for bid until mid-2012.*

**Table 2-1: Construction Procurement**

Activity #	Description	Date*	Comment
<b>Contract C-26009 (C6): Systems</b>			
SYPR40	Award Contract	01/13/12	Award of contract.
<b>Contract C-26010 (C2B): 96<sup>th</sup> Street Station Concrete, MEP &amp; Finishes</b>			
25a	Advertise for Bids	12/05/11A	
25d	Bid Opening	02/29/12	
PR40	Award Contract	04/30/12	

\* Note: All dates reference IPS Update #65 (Data Date as of 12/01/11) U.N.O.

Observations and Analysis:

- *Contract C-26009 (C6): On December 20, 2011, the MTA Board approved the staff recommendation for the award of this contract to Comstock/SKANSKA, JV.*

- [Redacted]

[Redacted]

[Redacted]

**2.1.3 Construction**

Status:

Six (6) of the 10 construction contracts for the SAS Phase 1 Project have been awarded. Construction progress on the active contracts through December 31, 2011 includes:

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

- Conveyor system disassembly and removal.
- Dismantling of the surface vertical conveyor structure.
- Waterproofing and concrete lining work in the West tunnel.
- Excavation of the 78<sup>th</sup> Street pump room.
- Surface preparation, waterproofing, and concrete lining work in the East tunnel.
- DBS repair work ongoing.

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

- *Installation of all 51 slurry wall panels on the Westside of 2<sup>nd</sup> Avenue between 95<sup>th</sup> and 99<sup>th</sup> streets.*
- *Guidewall construction for secant piles at Ancillary 1.*
- *Installation of 33 secant piles completed on the Westside of 2<sup>nd</sup> Ave as part of the north tie-in support of excavation at existing 99<sup>th</sup> Street tunnel.*
- *Installation of deck beams along 2<sup>nd</sup> Avenue between 95<sup>th</sup> and 99<sup>th</sup> streets.*
- *Installation of twelve inch high pressure gas tie-in on the Westside of 2<sup>nd</sup> Avenue between 96<sup>th</sup> and 97<sup>th</sup> streets.*
- *Phase II building stabilization work at 1802 2<sup>nd</sup> Avenue (structural slab/grade beam construction; transformer installation by Con Ed; gas main relocation).*
- *Installation of a new 36 inch diameter sewer line was started at Entrance 1.*

Contract C-26006 – (C3) 63<sup>rd</sup> Street Station Upgrade

- *The focus continued to be in the plaza at 63<sup>rd</sup> St. and 3<sup>rd</sup> Ave., which is the primary access to Area 5 on the project. The MPT continues to be maintained successfully at the plaza area.*
- *The CM office continues to work on getting approval from NYDOT for 2 weekend shutdowns of 63<sup>rd</sup> St. traffic.*
- *Completed the runway beams and the Gantry Crane has been installed at the 6<sup>th</sup> Mezzanine. Testing, training and startup has been completed.*
- *Continued surveying the DMPs.*
- *Continued to install temporary shielding and decking and concrete demolition in Area 5.*
- *Continued with concrete demolition in multiple Area 5 mezzanines.*
- *Continued with installation of permanent walers to transfer loads for new openings.*
- *Continued temporary and permanent structural steel fabrication & installation.*
- *Lead abatement continued and primer application continued in Area 5.*
- *Continued with crack repair at tracks G3/G4.*
- *Continued with relocation of existing conduit and services for future demolition.*

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

- *Current Rock Excavation Locations:*
  - *Main Station Cavern between 69<sup>th</sup> and 72<sup>nd</sup> St.*
    - Center Drift; 100% complete (21,863 CY removed)*
    - West Slash; 100% complete (17,932 CY removed)*
    - East Slash; 40.4% complete 17,932 CY removed)*
    - Bench: 3.0% complete (860 CY of 28,871 CY 100% removed)*

- G3/S1 Cavern I (between 65<sup>th</sup> and 66<sup>th</sup> St): 100% complete (3,368 CY removed)
- C3/S1 Cavern II (between 65<sup>th</sup> and 66<sup>th</sup> St): 100% complete (3,733 CY removed)
- G4/S2 Cavern I (between 67<sup>th</sup> and 68<sup>th</sup> St):
- G4/S2 Cavern II (between 67<sup>th</sup> and 69<sup>th</sup> St): 32.9% complete (1,286 CY of 3,753 CY removed)
- Horseshoe Tunnel: Approximately 40 feet remains projected completion 1/9/2012
- Ancillary 2 (72<sup>nd</sup> St Southwest Corner) demolition has progress to the third floor level projected completion 1/27/2012
- Ancillary 1 (69<sup>th</sup> St Southwest Corner) demolition completed, preparation for installation of soldier piles
- Entrance 3 (72<sup>nd</sup> St Southeast Corner) asbestos abatement at 300 E 72<sup>nd</sup> St. ongoing in preparation for building demolition
- Building remediation – ongoing (1343 2<sup>nd</sup> Ave, 259 E 71<sup>st</sup> St, 1390 ½ 2<sup>nd</sup> Ave, 220 E 65<sup>th</sup> St, 239 E 73<sup>rd</sup> St, 1405 2<sup>nd</sup> Ave, and 307E 70<sup>th</sup> St)

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

- This contract was declared Substantially Complete on November 16, 2011.

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

- Contractor mobilization is continuing.
- Seismic level instrumentation has been installed in a majority of buildings and testing is ongoing. The contractor and the CCM continue to work with remaining building owners to get access for installation of remaining instrumentation.
- Completed takeover of the block north of 86<sup>th</sup> St. and continued with light pole removal, installation of temporary street lighting, relocation of fire hydrants, removal of pavement and sidewalk.
- Completed mobilization for asbestos abatement at the Gotham Building.
- Began foundation work for the muck stations.
- Began receiving steel for the south Gantry Crane.
- Completed site takeover at set up barriers at Ancillary 1.
- Began placement of Muck Station foundations.

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:

- Timely completion of the CIP lining in the West tunnel to support East tunnel concrete work.

- *Resolution of time impacts for AWO #103 (Ground Freezing), AWO #92 (TBM Extension), AWO #114 (Mining through freeze zone), and AWO #112 (CIP Lining Deletion).*

For Contract C2A:

- *Potential impact of work at Ancillary #1 and entrances #1 and #2 due to:*
  - *Gas relocation outside secant piles (AWO-091) at all locations*
  - *East and West side sewer relocation at Entrance #1 and #2*
  - *ECS duct bank relocation at entrance #1*

For Contract C3:

- *Maintaining the steel fabrication schedule for timely steel erection is critical to maintaining the overall project schedule.*

For Contract C4B:

- *Owner completion of repair work at 22 East 70<sup>th</sup> Street*
- *Negotiation and execution of the additional work order for MEP utility relocation work at 301 East 69<sup>th</sup> Street*

For Contract C5A:

- *Resolution of all additional work orders to facilitate contract close out*
- *Review and approval of as built drawings required before Final Acceptance*

For Contract C5B:

- *This contract continued in mobilization phase through September 2011. The initial project meetings are transition coordination meetings between the 5A & 5B contractors. The PMOC has observed that these meetings are proving to be an effective vehicle for smooth transition of site permits and overlapping activities of the 5A contractor's step down operations and the 5B contractor's ramping up operations.*

#### Concerns and Recommendations:

*The SAS Project Team continues to identify, prioritize and address construction problems which have the potential to delay the project. No concerns this period.*

#### **2.1.4 Force Account (FA) Contracts**

##### Status:

*During the 4<sup>th</sup> Quarter 2011 the total force account expenditures increased to \$1,715,021. The increase of \$908,258 is primarily associated with work at the 63<sup>rd</sup> Street Station (Contract C3), which requires general orders and work train support from NYCT.*

##### Observation:

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



Concerns and Recommendation:

None

**2.1.5 Operational Readiness**

Status:

NYCT has developed a Concept of Operations Plan for the SAS Project. NYCT will validate SAS Phase 1 readiness during Pre-Revenue Service Operations Training and Testing scheduled from June 15, 2016 to October 25, 2016 (Reference IPS Update #65 dated November 2011).

Observation:

IPS Update #65 reflects the specific tests with its associated durations that NYCT will perform prior to Revenue Service. The lack of this information in prior integrated project schedule had been a concern of the PMOC.

Concerns and Recommendation:

None

**2.2 Third-Party Agreement**

Status:

During the 4<sup>th</sup> Quarter 2011 the SAS Project Team continued its Interagency Coordination as defined in Section 12 of the SAS PMP. Section 12 describes the plans and agreements that need to be made with city and state agencies and utility providers in order to expedite the construction process.

Observation:

MTACC/NYCT has entered into cooperative and force account agreements as needed with other agencies and utility providers to perform construction work for the Project. As of December 31, 2011, third-party reimbursements totaling \$16,301,044 have been made.

**2.3 Contract Packages and Delivery Methods**

Status:

Phase 1 of the Second Avenue Subway is being delivered via ten separate construction packages. Each construction contract package utilizes the design-bid-build process based upon a fixed price construction contract. Competitive procurements are based on NYCT standard procedures.

Procurement of general construction packages has been primarily based on the IFB (lump-sum bid) process. Due to the technical complexity of the Systems Package (C6), the RFP process was

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judged to be the best procurement alternative. There was no change to the procurement or delivery method for any of the construction packages during the 4<sup>th</sup> Quarter of 2011.

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

**Table 2-1 Construction Procurement Method and Status**

Pkg.	Contract	Description	Procurement	
			Type	Status
C2B	C-26010	96th Street Station: construction of the entrances and ancillary facilities, architectural finishes and MEP equipment.	IFB	<i>Bid Phase</i>
C4C	C-26011	72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.	IFB	Design Completed
C5C	C-26012	86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.	IFB	Design Completed
C6	C-26009	Power, Signals and Communications; includes the installation of track, 3 <sup>rd</sup> Rail traction power, way-side signals, and all communication components, integration of the communication network with the NEP SCADA system and commissioning the system for revenue service.	RFP	<i>Award Pending</i>

[REDACTED]

Concerns and Recommendations:

Standard NYCT procurement durations clearly do not reflect all issues associated with the procurement of large packages such as those included in SAS. The PMOC recommends the Project Team evaluate procurement durations based upon previous experience and consider revising the procurement duration for the station finish packages (C2B, C4C and C5C) accordingly.

**2.4 Vehicles**

Status:

No change.

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Observations:

*No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project has been reflected in the Rail Fleet Management Plan which was accepted by FTA Region II. A "zero" dollar budget for the procurement of vehicles is reflected in the projects Current Working Budget (CWB) and also in the latest cost estimate (Rev. 9).*

Concerns and Recommendations:

None

## **2.5 Property Acquisition and Real Estate**

Status:

Real estate acquisition and tenant relocation was performed in accordance with the approved SAS Real Estate Acquisition Management Plan and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and FTA real estate requirements 5010.1C.

*MTACC reports that as of October 25, 2011, all real estate acquisitions required for the construction of SAS Phase 1 have been completed.*

Observation:

*On December 1, 2011, the United States District Court rendered its opinion in Yorkshire Towers Company, LP, et al, versus United States Department of Transportation, et al. In this litigation, the plaintiffs sought to relocate the 86<sup>th</sup> Street Entrance from its current mid-block position in front of the Yorkshire Towers (Alternate 7) to the southeast corner of Second Avenue and 86<sup>th</sup> Street (Revised Alternative 5).*

*The Court found the plaintiff's case to be without merit and it was dismissed.*

*If the plaintiffs prevailed, additional real estate acquisitions would have been necessary, with a likely result of significant project cost increases and schedule delays.*

Conclusions and Recommendations:

*Real estate and right of occupancy acquisition has not affected construction progress to date. With the completion of all acquisition activities, the risk of delay involving property acquisition has been significantly reduced.*

## **2.6 Community Relations**

Status:

*During the 4th Quarter of 2011, MTACC continued its public outreach by keeping the community, local elected officials and Community Boards (8 and 11) informed of construction work for all active contracts. Look-ahead schedules were posted on the MTA website, meetings were held with businesses and residents. MTACC continued to field questions via the field office telephone, SAS Hotline and MTA web mail. The Good Neighbor Initiative has resulted in cleaner work areas, prompt removal of trash and better lighting.*

Observation:

*MTACC's community relations efforts appear adequate.*

Concerns and Recommendations:

*MTACC should continue its prompt response to the community concerns and keep the neighborhood informed of construction activity on 2<sup>nd</sup> Avenue.*

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

**3.1 Project Management Plan**

Status:

The PMOC has completed its review of the Revision 8 submission of the draft SAS PMP (dated January 2011) and has forwarded its comments to FTA Region II. Upon FTA's concurrence with the PMOC's findings and recommendations, the results will be transmitted to the MTACC SAS Project Team.

Observations:

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

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**3.2 PMP Sub Plan**

Status:

As part of the PMP review, the referenced Sub-Plans have been reviewed to confirm their conformance and consistency with the PMP.

Observations:

SAS Sub-Plan documents consist of: Project Quality Manual, Quality Assurance Plan, Risk Management Plan, Design Criteria Manual, Cost Management Plan, Schedule Management Plan, Project Design Quality Manual, Real Estate Acquisition Plan, Real Estate Acquisition Management Plan, Contingency Management Plan, and Quality Implementation Procedure.

Concerns and Recommendations:

None

**3.3 Project Procedures**

Status:

*In conjunction with NYCT procedures utilized on the SAS Phase 1 Project, MTACC has approved and issued 75 procedures of its own. Four procedures are still under development.*

Observations:

*MTACC failed to meet its original commitment to have all the procedures approved and issued by April 12, 2010. MTACC has not specified a time period for the completion of the four*

procedures still under development. Of the four procedures under development, the PMOC believes that AD.15, Program Change Control, is critical to the management of the project.

Concerns and Recommendations:

The PMOC is still concerned about the length of time it has taken MTACC to develop and issue the procedures. The PMOC recommends that the MTACC complete development of the remaining (additional) procedures, particularly AD.15, as quickly as possible, preferably by January 31, 2012. [Ref: SAS-11-Jan10]

**4.0 PROJECT SCHEDULE STATUS**

**4.1 Integrated Project Schedule**

Status:

The IPS is a management level schedule that integrates all ten construction packages along with design, procurement, startup and other support activities. *IPS Update #65 was received on January 5, 2012 and is based on a Data Date of December 01, 2011.* Update #65 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports.

Significant schedule-related accomplishments during December 2011 include:

- Incremental refinements for the NYCT Pre-Revenue Operation Activities were incorporated into the IPS.
- MTACC has initiated a "SAS Schedule Contingency Task Force" that will explore additional means of enhancing the project schedule contingency.

**Table 4-1: Summary of Schedule Dates**

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

During the month of December 2011, progress continued on six (6) active construction packages:

- C-26002 (C1) TBM Tunneling and 96<sup>th</sup> Street Box,
- C-26005 (C2A) 96<sup>th</sup> Site Work and Heavy Civil,
- C-20006 (C3) 63<sup>rd</sup> Street Station Rehabilitation,
- C-26007 (C4B) 72<sup>nd</sup> Street Station Cavern Mining & Lining,
- C-26013 (C5A) Open Cuts and Utility Relocation,
- C26008 (C5B) 86<sup>th</sup> Street Station Cavern Mining & Lining.

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

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Observations and Analysis:

Based on a review of construction contracts, schedule progress (Table 4-2) during the 4<sup>th</sup> Quarter of 2011 was acceptable. Contracts C1 and C5A are at a high level of completion and have achieved all interface milestones with other contracts. Incidental delays to these packages do not affect the overall project schedule. Overall progress for contracts C2A and C4B was slightly ahead of schedule. Contract C3 was delayed by structural steel fabrication late this quarter; recovery from this delay is forecast. Schedule progress for C5B cannot be evaluated as the baseline schedule has not been approved. Approval and incorporation into the IPS is forecast for January 2012.

At the request of the FTA, the PMOC has initiated quarterly tracking of major schedule activities and/or "milestones" that are in progress during that quarter as a means of reviewing and evaluating the project's ability to achieve short-term schedule goals. Due to the one-month lag

in reporting schedule update progress, the 4<sup>th</sup> Qtr. 2011 baseline and intermediate results are published in this report and shown in the following table:

[Redacted Table Content]

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[Redacted Table Content]

Conclusions and Recommendations:

Based upon schedule progress through December 01, 2011:

- Construction schedule progress through the first two months of the 4<sup>th</sup> Quarter, 2011 has been acceptable.
- The Project is generally progressing in accordance with previous forecasts generated by the IPS. The IPS has proven to be a reasonably accurate predictor of project activity.
- The SAS Project Team actively uses the IPS in the coordination and management of the project.
- Final development and approval of the C5B baseline schedule and any reconciliation of the milestones restraining the start of cavern excavation should be given a high priority in order to provide an accurate IPS forecast.

**4.2 90-Day Look-Ahead**

Status:

Based on the Integrated Project Schedule (IPS) Update#65 (DD=12/01/11), major activities that can be anticipated to either start or complete over the upcoming 90 days include the following:

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

Activity ID	Start	Finish
<b>C1- TBM Construction – Tunnel 96th Box (91st to 95th)</b>		
West Tunnel Concrete Complete		01/18/12
East Tunnel concrete Complete		03/18/12
Handoff from C1 to C4B, C5B for Cavern Mining		01/18/12
C1 substantial Completion		03/18/12
<b>C2A – 96<sup>th</sup> Street Station Sitework&amp; Heavy Civil</b>		
Stage 4 Decking Installation	11/01/11A	02/22/12
Start Stage 5 Slurry Wall Installation	02/23/12	
Ancillary #2: Complete Precast Decking		02/16/12
<b>C2B – 96<sup>th</sup> Street Station Concrete, Finishes &amp; Utilities</b>		
Bid Opening	02/29/12	02/29/12
<b>C3 – 63<sup>rd</sup> Street Station Rehab</b>		
Low Platform, Area 4-Demo Slab & Walls		03/23/12
Demo Upper Platform & Track 1		02/12/12
Begin Fabrication - Elevators	02/06/12	
Complete Steel shop drawing review/approval		05/21/12
<b>C4B – 72<sup>nd</sup> Street Station Mining &amp; Lining</b>		
Begin 72 <sup>nd</sup> Street Cavern pressure relief system	03/14/12	
Ancillary 2 – Complete Decking		03/08/12
Entrance 1 – Adit Excavation		03/08/12
<b>C5B – 86<sup>th</sup> St. Station Mining &amp; Lining (IFB)</b>		



Activity ID	Start	Finish
<i>Complete Instrumentation</i>	<i>Based on look-ahead forecast at job progress meetings. Baseline schedule not approved.</i>	
<i>Continue Mobilization</i>		
<i>Continue Muck Handling Shed foundations</i>		
<i>Begin Erection of South Gantry Crane</i>		
<b>C6 – Systems (RFP)</b>		
<i>MTA Board Approves Contract Award Recommendation</i>	<i>12/21/11</i>	<i>12/21/11</i>
<i>Award Construction Contract C6</i>	<i>01/11/12</i>	<i>01/11/12</i>

Observations and Analysis:

90-Day Look-Ahead Notes:

1. C3 site activities primarily limited to demolition & prep work over next 90 days. Procurement of long-lead items (structural steel, vertical transportation, control systems) is underway.
2. MTACC reports the bidding of Contract C2B will proceed in accordance with the current schedule update.
3. C5B is currently forecasting the start of excavation activities in April 2012.
4. C1 should achieve Substantial Completion/Beneficial Occupancy during the next 90 days.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The following discussion on the schedule critical and near-critical paths will substantiate and support these conclusions and recommendations.

**4.3 Critical Path Activities**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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[REDACTED]

Observations and Analysis:

*As previously noted, the critical path spans construction packages that are mobilizing to commence construction or otherwise not currently active. The reliability of the critical path will be enhanced when the actual construction schedule for these packages is incorporated into the IPS.*

*Several recent initiatives will add to the functionality and overall usefulness of the IPS:*

- *Addition of NYCT pre-revenue operation activities will aid in ensuring operational readiness for the RSD.*
- *Inter-contract milestones and turnover requirements will assist in management of the multiple prime contractors and satisfaction of MTA's access obligations.*

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[REDACTED]

#### 4.4 Compliance with Schedule Management Plan

Status:

Since August 2010, the PMOC has monitored and evaluated the SAS Project Team's compliance with its Schedule Management Plan, developed as part of the overall ELPEP process. The PMOC will continue this effort until the MTACC undertakes the role of ELPEP compliance reporting and verification.

Observations and Analysis:

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

- Forecast Revenue Service Date
  - ELPEP Requirement: February 28, 2018
  - Current Forecast: December 30, 2016

- [REDACTED]

- Minimum Allowable Float; Real Estate Acquisition
  - ELPEP Requirement: 60 CD
  - Current Forecast: All Real Estate Takings are complete as of November 1, 2011.

- [REDACTED]

- [REDACTED]

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In addition to the metrics above, the MTACC continues to demonstrate that it is using the IPS to actively plan, organize, direct and control individual packages and the overall project, and to provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments. These beneficial outcomes are significant components of ELPEP/SMP compliance.

Concerns and Recommendations:

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

**5.0 PROJECT COST STATUS**

**5.1 Budget/Cost**

Status:

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

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

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

\* 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.

Observation and Analysis:

A summary of the completion status of the active construction contracts as of December 31, 2011, based upon cost incurred through that date, is as follows:

- C26002 (Tunnel Boring) – 91.7%
- C26005 (96th Street Station) – 54.5%
- C26013 (86th Street Station) – 92.5%
- C26008 (86<sup>th</sup> Street Station) – 4.93%
- C26006 (63<sup>rd</sup> Street Station) – 8.3%
- C26007 (72nd Street Station) – 30.1%

Aggregate Construction % Completion:

- 59.4% of all construction work is under contract
- 45.2% of active construction contracts are complete
- 26.3% of all construction is complete



Notes to this evaluation include:

- For December 2011, no progress was reported for two construction contracts (C3, C5A), artificially reducing the progress calculated for the period.
- Contract C5A has been 100% physically complete since mid-November 2011, yet is still only 92.5% complete based upon payments, demonstrating the inherent lag or variance in this type of analysis. A similar lag may also exist for C1.

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Conclusions and Recommendations:

*This analysis suggests that overall construction progress is trending along the lower limit or late finish dates from the IPS, but suggests that current project schedule goals can still be achieved. This conclusion is consistent with the schedule based analysis. The PMOC recommends that schedule improvement initiatives for both critical and near-critical paths be implemented where feasible as a means of enhancing the chances for achieving project schedule goals.*

**5.1.1 Project Cost Management and Control**

Status:

*SAS estimates the percent of work complete based on cumulative payments divided by contract (or budget) value as may be appropriate.*

*As of December 31, 2011, MTACC reports total project expenditures of \$1,538,609,469. When compared against the CWB of \$4,451,000,000, this results in an estimated total project completion of 34.57%.*

Observation:

*When compared against values reported as of November 30, 2011, expenditures for the month of December 2011 equal \$36,298,523. Based on these values, approximately .82% of SAS Phase 1 was completed during this period.*

*This evaluation does not take into account "payment lag" or other time offsets.*

Concerns and Recommendations:

*The SAS Project Team has demonstrated effective and comprehensive cost tracking and reporting capability. These capabilities should be augmented to conform to the requirements of the Cost Management Plan.*

**5.1.2 Project Expenditures and Commitments:**

Status:

*As of December 31, 2011, a summary comparison of the SAS Current Working Budget (Estimate Revision #9) and expenditures is as follows:*

Description	CWB	Expended	%
Total Construction	\$2,775,988,299	\$732,411,873	26.3%
Total Soft Cost	\$1,675,011,701	\$806,197,596	48.1%
<b>Subtotal</b>	<b>\$4,451,000,000</b>	<b>\$1,538,609,469</b>	<b>34.6%</b>

Observations:

[Redacted]

The PMOC notes that expenditures are generally representative of the level of completion of each project element.

Concerns and Recommendations:

None at this time

**5.1.3 Change Orders**

Status:

As of December 31, 2011, the status of Additional Work Orders (AWOs) on Phase 1 of the Second Avenue Subway Project is summarized as follows:

[REDACTED]					
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
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**5.2 Project Funding**

Status:

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

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

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru December 31, 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	\$157,092,845
NY-03-0408-07	\$237,849,000	\$237,849,000	0
NY-03-0408-08	<i>Pending</i>	<i>Pending</i>	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	\$36,884,999
<b>Total</b>	<b>\$866,760,200.00</b>	<b>\$866,760,200.00</b>	<b>\$502,169,014.00</b>

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

Local funds totaling \$1,036,440,455 (\$1,538,609,469 – \$502,169,014) have been spent as of December 31, 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.

[REDACTED]

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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. As part of the proposed amendment of the SAS FFGA, local funding sources should be identified and committed to by the MTA. PMOC will continue to monitor the situation and assist all parties in evaluating the funding situation.

**5.2.1 Overall Project Funding**

*Refer to Section 5.2 of this Report.*

**5.2.2 Local Funding**

*Refer to Section 5.2 of this Report.*

**5.3 Cost Variance Analysis**

Status:

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

This EAC is based on the following:

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

[REDACTED]

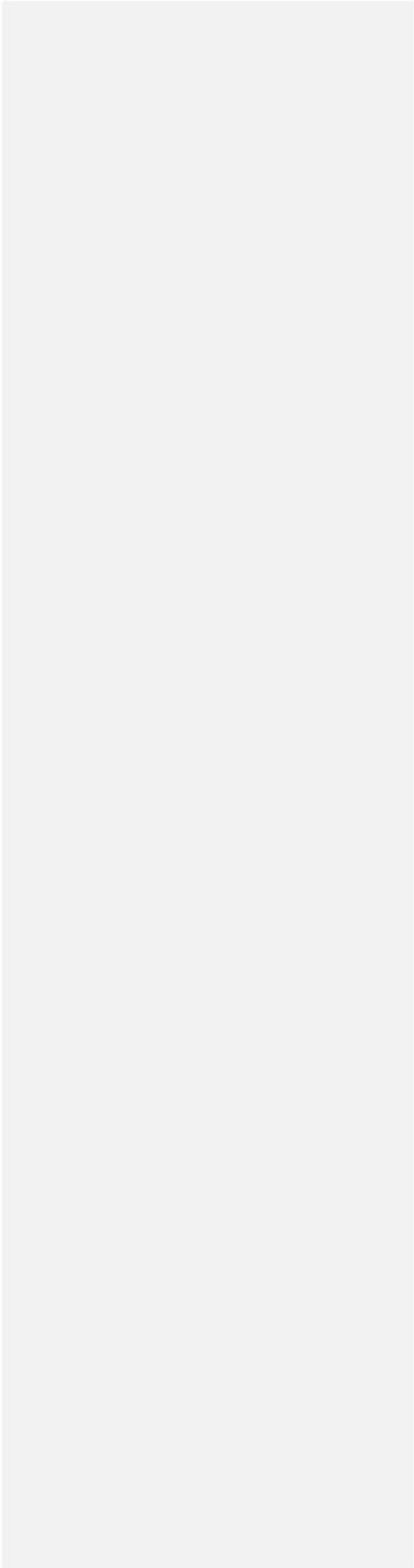
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Observation and Analysis:

*Through December 2011, the EAC generally corresponds with values contained within the recently completed and approved Cost Estimate Revision 9. As variances are observed and evaluated, they will be incorporated in the EAC and reconciled when the next project cost estimate is prepared.*

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**6.0 PROJECT RISK**

**6.1 Initial Risk Assessment**

No change this period.

**6.2 Risk Updates**

Status:

*Risk Mitigation Meeting #11 was held on December 7, 2011.*

Observation and Analysis:

*A summary of issues discussed and actions to be taken as a result of this meeting include the following:*

<b>Risk</b>	<b>Discussion</b>	<b>Actions Taken</b>
CNS 4 (C6)	Problems related to managing the contractual interfaces during construction may result in delays and related claims.	<ol style="list-style-type: none"> <li>1. Interface spreadsheet has been populated. Major interfaces to be added to IPS.</li> <li>2. Continue "Critical Issues" meetings.</li> <li>3. Develop interface report.</li> </ol>
89 (C5B)	Differing site conditions during cavern mining lead to lost productivity and contractor delay resulting in change requests.	<ol style="list-style-type: none"> <li>1. CM is mapping exposed rock face in a timely manner. Rock @ 72<sup>nd</sup> Street is better than expected; 86<sup>th</sup> Street expected to be better than 72<sup>nd</sup> Street.</li> <li>2. Based on current status, this risk will be placed "on hold" for two months.</li> </ol>
TRP 4 (C6)	Systems Integration Testing Problems (Traction Power SCADA).	<ol style="list-style-type: none"> <li>1. Complete evaluation of this risk requires the C6 Integration Testing Plan, prepared by the C6 Contractor.</li> <li>2. Availability of adequate NYCT resources to supervise and approve tests is the major risk.</li> <li>3. NYCT continues to indicate it can support the current schedule</li> <li>4. This risk to be placed "on hold" for six months.</li> </ol>
CNS 8 (C6)	Delayed Safety Certification	<ol style="list-style-type: none"> <li>1. Continue discussions with Fed and State Safety representative and determine if SSMP addresses the needed process.</li> </ol>
147	Vibration from mining operation	<ol style="list-style-type: none"> <li>1. C4B issues have been resolved with no similar problems forecast.</li> <li>2. This risk is "on hold" pending reports of additional concerns or issues.</li> </ol>
TBD	Procurement Delay-Risk (C5B)	<ol style="list-style-type: none"> <li>1. Develop measures to recover some of the time lost in procurement during the baseline schedule development process.</li> <li>2. Reformulate this risk as part of an overall schedule risk item.</li> </ol>

<b>Risk</b>	<b>Discussion</b>	<b>Actions Taken</b>
91 (C5B)	Yorkshire Towers lawsuit settlement results in cost and delay. This may result in moving the elevator entrance on the corner of the building.	<i>The favorable resolution of this lawsuit has eliminated this risk.</i>
TBD	Shop Drawings--the review process for shop drawings is too time-consuming. MTACC president wants the process streamlined so that it can be done in 20 days.	<ol style="list-style-type: none"> <li>1. <i>Modified process with multiple reviewers defined and implemented.</i></li> <li>2. <i>Bi-weekly meeting evaluate progress. Results to date generally satisfactory.</i></li> <li>3. <i>Detailed evaluation by discipline to be performed to identify potential problem areas.</i></li> </ol>
C4B Ancil 1	<i>Completion of damage repair to adjacent fragile building will delay excavation of the egress/service adit</i>	<i>Obtain approval by 226 E 70<sup>th</sup> on superstructure crack repair and confirm it is "blast ready".</i>
C4B Ent. 1	<i>Delays in obtaining utility relocation approval from uncooperative adjacent owner.</i>	<i>Major risk. Resolution of the issue to be escalated with concurrent evaluation of other options, including deferring to C4C.</i>
C4B Ent. 2	<i>Delay in access to adjacent building for underpinning and utility relocation.</i>	<i>Some progress in resolving issue reported. Continue current efforts and monitor.</i>

**Concerns and Recommendations:**

*The Risk Mitigation Meetings are effective in identifying, clarifying and updating significant risks to project cost and schedule and developing and implementing mitigation or management strategies. SAS Senior Managers support and participate in this process. Follow-up to tasks assigned at these meetings has been good.*

*In its September 2011 Monthly Report, the PMOC expressed concern that construction risks were not represented in this effort. Discussions documented at Meeting #11 demonstrate an increased the construction staff participation and focus on construction issues.*

**6.3 Risk Management Status**

**Status:**

*Risk Management is an ongoing activity that is a follow-up to the Risk Mitigation Meetings described in Section 6.2 of this Report. The SAS Risk Manager supports and coordinates specific risk management efforts, which may involve a wide range of senior project management personnel.*

Observation and Analysis:

*During 2011, the forecast substantial completion dates of the "Future" contract packages have changed significantly.*


[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] *The obligation to coordinate multiple prime construction contractors is retained by the owner and cannot be effectively transferred or otherwise avoided. The SAS Project Team has responded to this risk and is currently engaged in developing a process that will:*

- *Identify all interface points*
- *Define the work to be performed and its required sequencing*
- *Integrate these interfaces into the overall project IPS*
- *Provide "90-day look-ahead" reporting for pending interfaces*
- *Provide a framework to facilitate the ongoing review, updating and management of this risk.*

*This risk has been identified in the Risk Register as "CNS 4". The project team's ability to manage this risk is considered "critical" to the successful management of the construction phase.*

Conclusions and Recommendations:

*Effective management of the interfaces between multiple prime contractors is critical to the success of this project. The current initiative provides a framework for managing this risk that can be expanded to include the individual contract teams as they are mobilized. This approach*

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[REDACTED]

*will not ensure the trouble-free construction of all elements requiring multiple prime contractor participation but does demonstrate a pro-active approach to the management and mitigation of the impact of this retained risk.*

*The PMOC will monitor ongoing development of this initiative.*

#### **6.4 Risk Mitigation Actions**

##### Status:

*The SAS Project Team is actively engaged in the mitigation of project risk including those risks directly retained by the MTACC as well as those risks for which direct responsibility has been transferred to other parties.*

##### Observation and Analysis:

*To date, the tangible mitigation of risk is generally associated with the completion of an activity or achievement of a specific milestone. The following major achievements signify the mitigation of significant project risk:*

- *Substantial Completion – Contract 5A: geotechnical risk, utility interface, inter-contract coordination.*
- *Completion of TBM mining – Contract 1: geotechnical risk, inter-contract coordination.*
- *Completion of Real Estate Acquisition – access delays to construction.*
- *NYCDEP approval of 60" water main – design delay, scope (cost/schedule) increase.*

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

*During the 1<sup>st</sup> Quarter of 2012, the SAS Project Team will integrate the updated risk register with the EAC forecasting process. Risk information will be used instead of fixed percentages of construction cost to forecast remaining cost exposure and the contract and project EAC.*

##### Concerns and Recommendations:

*Integrating the risk management process with the EAC forecasting process is a potentially very significant enhancement in the management of the project. This process will capture the net effect of incremental changes in risk exposure and forecasting that might otherwise not be reported. It will further integrate the risk management processes into the "mainstream" of project management and create collaboration between processes that will mutually enhance reliability.*

#### **6.5 Cost and Schedule Contingency**

##### **6.5.1 Cost Contingency**

###### Status:

Refer to Section 5.4 of this report.

##### **6.5.1 Schedule Contingency**

###### Status:



Schedule contingency reported by MTACC, based upon Update #65 of the SAS IPS, conforms to schedule contingency threshold limits established by the ELPEP.

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Concerns and Recommendations:

Schedule contingency has remained fairly constant over the 4<sup>th</sup> Quarter of 2011 and for most of calendar year 2011. This is discussed further in Section 4 of this report.

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## 7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column      1 – Critical 2– Near Critical

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-09-Jan10	3.0 PMP	<p>The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP.</p> <p><b>PMOC Recommendation:</b> Update the PMP and its sub-plans within the timeframes established in the ELPEP.</p> <p><b>Update:</b> 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> <p><b>Update (January 2011):</b> Revised draft PMP issued and currently being reviewed by PMOC. Review anticipated to be completed by February 2011.</p> <p><b>Update (March 2011):</b> PMOC review of PMP update is substantially complete.</p> <p><b>Update (April 2011):</b> The PMOC has completed its review of PMP Revision 8 (update). The PMOC will review its findings with the FTA and compare findings with the corresponding PMP review which is currently underway for the East Side Access Project. After these tasks are complete, the PMOC and FTA will present findings and recommendations to the MTACC.</p> <p><b>Update (May 2011):</b> No additional information this period.</p> <p><b>Update (June 2011):</b> PMOC is monitoring the implementation and effectiveness of Candidate Revisions per discussions with FTA. Results to be included in review comments.</p> <p><b>Update (Sept 2011):</b> In general, Revision 8 of the SAS PMP was updated in accordance with the “PMP Update” process defined in the ELPEP. Candidate Revisions were issued and approved by the Technical Advisory Committee for all “Material Decisions”, i.e., project decisions that affect scope, cost, schedule or funding.</p> <p><i>Update December 2011: Resolution of PMOC comments/recommendation and FTA concurrence is anticipated by mid February 2012</i></p>	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-10-Jan10	3.1 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><b>Update:</b> 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.</p> <p><b>Update (March 2011):</b> SMP outstanding comments resolved. Updated CMP submitted and PMOC comments returned. Reconciliation of comments to be scheduled in April 2011.</p> <p><b>Update (April 2011):</b> Revisions to the CMP are anticipated on May 3, 2011 and will be discussed at the ELPEP meeting on May 5, 2011. Based upon the clarifications and understandings achieved at this meeting, MTACC will revise the CMP accordingly and resubmit it on or about May 13, 2011.</p> <p><b>Update (May 2011):</b> A final revision to the CMP will be published in June 2011 based upon comments received to date. The CMP is at a high level of completion. Final comments should be developed in June leading to a conditional approval of the plan.</p> <p><b>Update (June 2011):</b> PMOC final review comments transmitted to MTACC.</p> <p><b>Update (Sept 2011): Schedule &amp; Schedule Contingency Management Plan</b> – The PMOC has verified SAS substantial compliance with the SMP since August 2010. The process of transferring the verification process to the respective project teams has been generally discussed in several recent ELPEP meetings. Refer to “Conformance Demonstration” for additional information. <b>Cost &amp; Cost Contingency Management Plan (CMP)</b> –Conditional approval of this plan was transmitted to the MTACC from the FTA on September 1, 2011. The MTACC is working to address the five (5) Candidate Revisions upon which final approval is conditioned.</p> <p><i>Update (December 2011): MTACC has submitted its final revisions to the CMP, which</i></p>	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		<i>incorporate its responses to those Candidate Revisions. FTA/PMOC final review of these revisions is in progress</i>	
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><b>PMOC Recommendation:</b> 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> <p><b>Update (April 2011):</b> The MTACC is behind schedule in developing the revised project procedures. To date, it has adopted a total of 69 revised procedures of 75. MTACC originally committed to have all revised procedures adopted by April 12, 2010</p> <p><b>Update (May 2011):</b> No update this period.</p> <p><b>Update (June 2011):</b> No update this period.</p> <p><b>Update (Sept 2011):</b> The MTACC released one additional procedure during September 2011. The total number of revised procedures is now 73 of a potential 75.</p> <p><b>Update (December 2011):</b> <i>Two procedures were issued which brings the total number of procedures issued to 75. Four additional procedures are under development with no specific time period identified for their completion.</i></p>	2

Number with Date Initiated	Section	Issues/Recommendations	Criticality
SAS-20- Dec10	5.1.3 Change Orders	<p>Processing duration for AWOs is excessive. The average processing duration currently equals the published MTA maximum duration of 90 days. Improvement is required to facilitate contractor cooperation and reduce risk of “backlash” through perceived unfair treatment.</p> <p><b>Update (February 2011):</b> Meeting to be set up with MTACC/SAS/ESA for review and comparison of AWP processing procedures and identification of specific ways to accelerate SAS process.</p> <p><b>Update (March 2011):</b> Meeting with MTACC/SAS/ESA not scheduled. No improvement in processing observed to date. Open Item</p> <p><b>Update (April 2011):</b> With regard to the procurement of additional work orders (AWO's), NYCT and MTACC have jointly implemented a more streamlined approach to approving Procurement Staff Summaries. This adjustment has reduced the number of signatures necessary for approval and should save time during the approval phase of the AWO process. Specifically, NYCT has removed the following 4 executive level signatures: NYCT President, NYCT Executive Vice President, NYCT General Counsel, and NYCT Chief Officer -Civil Rights. Additionally, the NYCT VP Capital Programs and the NYCT VP Subways have been replaced with lower level designees who should cut down further the amount of time necessary for approval.</p> <p><b>Update (May 2011):</b> Some marginal improvement in AWO processing has been noted – see section 5 of this report. PMOC will continue to monitor and report.</p> <p><b>Update (June 2011):</b> Some marginal improvement in AWO processing has been noted – see section 5 of this report. PMOC will continue to monitor and report.</p> <p><b>Update (Sept 2011):</b> In recent months, the MTACC has implemented certain staffing changes and process improvements directed at reducing the time required to estimate, negotiate and administratively process Additional Work Orders (AWOs). The PMOC is monitoring and evaluating the quantifiable indicators associated with AWO processing in an effort to evaluate the effectiveness of the MTA’s improvement efforts.</p>	1

Number with Date Initiated	Section	Issues/Recommendations	Criticality
		<u>Update (December 2011):</u> PMOC monitoring of the AWO process is on-going. To date, no significant reduction in the time to process an AWO has been noted	
SAS-21- Dec10	2.1.2 Procurement	<p>Excessive recent delay to C-26009 package is noted. PMOC recommends MTACC initiate corrective action and/or develop “recovery schedule” to regain time lost.</p> <p><u>Update (February 2011):</u> Additional delays noted.</p> <p><u>Update (March 2011):</u> RFP documents were made available to the qualified proposers on March 7, 2011 and the pre-proposal meeting was held on March 31, 2011.</p> <p><u>Update April 2011:</u> Receipt of proposals has already been delayed from May 18, 2001 to June 3, 2011. Further, unspecified delays are forecast for the receipt of proposals for this package as a result of MTA’s intention to “coordinate” systems procurement among the three “mega-projects” (No. 7 Line, SAS, and ESA).</p> <p><u>Update (May 2011):</u> Additional one-month delay to package award was realized during May 2011 as a result of ongoing “coordination” with other systems procurements. MTA Executive Management is apparently directing this effort.</p> <p><u>Update (June 2011):</u> Additional one-month delay to package award was realized during June 2011 as a result of bidder requests for a time extension. Criticality of other delays have superseded this issue PMOC to continue monitoring progress of this procurement.</p> <p><u>Update (Sept 2011):</u> Additional one-month delay to package award was realized during June 2011 as a result of bidder requests for a time extension. Criticality of other delays have superseded this issue PMOC to continue monitoring progress of this procurement.</p> <p><u>Update (December 2011):</u> On December 21, 2011 the MTA Board approved the Track, Power, Signals and Communication Systems Contract C-26009 (C6) for award. Notice of Award is scheduled for mid-January 2012. This concern is closed with no further action planned by the PMOC.</p>	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	<p>The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan:</p> <ul style="list-style-type: none"> <li>▪ NYCT should provide a test plan for increasing the period between inspections of the new technology fleet.</li> <li>▪ 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.</li> <li>▪ MTACC should explain why they are considering removing the vehicles from the project scope without reducing the project funding.</li> </ul> <p><b>Update:</b> 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><b>Update:</b> A Draft Fleet Management Plan was not submitted during July 2010. This item remains open.</p> <p><b>Update:</b> As of August 31, 2010, a Draft Fleet Management Plan has not been submitted.</p> <p><b>Update:</b> A Draft Fleet Management Plan was received, reviewed with</p>	2	7/30/10

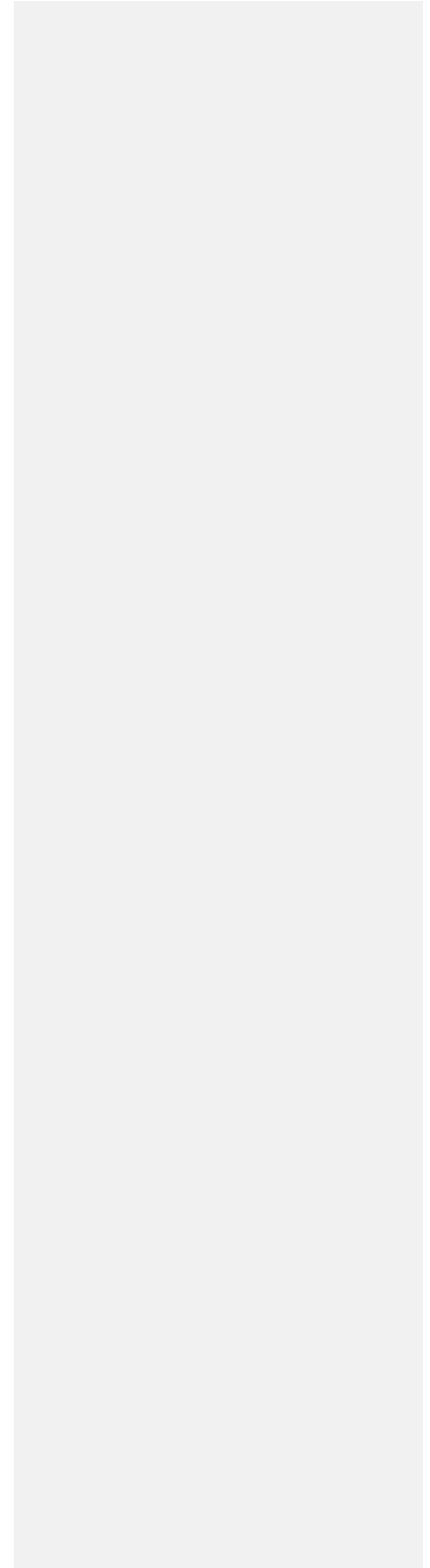
Number with Date Initiated	Section	Grantee Actions	Criticality	Projected Resolution
		<p>comments provided to the FTA.</p> <p><b>Update:</b> Vehicle requirements and associated cost to be addressed as part of the FFGA amendment.</p> <p><b>Update:</b> <i>No additional vehicles will be procured for the SAS Phase 1 Project. MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase 1 Project has been reflected in the Rail Fleet Management Plan which was accepted by FTA Region II. A "zero" dollar budget for the procurement of vehicles is reflected in the projects Current Working Budget (CWB) and also in the latest cost estimate (Rev. 9). No further action is planned by the PMOC.</i></p>		
SAS-A18-Aug08	ELPEP Updates	<p>The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified.</p> <p><b>Update:</b> 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><b>Update:</b> 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> <p><b>Update:</b> Review and resolution of all issues is anticipated to be completed in February 2011.</p> <p><b>Update:</b> See ELPEP section of report.</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
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
UNO	Unless Noted Otherwise
WD	Work Day



## APPENDIX B-- PROJECT OVERVIEW AND MAP

### Project Overview and Map – Second Avenue Subway



#### Scope

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

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

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

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

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

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

**Schedule**

12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTA schedule)		
22.5%	Percent Complete Construction at June 30,2010		
65%	Percent Complete Time based on Rev Ops Date of December 30, 2016		
12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTA schedule)		
22.5%	Percent Complete Construction at June 30, 2011		
65%	Percent Complete Time based on Rev Ops Date of December 30, 2016		

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## APPENDIX C – LESSONS LEARNED

### Lessons Learned Table for 4th Quarter 2011

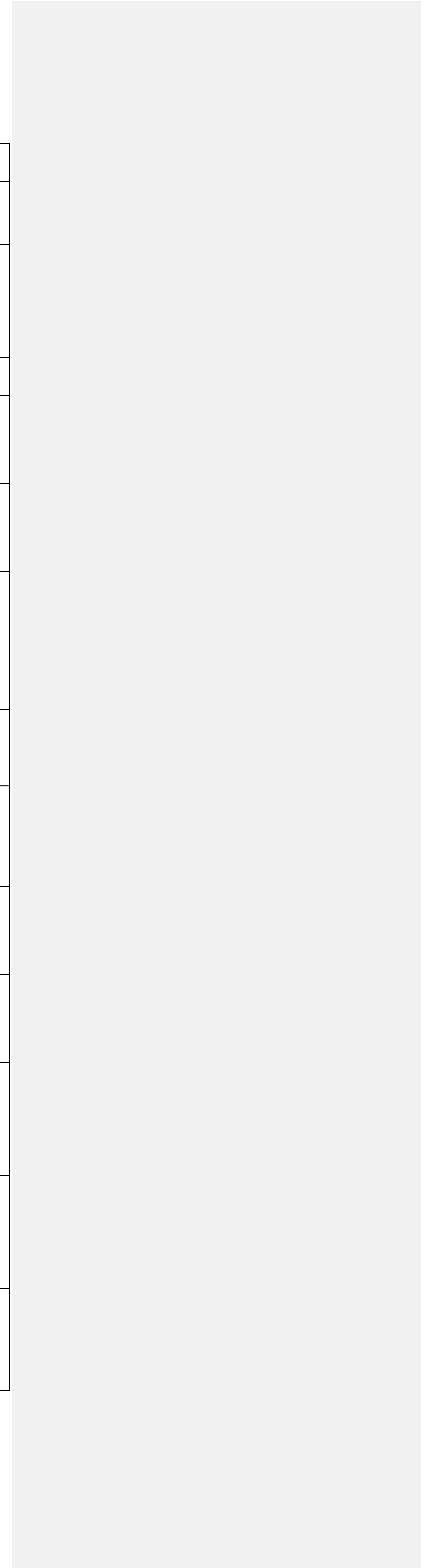
#	Date	Phase	Category	Subject	Lessons Learned
1	Oct-09	Construction	Schedule	Delays to excavation caused by adjacent Fragile Buildings	The PMOC recommended and MTACC adopted a plan to review the stability of all of the buildings affected by the Second Avenue Subway project. MTACC instructed their Designer to review all the buildings along the project. Furthermore, they have the designer developing shoring plans for the fragile buildings and including this work in the future contracts. In this way the stabilization work cannot delay the contracts as it is part of the contract.
2	Nov-09	Construction	Schedule	3 <sup>rd</sup> Party Utilities changed the size of an electric volt after construction began	The PMOC recommended that MTACC get the utility companies to agree that once they have approved the plans, they cannot make major changes after award. MTACC's SAS Project Executive is meeting with the utilities to work out this problem.

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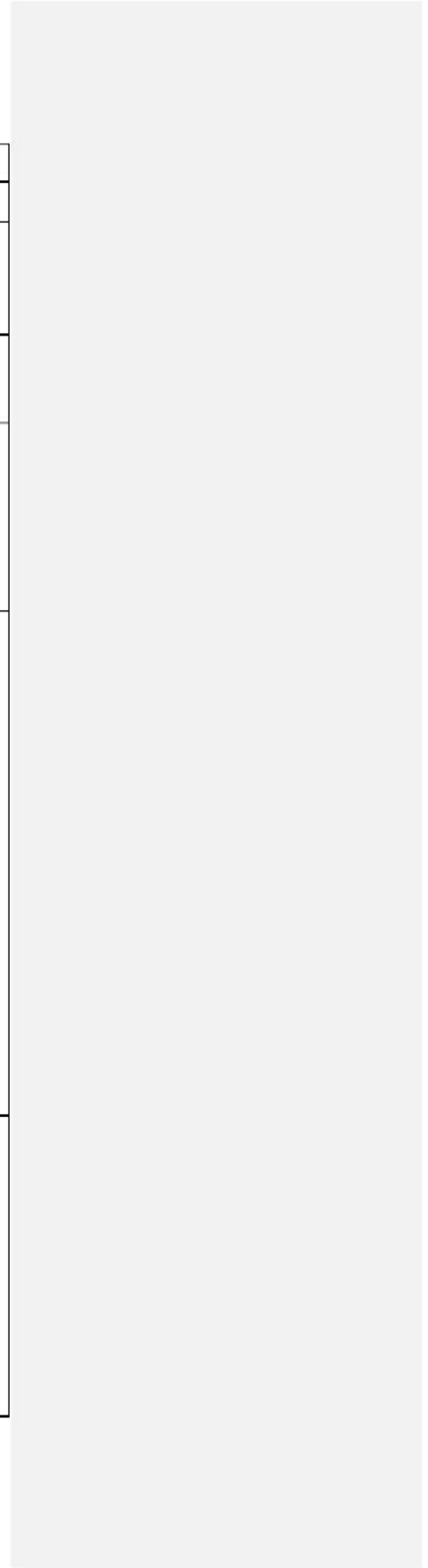
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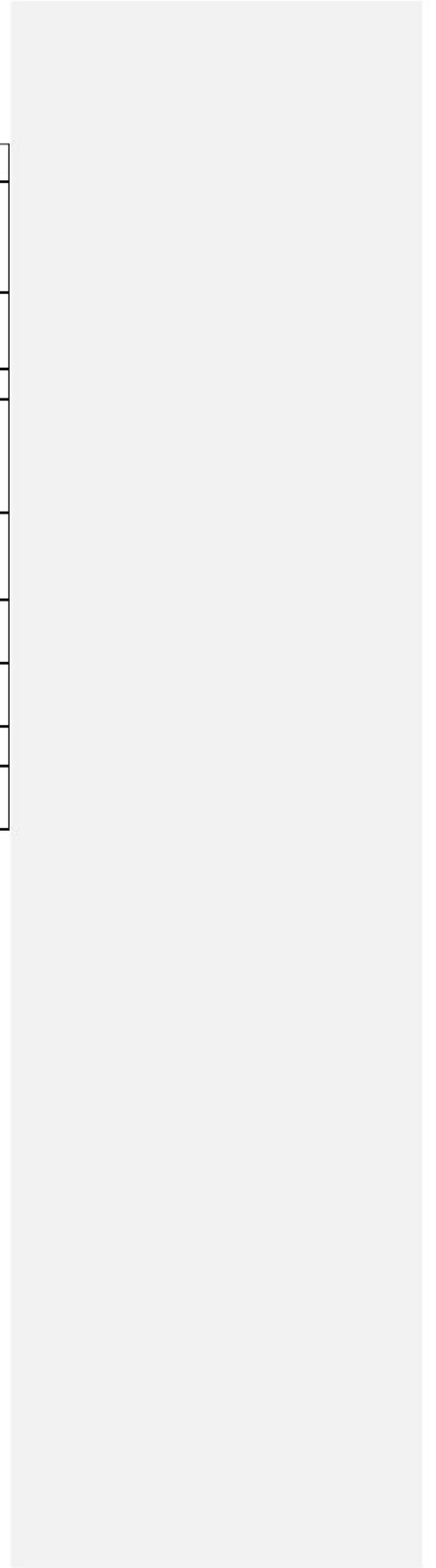


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