

## **PMOC MINI MONTHLY REPORT**

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

November 1 to November 30, 2010



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

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

OPs Referenced: OP20-OP26, OP33, OP34, OP37, OP40, OP 41, OP53, OP54

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Length of time on project: 0.5 years

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## TABLE OF CONTENTS

|   | Page No.  |
|---|-----------|
| <b>SECOND AVENUE SUBWAY (SAS)</b>                           |           |
| <b>EXECUTIVE SUMMARY .....</b>                              | <b>1</b>  |
| <b>ELPEP SUMMARY .....</b>                                  | <b>3</b>  |
| <b>1.0 GRANTEE’S CAPABILITIES AND APPROACH .....</b>        | <b>6</b>  |
| 1.1 TECHNICAL CAPACITY AND CAPABILITY .....                 | 6         |
| 1.2 FTA COMPLIANCE DOCUMENTS .....                          | 9         |
| <b>2.0 PROJECT SCOPE.....</b>                               | <b>11</b> |
| 2.1 STATUS & QUALITY: DESIGN/PROCUREMENT/CONSTRUCTION ..... | 11        |
| 2.2 THIRD-PARTY AGREEMENT .....                             | 17        |
| 2.3 CONTRACT PACKAGES AND DELIVERY METHODS .....            | 17        |
| 2.4 VEHICLES.....   | 17        |
| 2.5 PROPERTY ACQUISITION AND REAL ESTATE.....               | 17        |
| 2.6 COMMUNITY RELATIONS .....                               | 17        |
| <b>3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS.....</b>       | <b>17</b> |
| 3.1 PROJECT MANAGEMENT PLAN.....                            | 17        |
| 3.2 PMP SUB PLAN.....                                       | 17        |
| 3.3 PROJECT PROCEDURES .....                                | 17        |
| <b>4.0 PROJECT SCHEDULE STATUS .....</b>                    | <b>18</b> |
| 4.1 SCHEDULE STATUS .....                                   | 18        |
| 4.2 90-DAY LOOK-AHEAD.....                                  | 19        |
| 4.3 CRITICAL PATH ACTIVITIES .....                          | 20        |
| 4.4 COMPLIANCE WITH SCHEDULE MANAGEMENT PLAN.....           | 21        |
| <b>5.0 PROJECT COST STATUS .....</b>                        | <b>22</b> |
| 5.1 BUDGET/COST .....                                       | 22        |
| 5.2 COST VARIANCE ANALYSIS .....                            | 23        |
| 5.3 PROJECT FUNDING STATUS .....                            | 25        |
| <b>6.0 PROJECT RISK .....</b>                               | <b>26</b> |
| 6.1 INITIAL RISK ASSESSMENT .....                           | 26        |
| 6.2 RISK UPDATES .....                                      | 26        |
| 6.3 RISK MANAGEMENT STATUS .....                            | 26        |

|            |  |           |
|------------|--|-----------|
| 6.4        | RISK MITIGATION ACTIONS .....                                    | 26        |
| 6.5        | COST AND SCHEDULE CONTINGENCY .....                              | 27        |
| <b>7.0</b> | <b>LIST OF ISSUES AND RECOMMENDATIONS .....</b>                  | <b>30</b> |
| <b>8.0</b> | <b>GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS .....</b> | <b>34</b> |

## **TABLES**

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|   |           |
|---|-----------|
| <b>TABLE 1: PROJECT BUDGET/COST TABLE .....</b>   | <b>5</b>  |
| <b>TABLE 2: SUMMARY OF CRITICAL DATES .....</b>   | <b>5</b>  |
| <b>TABLE 1-1: STANDARD COST CATEGORIES.....</b>   | <b>8</b>  |
| <b>TABLE 1-2 APPROPRIATED AND OBLIGATED FUNDS.....</b>                                      | <b>8</b>  |
| <b>TABLE 2-1: DESIGN COMPLETION DATES.....</b>  | <b>12</b> |
| <b>TABLE 2-2: CONSTRUCTION PROCUREMENT MILESTONES .....</b>                                 | <b>13</b> |
| <b>TABLE 4-1 SUMMARY OF CRITICAL DATES .....</b>  | <b>18</b> |
| <b>TABLE 4-2: 90-DAY LOOK-AHEAD SCHEDULE.....</b>   | <b>19</b> |
| <b>TABLE 4-3: CRITICAL PATH ACTIVITIES.....</b>   | <b>20</b> |
| <b>TABLE 5-1 ALLOCATION OF CURRENT WORKING BUDGET TO STANDARD<br/>COST CATEGORIES .....</b> | <b>22</b> |
| <b>TABLE 5-2 ESTIMATE AT COMPLETION COMPARISON .....</b>                                    | <b>23</b> |
| <b>TABLE 5-3: ESTIMATE(*) VS. BID HISTORY .....</b>   | <b>24</b> |
| <b>TABLE 5-4: EXPERIENCE ADJUSTED COST ESTIMATES.....</b>                                   | <b>24</b> |
| <b>TABLE 5-5: UPDATED EAC FORECAST SUMMARY .....</b>  | <b>25</b> |
| <b>TABLE 5-6: APPROPRIATED AND OBLIGATED FUNDS .....</b>                                    | <b>26</b> |
| <b>TABLE 6-1: SCHEDULE CONTINGENCY.....</b>   | <b>28</b> |

## **APPENDICES**

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### **APPENDIX A - LIST OF ACRONYMS**

## **EXECUTIVE SUMMARY**

### **PROJECT DESCRIPTION**

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

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

### **COST BASELINE**

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

### **SCHEDULE BASELINE**

Key Milestones:

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

### **COMPLETION STATUS**

*A summary of the completion status of the four (4) active construction contracts is as follows:*

- C26002 – 77.84%
- C26005 – 25.12%
- C26013 – 41.75%
- C26007 – 0.00%

*Aggregate Construction % Completion:*

- 31.3% of active construction contracts are complete
- 12.5% of all construction is complete

## **PROGRESS AND ISSUES**

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

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

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

*Key Issues to be monitored during the upcoming period:*

- *Potential startup of the ground freeze system installation of the ground freeze system at the northern limit of the West Bore. The C-26002 (C1) contractor has completed drilling and installing freeze pipes. Equipment required to monitor ground conditions is being reviewed and will require an AWO. Coordination with the actual progress of the TBM in the East Tunnel will determine when the actual freeze of the ground starts.*
- *The bid opening for Contract C-26006 (63<sup>rd</sup> Street Station Upgrade) occurred in November 2010.*
- *Coordination with Contract C-26005 (2A) for the tie-in of the 30" gas main and early access that will enable the contractor to accelerate performance of utility work between 94<sup>th</sup> and 95<sup>th</sup> Streets.*

## **MINI MONTHLY UPDATE**

The information contained in the body of this report is limited, in accordance with Oversight Procedure 25, to "inform the FTA of the most critical project occurrences, issues, and next steps, as well as professional opinions and recommendations." Where a section is included with no text, there are no new "critical project occurrences [or] issues" to report this month.

## ELPEP SUMMARY

### Status:

*As of the end of November 2010, MTACC continued to work with the FTA to produce Management Plans and to demonstrate compliance with the Enterprise Level Project Execution Plan (ELPEP). As reported previously, the original schedule for accomplishment of portions of the ELPEP implementation has consistently not been met; however, progress has been made in several key areas. A significant contribution to the delays in implementing the ELPEP has been the requirement for intermediate deliverables by the MTACC to establish mutual and complete understanding of the concepts and requirements of the ELPEP which in many cases differed from the original MTACC interpretation of the ELPEP. October 12, 2010 marked the official goal for complete implementation of the ELPEP, which has not been achieved as of this writing. The PMOC projects that the full implementation of the ELPEP will require several more months of cooperative effort between the FTA and MTACC. This month, completion of the Technical Capacity & Capability (TCC) Implementation Plan was reported by MTACC, with proposed changes to the respective projects' PMPs having been reviewed and approved by the respective TACs, and the changes to the document in process with a projected completion of December 2010. The MTACC expects to issue a revised PMPs by the end of December 2010, pending approval by the respective projects' TAC Committees. On October 26, 2010, FTA provided MTACC the Schedule Management Plan (SMP) Acceptance Letter. MTACC will update their SMP to include the items in the SMP acceptance letter. Once these modifications have been defined, MTACC will determine what level of approval/documentation will be required and finalize the changes. MTACC has submitted a revised draft Cost and Cost Contingency Management Plan, to which the PMOC/FTA have provided comments. As part of the final review and approval process, meetings will be held in December to review the ESA and SAS Cost Management Programs individually. MTACC has begun work on their demonstration of ELPEP conformant Construction Risk Mitigation Capacity by distributing a draft summary of the processes addressing stakeholder issues at the October 28 ELPEP meeting. At that meeting, the PMOC pointed out that this is a good first step to define processes, and the next step should define how MTACC will demonstrate a functioning program and processes. At the most recent ELPEP meeting, it was agreed that FTA would provide comments to the MTACC draft process summary and that MTACC would continue work on providing a paper that will demonstrate the MTACC risk mitigation capacity. The SAS demonstration of their Retained Risk Management process was held on November 2, 2010. The PMOC provided feedback at the meeting as well as the following comments at the most recent ELPEP meeting:*

- *Process seemed limit in that PMOC observed a review of the existing Risk Register and a consensus estimate of the remaining risk exposure.*
- *Process should be baselined as to total contract risk exposure vs. Risk Transfer, Reduction (mitigation), Retention*
- *Risk Definition - (real or actual, direct risks) risks should have tangible cost or schedule consequence*

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

- MTA will finalize the Cost and Cost Contingency Management Plan for the SAS project in conformance with ELPEP requirements.
- MTA completing the implementation of the PMP Revision Process.
- MTA will demonstrate a functioning process for achieving the traceability of contract package scope from the design basis documentation through pre-construction planning into the contract package cost estimate, and schedule through a contract package level WBS or functional equivalent for one active SAS contract package (4B). MTA will provide the FTA with a plan to demonstrate similar ELPEP conformance on all other un-awarded contract packages for both projects except for construction risk mitigation capacity.

Observation:

*Based on ELPEP requirements, the overall progress remains behind schedule; however, this month MTACC has made further progress in the implementation of the PMP Update Process, the completion of the TCC PMP review, the implementation of the Schedule Management Plan, and the finalization of the Cost Management Plan. The draft recovery plan has been reviewed by the PMOC and FTA is in discussions with MTACC to resolve issues with the respective ESA and SAS Plans.*

*FTA and MTACC continue to participate in a cooperative process to produce the deliverables described in the ELPEP. The bi-weekly ELPEP progress meetings serve to review progress and look ahead to upcoming milestones. MTACC has completed its TCC Implementation Plan PMP review and has gained approval of the respective Technical Advisory Committees for implementation of the proposed changes, and is in the process of implementing PMP changes. This approach is in line with the TCC Implementation and PMP Update Acceptance Letter. Comments to the MTACC draft CMP have been provided by FTA and will be reviewed with ESA and SAS staffs individually in December 2010. This month, the SAS Project Team has continued to be proactive in the support of the ELPEP implementation effort.*

Concerns and Recommendations:

- The PMOC has recommended that the MTACC develop their proposed method to demonstrate compliance with the ELPEP requirements for risk mitigation capacities. MTACC has begun developing the intermediate deliverable, which is a description of their procedures, which can then be verified. *This month there has been limited progress in advancing this deliverable.*
- *The PMOC has recommended revisions to the draft CMP which will be discussed with SAS project management in December, leading to the goal of a finalized CMP.*
- *The PMOC is completing the OP53 review of the 4B Contract and recommends a joint review between FTA, SAS and the PMOC following that review.*
- *The PMOC has provided comments to the SAS procedure for implementing a Retained Risk Program, which has also been endorsed by ESA. The next step should be a review, with each project team, of a strategy to implement the program including the items identified by the PMOC.*

**Table 1: Project Budget/Cost Table**

|                                  | FFGA             |                               |                           | FFGA<br>Amendments | MTA's Current<br>Working Budget<br>(CWB) |                               | Expenditures as of<br><i>November 30, 2010</i> |                                |
|----------------------------------|------------------|-------------------------------|---------------------------|--------------------|--|-------------------------------|--|--------------------------------|
|                                  | (\$ Millions)    | (%)<br>Grand<br>Total<br>Cost | Obligated<br>(\$ Million) | TBD                | (\$ Millions)                            | (%)<br>Grand<br>Total<br>Cost | (\$ Millions)                                  | % of<br>Grand<br>Total<br>Cost |
| <b>Grand Total Cost:</b>         | <b>4,866.614</b> | <b>100</b>                    | <b>3,592.911</b>          |                    | <b>5,489.614</b>                         | <b>100</b>                    | <b>1,090.296</b>                               | <b>19.86</b>                   |
| <b>Financing Cost</b>            | 816.614          | 16.78                         |                           |                    | 816.614                                  | 14.88                         |  |                                |
| <b>Total Project Cost:</b>       | <b>4,050.000</b> | <b>83.22</b>                  | <b>3,592.911</b>          |                    | <b>4,673.000</b>                         | <b>85.12</b>                  | <b>1,090.296</b>                               | <b>19.86</b>                   |
| <b>Total Federal share:</b>      | <b>1,350.693</b> | <b>27.75</b>                  | <b>628.911</b>            |                    | <b>1,350.693</b>                         | <b>24.60</b>                  | <b>289.248</b>                                 | <b>5.30</b>                    |
| <b>Total FTA share:</b>          | <b>1,300.000</b> | <b>96.25</b>                  | <b>600.818</b>            |                    | <b>1,300.000</b>                         | <b>94.62</b>                  | <b>278.136</b>                                 | <b>5.07</b>                    |
| 5309 New Starts share            | 1,300.000        | 100                           | 600.818                   |                    | 1,300.000                                | 94.62                         | 278.136  | 5.06                           |
| <b>Total FHWA share:</b>         | <b>50.693</b>    | <b>3.75</b>                   | <b>28.093</b>             |                    | <b>50.693</b>                            | <b>5.38</b>                   | <b>11.112</b>                                  | <b>.20</b>                     |
| CMAQ                             | 48.233           | 95.15                         | 25.633                    |                    | 48.233                                   | 96.67                         | 8.652  | .16                            |
| Special Highway<br>Appropriation | 2.460            | 4.85                          | 2.460                     |                    | 2.460                                    | 3.33                          | 2.460  | .04                            |
| <b>Total Local share:</b>        | <b>2,699.307</b> | <b>55.47</b>                  | <b>2,964.000</b>          |                    | <b>3,322.307</b>                         | <b>60.52</b>                  | <b>801.048</b>                                 | <b>14.59</b>                   |
| State share                      | 450.000          | 16.67                         | 100.000                   |                    | 450.000                                  | 13.54                         |  |                                |
| Agency share                     | 2,249.307        | 83.33                         | 1,145.782                 |                    | 2,872.307                                | 86.46                         |  |                                |
| City share                       | 0                | 0                             |                           |                    | 0  | 0                             |  |                                |

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

**Table 2: Summary of Critical Dates**

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

(1) SAS Phase 1 Integrated Project Schedule, Revision 3, Update #52, data date of November 1, 2010.

\* From ELPEP



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

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

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

##### **a) Grantee's Organization**

##### **b) Staff Qualifications**

##### **c) Grantee Staffing Plan**

###### Status:

Design: DMJM+Harris and ARUP, (DHA), the design consultant, has reduced its staff to coincide with the completion of the final design of the project.

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

###### Observation:

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

###### Concerns and Recommendations:

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

##### **d) Grantee's Physical Resources**

###### Status:

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

###### Observation:

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

###### Concerns and Recommendations:

*None*

##### **e) History of Performance, Adequacy of Management Systems**

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

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

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

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

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

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

a) **Uniform Property Acquisition and Relocation Act of 1970**

b) **Local Funding Agreements**

**1.1.4 Scope Definition and Control**

**1.1.5 Quality**

**1.1.6 Project Schedule**

Status:

A summary of project schedule information is as follows:

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

Observations:

*The project has experienced delays beyond the current FFGA Revenue Service Date of June 30, 2014 that realistically cannot be recovered. Over the last six months, the MTACC has updated and upgraded the Integrated Project Schedule in a manner which significantly improves the reliability of the forecast dates. The updating process has included TBM forecasts based upon actual production rates previously achieved and incorporation of MTA testing and commissioning activities for all operating systems.*

*TBM production has generally been less than planned. TBM mining is the start of an independent "near-critical" path with only 3 WD of float.*

Conclusions and Recommendations:

*MTACC continues to actively manage the schedule in an effort to mitigate additional delays and potentially recover some of the previous delay time, as well as take advantage of opportunities to develop additional schedule contingency (float).*

*TBM mining directly impacts the cavern mining/excavation for contracts C4B and C5B. Active management of the cavern excavation process by MTACC can mitigate some additional TBM delay. TBM progress is extremely variable from period to period and this situation must be monitored closely. Additional contingency plans (if any are available) should also be considered.*

### 1.1.7 Project Budget and Cost

#### Status:

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

**Table 1-1: Standard Cost Categories**

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

Table 1-2 lists the associated grants in the Transportation Electronic Award Management (TEAM) System with respective appropriated and obligated amounts as of *November 30, 2010*.

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

| Grant Number  | Amount (\$)   | Obligated (\$) | Disbursement (\$) thru <i>November 30, 2010</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  | <i>\$165,848,059</i>                            |
| NY-03-0408-06 | \$274,920,030 | \$274,920,030  | 0   |
| NY-17-X001-00 | \$2,459,821   | \$2,459,821    | \$2,459,821                                     |



| <b>Grant Number</b> | <b>Amount (\$)</b>      | <b>Obligated (\$)</b>   | <b>Disbursement (\$) thru<br/><i>November 30, 2010</i></b> |
|---------------------|-------------------------|-------------------------|--|
| NY-36-001-00*       | \$78,870,000            | \$78,870,000            | \$78,870,000   |
| NY-95-X009-00       | \$25,633,000            | \$25,633,000            | \$8,652,432  |
| NY-95-X015-00       | \$45,800,000            | \$45,800,000            | 0  |
| <b>Total</b>        | <b>\$628,911,200.00</b> | <b>\$628,911,200.00</b> | <b>\$289,248,361.00</b>                                    |



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

A total of \$1,090,296,158 has been expended on the project through *November 30, 2010*, of which \$408,366,663 has been spent on design and \$366,004,030 on construction (MTACC's monthly financial input).

**Observation:**

Local funds totaling \$801,047,797 (\$1,090,296,158 - \$289,248,361) have been spent as of *November 30, 2010*. MTA's approved 2000-2004 and 2005-2009 Capital Programs included \$1,050 million and \$1,914 million respectively for SAS Phase 1. The proposed 2010-2014 Capital Program budgets \$1,487 million to complete the SAS Phase 1 project.

**Concerns and Recommendations:**

*None*

## **1.1.8 Project Risk Monitoring and Mitigation**

### **1.1.9 Project Safety**

**Status:**

Each construction contractor continued to implement its Safety Program in compliance with Section 011150 of the General Requirements Section of the Contract. As of September 30, 2010, the OSHA Recordable Accident Rate increased to 4.07 from the previous rate of 3.77. The OSHA Lost Time Rate also increased from 1.45 to 1.55. Both rates are, however, below the national average of 4.2 and 2.2 respectively.

**Observation:**

SAS has an effective and proactive safety program.

**Concerns and Recommendations:**

*None*

## **1.2 FTA Compliance Documents**

### **1.2.1 Readiness to Enter PE**

### **1.2.2 Readiness to Enter Final Design**

### **1.2.3 Record of Decision (ROD)**

## 1.2.4 Readiness to Execute FFGA

## 1.2.5 Readiness to Bid Construction Work

### Status:

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

- Scheduled and conducted two internal progress meetings per week and prepared and issued meeting minutes for SAS 4B and 5C Contract reviews, and general information on other SAS contract reviews to be performed;
- Distributed additional package-level design documents directly, through internal server access, and through an FTP server to OP53 Review Team;
- The OP53 review of the 4B and 5C packages continued with the research of needed documents in the EDMS system, and further chronology development;
- Assembled *additional* 5C design documents and *continued* OP53 reviews;
- *Received and commenced review of 72<sup>nd</sup> Street Station conformed documents set;*
- *Received and reviewed FTA refresher Contractor Orientation Training power point file;*
- *Continued analyses and development of various Contract 4B report sections;*
- *Prepared additional analyses and development of Contract 5C report sections pertaining to Demonstrated Management Capacity and Control in Procurement, Package Chronology and Package Level Verification.*

### Observation:

*During November 2010, the PMOC assessed and evaluated the Procurement Policies and Procedures contained in Volume 1 of the Second Avenue Subway, January 11, 2010, bid documents for the 72nd Street Station, Station Cavern Mining/ Lining. The MTA Procurement Policy/Instruction Manual – IV-A.16 identifies that FTA requires that a price analysis be performed on every procurement action even where a cost analysis is called for. A price analysis as defined means the process of examining and evaluating a proposed price without evaluating its separate cost elements and proposed profit. The price analysis approach must include several of the following:*

- *A comparison of competitive price quotations;*
- *A comparison of prior quotations and contract prices with current quotations for the same or similar end-items;*
- *A comparison of prices or published price lists issued on a competitive basis, and published prices of commodities, together with discount or rebate schedules;*
- *A comparison of proposed prices with independent estimates.*

*The MTA Procurement Manual states: "Every effort should be expended to ensure that the Authority receives full value for the goods' and services it procures and that prices which are recommended for award are considered 'Fair and Reasonable'. A cost/price analysis is the*

instrument that provides the basis for rendering that determination, as well as being a process reflected in the Staff Summary for award”. Despite requests, the PMOC has not yet seen a price or cost analysis of the C-26007 Bid.

During November 2010, the PMOC also reviewed Cost Estimate Revision 7, which is based on 100% design documents. In addition, the price schedule was prepared for negotiation purposes at the time of the bid. The PMOC understands that the function of the Price Schedule is to reconfigure the cost estimate format into a price line item format in order to facilitate the reconciliation process with the award contract; however, MTACC Procedure No. CO.20 does NOT cite the reconfiguration process from cost estimate into price schedule. Although DHA indicated that the Price Schedule followed the Cost Estimate, the PMOC noted that there is a discrepancy of \$12M between both formats.

Cost Estimate Revision 7 and its breakdown are as follow:

|                              | <u><b>Cost Estimate (Rev. 7)</b></u> | <u><b>Price Schedule</b></u> |
|------------------------------|--------------------------------------|------------------------------|
| <b>Contract 4A (C-26014)</b> | \$ 5,141,138                         | Not Submitted                |
| <b>Contract 4B (C-26007)</b> | <u>\$ 450,856,258</u>                | <u>\$ 438,995,822</u>        |
| <b>Total Combined</b>        | \$ 455,997,396                       |                              |

#### Concerns and Recommendations:

- The Bid Breakdown Worksheet has line item differences that vary from \$452,370 dollars (Final Site Work) to as much as \$68,651,628 (Excavation and Mining) with no written explanations. Based on the lack of documented information available to the PMOC, the PMOC concludes that MTACC has not yet demonstrated a basis for rendering that full value for the goods and services has been received.
- The August 27, 2010 MTA-NYCT Procurement Staff Summary indicated their intent of proceeding with the technical qualification of the second lowest bidder since their bid amount was less than “1% below the engineer’s estimate”. However, the difference when both Contracts C-26014 and C-26007 are accounted for is 2.5%. The PMOC recommends that the procedure for these evaluations be better defined.

### **1.2.6 Readiness for Revenue Operations**

## **2.0 PROJECT SCOPE**

### **2.1 Status &Quality: Design/Procurement/Construction**

#### **2.1.1 Engineering and Design**

##### Status:

The following table summarizes Final Design Completion Dates as reported by the MTACC via the most recent update of the Integrated Project Schedule (IPS) update #52, dated November 1, 2010.

**Table 2-1: Design Completion Dates**

| <b>Contract</b>     | <b>Description</b>                                  | <b>IPS Update #51</b> | <b>IPS Update #52</b> |
|---------------------|---|-----------------------|-----------------------|
| Contract-26010 (2B) | 96 <sup>th</sup> Street Station Finishes and (MEP)  | 10/29/10              | 11/2/10               |
| Contract-26011 (4C) | 72 <sup>nd</sup> Street Station Finishes and MEP    | 06/02/10A             | 06/02/10A             |
| Contract-26008 (5B) | 86 <sup>th</sup> Street Station Cavern Construction | 09/03/10A             | 09/30/10A             |
| Contract-26012 (5C) | 86 <sup>th</sup> Street Station Finishes and MEP    | 10/27/10              | 10/27/10A             |
| Contract-26009 (6)  | Systems –Track, Power, Signals and Communications   | 10/26/10              | 10/26/10A             |

**Observation:**

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

*As of the writing of this report, the PMOC has not received 100% Design Memorandums for C2B, C5C and C6.*

**Concerns and Recommendations:**

*MTACC has reported that design work for all construction packages is “substantially complete”. Delays to station finish packages (C2B, C4C, and C5C) are not significant as these packages will not be advertised for construction bidding for at least 12 months.*

*As the 100% Design Memorandums are submitted, the PMOC will review and establish the appropriate follow-ups to verify that outstanding issues are being addressed.*

**2.1.2 Procurement****Status:**

Major construction procurement achievements during November 2010 include:

*Bids for Contract C-26006 (C3) were opened on November 4, 2010. Bid results are tabulated in the following table:*

| <b>Position</b> | <b>Contractor</b>             | <b>Bid</b>    |
|-----------------|-------------------------------|---------------|
| 1               | Judlau Contracting Inc        | \$176,450,000 |
| 2               | Picone-Schiavone-Tudor-Perini | \$177,654,925 |
| 3               | Skanska USA                   | \$177,763,300 |
| 4               | Citnalta Const                | \$205,172,904 |
| 5               | Tully Construction            | \$206,816,732 |
| 6               | Kiewit Infrastructure         | \$254,223,331 |

*The bid opening for Contract C-26008 (C5B was postponed until January 11, 2011. Adequate float exists in the schedule to ensure that no delays to the contract award date will result from*



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

**Table 2-2: Construction Procurement Milestones**

| Activity #   | Description                             | Date*     | Comment                                     |
|--|---|-----------|---|
| Contract C-26006 (C3): 63 <sup>rd</sup> Street Station Upgrade               |   |           |   |
| C3 PR25  | Procurement (IFB) Advertise & Bid       | 06/24/10A | Evaluation of low bidder by MTA is ongoing. |
| C3 PR30  | Open Bids                               | 11/04/10A |   |
| C3 PR40  | Award Contract C3                       | 12/17/10  |   |
| Contract C-26008 (C5B): 86 <sup>th</sup> Street Station Cavern & Heavy Civil |   |           |   |
| C5B 20m  | Procurement – Advertise C5B Bid Package | 10/25/10A | Bid date postponed until 01/11/11.          |
| C5B 25d  | Procurement (IFB) Open Bids             | 01/11/11  |   |
| C5B PR40   | Award Contract 5B                       | 03/29/11  |   |
| Contract C-26009 (C6): Systems   |   |           |   |
| SYPR20e  | Authorization to Advertise              | 09/10/10A | RFP short list has been identified.         |
| SYPR 20k   | Prep RFP Short List                     | 11/29/10A |   |
| SYPR 25t   | Issue RFP                               | 12/16/10  |   |
| SYPR30a  | Submit Proposals                        | 03/14/11  |   |

\* Note: All dates reference IPS Update #52 (DD=11/01/10)

#### Observations and Analysis:

*The variance between low bids received for Contract 3 and the current/engineer’s estimate for that package is excessive.*

#### Concerns and Recommendations:

*Detail evaluation and understanding of the variance between the bids received and the engineer’s estimate for Contract 3 is needed. A variance of this magnitude (> 18%) is excessive; MTA procedures mandate a complete evaluation in instances where this variance exceeds 10%.*

### **2.1.3 Construction**

#### Status:

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

- **Contract C-26002(C1) –TBM tunnels from 92nd Street to 63rd Street**
  - *TBM mining of west tunnel continues w/approximately 4,628lf mining completed to just north of 74<sup>th</sup> Street (as of November 30, 2010).*
  - *Installation of Ground Freezing Plant & Piping completed. Actual freezing operation is anticipated to start in late January 2011/early February 2011, based on forecast production of TBM Run #1.*
  - *Cellar Tie work at 1834 is complete and work at 1808 is nearing completion. Work at 1814 is still pending sidewalk shed removal.*
  - *Sidewalk improvements/Good Neighborhood Program initiatives commenced between 92nd and 93rd Streets.*



- **Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation**
  - *Completed sewer excavation/CFA pile installation and commenced sewer work between 95th to 96th Streets and 96th to 97th Streets.*
  - *Installed 48" sewer from MH 97-3 to MH 98-1 up to ECS conflict point and 18" sewer between MH 96-3 to SC 96-1.*
  - *Continued jet grouting at the North wall of building 1873 2nd Avenue.*
  - *Con Edison and ECS pulled and spliced cables between 95th and 98<sup>th</sup> Streets on the east side of 2nd Avenue.*
  - *Demolished Rainbow Hardware to perform structural survey (Entrance 1).*
  - *Verizon crews continue working two shifts to ID cables at 98th Street ECS MH to resolve ECS/Sewer conflict.*
- **Contract C-26007 (C4B) 72<sup>nd</sup> Street Station Mining and Lining**
  - *Schedule Kick-off Meeting held October 20, 2010.*
  - *Final submission and acceptance of Preliminary Schedule.*
  - *Full submission of Baseline Schedule (draft schedule submitted late November and review is underway).*
  - *Early Construction activities next 90 calendar days*
    - *Mobilization & MPT Setup*
    - *Ground & Building Instrumentation Installation*
    - *Environmental – Noise Control & Ground Water Treatment*
    - *Encroachment removals*
    - *Temp utilities*
    - *Ancillaries – Asbestos Abatement*
    - *Test Blasts*
    - *69th and 72 street shaft excavation*
    - *Main Cavern -Mechanical excavation (Top heading)*
- **Contract C-26013 (C5A) 86th Street Station Excavation, Utility Relocation and Road Decking**
  - *Completed electrical ductwork on 82nd to 84th & 83rd St, east of 2<sup>nd</sup> Ave.; Con Ed crews started cable pulling & splicing work.*
  - *Installing new sewer pipe and MHs to replacement existing sewer on west side of 2nd Ave. The contractor, JDSI is working extended weekdays and Saturdays to support December 4, 2010 completion.*
  - *Shifted work zone in the North Shaft area at 86th St from east side of 2nd Ave to the center configuration to support sewer main replacement.*

- Con Ed transferred Chase Bldg. service to secondary system vault west side of 2nd Ave between 86th and 87th St.
- Excavating new sewer manhole on southwest corner of 87th Street.

#### Observations:

Key elements of work or issues requiring resolution in the near future to avoid delays to the work are described below. For Contract C1 - As of the end of November 2010, TBM progress is summarized as follows:

| Second Avenue Subway<br>TBM Summary - PMOC Projection |  |                |             |                 |                  |                 |       |
|---|--|----------------|-------------|-----------------|------------------|-----------------|-------|
| Date  | Station                                    | Total Progress | Unit        | Period Progress | Work Days/Period | Progress/Period | Unit  |
| Actual  | 5/27/2010                                  |                |             |                 |                  |                 |       |
|   | 6/8/2010                                   | Sta 1221+89.0  | 0           | 261             | 16               | 16.31           | LF/WD |
|   | 6/29/2010                                  | Sta 1219+28.0  | 261 LF      | 374.2           | 22               | 17.01           | LF/WD |
|   | 7/29/2010                                  | Sta 1215+02.96 | 635.2 LF    | 1292.8          | 18               | 71.82           | LF/WD |
|   | 8/31/2010                                  | Sta 1202+61.0  | 1928 LF     | 1054            | 17               | 62.00           | LF/WD |
|   | 9/29/2010                                  | Sta 1192+07    | 2982 LF     | 769             | 24               | 32.04           | LF/WD |
|   | 11/2/2010                                  | Sta 1183+85.72 | 3751 LF     | 877             | 20               | 43.85           | LF/WD |
|   | 11/30/2010                                 | Sta 1175+09.17 | 4628 LF     |                 |                  |                 |       |
|   | Total To Date                              |                | 4628.0 LF   |                 | 117              | 39.56           | LF/WD |
|   | IPS Scheduled To Date                      |                | 6165.9 LF   |                 | 117              | 52.70           | LF/WD |
|   | Net Ahead (+) Behind (-)                   |                | (1537.9) LF |                 | (29)             |                 | WD    |
|   |  |                |             | 378             | 10               | 39.56           | LF/WD |
| Forecast  | 12/13/2010                                 | Sta 1172+09    | 5006 LF     |                 |                  |                 |       |
|   | AWO #92 Agreement in Principle on 10/29/10 |                |             | 2209            | 56               | 39.56           | LF/WD |
|   | 3/1/2011                                   | Sta 1150+00    | 7215 LF     |                 |                  |                 |       |
|   | 3/29/2011                                  |                |             |                 | 20               |                 |       |
|   | 5/3/2011                                   |                |             |                 | 25               |                 |       |
|   | 5/3/2011                                   | Sta 1221+89    | 0 LF        | 7827            | 198              | 39.56           | LF/WD |
|   | 2/4/2012 Sta 1143+80                       |                |             | 7827            |                  |                 |       |
|   |  |                |             |                 |                  |                 |       |
|   |  |                |             |                 |                  |                 |       |
|   |  |                |             |                 |                  |                 |       |

- TBM production declined somewhat during November 2010. This result was generally expected. During November, the TBM passed through the 72<sup>nd</sup> Street Station limits, an

*area where poor rock quality has been identified in the GBR and other baseline documents.*

- *As previously reported, the contractor has accepted responsibility for 85 WD of delay through June 1, 2010. TBM delays calculated above are also considered to be the Contractor's responsibility. To date, no Recovery Plan or other indication how the Contractor intends to recover this time has been presented.*
- *It is forecast that the Contractor will complete the 5006 LF of original tunnel mining scope for the west tunnel and start on the additional 2,209 LF added to the contract via AWO #92 in early December 2010. MTACC issued a directive authorizing S3 to perform the AWO #92 effort prior to approval by the MTA Board. Board approval is anticipated in December 2010. The Contractor's willingness to perform additional work of this nature is a key element in avoiding excessive project delays.*
- *Transfer of the concrete lining of the east bore (72nd to 86th Streets) from contract C1 to contract C4B is anticipated to satisfy New York City Fire Department (NYCFD) requirements and coordinate the work of these packages.*
- *Installation and testing of the ground freeze plant is complete. Startup will be coordinated with TBM progress to ensure continuity of operations.*

For Contract C2A:

- *ECS duct interference with sewer line at SC 95-2.*
- *ECS Manhole interference with Slurry wall panel at 95th St.*
- *Negotiation and approval of AWO #48 for additional costs associated with schedule recovery plan (which is incorporated in the current IPS Update).*
- *NYCHA approval and DEP permitting for sewer redesign at former 98th street.*

For Contract C4B:

- *Blasting Coordination w/C1 TBM Mining Contract.*
- *Reaction to Contractor's proposed plan to build an enclosure around the muck conveyor/loading operation at street level. Early verification that this structure conforms to FEIS requirements is considered very important.*
- *Vacating of Commercial Space by 01-Jan-11 to support demolition of Ancillary #2*
- *FTA response to TEC Memo #7 for Ancillary #2.*

For Contract C5A:

- *Resolution of North Shaft area water and sewer utility amplifying drawings with DEP.*
- *ECS/Verizon to confirm cables duct assignments within existing system in vicinity of southwest pit to prevent delays.*
- *Con Ed coordination agreement for schedule improvement for cable pulling and splicing work at north end for powering Chase Bldg.*

- *Potential schedule impact due to mechanical rock excavation of shafts after TBM is positioned south of the 86th St. Station Shafts.*

Concerns and Recommendations:

*MTACC continues to make progress in resolving problem issues and avoiding major construction delays. However, the PMOC considers an improvement in the processing times for AWOs to be an area requiring improvement.*

*Additional recommendations related to construction activities are contained within other sections of this report.*

**a) Force Account (FA) Contracts**

**2.1.4 Operational Readiness**

**2.2 Third-Party Agreement**

**2.3 Contract Packages and Delivery Methods**

Status:

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

**2.4 Vehicles**

**2.5 Property Acquisition and Real Estate**

**2.6 Community Relations**

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

**3.1 Project Management Plan**

**3.2 PMP Sub Plan**

**3.3 Project Procedures**

Status:

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

Observation:

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

Concerns and Recommendations:

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

## 4.0 PROJECT SCHEDULE STATUS

### 4.1 Schedule Status

#### Status:

*IPS Update #52 was received on November 30, 2010 and is based on a Data Date of November 1, 2010. Update #52 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports. Project schedule completion milestone dates remained essentially unchanged for this period. MTACC continues to forecast completion of all construction on 07/15/16, with 165 calendar days of contingency until its committed RSD of 12/30/16.*

**Table 4-1 Summary of Critical Dates**

|                       | FFGA              | Forecast Completion |               |
|-----------------------|-------------------|---------------------|---------------|
|                       |                   | Grantee             | PMOC          |
| Begin Construction    | January 1, 2007   | 03/20/2007A         | 03/20/2007A   |
| Construction Complete | December 31, 2013 | May 15, 2016        | October 2017  |
| Revenue Service       | June 30, 2014     | December 30, 2016   | February 2018 |

During the month of September 2010, progress continued on the three (3) active construction packages: C-26002 (C1) TBM Tunneling and 96th Street Box, C-26005 (C2A) 96th Site Work and Heavy Civil, and C-26013 (C5A) Open Cuts and Utility Relocation; and the IFB Procurement Process continued for Contract C-26006 "63rd Street Station Upgrades" and C-26007, 72nd Street Station Cavern Mining & Lining."

The schedule kickoff meeting for C-26007 (C4B) was held on October 20, 2010 at which time the requirements for the formal schedule submission were reviewed. The general contractor submitted its Preliminary Schedule at the November 20 progress meeting. The initial submission of the C4B baseline schedule was received in late November and is currently under review.

#### Observations and Analysis:

*No significant changes were made to the IPS during this update period.*

*The cumulative effect of slower than planned TBM mining progress has resulted in a secondary critical path that contains less than 25 days float. This condition is not in conformance with the ELPEP. MTACC recognizes the nonconformity and is evaluating methods to mitigate.*

*It should be noted that some "flexibility" exists between the TBM mining and the handoffs to C4B and C5C cavern excavation. For this reason, the critical path extending from C5A → C5B → C5C → C6 is considered the governing critical path for the project.*

#### Concerns and Recommendations:

*Significant problems exist with respect to a plan to mitigate the current TBM delays. The Contractor's unwillingness or inability to accelerate work to overcome delays for which it is*



responsible, coupled with the variations in production due to rock conditions encountered and the extremely linear nature of the work remaining, suggest a means of overcoming a significant portion of delays encountered may not be feasible.

The PMOC will continue to work with MTACC to identify potential schedule mitigation tactics. Two issues that occurred in October 2010 have significant impact on the Project.

## 4.2 90-Day Look-Ahead

### Status:

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

**Table 4-2: 90-Day Look-Ahead Schedule**

| <i>Activity ID</i>  | <i>Start</i> | <i>Finish</i> | <i>Note</i> |
|---|--------------|---------------|-------------|
| <b>C1- TBM Construction – Tunnel 96th Box (91st to 95th)</b>  |              |               |             |
| TBM 1 <sup>st</sup> Run – Mine West Tunnel from 96 <sup>th</sup> Street Launch Box to 65 <sup>th</sup> Street | 05/27/10A    | 03/02/11      | 1           |
| Complete Installation of Freeze Plant   |              | 01/25/11      |             |
| Verify Freeze Zone Complete   |              | 2/1/11        |             |
| <b>C2B – 96<sup>th</sup> Street Station concrete and Finishes &amp; MEP</b>                                   |              |               |             |
| 100% Design Submission  |              | 02-Nov-10     |             |
| <b>C3 - 63rd Street Station Upgrade (IFB)</b>   |              |               |             |
| Award Contract  |              | 12/17/10      |             |
| <b>C4B – 72nd St. Station Existing Demo/Mining &amp; Lining (IFB)</b>   |              |               |             |
| Notice of Award   |              | 10/01/10A     | 2           |
| <b>C5B – 86<sup>th</sup> St. Station Mining &amp; Lining (IFB)</b>  |              |               |             |
| Advertise   | 10/25/10A    |               | 3           |
| Bid Opening   |              | 01/11/11      | 4           |
| Award   |              | 03/29/11      |             |
| <b>C6 – Systems (RFP)</b>   |              |               |             |
| Submit System RFP Package to NYCT   | 12/01/10     |               | 3           |
| Submit Proposals  | 03/29/11     |               |             |
| <b>CM1188 – Design Services MOD #57</b>   |              |               |             |
| PE/FD for Ancillary #2 @ 86 <sup>th</sup> St Station; Contract 5B   | 05/17/10A    | 09/10/10A     |             |
| PE/FD for Ancillary #2 @ 86 <sup>th</sup> St Station; Contract 5C   | 05/24/10A    | 10/27/10A     |             |
| Systems   | 06/21/10     | 10/26/10A     |             |

### Observations and Analysis:

#### *90-Day Look-Ahead Notes:*

1. Revised completion date (approximately 1 month delay from September 2010 Report) for the East Bore is a result of the reforecast of future durations based upon experience to date.

2. *Actual date of contract award notification.*
3. *Document Availability date as posted on the MTACC Procurement Web Site.*
4. *As posted on the MTACC Procurement Web Site and in IPS Update #52.*

*MTACC has reported design work for Packages 2B, 4C, 5C and 6 is generally complete. 100% Design Memoranda are being submitted to the PMOC for review when available. Follow-up work for any of these packages is not currently delaying subsequent activities.*

**Concerns and Recommendations:**

*Substantial float exists between the currently scheduled C5B bid date and award date. Incidental delays during construction procurement should not delay the award.*

**4.3 Critical Path Activities**

**Status:**

Table 4-3 summarizes the critical path contained in IPS Update #52.

**Table 4-3: Critical Path Activities**

| Activity ID |  | Update #51 Duration | Start            | Finish           |
|-------------|--|---------------------|------------------|------------------|
| <b>C5</b>   | <b>86th Street Station</b>   | <b>1286</b>         | <b>1-Nov-10</b>  | <b>27-Sep-15</b> |
| C5A         | 86th Station - Excavation & Utility Work                           | 251                 | 1-Nov-10         | 27-Sep-11        |
| C5B         | 86th Station - Mining & Lining                                     | 551                 | 10-Oct-11        | 20-Nov-13        |
| C5C         | 86th Station - Architectural & MEP Finishes                        | 435                 | 20-Nov-13        | 24-Jul-15        |
| C6          | System Installation (86th Street Station)                          | 170                 | 12-Jan-15        | 4-Sep-15         |
| <b>C6</b>   | <b>Systems (Track, Signal, Traction Power &amp; Communication)</b> | <b>185</b>          | <b>7-Sep-15</b>  | <b>23-May-16</b> |
| C6          | Construction   | 185                 | 7-Sep-15         | 23-May-16        |
| <b>NYCT</b> | <b>Pre-Revenue Operation Test &amp; Revenue Service</b>            | <b>85</b>           | <b>21-Mar-16</b> | <b>15-Jul-16</b> |
|             | Phase 1 Substantial Completion                                     | 0                   | 15-Jul-16        | 15-Jul-16        |
|             | <b>Phase 1 Schedule Contingency</b>                                | <b>120</b>          | <b>18-Jul-16</b> | <b>30-Dec-16</b> |
|             | Completion w-Schedule Contingency                                  | 120                 | 18-Jul-16        | 30-Dec-16        |

**Observations:**

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

The Primary Critical Path of the program is still extends through contracts C5A, C5B, C5C, and C6. Previously discussed delays to TBM mining have resulted in a Secondary Critical Path extending from the current TBM mining through the handoff to C5B cavern excavation.

The Primary Critical Path involves only one active construction package, C5A. As such, there is limited change in this path from update to update. The Secondary Critical Path involves considerably more active construction. As such, greater variances from period to period are likely.

#### Concerns and Recommendations:

The SAS Project Team continues to take steps to upgrade and enhance the reliability of the IPS. Limited mitigation of additional TBM delays may be possible by adjusting handoff dates with the cavern construction packages. *The PMOC is concerned that further TBM-related delays will become the driving delay and adversely impact the schedule and cost of subsequent packages.*

#### **4.4 Compliance with Schedule Management Plan**

##### Status:

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

##### Observations and Analysis:

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

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

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

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



*Of note is the fact that MTACC does not conform to Item 1.3 of the PMOC evaluation checklist wherein the difference between the project critical path and the next most critical path shall be no less than 25 CD of float. This nonconformance is acknowledged by MTACC.*

*In general, the PMOC notes that MTACC is realizing the beneficial outcomes established by the ELPEP. Based upon this analysis, the MTACC currently “Conforms” to the Schedule Management requirements established by the ELPEP.*

#### Concerns and Recommendations:

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

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

## **5.0 PROJECT COST STATUS**

### **5.1 Budget/Cost**

#### Status:

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

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

| <b>Standard Cost Category (SCC)</b> | <b>Description</b>                     | <b>FFGA</b>            | <b>MTA’s Current Working Budget</b> |
|-------------------------------------|--|------------------------|-------------------------------------|
| 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.

As previously reported, on November 10, 2010, MTACC provided Revision No. 8 of the SAS Phase 1 Cost Estimate. This estimate update does not include soft costs. It includes 100% Design Cost estimates for all construction packages that have not been bid. Updated construction cost estimates currently indicate a reduction in direct construction cost and escalation of approximately \$50.4 million. These costs have been shifted to “unallocated contingency” and grouped within the construction cost component.

At the summary level, changes to the MTACC’s EAC are minimal:

**Table 5-2 Estimate at Completion Comparison**

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

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

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

Observation and Analysis:

MTACC’s Revision #8 of the Phase 1 Cost estimate for this project is currently labeled “DRAFT” and should be thoroughly validated prior to formal acceptance. The C3 bids, received on November 4, 2010, were substantially higher than the estimated cost in Revision 8. This issue is discussed elsewhere in this report.

PMOC also notes that this update reflects a reforecast of construction costs only. MTACC has demonstrated that select elements of its current EAC include updated forecasts; however a comprehensive forecast of all cost elements should be made.

## 5.2 Cost Variance Analysis

Status:

The PMOC has independently forecast a revised EAC based upon additional information obtained during the November update period. This information includes:

- Contract 3 bid results
- Cost Estimate Revision 8, which includes 100% design estimates for all packages.

The factors evaluated and methodology used to develop a construction EAC forecast are discussed further in the following sections. The PMOC anticipates a similar methodology will be applied to a total project EAC reforecast in the near future.



Observation and Analysis:

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

**Table 5-3: Estimate(\*) vs. Bid History**

| <b>Package</b>  | <b>Estimate \$</b> | <b>Reference</b>                        | <b>Bid Price</b> | <b>+/- (%)</b> |
|---|--------------------|---|------------------|----------------|
| <i>C1; TBM Tunneling</i>  | \$319,000,000      | <i>Estimate Rev. 5, 08/30/06</i>        | \$337,025,000    | 5.65%          |
| <i>C2A; 96<sup>th</sup> St. Station Utility &amp; Heavy Civil</i> | \$261,000,000      | <i>Estimate Rev. 6, 07/11/08</i>        | \$325,000,000    | 24.52%         |
| <i>C5A; 86<sup>th</sup> St. Station Utilities</i>                 | \$25,000,000       | <i>Estimate Rev. 6, 07/11/08</i>        | \$34,070,000     | 36.28%         |
| <i>C4B; 72<sup>nd</sup> St. Station Heavy Civil &amp; Mining</i>  | \$448,035,000      | <i>Estimate Rev. 7, 10/08/09</i>        | \$447,180,260    | -0.19%         |
| <i>C3: 63rd St. Station Upgrade</i>                               | \$148,771,000      | <i>Estimate Rev. 8 (draft) 10/29/10</i> | \$176,450,000    | 18.61%         |
|   | \$1,201,806,000    |   | \$1,319,725,260  | 9.81%          |

\* In this table, Estimate = Est. Cost of Construction + AFI

C3 Bid Price assumes approval of low bidder.

In forecasting the total project EAC, the significant variance between estimate and bids received shown in Table 5-3 must be considered. Adding this bidding experience variance to the Revision #8 estimate of remaining preconstruction packages results in the following:

**Table 5-4: Experience Adjusted Cost Estimates**

| <b>IN DESIGN / PRE-BID PROCESS</b>      |   | <b>Estimated (Rev 8)</b> | <b>AFI %</b> | <b>Estimate w/AFI</b> | <b>Estimate Variance</b> | <b>Adjusted Estimate</b> |
|---|---|--------------------------|--------------|-----------------------|--------------------------|--------------------------|
| 2B                                      | 96th Street Station Shell Concrete, Backfill, Permanent Utilities and Street Restoration  | \$370,185,000            | 1.1          | \$407,203,500         | 12.00%                   | \$456,067,920            |
| 4C                                      | 72nd Street Station, Ancillary and Entrance Concrete, Architectural Finishes and MEP      | \$231,376,000            | 1.1          | \$253,964,234         | 12.00%                   | \$284,439,942            |
| 5B                                      | 86th Street Station Mining and Lining   | \$358,418,000            | 1.1          | \$330,968,158         | 0.00%                    | \$330,968,158            |
| 5C                                      | 86th Street Station Architectural, Conveying Systems, Mechanical, Electrical and Plumbing | \$227,644,000            | 1.1          | \$261,772,594         | 12.00%                   | \$293,185,305            |
| 6                                       | Track, Signal, Power, Communication & MEP System Equipment                                | \$230,522,000            | 1.1          | \$232,973,463         | 8.00%                    | \$251,611,340            |
| Subtotal Pre-Bid Contracts:             |   | \$1,418,145,000          |              | \$1,486,881,949       |                          | \$1,616,272,665          |
| Subtotal Active Construction Contracts: |   |                          |              |                       |                          | \$1,319,725,260          |
| TOTAL:                                  |   |                          |              |                       |                          | \$2,935,997,925          |

Based upon change order experience to date, modified AWO% has been applied to the current contract or forecast values for preconstruction packages. This results in the following:

**Table 5-5: Updated EAC Forecast Summary**

|    | <i>Description</i>  | <i>Contract/Forecast</i> | <i>AWO %</i>  | <i>EAC</i>              |
|----|---|--------------------------|---------------|-------------------------|
| 1  | <i>TBM Tunneling</i>  | <i>\$337,025,000</i>     | <i>16.96%</i> | <i>\$394,188,081</i>    |
| 2A | <i>96th Street Station; Excavation &amp; Heavy Civil</i>              | <i>\$325,000,000</i>     | <i>8.70%</i>  | <i>\$353,283,542</i>    |
| 2B | <i>96th Street Station Shell Concrete, Arch &amp; MEP</i>             | <i>\$456,067,920</i>     | <i>14.00%</i> | <i>\$519,917,429</i>    |
| 3  | <i>63rd Street and Lexington Avenue Station</i>                       | <i>\$176,450,000</i>     | <i>14.00%</i> | <i>\$201,153,000</i>    |
| 4B | <i>72nd Street Station Excavation &amp; Heavy Civil</i>               | <i>\$447,180,000</i>     | <i>14.00%</i> | <i>\$509,785,200</i>    |
| 4C | <i>72nd Street Station, Shell Concrete, Arch &amp; MEP</i>            | <i>\$285,055,232</i>     | <i>14.00%</i> | <i>\$324,962,964</i>    |
| 5A | <i>86th Street Station Open Cuts and Utility Relocations</i>          | <i>\$34,070,000</i>      | <i>25.22%</i> | <i>\$42,664,092</i>     |
| 5B | <i>86th Street Station Mining and Lining</i>                          | <i>\$394,259,800</i>     | <i>14.00%</i> | <i>\$449,456,172</i>    |
| 5C | <i>86th Street Station Shell Concrete, Arch &amp; MEP</i>             | <i>\$280,457,408</i>     | <i>14.00%</i> | <i>\$319,721,445</i>    |
| 6  | <i>Track, Signal, Power, Communication &amp; MEP System Equipment</i> | <i>\$273,860,136</i>     | <i>14.00%</i> | <i>\$312,200,555</i>    |
|    |   | <i>\$3,009,425,496</i>   |               | <i>\$ 3,427,332,480</i> |

**Conclusions and Recommendations:**

The PMOC forecast EAC of \$3,427,332,480 should be compared to the current MTACC forecast EAC of \$3,263,717,000. The variance of \$163,615,480 (overrun) should be compared to the PMO's previous construction EAC forecast \$14,289,943 (overrun) presented in the September Monthly Report.

The negative result of this forecast is the primary result of Construction Estimate Revision 8 and the resulting estimate/bid variance for Contract 3. The PMOC recommends a complete evaluation of both results to see if this forecast correctly interprets their results. Any adjustments to this forecast will be presented in subsequent monthly reports.

**5.3 Project Funding Status**

**Federal**

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



**Table 5-6: Appropriated and Obligated Funds**

| <b>Grant Number</b> | <b>Amount (\$)</b>      | <b>Obligated (\$)</b>   | <b>Disbursement (\$) thru<br/><i>November 30, 2010</i></b> |
|---------------------|-------------------------|-------------------------|--|
| 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           | <i>\$165,848,059</i>                                       |
| NY-03-0408-06       | \$274,920,030           | \$274,920,030           | 0  |
| NY-17-X001-00       | \$2,459,821             | \$2,459,821             | \$2,459,821  |
| NY-36-001-00*       | \$78,870,000            | \$78,870,000            | \$78,870,000   |
| NY-95-X009-00       | \$25,633,000            | \$25,633,000            | \$8,652,432  |
| NY-95-X015-00       | \$45,800,000            | \$45,800,000            | 0  |
| <b>Total</b>        | <b>\$628,911,200.00</b> | <b>\$628,911,200.00</b> | <b><i>\$289,248,361.00</i></b>                             |



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

## **Local**

No change from last month.

## **6.0 PROJECT RISK**

### **6.1 Initial Risk Assessment**

No change this period.

### **6.2 Risk Updates**

Status:

No updates for this period.

### **6.3 Risk Management Status**

Status:

No updates for this period.

### **6.4 Risk Mitigation Actions**

Status:

No updates for this period.

## 6.5 Cost and Schedule Contingency

### 6.5.1 Cost Contingency

#### Status:

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

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

#### Observations and Analysis:

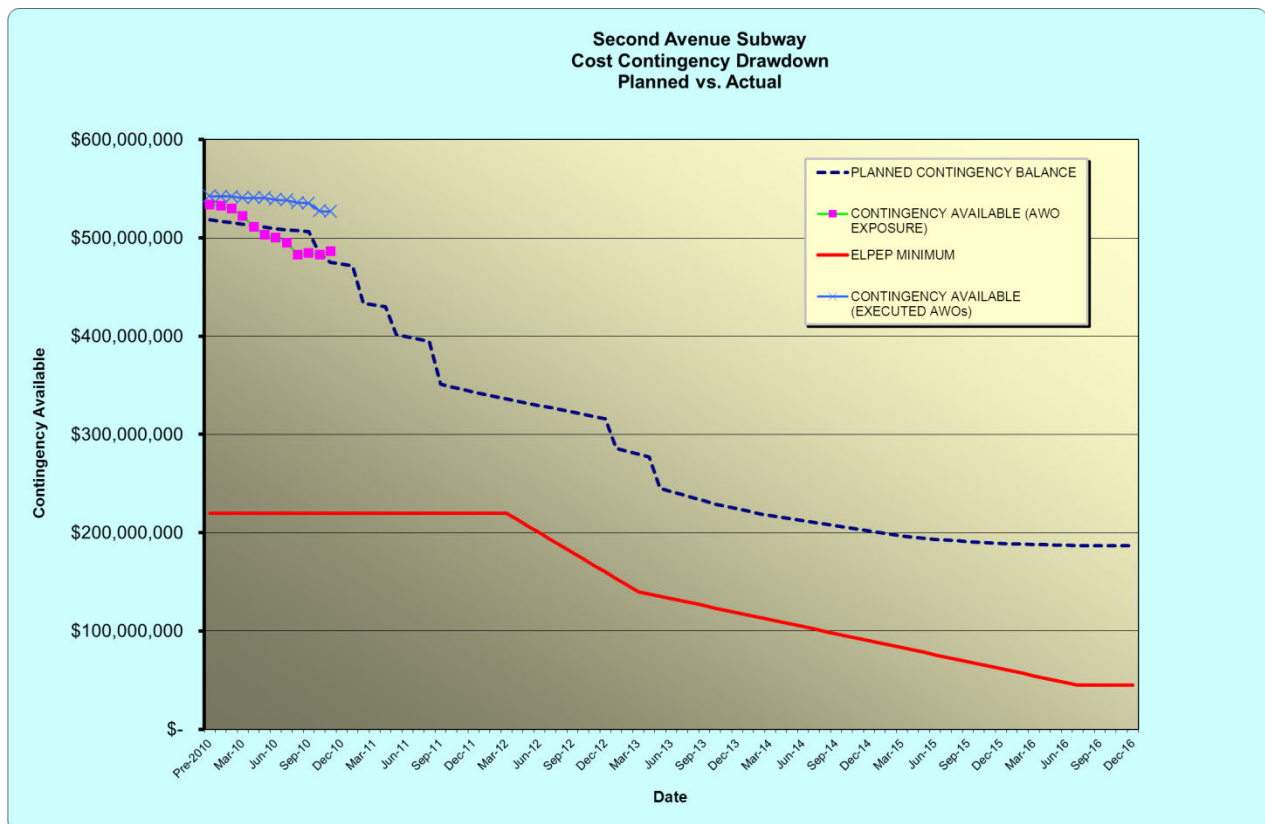
*Using the MTACC's methodology, the PMOC has developed a contingency analysis for the project. Through November 2010, cost contingency status is summarized as follows:*

*Planned Balance:* \$ 475,149,315

*Actual Balance (using executed AWOs):* \$ 526,718,229

*Actual Balance (using AWO Exposure):* \$ 486,384,513

*In graphic form:*



*The ELPEP and the MTACC Draft Cost Management Plan do not currently specify how the Actual Drawdown is to be calculated for comparison with the required ELPEP minimum. In the opinion of the PMOC, Actual Drawdown should be calculated using the “AWO Exposure” value tabulated in the monthly AWO tracking logs. Contingency balance using both “AWO Exposure” and “Executed AWOs” is presented in the graphic above.*

*Significant changes which occurred during November 2010 include:*

- 1. The actual value of Contract 1, AWO #92 was incorporated. This had the effect of reducing AWO Exposure by approximately \$3M.*
- 2. The Revision 8 Estimate and bid results were included for Contract 3. The reduced estimate value had the effect of increasing available contingency, which was then partially consumed upon recording the (presumed) award value.*

#### **Concerns and Recommendations:**

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

- 1. Contingency usage is based upon an evaluation of the construction phase only. Construction cost is expected to be the primary driver of contingency usage, however, other elements of the project may draw upon (or provide surplus) contingency funds. The current methodology should be extended to include all design phase and other project soft costs, to provide a total picture of contingency usage.*
- 2. Construction contingency usage should be based upon “AWO Exposure” as discussed above.*

#### **6.5.1 Schedule Contingency**

##### **Status:**

*Schedule contingency reported by MTACC, based upon Update #52 of the SASIPS exceeds threshold limits established by the ELPEP. Schedule contingency measured against MTACC's RSD commitment date of 12/31/16 is 172 CD. When measured against the FTA/PMOC RSD estimate of 02/28/18, the contingency is currently 617 CD.*

##### **Observations:**

*The revision in schedule contingency contained in Update #52 is the result of fine-tuning the schedule scope and relationship between the C5A and C5B packages.*

**Table 6-1: Schedule Contingency**

| <b>IPS Update #</b>     | <b>47</b> | <b>48</b> | <b>49</b> | <b>50</b> | <b>51</b> | <b>52</b> |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>Data Date</b>        | 06/01/10  | 07/01/10  | 08/01/10  | 09/01/10  | 10/01/10  | 11/01/10  |
| <b>Contingency (CD)</b> |           |           |           |           |           |           |
| <i>RSD=12/31/2016</i>   | 165       | 165       | 127       | 165       | 185       | 172       |
| <i>RSD=02/28/2018</i>   | 589       | 589       | 551       | 589       | 617       | 604       |

*\*Estimated by PMOC based on IPS Update #52, provided by MTACC*

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

**Concerns and Recommendations:**

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



## 7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column      1 – Critical

2 – Near Critical

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

| Number with Date Initiated | Section                                 | Issue/Recommendation  | Criticality |
|----------------------------|---|---|-------------|
| SAS-10-Jan10               | 3.2<br>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>   | 2           |
| SAS-11-Jan10               | 3.3<br>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> | 2           |
| SAS-12-Oct10               | 2.1.2<br>Procurement<br>4.2<br>Schedule | <p>The PMOC is concerned about the quantity of addenda (16) and the extension of the bid phase (2.5 months) for Contract Package 3 (63<sup>rd</sup> Street Station Upgrade). The PMOC recommends a detailed review and evaluation of the addenda issued in an effort to identify any systemic issues in the design or procurement process that can be improved upon.</p> <p><b>Update (November 2010):</b> PMOC has evaluated this issue. Total construction cost added to the package via addenda is approximately \$5M. Resolution of open issues from the design phase did not adversely impact construction procurement cost or schedule. This</p>  | 2           |

| Number with Date Initiated | Section                | Issue/Recommendation   | Criticality |
|----------------------------|------------------------|--|-------------|
|                            |                        | <i>item will be closed.</i>  |             |
| SAS-12-Oct10               | 2.1.3<br>Construction  | <p>MTACC should develop contingency plans for contract coordination issues that may result from continuing delay to TBM mining. This primarily involves Contracts 4B and 5B, where TBM mining may impact proposed work sequencing.</p> <p><b>Update (November 2010):</b> <i>TBM progress should not significantly affect C4B. TBM progress will affect the period during which blasting is permitted; this has been anticipated in the C4B contract documents.</i></p> | 2           |
| SAS-13-Oct10               | 2.5<br>Real Estate     | <p>The PMOC proposes to conduct a detailed review of the current status of condemnation, business tenant relocation, temporary rock bolt easements, and cost to cure of interior building utilities. Evaluation of the adequacy of the current Real Estate budget and any potential cost overrun/under run exposure is included.</p> <p><b>Update (November 2010):</b> <i>No progress this period. PMOC to follow-up.</i></p>  | 2           |
| SAS-14-Oct10               | 4.1<br>Schedule Status | <p>Confirm detailed coordination between TBM and ground freeze activities. Confirm active monitoring and forecasting of progress and performance thresholds to support decision making.</p> <p><b>Update (November 2010):</b> <i>PMOC has confirmed that the MTACC, through the CCM is reviewing the status of these activities on a weekly basis.</i></p>   | 2           |
| SAS-15-Oct10               | 4.4<br>SMP Compliance  | <p>The PMOC recommends the addition of schedule activities representing the “dustoff” phase for Contracts 2B, 4C and 5C were not added this period. Adding these activities to the IPS will enhance its usefulness, reliability and provide improved visibility for these tasks.</p>   | 2           |



| Number with Date Initiated | Section                       | Issue/Recommendation   | Criticality |
|----------------------------|-------------------------------|--|-------------|
|                            |                               | <i>Update (November 2010): Not completed to date. PMOC to follow up.</i>   |             |
| SAS-16-Oct10               | 5.1<br>Budget/Cost            | <p>The PMOC recommends validation of the MTACC's Update #8 of the Phase 1 Project Estimate prior to accepting the stated savings generally in excess of \$50 million.</p> <p><i>Update (November 2010): MTACC reports this effort is in progress.</i></p>  | 2           |
| SAS-17-Oct10               | 6.2<br>Risk Updates           | <p>Reconciliation of the current cost estimate values with those used in the risk assessment for Contract C3 and, if necessary, adjustment of the results and conclusions of that analysis.</p> <p><i>Update (November 2010): The C3 risk assessment concluded that current funds allocated for this package should be adequate.</i></p>   | 2           |
| SAS-18-Oct10               | 6.5.1<br>Schedule Contingency | <p>The PMOC will review the SAS Project Team's distribution and allocation of schedule contingency.</p> <p><i>Update (November 2010): MTACC has allocated schedule contingency to select schedule events on a limited basis to reflect a degree of risk or uncertainty in achieving a proposed modification or mitigation to the involved activities. This is not a return to the "handoff activity" contingency distribution methodology. PMOC will monitor this practice monthly to ensure schedule results are not being manipulated through this practice.</i></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 comments provided to the FTA.</p> | 2           | 7/30/10              |

| Number with Date Initiated | Section       | Grantee Actions  | Criticality | Projected Resolution |
|----------------------------|---------------|--|-------------|----------------------|
| SAS-A18-Aug08              | ELPEP Updates | <p>The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified.</p> <p><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> | 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                         |
| FPGA      | Full Funding Grant Agreement                                 |
| FTA       | Federal Transit Administration                               |
| HLRP      | Housing of Last Resort Plan                                  |
| IFP       | Invitation for Proposal                                      |
| IPS       | Integrated Project Schedule                                  |
| <i>LF</i> | <i>Linear Feet</i>   |
| MEP       | Mechanical, Electrical, Plumbing                             |
| MTACC     | Metropolitan Transportation Authority – Capital Construction |
| N/A       | Not Applicable   |
| NTP       | Notice to Proceed  |
| NYCDEP    | New York City Department of Environmental Protection         |
| NYCT      | New York City Transit  |
| PE        | Preliminary Engineering                                      |
| PMOC      | Project Management Oversight Contractor (Urban Engineers)    |
| PMP       | Project Management Plan                                      |
| PQM       | Project Quality Manual                                       |
| RAMP      | Real Estate Acquisition Management Plan                      |
| RFMP      | Rail Fleet Management Plan                                   |
| RFP       | Request for Proposal   |
| ROD       | Record of Decision   |
| ROD       | Revenue Operations Date                                      |
| RSD       | Revenue Service Date   |
| S3        | Skanska, Schiavone and Shea                                  |
| SAS       | Second Avenue Subway   |
| SCC       | Standard Cost Categories                                     |

|      |  |
|------|--|
| SSMP | Safety and Security Management Plan    |
| SSOA | State Safety Oversight Agency          |
| SSPP | System Safety Program Plan             |
| TBD  | To Be Determined                       |
| TBM  | Tunnel Boring Machine                  |
| TCC  | Technical Capacity and Capability Plan |
| TIA  | Time Impact Analyses                   |