

## **PMOC MONTHLY REPORT**

### **Second Avenue Subway Phase 1 (MTACC-SAS) Project**

Metropolitan Transportation Authority

New York, New York

Report Period October 1 to October 31, 2012



PMOC Contract No. DTFT60-09-D-00007

Task Order No. 2, Project No. DC-27-5115, Work Order No. 03

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Length of time on project: Two years on project for Urban Engineers

## TABLE OF CONTENTS

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|   |           |
|---|-----------|
| <b>TABLE OF CONTENTS</b> .....                        | <b>2</b>  |
| <b>THIRD PARTY DISCLAIMER</b> .....                   | <b>3</b>  |
| <b>REPORT FORMAT AND FOCUS</b> .....                  | <b>3</b>  |
| <b>MONITORING REPORT</b> .....                        | <b>3</b>  |
| <b>1.0 PROJECT STATUS</b> .....                       | <b>3</b>  |
| a. Procurement .....                                  | 4         |
| b. Construction.....                                  | 5         |
| c. Quality Assurance and Quality Control (QA/QC)..... | 9         |
| <b>2.0 SCHEDULE DATA</b> .....                        | <b>10</b> |
| <b>3.0 COST DATA</b> .....                            | <b>15</b> |
| <b>4.0 RISK MANAGEMENT</b> .....                      | <b>18</b> |
| <b>5.0 ELPEP</b> .....                                | <b>19</b> |
| <b>6.0 SAFETY AND SECURITY</b> .....                  | <b>19</b> |
| <b>7.0 ISSUES AND RECOMMENDATIONS</b> .....           | <b>19</b> |

## APPENDICES

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### APPENDIX A – ACRONYMS

### APPENDIX B – TABLES AND FIGURES

Table 1 - Summary of Schedule Dates

Table 2 - Schedule Contingency

Table 3 - 3<sup>rd</sup> Quarter Schedule Milestone Comparison

Table 4 - Project Budget/Cost

Table 5 - Contingency Drawdown

Table 6 - Estimate @ Completion

Table 7 - Allocation of Current Working Budget to Standard Cost Categories

Table 8 - Core Accountability Items October 2012

## **THIRD PARTY DISCLAIMER**

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

## **REPORT FORMAT AND FOCUS**

This monthly report is submitted in compliance with the terms of the Federal Transit Administration (FTA) Contract No. DTFT60-09-D-00007, Task Order No. 002. Its purpose is to provide information and data to assist the FTA as it continually monitors the grantee's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the grantee continues to be ready to receive federal funds for further project development.

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

## **MONITORING REPORT**

### **1.0 PROJECT STATUS**

*Hurricane Sandy struck the New York City metropolitan area beginning the evening of October 29, 2012 and continuing through October 30, 2012. The Second Avenue Subway construction sites were not damaged by the storm, but construction operations were immediately impacted by fuel shortages and the consequential effect of the entire area recovering from the storm. In addition, the MTA's main office and site of the SAS Project Office at Two Broadway were seriously damaged and remain closed as of the writing of this report.*

*The effect of Hurricane Sandy on SAS Phase 1 can be summarized as follows:*

- *Three days (October 29 through October 31, 2012) of "force majeure" delay to construction. Additional delay can be anticipated during November 2012.*
- *Serious impacts and interruptions to routine MTA and FTA supervisory and administrative functions due to damages to each office at Two Broadway and One Bowling Green, respectively.*

*This report is based, in part, on routine reporting prepared and issued by MTACC and the SAS Project Office. Preparation and distribution of this information was almost completely disrupted by the hurricane. The absence of this reporting will be noted as appropriate throughout this report and corresponding information from the previous reporting period will be used for completeness.*

*During October 2012, MTACC continued advancing the project to meet a Revenue Service Date (RSD) of December 30, 2016 and within its Current Working Budget (CWB) of \$4.451B (exclusive of financing). Contract close-out is ongoing for construction contracts C-26002 (C1) “TBM Tunneling Boring” and C-26013 (C5A) “86<sup>th</sup> Street Excavation, Utility, Relocation and Road Decking” and is anticipated to be completed during the 1<sup>st</sup> Quarter 2013. Progress continued on the six (6) active construction contracts and featured the following accomplishments:*

*C-26005 (C2A) “96<sup>th</sup> Street Site Work and Heavy Civil” has completed over 90% of the precast roadway panel installation. Installation of struts, walers and mass excavation beneath the precast panels has started.*

*C-26010 (C2B) “96<sup>th</sup> Street Station Civil, Architectural, and MEP” has started lead abatement in the existing tunnel section ahead of schedule.*

*C-26006 (C3) “63<sup>rd</sup> Street Station Rehabilitation” continued implementing its steel fabrication and erection plan in Area 5 as well as started MEP rough-in at the East and West Fan Rooms.*

*C-26007 (C4B) “72<sup>nd</sup> Street Station Cavern Mining and Lining” Total rock excavation for the contract is approximately 91% complete. Concrete and waterproofing installation is ongoing at the Main Cavern, G3 Tunnel, G3/S1 Cavern, and the North Crossover.*

*C-26008 (C5B) “86<sup>th</sup> Street Station Cavern Mining and Lining” Total rock excavation is approximately 24% complete. This is the primary work activity in progress for this contract.*

*C-26009 (C6) “Track, Power, Signals and Communication Systems” Mobilization and submittal activities continue.*

*The overall project is approximately 43.3% complete. Contractors are currently preparing bids for C-26011 (C4C) “72<sup>nd</sup> Street Station Architectural, MEP and Finishes” package. A revised date for advertising the C-26012 (C5C) “86<sup>th</sup> Street Station Architectural, MEP and Finishes” package is being determined.*

#### **a. Procurement**

**Future Procurements:** Bid documents were made available to interested contractors for contract C-26011 (C4C) “72<sup>nd</sup> Street Station Architectural, MEP and Finishes Package” on August 13, 2012. The bid opening for this package has been postponed indefinitely due to the impacts of Hurricane Sandy to the MTA Headquarters at 2 Broadway and to the NYC region in general.

The 86<sup>th</sup> Street Station Architectural, MEP and Finishes Package, C26012 (C5C) is scheduled for advertisement on November 28, 2012, bid opening on April 5, 2013 and contract award on May 24, 2013. As of the writing of this report, no change to this schedule has been announced.

## **b. Construction**

*As of October 31, 2012, there are six (6) active construction contracts on the SAS Phase 1 Project. Contracts C1 and C5A are still in the close out process. Construction progress on the active contracts during this period includes:*

- **Contract C-26005 (C2A) 96th Street Site Work and Heavy Civil**
  - *Precast concrete panel installation 543 out of 580 (93.6% complete)*
  - ***Excavation and installation of walers and struts ongoing at:***
    - *Intersections of 95<sup>th</sup>, 96<sup>th</sup>, and 97<sup>th</sup> Streets and 2<sup>nd</sup> Avenue*
    - *From 94<sup>th</sup> to 99<sup>th</sup> Streets on 2<sup>nd</sup> Avenue*
  - **Entrance 1**
    - *Secant pile installation completed (23 of 23)*
    - *Jet grouting between secants and slurry wall (2 locations) to start November 15, 2012*
    - *Mass excavation to start December 3, 2012*
  - **Entrance 2**
    - *Preparation for secant piles and drill piers in progress at Entrance 2*
    - *Installation of secant piles to start on November 7, 2012*
  - **Entrance 3**
    - *Current location for jet grout plant*
  - **Ancillary 1**
    - *Secant pile demo for whaler support brackets and mass excavation*
  - **Ancillary 2**
    - *Mass excavation ongoing*
    - *Installation of walers at elevation 93 to start November 15, 2012*
  - **Launch Box (92<sup>nd</sup> Street thru 95<sup>th</sup> Street)**
    - *Tunnel invert slab concrete placement is ongoing with drainage pipe and rebar installation for pour 7 in progress*
    - *Concrete pour 7 is scheduled for November 9, 2012*
- **Contract C-26010 (C2B) 96<sup>th</sup> Street Station Civil, Architectural, and MEP**
  - *Relocation of utility line for shotcrete in launch box is ongoing*
  - *Lead abatement in old tunnel section (102<sup>nd</sup> Street and 2<sup>nd</sup> Avenue) 46.0% complete*
  - *CTJV is working to resolve conflicts associated with: tunnel liner; face of tunnel wall, and elevation of tunnel*

- *Identification and tracking of long lead items in progress*
- **Contract C-26006 (C3) 63<sup>rd</sup> Street Station Rehabilitation**
  - *Surveying of the Deformation Monitoring Points (DMPs) is ongoing and will continue throughout the project.*
  - **Quality**
    - *Special Inspections continue at the structural steel plant in Ohio and at the delivery trucks upon arrival. The contractor continues to send a representative to the plant every other week.*
  - **Schedule**
    - *The project continued at approximately 89 days behind schedule with no additional slippage.*
    - *The contractor completed the cost-loaded schedule and a recovery schedule for MTACC review.*
  - **Area 5**
    - *Continued with temporary and permanent structural steel fabrication & erection at the 3<sup>rd</sup> & 4<sup>th</sup> Mezzanines. The reconstructed Area 5 consists of 6 Mezzanines and the Plaza deck.*
    - *During early October 2012 the project experienced a significant increase in steel erection rates with the adding of a 2<sup>nd</sup> shift.*
    - *However, during mid-October the contractor began to report an insufficient supply of steel causing the 2<sup>nd</sup> shift to be temporarily suspended and discussion of adding a 3<sup>rd</sup> shift to be placed on hold.*
    - *During the end of October the hurricane (Sandy) impacted steel deliveries and erection. No schedule impact had been determined.*
    - *Continued placing concrete at the lower platform walls, slabs and curbs.*
  - **Entrance #1**
    - *Delays in obtaining full access to the area remained an issue.*
    - *Under the circumstances MTACC, DHA and the contractor agreed that the contractor would proceed to submit shop drawings for the escalators without complete field dimensions.*
  - **Ancillary #1**
    - *During October 2012 the date to occupy the garage (Hans Garage) remained November 1, 2012. The hurricane (Sandy) at the end of the month jeopardized that date and an exact date for taking over the garage had not been determined.*
    - *There are 3 weekend street closures on 63<sup>rd</sup> St. between Lexington and Park scheduled for January 2013.*
  - **Platforms**
    - *Continued with Service Carrier and conduit installation at G4 level.*
    - *Completed steel erection for Stair S-41 opening at the G-4 level.*
  - **Fan Plants**
    - *Completed installation of conduits from EDR #2 to West Fan Room.*
    - *Continued installation of new drain lines in West Fan Room.*

- Continued conduit installation in the shaft at the West Fan Room.
  - Completed CMU walls in the East Fan Room.
  - Began MCC conduits in East Fan Room.
- **Contract C-26007 (C4B) 72<sup>nd</sup> Street Station Cavern Mining and Lining**
    - **Excavation**
      - Ancillary 1 open cut excavation (NW corner 69<sup>th</sup> Street and 2<sup>nd</sup> Ave.)
      - Ancillary 2 open cut excavation (NW corner 72<sup>nd</sup> Street and 2<sup>nd</sup> Ave.)
      - Entrance 3 open cut excavation (SE corner 72<sup>nd</sup> Street and 2<sup>nd</sup> Ave.)
      - Total rock excavation –Approximately 168,074 BCY (91.0% of project)
    - North Crossover –Placement of concrete invert completed
    - Main Cavern –Installation of drainage layer, invert waterproofing and placement of concrete invert ongoing
    - G3 Tunnel –Waterproofing and concrete ongoing
    - G3/S1 Cavern –Installation of rebar at north end wall in progress
    - Sub Cavern –Waterproofing along invert and walls (G3) ongoing. Installation of rebar at the soffit slab ongoing
    - Ancillary 2 (NW corner 72<sup>nd</sup> St. and 2<sup>nd</sup> Ave.) –Rock excavation by means of blasting approximately 37 ft. down from decking
    - Ancillary 1 (NW corner 69<sup>th</sup> St. and 2<sup>nd</sup> Ave.) –Rock excavation by means of blasting approximately 46 ft. down from decking
    - Entrance 3 (SE corner 72<sup>nd</sup> St. and 2<sup>nd</sup> Ave.) –Rock excavation by means of blasting approximately 27 ft. down from decking
    - Building remediation –ongoing (239 E 73<sup>rd</sup> St. –final inspection, and 1405 2<sup>nd</sup> Ave.)
  - **Contract C-26008 (C5B) 86<sup>th</sup> Street Station Cavern Mining and Lining**
    - Work continued with 3 shifts.
    - Rock bolting and shotcrete follow the progression of rock excavation.
    - **North Shaft Area**
      - Continued mining the horizontal caverns for the development of the top heading.
      - Preparing to begin ramping to the intermediate bench and continue heading development in the public areas of the cavern.
      - Rock bolting and shotcrete follow the progression of rock excavation.
    - **South Open Cut Area**
      - Continued mining in the caverns for development of the top heading.
    - **Ancillary #1**

- *Rock excavation at the Ancillary #1 portion of the South Open Cut has been temporarily leveled off at approximate Elevation 90.*
- **Ancillary #2**
  - *Continued with drilling, rock excavation, rock bolting and shotcrete placement in both the open cut area and from the cavern.*
- **Entrance #1**
  - *Completed the load transfer and began removal of columns, footings and the remainder of the basement demolition.*
- **At Entrance #2**
  - *Continued drilling for rock excavation at the elevator shaft to approximately 18 feet below the surface.*
  - *The contractor presented a proposal to develop a modified work zone on 86th St. to allow work to continue on the elevator shaft at the same time work goes forward at the Support of Excavation on the north side.*
- **Rock Excavation(for the week ending October 26, 2012)**  
*As reported to the PMOC by the MTACC C-26008 Project Office*
  - *Total rock (estimated) for complete project) – 154,623 BCY*
  - *Total rock excavated to date – 36,971 BCY (23.9%)*
  - *Summary by Area (4 areas have not begun rock excavation):*
    - North Cavern – 55,686 BCY (total); 14,712 BCY (to date); 26.4%*
    - South Cavern – 54,302 BCY (total); 13,162 BCY (to date); 24.2%*
    - Ancillary #1 – 11,725 BCY (total); 6,041 BCY (to date); 51.5%*
    - Ancillary #2 – 4,830 BCY (total cut & cover); 1,723 BCY (to date); 35.7%*
    - Ancillary #2 – 7,480 BCY (total from cavern); 651 BCY to date); 8.7%*
    - Entrance #1 – 1,990 BCY (total from cut & cover); 330 BCY to date; 16.6%*
    - Entrance #2 – 14,237 BCY (total from cut & cover); 352 BCY to date; 2.5%*
  - *The tracking of total rock excavation (actual) from April 6, 2012 through October 26, 2012 vs. planned excavation shows the cumulative rock excavation production to date to be slightly behind the baseline schedule.*
- **Contract C-26009 (C6) Track, Power, Signals and Communication Systems**
  - *Field surveying at the 63rd St. Station for IJ installation has progress to the point where no additional work can be performed. Surveying to locate the IJs between 86th St. and 96th St. in progress.*
  - *CSJV's new nominee for the position of System Integration Manager (SIM) was approved.*
  - *CSJV stated that the Field Office will be located at 309 94th Street (between 1st and 2nd Avenue). Fit-out of the space 3rd floor (contractor space) has been completed. Contractor scheduled to move-in at the end of the month. The 5th floor (MTACC's space) is still under construction and is expected to be available early November 2012.*
  - *Submittals are ongoing*

**c. Quality Assurance and Quality Control (QA/QC)**

Status:

*During October 2012, the Second Avenue Subway Quality Management team held Quality Management Meetings with participation from the contractor, CCM, MTACC and PMOC.*

Observation:

During August and September 2012, the PMOC performed a series of “mini-audits” focusing on the control of discrepant material via the Nonconformance Report (NCR) process. *An update based on activities in October 2012 of the findings for contract packages C1 and C4B is shown in the following table.*

*A meeting is scheduled on November 16, 2012 with the new SAS Quality Manager, his four Contract Quality Managers, and the PMOC. The purpose of this meeting will be to determine if there are any trends with quality issues within each contract and/or among the C2A, C2B, C3, C4B, and C5B contracts.*

| <b>Contract Package C1</b>           |  |
|--------------------------------------|--|
| <b>Status:</b>                       | <p>There were 40 NCRs written on the C1 contract. 16 of them involved concrete installation involving the following structural elements:</p> <ul style="list-style-type: none"> <li>• Invert Slab – seven NCRs</li> <li>• Slurry wall – five NCRs</li> <li>• Concrete Tunnel Liner Arch – four NCRs</li> </ul>   |
| <b>Observation:</b>                  | <p><i>Of the 40 NCRs written on the C1 contract, six are still open. Two of these have been finalized and are awaiting signatures on the MTACC closure form. Two of the remaining four are related to the slurry wall. The status of the 16 involving concrete installation is as follows:</i></p> <ul style="list-style-type: none"> <li>• Invert Slab – None of the seven NCRs are still open</li> <li>• Slurry wall – Two of the five NCRs are still open</li> <li>• Concrete Tunnel Liner Arch – None of the four NCRs are still open</li> </ul> |
| <b>Concerns and Recommendations:</b> | <p>Contract C1 has been Substantially Complete since March 2012. The Contractor has demobilized and has a limited presence on site. <i>The SAS Project Team continues to emphasize the closure of the remaining NCRs and has reduced the number of open NCRs to four.</i> The PMOC recommends that the SAS Project Team continue their efforts to close these remaining four NCRs.</p>   |
| <b>Contract Package C4B</b>          |  |
| <b>Status:</b>                       | <p>The independent test lab for the C4B contract did not follow the ASTM reporting format when submitting concrete break reports, e.g., the reports did not identify concrete mix identification and failures after</p>  |

|                                      |   |
|--------------------------------------|---|
|                                      | seven days.   |
| <b>Observation:</b>                  | Recent reports from the independent test lab indicate that this issue has been resolved. However, to assure consistency in reporting, the SAS CCM requested at the August 28, 2012 Monthly Quality Management Meeting that the C4B contractor invite a representative from the independent test lab to the next monthly meeting. There was no representative from the independent test lab at the September 25, 2012 meeting. <i>The October 30, 2012 Monthly Quality Management Meeting was postponed until November due to Hurricane Sandy.</i> |
| <b>Concerns and Recommendations:</b> | <i>The PMOC recommends that a representative from the independent test lab be invited to the rescheduled Monthly Quality Management Meeting.</i>  |
| <b>Contract Package C4B</b>          |   |
| <b>Status:</b>                       | The submittal of As-Builts was not current and there were problems with some of those that were submitted.  |
| <b>Observation:</b>                  | The C4B contractor has assigned a new member of their Quality Staff to assist with the as-built submittal process. <i>Improvement with on-time submittals and quality of the submittals continues to improve.</i>   |
| <b>Concerns and Recommendations:</b> | <i>The PMOC recommends that this issue be closed. The timeliness and quality of submittals will continue to be monitored and this issue will be re-opened if the issue arises again.</i>  |

## 2.0 SCHEDULE DATA

*Integrated Project Schedule (IPS) Update #75 was received on October 26, 2012 and is based on a Data Date of October 1, 2012. This update was provided to the PMOC in advance of the arrival of Hurricane Sandy. As such, it did not include the usual narrative report.*

*The updated IPS still reflects the forecasted completion of all construction and NYCT Pre-Revenue Training & Testing activities by October 4, 2016, with 90 calendar days (CD) or 64 work days (WD) of contingency when measured against MTACC's target Revenue Service Date (RSD) of December 30, 2016. Schedule contingency along the primary critical path leading to the start of revenue operations was unchanged this period.*

*During this period, the C6 (Systems) construction schedule was fully integrated into the IPS. The impact of this effort is significant and can be summarized as follows:*

- *Numerous interface milestones between station finish packages and the systems installation work were added. These milestones appear to have a significant impact to the "mechanics" of schedule calculation.*
- *Procurement activities for systems components were significantly enhanced. Many procurement activities have been summarized and are represented by a single activity with duration of several hundred calendar days.*

- *Complete integration of systems installation work with the general/civil construction work has significantly altered several activity paths, creating several new “near-critical” paths that previously did not exist in the IPS.*
- *Systems installation activities are now depicted in significantly greater detail and specificity.*

**Project Critical Path:** *Critical and “near-critical” paths have changed significantly since the last update of the IPS. The “most critical path originates with the turnover of the 86<sup>th</sup> Street Station Traction Power Rooms to the C6 contractor on March 18, 2015. This path then follows the installation of the Traction Power Sub Station and associated equipment and controls through to the completion of both local traction power testing and integrated traction power system testing on August 17, 2016.*

**Secondary Paths:** *Major secondary float paths of significance to the overall status of the project include the following:*

- + 8 WD:** *Design, manufacture, delivery, installation and testing of signal equipment for the 86<sup>th</sup> Street Station is the first path that extends continuously from the data date to project completion. Installation work is scheduled to be completed on April 15, 2016. Systems’ testing is scheduled to be completed on July 11, 2016, when operational testing completes this path.*
- +19 WD:** *C5C procurement which includes a scheduled bid opening on March 29, 2013 and contract award on May 24, 2013.*
- +23 WD:** *NYCT Pre-Revenue Operation Activities, scheduled to start on August 18, 2014. Unchanged this period.*
- +40 WD:** *Manufacture, delivery, installation and testing of both signal and traction power systems at 96<sup>th</sup> Street Station. Both signal and traction power systems occupy this path, from material procurement through systems testing activities.*
- +45 WD:** *86<sup>th</sup> Street Station, south cavern excavation. This path follows rock excavation and concrete liner installation in the south cavern. Handoff Milestone #1 denotes the completion and C5B work in this area and the handoff to C5C. The current schedule indicates significant float between completion of C5B heavy civil work and the start of C5C architectural and finish work in this area.*
- +46 WD:** *86<sup>th</sup> Street Station, Entrance #1. This path follows underpinning, rock excavation and structural concrete installation at entrance #1. Handoff Milestone #2 denotes the completion and C5B work in this area and the handoff to C5C. The current schedule indicates significant float between completion of C5B heavy civil work and the start of C5C architectural and finish work in this area.*
- +55 WD:** *Communication system design followed by installation work, primarily at the 63<sup>rd</sup> Street Station.*

**+57 WD:** Completion of “cost-to-cure” work at 63<sup>rd</sup> Street Station, Entrance #1 followed by structural and MEP work at Entrance #1. Similar work at Entrance #3 follows the completion of all work at Entrance #1.

The PMOC is extremely concerned about the dramatic changes to the IPS brought about by the incorporation of the systems construction schedule in Update #75. The results of this update change the fundamental understanding of the project schedule priorities and potential problem areas established by previous IPS updates. Samples of these concerns include:

- The Update #73 critical path activities now have approximately 45 CD of schedule float and at least three new, more critical paths have been introduced; however the overall schedule RSD and contingency remain the same.
- In previous updates, the 63<sup>rd</sup> Street Station activities had significant schedule float. 63<sup>rd</sup> Street Station now occupies multiple float paths all of which are more critical than work at the 96<sup>th</sup> Street Station, which, based upon previous updates was generally considered to be the second most critical area of the project.
- The introduction of numerous constraining milestones appears to affect the flow of work activities and introduce gaps in the work which previously did not exist.
- The duration of many activities is excessive and does not promote the tracking of progress or true understanding of the work represented. The PMOC understands the IPS is a summary schedule, but some form of detail and substantiation of activities with long durations, especially when they are near the critical path, should be included.

The PMOC recommends a formal workshop be conducted to present, explain and evaluate the current IPS in an effort to provide senior project management with a clear understanding of the impact of this update to the IPS.

**Quarterly Milestone Tracking:** The final tabulation of select schedule activity performance for the 3<sup>rd</sup> Qtr. 2012 is contained in the accompanying Table 3. Activities not completed this Quarter will be “carried over” into the 4<sup>th</sup> Quarter 2012 tracking log. A summary of schedule performance includes the following:

| <b>Summary</b>                                 |     |
|--|-----|
| # Calendar Days Elapsed                        | 92  |
| Average Δ from Baseline - all activities       | 100 |
| Average Δ from Baseline - completed activities | 84  |
| Average Δ from Baseline - ongoing activities   | 113 |
| Average Monthly Δ                              | 13  |
| Number Activities Sampled                      | 33  |
| Number Activities Completed                    | 11  |
| <b>3rd Qtr. 2012 Activity Summary</b>          |     |
| # Activities Forecast this Qtr.                | 13  |
| # Activities forecast to complete this Qtr.    | 9   |
| # Activities completed this Qtr.               | 2   |

|                                     |    |
|-------------------------------------|----|
| # Activities on/ahead of baseline   | 0  |
| # Activities behind baseline        | 11 |
| Average $\Delta$ from Baseline (CD) | 25 |
| Average Monthly $\Delta$ (CD)       | 10 |
| Avg TF - Open Activities            | 90 |

Based on the sampling of activities in Table 3, the PMOC notes the following:

- Nine of the activities selected for tracking during the third Quarter 2012 were originally forecast (baseline) to complete during this Quarter. Only two of these activities were actually completed during the 3<sup>rd</sup> Quarter.
- All incomplete activities are behind schedule. On average, these activities have been delayed approximately 25 CD from their baseline forecast.
- All activities in this sampling (including carryover activities) are behind schedule and were delayed an average of 13 CD over this reporting period.
- This data is based on the schedule update as of October 1, 2012. The effects of Hurricane Sandy are not reflected in these results.

This sampling of schedule activities suggests that schedule performance for the third quarter 2012 may not have been adequate to achieve overall project schedule goals. This sampling is based on a limited number of activities and is one component of the overall review and evaluation of the SAS Phase 1 schedule.

The PMOC has previously noted significant delays involving the 63<sup>rd</sup> Street Station Rehabilitation Package (C3). Using the C3 activities contained in the Quarterly Milestone Tracking and comparing IPS Update #75 status data for these activities with their baseline values yields the following tabulation:

| Act.               | Description                                | Baseline |          |     | Update #75 |          |     | Performance |            |             |
|--------------------|--|----------|----------|-----|------------|----------|-----|-------------|------------|-------------|
|                    |  | RD       | EF/ES    | TF  | RD         | EF/ES    | TF  | Work        | Efficiency | $\Delta$ TF |
| LP025              | Complete Demo – Lower Platform             | 161      | 4/24/12  | 432 | 20         | 10/29/12 | 231 | 141         | 51%        | 201         |
| 005                | Complete Sub/App Struct. Steel Shop Dwgs   | 140      | 3/26/12  | 299 | 56         | 12/21/12 | 74  | 84          | 30%        | 225         |
| A1010              | Begin Demo - Ancil #1                      | 18       | 1/25/12  | 697 | 18         | 11/29/12 | 373 | 0           | 0%         | 324         |
| EN105              | Begin Structural Work - Ent #1             | 96       | 3/29/12  | 407 | 96         | 9/10/13  | 57  | 0           | 0%         | 350         |
| MZB05              | Compl. Asbestos/Lead Abatement - Fan Plant | 41       | 1/3/12   | 280 | 10         | 10/15/12 | 241 | 31          | 11%        | 39          |
| 010                | Begin Elevator Fab                         | 90       | 11/15/11 | 497 | 90         | 10/18/12 | 199 | 0           | 0%         | 298         |
| MZC01/<br>MZC05    | Asbestos/Lead Abatement & Demo-Lower Mezz  | 77       | 11/23/11 | 318 | 5          | 10/5/12  | 74  | 72          | 26%        | 244         |
| MZ5001<br>/010/015 | Lead Abatement/Demo -M1->M6                | 85       | 2/10/12  | 558 | 10         | 10/15/12 | 149 | 75          | 27%        | 409         |

| Act.   | Description                            | Baseline |         |     | Update #75 |          |     | Performance |            |      |
|--------|--|----------|---------|-----|------------|----------|-----|-------------|------------|------|
|        |  | RD       | EF/ES   | TF  | RD         | EF/ES    | TF  | Work        | Efficiency | Δ TF |
| UP025  | Begin Structural const; CBH Control Rm | 94       | 11/2/11 | 625 | 85         | 7/23/12  | -   | 9           | 3%         |      |
| UP001  | Demo Upper Platform (Complete)         | 22       | 9/25/11 | 946 | 8          | 10/28/12 | 62  | 14          | 5%         | 884  |
| MZC15  | Structural Work Lower Mezz (Complete)  | 48       | 4/5/12  | 307 | 20         | 11/5/12  | 109 | 28          | 10%        | 198  |
| MZ5020 | Structural Work @nd Mezz (Complete)    | 51       | 4/26/12 | 299 | 20         | 11/5/12  | 109 | 31          | 11%        | 190  |

(7)=  
(1)      (2)      (3)      (4)      (5)      (6)      (7)=  
(1)-(4)      (7)/276      (3)-(6)

*The Baseline used for this comparison is IPS Update #62. This update contained the initial cut-in of the Contractor’s construction schedule plus the first monthly update. Incorporating the first update allows for troubleshooting and initial error correction. This should represent the Contractor’s plan for constructing the project.*

*In the table “Work” represents schedule time credited for work performed. It is calculated by subtracting the Update 75 Remaining Duration from the Baseline Remaining Duration.*

*“Efficiency” is a measure of work performed over time available. For the period between Sept 1, 2011 and October 1, 2011, the PMOC estimated that 276 WD were available.*

*The table indicates that all C3 activities sampled have been inefficient with respect to schedule performance. Erosion of float values for these activities has been significant. Schedule float is a characteristic of groups of activities, not single activities. When one activity loses float, all other activities in that path lose the same amount. The erosion of float demonstrates the transition of C3 to a package where further delay may impact the RSD and the overall SAS Phase 1 Schedule.*

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

- Forecast Revenue Service Date
  - ELPEP Requirement: February 28, 2018
    - Current Forecast: December 30, 2016
- Minimum schedule contingency (measured against February 28, 2018 RSD)
  - ELPEP Requirement: 240 CD
    - Current Forecast: 513 CD (estimated, based on best available information).
- Minimum Allowable Float; Real Estate Acquisition
  - ELPEP Requirement: 60 CD
    - Current Forecast: All Real Estate Takings are complete as of November 1, 2011.

- *Cost to Cure Activities*
  - *Current Forecast: 63<sup>rd</sup> Street Station – Entrance #1; TF = 57 WD*
- **Minimum Allowable Secondary Float Path**
  - *ELPEP Requirement: 25 Calendar Days (approximately 18 WD)*
    - *Current Forecast: Independent float paths for signal system procurement and installation (+8 WD) and C5C construction contract procurement (+19 WD).*
- **Secondary Schedule Mitigation (critical path compression)**
  - *ELPEP Requirement: 125 CD*
    - *Current Forecast: Schedule mitigation efforts are in progress.*

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

**Schedule Contingency:** *IPS Update #75 forecasts all Phase 1 construction and pre-revenue testing to be complete on October 3, 2016. This results in an 90 CD (64 WD) contingency when measured against the MTACC's target RSD of December 30, 2016 and a 513 CD contingency when measured against the FTA Risk-Informed RSD of February 28, 2018.*

### **3.0 COST DATA**

*Financial reports prepared by the MTACC and the SAS Project Office were not available of the October 2012 time period, as noted in Section 1.0 of this report.*

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

- C26002 (Tunnel Boring) – 96.1%
- C26005 (96th Street Station) – 77.0%
- C26010 (96<sup>th</sup> Street Station) – 0.0%
- C26013 (86th Street Station) – 100%
- C26008 (86<sup>th</sup> Street Station) – 23.6%
- C26006 (63<sup>rd</sup> Street Station) – 18.2%
- C26007 (72nd Street Station) – 56.5%
- C26009 (Systems) – 1.78%

Aggregate Construction % Completion:

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

Based upon cost data received from MTACC for September 2012:

- Value of construction in place this period = \$24,192,828
- Estimated value of construction remaining = \$1,658,892,667
- Target construction completion = August 18, 2016
- # Months remaining = 47

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

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

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

The average progress (payments) achieved over the most recent six month period is \$34,329,900. Based on a review of cost data for September 2012, it appears that adequate overall progress was made on the project to achieve the RSD of December 30, 2016.

**Estimate-At-Completion (EAC):** The SAS Project Team has extended its risk-based contingency forecasting effort to the development of an EAC for all construction. To date, this effort is limited to construction cost only. The SAS Project Team has established a goal of monthly EAC reporting for the full project, including all soft costs, by December 2012.

The project EAC is a combination of the risk-based approach for construction cost and traditional estimating for soft costs. Table 6 contains a summary of the current EAC, which is currently \$4,230,414,318. The current EAC reflects updates to recent construction and MTACC cost forecasts.

Based on the information available, this EAC validates the reasonableness of the MTACC's Current Working Budget of \$4.451B. Based upon current information, this effort suggests the project can be built within the limits of the Current Working Budget.

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

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

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

1. Contract C2A: Adjustments to forecast exposure for AWOs #123 the initial valuation of AWO #124 totaling \$328,083.

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

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

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



**ELPEP/CMP Compliance:** Section 5.4 of the Cost Management Plan (CMP) discusses Project-Level EAC Forecasting. It is noted in this section that soft costs are included in this report, which is to be produced on a monthly basis.

*The PMOC has previously noted that the SAS EAC reporting and forecasting is incomplete in that does not include a monthly evaluation and forecast of soft cost. The SAS Project Team produces ample financial documentation to enable complete EAC forecasting and the PMOC has used this information in developing an “independent” EAC forecast.*

*The SAS Project Team has committed to providing a complete EAC forecast as part of its regular project controls reporting by December 2012. With complete EAC reporting, it is the opinion of the PMOC that SAS will substantially be in compliance with ELPEP.*

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

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

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

#### 4.0 RISK MANAGEMENT

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

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

*IPS Update #75 presents a schedule model of the project wherein the procurement and installation of rail/MEP systems is depicted as a much greater risk to the timely completion of the project than previously forecast. Based on the results of this update and the effort that went into its development, the PMOC recommends:*

- *Update the C6 Risk Register to capture those risks not previously listed that were identified by IPS Update #75.*
- *Update the schedule and risk values in the C6 Risk Register to reflect current project understanding.*
- *Review C6 risks to determine if short-term action is required to manage the risk.*
- *Implement detailed tracking procedures for ongoing system engineering and procurement activities as a means of monitoring and managing schedule risk.*

*In the PMOC’s opinion, the SAS Project Team is actively managing retained risks and generally achieving a moderate to high level of mitigation of the overall growth of project cost.*

## 5.0 ELPEP

*There were no ELPEP meetings held during October 2012. With respect to SAS, the current status of each of the main ELPEP components is summarized as follows:*

- **Technical Capacity and Capability (TCC):** *The PMOC completed its review of the SAS PMP. MTACC has addressed all FTA/PMOC comments and reissued the PMP as Revision 8.1. Candidate Revisions for the next PMP update are being developed with an updated PMP anticipated by early 2013.*
- **Schedule Management Plan (SMP):** *The PMOC continues to monitor and verify SAS substantial compliance with the SMP.*
- **Cost Management Plan (CMP):** *The PMOC continues to monitor and verify SAS substantial compliance with the CMP.*
- **Risk Mitigation Capacity Plan (RMCP) and Risk Management Plan (RMP):** *On February 2, 2012, the FTA/PMOC consolidated comments on the SAS Risk Management Plan were forwarded to the MTACC. PMOC recommendations regarding approval were forwarded to FTA.*
- **Conformance and Compliance Demonstration:** *A Compliance Checklist was distributed and reviewed at the ELPEP Meeting of September 12, 2012.*

*The SAS Project Team has implemented the principles and requirements embodied in the ELPEP. The procedural changes instigated by the ELPEP have become an integral part of the management of the project and gives the FTA/PMOC greater insight into the risk, cost and schedule elements of the project.*

## 6.0 SAFETY AND SECURITY

*All construction Contractors continued implementation of the Safety Requirements as specified in Section 01 11 50 of the General Requirements of its contract. To promote safety, the Contractors held safety meetings, trained new employees and monitored his work site safety via inspection during all work shifts. Each contractor continued to have a Safety Managers or Safety Representative on site whenever physical work was being performed. On October 5, 2012 the Project-wide monthly safety meetings was held with representation from the Contractors, CCM, MTACC, OCIP, and the PMOC present. Lessons learned were shared from incidents that occurred from the previous month.*

*Security – No security concerns have been noted during this reporting period*

## 7.0 ISSUES AND RECOMMENDATIONS

**IPS Update #75:** *The PMOC is concerned that the incorporation of the systems construction schedule and associated milestones into the IPS has obscured some of the non-systems construction logic. The PMOC recommends a review of this update with senior project management to be sure that current plans are modeled in the schedule as accurately and completely as possible.*

**Safety Certification:** *The safety certification process has been identified as a risk to project completion. This risk is currently identified in the C6 contract Risk Register as ID # CNS8. The*

PMOC has previously expressed concern that consistent progress would not be achieved until adequate, dedicated resources were available to coordinate the efforts. The relative lack of recent progress in this area seems to support this concern. A Systems Safety Specialist has reportedly been assigned to the project as part of the CCM staff, but has yet to start work. The PMOC will continue to evaluate the Safety Certification process as part of its ongoing monitoring process.

**Stakeholder Risk:** *The SAS Project Team is currently incorporating two major changes to the project (waterproofing and communications) that were requested by MTA operations groups and not included in the final design documents. The cost and schedule impact of these changes is very significant. The PMOC is concerned that the project team's change and configuration control processes are adequate to manage and if necessary resist discretionary design changes requested by exterior stakeholders that may ultimately compromise the project cost and schedule performance.*

**Schedule Performance; Contract C3:** *Several significant delays have impacted this package. Responsibility for the delays appears shared by several of the parties. Some of these delays can reasonably be expected in a rehabilitation project. However, the PMOC is concerned at the apparent inability of the parties to collectively overcome problem issues and keep the 63<sup>rd</sup> Street Station Rehab project moving forward. To date, the SAS Project Team has been able to keep the overall project on schedule, but the 63<sup>rd</sup> Street Station has not kept pace and is becoming much more critical to the overall SAS schedule than previously forecast.*

## **APPENDIX A - ACRONYMS**

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|         |  |
|---------|--|
| A/A     | AECOM/Arup.  |
| AFI     | Allowance for Indeterminates                                 |
| ARRA    | American Recovery and Reinvestment Act                       |
| AWO     | Additional Work Orders                                       |
| BA      | Budget Adjustment  |
| CCM     | Consultant Construction Manager                              |
| CD      | Calendar Days  |
| CMP     | Cost Management Plan   |
| CSSR    | Contact Status Summary Report                                |
| CIL     | Central Instrument Location                                  |
| CPRB    | Capital Program Review Board                                 |
| CPP     | Contract Packaging Plan                                      |
| CWB     | Current Working Budget                                       |
| CY      | Cubic Yards  |
| DCB     | Detailed Cost Breakdown                                      |
| DMP     | Deformation Monitoring Points                                |
| EAC     | Estimate at Completion                                       |
| ELPEP   | Enterprise Level Project Execution Plan                      |
| EPC     | Engineering-Procurement-Construction                         |
| FFGA    | Full Funding Grant Agreement                                 |
| FTA     | Federal Transit Administration                               |
| GO      | General Outage   |
| IPS     | Integrated Project Schedule                                  |
| MPT     | Maintenance Protection of Traffic                            |
| MTA     | Metropolitan Transportation Authority                        |
| MTACC   | Metropolitan Transportation Authority – Capital Construction |
| N/A     | Not Applicable   |
| NOA     | Notice of Award  |
| NTP     | Notice to Proceed  |
| NYCT    | New York City Transit  |
| NYSPTSB | New York State Public Transportation Safety Board            |

|      |   |
|------|---|
| OSS  | NYCT Office of System Safety                              |
| PE   | Preliminary Engineering                                   |
| PEP  | Project Execution Plan                                    |
| PMOC | Project Management Oversight Contractor (Urban Engineers) |
| PMP  | Project Management Plan                                   |
| PQM  | Project Quality Manual                                    |
| QA   | Quality Assurance   |
| RAMP | Real Estate Acquisition Management Plan                   |
| RMCP | Risk Mitigation Capacity Plan                             |
| RMP  | Risk Management Plan                                      |
| ROD  | Revenue Operations Date                                   |
| ROW  | Right of Way  |
| RSD  | Revenue Service Date                                      |
| SAS  | Second Avenue Subway                                      |
| SCC  | Standard Cost Category                                    |
| SMP  | Schedule Management Plan                                  |
| SOE  | Support of Excavation                                     |
| SSCC | Safety and Security Certification Committee               |
| SSOA | State Safety Oversight Agency                             |
| SSPP | System Safety Program Plan                                |
| TBD  | To Be Determined  |
| TBM  | Tunnel Boring Machine                                     |
| TCC  | Technical Capacity and Capability                         |
| VE   | Value Engineering   |
| WBS  | Work Breakdown Structure                                  |
| WD   | Work Days   |

**APPENDIX B – TABLES**

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**Table 1 - Summary of Schedule Dates**

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

A = Actual

**Table 2 - Schedule Contingency**

| IPS Update #     | 62       | 65       | 68       | 71       | 74       | 75       |
|------------------|----------|----------|----------|----------|----------|----------|
| Data Date        | 09/01/11 | 12/01/11 | 03/01/12 | 06/01/12 | 09/01/12 | 10/01/12 |
| Contingency (CD) |          |          |          |          |          |          |
| RSD=12/31/2016   | 67       | 67       | 80       | 90       | No       | 90       |
| RSD=02/28/2018   | 490      | 490      | 503      | 513      | Report   | 513      |

**Table 3 – 3<sup>rd</sup> Quarter 2012 Schedule Milestone Comparison**

|   |                |  | Milestone Updates |                 |   |           |        |
|---|----------------|--|-------------------|-----------------|---|-----------|--------|
| Pkg.  | Act.           | Description                                | Baseline          | M-3             | Δ | Monthly Δ | TF     |
| <b>4th Qtr 2011 Tracking Milestones (Carryover)</b> |                |  | <b>1-Oct-11</b>   | <b>1-Oct-12</b> |   |           |        |
| C2A   | A117           | Complete ANC #1 Secant Piles               | 11-Jul-12         | 10-Aug-12       | A | 30        | 0 -    |
| C3  | LP025          | Complete Demo – Lower Platform             | 31-May-12         | 29-Oct-12       |   | 151       | 6 231  |
| C4B   | 72C1225        | Excavate Cavern Bench                      | 9-May-12          | 25-Sep-12       | A | 139       | 20 -   |
| <b>1st Qtr 2012 Tracking Milestones (Carryover)</b> |                |  | <b>1-Jan-12</b>   | <b>1-Oct-12</b> |   |           |        |
| C3  | 005            | Complete Sub/App Struct. Steel Shop Dwgs   | 20-Jul-12         | 21-Dec-12       |   | 154       | 0 74   |
|   | A1010          | Begin Demo - Ancil #1                      | 2-May-12          | 29-Nov-12       |   | 211       | 36 373 |
|   | EN105          | Begin Structural Work - Ent #1             | 22-May-12         | 10-Sep-13       |   | 476       | 139 57 |
|   | MZB05          | Compl. Asbestos/Lead Abatement - Fan Plant | 27-Mar-12         | 15-Oct-12       |   | 202       | 21 241 |
|   | 010            | Begin Elevator Fab                         | 7-Mar-12          | 18-Oct-12       |   | 225       | 0 199  |
| C4B   | G3S11060       | G3 TBM F/P/S Tunnel Invert                 | 28-Mar-12         | 17-Jul-12       | A | 111       | 0 -    |
|   | ENT1200A       | Contractor (Start) Cost to Cure Work       | 2-Mar-12          | 31-Oct-12       |   | 243       | 20 107 |
|   | ETA1000        | Ent #2 Adit Excavation Complete            | 11-Jan-12         | 2-Jul-12        | A | 173       | 0 -    |
| C5B   | S110a          | Complete Installation of Mucking Sys-South | 25-Apr-12         | 24-Aug-12       | A | 121       | 0 -    |
| <b>2nd Qtr 2012 Tracking Milestones</b>             |                |  | <b>1-Apr-12</b>   | <b>1-Oct-12</b> |   |           |        |
| C2A   | E105           | (AWO98)                                    | 25-Jun-12         | 1-Oct-12        |   | 98        | 4 76   |
| C3  | MZC05          | Mezz                                       | 27-Apr-12         | 5-Oct-12        |   | 161       | 22 74  |
|   | MZ5001/010/015 | Lead Abatement/Demo -M1->M6                | 10-Jul-12         | 15-Oct-12       |   | 97        | 14 149 |
|   | UP025          | Begin Structural const; CBH Control Rm     | 2-Apr-12          | 23-Jul-12       | A | 112       | 0 -    |
| C4B   | 72C1430        | Start Main Cavern Invert F/R/P/S (Start)   | 24-Jul-12         | 21-Dec-12       |   | 150       | 30 114 |
|   | NCC1035        | Start North X-Over Invert WP               | 9-May-12          | 20-Jul-12       | A | 72        | 0 -    |
| C5B   | E210/240/242   | Complete Entrance 2; Utility Relocations   | 4-Oct-12          | 28-Sep-12       | A | -6        | 0 -    |
|   | E110           | Complete Entrance 1; Structural Demo       | 26-Jun-12         | 31-Aug-12       | A | 66        | 0 -    |
| <b>3rd Qtr 2012 Tracking Milestones</b>             |                |  | <b>1-Jul-12</b>   | <b>1-Oct-12</b> |   |           |        |
| C2A   | 5S210          | Stage 5 Deck Installation (Complete)       | 27-Sep-12         | 1-Oct-12        | A | 4         | 0 -    |
|   | A126           | Exc. Upper Level/Install Decking-Accil. #1 | 27-Sep-12         | 8-Nov-12        |   | 42        | 15 89  |
| C3  | UP001          | Demo Upper Platform (Complete)             | 19-Aug-12         | 28-Oct-12       |   | 70        | 28 62  |
|   | MZC15          | Structural Work Lower Mezz (Complete)      | 10-Sep-12         | 5-Nov-12        |   | 56        | 27 109 |
|   | MZ5020         | Structural Work @nd Mezz (Complete)        | 11-Oct-12         | 5-Nov-12        |   | 25        | 26 109 |
| C4B   | NCC1055        | North X-Over Invert F/R/P/S (Complete)     | 9-Oct-12          | 17-Oct-12       |   | 8         | -5 207 |
|   | 63S1070        | 63rd St Stub Cavern Wall F/R/P/S (Finish)  | 14-Sep-12         | 25-Sep-12       | A | 11        | 12 -   |
| C4C   | 25d            | Bid Opening                                | 27-Nov-12         | 27-Nov-12       |   | 0         | 0 99   |
| C5B   | S110b          | South Cavern Exc. - Dev & Top Heading (Com | 12-Sep-12         | 8-Nov-12        |   | 57        | 41 45  |
|   | S150           | North Cavern Exc. - Dev & Top Heading (Com | 12-Oct-12         | 5-Nov-12        |   | 24        | 4 109  |
|   | E245           | Ent #2 South SOE/Decking (Complete)        | 27-Sep-12         | 5-Oct-12        |   | 8         | -12 96 |
|   | E120           | Ent #1 Underpinning (Complete)             | 13-Sep-12         | 8-Oct-12        |   | 25        | -2 46  |
| C5C   | 20k            | Authorization to Advertise                 | 27-Nov-12         | 22-Nov-12       |   | -5        | -5 19  |

**Table 4 - Project Budget/Cost** 

|                               | FFGA             |              |                         | FFGA Amend | MTA Current Working Budget (CWB) |              | Expenditures as of September 30, 2012 |              |
|-------------------------------|------------------|--------------|-------------------------|------------|----------------------------------|--------------|---------------------------------------|--------------|
|                               | \$ Millions      | % of Total   | Obligated (\$ Millions) | TBD        | \$ Millions                      | % of Total   | \$ Millions                           | % of Total   |
| <b>Grand Total Cost:</b>      | <b>4,866.614</b> | <b>100</b>   | <b>4,572.942</b>        |            | <b>5,267.614</b>                 | <b>100</b>   | <b>1,927.939</b>                      | <b>36.60</b> |
| Financing Cost                | 816.614          | 16.78        |                         |            | 816.614                          | 15.50        |                                       |              |
| <b>Total Project Cost:</b>    | <b>4,050.000</b> | <b>83.22</b> | <b>4,572.942</b>        |            | <b>4,451.00</b>                  | <b>84.50</b> | <b>1,927.939</b>                      | <b>36.60</b> |
| <b>Total Federal:</b>         | <b>1,350.693</b> | <b>27.75</b> | <b>1,063.942</b>        |            | <b>1,350.693</b>                 | <b>24.60</b> | <b>622.437</b>                        | <b>11.82</b> |
| <b>Total FTA share:</b>       | <b>1,300.000</b> | <b>96.25</b> | <b>990.049</b>          |            | <b>1,300.000</b>                 | <b>23.68</b> | <b>558.185</b>                        | <b>10.60</b> |
| 5309 New Starts share         | 1,300.000        | 100          | 990.049                 |            | 1,300.000                        | 23.68        | 558.185                               | 10.60        |
| <b>Total FHWA share:</b>      | <b>50.693</b>    | <b>3.75</b>  | <b>73.893</b>           |            | <b>50.693</b>                    | <b>0.96</b>  | <b>64.252</b>                         | <b>1.22</b>  |
| CMAQ                          | 48.233           | 95.15        | 71.433                  |            | 48.233                           | 0.88         | 61.792                                | 1.17         |
| Special Highway Appropriation | 2.460            | 4.85         | 2.460                   |            | 2.460                            | 0.04         | 2.460                                 | 0.05         |
| <b>Total Local share:</b>     | <b>2,699.307</b> | <b>55.47</b> | <b>3,509.000**</b>      |            | <b>**3,509.000</b>               | <b>63.92</b> | <b>1,305.502</b>                      | <b>24.78</b> |
| State share                   | 450.000          | 16.67        | 100.000                 |            | 450.000                          | 8.20         |                                       |              |
| Agency share                  | 2,249.307        | 83.33        | 1,145.782               |            | 3,059.000                        | 55.72        |                                       |              |
| City share                    | 0                | 0            |                         |            | 0                                | 0            |                                       |              |

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

\*\* Current MTA Board approved budget.

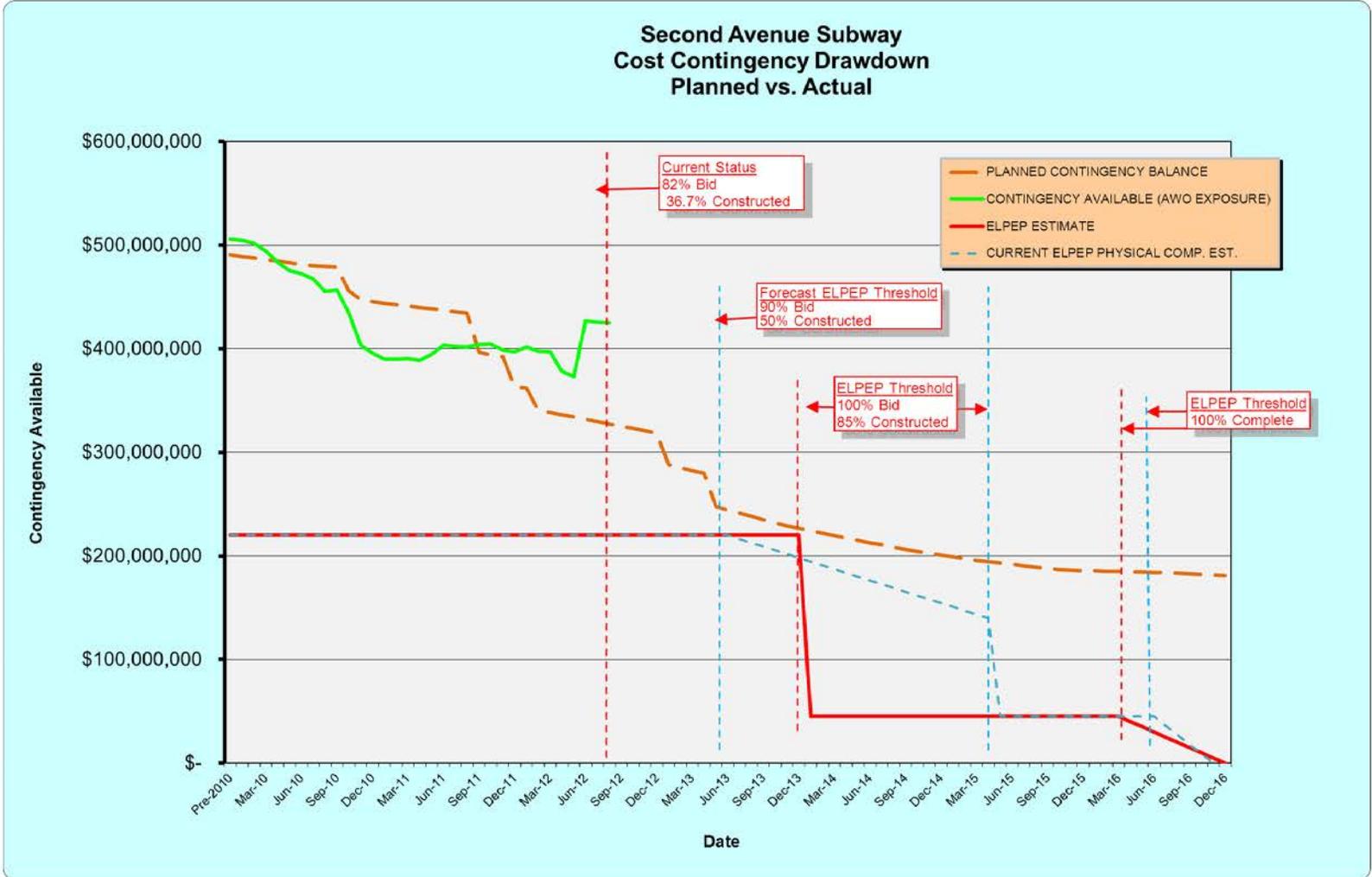


Table 5 - Contingency Drawdown

**Table 6 - Estimate @ Completion**

| <b>Category</b>                      | <b>Current Working Budget</b> | <b>PMOC EAC Forecast</b> |
|--------------------------------------|-------------------------------|--------------------------|
| <b>Total Construction</b>            | \$2,728,172,492               | \$2,975,954,233          |
| <b>Engineering Services Subtotal</b> | \$576,541,264                 | \$591,500,000            |
| <b>Third Party Expenses</b>          | \$534,800,000                 | \$534,800,000            |
| <b>TA Expenses</b>                   | \$125,160,085                 | \$128,160,085            |
| <b>Contingency</b>                   | \$321,104,648                 |                          |
| <b>Executive Reserve</b>             | \$160,000,000                 |                          |
| <b>Subtotal</b>                      | \$4,451,000,000               | \$4,230,414,318          |

**Table 7 - Allocation of Current Working Budget to Standard Cost Categories**

| <b>Std. 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 Region II has accepted MTACC/NYCT's assertion that recent services reductions will provide ample spare vehicles for the SAS Phase I Project.

| <b>Table 8 -- Core Accountability Items October 2012</b> |  |                         |                         |  |
|--|--|-------------------------|-------------------------|--|
| <b>Project Status:</b>                                   |  | <b>Original at FFGA</b> | <b>Current*</b>         | <b>ELPEP**</b>   |
| <b>Cost</b>  | Cost Estimate                                  | \$4,050M                | \$4,451M                | \$4,980M   |
| <b>Contingency</b>                                       | Unallocated Contingency                        | \$555.554M              | \$401M                  | \$220M   |
|  | Total Contingency (Allocated plus Unallocated) | \$555.554M              | \$425M (September 2012) | \$220M   |
| <b>Schedule</b>  | Revenue Service Date                           | June 30, 2014           | December 30, 2016       | February 28, 2018  |
| <b>Total Project Percent Complete</b>                    | Based on Expenditures                          | 43.3%                   |                         |  |
|  | Based on Earned Value                          | N/A                     |                         |  |
| <b>Major Issue</b>                                       |  |                         |                         |  |
| <b>Organization and Staffing</b>                         |  | <b>Status</b>           |                         | <b>Comments</b>  |
|  |  | Open                    |                         | Certain relationships on the current Org. Chart do not reflect actual structure and function of project team. Need to fill two open positions ASAP.  |
| <b>Safety and Security Certification</b>                 |  | Open                    |                         | Detailed planning and organizational prep for safety & certification process needs to continue. Current lack of dedicated staff may impede progress. |
| <b>Date of Next Quarterly Meeting:</b>                   |  | TBD                     |                         |  |

\* MTACC's Current Working Budget

\*\* Enterprise Level Project Execution Plan (ELPEP), reflecting median level of risk mitigation

Schedule data based upon IPS Update #73; Data Date = 10/01/2012

Financial date based upon MTACC reporting through 10/31/2012