

## **PMOC MONTHLY REPORT**

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

Metropolitan Transportation Authority

New York, New York

**Report Period September 1 to September 30, 2017**



PMOC Contract No. DTFT60D1400017

Project No. DC-27-5287, Task Order No. 0002, Work Order No. 05

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Length of time on Project: Five years on Project for Urban Engineers

## TABLE OF CONTENTS

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<b>THIRD PARTY DISCLAIMER.....</b>	<b>1</b>
<b>REPORT FORMAT AND FOCUS.....</b>	<b>1</b>
<b>MONITORING REPORT .....</b>	<b>2</b>
<b>1.0 PROJECT STATUS.....</b>	<b>2</b>
a. Procurement.....	2
b. Construction.....	2
c. Quality.....	4
d. Readiness for Revenue Operation.....	5
<b>2.0 SCHEDULE DATA.....</b>	<b>6</b>
<b>3.0 COST DATA.....</b>	<b>7</b>
<b>4.0 RISK MANAGEMENT .....</b>	<b>8</b>
<b>5.0 ELPEP .....</b>	<b>9</b>
<b>6.0 SAFETY AND SECURITY.....</b>	<b>9</b>
<b>7.0 ISSUES AND RECOMMENDATIONS.....</b>	<b>10</b>

## APPENDICES

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### APPENDIX A – ACRONYMS

### APPENDIX B – TABLES

Table 1 - Summary of Schedule Dates

Table 2 - Project Budget/Cost

Table 3 - Estimate at Completion

Table 4 - Allocation of Current Working Budget to Standard Cost Categories

Table 5 - Core Accountability Items

### **THIRD PARTY DISCLAIMER**

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

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

Therefore, the information in the monthly reports may change from month to month, based on relevant factors for the 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. DTFT60D1400017, Task Order 0002. Its purpose is to provide information and data to assist the FTA as it continually monitors the Project Sponsor's technical capability and capacity to execute a project efficiently and effectively, and hence, whether the Project Sponsor continues to be ready to receive federal funds for further project development.

This report covers the project management activities on the Second Avenue Subway (SAS) Phase 1 Project managed by Metropolitan Transit Authority Capital Construction (MTACC) of New York City (NYC). MTA is the Project Sponsor, financed by the FTA FFGA.

## MONITORING REPORT

### 1.0 PROJECT STATUS

On January 1, 2017, the Second Avenue Subway (SAS) Phase 1 Project began Revenue Service. Although some individual contracts have reached substantial completion, the overall project, however, has not. Corrections of open inspection observations and testing of various system elements are ongoing. Project Substantial Completion is forecasted for November 20, 2017, and is being driven by the Systems contractor's schedule.

Total project expenditures as of September 30, 2017, are \$4.325 billion. This is 97.2% of MTACC's Current Working Budget of \$4.451 billion (exclusive of financing costs) and below the funding commitment in the FTA Full Funding Grant Agreement of \$5.574 billion. MTACC has committed to a revised cost "Estimate at Completion" (EAC) to determine if additional local funds are required, given the scope of the open inspection observations, ongoing NYCT force account labor, the level of testing still required, the probability of future claims, and the exposure from AWOs pending negotiation. Because the current project contingency is reported at negative \$22.9 million, additional funding will be required and MTA needs to follow the process to allocate the local funds identified in the amended FFGA. The PMOC does note, however, that MTACC's Current Working Budget is within the amended FFGA Baseline Cost Estimate.

#### a. Procurement

All contracts required for SAS Phase 1 have been awarded.

#### b. Construction

As of September 30, 2017, there are eight (8) active contracts on the SAS Phase 1 Project, of which two are in the closeout process, and Overall construction is 99.5% complete. The status of each contract is as follows:

- **Contract C-26005 (C2A) 96th Street Site Work and Heavy Civil**  
The Contractor achieved Substantial Completion on November 5, 2013. Contract closeout is in process.
- **Contract C-26010 (C2B) 96th Street Station Civil, Architectural, and MEP**  
Closeout of open observations progressed such that substantial completion was declared by MTACC's Construction Manager on August 7, 2017. There are still 182 open observations as of September 30, 2017. Expenditures show the contractor at 99.3% complete. Final Completion is still forecasted for November 5, 2017.
- **Contract C-26006 (C3) 63rd Street Station Rehabilitation**  
Ongoing closeout of open observations and testing of systems have impacted the schedule. Subsequently, substantial completion was reforecast for November 15, 2017 and final completion for February 15, 2018. As of September 30, 2017, there are 213 open observations that need to be addressed. Expenditures show that the contractor is 99.3% complete.
- **Contract C-26007 (C4B) 72nd Street Station Cavern Mining and Lining**  
Substantial Completion was achieved on January 14, 2014. Submittal of contract closeout documentation and completion of punchlist items are ongoing.

- **Contract C-26011 (C4C) 72nd Street Station – Station Finishes, MEP, Ancillary Buildings and Entrances**  
Closeout of open observations progressed such that substantial completion was declared by MTACC’s Construction Manager on August 3, 2017. As of September 30, 2017, there are 294 open observations that need to be addressed. Final completion is forecasted for November 30, 2017. Expenditures show the contractor at 99.0% complete.
- **Contract C-26008 (C5B) 86th Street Station Cavern Mining and Lining**  
Substantial Completion of all contract work was achieved on December 16, 2014. Contract closeout is ongoing.
- **Contract C-26012 (C5C) 86th Street Station Finishes, MEP Systems, Ancillary Buildings and Entrances**  
Closeout of open observations and testing of mechanical, electrical, and plumbing systems is ongoing with substantial completion being re-forecasted for October 31, 2017. Final Completion was subsequently re-forecasted for January 31, 2018. As of September 30, 2017, there are 135 open observations that need to be addressed. Expenditures show the contractor at 98.6% complete.
- **Contract C-26009 (C6) Track, Power, Signals and Communication Systems**  
The contractor continued closeout of open observations and integration testing of systems during September 2017. Progress was not as anticipated which resulted in the substantial completion and final completion dates being revised to December 31, 2017 and March 31, 2018 respectively. As of September 30, 2017, there are 1,194 open observations that need to be addressed. Expenditures show the contractor at 99.0% complete.

### c. Quality

#### Quality Assurance and Quality Control (QA/QC)

##### Status:

As of September 30, 2017, a total of 2,018 open observations are on the “Observations Lists” that need to be addressed for the stations and system contracts.

The status of the Preliminary Operations and Maintenance (O&M) Manuals, Training Manuals, and “As-Built” drawings as of September 30, 2017 is as follows:

##### Preliminary O&M Manuals

	Stations	Systems
Required	185	65
Submitted	185 (100%)	46 (71.0%)
Approved	141 (76.0%)	15 (23.0%)
Returned R&R	6 (3.0%)	7 (23.0%)
Under Review (NYCT)	38 (21.0%)	24 (37.0%)
To be Submitted	0 (0.0 %)	19 (29.0%)

##### Training Manuals

	Stations	Systems
Required	115	47
Submitted	115 (100.0%)	23 (49.0%)
Approved	73 (63.0%)	14 (30.0%)
Returned R&R	12 (10.0%)	4 (9.0%)
Under Review (NYCT)	30 (26.0%)	5 (11.0%)
To be Submitted	0 (0.0%)	24 (55.0%)

##### As-Built-Drawings

	Stations	Systems
Required	7,913	4,337
Submitted	7,913 (100.0%)	1,026 (24.0%)
Reviewed	6,380 (81.0%)	809 (19.0%)
Approved	4,089 (52.0%)	749 (17.0%)
Returned R&R	2,265 (29.0%)	60 (1.0 %)
Under Review (NYCT)	1,565 (20.0%)	218 (5.0%)
To be Submitted	0 (0.0%)	3,311 (76.0%)

##### Observations:

MTACC is still maintaining a Quality Assurance/Quality Control presence on the project. Efforts are directed toward the resolution of open observations on the “Observations Lists”, performing inspections of base and AWO work, resolution of nonconforming reports, review quality submittals, and review of Preliminary O&M Manuals, Training Manuals, and “As-Built” drawings.

#### Concerns and Recommendations:

It is taking the contractors longer than anticipated to address the items on the observations lists because the contractors must coordinate their work around an operational system and staff the project accordingly.

The PMOC continues to be concerned about the low percentage of approved manuals and “As-Built” drawings given that construction is 99.5% complete. MTACC’s Project Procedure No. CO.10 (Beneficial Use, Substantial Completion, and Final Completion) that is referenced in the SAS Project Management Plan suggests that these items must be addressed before the Project Final Completion can be declared. The PMOC recommends that added effort be directed toward the completion of the manuals and “As-Built” drawings.

#### **d. Readiness for Revenue Operation**

##### Status:

The SAS Phase 1 Project opened for Revenue Operation on January 1, 2017. At that time, substantial completion had not been achieved for the four station contractors and the system contractor due to unfinished work and various open items on the observation list. The items are being tracked on an “Observation Lists”. MTACC reports that as of September 30, 2017, there are 2,018 open items on the “Observation Lists” and that all of the RSD+60 (Revenue Service Date +60 days) and RSD+60(s) (safety) related observations have been addressed. See Section 1.b for forecasted substantial completion dates. Submittal and approval of the required manuals and “As-Built” drawings are ongoing. See Section 1.c for details.

##### Observations:

Resolution of the code compliance issues is taking longer than anticipated, which has resulted in mitigation measures being extended. MTACC has confirmed that none of the code compliance open observations presents a critical or serious safety risk to the general public or NYCT employees.

##### Concerns and Recommendations:

The PMOC’s concerns with code compliance, the certification process, and quality are all associated with the length of time that it is taking the MTACC to close the items on the Observation Lists for the construction and system contracts. Neither the quality of the workmanship of completed and accepted elements nor the safe operation of the service are in question. Inspections performed by MTACC identified open items which should have been identified and corrected by the contractors prior to the facilities being submitted for MTACC’s acceptance.

The PMOC recommends that the MTA Code Compliance Office continue to monitor the code compliance issues to ensure that proper mitigation measures are implemented.

## 2.0 SCHEDULE DATA

### Status:

The table below reflects SAS Phase 1 schedule data presented at the September 2017, SAS Project Update Meeting with FTA/PMOC.

Road Map for Project and Grant Closeout					
Description of Tasks	63rd Street	72nd Street	86th Street	96th Street	Systems
Required Prior to Substantial Completion					
1. Outline of Proposed Schedule for submission of administrative items	6/30/17	9/1/2017	8/31/2017	8/7/2017	11/20/2017
2. Completion of AWOs	6/30/17	7/31/2017	8/31/2017	6/30/2017	11/20/2017
Substantial Completion (Forecast)	11/15/2017	8/3/2017	10/31/2017	8/7/2017	12/31/2017
Substantial Completion (Actual)		8/3/2017(A)		8/7/2017(A)	
3. Final SAS Certification	<-----11/6/2017----->				
4. Substantial Completion by Contract	11/15/2017	8/3/2017(A)	10/31/2017	8/7/2017(A)	12/31/2017
5. Final Completion /Identify Closeout Schedule	1/31/2018*	11/30/2017*	1/31/2018*	11/5/2017*	3/31/2018*
6. Grant closeout	<-----6/30/2018**----->				

\*Plus 3 months from Substantial Completion per contract

\*\*Plus 90 days from System Contract closeout

### Observations:

Reduction in subcontractor staff and correction of open observations while the system is operational is requiring more time than anticipated. This has resulted in changes in the substantial completion dates. See construction status for each station and system contractor under Section 1(Construction).

### Concerns and Recommendation:

The PMOC recommends that coordination/progress meetings between MTACC and the contractors continue to be held on a regular basis so manpower adjustments can be made to minimize impacts on the schedule.



### 3.0 COST DATA

#### Status:

Total project expenditures, as of September 30, 2017, are \$4.325 billion. This is 97.2% of MTACC's \$4.451 billion Current Working Budget (exclusive of financing costs) and below the Full Funding Grant Agreement commitment of \$5.574 billion.

Construction expenditures, as of September 30, 2017, are \$2.662 billion. This is 99.5% of the \$2.674 billion construction budget. The completion status of each individual construction contract is as follows:

- C26002 (C1 Tunnel Boring) – 100%;
- C26005 (C2A 96th Street Station) – 100%;
- C26010 (C2B 96th Street Station) – 99.3%;
- C26013 (C5A 86th Street Station) – 100%;
- C26008 (C5B 86th Street Station) – 99.6%;
- C26012 (C5C 86th Street Station) – 98.6%;
- C26006 (C3 63rd Street Station) – 99.3%;
- C26007 (C4B 72nd Street Station) – 100%;
- C26011 (C4C 72nd Street Station) – 99.0%; and,
- C26009 (C6 Systems) – 99.0%.

Soft Cost expenditures, as of September 30, 2017, are \$1.301 billion, which is 94.1% of the \$1.382 billion budget.

Project contingency as of September 30, 2017, is as follows:

AWO Budget (Approved Contingency)	\$394,026,000 (allocated)
<u>Executive Reserve</u>	<u>+ \$2,206,000 (unallocated see Table 5)</u>
Total Contingency	\$396,232,000
<u>Contingency Spent (thru 9/30/17)</u>	<u>-\$361,935,000</u>
Contingency (balance)	\$34,297,000
<u>Retroactive AWO Payments</u>	<u>+\$11,341,000</u>
Contingency Remaining	\$45,638,000 (see Table 5)
<u>AWOs (Negotiated Pending Approval)</u>	<u>-\$22,139,000</u>
Available Contingency	\$23,499,000
<u>AWOs (Pending Negotiation)</u>	<u>-\$46,378,000</u>
MTACC Remaining Contingency	-\$22,879,000

#### Observations:

A revised cost Estimate at Completion (EAC) should be prepared to determine if additional local funds are needed given the scope of the "Observation List", the level of testing still required, probability of future claims, and ongoing need for project support personnel.

#### Concerns and Recommendation:

The PMOC recommends expediting an update to the EAC. If additional local funds are required, MTA should follow the process to allocate the local funds identified in the amended FFGA.

## 4.0 RISK MANAGEMENT

### Status:

The risks to the project are clearly defined at this stage of the project and are understood by the SAS Project Team. MTACC continues to monitor the ongoing mitigation measures implemented at the time of revenue service. See item 4 below.

### Observation and Analysis:

Risks involving MTACC’s schedule acceleration initiative can be classified as either management and organizational risk or technical and coordination risk. PMOC identified major risks within each of these categories are summarized as follows:

Management and Organizational Risks	
Risk	Status
1. MTACC’s ability to implement its schedule acceleration program through compression of construction schedules.	The acceleration program was based on the station and systems contractors achieving key milestones which would allow the test program to start subsequently with substantial completion being achieved as a key milestone. The objective of the acceleration program was not fully achieved. Construction delays by the station contractors impacted the system contractor. Revenue Service subsequently began on January 1, 2017, without the station and systems contractors achieving substantial completion. See Section 2 of this report for forecasted substantial completion and final completion dates. This item is no longer considered a risk and will be removed from future reports.
2. Design and scope changes requested by NYCT during the late stages of construction. NYCT has agreed that changes not related to safe operation of the railroad and station facilities will be deferred until after Revenue Service.	The AWO process is being utilized to track requested design changes/issues noted during construction and testing. Efforts are underway to resolve the cost of implementing design changes requested by the user group (NYCT) which are not part of the original scope. MTACC, however, has committed to implement any design changes which address safety issues.  The AWO tracking log is an effective tool for tracking design changes/issues and is being effectively utilized by the SAS Project Team. This is no longer considered a risk associated with the acceleration initiative and will be removed from future reports.
3. Availability of NYCT staff to support testing, commissioning, and final acceptance of work performed by SAS contractors.	NYCT Force Account efforts are ongoing in support of the closeout of open observations on the “Observations Lists”, completion of AWOs and base contract work and the review of test reports. NYCT force account budget has been exceeded and additional funds are required.
4. MTA code compliance reviews. Past experience suggests that risks involve delayed inspections, code interpretation issues	Revenue Service commenced on January 1, 2017, with unresolved code compliance issues. MTACC failed to resolve all the code compliance issues documented in NYCT’s Certification for Temporary Certificate of Occupancy Memorandum dated December 29, 2016. Subsequently, the Office of Code Compliance reissued the certifications with the revised conditions that RSD+60 (items) will be resolved by April 15, 2017. At the end of April 2017, there were still open RSD+60 items. The NYCT code compliance unit said that the Temporary Code Compliance Certificates are valid until December 31, 2017 and that no new temporary certificates will be issued. MTACC reports that as of September 30, 2017, there are 2,018 open items on the “Observation Lists”, and that all of the RSD+60 (Revenue Service Date +60 days) and

Management and Organizational Risks	
Risk	Status
	RSD+60(s) (safety) observations have been addressed. Mitigation measures are ongoing until the code compliance open items are resolved. Delayed inspections and length of time to resolve open code issues introduce potential schedule risks and resultant delays. The MTA Code Compliance Office should continue monitoring the code compliance issues and mitigation measures implemented.
Technical and Coordination Risks	
Risk	Status
1. Critical communication systems: fire alarm system, police radio installation, and startup at all stations.	Testing of all the interfaces to the fire alarm system continues to be a major risk in that integration testing is ongoing. The Systems Contractor's schedule shows substantial completion to be achieved on November 20, 2017. The issue associated with testing during the Systems Acceptance Phase subsequent to substantial completion has not been resolved. See Section 7.0 Issues and Recommendations (System Testing) for details.

## 5.0 ELPEP

The SAS Project Team has implemented the principles and requirements embodied in the ELPEP. The procedural changes triggered by the ELPEP have become an integral part of the management of the project and have given the FTA/PMOC greater insight into the risk, cost, and schedule elements of the project. The project met the \$45 million ELPEP minimum available contingency requirement at the 100% Bid and 85% Constructed hold points.

## 6.0 SAFETY AND SECURITY

Each construction contractor continued implementation of the Safety Requirements as specified in Section 01 11 50 of the General Requirements.

As of August 31, 2017, a total of 15,188,545 construction hours have been logged on the project with 105 lost time and 197 recordable incidents documented. The total hours and incidents equate to a Lost Time Rate (LTR) of 1.38 and a Recordable Rate (REC) of 3.98, which has not changed from the previous month. The LTR is below and the REC is above the US Bureau of Labor Statistics (BLS) national rates (Heavy and Civil construction) of 1.8 and 3.2, respectively.

**Safety and Security Certification:** Safety and Security Certification Requirements are specified in Section 01 77 12 of the General Requirements for each station and system contract. The certifiable elements of the SAS project have been identified and the Certifiable Items List (CIL) has been established and documented on checklists. The test reports that serve as the "Bodies of Evidence" for the verification of the certifiable items were not issued in a timely manner. The delay in the issuance of the test reports caused the Systems Safety Certification Committee to update its certification process. In December 2016, the SAS Systems Safety Certification Committee issued an Interim Acceptance Certificate of Conformance that allowed all SAS stations to open for revenue service on an interim basis until final system integration can be substantiated. Full certification for each station will be granted by the SAS Systems Safety Certification Committee upon evidentiary review of system integration provided by the Systems contractor's management team, C-26009. Safety Certification is ongoing with the accumulation of test reports and other bodies of evidence. As of September 30, 2017, three-hundred one (301) of the 330 required test reports have been submitted, 170 have been approved, 93 are being

reviewed and 67 have to be resubmitted / submitted. Final certification is still forecasted on November 6, 2017.

## **7.0 ISSUES AND RECOMMENDATIONS**

**Schedule:** Correction of open items on the observation list are requiring considerably more time while the system is operational. NYCT standard operating procedures dictate what can be accomplished within an operational system. Coordination/Progress meetings should continue on a regular basis so adjustments can be made to minimize the impacts on the schedule.

**Technical Issues:** MTACC has identified some design issues that required mitigation. These are not uncommon in large complex projects and often manifest themselves during construction and systems installation and testing. Complex projects often track justification for changes. Design issues are among the reasons for changed conditions identified by MTACC on this project. The AWO process is being utilized to track the design issues that were noted during construction and testing.

NYCT requests for design features which are not in the station contractor's contract are being evaluated with the expectation that NYCT will fund the addition features. Any design issues associated with safety are being approved and implemented.

The AWO process is also being utilized to track requested design changes and is an effective tool to address the issue. This issue will be removed from future reports.

**Systems Testing:** Delays in completing the installation of equipment have had a ripple effect on the overall integration and test program. MTACC still forecast integration testing to be ongoing until November 20, 2017.

Volume 2 of the Facilities System Test Program identifies the System Acceptance Phase (SAP) as the period after contract substantial completion (completion of all Factory Acceptance Tests - FAT, Field Installation Acceptance Tests -FIAT, Simulated Integrated Systems Testing -SIST, and Final Systems Integrated Testing -FSIT) when systems and subsystems will be operated to demonstrate that all interfaces and systems are functioning as designed and intended. The SAP has not occurred because neither the station contractor nor the systems contractor have achieved substantial completion. The Road Map for Project and Grant Closeout presented at the August 16, 2017 Budget/Schedule Progress Meeting did not reflect the SAP. MTACC has stated that an addendum to the Facilities System Test Program (FSTP) will be issued to address changes that were made to the test program. However, to date, the PMOC has not observed that the FSTP addendum has been issued or implemented.

**Compliance Inspections:** MTACC's commitment to expedite the Compliance Inspection process is ongoing. NYCT force account personnel are still being utilized to verify the correction of open observations on the observation list.

**Safety Certification:** The test reports that serve as the "Bodies of Evidence" for the verification of the certifiable items were not issued in a timely manner and this caused the Systems Safety Certification Committee to update its certification process.

The SAS Safety Certification Committee agreed to open the Second Avenue Subway stations for revenue service on an interim basis until final system integration can be substantiated. An Interim Acceptance Certificate of Conformance was issued on December 28, 2016. The certification stated that "risk mitigation methods will be strictly enforced providing an equivalent efficacy of those final systems until full certification can be achieved. Full certification for each

station will be granted by the SAS Certification Committee upon evidentiary review of system integration provided by the System C-26009 construction management team”.

The PMOC expressed its concern to MTA that the certification process has been updated to accommodate the January 1, 2017 opening. The MTA opened the stations with a temporary certification rather than a final certification. Final certification would have required a full body of evidence as verification that the Certifiable Items List associated with each certifiable element at each station had been completed. That full body of evidence will now be provided as part of the final certification, which is scheduled for November 6, 2017. As of September 30, 2017, three-hundred one (301) of the 330 required test reports have been submitted, 170 have been approved, 93 are being reviewed and 67 have to be resubmitted / submitted.

**Financial:** As of September 30, 2017, \$4.325 billion (97.2%) of the MTACC’s Current Working Budget of \$4.451 billion (exclusive of financing costs), has been expended. Project contingency is still projected at negative \$22.9 million as noted on the September 30, 2017 AWO Exposure SAS Budget Reconciliation Report. MTACC committed to revise the cost Estimate -at -Completion (EAC) in order to address the apparent funding shortfall, given the scope of the open inspection observations, the level of testing still required, pending AWOs, and the probability of future claims. As of September 30, 2017, the EAC has not been revised and provided to the FTA/PMOC.

## **APPENDIX A – ACRONYMS**

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ARRA	American Recovery and Reinvestment Act
AWO	Additional Work Order
BLS	Bureau of Labor Statistics
CBDS	Computer Based Dispatch System
CBH	Circuit Breaker House
CCM	Consultant Construction Manager
CCTV	Closed Circuit Television
CD	Calendar Days
CIL	Certifiable Items List
CMP	Cost Management Plan
CPRB	Capital Program Review Board
CSSR	Contact Status Summary Report
CWB	Current Working Budget
CY	Cubic Yards
DCB	Detailed Cost Breakdown
EAC	Estimate at Completion
EBCS	Emergency Booth Communication System
ELPEP	Enterprise Level Project Execution Plan
FAS	Fire Alarm System
FAT	Factory Acceptance Test
FIAT	Field Installation Acceptance Test
FFGA	Full Funding Grant Agreement
FSIT	Final Systems Integrated Testing
FSTP	Facilities System Test Program
FTA	Federal Transit Administration
GO	General Orders
IAC	Intrusion Access Control
IPS	Integrated Project Schedule
LAN	Local Area Network
LTR	Lost Time Rate
MO	Month

MPT	Maintenance and Protection of Traffic
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority – Capital Construction
N/A	Not Applicable
NYCT	New York City Transit
NYSPTSB	New York State Public Transportation Safety Board
OSS	NYCT Office of System Safety
PACIS	Public Address Customer Information Screens
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
REC	Recordable Rate
RMCP	Risk Mitigation Capacity Plan
RMP	Risk Management Plan
RMS	Remote Monitoring System
ROD	Revenue Operations Date
ROW	Right of Way
RSD	Revenue Service Date
SAS	Second Avenue Subway
SCC	Standard Cost Category
SIST	Simulated Integrated System Testing
SMP	Schedule Management Plan
SSCC	Safety and Security Certification Committee
SSOA	State Safety Oversight Agency
SSPP	System Safety Program Plan
TBD	To Be Determined
TCC	Technical Capacity and Capability
TPSS	Traction Power Substation
TSSM	Tunnel Station Smoke Management
TWG	Technical Working Group

WAN	Wide Area Network (WAN)
WBS	Work Breakdown Structure
WD	Work Days



## APPENDIX B – TABLES

**Table 1 - Summary of Schedule Dates**

	Amended FFGA (March 2015)	Forecast Completion	
		Project Sponsor	PMOC
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	August, 2016	November 20, 2017*	October 2017
Revenue Service	February 28, 2018	January 1, 2017A	February 2018

\* Substantial Completion revised to reflect substantial completion of the Systems Contractor.

**Table 2 - Project Budget/Cost** 

	FFGA (January 2008)			FFGA Amend (March 2015)	MTA's Current Working Budget (CWB)		Expenditures as of September 30, 2017	
	\$ Millions	% of Total	Obligated (\$ Millions) as of 3/31/2015	\$ Millions	\$ Millions	% of Total	\$ Millions	% of Total
Grand Total Cost	4,866.614	100	4,572.942	5,574.614	5,267.614	100	4,324.955	82.10
Financing Cost	816.614	16.78		816.614	816.614	15.50	(N.A.)	(N.A.)
Total Project Cost	4,050.000	83.22	4,572.942	4,758.000	4,451.00	84.50	4,324.955	82.10
Total Federal	1,350.693	27.75	1,250.508	1,373.893*	1,350.693	24.60	1,311.103	24.89
Total FTA share	1,300.000	96.25	1,176.615	1,300.000	1,300.000	23.68	1,237.210	23.49
5309 New Starts share	1,300.000	100	1,176.615	1,300.000	1,300.000	23.68	1,237.210	23.49
Total FHWA share	50.693	3.75	73.893	73.893	50.693	0.96	73.893	1.40
CMAQ	48.233	95.15	71.433	71.433	48.233	0.88	71.433	1.35
Special Highway Appropriation	2.460	4.85	2.460	2.460	2.460	0.04	2.460	0.05
Total Local share	2,699.307	55.47	3,509.000**	3,384.107	3,509.000 **	63.92	3,013.852	57.21
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 and expended amounts obtained from the FTA's Transit Award Management System (TrAMS) and MTACC's Grant Management Department.

\*\* Current MTA Board approved budget.

**Table 3 - Estimate at Completion**

<b>Category</b>	<b>Current Working Budget</b>	<b>EAC Forecast As of September 2016</b>
<b>Total Construction</b>	\$2,674,814,299	\$3,050,065,727
<b>Engineering Services Subtotal</b>	\$622,862,000	\$690,022,317
<b>Third Party Expenses</b>	\$554,086,273	\$556,586,000
<b>TA Expenses</b>	\$131,160,085	\$141,514,683
<b>Contingency</b>	\$468,077,343	\$0
<b>Total</b>	<b>\$4,451,000,000</b>	<b>\$4,438,188,727</b>

EAC is being updated to reflect current project status

**Table 4 - Allocation of Current Working Budget to Standard Cost Categories**

<b>Std. Cost Category (SCC)</b>	<b>Description</b>	<b>FFGA (January 2008)</b>	<b>FFGA Amended (March, 2015)</b>	<b>MTA's Current Working Budget (December 31, 2016)</b>
10	Guideway & Track Elements	\$612,404,000	\$195,346,781	\$189,310,484
20	Stations, Stops, Terminals, Intermodal	\$1,092,836,000	\$1,666,605,679	\$1,471,571,389
30	Support Facilities	\$0	\$0	\$0
40	Site Work & Special Conditions	\$276,229,000	\$793,118,232	\$880,704,398
50	Systems	\$322,707,000	\$250,379,966	\$212,891,015
60	ROW, Land, Existing Improvements	\$240,960,000	\$281,500,000	\$281,500,000
70	Vehicles	\$152,999,000	\$0	\$0
80	Professional Services	\$796,311,000	\$1,026,608,168	\$1,388,496,979
90	Unallocated Contingency	\$555,554,000	\$544,441,174	\$26,525,735
Subtotal		\$4,050,000,000	\$4,758,000,000	\$4,451,000,000
Financing Cost		\$816,614,000	\$816,614,000	\$816,614,000
<b>Total Project</b>		<b>\$4,866,614,000</b>	<b>\$5,574,614,000</b>	<b>\$5,267,614,000</b>

Note: Table updated to reflect latest allocations by MTACC (4<sup>th</sup> Quarter 2016)

**Table 5 - Core Accountability Items**

Project Status:		Original at FFGA	Amended FFGA	MTA's Current Working Budget	ELPEP*
<b>Cost</b>	Cost Estimate	\$4,050 million	\$4.758 million (exclusive of financing)	\$4,451 million (exclusive of financing)	\$4,980 million
<b>Contingency</b>	Unallocated Contingency (Management Reserve)	\$555.554 million	\$544.441 million	\$2.2 million (As of September 30, 2017)	\$45 million
	Total Remaining Contingency (Allocated plus Unallocated)	\$555.554 million	\$544.441 million	\$45.6 million (As of September 30, 2017)	\$45 million
<b>Schedule</b>	Revenue Service Date	June 30, 2014	February 18, 2018	January 1, 2017A	February 28, 2018
See Section 3.0 for detail breakdown of Project Contingency					
<b>Total Project Percent Complete</b>	Based on Expenditures			97.2%	
	Based on Earned Value			N/A	
<b>Major Issue</b>	<b>Status</b>			<b>Comments</b>	
<b>Substantial and Project Completion</b>	Open	Correction of open observations while the system is operational will require considerably more time. GOs for track outages and foul time will be limited and of shorter durations, thus limiting what can be accomplished. Coordination/Progress meetings are being held on a regular basis so adjustments can be made to minimize the impacts on the schedule. See Section 2 for substantial completion and project completion dates.			
<b>Construction Quality</b>	Open	On January 1, 2017, the Second Avenue Subway (SAS) Phase 1 Project began Revenue Service. The service began with a number of open items which are documented in NYCT's Certification for Temporary Certificate of Occupancy Memorandum dated December 29, 2016. The memorandum indicated that the open items are to be completed within 60 days of revenue service i.e., March 1, 2017. All of the Revenue Service (RSD) +60 days items were not resolved by March 1, 2017. Subsequently, Code Compliance reissued the temporary certificates with the revised conditions that RSD+60 (items) will be resolved by April 15, 2017. At the end of April 2017, there were still open RSD+60 items. The NYCT code compliance unit said that the Temporary Code Compliance Certificates are valid until December 30, 2017 and that no new temporary certificates will be issued. MTACC reports that as of September 30, 2017, there are 2,018 open items on the "Observation Lists", and that all of the RSD+60 (Revenue Service Date +60 days) and RSD+60(s) (safety) observations have been addressed. MTACC has confirmed that none of the code compliance open items present a critical or serious safety risk to the general public or NYCT employees.			
<b>Date of Next Quarterly Meeting:</b>			October 26, 2017		

\* Enterprise Level Project Execution Plan (ELPEP), reflecting median level of risk mitigation  
Financial data based upon MTACC reporting through 09/30/2017.