

## **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, 2016**



PMOC Contract No. DTFT6014D00017

Project No. DC-27-5287, Task Order No. 2, Work Order No. 3

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

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## **THIRD PARTY DISCLAIMER**

This report and all subsidiary reports are prepared solely for the Federal Transit Administration (FTA). This report should not be relied upon by any party, except 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. DTFT6014D00017, Task Order 2. 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 Second Avenue Subway (SAS) Phase 1 Project managed by MTACC. MTA is the Grantee and financed by the FTA FFGA.

## **MONITORING REPORT**

### **1.0 PROJECT STATUS**

NOTE: The dates in Section 1.0 are the latest dates based on conversations between the PMOC and SAS management representatives. The dates in Section 2.0 are based on the most recent MTACC approved scheduled updates.

During October 2016, the MTACC continued advancing SAS Phase 1 to meet a Revenue Service Date (RSD) of December 30, 2016, within its Current Working Budget (CWB) of \$4.451 billion (exclusive of financing). The overall project is approximately 92.4% complete with construction being 97.2 % complete. Substantial Completion has been achieved on three of the eight active construction contracts. The project has transitioned into the integration and acceptance test phase.

#### **a. Procurement**

Procurement of construction contractors for SAS – Phase 1 is complete. Three construction contracts are currently in the closeout process.

## **b. Construction**

As of October 31, 2016, there are eight (8) active contracts on the SAS Phase 1 Project. Overall construction progress is 97.2% complete and the contractors have transitioned into the integration and test phase. Integration and testing of the critical systems required for Revenue Service 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 being delayed because of NYCDEP field inspections. The inspections are being performed to verify the work as reflected on the revised “As-Built-Drawings”. Closeout is anticipated by the end of the 4Q2016.

### **Contract C-26010 (C2B) 96th Street Station Civil, Architectural, and MEP**

Construction has progressed to 96.1% complete. Integration and acceptance testing is ongoing and is reported as 71.5% complete (number of tests completed/number of test required). Critical systems being tested are as follows:

#### **▪ Fire Suppression Systems**

- Water Mist System – Equipment installed and L3/4 Field Installation Acceptance Tests are 100.0% complete. Integration into the Fire Alarm System and subsequent testing by the Systems Contractor is expected to be completed on November 23, 2016.
- Sprinkler System – Equipment installed and L3/4 Field Installation Acceptance Tests are 100.0% complete. Integration into the Fire Alarm System and subsequent testing by the Systems Contractor is expected to be completed on November 15, 2016.
- Dry Fire Standpipe – Equipment installation completed and L3/4 Field Installation Acceptance tests are 67.0% complete. One-hundred percent (100.0%) completion is anticipated on November 15, 2016.
- Inergen System – Equipment installed and L3/4 Field Installation Acceptance Test are 52.0% complete. Functional and discharge test scheduled to be completed by November 2, 2016, with integration into the Fire Alarm System scheduled to be completed by November 15, 2016.

#### **▪ Tunnel Station Smoke Management System (Axial Fans)**

- Ancillary #1 (South) – Equipment installation completed. L3/4, 5, and 6 (100 hour test and final vibration) complete. Turnover to the System Contractor anticipated on November 10, 2016.
- Ancillary #2 (North) – Equipment installation completed. L3/4 and 5 tests are completed. Level 6 (100 hour test and final vibration) scheduled to be completed with subsequent turnover to the System Contractor on November 10, 2016.

#### **▪ Elevators**

- Platform Hydraulic Elevator (1 Elevator) – Equipment installation completed. L3/4 tests complete. Level 5 test schedule to start November 4,

2016, with testing of ancillary equipment to be completed by November 23, 2016.

- Street Level Hydraulic Elevator Entrance #3 (1 Elevator) – Equipment installation completed. L3/4 tests completed. Level 5 test schedule to start November 4, 2016, with testing of ancillary equipment to be completed by November 23, 2016.

- **Escalators**

- Platform (3 Escalators) – Equipment installation is complete. L3/4 tests completed. Level 5 tests in progress and scheduled to be completed on November 5, 2016. L 6 (24 hour test) scheduled to be completed November 23, 2016.
- Entrance #1 (1 Escalator) – Equipment installation is complete. L3/4 tests completed. Level 5 tests in progress and scheduled to be completed on November 5, 2016. Level 6 (24 hour test) scheduled to be completed November 23, 2016.
- Entrance #2 (3 Escalators) – Equipment installation is complete. Levels 3 and 4 tests completed. Level 5 tests in progress and scheduled to be completed on November 5, 2016. Level 6 (24 hour test) scheduled to be completed November 23, 2016.
- Entrance #3 (2 Escalators) – Equipment installation is complete. L3/4 tests completed. Level 5 tests in progress and scheduled to be completed on November 5, 2016. Level 6 (24 hour test) scheduled to be completed November 23, 2016.

- **Heating Ventilation Air Conditioning (HVAC)**

- Sump Pumps, Supply Fans, Cooling Tower, and Chiller System – Equipment installation complete. L3/4 tests in progress and scheduled to be completed on November 23, 2016. Level 6 tests also scheduled to be completed on November 23, 2016.

### **Contract C-26006 (C3) 63rd Street Station Rehabilitation**

Construction has progressed to 98.1% complete. Integration and acceptance testing is ongoing and is reported as 88.0% complete (number of tests completed/number of test required). Critical systems being tested is as follows:

- **Fire Alarm Tests (Levels 5a and 5b)**

- During September 2016, the contractors (C3 & C6) performed a pre “dry run” test for the fire alarm system. The test failed. The C3 contractor has corrected the issues and is scheduling a resumption of the tests. As of October 31, 2016 the tests had not begun.

- **Fire Suppression Systems (Levels 3/4)**

- Water Mist – Total tests required; 6. Total tests completed; 6(100%). Acceptance and turnover to the Systems Contractor is scheduled for November 30, 2016.
- Sprinkler System – Total tests required; 2. Total tests completed; 2(100%).

- Acceptance and turnover to the Systems Contractor is scheduled for November 30, 2016.
- Dry Fire Standpipe (DFSP) System – Total tests required; 3. Total tests completed; 3(100%). Acceptance and turnover to the Systems Contractor is scheduled for November 30, 2016.
  - Inergen System – Total tests required; 10. Total tests completed; 8(80%). Acceptance and turnover to the Systems Contractor is scheduled for November 30, 2016.
  - **Elevator & Escalator Testing (Levels 3/4, 5 and 6)**
    - The single escalator (Entrance #1) has completed all levels of testing. Verification of punch list items and subsequent turnover to NYCT for acceptance is scheduled for November 30, 2016.
    - The single hydraulic elevator (Entrance #2) has completed all levels of testing. Verification of punch list items and subsequent turnover to NYCT for acceptance is scheduled for November 30, 2016.
    - The 4 traction elevators have completed all levels of testing. Verification of punch list items and subsequent turnover to NYCT for acceptance is scheduled for November 30, 2016.
  - **HVAC System (Levels 3/4 and 5)**
    - Total tests required; 169. Total tests completed; 169(100%). There are no Level 6 tests required for this system.
  - **TSSM (Tunnel Station Smoke Management) System (Levels 3/4, 5 and 6)**
    - Total tests required; 14. Total tests completed; 14(100%).

### **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 is ongoing;

- The punchlist items, including correcting the deficiencies to the architectural finish along the escalator incline at Entrance #2, are complete and the area has been turned back over to the C4C contractor; and,
- Similar corrective work will also be required on the Entrance #1 incline finish.

### **Contract C-26011 (C4C) 72nd Street Station – Station Finishes, MEP, Ancillary Buildings and Entrances**

Construction has progressed to 90.8% complete. Integration and acceptance testing is ongoing and is reported as 42.5% complete (number of tests completed/number of test required). Critical systems being tested are as follows:

- **Fire Alarm Tests (Levels 5a and 5b)**
  - These tests will be conducted by Node, and are scheduled for December 1 through December 15, 2016.
- **Fire Suppression System (Levels 3/4)**
  - Water Mist – Total tests required; 6. Total tests completed; 0(0%).

All tests and acceptance and turnover are scheduled to be completed by December 22, 2016.

- Sprinkler System – Total tests required; 2. Total tests completed; 2(100%). Acceptance and turnover is scheduled to be completed by December 22, 2016.
- Dry Fire Standpipe (DFSP) System – Total tests required; 3. Total tests completed; 3. (100%) Acceptance and turnover is scheduled to be completed by December 22, 2016.
- Inergen System – Total tests required; 8. Total tests completed; 2(25%). All tests and acceptance and turnover are scheduled to be completed by December 22, 2016.
- **Elevator & Escalator Testing (Levels 3/4, 5 and 6)**
  - Escalators – Total test required; 60. Total tests completed; 16(27%). All testing is scheduled to be completed by November 29, 2016.
  - Hydraulic Elevator – Total test required; 10. Total tests completed; 3(30%). All testing is scheduled to be completed by November 17, 2016.
  - Traction Elevators - Total test required; 25. Total tests completed; 1(4%). All testing is scheduled to be completed by November 28, 2016.
- **HVAC System (Level 3/4 and 5)**
  - Total tests required; 217. Total tests completed; 100(46%).
- **TSSM (Tunnel Station Smoke Management) System (Levels 3/4, 5 and 6)**
  - Total tests required; 14. Total tests completed; 12(86%). All test and acceptance and turnover are scheduled to be completed by November 23, 2016.

### **Contract C-26008 (C5B) 86th Street Station Cavern Mining and Lining**

Substantial Completion of all contract work was achieved on December 16, 2014. The architectural finish corrections at Entrance #2 and Entrance #1 escalator inclines have been completed and the areas turned back over to the C5C contractor.

### **Contract C-26012 (C5C) 86th Street Station Finishes, MEP Systems, Ancillary Buildings & Entrances**

Construction has progressed to 89.0% complete. Integration and acceptance testing is ongoing and is reported as 73% complete (number of completed /number of test required). Critical systems being tested is as follows:

- **Fire Alarm (Levels 5a and 5b)**
  - These tests will be conducted by Node, and are scheduled start November 15, 2016.
- **Fire Suppression Tests (Levels 3/4)**
  - Water Mist – Total tests required; 6. Total tests completed; 4(66.7%). All tests, acceptance and turnover to be completed by December 10, 2016.
  - Sprinkler System – Total tests required; 2. Total tests completed; 0(0%). All tests, acceptance and turnover to be completed by November 30, 2016.
  - Dry Fire Standpipe (DFSP) System – Total tests required; 3. Total tests completed; 0(0%). All tests, acceptance and turnover scheduled to be completed by December 2, 2016.

- Inergen System – Total tests required; 8. Total tests completed; 2(25%). All tests, acceptance and turnover scheduled to be completed by December 22, 2016.
- **Elevator and Escalator Testing (Levels 3/4, 5 and 6)**
  - Escalators –Total tests required; 78. Total tests completed; 58(74%). All tests, acceptance and turnover scheduled to be completed by December 20, 2016.
  - Hydraulic Elevator –Total tests required: 5. Tests completed; 4(80%). All tests, acceptance and turnover scheduled to be completed by November 29, 2016.
  - Traction Elevator –Total tests required; 5. Total test completed: 0(0%). All test, acceptance and turnover scheduled to be completed by December 7, 2016.
- **HVAC System (Level 3/4, and 5 )**
  - Total tests required; 256. Total tests completed; 193 (75%). All tests, acceptance and turnover scheduled to be completed by December 13, 2016 with the exception of the seasonal performance verification test which will be completed by June 27, 2016.
- **TSSM (Tunnel Station Smoke Management) System (Levels 3/4, 5 and 6)**
  - Total tests required; 14. Total tests completed; 7(50%). All test, acceptance and turnover scheduled to be completed by December 15, 2016.

### **Contract C-26009 (C6) Track, Power, Signals and Communication Systems**

Construction has progressed to 92.8% complete. Integration and acceptance testing is ongoing and is reported as 57.3% complete (number of tests completed/number of test required). Critical systems being tested are as follows:

- **Remote Monitoring System (RMS) Testing**
  - Equipment installation and L3/4 testing completed at all stations. No other tests required.
- **Closed Circuit Television (CCTV)**
  - Equipment installation at the 63rd and 96th Street Stations is complete and is ongoing at the 72nd and 86th Street Stations. L3/4 testing at the 63rd and 96th Street Stations is complete.
- **Computer Based Dispatch System (CPDS)**
  - Equipment is only installed at the 96th Street Station and is scheduled to be completed to allow L3/4 testing to start on November 4, 2016. Levels 5 and 6 testing is scheduled to be completed by November 11, 2016.
- **Emergency Booth Communication System (EBCS)**
  - Equipment is only being installed at the 72nd, 86th and 96th Street Stations. L3/4, 5 and 6 testing scheduled to start at each of the stations on December 18, 2016 and be completed on December 23, 2016.



- **Fire Alarm System (FAS)**
  - Equipment installation is complete at the 63rd and 96th Street Stations and is ongoing at the 72nd and 86th Street Stations. L3/4 testing at the 63rd and 96th Street Stations has been completed. Level 5 testing at the 63rd and 96th Street Stations has started and is scheduled to be completed November 23, 2016, and November 18, 2016 respectively.
- **Intrusion Access control (IAC)**
  - Equipment installation at the 96th Street Station has been completed and L3/4 testing is in progress and projected to be completed on November 11, 2016. Equipment installation at the other stations needs to be completed no later than December 14, 2016, to allow the start of L3/4 testing.
- **Radio Systems**
  - L3/4 testing of the Police UHF Radio Cabinet at the 72nd and 86th Street Stations has started and is scheduled to be completed by November 11, 2016. The remaining L3/4, and all L5 and L6 testing is scheduled to be completed by December 14, 2016.
- **Public Address Customer Information Screens (PACIS)**
  - Equipment installation at the 63rd Street Station has been completed and L3/4 testing is in progress. Equipment installation at the other stations is in progress. Testing at all stations is scheduled to be completed by December 7, 2016.
- **Local Area Network (LAN) and Wide Area Network(WAN)**
  - L3/4, 5 and 6 testing has been completed at all stations
- **Signal Work**
  - All signals along the alignment have been installed and tested.
- **Track Work**
  - All major trackwork is complete.
- **Traction Power**
  - Traction power substations are completed and tested at the 63rd and 96th Street Stations. One substation is operational at the 86th Street Station. Installation at the 72nd Street Station is ongoing.

## c. Quality

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

#### Status:

During October 2016, the Second Avenue Subway Quality Management Team continued to conduct Quality Meetings of the Contractor with CCM, MTACC, and PMOC participation. The Quality Management Team participated in the job progress meetings, monitored quality matters in the field for each construction contract, reviewed and provided comments for Quality Work Plans, and participated in Preparatory Phase Meetings for numerous construction processes.

The following issues on the C2B, C3, C4C, and C5C contracts were discussed by the respective SAS Quality Managers at their Quality Management Meetings:

#### Observations:

**C2B:** There are still many issues on this contract that affect Quality. These include:

- Inspection Checklists not submitted for the following mechanical and electrical work: dry fire stand pipe and wet stand pipe; domestic water piping; through penetration fire-stopping; duct work activities; pumps; fans and MCC and fan coil unit;
- Submittals of Quality Work Plans (QWPs) for approvals are delayed;
- Lack of scheduling and conducting Preparation Phase Meeting (PPM) for tree planting and elevator activities;
- Material receiving inspection is not available for review;
- Some electrical and mechanical issues are not documented and resolved. Some nonconformance reports (NCRs) are not written for nonconforming electrical and mechanical work that is documented on the Observation List;
- Water Leaks – Multiple locations are still leaking. A total of 60 active leaks were reported as of October 25, 2016; and,
- Poor quality welds performed on site during assembly of stainless steel members at Canopy Entrances #3 and #2. It took the contractor 3½ months to initiate an NCR. The NCR was approved by AAJV in October 2016. The contractor is performing the repair.

**C3:** There has been no effort to enter Daily Inspection Reports into the CM System:

- No Daily Inspection Reports have been entered into the CM System since July 2016.

**C4C:** There are still several issues on this contract that affect Quality. These include:

- The number of open NCRs has remained at over 70 for several months, submittal of Daily Inspection Reports has gone from two weeks behind to three, and the PMOC is concerned that the contractor's Quality Manager does not have enough support;
- Revise and Resubmit (R&R) submittals are delinquent (currently 13); and
- The contractor still has not issued a close-out letter for high strength bolts although all bolts have been installed and inspected.

**C5C:** There are still many issues on this contract that affect Quality. These include:

- NCRs – concrete analyses (37 are open) is pending for past 4 months;
- Non-concrete NCRs (38) are not being resolved in a reasonable time;
- Field supervision is not sufficient: Examples are – stairs, electricals, HVAC, plumbing, wall cladding, and architectural finishing;
- Special inspection for electrical and mechanical seismic installations are delayed;
- The monthly Special Inspection Report for September 2016 has not been submitted as of the end of October 2016;
- Submittals (Revise and Resubmit) – currently 133 – are pending for re-submission; and,
- As built drawings are not being submitted as per milestones.

The following table depicts nonconformance report and daily inspection report statuses for each of the five (5) active SAS contracts:

<b>Contract Package C2B</b>	
<b>Status:</b>	Through October 31, 2016, a total of 182 NCRs have been issued. One hundred seventy-three (173) have been closed and 9 NCRs are open. In October 2016, two new NCR's were written and seven were closed. Two (2) of the nine open NCRs are for concrete that was out-of-specification.
<b>Observation:</b>	Bi-weekly Quality Management Meetings, as suggested by the PMOC, are being held. Submittal of Daily Inspection Reports is current.
<b>Concerns and Recommendations:</b>	The PMOC recommends that the contractor devote the necessary effort to resolving the issues listed in the beginning of this section.
<b>Contract Package C3</b>	
<b>Status:</b>	Through October 31, 2016, a total of 132 NCRs have been issued. One hundred twenty-five (125) have been closed and seven are still open. In October 2016, one new NCR was written and five were closed.
<b>Observation:</b>	Submittal of Daily Inspection Reports is three months behind.
<b>Concerns and Recommendations:</b>	In the beginning of September 2016, the contractor's Quality Manager suddenly resigned. The contractor assigned an individual who had previously served as the Quality Manger on this contract to be his replacement. Although this individual is capable, no Daily Inspection Reports have been entered into the CM System since July 22, 2016. The PMOC recommends that MTACC's quality management resolve this situation with the contractor's management immediately.
<b>Contract Package C4C</b>	
<b>Status:</b>	Through October 31, 2016, a total of 256 NCRs have been issued. One hundred eighty-one (182) have been closed and 74 NCRs are still open. In October 2016, three NCRs were written and one was closed.

<b>Observation:</b>	Two hundred-three (203) of the 256 NCRs are for concrete that was out of specification. All three of the NCRs generated in October 2016 were for concrete. Forty-six (46) of the remaining 74 open NCRs are for concrete that was out of specification. Submittal of Daily Inspection Reports is three weeks behind.
<b>Concerns and Recommendations:</b>	The PMOC is concerned that there are still 74 open NCRs and recommends that a target date be established for closure of each NCR. The PMOC also recommends that the contractor devote the necessary effort to resolving the issues listed in the beginning of this section.
<b>Contract Package C5C</b>	
<b>Status:</b>	Through October 31, 2016, 235 NCRs have been issued. One Hundred sixty-three (163) have been closed and 72 NCRs are still open. In October 2016, no new NCRs were written and 3 were closed.
<b>Observation:</b>	Thirty-seven (37) of the 75 NCRs that are open are for concrete that is out of specification. Submittal of Daily Inspection Reports is three weeks behind.
<b>Concerns and Recommendations:</b>	The PMOC recommended that the contractor prepare a concrete statistical analysis in July 2016 to close those NCRs that passed the 56-day break. The contractor's Program Manager then directed the contractor's Quality Manager, to prepare the analysis, but he did not and as of the end of October 2016, the analysis has still not been prepared. The PMOC also continues to recommend that the contractor establish a schedule for closing the 35 non-concrete NCRs and devote the necessary effort to resolving the issues listed in the beginning of this section.
<b>Contract Package C6</b>	
<b>Status:</b>	Through October 31, 2016, a total of 72 NCRs have been issued. Sixty-seven (67) NCRs have been closed and five are still open. In October 2016, no new NCRs were written and 17 were closed.
<b>Observation:</b>	A concrete statistical analysis was prepared and approved in September 2016 for 11 open concrete NCRs and these were among the 17 closed in October 2016. Submittal of Daily Inspection Reports is current.
<b>Concerns and Recommendations:</b>	The PMOC has no concerns at this time.

Concerns and Recommendations:

Discussed under each Contract Package

**d. Readiness for Revenue Operation**

During May 2016, the FTA initiated a review of SAS's readiness for revenue operation. The readiness review was conducted by the PMOC in accordance with OP54, Readiness for Revenue Operation. This process is intended to evaluate the adequacy, soundness, and timeliness of the MTACC-SAS's Systems Integration Testing; Project System Safety and Security Validation;

Pre-Revenue Operation Plan and any required work-arounds; and Management Capacity and Capability.

The PMOC commenced work on the OP54 Review in early May 2015. The PMOC's draft report for review by FTA and MTA was transmitted to FTA in mid-July 2016. On August 18, 2106, the PMOC received MTACC comments to this draft report. Reconciliation of the comments was achieved and the final report was submitted to the FTA for issuance on October 26, 2016.

Tracking of the recommended actions noted in the OP54 Review will be reported on in subsequent PMOC Monthly Reports.

## 2.0 SCHEDULE DATA

### Status:

As of July 1, 2016, MTACC is no longer maintaining an Integrated Project Schedule (IPS). The project has transitioned into the integration and acceptance test phase and the MTACC's Program Control Manager provides status updates via fragnet schedules. The latest update to the fragnet schedules (data date October 28, 2016) is reported on in Section 1.b (Construction) of this report.

### Observations:

**Milestone Summary:** As a part of the "Schedule Acceleration Agreements", MTACC established revised milestones with the 72nd, 86th and 96th Station Contractors and the Systems Contractor for the work involved. Remaining incomplete milestones are summarized and updated based of the fragnets (data date October 28, 2016).

<b>72nd Street Station</b>			
<b>MS</b>	<b>Description</b>	<b>Acceleration Agreement Date</b>	<b>Current Forecast</b>
24	Complete all work and testing through FIST (L3/4) on the water mist system (except those portion of the system located within Entrance 1 escalator trusses.	7/1/16	12/22/16
25	Complete all work and testing of all elevators and escalators (except escalators at Entrance 1 and elevators at Entrance 3) through FSIT (Levels 5a/b), including 2 weeks dedicated to performing FSIT over the WAN in coordination with the C26009 Contractor (Level 5b).	09/30/16	11/28/16
26	Complete all work and testing through FSIT (Levels 5a/b) for Escalators at Entrance #1 and Elevators at Entrance #3.	11/01/16	11/28/16

<b>86th Street Station</b>			
<b>MS</b>	<b>Description</b>	<b>Acceleration Agreement Date</b>	<b>Current Forecast</b>
19	Complete all installation and testing through Level 5b.	09/01/16	12/20/16

<b>96th Street Station</b>			
<b>MS</b>	<b>Description</b>	<b>Acceleration Agreement Date</b>	<b>Current Forecast</b>
17	Complete Level 5a Testing for HVAC, and Fire Suppression Systems	07/31/16	12/1/16
19	Complete Level 5b Testing for All Systems; Complete ALL Work	08/31/16	4/25/17

<b>Systems</b>			
<b>MS</b>	<b>Description</b>	<b>Acceleration Agreement Date</b>	<b>Current Forecast</b>
16	63rd Comms. Systems: Complete all work and pre-testing required to perform Field Installation Acceptance Tests	05/31/16	11/25/16
17	72nd Comms. Systems: Complete all work and pre-testing required to perform Field Installation Acceptance Tests	06/13/16	12/15/16
18	86th Comms. Systems: Complete all work and pre-testing required to perform Field Installation Acceptance Tests	06/27/16	12/15/16
19	96th Comms. Systems: Complete all work and pre-testing required to perform Field Installation Acceptance Tests	06/20/16	12/15/16
20	The Contractor shall complete all work and testing through Final Systems Integrated Testing of all systems over the Local Area Network (LAN) and overall Wide Area Network (WAN), such that the LAN/ WAN is available for Final Systems Integrated Testing by the Station Contractors.	06/06/16	12/1/16
21	Complete all other work required to start Pre-Revenue Service Training	09/30/16	12/15/16

**Activity Progress Monitoring:**

Progress Monitoring has been revised to provide day to day insight into the integration and acceptance testing activities. Using the schedule fragments, SAS Program Control has developed a test matrix that shows the number of tests and systems to be tested each week from October 21, 2016 to December 30, 2016 in order to complete the integration and acceptance testing of the critical systems required for revenue service. Weekly coordination meetings are being held to update the matrix, make adjustments and commitment additional resources as necessary. Commitments of resources are being made by the station contractors, their subcontractors and the user group NYCT.

From October 21, 2016 to December 30, 2016, three-hundred and ninety-four (394) test have been identified that needs to be completed by the station contractors and the system contractor. The PMOC will incorporate this matrix into future monthly reports.

**Concerns and Recommendations:**

The PMOC is concerned that the 394 tests noted on the test matrix is understated. Data analysis by the PMOC indicates that as of October 31, 2016: only 257 of the 1,319 Level 3/4 FIAT have been completed (19.48%); only 21 of the 131 Level 5 FIST have been completed (16.03%); and only 21 of the 129 Level 6 FSIT have been completed (16.28%). Reconciliation of the number of tests needs to take place.

Failure of the Station Contractors to complete base contract and acceleration milestones has impacted the Systems Contractor, resulting in compression of the integration and testing phase.

Testing of the various systems is not progressing as defined in the Facilities Test Program and the submission of test reports is not occurring in a timely manner. Current schedules indicate that many reports will be submitted after revenue service has commenced.

Of major concern is the testing of the Fire Suppression Systems and the various systems that interface with the Fire Alarm System. Work arounds have been developed for the 72nd and 86th Street Stations with buy in from NYCT.

With the large number of observations noted during the inspection at each station it appears to be a breakdown in the Contractor's Quality Assurance process and the Subcontractors Quality Control process. MTACC's Project Procedure No. CO.10 (Beneficial Use, Substantial Completion and Final Completion) suggest that these items must be addressed before substantial completion can occur with subsequent turnover to the user group.

MTACC's committed to revise and clarify Volume 2 of the Facilities System Test Program wherein it identifies a System Acceptance Phase (SAP) after substantial completion (completion of FAT, FIAT, SIST and FSIT). To date, this task remains incomplete.



### 3.0 COST DATA

Based upon financial expenditures reported by the MTACC through October 31, 2016, SAS Phase 1 is approximately 92.4% complete. The completion status of the individual construction contracts through October 31, 2016, also based upon reported expenditures through that date, is as follows:

- C26002 (C1 Tunnel Boring) – 100.0%;
- C26005 (C2A 96th Street Station) – 100.0%;
- C26010 (C2B 96th Street Station) – 96.1%;
- C26013 (C5A 86th Street Station) – 100%;
- C26008 (C5B 86th Street Station) – 99.6%;
- C26012 (C5C 86th Street Station) – 92.0%;
- C26006 (C3 63rd Street Station) – 97.9%;
- C26007 (C4B 72nd Street Station) – 99.9%;
- C26011 (C4C 72nd Street Station) – 91.7% ; and,
- C26009 (C6 Systems) – 92.8%.

Aggregate Construction percentage complete:

- 100% of all construction has been bid;
- 100% of all construction is under contract;
- 97.2% of base contract construction (excluding AWOs) is complete.

Soft Cost expenditures (not including real estate, OCIP, etc.) reported this period by the MTACC totaled \$8.2M; expenditures were spread through all of the project management and technical support categories. At forecast expenditure levels, the available budget should be sufficient through 2016. Significant expenditure beyond 2016, however, may require the transfer of additional funds from contingency. Any significant construction delays beyond December 2016 may also require additional contingency transfer.

**Cost Growth:** As of September 2016, the status of Additional Work Orders (AWOs) for each construction contract on Phase 1 of the Second Avenue Subway Project is summarized as follows:

Contract / (Package)	% Complete	Award	Exposure		Executed	
			\$	% of Award	\$	% of Award
C26002 (1)	100.00%	\$337,025,000	\$41,086,647	12.19%	\$41,086,647	12.19%
C26005 (2A)	100.00%	\$325,000,000	\$47,615,409	14.65%	\$47,612,118	14.65%
C26010 (2B)	85.04%	\$324,600,000	\$63,299,694	19.50%	\$58,214,587	17.93%
C26006 (3)	94.71%	\$176,450,000	\$42,761,025	24.23%	\$30,483,188	17.28%
C26007 (4B)	99.93%	\$447,180,260	\$1,325,639	0.30%	\$1,325,639	0.30%
C26011 (4C)	73.36%	\$258,353,000	\$68,640,573	26.57%	\$41,534,934	16.08%
<b>C26013 (5A)</b>	<b>100.00%</b>	<b>\$34,070,039</b>	<b>\$6,525,471</b>	<b>19.15%</b>	<b>\$6,525,471</b>	<b>19.15%</b>
C26008 (5B)	99.63%	\$301,860,000	\$26,280,122	8.71%	\$21,586,813	7.15%
C26012 (5C)	64.84%	\$208,376,000	\$37,395,738	17.95%	\$29,293,626	14.06%
C26009(6)	69.51%	\$261,900,000	\$39,598,750	15.12%	\$26,184,210	10.00%
<b>TOTAL TO DATE</b>		\$2,674,814,299	\$374,529,068	14.00%	\$303,847,233	11.36%

The PMOC notes that total AWOs currently exceed the original AWO budget. The PMOC also notes that exposure values are not included in a significant number of logged AWOs. Based on current AWO trends, the final AWO value is estimated at approximately \$340 million. MTACC maintains an AWO forecast at completion that includes input from its Risk Registers. The MTACC AWO EAC Forecast through September 2016 is \$375,251,428. This value is somewhat greater than the current AWO Exposure and will be used as part of the overall contingency/EAC analysis.

**Cost Contingency:** Based upon the MTACC Current Working Budget, expenditures as of September 2016 reported by the MTACC and the current AWO EAC forecast as of September 2016, the PMOC contingency analysis is as follows:

	Contingency Analysis	
	Current	@ Completion
Phase 1 Budget	\$4,451,000,000	\$4,451,000,000
Construction Awards	\$2,674,814,299	\$2,674,814,299
Soft Cost Expended	\$1,207,669,341	\$1,207,669,341
Soft Cost Forecast to Complete	\$180,453,659	\$180,453,659
Add'l Soft Cost - Schedule Acceleration		\$0
AWO	\$296,651,203	\$373,049,344
Total Contingency	\$91,411,498	\$15,013,357
Reserved Contingency	\$91,411,498	\$15,013,357

Notes:

- (1) AWO Exposure @ Completion incorporates MTACC's latest "risk-informed" forecast through July 2016.
- (2) Based on September 2016 expenditures, approximately \$91M remains in contingency, however based on MTACC's forecasts, only \$15.0M will remain in contingency at project completion.
- (3) Changes to Soft Cost in September 2016 include:
  - a. Reduced Cost-To-Cure EAC to \$31M
  - b. Increased construction support by \$8.9M
  - c. Increased T/A Labor to include additional support costs due to schedule acceleration.
- (4) An increase to the CCM EAC is anticipated. PMOC has included \$10M in the "@ Completion" estimate to address this anticipated increase.
- (5) Total Contingency = Reserved Contingency = total budget balance after forecast expenditures;
- (6) Minimum Available Contingency required by ELPEP is approximately \$45,000,000 (100% Construction Bid, 85% Construction Complete).
- (7) MTACC states it anticipates further soft cost EAC reductions as well as significant credit from the design engineer due to E&O issues.

## 4.0 RISK MANAGEMENT

### Status

The major risk challenging the SAS Project Team at this time is schedule; senior MTA management has advised that the current goal for construction completion and the start of Revenue Service is December 30, 2016. Secondary risk involves the possibility that additional schedule acceleration (or delay mitigation) costs could threaten the completion of the project within MTACC's Current Working Budget of \$4.451B.

At this stage of the project, these risks are well understood by senior SAS managers and their mitigation is the focus of almost all project management activity.

### Observation and Analysis:

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

<b>Management and Organizational Risks</b>		
	<b>Risk</b>	<b>Status</b>
1.	MTACC's ability to implement its schedule acceleration program through compression of construction schedules.	The accelerated schedules for the construction and system contracts have been implemented. There are still equipment installation and test performance acceleration milestones that have not been completed.
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 the start of Revenue Service.	Based on the number and nature of AWOs initiated this period, MTACC continues to manage and mitigate this risk. Those few AWOs not directly related to achieving the RSD appear well within the contractors' current capability to execute without schedule impact.
3.	Availability of NYCT staff to support testing, commissioning, and final acceptance of work performed by SAS contractors	The test schedules continue to be compressed because of the station contractors not completing their milestones. Because of the compression additional personnel from the contractors, subcontractors and NYCT will be required to support the 12/30/2016 RSD.
4.	MTA code compliance reviews. Past experience suggests that risks involve delayed inspections, unrealistic code interpretation, and disregard for project operational goals.	Compliance reviews are discussed in greater detail below. The number of open critical observations that could impact the RSD is alarming.
5.	MTACC's ability to manage the change order process in a timely manner to avoid contractor delay.	Additional personnel have been assigned to each active contract to expedite and support the management of technical risk and any associated contract modifications. To date, management of this risk has been acceptable. NO CHANGE.
6.	NYCT's ability to conduct its pre-revenue familiarization and testing activities within the time period provided by MTACC.	RTO training has been completed. However a complete training matrix needs to be developed. This item was noted in the FTA's OP54 Report.

Technical and Coordination Risks	
Risk	Status
1. Critical communication systems: fire alarm system, police radio installation, installation, and startup at all stations.	MTACC considers completion and testing of the fire alarm system to be the biggest technical risk remaining on the project. Adequately testing of all the interfaces to the fire alarm system continues as a major risk.
2. Network (LAN/WAN)	LAN/WAN is no longer a risk. Network is operational at all stations.
3. Permanent facility power – all stations	Availability of permanent facility power is no longer a risk. All stations have permanent power.
4. Traction Power – all stations	The risk has been mitigated with the traction power substations at the 63rd, 86th (limited), and 96th Street Stations being operational. The traction power substation at the 72nd Street Station is not required for revenue service.
5. Installation, testing, commissioning, and acceptance of elevators and escalators.	The risk has not been mitigated. As of October 28, 2016, only 63.2% of the escalator test and 46.3% of the elevator tests have been performed.
6. Watermist system.	Installation and L3/4 testing complete at the, 63rd and 96th St. Stations. Testing in progress at all the 86th St. Stations and is 66.7% complete. Turnover and acceptance at the 72nd St. Station is scheduled to occur on 12/22/2016.
7. Delays in the development and approval of test procedures.	Risk is being mitigated. MTACC needs to continue to complete these tasks expeditiously.

### Compliance Reviews:

Compliance reviews are ongoing and are being conducted by four (4) separate NYCT Divisions: Stations; System Safety; Code Compliance; and Maintenance of Way. “Observations” resulting from these inspections are compiled electronically and made available to all parties almost immediately. A top-level status report of open and closed observations as of October 31, 2016 is shown in the following table.

CONTRACT	NO. OPEN [TOTAL]	NO. OPEN [CRITICAL TO RSD]	NO. CLOSED	TOTAL
C2B (96th St. Station)	3,577	2,630	1,503	5,080
C3 (63rd St. Station)	4,397	1,491	5,039	9,436
C4C (72nd St. Station)	4,481	3,293	1,264	5,745
C5C (86th St. Station0)	3,142	2,376	1,068	4,210
C6 (Systems and Track)	671	450	175	846
TOTAL	16,268	10,240	9,049	25,317

With respect to the “Observation” lists, the PMOC has the following observations:

1. Monthly monitoring indicates the number of new Observations each month continues to exceed the number being closed.
2. The Open “Critical to RSD Observations” has the potential to delay the RSD.
3. Contractors have not taken full advantage of the early notification of incomplete or deficient work. PMOC estimates at least 50% of the work on these lists was performed by subcontractors, which minimizes the General Contractor’s effort in completing the work.
4. Efforts to close the items identified on the “Observation Lists” represent a significant amount of work. While much of the work may be completed after RSD, at the user group’s discretion, the ongoing contractor presence will be a nuisance to both MTA operations and riders.

**Concerns and Recommendations:**

The large number of discrepancies noted on the “Observation List” is a concern to the PMOC. Such a large amount of discrepancies indicates a breakdown in the Contractor’s Quality Assurance Program and the Subcontractor’s Quality Control Program and that quality is being compromised for schedule acceleration.

The PMOC is concerned that both the CM and the contractors are not devoting enough effort to resolving and closing these observations. The PMOC recommends that both the CM and contractor evaluate the need for additional resources to significantly reduce the number of open Observations.

Significant risks remain for both the successful execution of MTACC’s accelerated construction schedule as well as overall achievement of Revenue Service on December 30, 2016. The PMOC is concerned over the apparent problems in developing system-level tests (Levels 5 and 6), particularly at the 72nd and 86th Street Stations.

## 5.0 ELPEP

With respect to SAS, the current status of each of the main ELPEP components is summarized as follows:

- **Technical Capacity and Capability (TCC):** MTACC has resolved all remaining FTA/PMOC comments and has issued the final revised PMP. MTACC is not planning any further updates to the SAS PMP;
- **Schedule Management Plan (SMP):** MTACC's position is that the SAS schedule management process is ELPEP compliant. The PMOC does not concur. The PMOC notes the ELPEP Conformance/Compliance checklist indicates the IPS is updated on a monthly basis. As noted at the March, April, May, and June 2016 Cost & Schedule Meetings, the SAS Project Team is no longer maintaining the IPS. Refer to Section 2.0 of this report for further discussion.
- **Cost Management Plan (CMP):** The SAS FFGA was amended in March 2015. The PMOC has requested MTACC to update its CWB to reflect the adjusted value. To date, MTACC has declined to do so. MTACC's position is that the SAS cost management process is ELPEP compliant. The PMOC does not agree. The contingency EAC has fallen below the ELPEP-specified \$45M. As such, it is the PMOC's opinion that MTACC is not ELPEP compliant. Refer to Section 3.0 of this report for further discussion.
- **Risk Mitigation Capacity Plan (RMCP) and Risk Management Plan (RMP):** MTACC's position is that the SAS management processes remain ELPEP compliant.

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 give the FTA/PMOC greater insight into the risk, cost, and schedule elements of the project.

## 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 September 30, 2016, a total of 14,190,065 construction hours have been logged on the project with 103 lost time and 189 recordable incidents documented. The total hours and incidents equates to a Lost Time Rate (LTR) of 1.45 and a Recordable Rate (REC) of 4.12. The LTR is below and the REC is above the US Bureau of Labor Statistics (BLS) national rates (Heavy & Civil construction) of 1.8 and 3.2 respectively. Although the REC is above the BLS national rate, it has been trending downward over the last nine months.

**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 subsequent breakdown of the certifiable elements into a list of certifiable items (CIL) has been completed. Monthly Technical Working Group (TWG) meetings are ongoing with each station contractor and the system contractor reviewing the test status of the certifiable items. Documentation supporting verification (Body of Evidences) of a certifiable item is being accumulated and entered into the database. Status meetings are held quarterly with the FTA and the PMOC in order to provide updates. Status meetings are held monthly with the PMOC in attendance and the FTA is briefed quarterly.



## 7.0 ISSUES AND RECOMMENDATIONS

**Schedule Acceleration Initiative:** MTACC has clearly advanced the final elements of SAS construction and testing at a faster rate than would otherwise have been achieved through its schedule acceleration effort. However, all the work is not advancing at the same rate, and some problem issues are evident.

- **Schedule:** Analysis of fragnet schedule data presented by MTACC indicates schedule slippage in select areas, specifically communications system installation and equipment installation, and system (Levels 3, 4, and 5) testing. At this time in the project, options and work-arounds are limited. Significant delay to the implemented acceleration plan has occurred. The ultimate impact on RSD is not known at this time as weekly work arounds are being continuously developed.
- **Contractor Coordination:** This issue was not addressed in the acceleration agreements or accompanying schedule milestone commitments. Delayed room turnover and delayed conduit installation by station contractors are two examples of delays encountered by the Systems Contractor that appear to have had a material impact on its schedule progress.
- **Technical Issues:** MTACC has adhered to its commitment to limit AWOs to those necessary issues involving operations or revenue service. Nevertheless, the number of AWOs initiated since February 2016 has been quite significant. Certain systematic design flaws have become apparent. MTACC has indicated significant work remains to be completed in order to activate the fire alarm system.
- **Compliance Inspections:** MTACC commitment to expedite this process is ongoing. Weekly inspections are being performed. The large number of open and critical observations indicates that the contractors are not taking advantage of this early notification of work remaining to be complete. Completion of work identified by these inspections may extend significantly beyond the planned RSD.
- **Systems Testing:** Delays in completing the installation of equipment has had a ripple effect on the overall integration and test program. Test schedules are being compressed, which results in additional personnel being required.
- **Financial:** The PMOC recommends that MTACC review the AWO percentages calculated for SAS and consider an average of approximately 12% construction cost growth for similar future projects. Higher percentages for projects involving extensive utility relocation or renovation of existing facilities should also be considered.

## **APPENDIX A – ACRONYMS**

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ARRA	American Recovery and Reinvestment Act
AWO	Additional Work Orders
BLS	Bureau of Labor Statistics
CBH	Circuit Breaker House
CCM	Consultant Construction Manager
CD	Calendar Days
CIL	Certifiable Items List
CMP	Cost Management Plan
CSSR	Contact Status Summary Report
CPRB	Capital Program Review Board
CWB	Current Working Budget
CY	Cubic Yards
DCB	Detailed Cost Breakdown
EAC	Estimate at Completion
ELPEP	Enterprise Level Project Execution Plan
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 Outage
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
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
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
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**

	FFGA (March 2015)	Forecast Completion	
		Grantee	PMOC
Begin Construction	January 1, 2007	March 20, 2007A	March 20, 2007A
Construction Complete	August, 2016	September 1, 2016	October 2017
Revenue Service	February 28, 2018	December 30, 2016	February 2018

A = Actual

**Table 2 - Project Budget/Cost** 

	FFGA			FFGA Amend	MTA Current Working Budget (CWB)		Expenditures as of October 31, 2016	
	\$ Millions	% of Total	Obligated (\$ Millions)	3/17/2015	\$ Millions	% of Total	\$ Millions	% of Total
Grand Total Cost	4,866.614	100	4,572.942	5,574.614	5,267.614	100	4,113.827	78.09
Financing Cost	816.614	16.78		816.614	816.614	15.50		
Total Project Cost	4,050.000	83.22	4,572.942	4,758.000	4,451.00	84.50	4,113.827	78.09
Total Federal	1,350.693	27.75	1,063.942	1,373.893*	1,350.693	24.60	1,209.723	22.96
Total FTA share	1,300.000	96.25	990.049	1,300.000	1,300.000	23.68	1,209.723	22.96
5309 New Starts share	1,300.000	100	990.049	1,300.000	1,300.000	23.68	1,135.830	21.56
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	2,904.104	55.13
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</b>
<b>Total Construction</b>	\$2,674,814,299	\$3,050,065,727.00
<b>Engineering Services Subtotal</b>	\$622,862,000	\$690,022,317.00
<b>Third Party Expenses</b>	\$554,086,273	\$556,586,000.00
<b>TA Expenses</b>	\$131,160,085	\$141,514,683.00
<b>Contingency</b>	\$468,077,343	
<b>Total</b>	\$4,451,000,000	\$4,438,188,727

**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 (June, 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	\$1,654,647,928
30	Support Facilities	\$0	\$0	\$0
40	Site Work & Special Conditions	\$276,229,000	\$793,118,232	\$878,871,887
50	Systems	\$322,707,000	\$250,379,966	\$212,886,484
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	\$1,187,398,615
90	Unallocated Contingency	\$555,554,000	\$544,441,174	\$46,384,602
<b>Subtotal</b>		<b>\$4,050,000,000</b>	<b>\$4,758,000,000</b>	<b>\$4,451,000,000</b>
<b>Financing Cost</b>		<b>\$816,614,000</b>	<b>\$816,614,000</b>	<b>\$816,614,000</b>
<b>Total Project</b>		<b>\$4,866,614,000</b>	<b>\$5,574,614,000</b>	<b>\$5,267,614,000</b>

**Table 5 - Core Accountability Items**

<b>Project Status:</b>		<b>Original at FFGA</b>	<b>Current*</b>	<b>ELPEP**</b>
<b>Cost</b>	Cost Estimate	\$4,050 million	\$4,451 million	\$4,980 million
<b>Contingency</b>	Unallocated Contingency	\$555.554 million	\$91 million	\$45 million
	Total Contingency (Allocated plus Unallocated)	\$555.554 million	\$91 million (As of Sept. 2016)	\$45 million
<b>Schedule</b>	Revenue Service Date	June 30, 2014	December 30, 2016	February 28, 2018
<b>Total Project Percent Complete</b>	Based on Expenditures	92.4%		
	Based on Earned Value	N/A		
<b>Major Issue</b>		<b>Status</b>	<b>Comments</b>	
<b>Construction Schedule Acceleration</b>		Open	MTACC's decision to accelerate the construction schedule to allow NYCT pre-Revenue Testing to commence on 09/01/16 results in concerns over additional cost and the ultimate ability to achieve this goal.	
<b>Construction Quality and Operational Readiness</b>		Open	MTACC has deviated from established organizational and project procedures as part of its schedule acceleration effort. PMOC is concerned that these deviations may result in reduced construction quality and incomplete systems testing.	
<b>Date of Next Quarterly Meeting:</b>		Tentatively January 19, 2017		

\* MTACC's Current Working Budget

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

Financial data based upon MTACC reporting through 10/31/2016