

PMOC COMPREHENSIVE MONTHLY REPORT

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

June 1 to June 30, 2010

PMOC Contract No. DTFT60-09-D-00007

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Length of time on project: 0 years

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Certain information presented in this report has been supplied by the New York City MTA, the MTACC and/or the Second Avenue Subway Project team. Prior to including such information in this report, the PMOC has reviewed and evaluated same. Within the limits of this assignment and unless specifically noted otherwise, the PMOC considers this information accurate.

EXECUTIVE SUMMARY

1.0 PROJECT SCOPE

The Second Avenue Subway (SAS) Phase I project is 2.3 miles in length from 63rd Street to 105th Street. Its scope includes: tunneling; 3 new stations and 1 rehabilitated station; ancillary facilities; track, signal, and electrical work; vehicle procurement; and all other subway systems necessary for operation from 96th Street to 63rd Street. It will connect at 63rd Street with the existing Broadway Line that extends to Lower Manhattan and Brooklyn. It will require 7 operating trains plus spares and is forecast to carry 191,000 riders on an average weekday following the revenue service date.

2.0 CHANGES DURING 2nd QUARTER 2010

2.1 Engineering/Design Progress

All design work is now scheduled to be completed by September 13, 2010. All other design work is substantially complete. The design completion dates were extended as a result of MOD #57 to the DHA Agreement for preliminary and final design to Ancillary #2 at the 86th Street Station. This revision directly affects construction packages 5B, 5C and 6. These design changes affect the configuration of existing scope elements. If the current schedule is maintained, this change will not impact the overall project schedule. The specific impact on cost has yet to be determined.

2.2 New Contract Procurements

Bids were received on June 10, 2010 for Contract-26007 (4B), 72nd Street Station Cavern Construction. The low bid was approximately 29% lower than the Engineer's Estimate. The low bidder promptly informed NYCT that it had made a mathematical mistake in its bid. NYCT is currently evaluating this situation.

The only other contract scheduled to be advertised and awarded in 2010 is Contract-26006 (3) 63rd Street Station modification. This contract was advertised on June 28, 2010. Bids are scheduled to be received on August 20, 2010 and an award is expected on/about October 4, 2010.

2.3 Construction Progress

Total construction cost for the project is currently estimated at \$2.935 billion. As of June 30, 2010, \$0.319 billion has been expended for base contract work on the three active construction contracts. Construction is approximately 10.883% complete vs. a planned completion of 12.78%. This date was extracted from the SAS June 2010 Monthly Cost Data Report.

2.4 Continuing and Unresolved Issues

Negotiation of delays and impact costs incurred on Package C1.

2.5 New Cost and Schedule Issues

Issues with significant cost or schedule implications which require prompt resolution include the following:

- *C26002 (1) Tunnel Boring Machine (TBM) tunnels from 92nd Street to 63rd Street*

- *Final design and contract modification for the ground freeze to support TBM mining operations at the northern end (start) of the east tunnel. Timely execution of this work is necessary to avoid delay of the TBM mining of the east tunnel.*
- *Negotiation and execution of AWO #92 for the addition of 2,209 LF of TBM mining of the west tunnel. Additional TBM mining of this tunnel has reduced the overall cost of the 72nd Street Cavern (C4B) by approximately \$50M and will provide productive use of the TBM while the ground freeze is implemented.*
- *C26005 (2A) 96th Street Station heavy civil, structural and utility relocation*
 - *Coordination with C26002 for early release of area between 94th and 95th Streets to facilitate MPT required as part of schedule recovery initiative.*
 - *30-inch gas line tie-in south of 95th Street. Con-Ed drawing approval and coordination of work at Launch Box with C26002 is needed.*
- *C26013 (5A) 86th Street Station excavation, utility relocation and road decking*
 - *DOT approval for added and revised MPT Stages to support revised schedule.*
 - *Coordination with Con Ed schedule for improvement in cable pulling and splicing durations. Coordinate Con Ed abatement of existing transite ducts at NE corner of 83rd Street.*

3.0 PROJECT STATUS SUMMARY AND PMOC ASSESSMENT

3.1 Grantee Technical Capacity and Capability

The Grantee's Technical Capacity and Capability has not changed from the last quarter.

3.2 Real Estate Acquisition

Real estate acquisition and tenant relocation is being performed in accordance with the approved SAS Real Estate Acquisition Management Plan and Relocation Plan. These plans address Title 49 CFR Part 24, which implements the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended and FTA real estate requirements 5010.1C. On April 20, 2010, the MTA held an Eminent Domain Procedure Law (EDPL) public hearing to describe the public use, benefit and purposes of the work covered by Contracts 3, 4B, 5A and 5B; the property interest to be acquired; and the general impact of the property acquisitions and related construction work on the environment. Following a presentation by the MTA's hearing officer, 15 speakers made statements about the proposed property acquisitions and/or construction impacts. In addition, MTA received 13 written submissions about the proposed property acquisition and/or construction impacts prior to the end of the written submission period on April 30, 2010.

Many of the issues raised at the EDPL public hearing and comment period have been addressed in the FEIS, ROD, EA and in prior Community Board 8 meetings and in individual meetings with property owners and tenants. Before and after the public hearing, MTA staff and consultants have also met and communicated with property owners, tenants and other potentially affected parties, and has committed to continue to do so as the Project moves forward in an effort to mitigate Project-related impacts as much as reasonably possible.

After due consideration of all statements and comments received during and after the EDPL public hearing on April 20, 2010, MTA staff recommended board approval of the acquisition by eminent domain if necessary.

3.3 Engineering/Design

Completion of final design for all contracts has been adjusted from May, 2010 to September 24, 2010. The adjustment will give the design consultant time to incorporate revisions to the 86th Street Station.

3.4 Procurement

On June 10, 2010 the MTACC received three bids for Contract-26007 (C4B), 72nd Street Station Cavern Construction. The low bid, submitted by Tully/OHL, JV, was approximately 29% lower than both the Engineers Estimate and the second lowest bid received. On June 14, 2010, Tully/OHL, JV formally notified MTACC that it had found a mathematical mistake in its bid. In response to this notification, NYCT implemented its Bid Mistakes and Withdrawals procedure. As of the writing of this report, the results of this evaluation have not been published.

On June 28, 2010, Contract C-26006 (C3), 63rd Street Station Upgrade, was advertised. Bids are currently due to be submitted on August 20, 2010, with contract award anticipated in early October, 2010.

3.5 Force Account (support and construction)

While MTACC is heavily involved in construction, it does not have its own employees to support these activities. It relies on NYCT in-house labor for this purpose. NYCT employees have specialized skills and will perform flagging, general orders, work trains, access and protection, inspections, and crowd control for the SAS project. These employees have been thoroughly trained and have gained expertise in NYCT operating procedures as they relate to providing a safe and effective work environment.

3.6 Third-Party Construction

There are currently three active construction contracts on the SAS project, as indicated below and depicted in the construction photos in Appendix F. Detailed progress of each contract is contained in Section 2.1.3.

- *Contract-26002 (1) – Tunnel Boring Machine (TBM) tunnels from 92nd Street to 63rd Street*
- *Contract C-26005 (2A) – 96th Street Station heavy civil, structural and utility relocation*
- *Contract C-26013 (5A) – 86th Street Station excavation, utility relocation and road decking*

3.7 Vehicles

MTA is still reevaluating the vehicle requirements for operation of the entire NYCT system, which includes SAS. NYCT has suggested that the total number of vehicles including spares could be reduced. NYCT's plan for providing SAS Phase 1 cars will be fully described in the forthcoming draft of the Rail Fleet Management Plan to be issued in July 2010. *An extension to the Scheduled Maintenance Inspections (SMI) periodicity and its relationship to how NYCT will*

provide vehicles for SAS Phase 1 service will be included in the revised Rail Fleet Management Plan.

Until the issue of the number of railcars required for SAS Phase 1 is resolved, the vehicle cost of \$222 million will be included in the SAS current working budget and estimated total project cost.

3.8 Systems Testing and Start-Up

The scope of work associated with systems testing and start-up is allocated to Contract 6. The Systems Testing Plan is being updated to provide additional detail on the equipment to be integrated and tested and identify the functional group within NYCT that has the responsibility to verify/validate the test.

IPS detail for systems testing and start up was substantially enhanced this period. These enhancements were reviewed by NYCT and their edits incorporated in the final product. This effort is a significant enhancement to the IPS, but it is not a formal update to the Systems Testing Plan. This plan will be updated over the next several months and incorporated in the Contract 6 bid documents.

3.9 Project Schedule

The PMOC received Integrated Project Schedule (IPS) Update # 47 data date (June 1, 2010) on June 24, 2010. The calculated Revenue Service Date (RSD) remained July 15, 2016, unchanged from the previous update. Schedule contingency is measured against the MTACC committed RSD of December 30, 2016.

Table 1 Summary of Critical Dates

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

Significant enhancements to the Integrated Project Schedule (IPS) occurred this period.

Contingency Management – *MTACC’s previous method of managing contingency through “hand-off” activities embedded throughout the schedule has been revised. A single “Contingency” activity now spans the time between the calculated RSD and the current RSD commitment of December 30, 2016. This enhancement has significantly improved the reliability and usability of the IPS.*

Systems Testing – *The testing and commissioning logic previously added in IPS Update 39 for all 4 stations has been entirely replaced with additional detail for Signals, Communications, Traction Power, and MEP. As a result of these changes, the previous 44 activities have been expanded to 218 activities that account for the various systems within each station being tested and commissioned. The durations and logic of these activities were reviewed by NYCT and adjusted where requested. This enhancement is not a comprehensive Testing and Commissioning Plan. However, at the IPS level, it is an enhancement that helps ensure*

adequate time is available at the end of construction for testing and commissioning. As such, the PMOC considers this effort a significant enhancement to the reliability of the IPS.

On June 24, 2010, MTACC and S3 reached agreement on responsibility for all delays incurred on Contract C26002 (Tunnel Boring) through June 1, 2010. This is a substantial accomplishment that will facilitate compensation of the contractor for excusable delays and defines the delay for which the contractor is responsible and must recover through schedule acceleration.

3.10 Project Budget/Cost

Table 2 Budget and Expenditures

	FFGA			FFGA Amendments	MTA's Current Working Budget (CWB)		Expenditures as of June 30, 2010	
	(\$ Millions)	(%) Grand Total Cost	Obligated (\$ Million)	TBD	(\$ Millions)	(%) Grand Total Cost	(\$ Millions)	% of Grand Total Cost
Grand Total Cost:	4,866.614	100			5,489.614	100	\$996.144	18.15
Financing Cost	816.614	16.78			816.614	14.88		
Total Project Cost:	4,050.000	83.22	1,599.773		4,673.000	85.12	\$996.144	18.15
Total Federal share:	1,350.693	27.75	353.991		1,373.892	24.60	268.724	4.89
Total FTA share:	1,300.000	96.25	325.898		1,300.000	94.62	266.264	4.85
5309 New Starts share	1,300.000	100	325.898		1,300.000	94.62	266.264	4.85
Total FHWA share:	50.693	3.75	28.093		50.693	5.38	2.460	0.04
CMAQ	48.233	95.15	25.633		48.2333	96.67	0	0
Special Highway Appropriation	2.460	4.85	2.460		2.459	3.33	2.460	0.04
Total Local share:	2,699.307	55.47	1,245.782		3,299.108	60.52	727.420	13.25
State share:	450.000	16.67	100.000		450.000	13.54		
Agency share:	2,249.307	83.33	1,145.782		2,872.308	86.46		
City share:	0	0			0	0		

Data for this table was obtained from the transportation electronic award management system (team) and MTA's grant management department.

3.11 Project Risk

During the past Quarter, the SAS project team has advanced the implementation of its new format for conducting and documenting risk mitigation planning.

Formal risk management work sessions were held on May 19, 2010 and June 29, 2010. The risk elements discussed in these work sessions (see below) were initially identified during the Risk Analysis performed in early December 2009. Each risk has been assigned to a specific sponsor. Each risk is undergoing an in-depth analysis to determine its potential impact on the project and the specific means by which the risk will be addressed.

- *Risk 5: Market Conditions and Competition*
- *Risk 15B: Relationship with utilities*
- *Risk 21A: Differing and/or unforeseen sub surface conditions*
- *Risk 28: Planning and design project utility relocation*
- *Risk 29: Ineffective interfacing between contract packaging results in inefficient management*
- *Risk 35: Settlement and damage to existing structures*
- *Risk 64A: Excessive cavern over-break*

The PMOC attended the work session held on June 29 and is generally encouraged by the efforts of the SAS team. Refer to Section 6.3 of this report for additional information.

ELPEP SUMMARY

Status:

As of the end of June 2010, MTACC continued to work cooperatively with the FTA to produce Management Plans as called for in the Enterprise Level Project Execution Plan (ELPEP). This month, finalization of the Schedule Management Plan was a priority, with a review meeting held on June 4, the final document forwarded to FTA on June 15 and a draft acceptance letter developed. Further discussions were held regarding the PMP review described in the Technical Capacity and Capability (TCC) Implementation Plan, and the PMP review effort was launched by MTACC. The Project Management Plan (PMP) Update process was also launched and the PMOC has generated a draft first Candidate Revision (CR) for transmittal to the Grantee. MTACC has submitted cost estimate flow diagrams, as part of the Schedule Management Plan process. The PMOC has reviewed these charts and provided comments to MTACC. MTACC is developing their revised Cost and Cost Contingency Management Plan for submission to FTA.

The PMOC, FTA, MTA and SAS staffs held weekly update meetings on June 4, 10, 17, and 24, 2010. Based on the ELPEP effective date of January 15, 2010, the following items are scheduled to be completed in the next 30 days:

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

Observation:

Based on ELPEP requirements the overall progress remains behind schedule. MTACC has completed their Schedule Management Plan and a draft letter of acceptance is in development. There have been discussions regarding support from the project teams of the PMOC OP 53 process in order to provide timely feedback of project of findings. The Cost Management Plan intermediate deliverables of flow charts have been reviewed by FTA/PMOC and comments given to and reviewed with MTACC. PMOC has supported FTA review of the SAS and ESA Recovery Plans – FTA has provided preliminary comments to MTACC.

FTA, PMOC and MTACC continue to participate in a cooperative process to produce the deliverables described in the ELPEP. The process includes weekly ELPEP progress meetings which serve to review progress and look ahead to upcoming milestones. MTACC has begun its TCC Implementation Plan PMP decision point reviews and has indicated that they are implementing the PMP Update Process. This month, the SAS Project Team has continued to be proactive in the support of the ELPEP implementation effort.

This month, the PMOC made good progress in the 4B Chronology portion of the OP 53.

The following summarizes the intermediate deliverables and final plans submitted during this update period:

- *June 15, 2010 – Final Draft Schedule Management Plan;*
- *June 30, 2010 – Trial Run of TCC Implementation Plan*

Concerns and Recommendations:

MTACC has adopted the PMOC recommended strategy of producing flow diagrams to describe their cost estimate management process in order to clearly define the process and facilitate the production of the final plans. The PMOC is confident that production and integration of flow charts into the Cost and Cost Contingency Management Plan will lead to a more descriptive document which has, through its development, resolved any MTACC work flow, forecasting and management issues. The PMOC recommends that the MTACC review the requirements of their PMP Update procedures in order to begin managing the PMP improvement process.

1.0 GRANTEE'S CAPABILITIES AND APPROACH

1.1 Technical Capacity and Capability

1.1.1 Organization, Personnel Qualifications and Experience

a) Grantee's Organization

Status:

The organizational structure of the Second Avenue Subway (SAS) project is being refined to better address processes associated with risk, schedule and contingency management.

Observation:

The SAS project is being implemented through the coordinated efforts of various organizations and responsible parties who are working as an integrated team providing multiple levels of oversight. The team primarily includes staff from Metropolitan Transportation Authority Capital Construction (MTACC), New York City Transit (NYCT), DMJM/Harris and Arup (DHA, the design consultant), and Parsons Brinkerhoff (PB) America (Construction Consultant Management). The team also consists of other support and oversight organizations such as the Metropolitan Transportation Authority's (MTA) Independent Engineering Consultant (IEC).

Concerns and Recommendations:

As the organization structure is finalized, the PMP should be updated to reflect the revised structure.

b) Staff Qualifications

Status:

Staff qualifications are consistent with those defined in Section 2.3.1 of the SAS PMP.

Observation:

The SAS team has a demonstrated level of experience gained from work on other major capital projects.

Concerns and Recommendations:

None

c) Grantee Staffing Plan

Status:

During the 2nd Quarter, a Construction Manager for the 72nd Street Station and a Risk Manager were added to the SAS Project Team. The SAS staffing plan has been updated to reflect the current effort required on the project.

Observation:

Adequate support is being provided for the various activities occurring during this phase of the project.

Concerns and Recommendations:

None

d) Grantee's Physical Resources

Status:

The SAS project team and the design consultant staffs are co-located at 20 Exchange Place in lower Manhattan in order to provide effective communication and decision making. Field offices, with construction management personnel, have been established at 207 E 94th St., 1850 2nd Ave and 341 E 79th St. for construction contracts 1, 2A and 5A respectively. As future construction contracts are awarded, MTACC will open and staff additional field offices.

Observation:

The space and resources appear to be adequate to meet the current needs and objectives of the project.

Concerns and Recommendations:

None

e) History of Performance, Adequacy of Management Systems

Status:

The SAS Project has not been executed in compliance with the cost and schedule elements of the Full Funding Grant Agreement (FFGA). The project is trending over budget and behind schedule. In the FFGA, the Baseline Cost Estimate (BCE) is \$4.050 billion (excluding financing cost) and the Revenue Operations Date is June 30, 2014. The MTA has proposed a revised baseline cost estimate (RBCE) of \$4.673 billion based on its risk range evaluation of \$4.522 to \$4.993 billion. The MTA is also proposing a Revenue Service Date (RSD) of December 31, 2016.

See Section 6.0 for additional details.

Observation:

The BCE represented the estimated total project cost when the FFGA was awarded in November 2007. The Revenue Operations Date (ROD) is the terminology used in the FFGA for when the SAS project will be operational. It is the same as the RSD, which is the terminology used in the Enterprise Level Project Execution Plan (ELPEP) effective date January 15, 2010.

Based on the assumption that the new management processes and medium level of mitigation measures noted in the ELPEP will be implemented, the PMOC projects that the SAS project team should be able to achieve the estimated total project cost (ETPC) of \$4.804 billion and RSD of February 2018.

Concerns and Recommendations:

The PMOC will continue monitoring the implementation of the risk mitigation strategies.

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

a) Adequacy of Project Management Plan and Project Controls

Status:

During the 2nd Quarter, various workshops continued with the MTA, FTA, and PMOC in order to develop the required management processes and strategies described in the ELPEP. The integration of these into the SAS PMP is on-going.

Observation:

Integration of the ELPEP requirements into the SAS PMP will allow the MTACC to more effectively manage the SAS project. It will also give the FTA/PMOC a greater level of assurance that the SAS project can proceed through the final design and construction phases and be delivered to the start up phase consistent with the estimated total project cost and schedule. The workshops are beneficial in helping all to understand the processes and to assure a timely update of the PMP.

The SAS Project Team is being proactive in the update of the PMP, and certain modified procedures (Risk Management, Schedule Management) are being implemented. Development of a Cost Management and Cost Contingency Plan is significantly behind schedule.

Concerns and Recommendations:

The PMOC is concerned about delays to the development and implementation of the Cost Management and Cost Contingency Plan. The PMOC recommends soliciting a "recovery plan" from the MTACC to establish an accelerated time period for this effort.

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

Status:

On November 19, 2007, the FTA awarded a Full Funding Grant Agreement (FFGA) to the MTA. Section 4 of the FFGA states in part:

"If at any time during its efforts to Complete the Project the Grantee determines that the total project cost will exceed the Baseline Cost Estimate, the Grantee must immediately notify the Government of the amount of the difference and the reasons for the difference. Further, the Grantee must provide the Government with a Recovery Plan that demonstrates the Grantee is taking and will take every reasonable measure to eliminate [recover] the difference between the total project cost and the Baseline Cost Estimate."

In early 2008, MTA notified the FTA that the FFGA Baseline Cost Estimate of \$4.050 billion (excluding financing cost) and ROD of June 30, 2014 will be exceeded.

Observation:

MTA, MTACC, FTA, and PMOC have developed a process which will meet the intent of the various FTA/Federal requirements and is reflected in the ELPEP, PMP and sub-plans.

Concerns and Recommendations:

See section 1.1.2a

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

Status:

As part of its community relations program, MTACC conducts extensive public and community outreach. The community relations representative supports the bi-weekly job progress meetings and makes known any concerns of the community that need to be addressed.

Observation:

MTACC continues to hold regular meetings with involved NYC Community Boards and has included them in much of the decision-making that affects local residents.

Concerns and Recommendations:

None

d) Grantee's Approach to Safety and Security

Status:

Safety –Each construction contractor continued to implement its Safety Program in compliance with Section 011150 of the General Requirements Section of the Contract. As of May 31, 2010 the OSHA Recordable Accident Rate was 1.98 and the OSHA Lost Time Rate was 1.32 for the total project. The national average is 4.2 and 2.2 respectively (See Appendix E –Safety and Security Checklist).

Security -The MTA initiated a comprehensive review of its infrastructure to determine how to protect its customers and key assets from a terrorist incident. Security experts define critical vulnerabilities and determine appropriate protective strategies. The result of these efforts was the implementation of a multi-faceted program including operating and capital investments. The capital investments included hardening vulnerable assets and implementing the networks and equipment necessary to conduct targeted surveillance, control access, stop intrusion and provide command and control system to support incident response. MTA began implementing these investments in the 2000-2004 Capital Program and will continue to progress this program and subsequent programs using Federal funds. (Reference: Proposed MTA Capital Program 2010-2014, dated September 23, 2009).

Observation:

Due to the sensitive nature of the security effort, the proposed 2010-2014 Capital Program identifies a single budgetary reserve of \$250 M which will be used to progress the next group of projects. (Reference: Proposed MTA Capital Program 2010-2014, dated September 23, 2009).

Each construction contractor is proactive in implementing its safety program. Monitoring and training is ongoing and effective as reflected in recordable and lost time rates.

Concerns and Recommendations:

None

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

a) Uniform Property Acquisition and Relocation Act of 1970

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

b) Local Funding Agreements

Status:

MTA's SAS Current Working Budget continues to reflect \$3.517 Billion of local funding (includes \$0.817 Billion financing cost).

Observation:

The Local Funding for the SAS project will be provided from the MTA's Five Year Capital programs. Because of the duration of the SAS project, several 5-year plans will be the source of Local Funding. Local funds are available for the 63rd St. and 72nd St. Station contracts to be awarded in 2010.

Concerns and Recommendations:

The PMOC is concerned about the availability of the local funds given that there is a \$10 billion funding gap in the 2010-2014 Capital Program and that the latest Integrated Project Schedule shows a ROD of December 30, 2016.

Because of the concern, the FTA has initiated a Final Condition Capability Assessment (FCCA). Results of the assessment are anticipated in late August 2010 or early September 2010.

1.1.4 Scope Definition and Control

Status:

The scope of the SAS Project is defined in the FEIS, ROD and the FFGA. The scope was subsequently allocated into eleven construction contract packages. The MTACC subsequently decided to reallocate the scope of work for the 72nd Street Station into two contract packages (4B and 4C) instead of three. This has resulted in ten construction contract packages for the project. *Technical Memorandum No. 5 (draft), which addresses changes to the 63rd Street Station entrances subsequent to the Record of Decision, was evaluated by FTA Regional II office during this reporting period. Based on its review, the FTA determined that the design changes to the SAS project, as described in the memo would not result in significant adverse environmental impacts. Also that the memo satisfied the NEPA requirements as outlined in 23 CFR 771.130 and no supplemental environmental review was necessary for the proposed changes (Ref. FTA Letter to Ms. Sara Rios dated April 27, 2010).*

Observation:

The process of utilizing the Configuration Control Board (CCB), the change control process, the Technical Advisory Committee (TAC) and issuing Technical Memorandums is effective in tracking scope changes. Four Technical Memorandums have been issued to date.

Concerns and Recommendations:

None

1.1.5 Quality

Status:

MTACC's Quality Manager for Second Avenue has implemented a Total Quality approach for monitoring the Quality Control and Quality Assurance activities on the Project. MTACC Quality Personnel audit both the Designer's and CCM's Quality programs; then the three groups (MTACC, Designer & CCM) audit the Contractors', Subcontractors' and Suppliers' Quality programs. Each construction Quality Manager has a very ambitious Quality program that is scheduled weeks into the future and lists the audits and inspections to be performed. The inspections follow the schedule of work to be performed in those weeks. Materials being delivered for the work tasks are inspected prior to the work beginning and the quality of the work being performed is audited/inspected as it is being done. The status of Non-Conformance Notices and the responsibility to perform corrective actions is distributed monthly. Representatives from each quality organization meet every other week to address any quality concerns.

Observation:

The Quality Program continues to be proactive and is providing proper oversight. Personnel working on the SAS Project have been trained and/or instructed in their organization's Quality Management System as it applies to their duties and responsibilities.

The CCM has a Quality Manager for each of the three existing contracts. The Quality Manager on Contract 1 is also the lead Quality Manager. When Contract 4B is awarded, he will become the Deputy Project Manager on 4B for the CCM. The Quality Manager on Contract 2A will become the lead Quality Manager and the CCM will hire two more Quality Managers: one for the Contract 1 replacement and the other for Contract 4B.

Concerns and Recommendations:

None

1.1.6 Project Schedule

Status:

Periodic update of package schedules is managed at the respective contract field offices through a combination of construction contractor, CMC and MTACC Project Control staff assigned to that project. The MTACC/CMC Project Controls Manager gathers schedule updates from design, construction and other units (real estate, procurement, etc.), integrates and summarizes the information into the Integrated Project Schedule (IPS).

Observation:

Adequate staff has been allocated to schedule management and updating at the individual construction package level. However, development and updating of the IPS, which encompasses the entire project, appears to be the sole responsibility of one individual.

Concerns and Recommendations:

The PMOC is concerned that level of effort required to manage the IPS will soon exceed the capabilities of a single individual. The PMOC understands that many individuals provide input to the IPS and the quality of their input directly impacts the effort required to manage the IPS. With substantial increases in construction activity forecast, the PMOC recommends directly supporting the management of the IPS with additional staff resources.

1.1.7 Project Budget and Cost

Status:

Total project cost in the approved FFGA is \$4,866,614 million and is allocated into the Standard Cost Categories (SCC) as shown in Table 1.1.7.

Table 1-1 –Standard Cost Categories

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

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

Table 1-2 – Appropriated and Obligated Funds

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru <i>June 30, 2010</i>
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$164,788,239
NY-03-0408-06	\$274,920,030	0	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$68,058,206
NY-95-X009-00	\$25,633,000	\$25,633,000	0
NY-95-X015-00	\$45,800,000	\$45,800,000	0
Total	\$628,911,200	\$353,991,170.00	\$268,724,315

* Denotes American Recovery and Reinvestment Act (ARRA) funds

A total of \$996,144,149 has been expended on the project through June 30, 2010, of which \$388,313,151 has been spent on design and \$319,295,421 on construction (MTACC's monthly financial input).

Observation:

Local funds totaling \$727,419,834 (\$996,144,149-\$268,724,315) have been spent as of June 30, 2010.

Concerns and Recommendations:

See Section 1.1.3b with regard to local funding.

1.1.8 Project Risk Monitoring and Mitigation

Status:

Section IV.c of the ELPEP states that the MTACC shall:

“...create an MTA retained risk register to provide a means for identifying and thereby managing MTA retained risks such as differing site conditions, environmental and subsurface utility risks...”

In response to this requirement, the SAS Project Team is implementing a formalized risk management process. An initial Risk Assessment was performed in the fourth quarter of 2009. Since that time, formalized Risk Mitigation Meetings have been held for the purpose of further

identifying the specific risks confronting the project, developing and implementing specific risk mitigation strategies.

Observation:

Formal risk management work sessions were held on May 19, 2010 and June 29, 2010. Attending these sessions were key representatives from design, construction and support groups, resulting in a comprehensive, multi-disciplinary approach to an issue.

Concerns and Recommendations:

Further discussion of project risk and risk mitigation efforts can be found in Section 6 of this report.

1.1.9 Project Safety

Status:

As of May 2010, the OSHA Recordable Accident rate for the project is 1.98 per 200,000 man hours worked and the OSHA Lost Time Accident rate is 1.32 per 200,000 man hours worked. Both rates continue to be below the national averages of 4.2 and 2.2 respectively.

Observation:

The SAS project has an effective and proactive safety program as indicated by its below average rates for accidents and lost time. The Safety program for each construction contract is being implemented per the General Requirements for Safety (Section 011150) of the contract. Safety representatives from the CCM, contractor, and OCIP continuously monitor the construction sites for compliance. Any unsafe conditions noted are corrected immediately and training provided as required.

Concerns and Recommendations:

None

1.2 FTA Compliance Documents

Status:

No change this period.

All documents required for approval of a FFGA were issued. As the project has advanced through different phases of development, decisions have been made which requires the PMP and RFMP to be updated. [Ref: SAS-A17-Aug08]

Note: Throughout this report, any [Ref: SAS-XX] refers to the table in Section 7.0 and any [Ref: SAS-AXX] refers to the table in Section 8.0.

1.2.1 Readiness to Enter PE

Entry into PE was approved by FTA on December 20, 2001; PE completed April 17, 2006.

1.2.2 Readiness to Enter Final Design

Entry into FD (Phase 1) was approved by FTA on April 18, 2006.

1.2.3 Record of Decision (ROD)

The ROD was issued on July 4, 2004.

1.2.4 Readiness to Execute FFGA

The FFGA was executed on November 19, 2007.

1.2.5 Readiness to Bid Construction Work

See Appendix G for details.

1.2.6 Readiness for Revenue Operations

Revenue Operations per the FFGA is scheduled for June 30, 2014. *Based on the MTA's SAS Integrated Project Schedule (update 47) the calculated revenue service date is July 15, 2016. Based on this updated information, the currently published RSD of December 30, 2016 includes a contingency of 165 calendar days.*

2.0 PROJECT SCOPE

2.1 Status & Quality: Design/Procurement/Construction

2.1.1 Engineering and Design

Status:

Final design for all contracts has been delayed until late September, 2010. The primary delay to design completion is MOD #57, which includes both Preliminary and Final Engineering for revised Ancillary #2 at the 86th Street Station. These changes have involved contract packages 5B, 5C and 6. The revised design completion dates for each package are as follows:

- Contract -26010 (2B) – 96th Street Station Finishes and Mechanical, Electrical and Plumbing (MEP) 09/30/2010.
- Contract-26006 (3) – 63rd Street Station modifications 03/31/2010A.
- Contract-26011 (4C) – 72nd Street Station Finishes and MEP 06/02/2010A.
- Contract-26008 (5B) – 86th Street Station Cavern Construction 08/03/2010.
- Contract-26012 (5C) – 86th Street Station Finishes and MEP 09/24/2010.
- Contract-26009 (6) –Systems –Track, Power, Signals and Communications 09/30/2010.

See Section 2.3 for contract package description, procurement method.

Observation:

MOD #57 incorporated necessary changes to the design based upon conflicts and coordination with adjacent structures.

Concerns and Recommendation:

Schedule delays resulting from these design revisions have been limited to the individual packages, with no net delay to the overall project. Completion of this redesign work should be aggressively pursued to maintain the current construction procurement schedule.

2.1.2 Procurement

Status:

On June 10, 2010 the MTA received bids for Contract-26007 (C4B), 72nd Street Station Cavern Construction. A summary of bids received is shown in the following table:

<i>Bidder</i>	<i>Bid/Estimate</i>
Tully/OHL, JV	\$319,229,925
SSK Contractors	\$447,180,260
SKANSKA/Traylor JV	\$475,471,000
MTACC/ Engineer's Estimate	\$448,050,140

The low bid of \$319,229,925, submitted by Tully/OHL, JV, was approximately 29% less than the second bidder and the Engineer's Estimate. On June 14, 2010, Tully/OHL, JV formally notified MTACC that it had found a mathematical mistake in its bid. Upon receiving this notification, NYCT implemented its Procedure IV.B-4, Bid Mistakes and Withdrawals. As of the writing of this report, the results of this evaluation have not been published.

MTACC expects to award this contract in late July, 2010.

Observation:

In the event that the low bid is not accepted and the project is awarded to the second low bidder, MTA will still realize significant cost savings on this contract as compared to earlier cost estimates. Cost savings are the result of reduced cavern excavation performed by this contract. This scope is in process of being formally transferred to Contract C26002 (AWO #92).

<i>Cost Estimate/Description</i>	<i>Estimated \$</i>
<i>Estimate 6c, July 2008 (Separate Contracts 4A & 4B)</i>	<i>\$602,696,000</i>
<i>Estimate 7, October 2009 (Separate Contracts 4A & 4B)</i>	<i>\$549,204,000</i>
<i>Estimate 7c, 2009 (Combined Contracts 4A & 4B)</i>	<i>\$500,388,706</i>
<i>Estimate 7.3, 2009 (Combined Contracts w/reduced scope)</i>	<i>\$448,050,140</i>

MTACC's efforts to reduce construction cost through logical adjustments to the scope of the construction contracts proved to be effective in this instance.

Concerns and Recommendation:

Excessive delay in the review and evaluation of the reported bid error; in the worst-case scenario, rebidding the package. Based on the latest update of the IPS, this package has approximately 100WD of positive float. The PMOC recommends the quickest possible resolution to the reported bid error and award of the contract on or near the current date scheduled.

2.1.3 Construction

Status:

There are three active construction contracts on the SAS project. Construction progress on these contracts is as indicated below and also depicted in the construction photos in Appendix F.

- **Contract-26002(1) –TBM tunnels from 92nd Street to 63rd Street**
 - Completed all excavation of Launch Box and installation of mud slab is complete.
 - Installation of all rock bolts and mesh within the Launch Box is completed.
 - Delivery and installation of the TBM/Trailing Gear & Conveyor System is complete. Incidental troubleshooting and “fine-tuning” continue.
 - TBM electrical distribution room and substation are complete and fully energized.
 - Construction of the muck bin observation deck completed.

- *Probing and mining of the west tunnel started on 6/8/10. Approximately 261LF of mining completed through 6/29/10.*
- *72nd Street Shaft wall completed.*
- *69th Street Shaft blasting and excavation completed; concrete wall construction has commenced.*
- *Installation of building façade ties for 1821-23, 1825, 1827 and 1829 (AWO 93) was completed; commenced cellar tie installation on west side of Second Ave. between 94th and 95th Streets.*
- ***Contract C-26005 (2A) -96th Street Station heavy civil, structural and utility relocation***
 - *Completed excavation and pile installation for sewer chamber 95-1 (between 95th -> 96th Street).*
 - *Completed excavation for sewer MH 96-1 and 96-2.*
 - *Completed installation of electrical splice boxes between 97th and 98th Streets.*
 - *Started 12" LP gas line crossing along east side of 2nd Avenue between 97th -> 98th Street).*
 - *Started Building 1873 Phase 1 stabilization work and continued jet and compensation grouting test programs.*
- ***Contract C-26013 (5A) 86th Street Station excavation, utility relocation and road decking***
 - *Completed replacement of existing 48" DIP water main.*
 - *Continued construction of MHs M54753, M60317, M14784.*
 - *Continued work on various ductbank runs, service ducts to buildings and transformer vault PCVI3-6.*

Observation:

MTACC is actively pursuing schedule and cost initiatives in an effort to mitigate previous delays and additional costs. Schedule improvement has generally improved over the recent quarter.

Concerns and Recommendation:

The ability of Package C1 to achieve or surpass production and schedule goals for the TBM mining operation is a key concern.

Force Account (FA) Contracts

Status:

As of June 30, 2010, \$140,773 of the \$33,000,000 FA budget has been expended.

Observation:

The Force Account requirements are documented in the SAS Force Account Plan. The plan gives a description and a cost estimate of the NYCT services required to support construction activities for each individual contract.

Concerns and Recommendation:

None

2.1.4 Operational Readiness

Status:

MTA has developed an Operations Plan for the SAS Project that was based on using 75-foot rail cars in revenue services. A previous decision to utilize 60-foot rail cars is being reevaluated.

Observation:

See Section 2.4

Concerns and Recommendation:

The PMOC recommends that the Concept of Operations Plan be updated to reflect any changes from the optimization effort which could affect the SAS project.

2.2 Third-Party Agreement

Status:

During the May 2010 SAS Quarterly Review, the project team presented a change in their approach to advertising contracts, in that no contract will be advertised until all utility signoffs have been achieved. In that this will be a change to the current design process described in the SAS PMP Chapter 7, FTA requests that MTACC consider a potential change (Candidate Revision) to the PMP under the approved PMP Update Plan section regarding Interim Updates.

Rewrite item 12.1 to include the review and final approval of the proposed contract package design by the affected utility, prior to finalizing the bid package. Reference to Project Procedures that detail such review/approval process should be included. The process description should be specific in terms of what the agreement with the utility contains, the responsibilities of each party, and the timing of executing such agreement.

Observation:

It is the PMOC's opinion that this CR, when implemented, represents a positive revision to MTACC's existing processes.

Concerns and Recommendations:

No additional concerns or recommendations at this time.

2.3 Contract Packages and Delivery Methods

Status:

Phase 1 of the Second Avenue Subway will be delivered via ten separate construction packages. All construction contract packages will be delivered through a design-bid-build process utilizing a fixed price construction contract. Competitive procurements are based on NYCT standard procedures. Specific procurement procedures for each contract package are shown in the following table.

Table 2-1 Construction Procurement Method and Status

			<i>Procurement</i>	
<i>No.</i>	<i>Contract</i>	<i>Description</i>	<i>Type</i>	<i>Status</i>
<i>C1</i>	<i>C-26002</i>	<i>TBM Tunnels from 92nd St. to 63rd St.</i>	<i>IFB</i>	<i>Awarded</i>
<i>C2A</i>	<i>C-26005</i>	<i>96th Street Station Structure and Heavy Civil</i>	<i>RFP</i>	<i>Awarded</i>
<i>C2B</i>	<i>C-26010</i>	<i>96th Street Station: construction of the entrances and ancillary facilities, architectural finishes and MEP equipment.</i>	<i>RFP</i>	<i>Design</i>
<i>C4B</i>	<i>C-26007</i>	<i>72nd Street Station: construction of the cavern and the G3/G4 tunnels to the existing 63rd St. /Lexington Avenue Station.</i>	<i>IFB</i>	<i>Bid error under review</i>
<i>C4C</i>	<i>C-26011</i>	<i>72nd Street Station: construction of ancillary finishes, station finishes and MEP equipment.</i>	<i>RFP</i>	<i>Design</i>
<i>C3</i>	<i>C-26006</i>	<i>63rd Street Station: renovation of existing station involving open-cut excavation for the construction of entrance and ancillary facilities.</i>	<i>IFB</i>	<i>Advertised</i>
<i>C5A</i>	<i>C-26013</i>	<i>86th Street Station: utility relocation, open excavation and road decking that will prepare the site for construction.</i>	<i>RFP</i>	<i>Awarded</i>
<i>C5B</i>	<i>C-26008</i>	<i>86th Street Station: construction of the station cavern, entrances and access shafts.</i>	<i>IFB</i>	<i>Design</i>
<i>C5C</i>	<i>C-26012</i>	<i>86th Street Station: construction of the ancillary facilities, station finishes and MEP equipment.</i>	<i>RFP</i>	<i>Design</i>
<i>C6</i>	<i>C-26009</i>	<i>Systems, Power, Signals and Communications; includes the installation of the low-vibration track, aluminum rail, way-side signals, and all communication components, integration of the communication network with the NEP SCADA system and commissioning the system for revenue service.</i>	<i>RFP</i>	<i>Design</i>

Observation:

Construction packages are primarily location-based and consist of one line-section package, eight station packages and one systems package. The project scope has been allocated to the various contract packages in a logical manner to facilitate a reasonable and efficient construction sequence. MTACC has proactively adjusted scope among the contract packages in response to delay mitigation or schedule acceleration opportunities as they have arisen.

Concerns and Recommendations:

Coordination of system installation across multiple construction packages is a major challenge. This issue is under active review and evaluation as part of the Risk Management Process (Risk # 29). This effort will identify all interfaces and specify how the respective contract packages will address them. The PMOC will monitor this critical effort to verify reasonableness of approach and completeness.

2.4 Vehicles

Status:

The decision to utilize 60 foot rail cars on the SAS project is being reevaluated. The reevaluation is part of an initiative by the new president of NYCT to optimize the entire NYCT rail fleet and infrastructure. The most recent information received unofficially from the NYCT is that the next rail car procurement replacing the R-44 fleet will be the 60 foot vehicles, with the 75 foot car question deferred to the next rail car procurement.

NYCT has stated in their Rail Fleet Management Plan that the purchase of vehicles for the SAS program may be cancelled based on NYCT projections for their fleet requirements to support the service including the SAS Phase 1 project. FTA and the PMOC have requested analysis to back up the NYCT calculations which according to the RFMP are based on a change to the NYCT fleet spare factor. The RFMP bases the change to spare factor on changes to fleet maintenance requirements.

Observations:

These issues were discussed with NYCT at a meeting on May 25, 2010. A summary of the discussions at this meeting include:

- Scheduled Maintenance Interval (SMI) extension tests. This initiative was confirmed to be primarily a cost-savings and efficiency improvement effort. NYCT will submit a written summary report on the matter, which will finalize their response.
- Fleet Spare Ratio. The PMOC explained that vehicles for SAS Phase 1 Service must be provided with no net effect on fleet operation and maintenance. NYCT stated that a decision to supply cars for SAS Phase 1 from the existing fleet had already been made. The upcoming R179 purchase was also identified as another near-term source of new vehicles.

NYCT's plan for providing SAS Phase 1 cars will be fully described in the forthcoming draft of the Rail Fleet Management Plan to be issued in July 2010. NYCT further clarified that there is no plan to extend the life of the R46 fleet. *NYCT responded to PMOC follow-up to the May 2010 meeting this month with a commitment to provide an analysis of the extension to Scheduled Maintenance Inspections (SMI) periodicity during July 2010.*

Concerns and Recommendations:

PMOC does not consider the SMI periodicity to be the only factor to affect NYCT ability to support an increase to the service requirement for the Second Avenue Subway, however the RFMP provides this change to maintenance practices as justification for no new associated procurement of vehicles for the SAS project. Once the SMI issue is clarified, a broader

discussion can be held to consider the requirement for additional cars for SAS service, as requested by MTACC.

2.5 Property Acquisition and Real Estate

Status:

On April 20, 2010, the MTA held an Eminent Domain Procedure Law (EDPL) public hearing to describe the public use, benefit and purposes of the work covered by Contracts 3, 4B, 5A and 5B; the property interest to be acquired; and the general impact of the property acquisitions and related construction work on the environment. Following a presentation by the MTA's hearing officer, 15 speakers made statements about the proposed property acquisitions and/or construction impacts. In addition, MTA received 13 written submissions about the proposed property acquisition and/or construction impacts prior to the end of the written submission period on April 30, 2010.

Many of the issues raised at the EDPL public hearing and comment period have been addressed in the FEIS, ROD, EA and in prior Community Board 8 meetings and in individual meetings with property owners and tenants. Before and after the public hearing, MTA staff and consultants have also met and communicated with property owners, tenants and other potentially affected parties, and has committed to continue to do so as the Project moves forward in an effort to mitigate Project-related impacts as much as reasonably possible.

After due consideration of all statements and comments received during and after the EDPL public hearing on April 20, 2010, MTA staff recommended board approval of the acquisition by eminent domain if necessary.

The temporary relocation of residents of 1873 2nd Ave is scheduled to start in July 2010. The temporary relocation of residents of 1821 to 1829 2nd Ave has started. Four residential tenants have moved out as of June 26, 2010. The remainder of the temporary relocations for 1821 to 1829 are scheduled for July 2010.

Observation:

Property acquisition is phased to support the start dates of the construction contracts. Regular meetings are being held to address any issues that might impact the acquisition process.

Concerns and Recommendations:

None at this time

2.6 Community Relations

Status:

During the 2nd Quarter 2010, the Community Relations Department continued its outreach to address the concerns of the residents and businesses in the work areas of the three construction contracts. During the bi-weekly job progress meetings for each contract, concerns were discussed and actions were implemented to resolve them.

Observation:

The community relations representative is responsive to the concerns of the community. As part of its community relations program, MTACC continues to conduct extensive public and community outreach. Activities include: liaison support at Construction Field Offices to

handle daily concerns of pedestrians, residents and businesses; arranging meetings with community groups, condo boards, etc. to address concerns specific to their neighborhoods/buildings; providing email advisories to alert elected officials in advance of significant changes at the construction site or new construction activity; and addressing correspondence received through letters and emails regarding the SAS project.

Concerns and Recommendations:

None at this time

3.0 PROJECT MANAGEMENT PLAN AND SUB-PLANS

3.1 Project Management Plan

Status:

No change this month.

Project Management Plan (Document ID: 7041.01.000173-6) Revision 6 is the latest approved PMP. Efforts are underway to update the PMP and its sub-plans to reflect the new management processes and strategies of the ELPEP. The integration of these processes and strategies into the PMP was initiated and is ongoing. See section 1.1.2 a.

Observation:

See Section 1.1.2 a.

Concerns and Recommendations:

See Section 1.1.2 a.

3.2 PMP Sub Plan

No change this period.

- Project Quality Manual (PQM): Updated PQM (Revision 2) for the final design/construction phase of the project was approved by the FTA on March 28, 2007.
- Bus Fleet Management Plan (BFMP): Updated BFMP dated February 2007 was conditionally accepted by the FTA in May 2007.
- Rail Fleet Management Plan (RFMP): Updated RFMP conditionally accepted by the FTA on April 24, 2007. In July 2009, NYCT decided to use a 60-foot rail car length for the SAS project and future procurements. *A draft update of this plan will be distributed in July 2010.*
- Safety and Security Management Plan (SSMP): On November 15, 2007, the FTA accepted the SSMP.
- Real Estate Acquisition and Management Plan (RAMP): On November 15, 2007, the FTA gave conditional approval of the RAMP.

3.3 Project Procedures

Status:

The MTACC originally informed the PMOC that Jacobs Engineering (ESA CCM) was contracted to prepare approximately 85 new project procedures. That amount was recently revised to be between 70 and 75. To date, the MTACC has released 52 approved procedures to the PMOC for review. The MTACC has also developed a schedule for the remainder of the procedures. The MTACC did not meet its commitment to release and implement all the new procedures by June 30, 2010. The MTACC now estimates that the remainder of the procedures will be complete by July 31, 2010.

Observation:

The PMOC has performed a thorough review of all the procedures that the MTACC has approved and released to date. A complete list of comments is on file in the PMOC's office for review. The PMOC met with MTACC on March 22, 2010 to discuss our review and present our comments. In general, although a few of the procedures contained glaring errors (which the MTACC will correct), and the priorities the MTACC has placed on the order of their development are arguable, it is the PMOC's opinion that the new procedures will be adequate for their intended purposes.

In informal meetings with ESA personnel, however, the PMOC has become aware that, although MTACC has approved and issued these 52 procedures, they are not yet in widespread use. The entire task will not be complete until all procedures are incorporated as required.

Concerns and Recommendations:

Although it now appears as if the MTACC has made a sincere commitment to develop and approve these new procedures, the second half of the task, the implementation, has yet to fully materialize. Since these new procedures will become part of the MTACC's Project Management Plan (PMP), which will outline how the MTACC will manage the ESA project within ELPEP guidelines, the PMOC is concerned that inconsistent implementation will defeat the purpose of the procedures and the ELPEP. As a result and to ensure consistency, the PMOC recommends that the MTACC develop a process to assure that all of these procedures are in use on all of its projects. For example, MTACC could develop a positive feedback distribution system that would require the recipients (the individual Project Managers) to acknowledge receipt of each new procedure as it is released for implementation. This system could be monitored by the parent MTACC to assure implementation across all its organizations and provide it with the opportunity to correct any non-conformances as they develop. [Ref: SAS-11-Jan10]

4.0 PROJECT SCHEDULE STATUS

4.1 Schedule Status

Status:

During the month of May 2010, progress continued on three (3) active construction packages; C-26002 TBM Tunneling and 96th Street Box, C-26005 96th Site Work and Heavy Civil, and C-26013 Open Cuts and Utility Relocation. Design continued for C-26015 96th, construction package s C3. The design process is reported to be 99% complete with a forecast completion date in September 2010. PMOC received Integrated Project Schedule (IPS) Update # 47 data date (June 1, 2010) on June 24, 2010.

Table 4-1 Summary of Critical Dates

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

The PMOC RSD was derived from conducting a risk analysis on SAS generated schedules and applying selected risk factors in a Monte Carlo analysis. The date represents the project parameters specified at the time of analysis and any subsequent modifications to the schedules and risks have not been analyzed.

Observation:

This update of the Integrated Project Schedule (IPS) maintains the July 15, 2016 forecast for the SAS Revenue Service Date. The difference between this date and December 30, 2016 is 165 calendar days and represents the schedule contingency currently available.

During the current update period, significant changes were made to the schedule logic for 72nd Street Station (C-26007), 86th Street Station (C-26008), and Systems (C-26009) Contracts:

- 72nd Street Station. The main cavern logic was replaced and/or adjusted to provide greater detail for visibility purposes while at the same time, accommodating the lower TBM mining rate of 50 LF/wd. That is, the “single bar activities” for mining the main cavern and G3/G4 Tunnels were replaced with several activities in order to accurately reflect the sequence for mining the caverns and tunnels.
- 86th Street Station. The logic was adjusted to accommodate a TBM mining rate of 50 LF/wd. To do so, the assumed Drill and Blast mining production rate was increased from 149 CY/wd to 200 CY/wd. Mechanical mining from the north shaft is assumed until completion of C1 east TBM run.
- Systems. The entire Testing and Commissioning Logic was removed and replaced with a higher level of detail. The new logic was reviewed and commented on NYCT Transit where their comments were included in the adjusted logic.

Concerns and Recommendations:

The SAS project team is aggressively implementing schedule recovery initiatives in an effort to curtail schedule growth and recover time lost to previous delays. The PMOC is confident these initiatives will positively impact the project schedule, however, considers it unreasonably optimistic to anticipate a recovery of the magnitude necessary to regain the FFGA RSD.

4.2 90 Day Look - Ahead

Status:

The table below summarizes major activities scheduled for the Second Avenue Subway Project over the upcoming 90-day period.

Table 4-2 90 Day Look - Ahead

Activity ID	Start	Finish
C1- TBM Construction – Tunnel 96th Box (91st to 95th)		
<i>TBM 1st Run – Mine West Tunnel from 96th Street Launch Box to 65th Street</i>	05/27/10A	11/23/10
Complete Design for Freeze Plant/Issue to S3	03/31/10A	06/30/10
C3 - 63rd Street Station Upgrade (IFB)		
<i>Bid Advertisement (Plans Available to Bidders)</i>	06/28/10A	
<i>Bids Due</i>		08/20/10
<i>Award Contract</i>		10/04/10
C4B – 72nd St. Station Existing Demo/Mining & Lining (IFB)		
<i>Bid Opening</i>		06/10/10A
Notice of Award		07/27/10
C6 – Systems (RFP)		
<i>RFP Available</i>	10/25/10	
CM1188 – Design Services MOD #57		
<i>PE/FD for Ancillary #2 @ 86th St Station; Contract 5A</i>	05/10/10A	07/06/10
<i>PE/FD for Ancillary #2 @ 86th St Station; Contract 5B</i>	05/17/10A	08/06/10
<i>PE/FD for Ancillary #2 @ 86th St Station; Contract 5C</i>	05/24/10A	08/24/10
Systems	06/21/10	09/27/10

Observation:

None.

Concerns and Recommendations:

None.

4.3 Critical Path Activities

Status:

IPS Schedule Update #47 was received on June 24, 2010 and is based on a Data Date of June 01, 2010. The following table summarizes the project critical path on this update with the previously received update, #46, which is based on a Data Date of April 30, 2010.

Table 4-3 Critical Path Activities

Activity ID	Duration			Start Date			Finish		
	May	June	Var	May	June	Var	May	June	Var
C5 - 86th Street Station	1375	1345	30	30-Apr-10	1-Jun-10	-22	6-Aug-15	27-Jul-15	8
C5A - 86th Stn - Exc & Utility Work	335	313	22	30-Apr-10	1-Jun-10	-22	18-Aug-11	18-Aug-11	0
Utility Work & Excavation	281	259	22	30-Apr-10	1-Jun-10	-22	1-Jun-11	1-Jun-11	0
Stage 3N&S Cut & Cover	29	29	0	2-Jun-11	2-Jun-11	0	13-Jul-11	13-Jul-11	0
Stage 4 N & S Cut & Cover	25	25	0	14-Jul-11	14-Jul-11	0	17-Aug-11	17-Aug-11	0
C5A Substantial Comp	0	0	0	17-Aug-11	17-Aug-11	0	17-Aug-11	17-Aug-11	0
C5B - 86th Stn; Mining & Lining	572	564	8	18-Aug-11	18-Aug-11	0	28-Oct-13	16-Oct-13	8
Station Mining	418	410	8	18-Aug-11	18-Aug-11	0	3-Apr-13	22-Mar-13	8
Cavern Concrete	144	144	0	4-Apr-13	25-Mar-13	8	25-Oct-13	15-Oct-13	8
C5B Substantial Completion	0	0	0	28-Oct-13	16-Oct-13	8	28-Oct-13	16-Oct-13	8
C5C - 86th Stn; Arch & MEP	311	311	0	28-Oct-13	16-Oct-13	8	8-Jan-15	29-Dec-14	8
Mobilization & Hand-off	0	0	0	28-Oct-13	16-Oct-13	8	28-Oct-13	16-Oct-13	8
Station Concrete	79	79	0	28-Oct-13	16-Oct-13	8	18-Feb-14	6-Feb-14	8
Arch & MEP Finishes	212	212	0	19-Mar-14	7-Mar-14	8	8-Jan-15	29-Dec-14	8
C6 - Sys Installation @ 86th St Stn	150	150	0	9-Jan-15	30-Dec-14	8	6-Aug-15	27-Jul-15	8
Communication Installation	150	150	0	9-Jan-15	30-Dec-14	8	6-Aug-15	27-Jul-15	8
C6 - Systems (Track, Signal, Traction Power & Comm.)	1342	1559	-217	31-Mar-11	1-Jun-10	217	23-May-16	23-May-16	0
Integrated Testing & Commissioning	266	274	-8	15-May-15	5-May-15	8	23-May-16	23-May-16	0
86th St Stn Integrated Testing & Commissioning	210	274	-64	15-May-15	5-May-15	8	3-Mar-16	20-May-16	-56
NYCT Pre-Revenue Operation Test & Revenue Service / SC	205	205	0	21-Mar-16	21-Mar-16	0	30-Dec-16	30-Dec-16	0
Phase I Substantial Completion	120	120	0	15-Jul-16	15-Jul-16	0	30-Dec-16	30-Dec-16	0

Observation:

The critical path this period begins with Substantial Completion of contract C5A where the South Shaft is handed over to C5B to begin drill and blast mining operations at the south end of the cavern into cavern concrete work. It then travels from C5B to C5C Mezzanine concrete work, then into 1st and 2nd Fix MEP works in the Public Area. From C5C it travels to C6 Systems MEP installation, testing, and commissioning work in the 86th Street Station. Upon completion, it is handed over to NYCT for Pre-Revenue Operations Testing.

This is a change in the critical path from last month and is a result of the schedule logic changes made to the IPS. The PMT indicated that some additional logic changes are being considered and it is possible that the critical path may shift in the next update.

Design of 72nd Street station (contract C4) and 86th Street station are 16 and 37 days off the critical path respectively.

Concerns and Recommendations:

The SAS Project Team has made significant enhancements to the IPS over the past Quarter and currently appears to be actively using it to plan and manage the work. Continuing the recent enhancement initiatives is extremely important as a means of enhancing the reliability and usefulness of the IPS.

5.0 PROJECT COST STATUS FOR SECOND AVENUE SUBWAY

5.1 Budget/Cost Status

Status:

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

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

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

* Includes \$47M Cost-to-Cure

** FTA has not approved the removal of the vehicles from the scope of work.

Observation:

The MTACC's current Estimate at Completion for the Second Avenue Subway is summarized as follows:

Table 5-2 Current Estimate at Completion

<i>Component</i>	<i>FFGA Budget</i>	<i>Current MTA EAC</i>
<i>Design Services</i>	<i>\$410,000,000</i>	<i>\$445,000,000</i>
<i>Construction</i>	<i>\$2,601,211,756</i>	<i>\$2,935,000,000</i>
<i>Soft Costs & Misc.</i>	<i>\$1,038,788,244</i>	<i>\$1,071,000,000</i>
<i>Subtotal</i>	<i>\$4,046,810,188</i>	<i>\$4,451,000,000</i>
<i>Finance Cost</i>		<i>\$816,614,000</i>
<i>TOTAL</i>		<i>\$5,267,614,000</i>

Source: Current Budget Summary, prepared by MTACC, as of May 31, 2010.

Two of the three bids received for Contract-26007 (4B) were approximately equal to or lower than the engineer's estimate and revised budget for this project. Successful award to one of these two bidders will have a positive impact on the project budget. It is anticipated that a contract award for this package will be made in late July or early August, at which time the project budget will be adjusted accordingly.

Concerns and Recommendations:

No new concerns or recommendations at this time.

5.2 Cost Variance Analysis

Status:

MTACC's Current Working Budget of \$4.451 billion (exclusive of finance costs) exceeds the FFGA budget of \$4.050 billion (excluding finance costs) by approximately 10%. MTACC is actively pursuing construction cost reduction initiatives, some of which are discussed in Section XXX of this report.

Observation:

Variances between the FFGA Budget and the June 30, 2010 MTACC Current Working budget are highlighted in the following table:

Table 5-3 Budget Variance Summary

<i>Budget Component</i>	<i>FFGA Budget per MTACC</i>	<i>Current Working Budget</i>	<i>Variance</i>	<i>Comment</i>
<i>Design Services</i>	\$410,000,000	\$445,000,000	(\$35,000,000)	<i>Estimated total cost for Final Design exceeds FFGA Budget by \$26,500,000 MTACC is actively pursuing cost mitigation initiatives.</i>
<i>Construction Services</i>	\$2,692,000,000	\$3,113,000,000	(\$421,000,000)	<i>MTACC includes <\$18M> undocumented VE adjustment.</i>
<i>NYCT F/A</i>	\$28,000,000	\$33,000,000	(\$5,000,000)	
<i>Eng Force Account</i>	\$48,000,000	\$70,000,000	(\$22,000,000)	<i>Additional cost based on extended duration of project</i>
<i>Utilities</i>	\$58,000,000	\$64,000,000	(\$6,000,000)	
<i>CCM</i>	\$80,940,647	\$96,000,000	(\$15,059,353)	<i>Additional cost based on extended duration of project</i>
<i>Artwork</i>	\$6,000,000	\$6,000,000	\$0	
<i>Rolling Stock</i>	\$152,999,000	\$0	\$152,999,000	<i>MTACC deduction from CWB not approved by FTA</i>
<i>Real Estate</i>	\$240,960,000	\$245,000,000	(\$4,040,000)	
<i>Cost To Cure</i>	\$0	\$47,000,000	(\$47,000,000)	<i>Additional cost due to "Fragile Buildings" Not included in original budgets</i>
<i>OCIP</i>	\$160,000,000	\$172,000,000	(\$12,000,000)	

<i>Budget Component</i>	<i>FFGA Budget per MTACC</i>	<i>Current Working Budget</i>	<i>Variance</i>	<i>Comment</i>
<i>Exec Reserve</i>	\$173,100,353	\$160,000,000	\$13,100,353	
TOTAL	\$4,050,000,000	\$4,451,000,000	(\$401,000,000)	

Concerns and Recommendations:

No new concerns or recommendations at this time.

5.3 Project Funding Status

Federal

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

Table 5-4 Funding Status

Grant Number	Amount (\$)	Obligated (\$)	Disbursement (\$) thru June 30, 2010
NY-03-0397	\$4,980,026	\$4,980,026	\$4,980,026
NY-03-0408	\$1,967,165	\$1,967,165	\$1,967,165
NY-03-0408-01	\$1,968,358	\$1,968,358	\$1,968,358
NY-03-0408-02	\$24,502,500	\$24,502,500	\$24,502,500
NY-03-0408-03	0	0	0
NY-03-0408-04	0	0	0
NY-03-0408-05	\$167,810,300	\$167,810,300	\$164,788,239
NY-03-0408-06	\$274,920,030	0	0
NY-17-X001-00	\$2,459,821	\$2,459,821	\$2,459,821
NY-36-001-00*	\$78,870,000	\$78,870,000	\$68,058,206
NY-95-X009-00	\$25,633,000	\$25,633,000	0
NY-95-X015-00	\$45,800,000	\$45,800,000	0
Total	\$628,911,200.00	\$353,991,170.00	\$268,724,315.00

* Denotes American Recovery and Reinvestment Act (ARRA) funds

Local

Status:

No change from last month.

MTACC has awarded a total of 3 contracts in the amount of \$696,095,039.

Observation:

With the additional authorized local funds provided in August 2009, the PMOC observes that the local funding is sufficient for contracts to be awarded in 2010.

Concerns and Recommendations:

See Section 1.1.3b

6.0 PROJECT RISK

6.1 Initial Risk Assessment

Status:

In early 2009, the PMOC performed a risk based PG 47 review of the updated cost estimate and schedule prepare by MTACC. The results of this review identified a number of specific project risks as well as a range of cost and schedule outcomes. A series of discussions were subsequently held to develop a project execution plan to minimize risk in the areas of focus for the FTA PG 47 document. This project execution plan was formalized for both ESA and SAS in an Enterprise Level Project Execution Plan (ELPEP) which was finalized on January 15, 2010.

Observation:

The Initial Risk Assessment demonstrated the potential consequences of not actively managing project risk. Since that time, the MTACC has implemented a risk management program that will be discussed further in the next section.

Concerns and Recommendations:

Based upon the results of the Initial risk Analysis, the PMOC recommended that the Financial Management Oversight Contractor (FMOC) review the MTA's financial capacity to fund the potential cost increases to the SAS project that were identified. This recommendation has been implemented and is in process.

6.2 Risk Updates

Status:

During the past Quarter, the SAS project has advanced the implementation of its new format for conducting and documenting risk mitigation planning.

Formal risk management work sessions were held on May 19, 2010 and June 29, 2006. The risk elements discussed in these work sessions (see below) were initially identified during the Risk Analysis performed in early December 2009.

Observation:

Each risk has been assigned to a specific sponsor. Each risk is undergoing an in-depth analysis to determine its potential impact on the project and the specific means by which the risk will be addressed.

- *Risk 5: Market Conditions and Competition*
- *Risk 15B: Relationship with utilities*
- *Risk 21A: Differing and/or unforeseen sub surface conditions*
- *Risk 28: Planning and design project utility relocation*
- *Risk 29: Ineffective interfacing between contract packaging results in inefficient management*
- *Risk 35: Settlement and damage to existing structures*
- *Risk 64A: Excessive cavern over-break*

The PMOC attended the work session held on June 29 and is generally encouraged by the efforts of the SAS team. Refer to Section 6.3 of this report for additional information.

Concerns and Recommendations:

The Risk Manager and Senior SAS Management are enthusiastic and committed to the success of this effort. Enthusiasm and commitment of project staff varies. Additional management effort, as well as some initial “success stories” will be useful in developing momentum and a truly robust, self-sustaining effort.

6.3 Risk Management Status

Status:

A review of the current status of several risks was provided at the June 29 Risk Management Meeting.

- *Risk 15B: Relationship with Utilities. Definition, complete execution and documentation of a consistent design process is considered the key to managing this risk. Several individuals expressed doubt that this risk can be managed. Comment included “.What motivates the utility to play ball with the MTA? It is in the utility’s benefit to withhold approvals, delay the process and extort additional concessions from MTA at the last minute...That’s how the game is played.” The discussion was closed by noting that escalation of issues to the executive management level is expected to become much more common and the key to success is the ability to demonstrate that MTACC has performed all of the required steps.*
- *Risks 21 and 28 involve utility relocations and unforeseen underground conditions. It was noted that both risks essentially deal with the accuracy of as-built information received from the utility company. Based on the results of a robust test pit effort to confirm utility locations and the fact that the design is generally beyond this point, it was agreed that this risk should be closed out.*
- *Risk 64A: Excessive cavern over-break. This risk has been transferred to the contractor via the specifications. The same approach to managing this risk was used on the 7 Line Extension, where there were significant instances of overbreak and no additional costs were incurred by MTACC.*
- *Risk 29: Contract Package Interfaces. Extensive effort has gone into classifying the specific risks by system and construction contract. The primary mode of coordination between multiple parties working on the same system will be the shop drawing review process. Double-handoff schedule milestones will be established for the station contractor to turn an area over to the systems contractor and for the systems contractor to complete its work and return the area to the station contractor in time for final inspection, etc. Related issues that must be addressed in the construction documents include access to work areas, staging areas, safety responsibility, damages to installed work, etc. Substantial work remains to be performed on developing effective tools to manage this risk.*
- *Risk 35: Settlement of Existing Bldgs. Substantial effort has been made to get ahead of this issue and avoid or mitigate these risks. These efforts are discussed in Section 6.4.*

- *Risk 5: Market Conditions and Competition.* MTA’s IEC presented a summary chart of all major civil/structural and rail systems procurements and construction contracts currently programmed by the MTA. This schedule indicates a very significant number of competing projects over the next 2-1/2 years. It was generally agreed that the SAS project team could not change the overall business environment, but that several strategies are available to position SAS projects in the most favorable manner possible. These include:
 - Maintain procurement schedules where they currently appear favorable; adjust procurement dates slightly where necessary to promote the maximum response.
 - Formal and informal outreach efforts to publicize SAS opportunities and represent them in a favorable manner.

Observation:

The risk management process on the SAS Project shows significant promise to be an effective means to mitigate and control cost and schedule growth for the remainder of the project. Lessons previously learned are providing insight into new risks and are being applied to the management and mitigation of known risks.

The PMOC considers these efforts to be an important step in moving toward the implementation of processes included in the ELPEP.

Concerns and Recommendations:

Within the SAS Project, this process is very early in the development process. Some staff skepticism and resistance has been observed. SAS Management needs to provide the direction and guidance to keep the process active until it gains widespread traction and becomes an integral part of the organization.

6.4 Risk Mitigation Actions

Status:

In response to lessons learned on the excavation of the tunnel boring machine launch box and pursuant to a memorandum of understanding with New York City Department of Buildings, MTACC has expanded its survey of existing buildings adjacent to the planned construction sites for SAS stations and ancillary facilities.

- *Existing buildings adjacent to 72nd Street Station have been prioritized in accordance with the construction schedule. Inspection activities by DHA have followed this schedule. Draft inspection reports have been turned over to the Department of Buildings (DOB). Any violations identified by these inspections will be followed-up by DOB. Conditions requiring attention generally appear localized and much less significant than those previously encountered.*
- *Cost allowances for building repairs have been included in the C4B contract to promote rapid and efficient management of repair issues.*
- *An independent engineering consultant has been hired to inspect buildings adjacent to the remaining station construction sites. This work is anticipated to start next period and be completed in October of this year.*

- *Subsequent building repair work is anticipated to be performed by a separate “Indefinite Quantity” Contractor.*

Observation:

MTACC has established a pro-active methodology for managing and mitigating the risk of additional cost and schedule delay resulting from construction damage to adjacent “fragile” buildings.

Concerns and Recommendations:

None at this time.

6.5 Cost and Schedule Contingency

a) Cost Contingency

Status:

The ELPEP requires the MTACC to develop a Cost Contingency Management Plan which will define how the MTACC will forecast required contingency funds, manage and transfer all project cost contingency funds, and how the minimum level of contingency will be maintained. MTACC has agreed to maintain minimum contingency balances defined as:

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

Observation:

MTACC has stated that they anticipate covering higher than anticipated construction cost growth through surplus AFI. In effect, MTACC is expecting construction bids to be less than the sum of the Direct Construction Cost + AFI.

Based upon scope revisions to Contract 4B, MTACC revised the estimated cost of this package (including AFI) to approximately \$448,036,000. The SAS Phase 1 Cost Estimate was updated in May 2010 to reflect this and other estimate adjustments. Based on updated construction estimates contained in this package, the available contingency can be calculated as follows:

Table 6-1 Available Cost Contingency

Category	Value	Notes
Construction Subtotal	\$2,935,000,000	MTACC Cost Report – June 30, 2010
AWO Contingency	\$178,000,000	MTACC Cost Report – June 30, 2010
Exec Reserve	\$160,000,000	MTACC Cost Report – June 30, 2010
Construction Budget	\$3,273,000,000	
Contracts Awarded	-\$696,095,039	
Est. Cost-Contracts to be Awarded	-\$2,059,608,000	Updated Phase 1 Working Estimate Summary (06/29/2010)
Total Contingency	\$517,296,961	
Executed AWOs	\$14,957,790	As of June 31, 2010
Available Contingency	\$502,339,171	

MTACC's calculations indicate a Total Contingency of \$537,621,000. The PMOC believes the \$20M variance is primarily due to MTACC assumed \$18M Value Engineering savings. Due to vacation schedules and staff availability, this cannot be confirmed until mid-July.

Concerns and Recommendations:

The \$502M available contingency significantly exceeds the initial threshold value established by the ELPEP. As such, there is no immediate concern regarding available contingency.

Cost Contingency Management is a key element of the ELPEP. PMOC/MTACC differences in contingency calculation are being reconciled so that the terms and conditions of the ELPEP can be effectively managed as the project progresses. The PMOC will work with the MTACC to complete the reconciliation process in the immediate future.

b) Schedule Contingency

Status:

The MTACC has conformed to the requirements of the ELPEP and has developed a Schedule Management Plan, which includes Schedule Contingency Management Plan. Development of the plan was substantially completed this period. The PMOC has provided final review and conditional acceptance comments to the FTA for review.

The MTACC has modified its method of managing schedule contingency. Previously, MTACC embedded "hand-off" activities throughout the schedule, a method which reportedly allocated schedule contingency to the various construction packages. Effective this period, MTACC has reduced the duration of all hand-off activities to "zero". Schedule Contingency is the difference between the calculated Revenue Service Date and either December 31, 2016 (MTA) or February 28, 2018 (PMOC/FTA).

Observations:

Based on the forecast Revenue Service Date of February 2018 for the SAS project, the MTACC has agreed to maintain a minimum level of schedule contingency of 240 days through Q3 2016 at which time the schedule contingency minimums will be updated as mutually agreed. Failure to meet this requirement will trigger the requirement for a recovery plan.

Tracking the available schedule contingency will be accomplished via the accompanying data set, using either a tabular or graphic presentation.

Table 6-2 Schedule Contingency

IPS Update #	45	46	47	48	49	50
Data Date	04/01/10	04/30/10	06/01/10			
Contingency (CD)						
RSD=12/31/2016	115*	165	165			
RSD=02/28/2018	539	589	589			

*Estimated by PMOC based on schedule Update #45, provided by MTACC

Concerns and Recommendations:

The reliability of the IPS is a key concern. The development of the IPS will not be complete until late 2013, at which time the actual schedule for the final construction package will be

incorporated. Until that time, schedule “estimates” prepared by MTACC will represent these packages. The care and diligence with which these schedules are prepared and integrated with the other SAS packages is a very important element in development of a reliable IPS.

7.0 LIST OF ISSUES AND RECOMMENDATIONS

Priority in Criticality column

1 – Critical

2 – Near Critical

Number with Date Initiated	Section	Issue/Recommendation	Criticality
SAS-07-Jan10	2.1.2 Procurement	<p>The PMOC is concerned about the utilization of the IFB process for Contract 4B because of its estimated value. The scope of the contract might limit the number of responsive and responsible bidders, which would extend the procurement process. This contract is on the near critical path and any slippage could have a major impact on the project.</p> <p><u>PMOC Recommendation:</u> The PMOC recommends that the MTACC develop a contingency plan if an insufficient number of responsive and responsible bids are received.</p> <p><i><u>Update:</u> An adequate number of bids were received (June 10, 2010) that were within the budget established for this package. This issue will be closed.</i></p>	2
SAS-08-Jan10	2.2 Third Party Agreements	<p>The PMOC is concerned that in several cases agreed upon design and scope of work has been revised when later reviewed by other personnel within the agencies.</p> <p><u>PMOC Recommendation:</u> <i>The PMOC recommends that MTA consider utilizing utility agreements on future projects to preclude problems of this nature.</i></p>	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
SAS-09-Jan10	3.1 PMP	<p>The PMP and its sub-plans must be updated to reflect the new management processes and strategies of the ELPEP.</p> <p><u>PMOC Recommendation:</u> <i>Update the PMP and its sub-plans within the timeframes established in the ELPEP.</i></p> <p><u>Update:</u> <i>PMOC has recommended this as a Candidate Revision to the SAS PMP.</i></p>	2
SAS-10-Jan10	3.2 PMP Sub-Plans	<p>MTA is required to develop and finalize a Cost and Schedule Management Plan, and a Cost and Schedule Contingency Management Plan for the SAS in conformance with ELPEP requirements within 60 days of January 15, 2010. The PMOC is concerned that the 60-day requirement may not be met.</p> <p><u>PMOC Recommendation:</u> PMOC recommends the continuation of the workshops.</p> <p><u>Update:</u> <i>As of this report, adequate progress still has not been made on the Cost Management Plan. PMOC recommends MTACC develop and adhere to an accelerated plan to prepare and implement this plan.</i></p>	2
SAS-11-Jan10	3.3 Procedures	<p>The PMOC is concerned whether the new procedures will actually be utilized by the different operating agencies within the MTA, given that NYCT will implement SAS, and the procedures of the SAS PMP reflect the NYCT quality management system.</p> <p><u>PMOC Recommendation:</u> <i>The PMOC recommends that the MTACC develop a process to assure itself that all of these procedures are in use on all of its projects. An example of such a process would be a new procedure distribution system that would require the recipients (the individual Project Managers) to acknowledge receipt of each new procedure as it is released for implementation. This system could be monitored by the parent MTACC to</i></p>	2

Number with Date Initiated	Section	Issue/Recommendation	Criticality
		<i>assure implementation across all its organizations and provide it with the opportunity to correct any non-conformances as they develop.</i>	
SAS-12- Jan10	4.2 Critical Path Activities	<p>The MTACC should investigate the detailed relationships between construction contracts to determine a precise amount of hand-off time. The strategy for the late performance of construction is to consume hand-off duration downstream. Significant amounts of hand-off could be consumed because of the late performance of Contract 1. The hand-off time is contingency time and should only be consumed in prescribed fashion.</p> <p><u>PMOC Recommendation:</u> <i>PMOC recommends a detailed review of the intended process and subsequent update of the IPS.</i></p> <p><i>Update:</i> <i>Duration of “handoff activities” has been reduced to “zero”, effectively closing this issue.</i></p>	1
SAS-13- Jan10	4.2 Schedule Performance Analysis	<p><i>There is a contractual milestone for the turnover of work from Contract 1 to the 86th Street mining Contract 5B. This relationship is likely to be critical or near critical. Currently, delays in achieving this milestone are of no consequence to Contract 1. Significant logic and activity durations changes are being implemented to Contract 1 as a result of ongoing delay in mitigation efforts.</i></p> <p><u>PMOC Recommendation:</u> <i>PMOC will revisit this issue after these changes are implemented and assess potential causes of action.</i></p> <p><i>Update:</i> <i>The latest IPS indicated 84 WD of float for this handoff. This interface will be monitored closely as TBM mining progresses.</i></p>	1

8.0 GRANTEE ACTIONS FROM QUARTERLY AND MONTHLY MEETINGS

Priority in Criticality column

1 – Critical

2 – Near Critical

Number with Date Initiated	Section	Grantee Actions	Criticality
SAS-A17- Aug08	2.4 Vehicles	<p>The PMOC requested additional information regarding certain statements in the draft Rail Fleet Management Plan:</p> <ul style="list-style-type: none"> ▪ NYCT should provide a test plan for increasing the period between inspections of the new technology fleet. ▪ NYCT should explain why, in light of the ongoing state of good repair fleet replacement program, the cars financed under the SAS project are no longer needed. ▪ MTA should explain why they are considering removing the vehicles from the project scope without reducing the project funding. 	2
SAS-A18- Aug08	ELPEP Updates	The change in the Contingency Drawdown Curve, particularly the latent contingency, needs to be clarified.	2
SAS-A19- Feb10	6.5 Cost and Schedule Contingency	<p>MTACC has developed a Risk Management Program through various workshops and mutual cooperation. The PMOC has documented the efforts of the Risk Assessment Team in various draft Spot Reports. The MTACC and FTA have identified and documented the risk mitigation initiatives in a scoping document for incorporation into the PMP.</p> <p>PMOC had expressed concern that the amount of available contingency may be insufficient to support the required contingency determined under the risk process.</p>	2

APPENDIX A -- LIST OF ACRONYMS

AFI	Allowance for Indeterminates
ARRA	American Recovery and Reinvestment Act
AWO	Additional Work Order
<i>BCE</i>	<i>Baseline Cost Estimate</i>
<i>BFMP</i>	<i>Bus Fleet Management Plan</i>
CCM	Consultant Construction Manager
<i>CD</i>	<i>Calendar Day</i>
<i>CMAQ</i>	<i>Congestion Mitigation and Air Quality</i>
CPM	Critical Path Method
CPRB	Capital Program Review Board
DHA	DMJM+Harris and ARUP
DOB	New York City Department of Buildings
<i>EAC</i>	<i>Estimate at Completion</i>
<i>ELPEP</i>	<i>Enterprise Level Project Execution Plan</i>
FD	Final Design
FEIS	Final Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
HLRP	Housing of Last Resort Plan
IEC	Independent Engineering Consultant
<i>IFP</i>	<i>Invitation for Proposal</i>
<i>IPS</i>	<i>Integrated Project Schedule</i>
MEP	Mechanical, Electrical, Plumbing
MTA	Metropolitan Transportation Authority
MTACC	Metropolitan Transportation Authority – Capital Construction
N/A	Not Applicable
NTP	Notice to Proceed
NYCDEP	New York City Department of Environmental Protection
NYCT	New York City Transit
PE	Preliminary Engineering
PMOC	Project Management Oversight Contractor (Urban Engineers)
PMP	Project Management Plan
PQM	Project Quality Manual
RAMP	Real Estate Acquisition Management Plan
<i>RFMP</i>	<i>Rail Fleet Management Plan</i>
<i>RFP</i>	<i>Request for Proposal</i>
<i>ROD</i>	<i>Record of Decision</i>
ROD	Revenue Operations Date
<i>RSD</i>	<i>Revenue Service Date</i>
S3	Skanska, Schiavone and Shea
SAS	Second Avenue Subway
SCC	Standard Cost Categories

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

APPENDIX B-- PROJECT OVERVIEW AND MAP
(Project Map sent separately)

Date: June 30, 2010

Project Name: Second Avenue Subway

Grantee: Metropolitan Transportation Authority

FTA Regional Contact: Mr. Hans Point du Jour

FTA Headquarters Contact: Mr. Dale Wegner

Scope

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

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

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

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

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

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

Schedule

12/20/01	Approval Entry to PE	06/12	Estimated Rev Ops at Entry to PE
04/18/06	Approval Entry to FD	03/14	Estimated Rev Ops at Entry to FD
11/19/07	FFGA Signed	06/30/14	Estimated Rev Ops at FFGA
12/30/16	Revenue Operations Date at date of this report (MTA schedule)		

10.88%	<i>Percent Complete Construction at June 30, 2010</i>
33.3%	<i>Percent Complete Time based on Rev Ops Date of December 30, 2016</i>

Cost (\$)

3,839 M	Total Project Cost (\$YOE) at Approval Entry to PE (w/o Financing Costs)
3,880 M	Total Project Cost (\$YOE) at Approval Entry to FD (w/o Financing Costs)
4,866 M	Total Project Cost (\$YOE) at FFGA signed (w/ \$816 M Financing Costs)
4,673 M	Total Project Cost (\$YOE) at Revenue Operations (w/o Financing Costs)
5,489 M	Total Project Cost (\$YOE) at date of this report including \$ 816 M in Finance Charges
996M	<i>Amount of Expenditures at date of this report from Total Project Budget of \$4,673M</i>
22.38	<i>Percent Complete based on Expenditures at date of this report</i>
*	Total Project Contingency remaining (allocated and unallocated contingency)

* Being revisited as a result of the Enterprise Level Project Execution Plan

APPENDIX C – LESSONS LEARNED

Lessons Learned Table for 2nd Quarter 2010

#	Date	Phase	Category	Subject	Lessons Learned
1	Oct-09	Construction	Schedule	Delays to excavation caused by adjacent Fragile Buildings	The PMOC recommended and MTACC adopted a plan to review the stability of all of the buildings affected by the Second Avenue Subway project. MTACC instructed their Designer to review all the buildings along the project. Furthermore, they have the designer developing shoring plans for the fragile buildings and including this work in the future contracts. In this way the stabilization work cannot delay the contracts as it is part of the contract.
2	Nov-09	Construction	Schedule	3 rd Party Utilities changed the size of an electric volt after construction began.	The PMOC recommended that MTACC get the utility companies to agree that once they have approved the plans, they cannot make major changes after award. MTACC's SAS Project Executive is meeting with the utilities to work out this problem.
	March 10	Construction		No new lessons learned this period.	
	June 10	Construction		<i>No new lessons learned this period.</i>	

APPENDIX D – PMOC STATUS REPORT

(This is a separate attachment covering both East Side Access and Second Avenue Subway projects)

APPENDIX E – SAFETY AND SECURITY CHECKLIST

Project Overview			
Project mode (Rail, Bus, BRT, Multimode)	Rail		
Project phase (Preliminary Engineering, Design, Construction, or Start-up)	Design and Construction		
Project Delivery Method (Design/Build, Design/Build/Operate/Maintain, CMGC, etc.)	Design/Bid/Build		
Project Plans	Version	Review by FTA	Status
Safety and Security Management Plan	7041.01.007308-0	11/15/07	Approved by FTA
Safety and Security Certification Plan			<i>Certification by New York State Public Transportation Safety Board (NYSPTSB)</i>
System Safety Program Plan			
System Security Plan or Security and Emergency Preparedness Plan (SEPP)			
Construction Safety and Security Plan		N	Each construction contractor is assigned the responsibility for developing a Construction Safety and Security Program Plan, as defined in the Contract Documents.
Safety and Security Authority			
Is the grantee subject to 49 CFR Part 659 state safety oversight requirements?	Y		
Has the state designated an oversight agency as per Part 659.9?	Y		NYSPTSB
Has the oversight agency reviewed and approved the grantee’s SSPP as per Part 659.17?	Y		<i>The NYSPTSB has initiated the biennial recertification process. Recertification is expected to be completed in September 2010.</i>
Has the oversight agency reviewed and approved the grantee’s Security Plan or SEPP as per Part 659.21?			

Project Overview		
Did the oversight agency participate in the last Quarterly Program Review Meeting?	N	
Has the grantee submitted its safety certification plan to the oversight agency?	N	
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	Y	
SSMP Monitoring	Y/N	Notes/Status
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	
Grantee reviews the SSMP and related project plans to determine if updates are necessary?	Y	
Does the grantee implement a process through which the Designated Function (DF) for Safety and DF for Security are integrated into the overall project management team? Please specify.	Y	
Does the grantee maintain a regularly scheduled report on the status of safety and security activities?	Y	Activity included in the monthly and quarterly reports from the grantee.
Has the grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y	Responsibilities during the design and construction phases identified
Does the grantee update the safety and security responsibility matrix/organizational chart as necessary?	Y	
Has the grantee allocated sufficient resources to oversee or carry out safety and security activities?	Y	
Has the grantee developed hazard and vulnerability analysis techniques, including specific types of analysis to be performed during different project phases?	Y	Included in Appendix F of the SSMP
Does the grantee implement regularly scheduled meetings to track to resolution any identified hazards and/or vulnerabilities?	Y	Frequency to be increased

Project Overview		
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Three active construction contracts being daily monitored by the CCM with oversight being performed by the grantee.
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	Y	Hazard and Vulnerability Analysis
Has the grantee ensured the development of safety design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured the development of security design criteria?	Y	Included in SAS project Design Criteria Manual
Has the grantee ensured conformance with safety and security requirements in design?	Y	Ongoing part of design review process
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	Y	
Has the grantee verified construction specification conformance?	Y	Reference Section D3.4 Construction Criteria Conformance of the SSMP
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	Y	Reference Section D3.2 Certification Items List of SSMP
Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	NA	Project is currently in the Design/Construction Phase
Does the grantee evaluated change orders, design waivers, or test variances for potential hazards and /or vulnerabilities?	Y	Part of formal configuration control process
Has the grantee ensured the performance of safety and security analyses for proposed work-arounds?	NA	
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: Activation Plan and Procedures Integrated Test Plan and Procedures Operations and Maintenance Plan Emergency Operations Plan	Y	
Has the grantee issued final safety and security certification?	N	To be covered as part of the testing in Contract 6

Project Overview		
Has the grantee issued the final safety and security verification report?	N	To be covered as part of the testing in Contract 6
Construction Safety		
Does the grantee have a documented/implemented Contractor Safety Program with which it expects contractors to comply?	Y	
Does the grantee's contractor(s) have a documented companywide safety and security program plan?	Y	
Does the grantee's contractor(s) have a site-specific safety and security program plan?	Y	Reference sections 011150 Safety Requirements and 011160 Security Requirements of the Contract Terms and Conditions
Provide the grantee's OSHA statistics compared to the national average for the same type of work?	<i>OSHA Recordable and Lost Time accident rates are 1.98 and 1.32 respectively.</i> OSHA Lost Time Rate is 1.03	<i>National Average 4.2 and 2.2 respectively</i>
If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?	NA	
Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?	Y	
Federal Railroad Administration		
If shared track: has grantee submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested)	NA	
If shared corridor: has grantee specified specific measures to address shared corridor safety concerns?	NA	
Is the Collision Hazard Analysis underway?	NA	
Other FRA required Hazard Analysis – Fencing, etc.?	NA	
Does the project have Quiet Zones?	NA	
Does FRA attend the Quarterly Review Meetings?	NA	

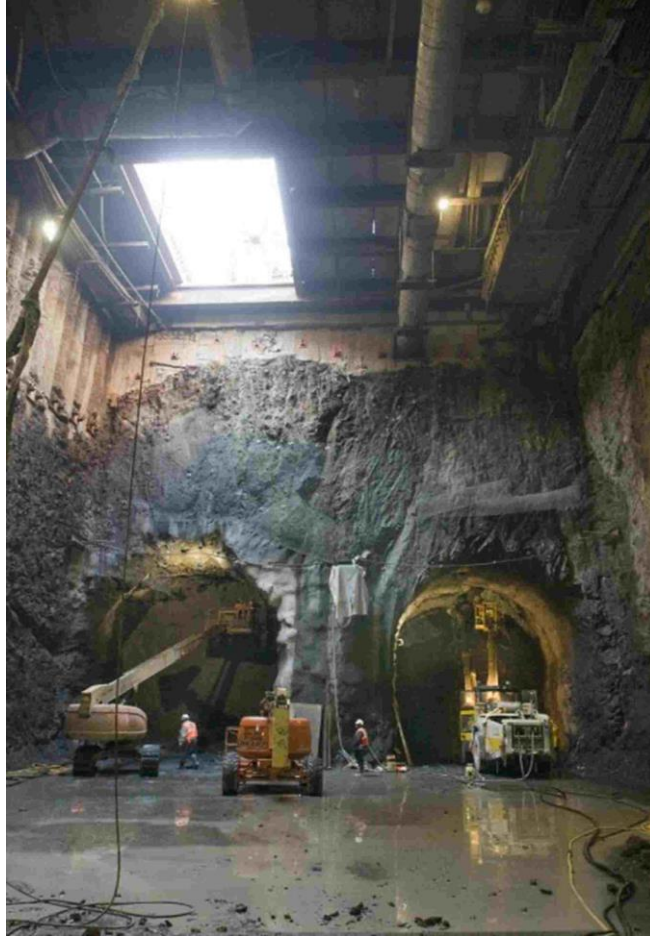
APPENDIX F – ON-SITE PICTURES



This photo shows the tunnel boring machine launch box underneath Second Avenue between 91st and 95th Streets. At rear of photo are the tunnel boring machine starter tunnels.



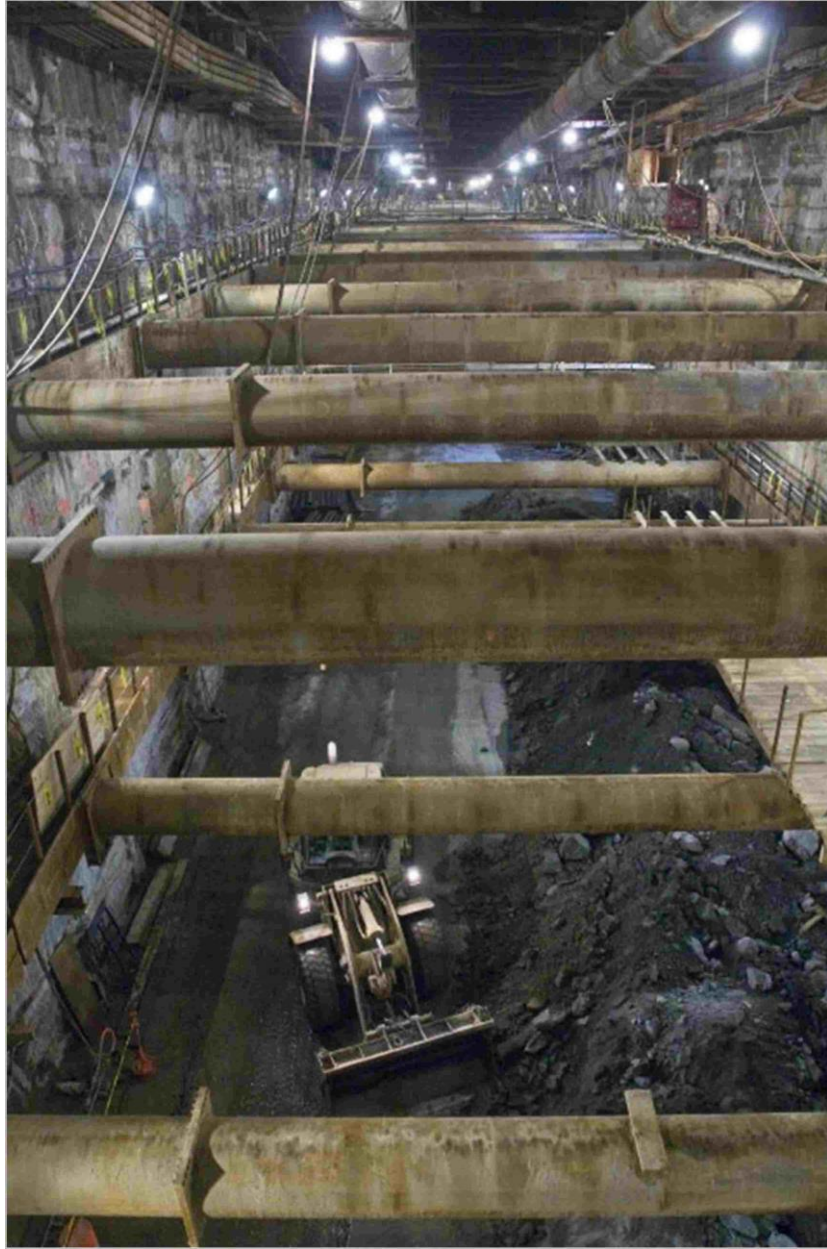
This photo shows the tunnel boring machine launch box underneath Second Avenue between 91st and 95th Streets.



General view of excavation of Starter Tunnel (looking south)



94th-95th St: Continued construction of muck bin observation deck at Tier 3 bracing level



This photo shows the lateral bracing across Second Avenue. On the right additional rock has to be removed

APPENDIX G – READINESS TO BID CONSTRUCTION WORK (OP53)

The PMOC's implementation of the OP53 reviews during June, 2010 included the following actions:

- *Scheduled and conducted two internal progress meetings per week and prepared and issued meeting minutes.*
- *Received and proceeded with review of the FTA Contract C1 ARC project chronology for guidance on OP53 review of MTA projects;*
- *Distributed package-level design documents directly, through internal server access, and through an FTP server to OP53 Review Team;*
- *Developed a presentation on the Traceability relationship between OP53 and ELPEP for a conference call session with FTA scheduled for June 24, 2010 which was canceled. Presentation and updates were issued to FTA;*
- *Preparation of OP53 Risk Mitigation Presentation Relationship of ELPEP and OP53 for July 1, 2010 Meeting with FTA/MTA.*
- *Assembled and distributed additional guidance documents for OP53 review team;*
- *Solicited from MTACC additional staff rights for direct access to Electronic Data Management System (EDMS). PMOC staff used remote access.*
- *The OP53 review of the 4B package continued with the research of needed documents in the EDMS system, and assembly of available documents for chronology development.*
- *Preparation of Contract 4B Chronology from monthly reports and other information continued.*