PMOC MONTHLY REPORT

Second Avenue Subway Phase 1 (MTACC-SAS) Project

Metropolitan Transportation Authority New York, New York

October 1 to October 31, 2011



PMOC Contract No. DTFT60-09-D-00007

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

Urban Engineers of New York, P.C., 2 Penn Plaza, Suite 1103, New York, New York 10121 PMOC Lead, Charles A. Halboth, PE, 212-736-9100; cahalboth@urbanengineers.com Length of time on project: Two years on project for Urban Engineers

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THIRD PARTY DISCLAIMER

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

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

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

REPORT FORMAT AND FOCUS

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

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

MONITORING REPORT

1.0 PROJECT STATUS

a. Design

MTACC has reported the final design phase of the SAS Project as 100% complete in late November 2010. Follow-up design-related activities are limited to updating station finish packages with "as-built" data from prior construction packages, construction and bid phase technical support. These functions are generally proceeding in accordance with the IPS, Current Working Budget (CWB) and applicable management plans.

b. Procurement

Updates to Construction Procurement, which occurred during October 2011 include:



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Comment [hp1]: Redact FOIA Exemption 5 USC § 552(b)(4)

Future Procurements: Remaining construction procurements include C26011 (C4C)
 72rd Street Station Finishes & MEP and C26012 (C5C) 86th Street Station Finishes & MEP.

Comment [hp2]: Redact FOIA Exemption 5 USC § 552(b)(4)

Comment [hp3]: Redact FOIA Exemption 5

c. Construction

As of October 31, 2011, there are six (6) active construction contracts on the SAS project. Significant construction progress through October 31, 2011 includes:

- Contract C-26002(C1) –TBM tunnels from 92nd Street to 63rd Street
 - o East Tunnel Operations
 - Removal of the utilities and cleaning of the invert from 63rd St. to 78th St. is ongoing.
 - > Drilling and blasting to create the pump room was started.
 - o West Tunnel Operations
 - Surface preparation was completed and waterproofing of the arch was started from 72nd St. to 78th St.
 - > Concrete invert pour in the west tunnel was completed.
 - Disassembly and removal of TBM and vertical conveyor system was initiated and is expected to be completed by the end of November 2011.

It is the PMOC's opinion that good coordination is taking place between the C1 and C4B contractors. A good example of this is contractor C4B allowing contractor C1 to utilize the 72nd St. shaft to remove the muck created by drilling and blasting of the pump room. Ongoing cooperation will aid in schedule recovery.

 Contract C-26005 (C2A) 96th Street Station Heavy Civil, Structural and Utility Relocation

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- Slurry wall installation on the west side of 2nd Ave. is ongoing with 40 of the 51 panels installed. All panels are scheduled to be installed by 11/18/11.
- North gas main crossing to facilitate slurry wall construction at 96th St. and 2nd Ave. is ongoing.
- Grade beam and structural slab pour at 1802 2nd Ave. completed.
- o Jet grouting at Ancillary 2 is ongoing.
- Utility relocation work (breakout and support of Con Ed./ECS ducts, 42" sewer line and 12" water line) is ongoing.

The PMOC observes willingness on the part of the contractor to perform additional work prior to the formal negotiation of the AWO in order to advance the overall project schedule.

Contract C-26006 (C3) 63rd Street Station Upgrade

- The focus continues to be on the plaza at 63rd St. and 3rd Ave. and preparation for the upcoming structural steel work. The MPT will continually be adjusted to reflect the ongoing work and the CM office is working on getting approval from NYDOT for 2 weekend shutdowns of 63rd St. traffic.
- o DMP (Deformation Monitoring Point) monitoring is ongoing.
- o Began whaler installation at the Entrance 2 roof opening.
- o Began installation of Gantry Crane runway beams.
- Lead abatement continued and primer application continued in Area 5 and the upper invert beams.
- Continued with crack repair at the upper platform. Demolition work continues on the upper and lower platforms.
- o Conducted a rebar training session on October 17, 2011.
- o MTACC conducted a Quality Audit on October 13, 2011.
- Work trains come to the site weekly to load out demolition debris at alternating platforms.
- Demolition on the inactive track side (2nd Ave. train) is ongoing for both upper and lower platforms. Active track area ("F" train) demolition takes place during General Orders (GOs).
- GO coordination with NYCT continued successfully through October. The October GOs will be the last in 2011.

The PMOC observes that the structural steel erection in Area 5 is currently the most critical activity. Timely submittal, review and approval of shop drawings and adherence to the fabrication schedule at the Ohio fabrication plant are crucial to maintaining the steel erection schedule.

Contract C-26007 (C4B) 72nd Street Station Mining and Lining

- Main Station Cavern between 69th and 72nd St. Center drift excavation is complete. West slash is complete. East slash excavation is ongoing.
- North Crossover West slash excavation is ongoing.
- G3/S1 Cavern II and I excavation between 65th and 66th St. on West side of 2nd Ave. – Cavern I is complete. Cavern II is complete. G4/S2 Cavern II excavation between 66th and 67th St on East side of 2nd Ave. - Cross
- Passage has been excavated.
- Horseshoe Tunnel Excavation between 65th and 64th Street on West side of 2nd Ave.
- Ancillary II Service/Egress/Vent Tunnels Excavation between 72rd and 73rd St, is complete.
- Total rock excavated approximately 60,334 BCY (35.4 % of project)
- Mapping, shotcrete, and rock bolt installation are ongoing.
- Ancillary 1 and 2 (69th and 72nd St.) Demolition Lead abatement is complete. Demolition was on hold with work to resume on 11/4/11.
- Building remediation ongoing (239 E. 73rd St., 242 E. 71st St, 1343 2nd Ave, 259 E. 71st St, 1390 ½ 2nd Ave, 1405 2nd Ave, 220 E. 65th St, 241 E. 73rd St, and 257 E. 71st

In the PMOC's opinion, operation of both enclosures is critical in meeting excavation production rates and schedule completion and the "no blasting" restriction after 7:00 pm has not impacted the schedule.

Contract C-26013 (C5A) 86th Street Station Excavation, Utility Relocation and Road

The work is nearing substantial completion with the Contractor reporting achieving Milestone #1 on October 17, 2011. At the South Shaft, the Contractor has completed all work and is in the process of finalizing some minor AWO work including tie-in of the 12 inch gas main adjacent to the South Shaft. As a result of late completion of utility work by Con Ed., tumover originally set for late October 2011 has slipped into November 2011.

- Contract C-26008 (C5B) 86th Street Station Cavern & Heavy Civil
 - o Coordination meetings between the C5A (C-26013) and the C5B (C-26008) contractors continued into October 2011. The first C5B Job Progress Meeting was held on October 18, 2011.
 - During October the contractor continued to mobilize as the C5A contractor continued to demobilize and turnover sections of the site to the C5B Contractor.
 - Continued with installation of MPT along 2nd Ave. and barricades on 86th St.
 - The contractor began preparations to take over the site and set up barriers at Ancillary #1.
 - Preparation began for demolition of the Gotham Building.
 - Installation of basement, ground and façade instrumentation began.

- Began removing curbs & pavement on 86th St.
- Relocation of hydrants, water and gas curb boxes and installation of temporary street lighting began.

The coordination meetings between the C5A and C5B contractors proved to be an effective vehicle for smooth transition of site permits and overlapping activities of the C5A contractor's step down operations and the C5B contractor's ramping up operations.

d. Quality Assurance and Quality Control (QA/QC)

Ongoing Quality Oversight Audits performed by MTACC continue to verify that the construction contractors are implementing its Quality Management System as specified in the General Requirements (Section 01 43 00). The contractors' overall ratings remain acceptable. Contractors Quality Work Plans, Test and Inspection Plans, control of non-conforming hardware, action item closure, supplier auditing systems, and preparatory phase meetings were monitored.

2.0 SCHEDULE DATA

Integrated Project Schedule (IPS) Update #63 was received on November 7, 2011 and is based on a Data Date of October 01, 2011. Update #63 contained a narrative report, a schedule variance report, a schedule revision log and "PDF" versions of several schedule reports. Project schedule completion milestone dates remained essentially unchanged for this period.



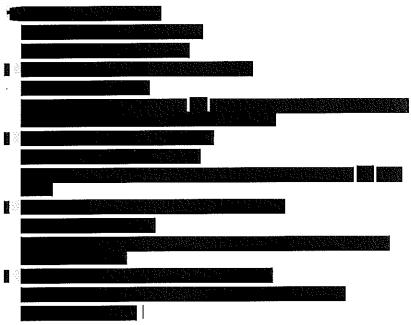
Project Critical Path: The project critical path is unchanged from the September 2011 Monthly Report. As a result of procurement delays for Contract C5B "86th Station Mining & Lining," the critical path begins at completion of the procurement process based on a MTACC actual Notice of Award (NOA) date of August 4, 2011. It then travels directly into excavation from the South Shaft upon release of the contractual Access Restraint (NOA+10 MO or June 5, 2012) for blasting. It then continues through completion of C5B North and South Cavern mining and concrete operations for both locations at the 86th Street Station (C5B Milestone No. 1 and S/C). Upon achieving MS #1 in early March 2014, the critical path shifts to start and completion of Contract C5C mezzanine and platform concrete work, followed by the start of concrete work in early September 2014, then shifting to 1st and 2nd fix work in 86th St Station south Ancillary (No. 1), where it is handed over to C6 in April 2015. The critical path continues into C6 Systems Signal and Traction Power work for the next six (6) months within the 86th Street Station, followed by Integrated Testing of the Traction Power system beginning in mid-December 2015. Upon completion, this area is handed over for Pre-Revenue Operations Testing beginning in late June 2016 and is forecast to complete on 25-Oct-16. The RSD remains as 30-Dec-16.

Comment [hp4]: Redact FOIA Exemption 5 USC § 552(b)(4)

Comment [hp5]: Redact FOIA Exemption S USC § 552(b)(4) Secondary Paths: Construction involving the 86th Street Station (C5B -> C5C -> C6) occupies all secondary float paths between +1 and +62 CD. Major secondary float paths of significance to the overall status of the project include the following:

- +59 WD: Completion of "cost to cure" construction at Tony DiNapoli's is forecast to be complete by November 1, 2011 to allow access and start of C5B construction at Entrance No. 1.
- +63 WD: Start of signal system installation in the tunnels between the 72nd Street Station and the 63rd Street Station. This work is not scheduled to start until July 2014 and is dependent on the progress of C4B construction; however, it is the first construction activity identified by the IPS for the C6 Contractor.
- +64 WD: Completion of Con Edison cable installation and general cleanup of the C5A construction areas. Complete turnover to C5B was originally forecast for mid-October 2011. Due to utility delays, this has been revised to November 2011.
- +74 WD: This path extends through the construction of the 96th Street Station (C2A -> C2B -> C6) starting with support of excavation, structural concrete, handoff to C2B, architectural construction, systems installation and testing. This path is initiated by Act. #A117 (Temporary SOE Wall/Secant Pile Installation at Ancillary #1). This work has not started due to the mitigation work being performed at 1802 Second Ave. The mitigation work was delayed due to access issues; however, the work is now underway and the start of Act. #A117 is forecast for late October 2011.
- +76 WD: Completion of the west tunnel concrete liner from 72nd Street to the 96th Street Launch Box is work controlling the completion of Contract C1.
- +87 WD: Installation of Traction Power Substation and start of traction power installation at 96th Street Station: This appears to be a critical schedule interface. The schedule contains adequate time for C6 substation procurement; however, C2A must construct spaces and provide access for C6 within 16 months of starting work.
- +90 WD: Award of C6 Contract and preconstruction submittals: This path is initiated and constrained by the MTA Board Meeting of December 21, 2011, where formal approval of this contract is anticipated. Technical selection and negotiation tasks are on a path with +102 CD of float. The technical selection process can slip by as much as 12 additional days and not affect the contract award. However, if the contract cannot be approved at the December MTA Board meeting, contract award will be delayed by approximately one month, which will begin to impact the downstream schedule of some C6 construction activities.
- +138 WD: Cost-to-cure construction at Chase Bank: Completion of this construction a delivery of this site for Ancillary #2 construction by June 1, 2012 is forecast.

ELPEP/SMP Compliance: In the opinion of the PMOC, SAS Phase 1 is in compliance with the metrics, deliverables and beneficial outcomes as expressed in the Enterprise Level Project Execution Plan (ELPEP), dated January 15, 2010 and as further described by the Schedule Management Plan (SMP). Specifically:



Note: IPS Update #63 identifies 67 CD of float measured against the MTACC RSD of December 30, 2016. Secondary mitigation should result in approximately 125 CD of schedule float when measured against the MTACC RSD of December 30, 2016. Transfer of mezzanine and platform construction into Heavy Civil Contracts for 72rd, 86th, and 96th Street Stations may provide additional secondary schedule mitigation opportunities.

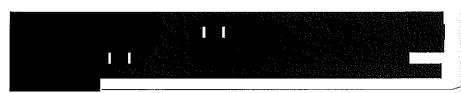
In addition to the metrics above, the MTACC is using the IPS to actively plan, organize, direct and control individual packages and the overall project, and to provide reliable forecasts of the SAS revenue service date (RSD) and other major accomplishments.



The PMOC expects the C5B construction schedule to be incorporated into the IPS in late 2011. This approved construction baseline will supersede the preconstruction schedule currently in the IPS and replace the access milestones that have been rendered obsolete by the delay in C5B award and the better-than-anticipated TBM mining progress. This enhancement of the IPS is expected to have a significant impact on critical path evaluation and schedule contingency.

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3.0 COST DATA

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A summary of the completion status of the active construction contracts as of October 31, 2011, based upon cost incurred through that date, is as follows:

- C26002 (Tunnel Boring) 91.2%
- C26005 (96th Street Station) 47.9%
- C26013 (86th Street Station Sitework) 85.8%
- C26008 (86th Street Station Heavy Civil) 2.2%
- C26006 (63rd Street Station) 6.2%
- C26007 (72nd Street Station) 22.2%

Aggregate Construction % Completion:

- 59.4% of all construction work is under contract.
- 40.6% of construction of active contracts is complete.
- 23.6% of all construction is complete.

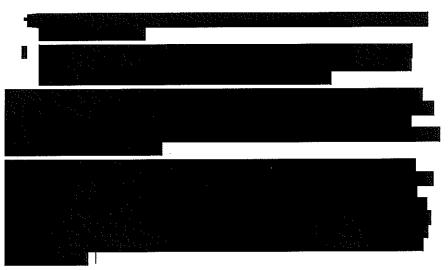
Based upon cost data received from MTACC for October 2011:



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<u>Cost Contingency</u>: During October 2011, no significant changes in the SAS construction program have occurred that materially affected the forecast cost contingency baseline against which the current contingency balance is measured. Changes this period were limited to routine incorporation of AWOs into the individual project and overall program reporting systems.

The PMOC has updated its contingency drawdown and utilization model to reflect these changes. Available contingency is calculated using the forecast "AWO Exposure".



4.0 RISK MANAGEMENT

On October 26, 2011, MTACC issued a draft of the SAS Risk Management Plan (RMP) dated 10/14/11 for FTA Region II review. The plan was developed to identify key risks and respective mitigation plans, prioritize and define treatment actions, and estimate the effect of those risks that are accepted and retained and assist in developing the Project's contingency budget. Risk Analysis Meetings are ongoing with update of the Risk Register as needed.

Mitigation Capacity: The risk of schedule slippage and delay to the RSD has been effectively managed by the project team to date

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Retained risks continue to be reviewed on a monthly basis. These reviews have contributed to development and implementation of specific mitigation strategies. In the PMOC's opinion, the SAS Project Team is actively working to avoid and contain the effect of retained risks and controlling the overall growth of the total project cost.

5.0 ELPEP

ELPEP meetings were held on October 6, 2011 and October 18, 2011. The current status of each of the main ELPEP components is summarized as follows:

- Technical Capacity and Capability (TCC) The TCC for SAS Phase 1 was submitted on 3/11/10 and approved by the FTA on 4/6/10. The PMOC completed its initial review of the Revision 8 submission of the draft SAS PMP (dated January 2011). The PMOC has transmitted the results of its review to the FTA. Currently, select follow-up and audit actions are underway to complete the final element of the "Candidate Revision → PMP Revision → Implementation and Resolution" framework suggested by the FTA.
- Schedule Management Plan (SMP) The PMOC has verified SAS substantial
 compliance with the SMP since August 2010. The process of transferring the compliance
 verification process to the MTA is discussed below.
- Cost Management Plan (CMP) FTA conditional approval of the Cost Management Plan, including five (5) Candidate Revisions was provided on September 1, 2011. Implementation of those five Candidate Revisions will result in final FTA approval of the plan. During October 2011, the MTA made significant progress on in resolving these items. Completion of this effort and final approval of the CMP is anticipated during November 2011.
- Risk Mitigation Capacity Plan (RMCP) PMOC final edits and comments on the RMCP were provided to the MTA at the October 6, 2011 meeting. Resolution of these comments combined with a review of the ESA and SAS Project Risk Management Plans are required for approval. Drafts of the ESA and SAS Risk Management Plans were transmitted to FTA Region II during October 2011.
- Conformance Demonstration- A "white paper" has been developed by MTACC to describe its philosophy and general conformance reporting methodology. This document focuses on the measureable metrics (contingency balances, schedule float, etc.) identified in the ELPEP. Further development of reporting methodology and incorporation of other "beneficial outcomes" included in the ELPEP has been discussed. A workshop session in November 2011 is anticipated to resolve these open issues.

6.0 SAFETY AND SECURITY



7.0 ISSUES AND RECOMMENDATIONS

<u>Cost Management Plan</u>: MTACC Procedure AD.13, Financial Reporting, has been released by the MTA and incorporated in the most recent submission of the CMP. The SAS Project Team should supplement its current financial reporting in accordance with this procedure as part of its overall compliance with the ELPEP/CMP.

Conformance Demonstration: MTACC received preliminary comments on its ELPEP compliance "white paper" on October 18, 2011. A workshop will be held in November 2011 to resolve reporting methodology and incorporation of other beneficial outcomes as noted in the ELPEP. The PMOC recommends that development of formal implementation verification and reporting process for each of these ELPEP elements should be given high priority. This effort will be reviewed at the September ELPEP meeting.

<u>Local Funding</u>: Availability of local funding is a major concern to the timely and cost-efficient completion of Phase 1 of the SAS. Current funding supports the award of Contract C6. Without resolution of New York State funding of its commitments to the 2012-2014 MTA Capital Plan, funding shortfalls may delay the award of one or more of the station finish packages (C2B, C4C, and C5C).



<u>Contract C5B:</u> MTACC forecasts a significant schedule recovery when the C5B construction schedule is incorporated into the IPS. The PMOC recommends this effort be expedited to the extent possible. The value of the IPS is limited until these changes are fully incorporated.



<u>Procurement Process</u>: The PMOC recommended that the standard sequencing and durations established by NYCT for Issue for Bid (IFB) and negotiated procurements should be reviewed based on recent "mega-project" experiences and updated appropriately. The PMOC's recommendations were incorporated into IPC Update #63. The procurement/award of contract

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Comment [hp13]: Redact FOIA Exemption 5 USC § 552(b)(4)

Comment [hp14]: Redact FOIA Exemption 5 USC § 552(b)(4)

Comment [hp15]: Redact FOIA Exemption 5 USC § 552(b)(4) durations for C2B (October 6, 2011 to April 30, 2012), C4C (May 16, 2012 to January 4, 2013) and C5C (October 4, 2012 to May 24, 2013) are now detailed in Update #63.

<u>Contingency Drawdown</u>: To date, the contingency drawdown evaluation has been limited to the SAS Phase 1 construction packages. The available contingency must also be applied to any soft cost overruns. The PMOC recommends that the contingency evaluation process be extended to include all project costs. The risk-informed contingency drawdown limits do include soft cost contingency; however, actual contingency usage may not fully incorporate contingency draws by soft cost elements. Soft cost contingency consumption will be reviewed in detail on a quarterly basis to confirm reasonableness of actual contingency usage.

Multi Contract Coordination: Handoffs and interfaces between prime contracts have been managed effectively by the SAS Project Team to date; however, the magnitude and complexity of these relationships will increase dramatically as the construction progresses. The SAS Project Team has initiated an effort to incorporate these relationships into the IPS. The PMOC applauds this initiative and recommends it be given the priority and resources necessary to be developed into a useful tool.

APPENDIX A- ACRONYMS

AFI Allowance for Indeterminates

ARRA American Recovery and Reinvestment Act

BA Budget Adjustment

CCM Consultant Construction Manager

CMP Cost Management Plan

CSSR Contact Status Summary Report
CIL Central Instrument Location
CPRB Capital Program Review Board
CPP Contract Packaging Plan

CWB Current Working Budget
DCB Detailed Cost Breakdown
DMP Deformation Monitoring Points

ELPEP Enterprise Level Project Execution Plan
EPC Engineering-Procurement-Construction

FFGA Full Funding Grant Agreement
FTA Federal Transit Administration
IPS Integrated Project Schedule

MTA Metropolitan Transportation Authority

MTACC Metropolitan Transportation Authority - Capital

Construction

N/A Not Applicable

NTP Notice to Proceed

NYCT New York City Transit

NYSPTSB New York State Public Transportation Safety Board

PE Preliminary Engineering
PEP Project Execution Plan

PMOC Project Management Oversight Contractor (Urban Engineers)

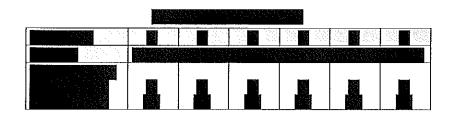
PMP Project Management Plan
PQM Project Quality Manual
QA Quality Assurance

RAMP Real Estate Acquisition Management Plan

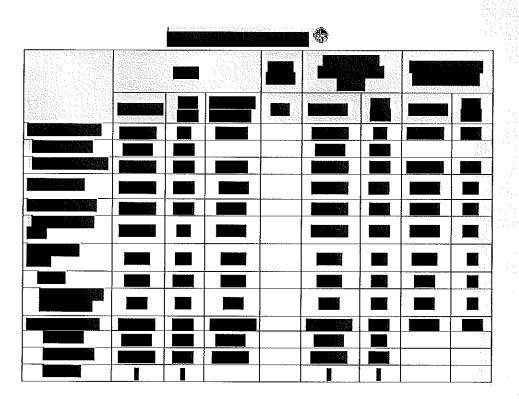
ROD	Revenue Operations Date	
ROW	Right of Way	
RSD	Revenue Service Date	
SAS	Second Avenue Subway	
SCC	Standard Cost Category	
SMP	Schedule Management Plan	
SSMP	Safety and Security Management Plan	
SSOA	State Safety Oversight Agency	
SSPP	System Safety Program Plan	
TBD	To Be Determined	
ТВМ	Tunnel Boring Machine	
TCC	Technical Capacity and Capability	
VE	Value Engineering	
WBS	Work Breakdown Structure	

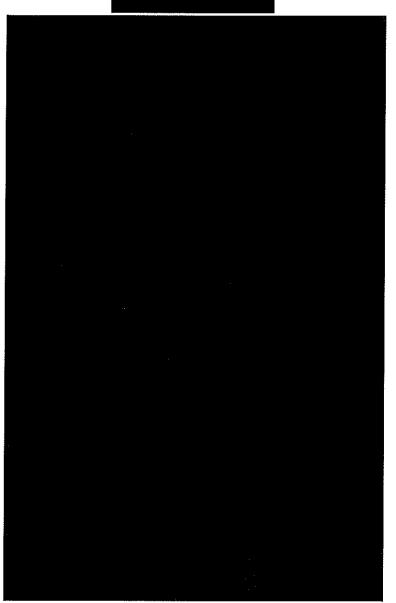
APPENDIX B - TABLES

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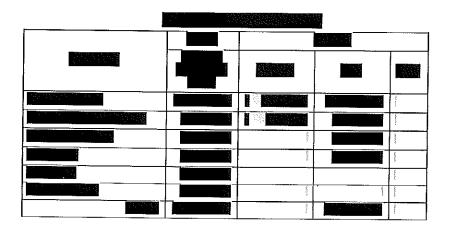


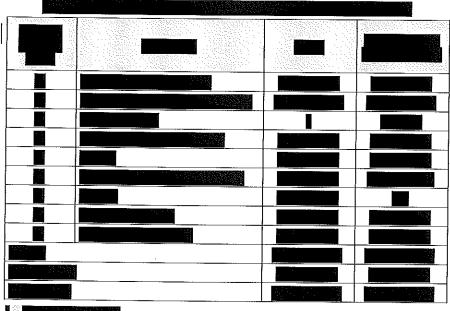


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