

MONTHLY MONITORING MINI-REPORT

October 2019

**Dulles Corridor Metrorail Project
Phase 2
(Wiehle Avenue Station to Ashburn Station)**

Metropolitan Washington Airports Authority
Washington, DC

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PMOC Contract Number: DTFT60-14-D-00011

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OPs Referenced: 01, 25

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Length of Time PMOC Assigned to Project: 6.0 years

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EXECUTIVE SUMMARY

The FTA and Project Management Oversight Contractor (PMOC) met with the Metropolitan Washington Airports Authority (MWAA) on November 13, 2019, for the Monthly Update Meeting on Phase 1 and Phase 2 of the Locally Preferred Alternative (LPA) for the Dulles Corridor Metrorail Project. PMOC monthly progress meetings typically occur the second week of each month. This mini-report serves to update the FTA on activities, events, and issues that occurred during the reporting period August 1 through October 31, 2019.

Project Description

The Dulles Corridor Metrorail Project (DCMP) Phase 2 is an 11.4-mile extension of Washington Metropolitan Area Transportation Authority (WMATA) heavy rail system from the current terminus at Wiehle-Reston East Station through Washington Dulles International Airport ("Dulles Airport") to a terminus in eastern Loudoun County. Phase 2 includes a maintenance and storage yard facility, wayside facilities, five new parking facilities with 8,900 parking spaces, and sixty-four new railcars. The current Phase 2 project budget is \$2,778,235,564 exclusive of parking facilities and finance costs. Construction of the project is being managed by the Metropolitan Washington Airports Authority (MWAA), who will relinquish operation to WMATA.

The project has been subdivided into several construction work packages that have been procured separately. There are two major construction packages: Package A awarded to Capital Rail Constructors (CRC) covers the final design and construction of the mainline, stations, and systems elements; and Package B awarded to Hensel Phelps Construction Company (HP) covers the final design and construction of the WMATA rail yard, and buildings for maintenance, transportation police, warehousing, and inspections. Notice to Proceed (NTP) was given on July 8, 2013 and August 18, 2014 for Package A and Package B, respectively.

Project Status

- *At the end of September 2019, the project was 87% complete based on expenditures.*
- *The MWAA Project Master Schedule (PMS) through October 1, 2019 continues to show the contractual Scheduled Substantial Completion Date (SSCD) as August 7, 2019. MWAA has rejected CRC's schedule updates for both August 2019 and September 2019. CRC's July 2019 schedule update indicates a forecast substantial completion date is June 22, 2020. However, MWAA projects SSCD as April 17, 2020.*
 - *CRC's latest schedule update through July 2019 forecasts a SSCD of June 22, 2020, a 320-day impact to the contractual SSCD.*
 - *Hensel Phelps' (HPs') latest schedule update through September 2019 forecasts a SSCD of August 25, 2020, which is 612 calendar days later than the contractual SSCD, a loss of 60 calendar days from their August 2019 schedule update. HP submitted a revised recovery schedule on October 7, 2019 with a projected SSCD of February 24, 2020. The revised recovery schedule is under review by MWAA.*

- MWAA's PMS dated October 1, 2019, indicates MWAA's Risk-Adjusted SSCD for CRC is April 17, 2020, resulting in a Revenue Service Date (RSD) of July 16, 2020. MWAA's PMS is merely a compilation of schedule data from CRC, HP, WMATA, and the counties of Fairfax and Loudoun. MWAA's PMS does not reflect a reconciliation of the conflicting completion dates, and cannot be considered a true project master schedule. MWAA has continually suggested to both contractors how schedule improvements can be made; however, it appears that both contractors continue to posture for future claims, as MWAA's suggestions have not been incorporated and there is continual schedule slippage.

Core Accountability Information

Table 1

TIFIA Core Accountability Items			
Project Status		Original at TIFIA Closing	Current Estimate (EAC)
Cost	Cost Estimate	\$2,778,235,564	\$2,778,235,564
Contingency	Unallocated Contingency	\$551,451,179	\$242,584,643
	Total Contingency (allocated plus Unallocated)	\$551,451,179	\$242,584,643
Schedule	Revenue Service Date	January 31, 2019	July 16, 2020
		Amount (\$)	Percent (of total)
Planned Value to Date	Total budgeted cost of work scheduled to date	\$2,346,276,219	93%
Earned Value to Date	Budgeted cost of work completed to date, i.e. actual total value of work earned or done	\$2,282,462,966	90%
Actual Cost	Total cost of work completed to date (actual total expenditures)	\$2,217,473,667	87%
		Amount (\$)	Percent (of total)
Contracts	Total contracts awarded to date	\$2,431,324,612	98%
	Total construction contract awarded to date (construction contracts only)	\$1,753,514,477	71%
	Physical construction work completed (amount of construction contract work actually completed)	\$1,611,852,071	92%

Major Issues	Status	Comments / Planned Action
Stormwater Management changes to Package A	Change resulted in 13 month schedule delay. Construction cost yet to be negotiated.	The construction cost is expected to be part of the global settlement at the end of the contract.
MWAA's extended management costs due to 13-month delay.	Cost yet to be finalized.	MWAA's final audit needs to be completed.
Delays to both Package A and Package B	<i>The Package A contractor's July 2019 schedule update indicates Package A is delayed 320 days and Package B contractor's September 2019 update indicates an SSCD of August 25, 2020 a delay of 612 days, which, if correct, result in a substantial delay to the Revenue Service Date.</i>	MWAA has not accepted either contractor's schedule update for over a year and a half. MWAA continues to work with each contractor to improve the schedules with little success to date. MWAA's Project Master Schedule dated October 1, 2019, indicates an SSCD of April 17, 2020 and a RSD of July 16, 2020.
Quality of the work related to:		
Station precast panels	The contractor has applied sealant to the station precast panels, but the penetration was only 70%.	<i>After reapplications of sealant, all panels met penetration requirements. WMATA's acceptance has not been obtained.</i>
Special trackwork cross level	Measurements have been taken of the special trackwork cross levels.	<i>The contractor plans to use a switch tamper to bring special trackwork cross level into compliance.</i>
Excessive fines in the yard ballast	<i>Additional sampling of ballast contamination in the yard has been undertaken. All test results have not completed.</i>	<i>Additional ballast cleaning will be undertaken once all test results are completed</i>
WMATA's Quality Issues	On September 6, 2019, WMATA's General Manager and Chief Executive Officer informed MWAA's President and Chief Executive Officer that the deficiencies with regard to the Universal Concrete Product precast panels, the fouled ballast in the yard and the special trackwork cross-level must be resolved before WMATA will accept the facilities.	The WMATA GM's letter was in advance of the WMATA OIG's formal report describing its findings with regard to the overall quality issues with the Project. A date for the submission of the formal report has not been determined. It is the PMOC's opinion that the report may contain additional quality issues that must be remediated prior to WMATA's acceptance of the Project.
Date of Next Quarterly Meeting:		December 16, 2019

A. Other Problems/Issues

1. **Stormwater/Early Design Changes** – The additional construction costs related to the stormwater design changes have yet to be finalized. MWAA has directed the contractor to proceed with the additional work on a time and materials basis.

2. **Beginning Rail Service** – WMATA has stated they cannot open rail service without the yard. *The September 2019 contractor’s schedule update for Package B (Yard and Shops) indicates a substantial completion date of August 25, 2020, which, based on WMATA’s position that the Yard is a prerequisite for RSD, will delay the RSD. It is the PMOC’s opinion that the contractor is positioning itself for a delay claim at the Project’s completion. MWAA requested a recovery schedule from the contractor which indicates a SSCD of February 24, 2020. This schedule is under review by MWAA. MWAA performed a Monte Carlo Risk Analysis in April 2019 which determined the risk-adjusted SSCD for Package A to be April 17, 2020, which results in a risk-adjusted Revenue Service Date (RSD) of July 16, 2020. It is MWAA’s assessment that the SSCD for Package B will occur so as to not impact the RSD.*
3. **Cracks in Precast Panels** – In July 2018, MWAA identified numerous cracks in precast panels for the exterior walls of the Service and Inspection Building (SIB), Warehouse Building (WHB) and the Transportation Building (TB). WMATA has approved the mock-up of the sealant treatment, and *the design change for the sealant application has been approved, but application work has not begun. All five major buildings need to be treated. Application of the sealant must be done with an ambient temperature of at least 40°F. There is the potential that treatment will not be done until spring of 2020 delaying completion of the yard.*
4. **Windscreen at Dulles Airport Station** – The bearing pedestals at the Dulles Airport Station exhibited cracking and investigation revealed a lack of confining reinforcement and damaged bearing plate anchors. *The contractor has reconstructed the pedestals, and is awaiting delivery of the top bearing plates.* The remediation could pose a delay to the Package G contractor’s work resulting in a potential schedule delay and cost impact. This could negatively impact the RSD.
5. **Surge Arrestors** – During February 2019, the contractor experienced spurious activation of several surge arrestors in TPSS #15 and TPSS #17. The devices were sent back to the manufacturer. Comments on the Root Cause Analysis Report were returned to the contractor in September 2019 and the contractor is preparing the response. The conclusion(s) from the root cause analysis could result in a delay to acceptance of the traction power facilities and the revenue service date.

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MAIN REPORT

A. Project Status

Design

Final design and construction are being performed under Design-Build (DB) contracts for Package A and Package B. The designs of both Package A and Package B are 100% complete. Fairfax and Loudoun Counties are managing the final design of the parking facilities (formerly Package C). The Counties have committed to delivering those elements as a condition of receipt of their TIFIA loans.

Construction

Status of Dulles Corridor Metrorail Project (DCMP) Phase 2 construction contracts through July 2019 is as follows:

Table 2

Contract	Description	Planned Substantial Completion	Construction Status
Package A	Rail Line, Station, Systems Contract	06/22/2020*	96% complete
Package B	Maintenance Facility	08/25/2020*	97% complete
Package S	Maintenance Facility Site Preparation	--	Completed in December 2014
Package G	Screenwall at Dulles Station	08/11/2020	The construction permit was received in May 2019. Awaiting the replacement of the pedestals by the Package A Contractor.
Package P	Stormwater Ponds	06/11/2021	<i>Of the 23 stormwater management ponds, 3 are complete except for paving and two are under construction.</i>
Package K	Project Closeout	<i>To be determined</i>	
Herndon Station	Parking Garage	04/2019	100% complete
Innovation Center Station	Parking Garage	01/2020	90% complete
Loudon Gateway Station	Parking Garage	10/28/2019	100% complete
Ashburn (Route 772) North	Parking Garage	01/2018	100% complete
Ashburn (Route 772) South	Parking Garage	07/25/2019	100% complete

*Contractor's Projected Date

Construction – Package A

Civil Construction - During October 2019, the Contractor completed the repaving of the Dulles International Airport Access Highway (DIAAH) and the Dulles Toll Road (DTR) within the

Project work zones. Local paving along Sunrise Boulevard is also complete. Stormwater management ponds were constructed as access became available with the completion of adjacent work. Grounding of the fencing on the overhead roadway and overpass bridge walls was also completed. Sidewalk, curb and gutter work continued along Edmund Halley Drive upon completion of the roadway reconfiguration. Fencing in the yard leads to secure the Airport property has also been completed.

The final communication line was relocated along Sunrise Boulevard to clear the way for the roadway widening required for the Herndon South kiss and ride and parking facilities. Communication and electric lines have been relocated along the Edmund Halley Drive roadway realignment.

Herndon Station – Finish and trim work continues on the station and pavilions. Station cleanup is underway. Station elevator and escalator testing and verification continues.

Innovation Station – Finish and trim work continues on the station and pavilions. Station cleanup is underway. Station elevator and escalator testing and verification continues.

Reston Town Center Station – Finish and trim work continues on the station and pavilions. Station cleanup is underway. Station elevator and escalator testing and verification continues.

Dulles Airport Station – Installation of station walkways, landscaping and exterior lighting continued during October. Station cleanup also continues.

Loudoun Gateway Station – Installation of lighting continued throughout the station. Station elevator and escalator testing and verification continues.

Ashburn Station – Installation of lighting continued throughout the station. Station elevator and escalator testing and verification continues.

Guideway – Testing along the guideway from the Reston Town Station continued. The guideway east of the Wiehle tie-in was energized and train movement in this area took place only to supply trains from the WMATA controlled Phase 1 guideway to the test track. This section of track was added to the Phase 2 testing area and the required train movements have started as part of the Phase 2 testing. The energized test area extends throughout the entire Package A guideway from Wiehle Avenue to, and beyond, the Ashburn Station. Emergency Trip Station panels were adjusted along the alignment to assure adequate clearance along the emergency walkway.

Systems – Communications cable terminations were verified in the racks at the communications rooms, and these connections and cables were tested and verified throughout the entire system. Electricians continued verifying and testing jumper cables and bonds on the west at-grade track. Inspection and testing of guideway mounted train control equipment and switch operation continued on the at-grade ballasted guideway on the west from the aerial guideway abutments to the Ashburn Station. All Traction Power Substations (TPSSs) have been energized and are supplying power to the contact rail per the approved systems design. Traction power connections were made to the contact rail, and testing of these connections continued along the west at-grade guideway in the area where that track and switches have been made ready for future dynamic testing.

Construction – Package B

During October 2019, Hensel Phelps Construction Company (HPCC) continued their internal punch list work on all buildings, trackwork and site work. Assembly work continues on all 36 car hoists in the Service and Inspection Building (SIB), and truck hoist equipment components were received. Final assembly of industrial equipment continues. The elevators were completed and tested.

Packages G and P

The construction permit for Package G (Dulles Airport Station Screen Wall) was issued on May 24, 2019, and the contractor has mobilized in the staging area. *The contractor is waiting for the release of the bearing repair locations by CRC to begin erection of the steel columns. Installation is expected to begin on November 17, 2019.*

Package P (Stormwater Management Ponds) is broken into three pond packages. *Of the 23 stormwater management ponds, two are under construction and three have been completed except for paving.* The completion of construction for these Best Management Practices ponds is scheduled for June 11, 2021.

Real Estate Acquisition

MWAA's report indicating the status of the property acquisitions through October 2019 indicates that of the 57 parcels to be acquired, settlement has been reached or condemnation processed for 54 of the parcels. The acquisition of 52 parcels is complete. MWAA has obtained rights of entry for properties not acquired; thus. There has been no impact to construction.

Third Party Agreements

Six Intergovernmental Agreements are required for Phase 2 and all were executed in 2013 and 2014. These agreements describe the roles and responsibilities of MWAA and the parties relative to the Project.

B. National Environmental Policy Act (NEPA) MWAA updated their Summary Matrix of Environmental Mitigation Measures for the second quarter of 2019 which was submitted to FTA on July 29, 2019. It is the PMOC's observation that MWAA is incorporating the mitigation measures into their design and construction. Project Management Plan (PMP) and Sub-plans

MWAA has submitted the PMP and required sub-plans. MWAA submitted an updated Risk and Contingency Management Plan (RCMP), Revision 4.0 Final Revised on August 15, 2019. *The document was approved by the FTA on September 18, 2019.*

C. Project Management Capacity and Capability

- **Staffing**

It is the PMOC's observation that MWAA continues to monitor and control the project in accordance with their procedures. MWAA reported the estimated number of full-time equivalents for Phase 2 during October 2019 is 929, a decrease of 264 from the September 2019 actual count of 1193.

- **Project Controls**

It is the PMOC's observation that MWAA continues to monitor and control the project in accordance with their procedures.

- **Compliance**

It is the PMOC's observation that MWAA continues to follow the required statutes, regulations, and agreements.

- **Disadvantaged Business Enterprise (DBE) Goal**

MWAA developed a DBE Project Goal of 25% (\$230.44M) of the federal participation cost for Phase 2, which was approved by FTA on August 26, 2013. MWAA continues to review and verify Scheduled DBE participation (Contracts Awarded) and Actual DBE participation (Payments). As of October 2019, \$235.8M (100.65%) of the DBE goal had been met.

- **Davis-Bacon Act Verification**

MWAA reports Davis-Bacon Act (DBA) verification activities in its Monthly Progress Report. As of the October 2019 MWAA Monthly Progress Report, DBA compliance monitoring is ongoing.

D. Project Cost

- *Through October 2019, approved change orders totaled \$231,731,160 for Package A. There were no change orders approved in October 2019.*
- *The change orders in process in October 2019 total \$27,698,649, and 35 Requests for Change (RFC) are under evaluation totaling approximately \$44,516,579 in Contractor proposals for Package A.*
- *In addition, MWAA has approved change orders for Package B that total \$41,895,263 through October 2019. In October 2019, change orders in process total \$94,849 and 16 Requests for Change (RFC) are under evaluation totaling \$212,775.*
- *Through October 2019, approved change orders for Package P total \$259,422.*
- *These charges against contingency represent a total of \$346,408,697 or 65.64% of the total Project Contingency of \$527,740,251. This is at a point where overall Project completion is at 87%.*
- ***PMOC believes the remaining contingency is sufficient at this stage of the Project.***
- *MWAA's revised Phase 2 project budget is \$2,778,235,564. Its report of the total charges against the project for the period ending September 30, 2019, (latest available data) is*

shown in the following table.

Figure 1

**Dulles Corridor Metrorail Project - Phase 2
Monthly Cost Report, September 2019**

DESCRIPTION	ORIGINAL BUDGET	BASELINE BUDGET ^{3,5}	EXPENDITURE TO DATE ⁴	ESTIMATE AT COMPLETION ⁶	PERCENT OF EAC EXPENDED TO DATE
Design-Build					
Design Build Main Line - Package A	\$ 1,177,777,000	\$ 1,177,777,000	\$ 1,325,034,268	\$ 1,411,777,504	
Commodity Escalation - Package A	\$ 16,000,000	\$ 16,000,000	\$ -	\$ 5,600,000	
Dulles Airport Windscreens - Package G		\$ 6,966,000	\$ 1,588,883	\$ 6,966,000	
Stormwater Management Ponds - Package P		\$ 26,586,161	\$ 6,591,373	\$ 26,845,583	
Subtotal Design-Build Main Line	\$ 1,193,777,000	\$ 1,227,329,161	\$ 1,333,214,524	\$ 1,451,189,087	
Yard - Package B + Yard Soil Preparation - Package S	\$ 269,280,530	\$ 258,939,297	\$ 278,637,547	\$ 301,768,477	
Commodity Escalation - Package B	\$ 4,000,000	\$ 4,000,000	\$ -	\$ 1,328,000	
Subtotal Design-Build Yard	\$ 273,280,530	\$ 262,939,297	\$ 278,637,547	\$ 303,096,477	
Design-Build Contracts Total	\$ 1,467,057,530	\$ 1,490,268,458	\$ 1,611,852,071	\$ 1,754,285,564	92%
Right of Way					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 26,521,308	\$ 57,500,200	
Right Of Way Total	\$ 58,600,000	\$ 58,600,000	\$ 26,521,308	\$ 57,500,200	46%
WMATA Agreement					
Vehicles	\$ 205,868,200	\$ 205,868,200	\$ 133,752,665	\$ 181,302,601	
WMATA Non Revenue Vehicles	\$ 9,250,751	\$ 9,620,781	\$ 1,038,383	\$ 9,620,781	
WMATA Project Management and Other Costs	\$ 90,205,767	\$ 89,835,737	\$ 52,130,191	\$ 89,835,737	
WMATA Agreement Total	\$ 305,324,718	\$ 305,324,718	\$ 186,921,239	\$ 280,759,119	67%
Preliminary Engineering					
Preliminary Engineering Total	\$ 75,000,000	\$ 75,000,000	\$ 73,266,056	\$ 75,000,000	98%
Airports Authority Services					
Airports Authority Project Management	\$ 64,620,000	\$ 64,620,000	\$ 65,749,257	\$ 80,081,913	
Project Management Support	\$ 140,000,000	\$ 140,000,000	\$ 184,775,686	\$ 194,560,000	
Other Costs ¹	\$ 116,182,137	\$ 116,682,137	\$ 68,388,050	\$ 93,464,125	
Airports Authority Services Total	\$ 320,802,137	\$ 321,302,137	\$ 318,912,993	\$ 368,106,038	87%
Contingency					
Contingency Total	\$ 551,451,179	\$ 527,740,251		\$ 242,584,643	
TOTAL PROJECT COSTS	\$2,778,235,564	\$2,778,235,564	\$2,217,473,667	\$2,778,235,564	87%²

1. Includes Rent, Relocation, OCIP, VDOT, Dulles Rail Consultants, Testing Consultant, DGS, TRIP II, DEQ, Airports Authority Permits/Inspection, Testing Power and Historic/Archaeological Mitigation. Estimate at Completion includes Dominion Virginia Power Route 28 to Frying Pan Road Ductbank Installation also.

2. This percentage does not include Contingency.

3. Baseline Budget for Packages A, G, P, B and S reflects the Contract Price. Baseline Budget for Contingency is adjusted by \$9.8 million increase which is the net of the underrun in Package S and overrun in Package B. Baseline Budget for Contingency is further adjusted by \$33.6 million decrease to fund Packages G and P.

4. Package A expenditure to date includes \$5 million of retainage released in December 2014 and \$14.7 million retainage released in December 2018 with October 2018 payments. Excludes \$9.7 million in Betterments.

5. Baseline Budget for WMATA Agreement is adjusted to align with WMATA's distribution of original budget in invoice #2.

6. Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests. Excludes \$11.0 million in Betterments.

E. Funding Sources

- Other than TIFIA loans – There was no change in primary funding for Phase 2.
- TIFIA Funding Status – no change. US DOT has provided \$1.876 billion. The 2019 TIFIA Financial Plan was submitted on March 29, 2019.

F. Project Schedule

- The table below shows the Phase 2 milestones as noted in the *August 1, 2019 Project Master Schedule*, provided by MWAA. *These dates are based on CRC's July 2019 Monthly Schedule Update which was "Not Accepted" by MWAA. CRC's July 2019 Schedule Update forecasts a substantial completion of June 22, 2020, reflecting a 320-day delay to the Project Contractual Substantial Completion Date of August 7, 2019. This reflects a loss of 39 days from the June 2019 schedule update.* The last schedule update from CRC that was approved, with comments, was dated September 2017.
- *HPs' July 2019 schedule update forecasts substantial completion on July 31, 2020 which represents a 587 calendar-day delay from the Contractual Substantial Completion Date. MWAA has "Not Accepted" this schedule.*
- *MWAA's August 1, 2019 Project Master Schedule indicates a Revenue Service Date (RSD) of July 16, 2020; based on MWAA's Monte Carlo Risk Analysis of the schedule. Since MWAA's Project Master Schedule does not reconcile conflicting completion dates across the various construction work packages, the PMOC does not consider it a true master schedule. The milestone dates from MWAA's August 1, 2019 Project Master Schedule are shown in the following table.*

DULLES CORRIDOR PHASE 2 MILESTONES		
DESCRIPTION	RE-BASELINED SCHEDULE	UPDATED SCHEDULE**
Package A – Design-Build Contract Award		05/14/2013(A)
Package S – Advanced Earthwork Contract IFB		06/27/2013 (A)
Package A – Contract NTP	07/08/2013	07/08/2013(A)
Package S – Advanced Earthwork Contract Award		11/01/2013 (A)
Package S – Advanced Earthwork Contract NTP		11/18/2013 (A)
Package B – Contract RFQI		11/12/2013 (A)
Package B – Contract RFP		02/11/2014 (A)
Loudoun County Garages – Board Action on BAFOs		06/10/2014 (A)
Package B – Contract Award		07/29/2014 (A)
Package A – Start of Construction		June 2014 (A)
Fairfax County – Approval of Land Use Cases for Parking Facilities		07/29/2014 (A)
Package B – Contract NTP	08/18/2014	08/18/2014 (A)
Package S – Advanced Earthwork Contract Substantial Completion		12/08/2014(A)
Deadline for Fairfax and Loudoun Counties' decision to construct the Parking Facilities		12/29/2014(A)
Fairfax County – Design of Parking Facilities Complete	03/31/16	11/30/16 (A)
Loudoun County – Design for RFP of Parking Facilities Complete	06/28/16	01/04/17 (A)
Package A – Complete Design*	10/21/15	10/14/19**
Package A – Complete Aerial Guideway Structure Construction *	04/07/17	11/13/18 (A)
Package A – Complete At-Grade Guideway Structure Construction	12/19/17	07/09/18(A)

DULLES CORRIDOR PHASE 2 MILESTONES		
DESCRIPTION	RE-BASELINED SCHEDULE	UPDATED SCHEDULE**
Package A – Complete Station Build-out	11/21/18	03/31/20**
Package A – Complete Systems Installation	09/21/18	12/14/19**
Fairfax County – Construction of Parking Facilities Complete	04/30/18	01/28/20
Loudoun County - Construction of Parking Facilities Complete	02/28/17	04/30/20
Package A – Forecasted Substantial Completion	08/07/19	06/22/20**
Package B - Complete Yard Systems and Commissioning	03/02/18	01/05/20**
Package B – Forecasted Substantial Completion	12/23/18	08/25/20**
Complete WMATA Operations Readiness Testing	10/06/19	05/17/20**
Complete WMATA Revenue Operations Acceptance Testing (Baseline: 3/31/20)	03/31/20	07/16/20**
Revenue Service Date (RSD) (Baseline: 3/31/20)	03/31/20	07/16/20**

* Includes changes

** Based on Unapproved Schedules

Critical Path

- *CRC’s Schedule updates for August and September 2019 were rejected by MWAA as being unrealistic.* CRC’s Primary Critical Path as reflected in their July 2019 schedule update runs through the submittal and approval of static testing pre-printed data sheets; performance of Level B and C dynamic testing for N97W, N98A, N98B and 99e; Safe Braking Testing in Area #4; performance of Levels B and C dynamic testing for N11, N12, N07 TCRs; Level F testing, Systems Performance Demonstration; and Scheduled Substantial Completion Date (SSCD).
- MWAA’s reasons for “Non Approval” of CRC’s July 2019 schedule update include:
 - 1) CRC added approximately 180 long duration activities concerning pre-printed data sheets (PPDSs) required for testing, each of which cover multiple scopes of work by different parties;
 - 2) The flow of PPDS activities appears to be incorrect;
 - 3) Logic errors in PPDS and testing activities;
 - 4) Logic errors in local Supervisory Control and Data Acquisition (SCADA) testing;
 - 5) A technical solution for the cross-level track issue has not been agreed upon;
 - 6) Schedule performance continues to lag behind schedule forecasts;
 - 7) Failure to provide accurate forecast dates based on actual production rates, progress and availability of resources, as well as activities riding and dragging the data date; and
 - 8) Continuing schedule narrative and cost issues.

Based upon the current status of the Project, it is the PMO’s opinion that the Revenue Service Date will be late in the third quarter of 2020. At the current stage of the Project there is no ability to recover time. MWAA must establish SSCDs for each Package based on the current levels of completion.

Important Activities – 90-Day Look Ahead (by the end of January 2020)

- *Right of Way acquisition to be completed, with the exception of one condemnation.*
- *Package A systems installation to be completed.*
- *Package P design of the base contract scope to be completed.*
- *Package G construction start*
- *Maintenance yard construction to be completed.*
- *Construction of the Train Wash Facility, Warehouse Building, Maintenance of Way Building, Transportation Building and Yard Tracks to be completed.*
- *Commissioning of yard systems and dynamic testing with WMATA trains to be completed.*
- *Maintenance yard site work to be completed.*

G. Quality Assurance/Quality Control

During October 2019, MWAA did not conduct any audits or surveillances of CRC for Package A or Hensel Phelps for Package B. The major non-conformances that remain open include:

- *cross levels in mainline crossovers exceed specifications,*
- *cracks in the precast panels in the yard buildings,*
- *cracks in the pedestals for the windscreens at Dulles Airport Station,*
- *stray currents in the yard insulated joints,*
- *spurious activation of several surge arrestors in TPSS #15 and TPSS #17, and*
- *excessive fines in the yard ballast*

H. Safety and Security

Construction Safety and Security – *Through October 2019, the contractors have accumulated 10,722,497 hours worked. There have been 68 OSHA Recordable non-lost time cases and 5 OSHA Recordable lost time cases totaling 39 lost time days.*

Safety and Security Certification Working Group (SCWG) – is the entity charged with the development of Design and Construction Conformance criteria, checklists and hazard analysis for the Project. This group meets on a monthly basis and continues to function satisfactorily. WMATA is responsible for the Threat and Vulnerability Analysis and has hired their consultant for this work. WMATA has completed the review of the Phase 2 design against the existing Silver Line and Yard TVAs, and has not informed MWAA of any issues requiring resolution.

Washington Metrorail Safety Commission (WMSC) - On March 18, 2019, the FTA certified the WMSC as the independent body now responsible for overseeing and enforcing safety practices on WMATA. The PMOC plans to coordinate its readiness review with WMSC. WMSC has participated in MWAA's SCWG meetings.

Transportation Security Administration (TSA) – On August 26, TSA representatives toured the Dulles Airport Station, TPSS #17 and the Rail Yard,

I. Americans with Disabilities Act (ADA)

Following review of the field installation and shop drawings, the design of the platform expansion joints was questioned and subsequently submitted by CRC to the Access Board for review. The supplier, MM Systems, performed some additional testing in response to Access Board comments, but the Board determined the joint to be non-compliant with the ADAAG. CRC has installed stainless steel cover plates over the joints to establish ADA compliance.

J. Buy America

Five overhead bridge cranes purchased for installation in the Service and Inspection Building (SIB) at the Yard have been certified as being Buy America compliant based on a designation of the equipment as rolling stock. FTA, upon request from MWAA, has indicated that the cranes do not qualify as rolling stock, and are non-compliant as certified. The prime contractor, HP, submitted a new Buy America certification from Demag under the manufactured product standard (49 CFR 661.5) on June 13, 2019. MWAA accepted this certification and this item is closed.

K. OP-54 Readiness Review

During May 2018, the FTA/PMOC conducted the formal OP-54 Part 1 by reviewing documents and records with interviews as necessary. The OP-54 Part 1 draft report was distributed 8/10/2018 for comment on and final report distributed on 10/18/2018. The OP-54 Part 1 resulted in three (3) findings and eight (8) concerns. The open OP-54 Part 1 findings and concerns generally surround completing and certifying WMATA deliverables and have not been closed.

The OP-54 Part 2 is planned to be performed during the 50% completion of the integrated testing phase, including WMATA control center integrated testing. MWAA and WMATA have not approved the dynamic testing schedule and testing activities continue to be delayed. Additionally, WMATA control center tie-in is not scheduled for completion until early 2020. As integrated testing is not expected until early 2020, the OP-54 Part 2 review is planned for February-March 2020, and Part OP-54 Part 3 is planned for June 2020.

Project Risks

Risk and Contingency Management Plan (RCMP): *The Final RCMP, Revision 4.0, was submitted to FTA on August 15, 2019, and was approved on September 18, 2019.*

Budget Risks: MWAA allocated \$551 million in contingency for the overall project. A contingency management plan has been established for the release of contingency based on contract milestones. MWAA continues to remain within the contingency milestones. The Project has consumed 65.64% of the total Project contingency at a point where the Project is 87% complete.

Schedule Risks: MWAA held a risk workshop on February 7, 2019 to review the RCMP, and in particular the schedule risk. In the absence of approved schedule updates from CRC and HP, MWAA was requested by the FTA to perform a Monte Carlo Analysis of their best estimate of the project schedule. That analysis, documented in RCMP, Revision 4.0, generated a RSD of July 16, 2020.

Based on CRC's July 1, 2019 schedule update the estimated Scheduled Substantial Completion Date (SSCD) is June 22, 2020, and Hensel Phelps' schedule update of September 2019 indicates an estimated SSCD of August 25, 2020. Both dates are beyond MWAA's estimated SSCD in the Monte Carlo Analysis of April 17, 2020. It is unlikely that there is sufficient time for the contractors to recover significant time between now and April 17, 2020. It is the PMOC's opinion that the actual SSCD will occur late in the third quarter of 2020.

Another factor that may adversely impact the SSCD is the investigation by WMATA's Office of Inspector General's (OIG's) review of the quality issues affecting the Project. There is no known schedule for the completion of the OIG's review. If there are extensive items requiring mitigation, this could further impact the SSCD.

Action Items

MWAA – DULLES CORRIDOR METRORAIL PROJECT PHASE 2- Items for Grantee Action

PR	ITEM	IDENTIFICATION	NATURE of PROBLEM	D	A	I	COMMENTS	STATUS
							<i>There are currently no open items.</i>	

KEY ITEM Note– Items marked with a ‘C’ in the ‘PMO Contractor Status’ column will be dropped from future reports.

Subtask 2A CLIN 0002A – PMP Review
 Subtask 2B CLIN 0002 – On-Site Monitoring

LEGEND

PRIORITY (PR)
STATUS

1- Most Critical
 2- Critical review required
 3- Least Critical

GRANTEE ACTION

D – Remedial Action Developed
 A – Remedial Action Approved
 I – Action Implemented

PMO CONTRACTOR

O- Open
 R – Review On-going
 C – Completed – No further

APPENDICES

APPENDIX A – LIST OF ACRONYMS

ACMC	Atlantic Contracting and Material Company
AHJ	Authority Having Jurisdiction
Airport	Dulles Airport
AUP	Agreed Upon Procedures
BAFO	Best and Final Offer
BMP	Best Management Practices
Board	MWAA Board of Directors
CA	Conditional Acceptance (7K Railcars)
CDR	Contingency Drawdown Requests
CMAQ	Congestion Mitigation Air Quality
CPSM	Construction and Professional Services Manual (Commonwealth of Virginia)
CRC	Capital Rail Constructors
DB	Design-Build
DBE	Disadvantaged Business Enterprise
DBOM	Design-Build-Operate-Maintain
DBOM+F	Design-Build-Operate-Maintain-Finance
DCMP	Dulles Corridor Metrorail Project
DCR	Design Change Request
DE	Dominion Energy
DEQ	Department of Environmental Quality
DHR	Department of Historical Resources
DIAAH	Dulles International Airport Access Highway
DIDB	Disparate Impact and Disproportionate Burden
DRPT	Department of Rail and Public Transportation (Virginia)
DTP	Dulles Transit Partners, LLC
DTR	Dulles Toll Road
DVP	Dominion Virginia Power (now called Dominion Energy)
EA	Environmental Assessment
EPDM	Ethylene Propylene Diene Terpolymer (roofing system)
FIA	Fire and Intrusion Alarm
FIAT	Field Inspection and Acceptance Test
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
FWSO	Federal WMATA Safety Oversight
HPCC	Hensel Phelps Construction Company
IFB	Invitation for Bid
IFP	Issued for Permit
IPP	Integrated Permit Package
IRR	Issue Requiring Resolution
LPA	Locally Preferred Alternative
MWAA	Metropolitan Washington Airports Authority
MWB	Maintenance of Way Building
NDC	Notice of Design Change
NEPA	National Environmental Policy Act

NTP	Notice to Proceed
NTSB	National Transportation Safety Board
OCIP	Owner Controlled Insurance Program
<i>OIG</i>	<i>Office of Inspector General (WMATA)</i>
PIP	Property Identification Plans
PMOC	Project Management Oversight Contractor
PMSS	Project Management Support Services
PMP	Project Management Plan
<i>PPDS</i>	<i>Pre-Printed Data Sheets</i>
PPP	Public-Private Partnership
PRBS	Proposed Revised Baseline Schedule
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
QPP	Quality Program Plan
RAMP	Real Estate Acquisition Management Plan
RCMP	Risk and Contingency Management Plan
RFMP	Rail Fleet Management Plan
RFQ	Request for Qualifications
RFQI	Request for Qualifications Information
RFP	Request for Proposal
RFI	Request for Information
RBS	Revised Baseline Schedule
ROD	Revenue Operations Date (synonymous with Revenue Service Date)
RSD	Revenue Service Date
SCC	Standard Cost Category
SCWG	Safety/Security Working Group
SHPO	State Historic Preservation Office
SIB	Service and Inspection Building
SSCD	Schedule Substantial Completion Date
SSMP	Safety and Security Management Plan
SSOA	State Safety Oversight Agency
STOMP	Safety and Security Oversight Management Plan (TOC)
SWM	Storm Water Management
SWPPP	Stormwater Pollution Prevention Plan
TBD	To Be Determined
TBS	Tie-Breaker Station
TIA	Time Impact Analysis
TOC	Tri-state Oversight Committee (<i>Superseded by WMSC</i>)
TPB	Transportation Police Building
TPSS	Traction Power Substation
<i>TSA</i>	<i>Transportation Security Administration</i>
TWF	Train Wash Facility
USDOT	United States Department of Transportation
VDOT	Virginia Department of Transportation
VSF	Vehicle Storage Facility

VSMP	Virginia Stormwater Management Program
WB	Warehouse Building
WFC	West Falls Church
WHB	Warehouse Building
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

APPENDIX B – PROJECT OVERVIEW

Project Name: Dulles Corridor Metrorail Project – Phase 2
Grantee: Metropolitan Washington Airports Authority (MWAA)
FTA Regional Contact: Andre Anderson - FTA Region III, DC Metro Office Engineer
FTA Headquarters Contact: Dale Wegner, P.E. - FTA Headquarters, Project Manager

Scope

Description: Phase 2 of the Project consists of the design and construction 11.4 route miles of new track from the interim terminus at Wiehle-Reston East Station through Washington Dulles International Airport to a terminus in eastern Loudoun County. The current Phase 2 project budget is \$2,778,235,564 exclusive of parking facilities and finance costs. (Overall cost is 3.126 B.)

Guideway: Phase 2 consists of 11.4 miles of elevated and at-grade guideway.

Stations: Phase 2 includes six new stations (Reston Town Center, Herndon, Innovation Center, Dulles Airport, Route 606 and Route 772 Stations).

Support Facility: Phase 2 includes a maintenance and storage yard facility at Dulles Airport, wayside facilities (including traction power substations, tiebreaker stations, stormwater management ponds along the alignment), and five new parking facilities with 8,900 parking spaces.

Vehicles Phase 2 includes sixty-four new railcars.

Current Delivery Milestone Schedule

12/01/2009	Preliminary Engineering Commenced
02/29/2012	Preliminary Engineering Completed
07/08/2013	Package A Design-Build NTP issued
11/18/2013	Package S Design-Build NTP issued
08/18/2014	Package B Design-Build NTP issued
05/08/2015	MWAA TIFIA Loan Executed Package S Completed
90%	Percent Work in Place Complete at the date of this report (<i>earned value</i>)
100%*	Percent Project Schedule Complete at the date of this report *Based on SSCD of August 7, 2019

Cost

\$2,778,235,564	Total project cost in year-of-expenditure dollars (\$YOE) at the date of this report
\$2,217,473,667	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
87%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$242,584,643	Total project contingency remaining (allocated and unallocated contingency)

APPENDIX C – MWAA SAFETY AND SECURITY CHECKLIST

Project Overview	Dulles Corridor Metrorail Project – Phase 2		
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, CMGG, etc.)	Design/Build		
Project Plans	Version	Review By FTA	Status
Safety and Security Management Plan	February 2017	Approved on August 8, 2017	MWAA submitted a revised SSMP on February 25, 2016 and PMOC provided comments to the FTA on March 28, 2016. MWAA’s email of April 13, 2016 stated they had no comments on the revised SSMP. FTA accepted the Plan with comments on June 15, 2016. The 2017 update was submitted on April 12, 2017 and PMOC recommended FTA approval on April 27, 2017. PMOC provided additional comments on June 1, 2017, requesting the FWSO be added to the Plan. The issue regarding the FWSO has been resolved and FTA’s letter of August 8, 2017 approved the revised plan.

Safety and Security Certification Plan			<p>MWAA has adopted their contractors' SSCPs as the guiding certification documents. MWAA Accepted "CRC's SSCP on October 10, 2014. MWAA accepted as noted HPCC's SSCP on February 20, 2015. The SSCP was resubmitted on May 28, 2015, and returned "Accepted as Noted" on July 2, 2015. HPCC resubmitted the SCPP on October 8, 2015 and MWAA "accepted as noted" on November 11, 2015. The SSCP was resubmitted on December 9, 2015 and accepted by MWAA on December 21, 2015.</p>
System Safety Program Plan	January 2013		<p>WMATA's 2014 SSPP is effective January 2014 and approved by TOC on April 25, 2014.</p>
System Security Plan or Security and Emergency Preparedness Plan (SEPP)	3/2012	N/A	<p>WMATA submitted a revised SEPP to TOC in March 2012, which the TOC approved on April 23, 2012.</p>

Construction Safety and Security Plan (CSSP)		CRC's CSSP was accepted on December 13, 2013. The CSSP procedures were submitted on June 4, 2014 for information. CRC's CSSP was resubmitted in January 2015 and accepted on February 5, 2015. ACMC's CSSP was Accepted as Noted on December 23, 2014. HPCC's CSSP, Rev.1, was accepted by MWA on December 15, 2014. The Procedures were accepted on March 5, 2015.
Safety and Security Authority	Y/N	Notes/Status
Is the grantee subject to 49 CFR Part 659 State Safety Oversight requirements?	Y	Washington Metrorail Safety Commission (WMSC)
Has the State designated an oversight agency as per Part 659.9?	Y	Washington Metrorail Safety Commission (WMSC)
Has the oversight agency reviewed and approved the grantee's SSPP as per 659.17?	Y	WMATA's 2018 SSPP was approved by the FTA WMATA Safety Oversight Office (FWSO) on June 22, 2018.
Has the oversight agency reviewed and approved the grantee's Security Plan or SEPP as per Part 659.21?	Y	WMATA SEPP approved on April 23, 2012.
Did the oversight agency participate in the last Quarterly Program Review Meeting?	Y	WMSC routinely attend the quarterly meetings, including the most recent on <i>June 3, 2019</i> .
Has the grantee submitted its safety certification plan to the oversight agency?	Y	
Has the grantee implemented security directives issues by the Department Homeland Security, Transportation Security Administration?	Y	WMATA will be operator. TSA representatives participate in the monthly SCWG meetings.

SSMP Monitoring	Y/N	Notes/Status
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	MWAA submitted a revised SSMP on February 25, 2016. FTA accepted the Plan with comments on June 15, 2016. The 2017 update, submitted on April 12, 2017 and PMOC recommended FTA approval on April 27, 2017. PMOC provided additional comments on June 1, 2017, requesting the FWSO be added to the Plan. SSMP, Revision 3 was approved by FTA on August 8, 2017.
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	
Has the grantee established staffing requirements, procedures and authority for safety and security activities throughout all project phases?	Y	
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?	N	Contractors (CRC and HPCC) are responsible for PHAs. A draft copy of the PHA was provided by CRC on June 25, 2014. CRC's Final PHA was submitted to MWAA on December 23, 2015. CRC updated their PHA and submitted it to MWAA on September 29, 2017. HPCC's PHA was finalized on February 14, 2017. WMATA is responsible for TVA and selected a TVA Consultant in November 2016. The TVA consultant completed their TVA design review of Phase 2 on March 1, 2017.
Does the grantee implement regularly scheduled meetings to track the resolution of any identified hazards and/or vulnerabilities?	Y	CRC and HPCC will resolve all identified hazards and vulnerabilities with final review by the SCWG.
Does the grantee monitor the progress of safety and security activities throughout all project phases? Please describe briefly.	Y	Yes, through SCWG.
Does the grantee ensure the conduct of preliminary hazard and vulnerability analyses? Please specify analyses conducted.	N	MWAA is developing the PHAs through its contractors, CRC and HPCC, and WMATA is responsible for the TVA.
Has the grantee ensured the development of safety design criteria?	Y	
Has the grantee ensured the development of security design criteria?	Y	
Has the grantee ensured conformance with safety and security requirements in design?	N	The safety and security requirement conformance process is ongoing and a report will be issued at the end of the design phase.
Has the grantee verified conformance with safety and security requirements in equipment and materials procurement?	N	This requirement will be met through Construction Specification Conformance.
Has the grantee verified construction specification conformance?	N	The construction specification conformance process is in progress and a report will be issued at the end of the construction phase.
Has the grantee identified safety and security critical tests to be performed prior to passenger operations?	N	The completion of the SITC for Package A and Package B was expected by May 31, 2019 and has not been submitted.

Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	N	The completion of the SITC for Package A and Package B was expected by May 31, 2019 and has not been submitted.
Does the grantee evaluated change orders, design waivers, or test variances for potential hazards and /or vulnerabilities?	Y	Contractor is responsible for this evaluation.
Has the grantee ensured the performance of safety and security analyses for proposed work-arounds?	N	
Has the grantee demonstrated through meetings or other methods, the integration of safety and security in the following: <ul style="list-style-type: none"> • Activation Plan and Procedures • Integrated Test Plan and Procedures • Operations and Maintenance Plan • Emergency Operations Plan 	N	
Has the grantee issued final safety and security certification?	N	
Has the grantee issued the final safety and security verification report?	N	

Construction Safety	Y/N	Notes/Status
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 company-wide safety and security program plan?	Y	
Does the grantee's contractor(s) have a site-specific safety and security program plan?	Y	MWAA has accepted the contractor's Construction Safety and Security Plan.
Provide the grantee's OSHA statistics compared to the national average for the same type of work. If the comparison is not favorable, what actions are being taken by the grantee to improve its safety record?	Y	System in place, construction activities have started on Package A. Package B construction started in July 2015.
Does the grantee conduct site audits of the contractor's performance versus required safety/security procedures?	Y	MWAA has developed an Audit schedule. MWAA conducts audits every six months of the Construction Safety and Security and System Safety and Security for both Package A and Package B.

Federal Railroad Administration	Y/N	Notes/Status
If shared track: has grantee submitted its waiver request application to FRA? (Please identify specific regulations for which waivers are being requested)	N/A	This is a Heavy Rail Transit Project. There is no FRA involvement.
If shared corridor: has grantee specified specific measures to address shared corridor safety concerns?	N/A	
Is the Collision Hazard Analysis underway?	N/A	
Other FRA required Hazard Analysis – Fencing, etc.?	N/A	
Does the project have Quiet Zones?	N/A	
Does FRA attend the Quarterly Review Meetings?	N/A	

APPENDIX D – Top 10 Project Risks

RCMP - Top Risks as of January 2019 Final			
Risk ID	Event Description	Primary Risk Mitigation	Risk Rating
80.03.P.292 Proposed NEW*	Owner management extended time due to Pkg A: 1-Replace camber in special rail ties 2- Delay start of ATC 3-Additional safe braking tests Pkg B delay post June 2016	MWWA to manage the overall program budget including PMSS, WMATA, VDOT, etc.. to minimize cost overruns.	40
80.08.P.296 Proposed NEW*	There is a delta between the number of safe braking tests that CRC propose to complete (18 in total) and the number that WMATA would accept (around 1500).	MWWA to continue the discussion with CRC and WMATA on the number of tests required. Based on the results of the 1st safe braking test WMATA may consider reducing the number of tests. CRC to consider 2 shifts for testing.	35
80.02.D.240	Package B claim for Design delays beyond June 1, 2016	1) Spot mitigation of issues as they arise 2) Expediting owner reviews, negotiating acceleration, coordinating with management. 3) Airports Authority has notified that HP is responsible for some of the delay due to slow construction progress.	30
80.03.P.297 Proposed NEW*	HP has verbally informed MWWA of their intent to file a 'Delay and Disruption' Claim	Continue to document HP activities, particularly in their continuing need to rework to correct flawed installations, inability to produce timely designs and poor track performance	20
80.08.P.294 Proposed NEW*	WMATA Safety (SAFE) is a Department that is separate and operates in autonomy from WMATA project office. It may require scope beyond contract.	The WMATA, MWWA and Package Contractors work together where possible to deal with and mitigate issues that might impact the project SSCD and maintain project safety.	16
80.03.C.2	Request for Equitable Adjustment Part 2 (REA-2) (for changes included in CO-66 and for changes after CO-66 that have not been finalized) (Cumulative claims / Total Cost)	Project Team Will review details once the native schedule file is submitted. PT is also looking at CRC's performance, progress delays and reworks to refute the claim.	15
10.C.293 Proposed NEW*	Excessive camber in special rail ties	Work with CRC and WMATA to establish acceptable plan for fixing or replacement of the ties: 1) Identify ties that need fixed/replace, 2) Have CRC submit new QA/QC plan for the ties, 3) Expedite replacement of ties, 4) Direct cost will be absorbed by CRC .	12
80.03.C.4	Litigation costs including owner management	1) Promote good faith approach amongst all parties 2) Ensure timely & proactive resolution of the issues 3) Collective agreement on clear "burden of proof" & accountability for the delays 4) Minimize any further changes 5) Early collective efforts of contract, project controls and legal team.	12
20.R.300 Proposed NEW*	Code compliance issues associated with Air Conditioning Equipment in elevator and escalator machine rooms	Work closely with CRC and AHJ on solution and code reviews. Consider reduction in equipment size or type; need for compliance with energy code; relocation/redesign of equipment. Focus efforts on stations by proposed turnover sequence	12

* Proposed NEW item and Top Risk

APPENDIX E – PHASE 1 CLOSEOUT

MWAA continues with close out activities for Phase 1. VDOT and MWAA continue to work toward resolution of the VDOT Punch List. *MWAA submitted an updated draft schedule for VDOT repairs dated November 13, 2019 which indicates a delay to the completion of the work at Old Meadow Road until May 27, 2020. The delay is due to the protracted time that the various utilities took to relocate their facilities. In addition, the completion of the left shoulder repairs to the Dulles Connector Road (DCR) has been delayed to June 3, 2020.*

MWAA met with DTP on December 14, 2016 to present the work that DTP is to complete. Bechtel Corporation, as the parent guarantor for DTP, entered into negotiations with MWAA for the completion of the work. Bechtel, at a December 18, 2017 meeting with MWAA, agreed to repair all defective stormwater piping. MWAA reported the cost of these repairs would be funded jointly by Bechtel and MWAA. MWAA and Bechtel negotiated an agreement covering this work. Construction began on July 2, 2018. Bechtel has completed their work and final videos have been approved by VDOT. MWAA and Bechtel are in the process of closing out their contract for this work.

MWAA reported the Task Order for the design of Old Meadow Road was negotiated, and cost of the final design is \$382,737. The Notice to Proceed was issued on March 20, 2017. ROW/Utility coordination meetings have been held and utility relocation has begun. *Dominion Energy has completed their relocation. The remaining utilities, with the exception of Zayo and Summit, have relocated their facilities.* Old Meadow Road construction is *now* expected to be completed by *May 27, 2020.*

The closeout of the FFGA is expected to occur in several years following payment of final Project costs with regard to the procurement of the first 64 rail cars, which is expected to extend until 2021.

As of October 2019, ten full time equivalents were working on the Phase 1 closeout, which is one less than the September 2019 actual headcount. There were four VDOT equivalents, two WMATA equivalents, three PMSS equivalents and one MWAA equivalent involved during October 2019.

APPENDIX F – PMOC Evaluation Team

Michael Radbill, PE, F.ASCE, Program Manager

Mr. Radbill is responsible for oversight of *the Hill International, Inc. PMOC program*. He was assigned as *Program Manager on February 16, 2018*. Mr. Radbill has over 40 years of technical and management experience in the construction of federal, state, local, and private projects, which types include public transportation, power generation, petrochemical, correctional, military, aviation, commercial, hotel, and others. Skills and management accomplishments include project manager for owner/contractor; analyzing and reporting on quality issues on FTA funded urban transit, and petrochemical construction projects; course designer and principal instructor for FTA sponsored project management course; instructor for FTA sponsored quality assurance/quality control (QA/QC) training course; reviewer for two FTA sponsored Guidelines; drafting and editing general and special conditions of the contract for FTA funded public transportation projects; lead civil field engineer for contractor on construction of fossil and nuclear power plants; developing, updating, and analyzing critical path method schedules; facilitating partnering for construction projects; testifying as an expert at trial regarding delays and damages; arbitrating construction disputes; writing and updating design and construction contracts and specifications.

Mathew Trzepacz, PE, Task Order Manager

Mr. Mathew Trzepacz, P.E., PhD, is responsible for oversight of this task order. He has over 40 years of experience in progressively responsible positions managing transportation design, maintenance, and construction. He has been the Project Manager for assignments in the FTA's PMOC Program in Regions 2, 4, and 8 for over eight years. He also developed the training manual and was an instructor for the National Transit Institute's course on the Management of Transit Construction Projects, which was established for the FTA. Mr. Trzepacz was previously responsible for a staff of professional engineers and maintenance forces as Chief Engineer for the Southeastern Pennsylvania Transportation Authority (SEPTA).

John Lehman, PE, Rail Equipment Engineer

John Lehman has over 35 years of experience in the transportation sector. Mr. Lehman has directed multi-disciplinary, multi-national engineering design teams on rail car manufacturing and large construction projects. He specializes in heavy equipment design, maintenance and operations, construction, and operations analysis for rail car procurement, rail manufacturing facilities and car repair and locomotive servicing facilities. Mr. Lehman has prepared engineering and economic studies on equipment selection, maintenance, transportation operations, and plant location.

Edward F. Nicholson, PE, Systems Integration Manager

Mr. Nicholson, P.E., has over 36 years of experience and has served as Senior Rail Planning Engineer, Superintendent of Signals, Communications, and Superintendent of Transportation for the Port Authority Trans-Hudson Corporation (PATH). During his employment at Hill, among other assignments, Mr. Nicholson has performed PMOC oversight reviews and assessments on the Dulles Corridor Metrorail Project, Washington Metropolitan Area Transit Authority Projects, the Weber County Commuter Rail, and Mid-Jordan Projects in Salt Lake City, and the Central Florida Commuter Rail Project.

Judy R. Mewborn, CCM, Construction Management Manager

Ms. Mewborn has over 30 years of experience in the construction field performing such duties as capital program manager, senior project/construction manager, project control, facilities condition assessment, design management, surveying, planning, space programming, and the production of design and construction documents. Her experience also includes acting as a client representative Project Manager on federal and local government projects. Additional experience includes project management on educational, hospitality and commercial projects, as well as designer and project assistant on residential projects.