

**MONTHLY MINI MONITORING REPORT**

**May 2019**

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

Metropolitan Washington Airports Authority  
Washington, DC

July 9, 2019

**PMOC Contract Number:** DTFT60-14-D-00011

**Task Order Number:** 005, **Project Number:** DC-27-5331, **Work Order No.** 04

**OPs Referenced:** 01, 25

**Hill International, Inc.**

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**Length of Time PMOC Assigned to Project:** 6.0 years

**Length of Time PMOC Lead Assigned to Project:** 6.0 years

## EXECUTIVE SUMMARY

*The FTA and Project Management Oversight Contractor (PMOC) met with the Metropolitan Washington Airports Authority (MWAA) on June 3, 2019, for the Quarterly Progress Review Meeting on Phase 1 and Phase 2 of the Locally Preferred Alternative (LPA) for the Dulles Corridor Metrorail Project. MWAA provided additional information on June 17, 2019 and June 25, 2019. 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 May 1 through May 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 April 2019, the project was 83% complete based on expenditures.*
- *The MWAA Project Master Schedule (PMS) through May 1, 2019 continues to show the contractual SSCD as August 7, 2019, the contractor's forecast substantial completion is April 4, 2020.*
  - *CRC's latest schedule update through April 2019 forecasts a Substantial Completion Date (SSCD) of April 4, 2020, representing 241 days of delay, a loss of 6 days from their March 2019 schedule update.*
  - *HP's latest schedule update through April 2019 forecasts a SSCD of July 21, 2020 which is 577 calendar days delayed from the contract substantial completion date, a loss of 67 calendar days from their March 2019 schedule update.*
- *The MWAA PMS through May 1, 2019 indicates two conflicting Revenue Operations Dates (RODs). In the WMATA System Wide portion of the PMS, a ROD of July 16, 2019 is indicated. In the same portion of the PMS, WMATA's completion of Operations Readiness Testing (ORT)*

thru declaration of ROD is October 2, 2020. The RODs must be reconciled. MWAA's Project Master Schedule does not reflect a reconciliation of the conflicting completion dates, and cannot be considered a true project master schedule. This discrepancy will be discussed at the July PMOC oversight meeting.

### Core Accountability Information

<b>TIFIA Core Accountability Items</b>			
<b>Project Status</b>		<b>Original at TIFIA Closing</b>	<b>Current Estimate (EAC)</b>
<b>Cost</b>	Cost Estimate	\$2,778,235,564	\$2,778,235,564
<b>Contingency</b>	Unallocated Contingency	\$551,451,179	\$257,742,809
	Total Contingency (allocated plus Unallocated)	\$551,451,179	\$257,742,809
<b>Schedule</b>	Revenue Service Date	1/31/19	July 2020
		<b>Amount (\$)</b>	<b>Percent (of total)</b>
<b>Planned Value to Date</b>	Total budgeted cost of work scheduled to date	\$2,292,655,395	91%
<b>Earned Value to Date</b>	Budgeted cost of work completed to date, i.e. actual total value of work earned or done	\$2,174,603,343	86%
<b>Actual Cost</b>	Total cost of work completed to date ( <i>actual total expenditures</i> )	\$2,099,741,113	83%
<b>Contracts</b>		<b>Amount (\$)</b>	<b>Percent</b>
	Total contracts awarded to date	\$2,412,516,196	98%
	Total construction contract awarded to date (construction contracts only)	\$1,736,727,907	70%
	Physical construction work completed (amount of construction contract work actually completed)	\$1,527,746,945	88%
<b>Major Issues</b>	<b>Status</b>	<b>Comments / Planned Action</b>	
SWM changes to Package A	Change resulted in 13 month schedule delay. Construction cost yet to be negotiated.	<i>The construction cost is expected to be part of the global settlement at the end of the contract.</i>	

MWAA's extended management costs due to 13 month delay.	Cost yet to be finalized.	<i>Final audit needs to be completed.</i>
<i>Delays to both Package A and Package B</i>	<i>The March 2019 contractor schedule updates indicate Package A is delayed 235 days and Package B is delayed 510 days which, if correct, result in a substantial delay in the Revenue Service Date.</i>	<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 through April 1, 2019 indicates a RSD of July 2020.</i>
<i>Non- Buy America compliant overhead cranes in Service and Inspection Building</i>	<i>Five overhead bridge cranes purchased for installation in the Service and Inspection Building at the Yard do not meet Buy America requirements and may have to be replaced. Three of the cranes are already installed.</i>	<i>MWAA will request that prime contractor for the Yard, Hensel Phelps (HP), submit a new Buy America certification from Demag under the manufactured product standard (49 CFR 661.5).</i>
<b>Date of Next Quarterly Meeting (if known):</b>		<i>June 3, 2019</i>

### Major Problems/Issues

1. The additional construction costs related to the **Stormwater/Early 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. WMATA has stated they cannot open **rail service** without the yard. *The April 2019 contractors' schedule updates indicate a substantial completion date for Package A of April 4, 2020, and for Package B of July 21, 2020, which, based on WMATA's position that the Yard is a prerequisite for RSD, will delay the RSD. This issue of what is the forecast RSD remains unresolved. Both contractors are clearly positioning themselves for delay claims at the Project's completion. MWAA must establish a schedule based on their estimate of the level of completion for each contract and establish a realistic RSD.*
3. Five **overhead bridge cranes** purchased from Demag, a German firm, for the Yard's Service and Inspection Building (SIB) have been certified by the Package B contractor (HP) Buy America compliant based on designation of the cranes 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. MWAA has requested recertification under the manufactured product standard (49 CFR 661.5). Recertification could result in a delay to the scheduled completion, if the cranes cannot be recertified and compliant overhead cranes have to be purchased and installed.

4. **Elevator/escalator rooms** along the mainline, the HVAC equipment does not meet code clearance requirements around the elevator/escalator equipment. Various options were being investigated including replacing the equipment with smaller units. Selected option includes relocation of elevator equipment and reconfiguration of HVAC equipment. This could impact the schedule if the code clearances cannot be provided in a timely manner to obtain permits.
5. On May 16, 2018, the Department of Justice (DOJ) unsealed their filing against Universal Concrete Products Corporation for violations of the False Claims Act. As part of the filing, the DOJ alleged that the aggregate being used in the **precast concrete panels** was from an unapproved quarry and failed to meet industry standard requirements, including alkali-silica reaction (ASR) testing. MWAA and CRC ordered an independent petrographic examination, and the findings were that there is currently no evidence of ASR in the materials and a low potential for formation in the future. WMATA has suggested that they will defer comment until the conclusion of the WMATA Office of Inspector General's (OIG) review of construction and concrete quality on the project. The WMATA OIG has not provided a timeline for the conclusion of its review. This could have a negative impact on the scheduled revenue service date if WMATA does not accept the proposed remediation. In the meantime, MWAA has directed the contractors to proceed with applying a waterproofing treatment to the panels.
6. In September 2018, MWAA reported that CRC was not meeting cross-level specifications at special trackwork and **concrete ties** were suspected to be a contributing factor due to excessive camber. The preliminary results of a re-survey of the crossovers indicate the cross-levels can be brought within tolerance by re-tamping the ballast in affected areas. CRC has remedied the condition by providing varying thickness track components. Final results of MWAA's re-survey of the mainline crossovers are being compiled, but the re-survey has been delayed due to need to work around dynamic testing. If a significant number of mainline crossover ties have to be replaced, it is likely to cause a delay to the schedule due to the lead-time required to procure replacement ties.
7. 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's refusal to accept the proposed remediation could result in a schedule delay to the revenue service date.
8. The **windscreen** bearing pedestals at the Dulles Airport Station exhibited cracking and investigation revealed a lack of confining reinforcement and damaged bearing plate anchors. The contractor responded to MWAA's comments on the formal submittal of the design change and is preparing the package for submittal to the AHJ. The remediation could pose a delay to the Package G contractor's work resulting in a potential cost impact. Repairs are underway for NCR-1325.
9. 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. The conclusions 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 DCMP Phase 2 construction contracts is as follows:

Contract	Description	Planned Substantial Completion (5/1/19 PMS)	Construction Status
Package A	Rail Line, Station, Systems Contract	08/2019	91% complete
Package B	Maintenance Facility	05/2020	98% complete
Package S	Maintenance Facility Site Preparation	--	<b>Completed</b> in December 2014
Package G	Screenwall at Dulles Station	08/2020	<i>The construction permit was issued on May 24, 2019.</i>
Package P	Stormwater Ponds	06/2021	<i>Permit for Package P1 issued on May 13, 2019. Package P2 100% Design is under review. Package P3 design is 65% complete and on hold.</i>
Package K	Project Closeout		
Herndon Station	Parking Garage	Opened 04/08/2019	100% complete
Innovation Center Station	Parking Garage	12/31/2019	70% complete
Loudon Gateway Station	Parking Garage	10/9/2019	86% complete
Ashburn (Route 772) North	Parking Garage	--	<b>Completed</b> in January 2018
Ashburn (Route 772) South	Parking Garage	7/25/2019	92% complete

## **Construction – Package A**

*During May 2019, the Contractor continued Dulles Toll Road (DTR) relocation south of the Herndon Station accessing the station kiss and ride area to allow realignment of the Toll Road for the Herndon Station. Median barrier walls were cast in their final configuration between the DTR and the Dulles International Airport Access Highway (DIAAH). Repaving of the DTR and DIAAH continued with the Project work zones, working both day and night shifts depending upon availability and weather. Rework of the Innovation Station sanitary line to provide the proper slope was completed. The stormwater management ponds were constructed as access became available. Stormwater drainage lines were installed along Edmund Halley Drive as the roadway reconfiguration continued. Fence grounding was completed along the guideway walls prior to energization of the contact rail and access of WMATA's vehicles.*

*Communication and power lines were 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 were relocated along the Edmund Halley Drive roadway realignment.*

*Herndon Station – Station ceiling grid installation continued in the station and on the pedestrian bridges. Elevator and escalator trim work continued in the north and south pavilions. Glazing and trim work also continued in the pavilions.*

*Innovation Station – Finish work continues on the station and pavilion. Finishes are being applied to the station with ceiling grids and lighting fixtures. Plumbing fixtures were installed and finish tile was placed in the restrooms. Station elevator and escalator testing and verification continued.*

*Reston Town Center Station –Detailing of the north and south pavilion elevators and escalators continued. The installation of roofing trim and ceiling grid continued in the station and on the pedestrian bridges. Trim installation continued within the station.*

*Dulles Airport Station – The installation of station lighting and ceiling installation continued in the mezzanine. Handrails were set on the ornamental staircase. Station mezzanine paver cleanup continued. The installation of station walkways and exterior lighting continued.*

*Loudoun Gateway Station – Installation of station vault roofing trim continued, along with pulling electrical cable throughout the station. Station and pedestrian bridge ceiling grid and panel installation trim work continued in May. Station ceramic tile work also continued.*

*Ashburn Station – Station vault roof work continues, as does escalator and elevator work and cable pulling and terminating. Elevator and escalator work continues in the north and south pavilions. Work also continues with detailing of the pedestrian bridges and ceiling grid and panel installation.*

*Rail and switches along the Greenway median continue to be aligned into their final position up to and beyond the Ashburn Station. Cable trough lids were installed along the aerial guideway and the west at-grade guideway.*

*Emergency trip station panels were installed, wired and tested along the west at-grade guideway up to and beyond the Ashburn Station. Electricians continue installing jumpers and bonds on the west at-grade track. Installation of power and train control cables in the cable troughs continued throughout the western section of the guideway to and beyond the Ashburn Station. Installation of guideway mounted equipment for train control and switch operations continued on the at-grade*



*ballasted guideway on the west from the aerial guideway abutments to the Ashburn Station. TPSS and station equipment was tested and final connection verification of this equipment continued prior to applying power to these downstream pieces of equipment and facilities.*

*Communications cables were installed along the alignment and communications rooms were equipped with racks and interconnecting cables were installed and terminated. Intrusion detection cabling and panels were installed on the at-grade guideway fencing from the Phase 1 tie-in to the at-grade guideway west towards the Ashburn Station.*

*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 track and switches have been readied for future dynamic testing. Testing along the guideway from TPSS #17 through the Dulles Airport Station and east to the Reston Town Center Station continued. The guideway east to the Wiehle Tie-in was energized. Train movement in this area took place only to supply trains from the WMATA Phase 1 guideway to the test track that now includes Reston Town Center Station. Tracks from Reston to the Phase 1 Tie-in will be energized only to allow trains to be moved through this area.*

### **Construction – Package B**

*As of the end of May 2019, work is continuing to progress on four major buildings in the Maintenance Facility. During the month, work on the sanitary force main began. Perimeter fence installation continued and installation of bio-retention ponds progressed. Work also continued on the direct fixation track troughs at concrete crossings.*

*Punch list work continues at the Service and Inspection Building (SIB), Maintenance of Way Building (MWB, Transportation Building (TB), Warehouse Building (WHB), Vehicle Storage Facility (VSF) and Storage Bins (STB). Elevator work also continued in the MWB. The installation of industrial equipment continued in the Train Wash Facility (TWF). Testing of the Yard Train Control (YTC) cabling throughout the site continued during May. Switch installation, signal installation and insulated joint installation progressed.*

### **Packages G and P**

*The construction permit for Package G (Dulles Airport Station Screen Wall) was issued on May 24, 2019.*

*Package P (Stormwater Management Ponds) is broken into three pond packages. The construction permit for the P1 Permit Package was issued on May 13, 2019. The P2 100% Design Package was submitted at the end of April and is under review. The P3 65% Design Package is on hold; construction for those BMPs is scheduled in 2020.*

### **Real Estate Acquisition**

*MWAA's report indicating the status of the Property Acquisitions through May 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 48 parcels is complete. Parcel 328, the JBG Smith's Arboretum property, may require FTA approval since it may be over \$100,000. Parcel 328 is being negotiated. To facilitate construction, MWAA has obtained rights of entry for properties not acquired.*

### **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.

### **National Environmental Policy Act (NEPA)**

*MWAA last updated their Summary Matrix of Environmental Mitigation Measures to FTA on April 30, 2019 for the first quarter of 2019. It is the PMOC's observation that MWAA is incorporating the mitigation measures into their design and construction.*

### **B. Project Management Plan (PMP) and Sub-plans**

*MWAA has submitted the PMP and required sub-plans. During the reporting period that ended May 31, 2019, **PMP Final Version 3.1** was approved by FTA on May 8, 2019. MWAA submitted an updated Risk and Contingency Management Plan (RCMP) on May 29, 2019 which is under review.*

### **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 May 2019 is 1734, an overall decrease of 0.3% from the April 2019 actual count of 1817.*

- **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% 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).*

- **Davis-Bacon Act Verification**

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

### **D. Project Cost**

- *Through May 2019, approved change orders totaled \$207,166,157 for Package A. There were \$40,078 in change orders approved in May 2019.*
- *The change orders in process in May 2019 total \$43,394,949, and 49 Requests for Change (RFC) are under evaluation totaling approximately \$35,626,178 in Contractor proposals for Package A.*

- In addition, MWAA has approved change orders for Package B that total \$37,063,169. In May 2019, change orders in process total \$869,589 and 15 Requests for Change (RFC) under evaluation total \$4,394,897.
- These charges against contingency represent a total of \$328,514,939 or 62.25% of the total Project Contingency of \$527,740,251. This is at a point where overall Project completion is at 83%. **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 April 30, 2019, (latest available data) is shown in the following table.

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

DESCRIPTION	ORIGINAL BUDGET	BASELINE BUDGET <sup>3 5</sup>	EXPENDITURE TO DATE <sup>4</sup>	ESTIMATE AT COMPLETION <sup>6</sup>	PERCENT OF EAC EXPENDED TO DATE
<b>Design-Build</b>					
Design Build Main Line - Package A	\$ 1,177,777,000	\$ 1,177,777,000	\$ 1,260,385,617	\$ 1,401,183,043	
Commodity Escalation - Package A	\$ 16,000,000	\$ 16,000,000	\$ -	\$ 16,000,000	
Design Build Main Line - Package G		\$ 6,966,000	\$ 830,262	\$ 6,966,000	
Design Build Main Line - Package P		\$ 26,586,161	\$ 2,256,547	\$ 26,586,161	
<b>Subtotal Design-Build Main Line</b>	<b>\$ 1,193,777,000</b>	<b>\$ 1,227,329,161</b>	<b>\$ 1,263,472,427</b>	<b>\$ 1,450,735,204</b>	
Yard - Package B + Yard Soil Preparation - Package S	\$ 269,280,530	\$ 258,939,297	\$ 264,274,518	\$ 298,138,072	
Commodity Escalation - Package B	\$ 4,000,000	\$ 4,000,000	\$ -	\$ 3,928,000	
<b>Subtotal Design-Build Yard</b>	<b>\$ 273,280,530</b>	<b>\$ 262,939,297</b>	<b>\$ 264,274,518</b>	<b>\$ 302,066,072</b>	
<b>Design-Build Contracts Total</b>	<b>\$ 1,467,057,530</b>	<b>\$ 1,490,268,458</b>	<b>\$ 1,527,746,945</b>	<b>\$ 1,752,801,276</b>	<b>87%</b>
<b>Right of Way</b>					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 26,115,075	\$ 57,500,200	
<b>Right Of Way Total</b>	<b>\$ 58,600,000</b>	<b>\$ 58,600,000</b>	<b>\$ 26,115,075</b>	<b>\$ 57,500,200</b>	<b>45%</b>
<b>WMATA Agreement</b>					
Vehicles	\$ 205,868,200	\$ 205,868,200	\$ 133,752,665	\$ 181,302,601	
WMATA Non Revenue Vehicles	\$ 9,250,751	\$ 9,620,781	\$ 130,668	\$ 9,620,781	
WMATA Project Management and Other Costs	\$ 90,205,767	\$ 89,835,737	\$ 42,705,226	\$ 89,835,737	
<b>WMATA Agreement Total</b>	<b>\$ 305,324,718</b>	<b>\$ 305,324,718</b>	<b>\$ 176,588,559</b>	<b>\$ 280,759,119</b>	<b>63%</b>
<b>Preliminary Engineering</b>					
<b>Preliminary Engineering Total</b>	<b>\$ 75,000,000</b>	<b>\$ 75,000,000</b>	<b>\$ 73,266,056</b>	<b>\$ 75,000,000</b>	<b>98%</b>
<b>Airports Authority Services</b>					
Airports Authority Project Management	\$ 64,620,000	\$ 64,620,000	\$ 62,960,328	\$ 66,471,913	
Project Management Support <sup>7</sup>	\$ 140,000,000	\$ 140,000,000	\$ 168,094,989	\$ 166,560,000	
Other Costs <sup>1</sup>	\$ 116,182,137	\$ 116,682,137	\$ 64,969,162	\$ 121,400,247	
<b>Airports Authority Services Total</b>	<b>\$ 320,802,137</b>	<b>\$ 321,302,137</b>	<b>\$ 296,024,479</b>	<b>\$ 354,432,160</b>	<b>84%</b>
<b>Contingency</b>					
<b>Contingency Total</b>	<b>\$ 551,451,179</b>	<b>\$ 527,740,251</b>		<b>\$ 257,742,809</b>	
<b>TOTAL PROJECT COSTS</b>	<b>\$2,778,235,564</b>	<b>\$2,778,235,564</b>	<b>\$2,099,741,113</b>	<b>\$2,778,235,564</b>	<b>83%<sup>2</sup></b>

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 overrun 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 \$9.2 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.

7. Estimate at completion is being revised and will be published next month.

## 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 *May 1, 2019 Project Master Schedule*, provided by MWAA. *These dates are based on CRC’s April 2019 Monthly Schedule Update which was “Not Accepted” by MWAA. CRC’s April 2019 Schedule Update forecasts a substantial completion of April 4, 2020 reflecting 241 days delay to the Project Contractual Substantial Completion Date of August 7, 2019. This reflects a loss of 6 days from the March 2019 schedule update. The last schedule update from CRC that was approved, with comments, was dated September 2017.*
- *Hensel Phelps’ April 2019 schedule update forecasts substantial completion on July 21, 2020 which is 577 calendar days delayed from the contract substantial completion date. This schedule was “Not Accepted” by MWAA.*
- *MWAA’s May 1, 2019 Project Master Schedule indicates a Revenue Service Date (RSD) of July 16, 2020; however, the basis for the new RSD was not provided. WMATA’s RSD as listed in the same Project Master Schedule indicates a RSD of October 2, 2020. 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 issue of conflicting RSD dates will be discussed at the July PMOC oversight meeting.*

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)

DULLES CORRIDOR PHASE 2 MILESTONES		
DESCRIPTION	RE-BASELINED SCHEDULE	UPDATED SCHEDULE**
Package A – Complete Design*	10/21/15	10/13/19**
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)
Package A – Complete Station Build-out	11/21/18	07/11/19**
Package A – Complete Systems Installation	09/21/18	11/08/19**
Fairfax County – Construction of Parking Facilities Complete	04/30/18	12/31/19
Loudoun County - Construction of Parking Facilities Complete	02/28/17	04/30/20
Package A – Forecasted Substantial Completion	08/07/19	04/04/20**
Package B - Complete Yard Systems and Commissioning	03/02/18	02/07/20**
Package B – Forecasted Substantial Completion	12/23/18	07/21/20**
Complete WMATA Operations Readiness Testing	10/06/19	06/03/20**
Complete WMATA Revenue Operations Acceptance Testing (Baseline: 3/31/20)	03/31/20	10/02/20**
Revenue Service Date (RSD) (Baseline: 3/31/20)	03/31/20	07/16/20**
Project Final Acceptance	06/30/20	10/2020**

\* Includes changes

\*\* Based on Unapproved Schedules

### Critical Path

- CRC’s Primary Critical Path as reflected in their *April 2019* schedule update runs through *modifications to the Wiehle Station for the Phase 1 tie-in and dynamic testing and systems performance demonstration.*

MWAA’s reasons for rejection of the *April 2019* schedule update include:

- 1) *SSCD exceeds the contractual date by 241 days;*
- 2) *Incorporation of additional safe braking tests is yet to be added in Areas 3, 4 and 5 to the schedule in order to accurately forecast its schedule impact;*
- 3) *A technical solution for the cross-level track issue has not been agreed upon;*
- 4) *Schedule performance continues to lag behind schedule forecasts;*
- 5) *Schedule is missing activities to identify some of the rework, repairs and removal of defective work in key areas;*
- 6) *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*
- 7) *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 and establish a realistic RSD.***

### **Important Activities – 90-Day Look Ahead**

- *Right of Way acquisition to be completed.*
- *Utility relocation to be completed.*
- *Construction of wayside facilities to be completed.*
- *Testing and commissioning of wayside TPSS and TBS to be completed*
- *Construction at Reston, Herndon, Innovation, Dulles Airport, Loudoun Gateway, and Ashburn Stations to be completed.*
- *At-Grade Track – West Segment Testing to be completed.*
- *MWAA to update the RCMP and perform a Monte Carlo analysis of the Project schedule.*
- *Construction of the Maintenance of Way, Transportation, Warehouse and Train Wash Buildings to be completed.*
- *Survey vehicle testing with WMATA trains of Package B (Yard) to be completed.*

### **G. Quality Assurance/Quality Control**

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

- *clearances in the elevator/escalator rooms do not meet code requirements,*
- *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, and*
- *spurious activation of several surge arrestors in TPSS #15 and TPSS #17.*

### **H. Safety and Security**

**Construction Safety and Security** – *Through May 2019, the contractors have accumulated 10,126,610 hours worked. There have been 66 OSHA Recordable non-lost time cases and 4 OSHA Recordable lost time cases totaling 36 lost time days.*

**Safety and Security 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.

#### **I. Americans with Disabilities Act (ADA)**

*There have been no new developments addressing the non-compliant platform expansion joint. The Access Board determined the joint to be non-compliant with the ADAAG. Additional on-site inspections of installed conditions are planned to further the determination; however, the platform level of the at-grade stations are currently inaccessible. There are several ADA issues have been identified in the Maintenance of Way Building in the yard facilities. They include: first floor women's rest room, men's locker room, break room and the first floor control office. These are described as minor by MWAA, and are expected to be corrected during the punch list work. More walkthroughs by WMATA's ADA team are expected to be completed in September 2019, closer to acceptance of the yard and shops.*

#### **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. *MWAA has requested that Hensel Phelps, submit a new Buy America certification from Demag under the manufactured product standard (49 CFR 661.5).*

### **Project Risks**

**Risk and Contingency Management Plan (RCMP):** The Final RCMP, Revision 3.0 was submitted on February 1, 2018, and approved by the FTA on March 6, 2018. *MWAA held a Risk Workshop on February 7, 2019 in preparation to updating the RCMP which was submitted on May 29, 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.

**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 to perform a Monte Carlo Analysis of their best estimate of the project schedule. That analysis generated a RSD of July 16, 2020.*

## Action Items

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

PR	ITEM	IDENTIFICATION	NATURE of PROBLEM	D	A	I	COMMENTS	STATUS
2	2A	MWAA to update PMP.	PMP Version 3.0 should be reviewed and updated.	Y	Y	Y	Final submittal was made on February 28, 2019. <i>PMOC completed its review of the document and submitted the draft PMP Review Report to FTA on April 29, 2019 recommending approval of the PMP. FTA approved the PMP on May 8, 2019.</i>	C
2	2B	MWAA to provide Hensel Phelps' schedule for replacing the non-compliant overhead cranes.	The overhead cranes in the Service and Inspection Building do not meet Buy America requirements.	N	N	N	Discussions started on November 13, 2018, and <i>the recertification has not yet been provided by Hensel Phelps.</i>	O

**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
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
<i>IRR</i>	<i>Issue Requiring Resolution</i>
LPA	Locally Preferred Alternative
MWAA	Metropolitan Washington Airports Authority
MWB	Maintenance of Way Building
<i>NDC</i>	<i>Notice of Design Change</i>
NEPA	National Environmental Policy Act
NTP	Notice to Proceed

NTSB	National Transportation Safety Board
OCIP	Owner Controlled Insurance Program
PIP	Property Identification Plans
PMOC	Project Management Oversight Contractor
PMSS	Project Management Support Services
PMP	Project Management Plan
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
TPB	Transportation Police Building
TPSS	Traction Power Substation
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  
WMSC

Washington Metropolitan Area Transit Authority  
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
86%	Percent Work in Place Complete at the date of this report ( <i>earned value</i> )
95.89%*	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
\$2,099,741,113	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
83%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$257,742,809	Total project contingency remaining (allocated and unallocated contingency)

**APPENDIX C – MWAA SAFETY AND SECURITY CHECKLIST**

<b>Project Overview</b>	<b>Dulles Corridor Metrorail Project – Phase 2</b>		
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		
<b>Project Plans</b>	<b>Version</b>	<b>Review By FTA</b>	<b>Status</b>
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. APMC'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.
<b>Safety and Security Authority</b>	<b>Y/N</b>	<b>Notes/Status</b>
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 March 18, 2019.
Has the grantee submitted its safety certification plan to the oversight agency?	Y	
Has the grantee implemented security directives issued by the Department of Homeland Security, Transportation Security Administration?	Y	WMATA will be operator. TSA representatives participate in the monthly SCWG meetings.



<b>SSMP Monitoring</b>	<b>Y/N</b>	<b>Notes/Status</b>
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	<i>The completion of the SITC for Package A and Package B was expected by May 31, 2019.</i>
Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	N	<i>The completion of the SITC for Package A and Package B was expected by May 31, 2019.</i>
Does the grantee evaluated change orders,	Y	Contractor is responsible for this

design waivers, or test variances for potential hazards and /or vulnerabilities?		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"> <li>• Activation Plan and Procedures</li> <li>• Integrated Test Plan and Procedures</li> <li>• Operations and Maintenance Plan</li> <li>• Emergency Operations Plan</li> </ul>	N	
Has the grantee issued final safety and security certification?	N	
Has the grantee issued the final safety and security verification report?	N	

<b>Construction Safety</b>	<b>Y/N</b>	<b>Notes/Status</b>
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.

<b>Federal Railroad Administration</b>	<b>Y/N</b>	<b>Notes/Status</b>
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 Ten Risks as of November 2017			
Risk ID	Event Description	Primary Risk Mitigation	Risk Rating
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)	The notice of change was for information only and has not been submitted with an associated schedule in P6 native format for evaluation. 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.	25
30.C.185 NEW	Installation of gravity Sewer	Restrategize the execution to ensure timely execution and dedicated crew to do this work.	25
80.03.C.243 NEW	Overall total cost claim by CRC	MWAA has initiated its own cost and scheduling forensic analysis in Aug 2017 for detail analysis of CRC's schedule and progress/performance and to refute any CRC's unfounded claims.	21
80.08.C.196	WMATA does not provide adequate Vehicles availability, adequate and qualified staff to witness the test, and operators to complete testing, start-up or final acceptance in a timely manner.	1) Started tiger team meetings to coordinate needed efforts from all stakeholders. 2) Working with WMATA on lessons learned from Phase 1 which will be implemented on Phase 2 3) WMATA is retiring old rail cars so ample number of retired cars will be available to support the testing 4) Working with WMATA to utilize the WFC annex facility for repairs & maintenance which will minimize travel delays to Phase 2 site.	21
50.05.C.153	Communications System Scope of Work – Fire Alarm and Intrusion Alarm systems separation.	The designs for these changes have been finalized and the changes to construction have been reduced. Risk realized. Cost yet to be finalized. Negotiating to minimize cost impact, working with MEC to reduce schedule impact	20
80.03.C.3	Recovery of Revised Baseline Schedule (for changes post CO-66) (Acceleration of 109 days)	Working to avoid further impacts that may delay the schedule. Minimize directing changes and objectively monitor CRC's performance for concurrent delays.	20
80.03.C.242 NEW	CRC subcontractors overhead claims	Assessing CRC delays and productivity inefficiencies that contributed to this cost impact	20
20.02.C.1	Screenwall Glazing at Dulles Station	Currently in procurement for competitive bidding	20
80.R.112	Future WMATA (through its granted authority) requires changes to the scope post design or award to the DB.	The Project Team is to establish funding contingency for unanticipated or unforeseen WMATA actions impacting project(s) scope, and monitor/manage same in conjunction with DB and WMATA.	20
80.02.D.241	Repurposing of the TPB - Design	1) MWAA formally advised HP to cease procurement of specialized equipment and materials associated with the police function in the TPB. 2) WMATA to identify which design elements can be deleted or modified to meet WMATA's intended use of the facility. 3) Exclude the TPB from the contractual SSCD, but, complete the RTRA units in the building by ORD. 4) Exclude the TPB from the LEED Silver Certification.	20
30.01.C.244 NEW	Repurposing of the TPB - Construction	1) MWAA formally advised HP to cease procurement of specialized equipment and materials associated with the police function in the TPB. 2) WMATA to identify which design elements can be deleted or modified to meet WMATA's intended use of the facility. 3) Exclude the TPB from the contractual SSCD, but, complete the RTRA units in the building by ORD. 4) Exclude the TPB from the LEED Silver Certification.	20

\* Proposed NEW Item and Top Ten 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 June 3, 2019 that continues to indicate that all VDOT work will be completed by September 30, 2019.*

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, but Dominion Energy has had various equipment breakdowns and is behind schedule.* Old Meadow Road construction is *still* expected to be completed by *September 30, 2019.*

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 May 2019, seventeen full time equivalents were working on Phase 1, which is the same as the April 2019 actual headcount.*

## **APPENDIX F – PMOC Evaluation Team**

### **Michael Radbill, PE, F.ASCE, Program Manager**

Mr. Radbill is responsible for oversight of this Task Order. He was assigned to this Task order at the end of March 2012 when he joined Hill. 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.