

COMPREHENSIVE MONTHLY REPORT

December 2018

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

Metropolitan Washington Airports Authority
Washington, DC

February 12, 2019

PMOC Contract Number: DTFT60-14-D-00011

Task Order Number: 005, **Project Number:** DC-27-5331, **Work Order No.** 02

OPs Referenced: 01, 25

Hill International, Inc.

One Commerce Square
2005 Market Street, 17th Floor
Philadelphia, PA 19103

PMOC Lead: Mathew E. Trzepacz, [REDACTED]

Length of Time PMOC Assigned to Project: 5 years

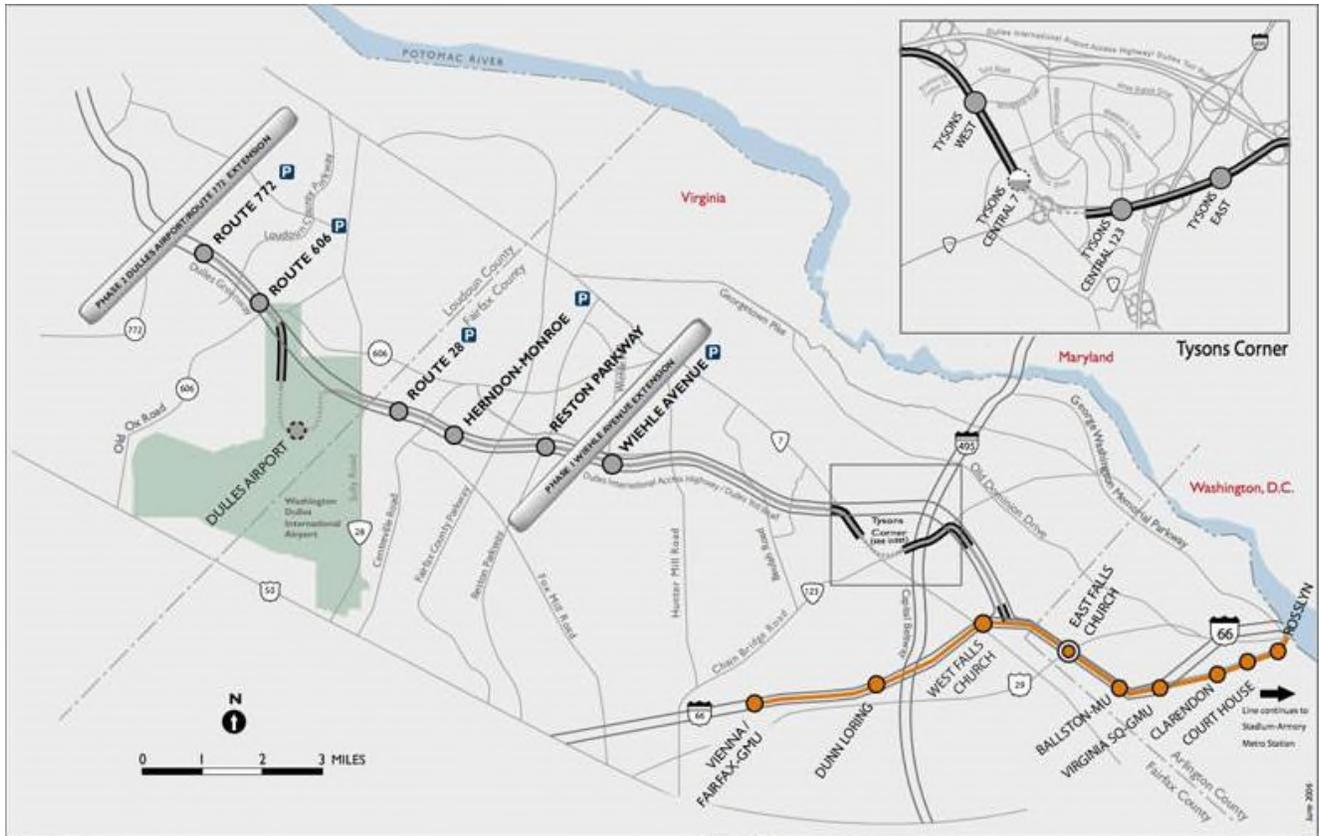
Length of Time PMOC Lead Assigned to Project: 5 years

EXECUTIVE SUMMARY

The FTA and Project Management Oversight Contractor (PMOC) met with the Metropolitan Washington Airports Authority (MWAA) on December 3, 2018 for the Quarterly Progress Review Meeting on Phase 1 and Phase 2 of the Locally Preferred Alternative (LPA) for the Dulles Corridor Metrorail Project. Supplemental updated material was received from MWAA on December 7, 2018, December 17, 2018 and February 1, 2019. PMOC monthly progress meetings typically occur the second week of each month.

1. 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. DCMP Phase 2 includes six new stations: Reston Town Center, Herndon, Innovation Center, Dulles Airport, Loudoun Gateway (Route 606) and Ashburn (Route 772) Stations. Phase 2 also includes a maintenance and storage yard facility near Dulles Airport, wayside facilities (including traction power substations, tiebreaker stations, and stormwater management ponds along the alignment), 5 new parking facilities with a total of 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.



2. Project Status

MWAA announced on April 27, 2015 that they anticipated a delay of thirteen months to the Project. Change Order 066 granted the Package A Contractor 396 days of excusable delay which makes the revised Scheduled Substantial Completion Date (SSCD) August 7, 2019. *The latest Project Master Schedule through December 1, 2018 continues to indicate the contractual SSCD of August 7, 2019. The Package A Contractor's latest schedule through November 2018 continues to show a forecast Substantial Completion of November 4, 2019, representing 89 days of delay and was "Not Accepted" by MWAA. MWAA's Project Master Schedule indicates the Revenue Service Date (RSD) continues to be March 31, 2020.*

3. Core Accountability Information

TIFIA Core Accountability Items			
Project Status:		Original at TIFIA:	Current Estimate (EAC):
Cost	Cost Estimate	\$2,778,235,564	\$2,778,235,564
Contingency	Unallocated Contingency	\$551,451,179	\$293,098,820
	Total Contingency (allocated plus Unallocated)	\$551,451,179	\$293,098,820
Schedule	Revenue Service Date	1/31/19	3/31/2020
		Amount (\$)	Percent (of total)
Planned Value to Date	Total budgeted cost of work scheduled to date	\$2,208,231,322	89%
Earned Value to Date	Budgeted cost of work completed to date, i.e. actual total value of work earned or done	\$2,052,392,082	83%
Actual Cost	Total cost of work completed to date (<i>actual total expenditures</i>)	\$1,930,171,961	78%
		Amount (\$)	Percent
Contracts	Total contracts awarded to date	\$2,366,902,357	97%
	Total construction contract awarded to date (construction contracts only)	\$1,695,808,833	70%
	Physical construction work completed (amount of construction contract work actually completed)	\$1,385,746,803	82
Major Issues	Status	Comments / Action / Planned Action	
SWM changes to Package A	Change resulted in 13 month schedule delay. Construction cost yet to be negotiated.	(b) (5)	

Package B design delays through June 1, 2016.	Global settlement 128 days.	<i>A change order was issued to HP based on MWAA's audit of HP's overhead. HP signed the change order in January 2019.</i>
MWAA's extended management costs due to 13 month delay.	Cost yet to be finalized.	<i>Final audit needs to be completed.</i>
Package B/ Package A interface coordination.	Package A has forecast interface supply dates up to three weeks behind Package B's need dates.	<i>AC power has been supplied to the yard facility by the Package A contractor.</i>
Date of Next Quarterly Meeting (if known):		<i>March 4, 2019</i>

4. Major Problems/Issues

1. Stormwater/Early Design Changes in Package A have resulted in a thirteen-month delay to the Project's construction substantial completion date to August 7, 2019. MWAA reported the thirteen-month *time* delay claim was settled [REDACTED]. The additional construction costs related to the Stormwater/Early Design Changes have yet to be finalized.
2. *On December 19, 2019, the Senior Vice President of the Dulles Corridor Metrorail Project stated that the Maintenance Yard opening date has been delayed at least 115 days. WMATA has stated they cannot open rail service without the yard. An updated Project schedule has yet to be developed.*
3. *The five bridge cranes installed in the Service and Inspection Building do not meet Buy America requirements.* (b) (5)
4. *The elevator/escalator rooms are too small and do not meet code clearance requirements. Various options are being investigated including using smaller equipment.*
5. *In April 2017, Capital Rail Constructors (CRC) informed MWAA that during an audit of Universal Concrete Products, the manufacturer of architectural pre-cast panels, errors were found in moisture content sampling of the aggregates used.* (b) (5)

[REDACTED]

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 alleges that the aggregate being used in the concrete was from an unapproved quarry and failed to meet industry standard requirements, including alkali-silica reaction (ASR¹) testing. (b) (5)

[REDACTED]

6. *In September 2018, MWAA reported that intermediate length concrete ties at crossovers along the mainline were found to have excessive negative camber. MWAA has informed CRC that the ties must be replaced prior to substantial completion. Four of the 49 yard crossovers have been measured and are acceptable. The remaining yard crossovers are being measured to determine if the excessive negative camber exists.*
7. *In July, 2018, MWAA identified numerous cracks in the precast panels for the exterior walls of the Service and Inspection Building (SIB), Warehouse Building (WHB) and the Transportation Building (TB). Based on MWAA's consultant's evaluation of the cracking it appears that most of the cracking is the result of panel connections to the foundation restraining the thermal and concrete shrinking movement of the panels. The precaster has been directed to reevaluate the precast concrete panel connection system, remediate the connections and mitigate the restraint.*
8. *MWAA identified an issue with concentrated fine in the ballast of the Yard. Remedial work to remove the fines continues.*

¹ASR is an expansive reaction that occurs over time in concrete between highly alkaline cement and the reactive non-crystalline (amorphous) silica found in common aggregates given sufficient moisture.

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MAIN REPORT

A. Project Status

Design Status

Final design and construction are being performed under Design-Build (DB) contracts for Package A as well as for 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 confirmed their commitment to deliver those elements as a condition precedent to receipt of their TIFIA loans.

Construction Status

Status of DCMP Phase 2 construction contracts is as follows:

<i>Contract</i>	<i>Description</i>	<i>Planned Substantial Completion</i>	<i>Construction Status</i>
<i>Package A</i>	<i>Rail Line, Station, Systems Contract</i>	<i>08/2019</i>	<i>85% complete</i>
<i>Package B</i>	<i>Maintenance Facility</i>	<i>05/2020</i>	<i>90% complete</i>
<i>Package S</i>	<i>Maintenance Facility Site Preparation</i>	<i>--</i>	Completed in December 2014
<i>Package G</i>	<i>Screenwall at Dulles Station</i>	<i>08/2020</i>	(b) (5)
<i>Package P</i>	<i>Stormwater Ponds</i>	<i>06/2021</i>	(b) (5)
<i>Package K</i>	<i>Project Closeout</i>		
<i>Herndon Station</i>	<i>Parking Garage</i>	<i>04/2019</i>	<i>97% complete</i>
<i>Innovation Center Station</i>	<i>Parking Garage</i>	<i>04/2019</i>	<i>65% complete</i>
<i>Loudon Gateway Station</i>	<i>Parking Garage</i>	<i>05/2019</i>	<i>59% complete</i>
<i>Ashburn (Route 772) North</i>	<i>Parking Garage</i>	<i>--</i>	Completed in January 2018
<i>Ashburn (Route 772) South</i>	<i>Parking Garage</i>	<i>05/2019</i>	<i>64% complete</i>

Construction – Package A

As of January 1, 2017, MWAA reported all aerial substructure and support work had been completed. As of September 1, 2017, all the deck spans had been poured. Structural crews have set the pedestrian bridges at the Herndon, Reston Town Center, and Innovation Center Stations.

The Contractor continues the relocation of the Dulles Toll Road (DTR) south of the Herndon Station for accessing the kiss and ride area and allowing the realignment of the DTR for Herndon Station. Traction power substations (TPSS) and tie-breaker stations (TBS) were graded and paved, as required and as temperatures permit. The stormwater management ponds were constructed on the TPSS #14 sites. Fencing to secure the system from at-grade access continue to be installed along the guideway, as were “chain marker” signs to identify the operating location on the system. Temporary fencing has been installed on overpasses to allow energization of the guideway below. The temporary fencing will be replaced with permanent materials when they are delivered to the Project from suppliers.

Power and communication lines continue to be relocated to allow for the relocation of the Edmund Hailey Roadway south of the Reston Town Center Station Pavilion. Power and communication lines also continue to be relocated to allow clearance from top of rail on the east and west sides of Ashburn Station.

Herndon Station – The installation of electrical cabling and mechanical piping continued. Station ceiling grid installation continued in the station and on the pedestrian bridges. Elevator and escalator work continued in the north pavilion and south pavilion. The section of the pedestrian bridge connecting the south pavilion to the parking garage was erected. This is the final section of bridge span on the Project.

Innovation Station – Finish work continues on the station and pavilion. Electrical cabling and plumbing work continues in the station. Finishes are being applied to the station with ceiling grids and lighting fixtures. Ceiling panels were installed after the successful close in code inspections. Plumbing fixtures were installed and finish tile was placed in the restrooms.

Reston Town Center Station – The installation of mechanical piping and pulling electrical cable continued within the station. North Pavilion construction continues with the detailing of the elevators and escalators. The installation of roofing panels and ceiling grid continued.

Dulles Airport Station – The installation of station lighting and ceiling grid framing continued in the mezzanine ceiling. Granite treads were placed on the staircases. Station platform pavers, canopy trim and ceiling panel installation continued in December.

Loudoun Gateway Station - Station vault roof skylight framing and glazing continues along with the installation of plumbing piping. Electrical cable pulling continues throughout the station and to the platform edge lighting. Station ceiling grid installation and pedestrian bridge detailing and trim work continued in December.

Ashburn Station - Roof work continues, as does mechanical, electrical and plumbing rough-in work. Elevator and escalator work continues in the north and south pavilions. Work also continues with detailing of the pedestrian bridges and ceiling grid installation.

Rail and switches along the at-grade guideway in the DIAAH median up to the Phase 1 tie-in were made ready for trains to be pulled through to access the test section of the guideway. The installation of rail and switches continued in the Greenway median up to and beyond the Ashburn Station. Cable trough lids were installed along the aerial and east at-grade guideways. The functionality of Emergency Trip Stations was tested on the guideway from Innovation Station to the yard leads. Emergency trip station panels were installed wired and tested along the east at-grade guideway up to the Phase 1 tie-in. Electricians continue installing jumpers and bonds on the aerial and at-grade track. Power and train control cables were installed in cable troughs

throughout the western section of the aerial guideway and along the at-grade guideway west to the Ashburn Station. Guideway mounted equipment for train control and switch operation continues to be installed on the aerial and at-grade ballasted guideway from Reston Station through the Yard leads. TPSS and station equipment was tested and final connection verification of this equipment continues prior to applying power to these downstream pieces of equipment and facilities. Communications cables were installed along the alignment and communications rooms are being equipped with racks and interconnecting cables are being 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 toward the Ashburn Station. Traction power connections were made to the contact rail along the aerial guideway and into the east at-grade guideway. The aerial guideway from TPSS #17 through the Dulles Station and east to the Innovation Center Station was verified and made ready for train movement and dynamic testing. This section of the guideway will be the first section of the Phase 2 alignment made ready for dynamic testing. Equipment in the communications and train control rooms were verified and made ready for systems testing.

Construction – Package B

As of the end of December 2018, work is continuing to progress on four major buildings in the Maintenance Facility. The on-site gas line installation was completed and meters installed. During the month, the Contractor performed work on direct fixation track troughs at concrete grade crossings. . The installation of the restraining rail on the inner loop tracks continued. Glycol fuel tanks were installed at the fuel pumps farm. Installation of perimeter fencing continued. The installation of the on-site gas line across Route 606 continued. Work on the sanitary force main remains on hold awaiting the relocation of overhead power lines. The installation of the bio-retention ponds also progressed

Mechanical, electrical and plumbing work continued in the high bay area of the Service and Inspection Building (SIB). Work for the close-in of the ceiling continued. The installation of industrial equipment also continued in the SIB. The installation of doors and hardware continued. The testing of equipment started in December.

Mechanical, electrical, and plumbing testing and installation of power circuits continued in the Maintenance of Way Building (MWB). The installation of doors and hardware continued in December.

Interior finish work continued in the Transportation Building (TB). The testing of industrial equipment began in the TB. Mechanical, plumbing and electrical installation continued in the Warehouse Building (WB). The installation of doors and hardware continues in the WB. Roof installation continued at the Train Wash Facility (TWF), and the installation of mechanical, electrical and plumbing work progressed. The installation of industrial equipment began in the TWF. Testing of yard train control cabling continued throughout the site. The installation of switches, signals and insulated joints also continued.

Packages G and P

Package G (Dulles Airport Station Screen Wall) contract was awarded to W.M. Schlosser Company on August 15, 2018 and the kick-off meeting was held on August 22, 2018. The contractor has made his first schedule submission and MWAA has provided comments. The 90% design submitted on November 1, 2018 has been reviewed and comments have been returned to

the contractor. *The comment resolution meeting was held on December 5, 2018. The pre-construction meeting with HGS, LLC for Package P (Stormwater Management Ponds) was held on June 14, 2018, and the substantial completion date is June 12, 2021. This contract includes two years of maintenance. HGS submitted their baseline schedule on October 5, 2018 which was accepted with comments. The design permit package was submitted to the Department of Environmental Quality (DEQ) and returned with comments (b) (5) [REDACTED] The schedule for performing the work has been submitted (b) (5) [REDACTED]*

Parking Facilities (formerly Package C)

Fairfax County is responsible for two parking facilities: one at the Innovation Center Station and one at the Herndon Station. Final design started in fall 2014. Project completion remains scheduled for April 30, 2019 for the Innovation Center Garage and is April 4, 2019 for the Herndon Station Garage. The project completions were previously revised by Fairfax County to accommodate the announcement by MWAA of a 13- month schedule delay.

The County's Department of Public Works and Environmental Services is the lead county agency for the design and construction of both parking facilities, and will be responsible for project management and oversight of both projects.

- **Herndon** - Fairfax County received bids for the Herndon Station Parking Garage and awarded the contract to Manhattan Construction; the NTP was issued on October 31, 2016. The Herndon Garage project cost was revised to \$44.5 million from \$56.7 million based on the winning bid. Fairfax County had a formal groundbreaking for the Herndon Garage on November 30, 2016. The County received the contractor's detailed construction schedule on January 20, 2017. The Garage Bridge Erection (connection between the new and existing garage) was completed on November 26, 2017, and access to the site from Sunrise Valley Road was reopened on that date. *Construction is 97% complete with fit out work remaining. The County expects the garage to be completed in March/April 2019.*
- **Innovation Center** - Notice to proceed was issued to Manhattan Construction on April 3, 2017. *Construction is 65% complete, with completion scheduled for early-April 2019. Work on the garage has been suspended since August 2018 when settlement of three caissons in the garage was discovered. A stop work order has been issued pending the analysis and resolution of the issue. There are thirteen caissons of concern which are being monitored every thirty minutes. Remediation for four caissons has been completed involving the use of high strength grout and micro-piles. Two more caissons are undergoing remediation which is expected to be completed by January 2019. Impacts to the schedule are to be evaluated when construction activities resume.*

Loudoun County is responsible for three parking facilities: one at the Route 606 Station and two at the Route 772 Station.

The RFQ for the Ashburn South and Loudoun Gateway Garages was released on September 1, 2016 consistent with the County's schedule. Loudoun County is also coordinating with MWAA and WMATA regarding the garage fare collection.

- **Route 772 North (Ashburn North)** – The Ashburn North Garage was constructed as a public privatization arrangement between Loudoun County and Comstock, LLP. Comstock was the developer of the Wiehle-Reston Parking Garage at the Phase 1 terminus.

Construction on the Ashburn North Garage began in January 2017, and the construction was completed in January 2018. The certificate for non-residential occupancy was received and the garage opened at the end of April 2018. The Ashburn North Garage will be initially used for Comstock’s commercial use, and will be open for Metrorail users at the start of revenue service. As stipulated in the Master Agreement, the temporary use will cease 180 days before the Phase 2 revenue service date.

- **Route 772 South (Ashburn South) and Route 606 (Loudoun Gateway)** – On May 2, 2017, the Loudoun County Board of Supervisors authorized the award of the Design Build contract for the design and construction of the Loudoun Gateway Garage (1,965 spaces) and Ashburn South Garage (1,540 spaces) to the S. B. Ballard Construction Company. Contract award was May 4, 2017, and the notice to proceed was issued on June 1, 2017. The 100% design has been approved. The *contractual* substantial completion date for both garages is May 30, 2019. MWAA is the Authority Having Jurisdiction (AHJ) for the Ashburn South Garage, and Loudoun County is the AHJ for the Loudoun Gateway Garage. Loudoun County reports permits for the construction of both Ashburn South and Loudoun Gateway Garages have been obtained. Construction has begun on the installation of footings and drainage at Ashburn South. Installation of footings at Loudoun Gateway will begin when weather permits. Loudoun County and the Design-Build Contractor met with the fabricator of the external precast structure and all materials have been confirmed and fabrication has begun. The lease agreement with the Claude Moore Charitable Foundation for direct access to the Ashburn South site was signed on February 5, 2018 providing direct access to the site eliminating the intrusion into the Package Contractor’s construction site. .

The Ashburn South Garage is 64% complete and is estimated to be completed by the end of July 2019 which is two months behind schedule. Loudoun Gateway Garage is 59% complete and expected to be completed in September 2019 which is four months behind schedule. Both garages are expected to be completed before the Revenue Service Date.

Loudoun County will prepare documents for a concessionaire to operate and maintain the Ashburn South and Loudoun Gateway Garages.

Real Estate Acquisition

The status of the Property Acquisitions through December 2018 is shown in the following table. Although acquisition of thirteen properties remains to be completed, there has been no impact to construction since rights of entry have been secured for all properties.

**Dulles Corridor Metrorail Project
Extension to Dulles Airport / Route 772**

Property Acquisition Status

Priority	Total Anticipated ¹	PIP ² Complete	Initial Appraisal Complete ³	Revised PIP/ Appraisal Pending ⁴	Offer Made ⁵	Revision in Process	Settlement Reached/ Condemnation Processed ⁶	Acquisition Complete ⁷
1	9	9	9	0	9	1	8	8
2A	27	25 ⁸	22	0	22	0	21	<u>20</u>
2B	20	20 ⁹	20	0	20	<u>2</u>	18	<u>15</u>
Total¹⁰	56	54	51	0	51	<u>3</u>	47	<u>43</u>

Right of Entry (ROE) Status:

- Full Access for Construction provided for acquired parcels and Parcels 237, 226, and 211.
- Full Access to Fairfax County-owned property was provided in 2013 for Parcels 213, 223, 232, 234, and 235.
- Full Access to Loudoun County-owned property was provided in 2016 for Parcels 257 and 258.

¹ Total based on current understanding. Two new acquisitions added in September 2018 due to a newly identified expanded TCE by CRC for wall construction on Parcels 311 and 509. These will be incorporated into ongoing acquisitions for Parcels 211 and 309

² PIP = Property Identification Plan.

³ Initial appraisals complete for all Priority 1 Parcels 207, 214, 220, 237, 262, 255, 253, and 254. The appraisal for Parcel 258 is not needed since it was dedicated to Loudoun County prior to being made available to the Project. Appraisals complete for Priority 2 Parcels 231, 238, 240, 275, 276, 256, 320, 264, 271, 251, 266, 261, 228, 249, 260/360, 224, 259, 349, 208, 225, 209, 210, 357, 281, 225, 226, 211, 227, 212, 267, 263, 328, 252, 269, 358, 204, 205, 268, and 265. Appraisals for the dedicated parcels, Parcels 236, 336, 235, and 257 are not needed since the landowner is not subject to condemnation.

⁴ New appraisal required for Parcel 237 due to revised utility relocation and pier construction approach completed in September 2018.

⁵ Offers made for Parcel 207, 220, 214, 238, 240, 237, 231, 262, 254, 275, 276, 253, 256, 320, 264, 271, 251, 266, 261, 228, 249, 255, 260/360, 224, 259, 349, 208, 209, 281, 227, 225, 226, 211 (June 2017), 210, 252, 269, 328 (including revision to Parcel 228), 263, 358, 357, 205, 204, 268, 212, 267 and 265. Negotiations ongoing for Parcels 237, 226, 210, and 265. Appraisal and offer revised for Parcels 226, 212, and 267 (latter two pending due to new ROW dedication by landowner). Offers rescinded for Parcels 253 and 271 as the acquisition need for those parcels was eliminated. An offer is not required for Parcels 236, 336, 235, and 257. Condemnation package prepared and sent to VDOT for Parcels 207, 220, 320, 260/360, 249, 349, 210, 557, 269, 268 (not filed), 228, 328, and 210 (second owner offer) due to impasse.

⁶ Negotiations completed for Parcels 207, 214, 220, 240, 253, 231, 264, 276, 275, 238, 262, 320, 254, 256, 261, 236, 266, 251, 255, 271, 224, 349, 260/360, 235, 257, 258, 208, 209, 263, 225, 227, 357/557, 358, 252, 205, 204, 211, 269, 268, 210, and 226. Parcel 268 delivered the signed DEV Easement in August 2018, providing full construction access.

⁷ Completed acquisitions: Parcels 207 (COT), 214, 220 (COT), 240, 231, 264, 276, 275, 238, 262, 320 (COT), 254, 256, 261, 266, 251, 255, 260/360 (COT), 258, 249 (COT), 349 (COT), 224, 263, 225, 269 (COT), 208, 227, 205, 209, 252, 259, 204, 281, 336, 210 (COT), 268, and 228/328 (COT). Parcels 253 and 271 offers rescinded; no further action required. Parcels 236, 235, and 257 dedications completed.

⁸ Priority 2A PIP status: PIPs have been completed for all Priority 2A parcels. Parcels 240, 238, 231, 275, 276, 264, 320, 271, 256, 266, 251, 249, 265, 358, 236, 281, 336, 349, 252, 269, 328, 263, 308, 309, and 366. PIPs Accepted by MWAA. Parcel 236 and 336 completed as a proffered dedication.

⁹ Priority 2B PIP status: PIPs have been completed for all Priority 2B parcels. MWAA Accepted PIPs for Parcel 261, 228, 260/360, 259, 224, 257, 357, 235, 225, 226, 212, 267, 211, 208, 209, 210, 227, 204, 205, and 268.

¹⁰ Does not include those parcels on which construction will be performed by permit/permission (TRIP II and Fairfax County). Acquisitions/conveyances will be based on as-built conditions and completed prior to Substantial Completion.

December 31, 2018

Third Party Agreements

Six Intergovernmental Agreements are required for Phase 2. *These agreements describe the roles and responsibilities of MWAA and the parties relative to the Project.*

The status of the six agreements is summarized in the table *below*.

AGREEMENT	STATUS	NOTES
WMATA – New Agreement	Executed on August 7, 2013	Effective date August 7, 2013
VDOT – Amendment of Phase 1 Agreement	Executed on November 4, 2013	Effective date November 4, 2013
Fairfax County – Amendment of Phase 1 Agreement	Executed on May 28, 2013	Effective date May 28, 2013
Loudoun County	Executed on August 7, 2013	Effective date August 7, 2013
Town of Herndon	Executed on July 9, 2013	Effective date July 9, 2013
TRIP II (Dulles Greenway)	Executed on September 30, 2013	Effective date August 1, 2013
Local Funding Agreement with VDOT for Route 606 improvements	Executed on June 11, 2014	Work was added to the design plans prior to execution of the agreement.

National Environmental Policy Act (NEPA)

MWAA prepared an Environmental Assessment covering the preliminary engineering design refinements for Phase 2, and issued it for public review on May 10, 2012. The FTA Regional Administrator issued a Finding of No Significant Impact (FONSI) on December 17, 2012, that stated there were “no significant environmental or socioeconomic impacts associated with the design refinements for Phase 2 of the Dulles Corridor Metrorail Project.” FTA cautioned that should there be any changes in the location of the parking facilities by the counties, or if they need any additional property for the construction of the parking facilities, MWAA must notify FTA immediately to determine if the environmental documents would need revisions.

MWAA submitted a letter regarding the environmental re-evaluation for the DCMP Phase 2 parking garage refinements to the FTA on June 4, 2015. FTA’s concurrence letter dated August 10, 2015 was received on August 11, 2015.

MWAA last updated their Summary Matrix of Environmental Mitigation Measures to FTA on *October 31, 2018 for the third quarter of 2018.*

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

MWAA has submitted the PMP and required sub-plans. Below is the status of each plan received by FTA through *December 31, 2018.*

PMP Final Version 2.2 was submitted to the FTA on January 31, 2017; and PMOC recommended the FTA approve the document with comments on February 8, 2017. FTA approved the Project Management Plan Final Version 2.2 with comments on April 6, 2017. The draft update of the PMP, Version 3.0 was submitted on March 30, 2018 and PMOC submitted its review comments to MWAA on May 8, 2018. (b) (5)

Subsequently, MWAA submitted PMP Version 3.0 on March 30, 2018 and PMP Version 3.1 covering the Testing and Start-up Phase of the Project on June 28, 2018. PMOC provided comments to both submissions. MWAA submitted the Pre-Final PMP Version 3.1 on November 30, 2018 and PMOC provided comments on January 8, 2019. (b) (5)

Quality Program Plan (QPP), Revision 1, was approved by FTA on September 23, 2013 and FTA requested that MWAA update it as needed as Phase 2 continues to move forward through final design and construction.

Safety and Security Management Plan (SSMP), Revision 3 dated February 28, 2017 was approved by FTA on August 8, 2017.

Risk and Contingency Management Plan (RCMP) - MWAA submitted the Final RCMP, Revision 3.0 on January 22, 2018. PMOC had a few comments which MWAA incorporated into the RCMP on February 1, 2018. PMOC recommended FTA approve the RCMP on February 5, 2018. FTA approved the RCMP, Revision 3.0 on March 6, 2018.

WMATA's Rail Fleet Management Plan (RFMP), Revision 5a was submitted and PMOC provided comments on January 12, 2017. (b) (5)

C. Project Management Capacity and Capability

(b) (5)

MWAA reported the *estimated* number of full-time equivalents for Phase 2 during *December 2018* is 2592, an increase of 399 from the *November actual* count. The *estimated December 2018 numbers* are indicated in the table below.

MWAA	35
Virginia Department of Rail and Public Transportation (DRPT)	1
Virginia Department of Transportation (VDOT)	4
Washington Metropolitan Area Transportation Authority (WMATA)	39
Project Management Support Services	111
Capital Rail Constructors (CRC) – Package A	2,000
Hensel Phelps Construction Company (HPCC) – Package B	387
<i>WM Schlosser – Package G</i>	6
<i>HGS – Package P</i>	9
Total	2,592

- **Project Controls**

MWAA has developed project management procedures with regard to monitoring and controlling project scope, quality, schedule, cost, contingency management, and safety. FTA approved PMP Version 2.2 on April 6, 2017. (b) (5)

- **Compliance** (b) (5)

- **Disadvantaged Business Enterprise (DBE) Goal** – MWAA developed a DBE Project Goal of 25% of the federal participation cost for Phase 2, which the FTA’s Region 3 Civil Rights Officer reviewed, and subsequently approved on August 26, 2013.

MWAA continues to review and verify Scheduled DBE participation (Contracts Awarded) and Actual DBE participation (Payments). The following table details DBE Goals, DBE contracts awarded and DBE participation achieved through the last assessment on *November 30, 2018*. Dollar values are included for the latest assessment period.

PMSS’ DBE Contracts Awarded toward the goal has been adjusted to reflect a reduced DBE Subcontract. Package A’s November 2018 DBE Contracts Awarded, DBE Contracts Awarded Toward Goal, and DBE Payments November 2018 have been adjusted to remove Non-DBE payments previously reported by the Prime Contractor.

PRIME CONTRACTS	DBE GOAL %	DBE CONTRACTS AWARDED (DBEC/TC)	NEW DBE AWARDS NOVEMBER 2018	DBE CONTRACTS AWARDED TOWARD GOAL	DBE GOAL ACHIEVED (DBE Pmts/TC)	DBE PAYMENTS NOVEMBER 2018
PreEng - PRELIMINARY ENGINEERING	0%	15.77%	\$0	N/A	15.77%	\$0
PMSS - RAIL OFFICE	25%	24.47%	\$0	97.87%	19.37%	\$4,742,515
PKG A - DESIGN BUILD CONTRACT	14%	14.17%	\$0	101.19%	9.29%	\$0
PKG B - RAIL YARD AND MAINTENANCE FACILITY	14%	15.30%	\$338	109.28%	11.67%	\$468,267
PKG S - SOIL STOCKPILE RELOCATION	25%	37.53%	\$0	150.11%	21.49%	\$0
PSI - SPECIAL INSPECTION SERVICES	15%	18.32%	\$0	100.00%	16.98%	\$66,106
ROW - REAL ESTATE ACQUISITION	25%	21.70%	\$0	86.80%	13.29%	\$39,925
CHANGE ORDER & CLAIM STATUS	15%	14.70%	\$0	73.51%	9.31%	\$0
TOTALS			\$ 338			\$ 5,316,813

- **Davis-Bacon Act Verification** – MWAA is reporting Davis-Bacon Act verification activities in the Monthly Progress Report. As of the *November 2018* MWAA Monthly Progress Report, DBA compliance monitoring is ongoing including the review of certified payroll reports and Prime Contractor requests to add additional job classifications and wage rates.

D. Project Cost

MWAA's Phase 2 project budget was \$3,126,450,757, including the cost of the parking facilities funded by Fairfax and Loudoun Counties. This figure is in year-of-expenditure dollars and excludes the finance costs. With the commitment from both Fairfax and Loudoun Counties to fund and procure the parking facilities independently, MWAA has revised its Phase 2 project budget to \$2,778,235,564. This is a deduction of \$348,215,193, which includes associated primary and secondary mitigation for the parking facilities. The SCC budget and expenditure summary for the period ending *November 30, 2018* is shown below.

Dulles Corridor Metrorail Project - Phase 2

All Packages Cost Summary by SCC Code, November 2018

FTA/SCC CODE	DESCRIPTION	ORIGINAL BUDGET ¹	BASELINE BUDGET ²	EXPENDITURE IN NOVEMBER	EXPENDITURE TO DATE ⁴	ESTIMATE AT COMPLETION ⁵	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ 344,946,326	\$ 267,928,670	\$ 2,505,598	\$ 187,452,627	\$ 204,402,734	\$ 4,722,034
20	Stations	\$ 238,424,057	\$ 231,928,000	\$ 3,075,793	\$ 162,280,020	\$ 229,855,037	\$ 15,379,351
30	Yards, Shops, Administration Buildings	\$ 329,857,097	\$ 213,730,843	\$ 4,917,797	\$ 183,656,232	\$ 232,465,408	\$ 17,160,565
40	Site Work and Utility Relocation	\$ 394,075,868	\$ 371,790,853	\$ 11,421,828	\$ 573,062,358	\$ 707,094,509	\$ 138,192,830
50	Systems	\$ 193,784,179	\$ 213,516,247	\$ 4,375,290	\$ 133,196,626	\$ 231,252,024	\$ 26,096,877
60	Right of Way Acquisition	\$ 58,523,267	\$ 58,800,000	\$ 57,873	\$ 23,665,541	\$ 57,369,200	\$ -
70	Vehicles	\$ 212,765,000	\$ 213,613,334	\$ -	\$ 193,752,665	\$ 187,489,735	\$ (24,565,599)
90	Professional Services	\$ 564,398,592	\$ 377,387,368	\$ 6,457,675	\$ 521,305,893	\$ 635,209,097	\$ 57,656,373
90	Contingency ³	\$ 551,451,179	\$ 527,740,251	\$ -	\$ -	\$ 293,096,820	\$ (234,641,431)
TOTAL PROJECT COST		\$ 2,778,235,564	\$ 2,778,235,564	\$ 33,849,734	\$ 1,990,171,961	\$ 2,778,235,564	\$ -

1. Original Budget is based on Table D-1 "Program Budget Estimates" of RCMR Rev3 submitted to FTA in November 2011.

2. Baseline Budget reflects cost loading of Package A baseline schedule approved in February 2014 and redistribution of spare parts budget. Baseline Budget for Packages B and S is adjusted to match the Contract Price. Baseline Budget for Contingency is adjusted by \$95 million increase which is the net of the decrease in Package B and increase in Package S. Baseline Budget for Contingency is further adjusted by \$33.6 million decrease to fund Packages G and P.

3. All of the contingency resides in SCC 90.

4. Package A expenditure to date includes \$1 million of retainage released in December 2014. Excludes \$3.5 million in Settlements.

5. Estimate at Completion includes Baseline Budget plus any changes funded via contingency/drawdown requests and budget transfer requests. Excludes \$12.3 million in Settlements.

On May 14, 2013, MWAA awarded the Package A Contract for final design and construction of the line and stations in the amount of \$1,177,777,000. This was \$307.6 million below the engineer's estimate, which did not take into account the Insurance line item that was deleted from the contract award amount. In April 2014, MWAA redistributed the SCC budgets to reflect the

cost-loaded Final Baseline Schedule for Package A and in April 2015 the SCC budgets were redistributed to reflect the cost-loaded Final Baseline Schedule for Package B.

As of November 30, 2018, Contingency Drawdown Requests (CDR) totaling \$258,352,359 have been issued. This includes a contribution to Contingency of \$9,841,233 due to the balance of the under run for Package S and the overrun in Package B. The original contingency budget was reduced by \$33.6 million to fund Package G and Package P. Over half the contingency amount, \$293,098,820 remains available.

The following are the expenditures through November 2018 by SCC for each of the contract packages. Both Package A and Package B continue to lag the planned performance levels. (b) (5)

It should be noted that CRC's estimated headcount for December represents a 25% increase over the November actual headcount.

Package A Cost by SCC – November 2018

Dulles Corridor Metrorail Project - Phase 2

Package A Project Cost Summary by SCC Code

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET ¹	BASELINE BUDGET ²	EXPENDITURE IN NOVEMBER	EXPENDITURE TO DATE ³	ESTIMATE AT COMPLETION ⁴	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ 340,953,449	\$ 163,928,670	\$ 1,505,536	\$ 187,452,627	\$ 200,402,734	\$ 4,722,034
20	Stations	\$ 224,432,514	\$ 223,697,000	\$ 5,073,735	\$ 162,180,020	\$ 221,624,037	\$ 15,378,351
30	Yards, Shops, Administration Buildings	\$ 377,285	\$ -	\$ -	\$ -	\$ -	\$ -
40	Site Work and Utility Relocation	\$ 352,759,752	\$ 509,201,330	\$ 11,213,905	\$ 547,402,104	\$ 634,347,688	\$ 128,128,728
50	Systems	\$ 172,044,132	\$ 188,997,000	\$ 4,375,290	\$ 138,431,210	\$ 204,732,777	\$ 26,096,877
60	Right of Way Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
70	Vehicles	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
80	Professional Services	\$ 87,209,868	\$ 91,953,000	\$ 92,722	\$ 112,037,658	\$ 114,816,011	\$ 22,589,457
90	Contingency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTALS		\$ 1,177,777,000	\$ 1,177,777,000	\$ 22,261,188	\$ 1,147,503,618	\$ 1,375,923,247	\$ 196,915,447

1 Original Budget is based on Table 2-1 "Program Budget Breakdown" of RCMP Rev1c submitted to FTA in November 2013

2 Baseline Budget reflects cost loading of Package A baseline schedule approved in February 2014 and redistribution of spares parts budget This reflects the original contract amount

3 Expenditure to date includes \$5 million of retainage released in December 2014 Excludes \$8.5 million in Bettements

4 Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests Excludes \$12.3 million in Bettements

Package B Cost by SCC – November 2018

Dulles Corridor Metrorail Project - Phase 2

Package B Project Cost Summary by SCC Code

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET ^{1,3}	BASELINE BUDGET ²	EXPENDITURE IN NOVEMBER	EXPENDITURE TO DATE	ESTIMATE AT COMPLETION ⁴	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
20	Stations	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
30	Yards, Shops, Administration Buildings	\$ 202,977,283	\$ 201,238,645	\$ 4,917,797	\$ 183,991,435	\$ 219,547,710	\$ 16,663,065
40	Site Work and Utility Relocation	\$ 25,772,661	\$ 23,296,613	\$ 78,708	\$ 20,075,546	\$ 31,433,577	\$ 8,043,768
50	Systems	\$ -	\$ 2,772,451	\$ -	\$ 736,820	\$ 2,772,451	\$ -
60	Right of Way Acquisition	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
70	Vehicles	\$ -	\$ 1,558,000	\$ -	\$ -	\$ -	\$ -
80	Professional Services	\$ 20,530,586	\$ 24,123,291	\$ 23,439	\$ 26,068,091	\$ 27,968,805	\$ 3,954,710
90	Contingency	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TOTALS		\$ 249,280,530	\$ 252,989,000	\$ 5,019,944	\$ 230,871,892	\$ 281,722,543	\$ 28,661,543

1 Original Budget is based on Table 2-1 "Program Budget Breakdown" of RCMP Rev1c submitted to FTA in November 2013

2 Baseline Budget reflects cost loading of Package B baseline schedule approved in March 2015 This reflects the original contract amount

3 Original Budget includes \$500,000 for the Route 606 improvements at Rail Yard that is now performed outside Package B

4 Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests

Package G – November 2018

Dulles Corridor Metrorail Project - Phase 2
DRAFT Package G Project Cost Summary by SCC Code

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET ¹	BASELINE BUDGET	EXPENDITURE IN NOVEMBER	EXPENDITURE TO DATE	ESTIMATE AT COMPLETION	
10	Guideway and Track Elements						
20	Stations		\$ 4,231,000			\$ 4,231,000	
30	Yards, Shops, Administration Buildings						
40	Site Work and Utility Relocation		\$ 1,915,000		\$ 46,371	\$ 1,915,000	
50	Systems						
60	Right of Way Acquisition						
70	Vehicles						
80	Professional Services		\$ 820,000			\$ 820,000	
90	Contingency						
TOTALS		\$ -	\$ 6,966,000	\$ -	\$ 46,371	\$ 6,966,000	

Package P – November 2018

Dulles Corridor Metrorail Project - Phase 2
DRAFT Package P Project Cost Summary by SCC Code

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET ¹	BASELINE BUDGET	EXPENDITURE IN NOVEMBER	EXPENDITURE TO DATE	ESTIMATE AT COMPLETION	CONTINGENCY TO DATE
10	Guideway and Track Elements						
20	Stations						
30	Yards, Shops, Administration Buildings						
40	Site Work and Utility Relocation		\$ 24,715,161	\$ 64,600	\$ 856,795	\$ 24,715,161	
50	Systems						
60	Right of Way Acquisition						
70	Vehicles						
80	Professional Services		\$ 1,871,000	\$ 7,125	\$ 17,813	\$ 1,871,000	
90	Contingency						
TOTALS		\$ -	\$ 26,586,161	\$ 71,725	\$ 874,608	\$ 26,586,161	

Through November 2018, approved change orders totaled \$176,504,461 for Package A. Change orders approved in December 2018 totaled \$30,481,618. The change orders in process in December 2018 total \$7,181,182, and 79 Requests for Change (RFC) are under evaluation totaling approximately \$45,452,891 in Contractor proposals for Package A. In addition, MWAA has approved change orders for Package B that total \$26,027,015. In December 2018, change orders in process total \$6,258,931 and 23 Requests for Change (RFC) under evaluation total \$8,863,481. This charge against contingency represents a total of \$291,906,098 or 55.35% of the total Project Contingency of \$527,740,251 at a point where overall Project completion is at 78%.

(b) (5)

The total charges against the Project are summarized below.

**Dulles Corridor Metrorail Project - Phase 2
Monthly Cost Report, November 2018**

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	\$ 1,147,503,618	\$ 1,375,923,247	
Commodity Escalation - Package A	\$ 16,000,000	\$ 16,000,000	\$ -	\$ 16,000,000	
Design Build Main Line - Package G		\$ 6,966,000	\$ 46,371	\$ 6,966,000	
Design Build Main Line - Package P		\$ 26,586,161	\$ 874,608	\$ 26,586,161	
Subtotal Design-Build Main Line	\$ 1,193,777,000	\$ 1,227,329,161	\$ 1,148,424,597	\$ 1,425,475,408	
Yard - Package B + Yard Soil Preparation - Package S	\$ 269,280,530	\$ 258,939,297	\$ 237,322,206	\$ 288,172,857	
Commodity Escalation - Package B	\$ 4,000,000	\$ 4,000,000	\$ -	\$ 3,928,000	
Subtotal Design-Build Yard	\$ 273,280,530	\$ 262,939,297	\$ 237,322,206	\$ 292,100,857	
Design-Build Contracts Total	\$ 1,467,057,530	\$ 1,490,268,458	\$ 1,385,746,803	\$ 1,717,576,265	81%
Right of Way					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 23,665,541	\$ 57,369,200	
Right Of Way Total	\$ 58,600,000	\$ 58,600,000	\$ 23,665,541	\$ 57,369,200	41%
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	\$ 8,208	\$ 9,620,781	
WMATA Project Management and Other Costs	\$ 90,205,767	\$ 89,835,737	\$ 37,138,039	\$ 89,835,737	
WMATA Agreement Total	\$ 305,324,718	\$ 305,324,718	\$ 170,898,912	\$ 280,759,119	61%
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	\$ 56,698,719	\$ 66,471,913	
Project Management Support	\$ 140,000,000	\$ 140,000,000	\$ 158,199,000	\$ 166,560,000	
Other Costs ¹	\$ 116,182,137	\$ 116,682,137	\$ 61,696,931	\$ 121,400,247	
Airports Authority Services Total	\$ 320,802,137	\$ 321,302,137	\$ 276,594,649	\$ 354,432,160	78%
Contingency					
Contingency Total	\$ 551,451,179	\$ 527,740,251		\$ 293,098,820	
TOTAL PROJECT COSTS	\$2,778,235,564	\$2,778,235,564	\$1,930,171,961	\$2,778,235,564	78%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 Excludes \$8.5 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 \$12.3 million in Betterments

Funding Sources

Primary funding for Phase 2 (excluding parking facilities) is shown in the table below. The CMAQ Grant was awarded in May 2018. The Northern Virginia Transportation Authority funding of \$60 million is to be used to fund just the construction of the Innovation Station and was awarded in October 2015 and May 2016. MWAA, Fairfax County, and Loudoun County received a total of \$1.876, 000,000 in direct loans under the United States Department of Transportation (USDOT) Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance program to assist in financing their shares.

Funding Source	Phase 2 Funding*	Percentage of Total
Commonwealth of Virginia	\$ 323,300	11.64%
Northern VA Transportation Authority	\$ 60,000	2.16%
Congestion Mitigation Air Quality (CMAQ) Grant (awarded)	\$ 7,401	0.40%
CMAQ (to be awarded)	\$ 3,668	
Fairfax County	\$ 515,910	18.57%
Loudoun County	\$ 273,066	9.83%
MWAA (Aviation Funds)	\$ 233,244	8.40%
MWAA (Dulles Toll Road)	\$ 1,361,647	49.01%
Total Sources of Funding	\$ 2,778,236	100.00%

* In \$1,000

TIFIA Funding Status

On August 20, 2014, United States Department of Transportation (USDOT) Transportation Infrastructure Finance and Innovation Act (TIFIA) credit assistance program executed a loan with MWAA, not to exceed \$1.278,000,000 billion to assist in financing its share. The TIFIA Loan with Loudoun County for up to \$195 million closed on December 9, 2014 and the TIFIA Loan with Fairfax County for up to \$403 million closed on December 17, 2014. The US Department of Transportation has provided \$1.876 billion in TIFIA Loans to support the construction of Phase 2. As of August 2014, this represents the largest TIFIA assistance for a single project in the program's history. *MWAA submitted a Recovery Plan on August 11, 2016 which reflected the 13-month delay to the Project. The Recovery Plan was accepted by FTA on October 3, 2016. MWAA submitted their 2017 TIFIA Financial Plan and associated Revised Financial Model of the Project on March 30, 2017. The 2018 TIFIA Financial Plan was submitted on March 30, 2018.*

E. Project Schedule

Phase 2 is currently in the design/construction phase. Construction began on Package A in June 2014 with the start of utility relocation. The commencement of revenue service is to begin on March 31, 2020, according to the last accepted overall Program Schedule. Since MWAA announced on April 27, 2015 that the Project was incurring a thirteen month delay, a revised baseline schedule has been submitted. Revised Project Milestones are updated based on the accepted-as-noted Package Revised Baseline Schedule in May 2015.

The table below shows the Phase 2 milestones as noted in the *December 1, 2018 Project Master Schedule* dated *January 4, 2019*, as provided by MWAA. *These dates are based on CRC's November 2018 Monthly Schedule Update which was "Not Accepted" by MWAA. CRC's November 2018 Schedule Update reflects 89 days delay to the Project Contractual Substantial Completion Date of August 7, 2019.*

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

*Includes changes

Critical Path

CRC's Primary Critical Path as reflected in their *November 2018* schedule update runs through *modifications to the Wiehle Station for the Phase 1 tie-in, continuing through dynamic testing in the east segments. MWAA did "Not Accept" this schedule update representing 89 days delay to the Project completion. The reasons for rejection of the November 2018 schedule update include: 1) SSCD exceeds the contractual date by 89 days; 2) A technical solution for the cross-level track issue has not been agreed upon; 3) Schedule performance continues to lag*

behind schedule forecasts; 4) Schedule is missing activities to identify some of the rework, repairs and removal of defective work in key areas; and 5) Failure to provide accurate forecast dates based on actual production rates, progress and availability of resources.

Important Activities – 90-Day Look Ahead

- *Right of Way acquisition to be completed.*
- *CRC to complete design (including design changes).*
- *At Grade Track – East Segment Testing to be completed.*
- *Aerial Track to Yard Lead Track Testing to be completed.*
- *MWAA to hold a risk workshop and update the RCMP.*
- *Dynamic Testing and Commissioning with WMATA trains to commence.*

F. Quality Assurance/Quality Control

The Quality Management Plan, Revision 1, submitted by CRC was approved in January 2014. MWAA added that it has requested the QC plans be submitted from the CRC subcontractors and vendors. CRC is submitting inspection test plans for MWAA review.

During December 2018, MWAA did not conduct any audits or surveillances of CRC on Package A.

MWAA typically submits a rolling six-month Audit Schedule at each monthly update meeting. *The most recent QA Audit Schedule for January 2019 through June 2019 for Package A is shown below.*

DULLES CORRIDOR METRORAIL PROJECT
Phase 2, Package A
QA Audit and Surveillance Schedule
January 2019 through June 2019

Tentative Date	Audit (A) Surveillance (S)	Organization/Activity	Joint Audit/ Surveillance	Lead
1/23/19	A	CRC Survey Audit	N	MWAA
2/20/19	A	CRC Construction Safety and Security Plan	N	MWAA
3/20/19	A	CRC ATC Audit	N	MWAA
4/24/19	A	CRC’s Care and Maintenance of installed equipment	N	MWAA
5/22/19	A	CRC Construction Quality Management Plan Testing and Inspection	N	MWAA
6/19/19	A	Quality Management Plan Audit	N	MWAA

During December 2018, MWAA did not perform any audits or surveillances of Hensel Phelps for Package B. The most recent QA Audit Schedule for January 2019 through May 2019 for Package B is shown below.

DULLES CORRIDOR METRORAIL PROJECT
Phase 2, Package B
QA Audit and Surveillance Schedule
January 2019 through May 2019

Tentative Date	Audit (A) Surveillance (S)	Organization/Activity	Joint Audit/ Surveillance	Lead
1/15/19	S	Package B Dynamic Testing Readiness	Y	MWAA/HP
3/21/19	S	M.C. Dean Quality Verification Records	Y	MWAA/HP
5/15/19	S	Post Installation Checkout Testing	Y	MWAA/HP

G. Safety and Security

Construction Safety and Security – *The safety statistics for Package A, Package B and Package P for December 2018 are contained in the tables below.*

Package A Safety and Security Performance Report, December 2018

EVENT	DURING PERIOD	CUMULATIVE
Hours Worked	<i>89,658</i>	<i>7,504,717**</i>
First-Aid Cases	<i>2</i>	<i>273</i>
OSHA Recordable Cases (Non-Lost Time)	<i>1</i>	<i>44</i>
OSHA Recordable Cases (Lost Time)	<i>0</i>	<i>3</i>
Lost Time Days (for cases above)	<i>0</i>	<i>8</i>
Utility Hits	<i>0</i>	<i>46</i>
Incident Investigation Reports	<i>6</i>	<i>316</i>
Property Damage Claims (>\$1500)	<i>1</i>	<i>45</i>
Vehicular Accidents on Public Roads	<i>0</i>	<i>30</i>
DEQ Reportable Environmental Spills*	<i>0</i>	<i>7</i>

*Spills that are less than 25 gallons are not reported as long as the oil has been cleaned up, and the spill does not impact groundwater, surface water, or other waters of the US.

** The cumulative total includes additional 45,985 hours (for the month of November 2018) reported in January 2019.

Package B Safety and Security Performance Report, December 2018

EVENT	DURING PERIOD	CUMULATIVE
Hours Worked	<i>41,009</i>	<i>1,778,537</i>
First-Aid Cases	0	17
OSHA Recordable (Non-Lost Time)	0	13
OSHA Recordable (Lost Time Cases)	0	1
Lost Time Days (for cases above)	0	28
Property Damage Claims (>\$1500)	0	0
Incident Investigation Reports	0	81
Utility Hits	0	0
Vehicular Accidents	0	1
DEQ Reportable Environmental Spills*	0	0

*Spills that are less than 25 gallons are not reported as long as the oil has been cleaned up, and the spill does not impact groundwater, surface water, or other waters of the US.

Package P Safety and Security Performance Report, December 2018

EVENT	DURING PERIOD	CUMULATIVE
<i>Hours Worked</i>	<i>866</i>	<i>1,868</i>
<i>First-Aid Cases</i>	<i>0</i>	<i>0</i>
<i>OSHA Recordable (Non-Lost Time)</i>	<i>0</i>	<i>0</i>
<i>OSHA Recordable (Lost Time Cases)</i>	<i>0</i>	<i>0</i>
<i>Lost Time Days (for cases above)</i>	<i>0</i>	<i>0</i>
<i>Property Damage Claims (>\$1500)</i>	<i>0</i>	<i>0</i>
<i>Incident Investigation Reports</i>	<i>0</i>	<i>0</i>
<i>Utility Hits</i>	<i>0</i>	<i>0</i>
<i>Vehicular Accidents</i>	<i>0</i>	<i>0</i>
<i>DEQ Reportable Environmental Spills*</i>	<i>0</i>	<i>0</i>

*Spills that are less than 25 gallons are not reported as long as the oil has been cleaned up, and the spill does not impact groundwater, surface water, or other waters of the US.

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.

H. Americans with Disabilities Act (ADA)

There have been no ADA issues reported to date. The design of the Project is ADA compliant.

I. Buy America

MWAA has identified the following items as being non-compliant with Buy America requirements:

*Mitsubishi Variant Refrigerant Flow (VRF) and ductless split systems,
Machine Shop Tools-radial arm drill press, engine lathe, vertical milling machine;
Hollow doors; and
Overhead Bridge Cranes.*

Subsequently, MWAA has determined that all but the overhead bridge cranes fall under the Small Purchase exception.

[REDACTED]

There are also miscellaneous small items that MWAA will certify.

Although the contractor claims the overhead bridge cranes should be considered as rolling stock, FTA has notified MWAA that characterization is incorrect. MWAA notified the contractor the overhead bridge cranes are non-compliant (b) (5)

J. Vehicle Technology

The Project is acquiring 64 new rail cars which are part of WMATA's 7000 Series Rail Car Procurement. The production of the Phase 2 rail cars began in February 2017. The 64th railcar was conditionally accepted on October 13, 2017.

Project Risks

The Final RCMP, Revision 3.0 was submitted on February 1, 2018, and the PMOC recommended FTA approval on February 5, 2018. FTA approved the RCMP, Revision 3.0 on March 6, 2018.

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: The result from MWAA's original schedule risk analysis showed that there *was a* less than five percent chance that the Schedule Substantial Completion Date (SSCD) would take place *on/or before* July 7, 2018. The *associated* 80% confidence level date for the SSCD *was* December 6, 2018, indicating a hypothetical delay of 152 calendar days. The schedule risk analysis performed by the project team was limited to the SSCD. For the Revenue Service Date (RSD), the project team has accepted the recommendation by PMOC to include a time contingency of 14 months in the overall program schedule. Overall, the schedule contingency, including the WMATA testing through the Revenue Service Date, is 14 months. *On* April 27, 2015 MWAA *announced* the Project had incurred a 13- month delay. *The delay* essentially *consumed* the entire original forecast Project Schedule Contingency *of* 14 months. Analysis performed on the revised baseline schedule with 13 months of extension and actual progress to date revealed that ten months of additional schedule contingency would suffice. *MWAA has scheduled a risk workshop for February 7, 2019 to review the RCMP, and in particular the schedule risk.*

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	N	MWAA submitted Draft PMP, Version 3, to FTA on March 30, 2018. PMOC submitted comments to MWAA on May 8, 2018. MWAA submitted the revised draft on June 28, 2018, and PMOC provided comments on October 23, 2018. <i>MWAA submitted the pre-final version to PMOC on November 30, 2018 and comments were provided on January 8, 2019 is under review. Final submittal is expected in February 2019.</i>	R
2	2B	<i>MWAA to provide more detail and the name and title of the presenter in their QPRM Issues Report. Request made December 3, 2018.</i>	<i>The dearth of information in the Issues Report leads to many questions and lengthy discussion at the QPRM.</i>	N	N	N	<i>More detailed Issues Report due for the March 4, 2019 QPRM.</i>	O
2	2B	<i>MWAA to provide back-up data and invoices in support of “Small Purchases” exclusion to Buy America requirements.</i>	<i>MWAA has deemed the Mitsubishi ductless split systems, small tool purchases and other items are under \$150,000.</i>	N	N	N	<i>Discussions started on November 13, 2018, and data is required by the end of February 2019.</i>	O
2	2B	<i>MWAA to provide Hensel Phelps’ schedule for replacing the non-compliant overhead cranes.</i>	<i>The overhead cranes in the Service and Inspection Building do not meet Buy America requirements.</i>	N	N	N	<i>Discussions started on November 13, 2018, and data is required by the end of February 2019.</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)

- 1- Most Critical
- 2- Critical
- 3- Least Critical

GRANTEE ACTION

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

PMO CONTRACTOR STATUS

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

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
LPA	Locally Preferred Alternative
MWAA	Metropolitan Washington Airports Authority
MWB	Maintenance of Way Building
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
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	Washington Metropolitan Area Transit Authority

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.

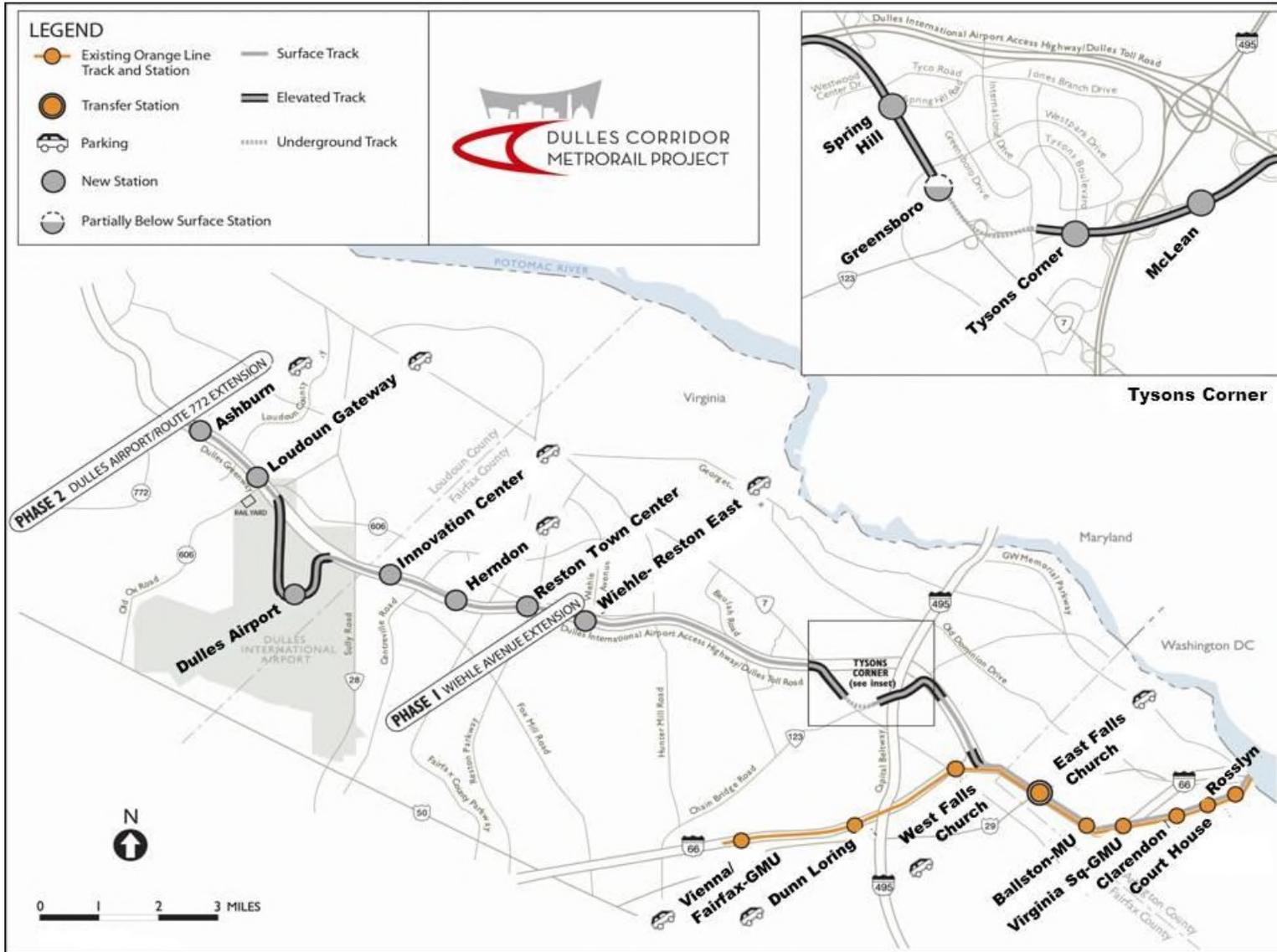
Current Delivery Milestone Schedule

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
83%	Percent Work in Place Complete at the date of this report (<i>earned value</i>)
89.04%*	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
\$1,930,171,961	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
78%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$293,098,820	Total project contingency remaining (allocated and unallocated contingency)

APPENDIX C – PROJECT MAP



APPENDIX D – 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.

<p>Safety and Security Certification Plan</p>			<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>
<p>System Safety Program Plan</p>	<p>January 2013</p>		<p>WMATA's 2014 SSPP is effective January 2014 and approved by TOC on April 25, 2014.</p>
<p>System Security Plan or Security and Emergency Preparedness Plan (SEPP)</p>	<p>3/2012</p>	<p>N/A</p>	<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 MWAA 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	Tri-State Oversight Committee (TOC)
Has the State designated an oversight agency as per Part 659.9?	Y	Tri-State Oversight Committee (TOC)
Has the oversight agency reviewed and approved the grantee's SSPP as per 659.17?	Y	WMATA's 2018 SSPP was approved by the 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	TOC and/or its contractor (TRA) routinely attend the quarterly meetings, including the most recent on <i>December 3, 2018</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	MWAAs 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 began updating their PHA in early 2017 is expected to complete the review in the fourth quarter of 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 to resolution any identified hazards and/or vulnerabilities?	N	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	

Has the grantee verified conformance with safety and security requirements during testing, inspection and start-up phases?	N	
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 E – 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. (b) (5)	25
30.C. 185 NEW	Installation of gravity Sewer	Restratgeize 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	(b) (5)	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. (b) (5)	20
80.03.C.242 NEW	CRC subcontractors overhead claims	(b) (5)	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 F – 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 December 3, 2018 that continues to indicate that all VDOT work will be completed on June 28, 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 will be funded jointly by Bechtel and MWAA. MWAA and Bechtel negotiated an agreement covering this work. Construction began on July 2, 2018. *Only two banding locations remain to be completed which will be dependent upon weather conditions.*

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. Old Meadow Road construction is expected to be completed by June 28, 2019. The closeout of the FFGA is expected to occur in several years following payment of final Project costs with regard to the first 64 rail cars, which is expected to extend until 2021.

As of December 2018, eighteen full time equivalents were working on Phase 1 which is two more than the November 2018 actual headcount.

APPENDIX G – 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.