

**COMPREHENSIVE MONTHLY REPORT**

**February 2018**

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

Metropolitan Washington Airports Authority  
Washington, DC

April 2, 2018

**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, 17<sup>th</sup> Floor  
Philadelphia, PA 19103

**PMOC Lead:** Mathew E. Trzepacz, [REDACTED]

**Length of Time PMOC Assigned to Project:** 4.5 years

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## EXECUTIVE SUMMARY

The Project Management Oversight Contractor (PMOC) met with Metropolitan Washington Airports Authority (MWAA) on *February 28, 2018* to conduct the Quarterly Progress Review Meeting for work performed during *January 2018* on Phase 1 and Phase 2 of the Locally Preferred Alternative (LPA) for the Dulles Corridor Metrorail Project. *Data for the activities completed during February 2018 were obtained via email on March 12, 2018.* The Phase 2 project extends from the Wiehle Avenue Station in Fairfax County through Dulles International Airport to the Route 772 Station in Loudoun County. The PMOC plans to conduct future PMOC monthly progress meetings during the second week of each month.

### **1. Project Description**

Phase 2 of the Project is an extension of Washington Metropolitan Area Transportation Authority (WMATA) heavy rail system and will provide 11.4 route miles of new track from the interim terminus at Wiehle-Reston East Station through Washington Dulles International Airport ("Dulles Airport") to a terminus in eastern Loudoun County. 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 at 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.

### **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 February 1, 2018 continues to indicate the contractual SSCD of August 7, 2019. The Package A Contractor's latest schedule through January 31, 2018, which shows a forecast Substantial Completion of August 13, 2019, representing 6 days of delay, was "Not Accepted" by MWAA. MWAA's Project Master Schedule indicates the Revenue Service Date (RSD) continues to be March 31, 2020.*

MWAA continues with close out activities for Phase 1. VDOT and MWAA continue to work toward resolution of the VDOT Punch List; MWAA met with DTP on December 14, 2016 to present the work that DTP is to complete. DTP accepted responsibility for about 30% of the listed items. [REDACTED]

[REDACTED] 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. *A draft schedule for the repairs is to be submitted to VDOT in mid-March 2018 by MWAA.*

MWAA reports 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, but *Level 3 and AT&T* utility companies have been slow to respond. Final Design is expected to be completed in *March 2018*. Old Meadow Road construction is now expected to be completed in the *third quarter of 2018*. 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.

### 3. Core Accountability Information

<b>TIFIA Core Accountability Items</b>			
<b>Project Status:</b>		<b>Original at TIFIA:</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	\$361,863,284
	Total Contingency (allocated plus Unallocated)	\$551,451,179	\$361,863,284
<b>Schedule</b>	Revenue Service Date	1/31/19	3/31/2020
		Amount (\$)	Percent (of total)
<b>Planned Value to Date</b>	Total budgeted cost of work scheduled to date <i>(if available)</i>	\$2,072,893,270	86%
<b>Earned Value to Date</b>	Budgeted cost of work completed to date, i.e. actual total value of work earned or done <i>(if available)</i>	\$1,754,072,785	73%
<b>Actual Cost</b>	Total cost of work completed to date <i>(actual total expenditures)</i>	\$1,650,339,506	68%
		Amount (\$)	Percent
<b>Contracts</b>	Total contracts awarded to date	\$2,252,017,129	95%
	Total construction contract awarded to date (construction contracts only)	\$1,630,799,185	69%
	Physical construction work completed (amount of construction contract work actually completed)	\$1,168,582,256	72%
<b>Major Issues</b>	Status	Comments / Action / Planned Action	
1	SWM changes to Package A associated with 13 month delay.	Construction cost yet to be negotiated.	
2	Package B Design Delays, thru June 1, 2016	Global settlement 128 days. Cost yet to be finalized	
3	Airports Authority's Extended Management Cost (13 month delay)	Cost yet to be finalized	
4	Communications System Scope of Work – Fire Alarm and Intrusion Alarm systems separation.	Risk realized. Cost yet to be finalized.	
5	Coordination of Package B and Package A interface	Package A has forecast interface supply dates up to four months behind Package B's need dates.	
<b>Date of Next Quarterly Meeting (if known):</b>		<i>June 4, 2018</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.
2. The additional construction costs related to the Stormwater/Early Design Changes and attendant increased overhead costs have yet to be finalized. MWAA reported the thirteen-month delay claim was settled [REDACTED].
3. The Package A contractor has encountered harder rock than anticipated at some locations, which has forced the contractor to go to Directional Boring or hand mining rather than using a Jack and Bore Procedure. The contractor has redesigned the utility connections at stations to mitigate the impact.
4. The delays experienced by the Package A Contractor could have a negative schedule impact on the Package B Contractor, who will have to tie-in the Maintenance Yard tracks and systems to the mainline. MWAA continues to work with the contractors for Packages A and B to mitigate any impacts at the interface points.

A major open item in the close out of Phase 1 is the Virginia Department of Transportation (VDOT) punch list. Although Phase 1 went into revenue service on July 26, 2014, VDOT did not submit their final punch list until May 16, 2016. VDOT offered to perform the punch list work and developed a cost proposal in the amount of \$36.8 million to perform the work. [REDACTED]

[REDACTED] Meetings between the two parties have made progress in reaching a mutually agreeable resolution. VDOT and MWAA met with DTP on December 14, 2016, to present their scope of work that DTP needs to rectify. MWAA met with DTP on March 17, 2017, to discuss the deficiencies MWAA claims are DTP's responsibility. [REDACTED]

[REDACTED] 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 continue to negotiate an agreement covering this work. Some of the underdrains could not be videotaped and will have to be assessed by fish taping. The fish taping of the Dulles Connector Road (DCR) underdrains has been completed and the results are being analyzed.*

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# MAIN REPORT

## **A. Project Status**

### **Design Status**

Final design and construction are being performed under 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 – Package A**

As of January 1, 2017, MWA reported all aerial substructure and support work had been completed. As of September 1, 2017, all the deck spans have been poured. Structural crews have set the pedestrian bridges at the Herndon, Reston Town Center, and Innovation Center Stations. *During February 2018, structures crews continued to set pedestrian bridges with all spans crossing the Greenway completed. Crews continue working to finish welding girder bearings and performing general cleanup.*

*Construction of track retaining walls and foundations continues in the DIAAH median. Contractor continues drainage work in the at-grade guideway in preparation for future ballast and at grade trackwork. Reston north and south underground cisterns are being installed. Track wall openings for at grade access to the guideway are being formed and poured along the Greenway and DIAAH to close the guideway for track installation. 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. Foundations and building slabs are being constructed for the traction power substations and tie-breaker stations along with screen wall foundations, columns and precast walls.*

*Relocation of communication and Dominion Virginia Power (DVP) lines continued to allow access to the west end of the existing Herndon Parking Garage from Sunrise Boulevard. Power and communication lines are being routed to the new locations for the FedEx security cameras that were removed for aerial guideway construction. Work for the 34.5 kV Traction Power Feeder continues with the installation of ductbank and manholes through Airport property toward the west. Work continues to tie-in the Traction Power Substation (TPSS) locations to the DVP substations. Ductbank and manholes have been installed into the Yard. Vista Switches required in the Yard for traction power are being modified for the control cables needed at the Yard. The Vista Switches are expected to be returned to the site for installation in March 2018. Contractor continued installing 34.5kV cabling in the ductbank and manholes in the Greenway median west of the abutments. TPSS #18, #19 and #20 are fed by this ductbank.*

*The station platform pavers and granite edging are being installed at Innovation Station. Electrical rough-in and plumbing work also continues in the Innovation station, along with detail work on the station escalators. Construction at the South and North Pavilions continues, as did work on the North Sound Wall. Roofing for the vault roof continued at Herndon Station. South Pavilion construction continued this month as did casting of the walkway retaining wall on the north side of the North Pavilion. Station pavers and granite edging are being installed at the*

*Herndon Station along with mechanical and electrical rough-in work. South Pavilion precast detailing continues at Reston Station. Mechanical and electrical rough-in work continues. The Reston Station South Pavilion structural concrete work continued in February 2018. North Pavilion construction continues with the detailing of the pedestrian bridges. Station metal doors and frames continue to be installed along with door hardware in the station equipment rooms at Dulles Airport Station. Walk Back Tunnel tie-in work also continues at the Dulles Station with demolition and preparation for the tunnel walkway concrete installation. Station precast and vault roof erection continues along with mechanical, electrical and plumbing rough-in at the Loudoun Gateway Station. Topping slabs were cast and masonry wall work continued at Loudoun Gateway Station. Erection of precast panels and structural steel erection was completed at the Ashburn Station. Steel welding and detailing continues. Work also continues with precast erection at the South Pavilion, and ongoing concrete work continues on the North Pavilion.*

*Installation of running rail, contact rail and guard rail on the aerial guideway through the Airport Station and in the yard leads is nearing completion. Rail and concrete ties are being installed along the at-grade guideway in the DIAAH median through Herndon Station and Reston Station and along the Greenway median. Cables are being installed between TPSS #15 and the Horsepen switch in the DIAAH median. Electricians continue pulling power and train control cables up columns to the aerial guideway from the TPSS and TBS locations. Jumper cables and bonds are being installed on the aerial guideway above Autopilot Road and west into the Yard leads. Equipment for train control and switch operation is being installed on aerial guideway from Dulles Airport Station through the yard leads. Power and train control cables are being installed between TPSS #17 and TBS #7. Electricians continue delivering and setting equipment and making internal connections in communications, train control, TPSS and TBS buildings. Work to install cable trays and conduits over the future gear in TPSS #16 at the Dulles Airport Station has begun.*

### **Construction – Package B**

*As of the end of February 2018, work is continuing to progress on four major buildings in the Maintenance Facility. During the month, the Contractor continued installing concrete imbedded track. Track and ballast installation continued in the Yard lead and maintenance of way tracks. Third rail installation continued in the lay-up yard. Gas line and sanitary force main installation continues.*

*Overhead rough-in continued in the Service and Inspection Building (SIB). The Contractor continued working on the installation of equipment foundations and electrical underground on the first floor of the SIB. Slab on grade work continued. Concrete masonry unit work continued on the first floor. Drywall installation continued on the upper mezzanine.*

*Overhead mechanical, electrical, and plumbing rough-in, and drywall framing continued on the first floor and upper mezzanine of the Maintenance of Way Building (MWB).*

*Mechanical, electrical and plumbing work continued on the first and second floors of the Transportation Police Building (TPB). Slab on grade work for the Warehouse Building (WHB) continued, as did roofing installation. Installation of wiring in the ductbanks began for TPSS #21A, and the TPSS#21 transformers have been adjusted. There was no activity in the Train Wash Facility (TWF).*

## ***Procurement - Packages G and P***

Package G (Dulles Airport Station Screen Wall) was re-issued on November 6, 2017, and technical proposals were received on January 5, 2018. *The cost proposals were submitted on February 28, 2018.* Package P (Stormwater Management Facilities) was issued on November 1, 2017 with technical proposals received on December 22, 2017. *Cost proposals are due on March 13, 2018.*

## **Parking Facilities (formerly Package C)**

**Fairfax County:** 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. *Seventy percent of the construction is complete at Herndon Station Garage.* 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. *The erection of precast continues and is over 70% complete. Mechanical, electrical and plumbing work are 50% complete.*

**Innovation Center** - Notice to proceed was issued to Manhattan Construction on April 3, 2017. *Construction activities are ongoing with construction 30% complete with the drilled caissons work ongoing at Innovation Center Garage. A second rig was mobilized to increase production. Rock removal remains a challenge.*

**Loudoun County:** 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 is being 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.

Loudoun County reported the Final Comprehensive Agreement with Comstock was reached on September 9, 2015. Construction on the Ashburn North Garage began in January 2017, *and the construction was completed in January 2018. Comstock has not yet initiated the formal acceptance process. The County has signed off on the Operations and Maintenance Plan.*

*Comstock is awaiting the County Zoning Board's approval of signing proposed for the exterior of the building. It is anticipated that Comstock will notify the County that it achieved substantial completion in March 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.*

**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 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 as soon as rain ceases. 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 100% design has been approved. Utility work and steel reinforcement bars for the foundations are expected to be placed by the end of March 2018. Fifty percent of the prefabricated panels have been made. The base line schedule was approved by the County in early February 2018. The scheduled completion date is May 31, 2019, and this revised schedule has been provided to MWAA.*

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 February 2018 is shown in the following table.*

## Property Acquisition Status

Priority	Total Anticipated <sup>1</sup>	PIP <sup>2</sup> Complete	Initial Appraisal Complete <sup>3</sup>	Revised PIP/ Appraisal Pending <sup>4</sup>	Offer Made <sup>5</sup>	Revision in Process	Settlement Reached/ Condemnation Processed <sup>6</sup>	Acquisition Complete <sup>7</sup>
1	9	9	9	1	9	0	8	8
2A	25	25 <sup>8</sup>	22	0	21	0	20	16
2B	20	20 <sup>9</sup>	20	1	20	0	17	10
<b>Total<sup>10</sup></b>	54	54	51	2	50	0	45	34

### Right of Entry (ROE) Status:

- Full Access for Construction has been provided for acquired parcels and Parcels 237, 226, 336, 252 and **210**.
- Limited ROE for construction provided for Parcels 208 and 209 in May 2017, for Parcel 228 in June 2016.
- 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.

<sup>1</sup> Total based on current understanding.

<sup>2</sup> PIP = Property Identification Plan.

<sup>3</sup> 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.

<sup>4</sup> New appraisal required for Parcel 237 due to revised utility relocation and pier construction approach **begun in February 2018 based on** revised PIP reflecting actual usage submitted in January. **Revised appraisal for Parcel 226 underway to account for new information from landowner.**

<sup>5</sup> 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 and 267. Negotiations ongoing for Parcels 237, 226, 228, 328, and **268**. Appraisal and offer revised for Parcel 228. 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, and **268** due to impasse. **Negotiations resumed with Parcels 210 and 268 prior to filing.**

<sup>6</sup> 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, 210, 281, 252, 212, 267, 205, 204, 211, and 269. Condemnation package for Parcel 557 (part of 357 acquisition) was filed in December 2017.

Agreement to process dedications for Parcel 336 and 259 were reached in May 2017 and July 2017, respectively.

<sup>7</sup> 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 and **209**. Parcels 253 and 271 offers rescinded; no further action required. Parcels 236, 235, and 257 dedications completed.

<sup>8</sup> Priority 2A PIP status: PIPs have been completed for all Priority 2A parcels **including the** recently added supplemental acquisitions at Reston Town Center station south due to the revised roundabout. 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 completed as a proffered dedication. Parcel 336 is proceeding as a proffered dedication.

<sup>9</sup> 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.

<sup>10</sup> 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.

### **Third Party Agreements**

Six Intergovernmental Agreements are required for Phase 2:

The status of the six agreements is summarized in the next table.

<b>AGREEMENT</b>	<b>STATUS</b>	<b>NOTES</b>
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.

On April 24, 2015, 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, 2017 for the third quarter of 2017.

### **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 *February 28, 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 next update of the PMP is due on March 31, 2018, which was confirmed at the February 28, 2018 Quarterly Progress Review Meeting.*

**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 2** dated February 29, 2016 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. WMATA expects to submit a revised RFMP in early 2018.

**C. Project Management Capacity and Capability**

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

*As of February 2018, twelve full time equivalents were working on Phase 1 which is one less than the January 2018 Report.*

MWAA reported the *estimated* number of full-time equivalents for Phase 2 during February 2018 is 1,503, a decrease of 295 from the January actual count. *The estimated February 2018 numbers are indicated in the table below.*

MWAA	36
Virginia Department of Rail and Public Transportation (DRPT)	1
Virginia Department of Transportation (VDOT)	4
Washington Metropolitan Area Transportation Authority (WMATA)	36
Project Management Support Services	130
Capital Rail Constructors (CRC) – Package A	947
Hensel Phelps Construction Company (HPCC) – Package B	349
<b>Total</b>	<b>1,503</b>

- **Project Controls**

MWAA has developed project management procedures with regard to monitoring and controlling project scope, quality, schedule, cost, contingency management, and safety. MWAA is to update the PMP by January 31, 2017, which it did. PMOC recommended that FTA approve PMP Final Version 2.2 on February 8, 2017. FTA approved PMP Version 2.2 on April 6, 2017. 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 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 *January 31, 2018*. Dollar values are included for the latest assessment period.

JANUARY 2018 PMOC ASSESSMENT						
PRIME CONTRACTS	DBE GOAL %	DBE CONTRACTS AWARDED (DBEC/TC)	NEW DBE AWARDS JANUARY 2018	DBE CONTRACTS AWARDED TOWARD GOAL	DBE GOAL ACHIEVED (DBE Pmts/TC)	DBE PAYMENTS JANUARY 2018
PreEng - PRELIMINARY ENGINEERING	0%	15.77%	\$0	N/A	15.77%	\$0
PMSS - RAIL OFFICE	25%	22.46%	\$0	89.85%	18.18%	\$1,178,832
PKG A - DESIGN BUILD CONTRACT	14%	15.11%	\$0	107.93%	8.22%	\$220,550
PKG B - RAIL YARD AND MAINTENANCE FACILITY	14%	14.87%	\$2,016	106.20%	7.76%	\$951,982
PKG S - SOIL STOCKPILE RELOCATION	25%	37.53%	\$0	150.11%	21.49%	\$0
PSI - SPECIAL INSPECTION SERVICES	15%	19.85%	\$0	132.35%	14.62%	\$60,181
ROW - REAL ESTATE ACQUISITION	25%	25.00%	\$0	100.00%	8.81%	\$76,392
<b>TOTALS</b>			<b>\$ 2,016</b>			<b>\$ 1,232,713</b>

- **Davis-Bacon Act Verification** – MWAA is reporting Davis-Bacon Act verification activities in the Monthly Progress Report. As of the *January 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 \$348,215,194, which includes associated primary and secondary mitigation for the parking facilities. The SCC budget and expenditure summary for the period ending *January 31, 2018* is shown below. As of *January 2018*, project expenditures total \$1,650,339,506. Based on the budget and expenditures, the total project completion is 68%. This percentage does not include finance charges and contingency.

**All Packages Cost Summary by SCC Code, January 2018**

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN JANUARY	EXPENDITURE TO DATE <sup>4</sup>	ESTIMATE AT COMPLETION <sup>5</sup>	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ 344,946,326	\$ 167,928,670	\$ -	\$ 170,780,349	\$ 204,191,434	\$ 4,510,734
20	Stations	\$ 228,424,057	\$ 227,697,000	\$ -	\$ 113,166,627	\$ 222,696,097	\$ 12,450,411
30	Yards, Shops, Admin. Bldgs	\$ 229,857,097	\$ 213,730,843	\$ 5,018,649	\$ 149,296,002	\$ 222,575,598	\$ 8,828,755
40	Site Work and Utility Relocation	\$ 394,075,868	\$ 545,160,692	\$ 6,146	\$ 497,042,281	\$ 668,931,805	\$ 127,416,784
50	Systems	\$ 193,794,178	\$ 215,516,247	\$ -	\$ 105,273,712	\$ 220,916,533	\$ 15,761,386
60	Right of Way Acquisition	\$ 58,523,267	\$ 58,600,000	\$ 5,792,478	\$ 21,922,691	\$ 58,038,300	\$ -
70	Vehicles	\$ 212,765,000	\$ 213,613,334	\$ -	\$ 127,178,430	\$ 213,613,334	\$ -
80	Professional Services	\$ 564,398,592	\$ 574,696,366	\$ 10,567,632	\$ 465,679,414	\$ 605,409,178	\$ 30,461,058
90	Contingency <sup>3</sup>	\$ 551,451,179	\$ 561,292,412	\$ -	\$ -	\$ 361,863,284	\$ (199,429,128)
<b>TOTAL PROJECT COST</b>		<b>\$ 2,778,235,564</b>	<b>\$ 2,778,235,564</b>	<b>\$ 21,384,904</b>	<b>\$ 1,650,339,506</b>	<b>\$ 2,778,235,564</b>	<b>\$ -</b>

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

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 matched 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

3 All of the contingency resides in SCC 90

4 Package A expenditure to date include \$5 million of retainage released in December 2014 Excludes \$8.3 million Betterments

5 Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests Excludes \$11.8 million Betterments

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 January 2018, Contingency Drawdown Requests (CDR) totaling \$199,429,128 have been issued. This includes a contribution to Contingency of \$9,841,233 due to balance of the under run for Package S and the overrun in Package B.

*The following are the expenditures through January 2018 by SCC for each of the contract packages. Both Package A and Package B continue to lag the planned performance levels. Both CRC (Package A) and HPCC (Package B) need to increase their staffing levels to meet the Contractual Substantial Completion Dates.*

**Package A Cost by SCC – January 2018**

**Package A Project Cost Summary by SCC Code**

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN JANUARY	EXPENDITURE TO DATE <sup>3</sup>	ESTIMATE AT COMPLETION <sup>4</sup>	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ 340,953,449	\$ 163,928,670		\$ 170,780,349	\$ 200,191,434	\$ 4,510,734
20	Stations	\$ 224,432,514	\$ 223,697,000		\$ 113,166,627	\$ 218,696,097	\$ 12,450,411
30	Yards, Shops, Admin. Bldgs	\$ 377,285	\$ -		\$ -	\$ -	\$ -
40	Site Work and Utility Relocation	\$ 352,759,752	\$ 509,201,330		\$ 474,302,781	\$ 622,924,573	\$ 117,368,913
50	Systems	\$ 172,044,132	\$ 188,997,000		\$ 105,014,256	\$ 194,397,286	\$ 15,761,386
60	Right of Way Acquisition	\$ -	\$ -		\$ -	\$ -	\$ -
70	Vehicles	\$ -	\$ -		\$ -	\$ -	\$ -
80	Professional Services	\$ 87,209,868	\$ 91,953,000		\$ 111,527,325	\$ 114,626,846	\$ 22,406,092
90	Contingency	\$ -	\$ -		\$ -	\$ -	\$ -
<b>TOTALS</b>		<b>\$ 1,177,777,000</b>	<b>\$ 1,177,777,000</b>	<b>\$ -</b>	<b>\$ 974,791,339</b>	<b>\$ 1,350,836,236</b>	<b>\$ 172,497,536</b>

1 Original Budget is based on Table 2-1 "Program Budget Breakdown" of RCMP Rev 1c 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 include \$5 million of retainage released in December 2014 Excludes \$8.3 million Betterments

4 Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests Excludes \$11.8 million Betterments

## Package B Cost by SCC – January 2018

Package B Project Cost Summary by SCC Code

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1,3</sup>	BASILINE BUDGET <sup>2</sup>	EXPENDITURE IN JANUARY	EXPENDITURE TO DATE	ESTIMATE AT COMPLETION <sup>4</sup>	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ -	\$ -			\$ -	
20	Stations	\$ -	\$ -			\$ -	
30	Yards, Shops, Admin. Bldgs	\$ 202,977,283	\$ 201,238,645	\$ 5,018,649	\$ 143,631,215	\$ 209,657,900	\$ 8,331,255
40	Site Work and Utility Relocation	\$ 25,772,661	\$ 23,296,613	\$ (8,854)	\$ 18,995,676	\$ 31,324,150	\$ 8,027,537
50	Systems	\$ -	\$ 2,772,451		\$ 230,850	\$ 2,772,451	
60	Right of Way Acquisition	\$ -	\$ -			\$ -	
70	Vehicles	\$ -	\$ 1,558,000			\$ 1,558,000	
80	Professional Services	\$ 20,530,586	\$ 24,123,291	\$ 210,421	\$ 24,482,862	\$ 27,700,051	\$ 3,592,760
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 249,280,530</b>	<b>\$ 252,989,000</b>	<b>\$ 5,220,216</b>	<b>\$ 187,340,604</b>	<b>\$ 273,012,552</b>	<b>\$ 19,951,552</b>

1 Original Budget is based on Table 2-1 "Program Budget Breakdown" of RCMP Rev 1c 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

*Through January 2018, approved change orders totaled \$150,218,199 for Package A, which is the same as the December 2017 total. There were no change orders approved during January 2018 for Package A. The change orders in process in February 2018 total \$25,819,421, and 61 Requests for Change (RFC) are under evaluation totaling approximately \$34,422,778 in Contractor proposals for Package A. In addition, MWAA has approved 53 change orders for Package B that total \$15,660,560. In February 2018, change orders in process total \$3,716,792, and 15 Requests for Change (RFC) under evaluation total \$13,781,450. This charge against contingency represents a total of \$243,619,200 or 43.4% of the total Project Contingency of \$561,292,412 at a point where overall Project completion is at 68%.*

*The total charges against the Project are summarized below.*

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

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	\$ 974,791,339	\$ 1,350,836,236	
Commodity Escalation - Package A	\$ 16,000,000	\$ 16,000,000	\$ -	\$ 16,000,000	
Yard - Package B + Yard Soil Preparation - Package S	\$ 269,280,530	\$ 258,939,297	\$ 193,790,918	\$ 279,462,866	
Commodity Escalation - Package B	\$ 4,000,000	\$ 4,000,000	\$ -	\$ 3,928,000	
Parking Garages - Package C	\$ -	\$ -	\$ -	\$ -	
<b>Design-Build Contracts Total</b>	<b>\$ 1,467,057,530</b>	<b>\$ 1,456,716,297</b>	<b>\$ 1,168,582,256</b>	<b>\$ 1,650,227,102</b>	<b>71%</b>
<b>Right of Way</b>					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 21,922,691	\$ 58,038,300	
<b>Right Of Way Total</b>	<b>\$ 58,600,000</b>	<b>\$ 58,600,000</b>	<b>\$ 21,922,691</b>	<b>\$ 58,038,300</b>	<b>38%</b>
<b>WMATA Agreement</b>					
Vehicles	\$ 205,868,200	\$ 205,868,200	\$ 127,178,430	\$ 205,868,200	
WMATA Non Revenue Vehicles	\$ 9,250,751	\$ 9,620,781	\$ 3,008	\$ 9,620,781	
WMATA Project Management and Other Costs	\$ 90,205,767	\$ 89,835,737	\$ 24,645,363	\$ 89,835,737	
<b>WMATA Agreement Total</b>	<b>\$ 305,324,718</b>	<b>\$ 305,324,718</b>	<b>\$ 151,826,801</b>	<b>\$ 305,324,718</b>	<b>50%</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	\$ 50,031,811	\$ 65,821,913	
Project Management Support	\$ 140,000,000	\$ 140,000,000	\$ 134,626,351	\$ 140,560,000	
Other Costs <sup>1</sup>	\$ 116,182,137	\$ 116,682,137	\$ 50,083,540	\$ 121,400,247	
<b>Airports Authority Services Total</b>	<b>\$ 320,802,137</b>	<b>\$ 321,302,137</b>	<b>\$ 234,741,702</b>	<b>\$ 327,782,160</b>	<b>72%</b>
<b>Contingency</b>					
<b>Contingency Total</b>	<b>\$ 551,451,179</b>	<b>\$ 561,292,412</b>		<b>\$ 361,863,284</b>	
<b>Dulles Airport Windscreens - Package G<sup>7</sup></b>					
<b>Dulles Airport Windscreens Total</b>	<b>\$ -</b>	<b>\$ -</b>		<b>TBD</b>	
<b>Stormwater Management Ponds - Package P<sup>7</sup></b>					
<b>Stormwater Management Ponds Total</b>	<b>\$ -</b>	<b>\$ -</b>		<b>TBD</b>	
<b>TOTAL PROJECT COSTS</b>	<b>\$2,778,235,564</b>	<b>\$2,778,235,564</b>	<b>\$1,650,339,506</b>	<b>\$2,778,235,564</b>	<b>68%<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 Package A, 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

4 Package A expenditure to date includes \$5 million of retainage released in December 2014 Excludes \$8.3 million 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 \$11.8 million Betterments

7 Package G and P will be funded from Contingency and should not have any impact on the Total Project Costs

## Funding Sources

Primary funding for Phase 2 (excluding parking facilities) comes from MWAA (8.41%), Fairfax County (18.63%), Loudoun County (9.85%), Commonwealth of Virginia (11.64%), Dulles Toll Road (49.31%), and the Northern Virginia Transportation Authority (2.16%). 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 billion 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%
Fairfax County	\$ 517,692	18.63%
Loudoun County	\$ 273,597	9.85%
MWAA (Aviation Funds)	\$ 233,698	8.41%
MWAA (Dulles Toll Road)	\$ 1,369,949	49.31%
<b>Total Sources of Funding</b>	<b>\$ 2,778,236</b>	<b>100.00%</b>

\* 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 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 their Recovery Plan on August 11, 2016 which was accepted by FTA on October 3, 2016. The Recovery Plan reflected the thirteen month delay to the Project. MWAA submitted their 2017 TIFIA Financial Plan and associated Revised Financial Model of the Project on March 30, 2017. The 2018 TIFIA Financial Plan is due by 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 *January 2018 Project Master Schedule* dated *March 5, 2018*, as provided by MWAA. *These dates are based on CRC's January 2018 Monthly*

Schedule Update which was “Not Accepted” by MWAA. CRC’s January 2018 Schedule Update reflects a six-day delay to the Project Contractual Substantial Completion Date of August 7, 2019.

<b>DULLES CORRIDOR PHASE 2 MILESTONES</b>	
<b>DESCRIPTION</b>	<b>DATE</b>
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(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 (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	11/30/16 (A)
Loudoun County – Design for RFP of Parking Facilities Complete	01/04/17 (A)
Package A – Complete Design	06/15/18
Package A – Complete Aerial Guideway Structure Construction	05/02/18
Package A – Complete At-Grade Guideway Structure Construction	07/06/18
Package A – Complete Station Build-out	07/29/19
Package A – Complete Systems Installation	05/10/19
Fairfax County – Construction of Parking Facilities Complete	04/30/19
Loudoun County - Construction of Parking Facilities Complete	09/30/19
Package A – Forecasted Substantial Completion	08/13/19
Package B - Complete Yard Systems and Commissioning	08/16/19
Package B – Forecasted Substantial Completion	12/23/18
Complete WMATA Operations Readiness Testing	06/17/19
Complete WMATA Revenue Operations Acceptance Testing	02/10/20
Revenue Service Date (RSD)	03/31/20
Project Final Acceptance	06/30/20

**Critical Path**

CRC’s Primary Critical Path as reflected in their *January 2018* schedule update runs through *N12 segment civil and track work, followed by track and systems installations, static and dynamic testing, and finalizing with project-wide systems performance demonstration. As noted above, MWAA did “Not Accept” this schedule update representing six days delay to the Project completion.*

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

- *MWAA is to submit their updated Project Management Plan (PMP) by March 31, 2018.*

**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 February 2018 an audit of CRC's Construction Safety and Security was performed on Package A.*

MWAA typically submits a rolling six month Audit Schedule at each monthly update meeting. *The most recent QA Audit Schedule for March 2018 through August 2018 for Package A is shown below from the March 12, 2018 data.*

**DULLES CORRIDOR METRORAIL PROJECT**  
**Phase 2, Package A**  
**QA Audit and Surveillance Schedule**  
*March 2018 through August 2018*

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
3/21-22/18	A	MWAA Special Inspections (PSI)	N	MWAA
4/26/18	A	PSI Field Services and QA Lab	N	MWAA
5/22/18	A	MWAA Construction Specialist	N	MWAA
6/27/18	A	CRC's Design Quality Management Plan (Review of RFIs)	N	MWAA
7/25/18	A	CRC Right of Way Acquisition	N	MWAA
8/29/18	A	<i>MOT Audit</i>	<i>N</i>	<i>MWAA</i>

*During February 2018, MWAA and HPSS did not perform any audits. The most recent QA Audit Schedule for Package B is shown below.*

**DULLES CORRIDOR METRORAIL PROJECT**  
**Phase 2, Package B**  
**QA Audit and Surveillance Schedule**  
*March 2018 through August 2018*

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
3/15/18	S	HPCC Submittal Register	Y	MWAA/HP
4/17/18	S	HPCC Contract Drawings Maintenance	Y	MWAA/HP
6/19/18	S	M.C.Dean Quality Documents	Y	MWAA/HP
8/15/18	S	<i>Post Installation Checkout Testing</i>	Y	<i>MWAA/HP</i>

**G. Safety and Security**

**Construction Safety and Security** – The contractor’s safety performance reports, including the accident/injury statistics, are included in the MWAA Monthly Progress Reports. However, the PMOC requested the Accident/Injury Statistics be provided by the fifteenth of each month, ahead of each monthly progress meeting. As of *February 2018*, CRC has recorded *6,156,301* hours worked with *209* first-aid cases, *33* OSHA recordable cases of which two resulted in lost time, *154* incidents, *35* utility hits, five environmental spills, *20* vehicular accidents, *ten* property damage claims (>\$1500), and six lost time days. *Two first aid cases, two OSHA Recordable Cases (Non-Lost Time), 16 incidents, one vehicular accident and one property damage claim occurred during February 2018.*

*HPCC has recorded 1,212,311 hours worked with twelve OSHA recordable (non-lost time) cases, one OSHA Recordable (lost time) case with twenty-eight lost time days, fourteen first-aid cases, one vehicular accident and 71 incidents. There was one OSHA Recordable Case (Non-lost Time), two first-aid cases and five Incident Investigations during February 2018.*

**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

There have been no Buy America issues to date.

## J. Vehicle Technology

The Project is acquiring 64 new rail cars which are part of WMATA's 7000 Series Rail Car Procurement. Earlier, MWAA procured 64 7000 Series Rail Cars for Phase 1. The monitoring of the rail car procurement is being done under the WMATA PMOC oversight. The production of the Phase 2 rail cars began in February 2017. The 64<sup>th</sup> 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 is less than five percent chance that the Schedule Substantial Completion Date (SSCD) would take place on July 7, 2018. The 80% confidence level date for the SSCD is 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. With MWAA's announcement on April 27, 2015 that the Project had incurred a thirteen month delay, essentially all the *original* forecast Project Schedule Contingency (14 months) has been consumed. 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.

## Action Items

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

PR	ITEM	IDENTIFICATION	NATURE of PROBLEM	D	A	I	COMMENTS	STATUS
4	2B	MWAA to update RCMP.	RCMP Revision 2 should be reviewed and updated.	Y	Y	Y	MWAA submitted Draft RCMP, Revision 3, to FTA on November 17, 2017. FTA forwarded the FTA/PMOC comments to MWAA on December 21, 2017; with the request that the comments be incorporated. Final RCMP, Revision 3.0 was submitted on February 1, 2018 and PMOC recommended FTA approval on February 5, 2018. <i>FTA approved RCMP, Revision 3.0, on March 6, 2018.</i>	C

**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

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
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
<i>DCMP</i>	<i>Dulles Corridor Metrorail Project</i>
DCR	Design Change Request
<i>DE</i>	<i>Dominion Energy</i>
DEQ	Department of Environmental Quality
DHR	Department of Historical Resources
DIAAH	Dulles International Airport Access Highway
DIDB	Disparate Impact and Disproportionate Burden
<i>DRPT</i>	<i>Department of Rail and Public Transportation (Virginia)</i>
DTP	Dulles Transit Partners, LLC
DTR	Dulles Toll Road
DVP	Dominion Virginia Power ( <i>now called Dominion Energy</i> )
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
<i>IFB</i>	<i>Invitation for Bid</i>
IFP	Issued for Permit
IPP	Integrated Permit Package
LPA	Locally Preferred Alternative
MWAA	Metropolitan Washington Airports Authority
<i>MWB</i>	<i>Maintenance of Way Building</i>
NEPA	National Environmental Policy Act
NTP	Notice to Proceed
NTSB	National Transportation Safety Board
OCIP	Owner Controlled Insurance Program

PIP	Property Identification Plans
PMOOC	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
<i>RFQ</i>	<i>Request for Qualifications</i>
RFQI	Request for Qualifications Information
RFP	Request for Proposal
<i>RFI</i>	Revised Baseline Schedule
RBS	<i>Request for Information</i>
SCC	Standard Cost Category
<i>SCWG</i>	<i>Safety/Security Working Group</i>
SHPO	State Historic Preservation Office
S&I	Service and Inspection
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
<i>TBS</i>	<i>Tie-Breaker Station</i>
TIA	Time Impact Analysis
TOC	Tri-state Oversight Committee
<i>TPSS</i>	<i>Traction Power Substation</i>
USDOT	United States Department of Transportation
VDOT	Virginia Department of Transportation
VSMP	Virginia Stormwater Management Program
WFC	West Falls Church
<i>WHB</i>	<i>Warehouse Building</i>
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:** Corey Walker, P.E. - 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
73%	Percent Work in Place Complete at the date of this report ( <i>earned value</i> )
75.34%*	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
\$1,650,339,506	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
68%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$361,863,284	Total project contingency remaining (allocated and unallocated contingency)



**APPENDIX D – 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 2016	Approved on June 16, 2016	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.
<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	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	TOC approved an updated WMATA SSPP dated January 2013 on February 15, 2013.
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>February 28, 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"> <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 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. 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 SSSC, 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 SSSC, 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 – 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).

### **Justine Belizaire – Gouveia, PMP, Construction Management Manager**

Ms. Belizaire, PMP, has over 24 years of experience in transit program management and construction management. For the last seven years, she has been the Task Order Manager for FTA's PMOC Program assignments in Regions 4 and 9 and provided technical support for assignments in Region 1. Ms. Belizaire has been responsible for all areas of construction management, including the responsibility to manage project budgets and schedules, as well as oversee the implementation of safety and security, and quality assurance and quality control programs.

### **Kevin Belizaire, M.Sc. (UK), Construction Management Manager**

Mr. Belizaire, M.Sc. has over 38 years of experience in in Project and Construction Management. He has been responsible for the structural design and preparation of construction documents and the supervision of construction activities which

included the oversight of the overall budget, schedule, safety, and quality and project payments.

**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.