

**COMPREHENSIVE MONTHLY REPORT**

**June 2017**

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

Metropolitan Washington Airports Authority  
Washington, DC

July 26, 2017

**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:** 3.5 years

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## EXECUTIVE SUMMARY

The Project Management Oversight Contractor (PMOC) met with Metropolitan Washington Airports Authority (MWAA) on *July 12, 2017* to conduct the Monthly Progress Meetings for work performed in *June 2017* on Phase 1 and Phase 2 of the Locally Preferred Alternative (LPA) for the Dulles Corridor Metrorail Project. 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 May 31, 2017 continues to indicate the contractual SSCD of August 7, 2019. The Package A Contractor's latest schedule through May 2017, which was "not accepted" by MWAA indicates a forecasted SSCD of November 19, 2019 which represents a slippage of 104 calendar days from the contractual SSCD. This is an improvement of 26 calendar days compared to the Contractor's April 2017 schedule update. MWAA's Project Master Schedule has indicated the Revenue Service Date (RSD) is anticipated to be May 19, 2020 based on CRC's unapproved schedule update. However, MWAA's forecast RSD remains March 31, 2020. At the July 12, 2017 Update Meeting, MWAA indicated that CRC was developing a schedule to complete the Project by the contractual SSCD.*

MWAA continues with close out activities for Phase 1. The punch lists from WMATA and Fairfax County have been closed out. VDOT and MWAA continue to work toward resolution of the VDOT Punch List and 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.

*Bechtel's response to the various punch list items was expected on June 3, 2017, but MWAA reported at the July 12<sup>th</sup> Update Meeting that a response has not been received. Whatever work that DTP does not complete will be performed by an MWAA contractor.*

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 some utility company responses have been slow.* Old Meadow Road construction is *still* estimated to be completed in April 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>Contingenc v</b>	Unallocated Contingency	\$551,451,179	\$378,191,721
	Total Contingency (allocated plus Unallocated)	\$551,451,179	\$378,191,721
<b>Schedule</b>	Revenue Service Date	1/31/19	5/19/20*
		<b>Amount (\$)</b>	<b>Percent (of total)</b>
<b>Planned Value to Date</b>	Total budgeted cost of work scheduled to date <i>(if available)</i>	\$1,763,130,983	73%
<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>	\$1,407,423,640	59%
<b>Actual Cost</b>	Total cost of work completed to date <i>(actual total)</i>	\$1,287,348,070	54%
		<b>Amount (\$)</b>	<b>Percent</b>
<b>Contracts</b>	Total contracts awarded to date	\$2,222,447,914	95%
	Total construction contract awarded to date (construction contracts only)	\$1,622,626,848	69%
	Physical construction work completed (amount of construction contract work actually completed)	\$954,209,036	59%
<b>Major Issues</b>	<b>Status</b>	<b>Comments / Action / Planned Action</b>	
1	Package B Design Delays, thru June 1, 2016	Global settlement 128 days. Cost yet to be finalized	
2	Airports Authority's Extended Management Cost (13 month delay)	Cost yet to be finalized	
3	Communications System Scope of Work – Fire Alarm and Intrusion Alarm systems separation.	Risk realized. Cost yet to be finalized.	
4	Coordination of Package B and Package A interface	Package A has forecasted interface supply dates up to four months behind Package B's need dates.	
<b>Date of Next Quarterly Meeting (if known):</b>		<i>August 14, 2017</i>	

- MWAA forecast for RSD is March 31, 2020.

#### 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 has submitted their consultant's (Delta Consulting) evaluation of the claim to CRC based on their certified claim in the amount of \$157.9 million on January 4, 2017. MWAA responded to the claim by March 4, 2017. MWAA reported the 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. At this time, the Package A Contractor estimates providing some systems interface work *six* months later than the Package B contractor needs them. MWAA continues to work with the contractors for Packages A and B to mitigate any impacts at the interface points.
5. 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] 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] Meetings between the two parties continue in the hope of resolution. [REDACTED]

[REDACTED] The additional videotaping of the piping and underdrains has been completed and the results are being reviewed by MWAA and VDOT.

6. The Director of Package A, Kevin Volbrecht, left the Project at the end of September. Mr. Volbrecht had served as Deputy Director for Construction on Phase 1 of the Program. Mr. Jay Neider who is currently Deputy Director of Package A was acting as Director of Package A while the recruitment process continued. The new Director of Package A, Shirlene Cleveland, P.E., started on June 12, 2017.

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# MAIN REPORT

## **A. Project Status**

### **Design Status**

Final design and construction is being performed under DB contracts for Package A as well as for Package B. The design of Package A is 100% complete and the *design for Package B is 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 their TIFIA loans.

### **Construction – Package A**

As of January 1, 2017, MWAA reported that all of the aerial substructure and support work had been completed. *As of July 1, 2017, 277 deck spans (95%) had been poured*. All the precast girders have been erected on the Aerial Guideway. *Foundation drilling crews continue drilling supports for the stations pedestrian bridges. Crews continue casting diaphragms for the guideway from Abutment A toward the east side of the Dulles Airport Station. Reinforcing steel and formwork for the aerial deck spans, inbound and outbound, are being prepared from Abutment A to the east side of the Dulles Airport Station and on the west guideway in the Greenway median and crossing the eastbound lanes of the Greenway.*

*Construction of track retaining walls and foundations continues in the DIAAH median. Modification work continues along the DIAAH and Dulles Toll Road (DTR) to enable the construction of the Innovation, Herndon and Reston Stations. The Contractor continues drainage work and track wall construction in the DIAAH median to close in the at-grade guideway in preparation for future ballast and track work. Realignment of the Greenway has been completed with only minor lane shifts and barrier wall installation remaining as needed to support the ongoing abutment and retaining wall work. The contractor continues directional boring, as required, to install the required systems and utilities under the DTR and the Greenway. Hand mining work continues in areas of dense rock for the installation of drainage, utilities and systems required for the stations and operating systems. Jack and bore work continues in areas where the conditions permit this type of excavation and drilling. The Contractor continues the relocation of the DTR south of the Herndon Station for accessing the kiss and ride area. Foundations are being installed for the traction power substation and tie-breaker screen walls.*

*Relocation of the Century Link Communications lines has been completed, allowing the installation of the future pedestrian bridge piers on the north and south sides of the DIAAH/DTR. Lighting and the electrical supply to the lights are being relocated in anticipation of the future road widening. Comcast, AT&T, Verizon and Dominion Virginia Power (DVP) lines are being relocated to permit the construction of the north pavilions at the Ashburn and Loudoun Gateway Stations. Work for the 34.5 kV Traction Power Feeder continues with the installation of ductbank and manholes along DIAAH near TPSS #12, #13, #14 and #15. Work continues to tie-in these TPSS locations to the track cable trough. The contractor continues to install 34.5kV ductbank along Rudder Road, Cargo Drive and Autopilot Road. The contractor continues to install ductbank and manholes for the 34.5 kV feed in the Greenway median in advance of guideway structures and abutments. TPSS #18, #19 and #20 are fed by this ductbank. Work also continues on directional drilling of ductbank under Horsepen Lake for the 34.5kV service to the future Maintenance Yard.*

*The installation of 34.5 kV cable between TPSS #14 and TPSS #15, and west toward Dulles Airport continues.*

*Precast erection, grouting and detailing continues at the Innovation Station. Structural steel painting and deck welding continues on the station vault roof. The roofer continues to dry in the station equipment rooms. Masonry work, electrical rough-in and plumbing work also continues in the station. Construction continues at the North and South Pavilions. Construction of the Pedestrian Bridge Pier continues along with assembly of the Pedestrian Bridge at Innovation Station. Structural steel detailing for the Herndon Station vault roof continues. Precast detailing and grouting continues at Herndon Station. Construction of the South Pavilion continues as does the pedestrian bridge assembly and painting. The contractor continues precast erection and the erection of structural steel at Reston Station, as does the assembly and painting of the pedestrian bridge. Station precast and structural steel continues to be erected at Dulles Station. Station mechanical, electrical and plumbing rough-in work also continues. Roofers also continue to dry in equipment rooms. Walk Back Tunnel tie-in work also continues at the Dulles Station. Station precast erection continues along with mechanical, electrical and plumbing rough-in at the Loudoun Gateway Station. Station foundation, columns and support wall work continues at the Ashburn Station and the erection of precast panels continues.*

*Concrete plinth construction continues in the yard leads and on the west side of the Dulles Airport Station on the aerial guideway with the installation of running and contact rail. Aerial guideway switch work also continues. Rail and concrete ties continue to be installed along the at-grade guideway in the DIAAH median. Electricians continue installing conduit from TPSS and TBS locations to the guideway. Overhead conduit and cable trays are being installed for TPSS #16 in the Dulles Airport Station. Ground grids are being installed in the traction power substation and tie-breaker station sites.*

### **Construction – Package B**

*As of the end of June, work is continuing to progress on all five major buildings in the Maintenance Facility. During June 2017, Hensel Phelps Construction Company (HPCC) continued with installation of structural steel and has installed 90% of the precast panels in the Service and Inspection Building (SIB). The installation of industrial equipment foundations continues as does the installation of electrical underground facilities on the first floor. Concrete masonry unit (CMU) work continued and has progressed to 90% on the upper mezzanine, 95% in the basement area and 50% on the first floor. Work on the main roofing and roof drains continues. Window frame installation continues and the installation of glazing has started. Electrical and HVAC rough-in has started in the SIB. Drywall framing also began on the upper mezzanine. Rebar installation began for the first floor slab. Structural steel erection has been completed for both the Maintenance of Way Building (MWB) and the Transportation Police Building (TPB). Roofing work continues and precast panel installation has progressed to the 90% level on the MWB. Foundation work for the finger platforms at the TPB has been completed and the elevated deck was placed. Roofing installation has also begun on the TPB. The contractor has completed the foundation and has started the installation of structural steel for the Train Wash Building (TWB). HPCC continued working on foundations for the Warehouse Building (WHB). Site work is also ongoing with the continued installation of ductbank, stormwater lines, sanitary lines and water lines. HPCC's subcontractor continues the installation of welded rail in the lay up yard and the installation of special trackwork at the western end of the yard toward the lead track.*

## **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 *April 3, 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 the project management and oversight of both projects.

Fairfax County received bids for the Herndon Station Parking Garage and awarded the contract to Manhattan Construction and 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. *Construction activities are ongoing with the current work focused on caisson drilling and stormwater retention pond work. The erection of precast panels is anticipated to begin at the end of July 2017. Fairfax County estimates that the work is approximately 30% complete.*

Bids were opened for the Innovation Center Garage on February 8, 2017 and the contract has been awarded to Manhattan Construction. The notice to proceed was issued on April 3, 2017. *Current activities include erosion control and sedimentation control work. Fairfax County reported that the contractor has encountered rock at the site. Fairfax County estimates the work is approximately 12% complete.*

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. Comstock is on schedule. Loudoun County has received their detailed garage design and is in the process of reviewing it and providing comments.

**Route 772 North (Ashburn North)** – 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 with the anticipated completion in January 2018. *At present the garage structure has been completed and work continues on the installation of conduits and wiring.* 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.

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.

**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. *Loudoun County reported at the July 12, 2017 Update Meeting that the contractor was halfway through the 120 day design schedule.*

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 June 2017 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	22	22 <sup>8</sup>	17	0	16	0	15	14
2B	20	20 <sup>9</sup>	17	0	12	1	5	5
<b>Total<sup>10</sup></b>	51	51	43	1	37	1	28	27

### Right of Entry (ROE) Status:

- Full Access for Construction has been provided for Parcels 237.
- Limited ROE for construction provided for **Parcels 208 and 209 in May 2017** and 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, and 263.** Appraisal for the dedicated parcels, **Parcels 236, 336, 235, and 257 is 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 will be deferred at request of landowner to account for actual conditions rather than speculated conditions.

<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, and 226.** Negotiations ongoing for Parcels 237, 259, 208, and 209. Appraisal and offer being 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 filed for Parcels 207, 220, 320, 260/360, 249, and 349 due to impasse.

<sup>6</sup> 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, and 258** complete. **Condemnation packages approved by VDOT for Parcels 249 and 349 in May 2017. Agreement to process dedication for Parcel 336 was reached in May 2017.**

<sup>7</sup> 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) and 224.** 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. Parcels 240, 238, 231, 275, 276, 264, 320, 271, 256, 266, 251, 249, 265, 358, 236, 281, 336, 349, 252, 269, 328, and 263 PIPs Accepted by MWAA. Parcel 236 has proceeded and completed 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

MWAA reported that there are six Intergovernmental Agreements required for Phase 2: WMATA, Virginia Department of Transportation (VDOT), Fairfax County, Loudoun County, the Town of

Herndon, the Dulles Greenway. As of November 4, 2013, MWAA had executed all six Intergovernmental Agreements.

The summary of the status of the agreements follows.

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.

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 April 28, 2017 for the first 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 *May 31, 2017*.

The update **PMP, Version 2.1**, dated June 2016, was submitted to the FTA on June 30, 2016 and the PMOC’s comments were submitted to the FTA on July 27, 2016, and FTA forwarded the comments on September 12, 2016. MWAA was to incorporate the comments and submit an updated PMP by October 31, 2016. MWAA submitted a Draft PMP, Version 2.2, to the FTA

on October 31, 2016. PMOC provided comments to FTA on December 9, 2016. FTA forwarded the comments to MWAA on December 22, 2016 and requested that the comments be incorporated by January 31, 2017. 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 Plan with comments on April 6, 2017.

MWAA submitted the latest revision of the Phase 2 **Quality Program Plan** (QPP), Revision 1, to the FTA on March 26, 2013 for FTA review and approval. On September 23, 2013, FTA approved the Phase 2 QPP, Revision 1, and requested that MWAA update it as needed as Phase 2 continues to move forward through final design and construction.

MWAA submitted **Safety and Security Management Plan** (SSMP), Revision 2 dated February 29, 2016 was submitted it to the PMOC on February 25, 2016. The PMOC provided review comments on the SSMP to FTA on March 8, 2016. WMATA's email of April 13, 2016 stated that they had received the revised SSMP and had no comments. FTA's email of June 15, 2016, accepted the Plan with comments. The SSMP revision was expected by the end of February 2017. MWAA submitted the updated SSMP to FTA on April 12, 2017 and the PMOC recommended FTA accept the Plan on April 27, 2017. PMOC submitted additional comments on June 1, 2017 recommending MWAA include the Federal WMATA Safety Oversight (FWSO) to the SSMP. *The FWSO issue has been resolved and MWAA awaits FTA's letter of approval.*

MWAA submitted the revised **Risk and Contingency Management Plan** (RCMP) on May 17, 2016. PMOC requested and received MWAA's Excel worksheets in support of their contingency analysis for review. On August 8, 2016, PMOC requested that the "Draft" watermark be removed and the Final document be formally submitted to the FTA with some minor edits. The Project team submitted the RCMP Rev 2.0 along with FTA requested revisions on August 11, 2016. PMOC recommended that FTA accept the RCMP on September 6, 2016. FTA approved the RCMP dated August 11, 2016 on December 2, 2016. MWAA submitted an updated Risk Register on December 16, 2016 which was discussed with MWAA on January 11, 2017. On February 10, 2017, PMOC recommended FTA accept the update.

Since WMATA, rather than MWAA, will be the operator of the completed project, the WMATA **Rail Fleet Management Plan** (RFMP) is the applicable document. WMATA submitted RFMP, Revision J, on August 1, 2013 and FTA accepted it on August 8, 2013. WMATA submitted RFMP Revision 5a 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.

The PMOC continues to monitor the transition of staff from the Phase 1 project to Phase 2 to ensure that there are adequate levels of dedicated and experienced staff on Phase 2 to ensure effective and efficient progression of final engineering and project management. As of the end of *June 2017*, eleven full time equivalents were working on Phase 1 *which is three less than the May Report.*

MWAA reported the *estimated* number of full-time equivalents for Phase 2 during *June 2017* is *1,669* an increase of 46 from the *May 2017 revised actuals* of *1,623*. The *June 2017 numbers* are composed as follows: MWAA – 35, Virginia Department of Rail and Public Transportation (DRPT) – 1, Virginia Department of Transportation (VDOT) – 5, Washington Metropolitan Area Transit Authority (WMATA) – 37, Project Management Support Services (PMSS) – 119, Capital Rail Constructors (CRC), Package A – 1171, and Hensel Phelps Construction Company (HPCC), Package B – 301.

Upon completion of the project, WMATA will become the owner/operator of this extension to the existing Metrorail system. WMATA personnel have been active participants in the Phase 1 project, and the agency will have more staff involved on the Phase 2 project.

• **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. *Mr. Thomas Crone was introduced at the July 12, 2017 Update Meeting as the new Director of Contracts and Project Controls.*

• **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 *May 31, 2017*. Dollar values are included for the latest assessed period.

PRIME CONTRACTS	DBE GOAL %	DBE CONTRACTS AWARDED (DBEC/TC)	NEW DBE AWARDS MAY 2017	DBE CONTRACTS AWARDED TOWARD GOAL	DBE GOAL ACHIEVED (DBE Pmts/TC)	DBE PAYMENTS MAY 2017
PreEng - PRELIMINARY ENGINEERING	0%	15.77%	\$0	N/A	15.77%	\$0
PMSS - RAIL OFFICE	25%	22.44%	\$0	89.76%	19.31%	\$0
PKG A - DESIGN BUILD CONTRACT	14%	14.28%	\$734,606	101.98%	6.41%	\$4,321,388
PKG B - RAIL YARD AND MAINTENANCE FACILITY	14%	11.81%	-\$280,028	84.36%	3.15%	-\$1,094,288
PKG S - SIGNAL STOCKPILE RELOCATION	25%	37.53%	\$0	150.11%	21.49%	\$0
PSI - SPECIAL INSPECTION SERVICES	15%	11.53%	\$0	76.89%	9.96%	\$91,763
ROW - REAL ESTATE ACQUISITION	25%	18.58%	\$0	74.33%	2.34%	\$22,125
<b>TOTALS</b>			<b>\$ 454,578</b>			<b>\$ 3,340,988</b>

• **Davis-Bacon Act Verification** – MWAA is reporting Davis-Bacon Act verification activities in the Monthly Progress Report. As of the *May 2017* 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 *May 2017* is shown below. As of *May 2017*, project expenditures total \$1,287,348,070. Based on the budget and expenditures, the total project completion is 54%. This percentage does not include finance charges and contingency.

**All Packages Cost Summary by SCC Code, May 2017**

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN MAY	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	\$ 6,161,654	\$ 133,428,287	\$ 203,636,734	\$ 4,510,734
20	Stations	\$ 228,424,057	\$ 227,697,000	\$ 5,346,085	\$ 77,873,236	\$ 217,503,282	\$ 10,629,011
30	Yards, Shops, Admin. Bldgs	\$ 229,857,097	\$ 213,730,843	\$ 6,071,833	\$ 94,169,530	\$ 220,231,057	\$ 6,500,214
40	Site Work and Utility Relocation	\$ 394,075,868	\$ 545,160,692	\$ 58,419,878	\$ 437,440,837	\$ 666,723,197	\$ 121,238,161
50	Systems	\$ 193,794,178	\$ 215,516,247	\$ 3,949,847	\$ 78,766,526	\$ 217,242,357	\$ 12,332,210
60	Right of Way Acquisition	\$ 58,523,267	\$ 58,600,000	\$ 160,511	\$ 7,775,060	\$ 58,474,300	\$ -
70	Vehicles	\$ 212,765,000	\$ 213,613,334	\$ -	\$ 39,832,723	\$ 213,613,334	\$ -
80	Professional Services	\$ 564,398,592	\$ 574,696,366	\$ 8,117,217	\$ 418,061,872	\$ 602,619,581	\$ 27,890,361
90	Contingency <sup>3</sup>	\$ 551,451,179	\$ 561,292,412	\$ -	\$ -	\$ 378,191,721	\$ (183,100,691)
<b>TOTAL PROJECT COST</b>		<b>\$ 2,778,235,564</b>	<b>\$ 2,778,235,564</b>	<b>\$ 88,227,024</b>	<b>\$ 1,287,348,070</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 Betterments

5 Estimate at Completion includes Baseline Budget plus any changes funded via contingency drawdown requests and budget transfer requests Excludes 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 *May 2017*, Contingency Drawdown Requests (CDR) totaling \$173,259,458 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 May 2017 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) continue to increase their staffing levels, but greater staffing increases are required to meet the Contractual Substantial Completion Dates.*

## Package A Cost by SCC – May 2017

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

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN MAY	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	\$ 6,161,654	\$ 133,428,287	\$ 199,636,734	\$ 4,510,734
20	Stations	\$ 224,432,514	\$ 223,697,000	\$ 5,346,085	\$ 77,873,236	\$ 213,503,282	\$ 10,629,011
30	Yards, Shops, Admin. Bldgs	\$ 377,285	\$ -		\$ -	\$ -	\$ -
40	Site Work and Utility Relocation	\$ 352,759,752	\$ 509,201,330	\$ 59,148,272	\$ 413,953,146	\$ 620,715,965	\$ 111,190,290
50	Systems	\$ 172,044,132	\$ 188,997,000	\$ 3,949,847	\$ 78,737,920	\$ 190,723,110	\$ 12,332,210
60	Right of Way Acquisition	\$ -	\$ -		\$ -	\$ -	\$ -
70	Vehicles	\$ -	\$ -		\$ -	\$ -	\$ -
80	Professional Services	\$ 87,209,868	\$ 91,953,000		\$ 111,547,325	\$ 113,847,646	\$ 21,861,792
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 1,177,777,000</b>	<b>\$ 1,177,777,000</b>	<b>\$ 74,605,858</b>	<b>\$ 815,539,914</b>	<b>\$ 1,338,426,737</b>	<b>\$ 160,524,037</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 Betterments

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

## Package B Cost by SCC – May 2017

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

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1,3</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN MAY	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	\$ 6,071,833	\$ 88,504,743	\$ 207,241,359	\$ 6,002,714
40	Site Work and Utility Relocation	\$ 25,772,661	\$ 23,296,613	\$ (772,440)	\$ 19,844,567	\$ 31,324,150	\$ 8,027,537
50	Systems	\$ -	\$ 2,772,451			\$ 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	\$ (139,650)	\$ 23,869,499	\$ 26,089,654	\$ 1,966,363
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 249,280,530</b>	<b>\$ 252,989,000</b>	<b>\$ 5,159,743</b>	<b>\$ 132,218,809</b>	<b>\$ 268,985,614</b>	<b>\$ 15,996,614</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

## Package S Cost by SCC – December 2016

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN OCTOBER	EXPENDITURE TO DATE	ESTIMATE AT COMPLETION <sup>3</sup>	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ -	\$ -			\$ -	
20	Stations	\$ -	\$ -			\$ -	
30	Yards, Shops, Admin. Bldgs	\$ 19,216,990	\$ 5,167,287		\$ 5,664,787	\$ 5,664,787	\$ 497,500
40	Site Work and Utility Relocation	\$ 527,455	\$ 527,455		\$ 529,972	\$ 529,972	\$ 2,517
50	Systems	\$ -	\$ -			\$ -	
60	Right of Way Acquisition	\$ -	\$ -			\$ -	
70	Vehicles	\$ -	\$ -			\$ -	
80	Professional Services	\$ 255,555	\$ 255,555		\$ 255,555	\$ 255,555	
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 20,000,000</b>	<b>\$ 5,950,297</b>	<b>\$ -</b>	<b>\$ 6,450,314</b>	<b>\$ 6,450,314</b>	<b>\$ 500,017</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 the original contract amount

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

*Through June 2017, approved change orders totaled \$150,612,808 for Package A. The change orders in process in June 2017 total \$15,649,801 and 67 Requests For Change (RFC) under evaluation total approximately \$36,136,425 in Contractor's proposals for Package A. In addition, MWAA has approved 37 change orders for Package B that total \$10,747,614. The change orders in process in June 2017 total \$3,968,346 and 30 Requests for Change (RFC) under evaluation*

total \$13,369,326. This represents a total of \$230,484,320 or 41.06% of the total Project Contingency of \$561,292,412 at a point where overall Project completion is at 54%.

**Dulles Corridor Metrorail Project - Phase 2  
Monthly Cost Report, May 2017**

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	\$ 815,539,914	\$ 1,338,426,737	
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	\$ 138,669,123	\$ 275,435,928	
Commodity Escalation - Package B	\$ 4,000,000	\$ 4,000,000	\$ -	\$ 4,000,000	
Parking Garages - Package C	\$ -	\$ -	\$ -	\$ -	
<b>Design-Build Contracts Total</b>	<b>\$ 1,467,057,530</b>	<b>\$ 1,456,716,297</b>	<b>\$ 954,209,036</b>	<b>\$ 1,633,862,665</b>	<b>58%</b>
<b>Right of Way</b>					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 7,775,060	\$ 58,474,300	
<b>Right Of Way Total</b>	<b>\$ 58,600,000</b>	<b>\$ 58,600,000</b>	<b>\$ 7,775,060</b>	<b>\$ 58,474,300</b>	<b>13%</b>
<b>WMATA Agreement</b>					
Vehicles	\$ 205,868,200	\$ 205,868,200	\$ 39,832,723	\$ 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	\$ 18,179,681	\$ 89,835,737	
<b>WMATA Agreement Total</b>	<b>\$ 305,324,718</b>	<b>\$ 305,324,718</b>	<b>\$ 58,015,412</b>	<b>\$ 305,324,718</b>	<b>19%</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	\$ 42,088,515	\$ 65,421,913	
Project Management Support	\$ 140,000,000	\$ 140,000,000	\$ 110,783,161	\$ 140,560,000	
Other Costs <sup>1</sup>	\$ 116,182,137	\$ 116,682,137	\$ 41,210,830	\$ 121,400,247	
<b>Airports Authority Services Total</b>	<b>\$ 320,802,137</b>	<b>\$ 321,302,137</b>	<b>\$ 194,082,506</b>	<b>\$ 327,382,160</b>	<b>59%</b>
<b>Contingency</b>					
<b>Contingency Total</b>	<b>\$ 551,451,179</b>	<b>\$ 561,292,412</b>		<b>\$ 378,191,721</b>	
<b>Dulles Airport Windscreens - Package G</b>					
<b>Dulles Airport Windscreens Total</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	
<b>Stormwater Management Ponds - Package P</b>					
<b>Storm Water Management Ponds Total</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	
<b>Finance Charges</b>					
<b>Finance Charges Total</b>	<b>\$ -</b>	<b>\$ -</b>		<b>\$ -</b>	
<b>TOTAL PROJECT COSTS</b>	<b>\$2,778,235,564</b>	<b>\$2,778,235,564</b>	<b>\$1,287,348,070</b>	<b>\$2,778,235,564</b>	<b>54%<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 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 Betterments



## 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.

## 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 *May 31, 2017* Project Master Schedule submitted on *July 6, 2017*, as provided by MWAA. *However, these dates are based on CRC's May 2017 Monthly Schedule Update which was again not accepted by MWAA.* MWAA has not accepted CRC's monthly Schedule updates since April 2016. In the past, MWAA has requested that CRC

incorporate MWAA’s comments in the next schedule update. However, starting with the February 2017 update, MWAA asked CRC to address MWAA’s comments and resubmit the February schedule update. CRC did not resubmit their February 2017, March 2017 and April 2017 Monthly Schedule Updates. The Revenue Operations Date has been reported by MWAA as March 31, 2020. However, the Project Master Schedule indicates a Revenue Service Date of May 19, 2020 based upon CRC’s unapproved schedule. MWAA has again requested CRC resubmit their May 2017 Monthly Schedule Update based on MWAA’s comments. MWAA reported at the July 12, 2017 Update Meeting that CRC was preparing a schedule that would bring the Schedule Substantial Completion Date (SSCD) back to the Contractual SSCD.

<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	11/12/17
Package A – Complete Aerial Guideway Structure Construction	10/18/17
Package A – Complete At-Grade Guideway Structure Construction	01/04/18
Package A – Complete Station Build-out	04/19/19
Package A – Complete Systems Installation	02/04/19
Fairfax County – Construction of Parking Facilities Complete	04/30/19
Loudoun County - Construction of Parking Facilities Complete	05/31/19
Package A – Forecasted Substantial Completion	11/19/19
Package B - Complete Yard Systems and Commissioning	11/19/18
Package B – Forecasted Substantial Completion	05/07/19
Complete WMATA Operations Readiness Testing	01/18/20
Complete WMATA Revenue Operations Acceptance Testing	05/18/20
Revenue Service Date	05/19/20*
Project Final Acceptance	08/18/20

\* As noted in this report, this Revenue Service Date is based on CRC’s May 2017 Monthly Schedule Update which was not accepted by MWAA. MWAA is forecasting a RSD of March 31, 2020.

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

- MWAA to hold a risk and contingency workshop with FTA and PMOC participation.
- MWAA to revise their RCMP based upon the results of their negotiations with CRC for the time delay costs and results of the risk and contingency workshop.

- CRC to submit a schedule that brings the SSCD back to the Contractual SSCD.

**Critical Path**

CRC’s Primary Critical Path as reflected in their May 2017 schedule update runs through the N97 S4 Abutment B retaining wall, leading into N97 and N11 trackwork, N97 systems installation, N97 train control room testing and commissioning, and finalizing with the systems-wide testing and commissioning. It should be noted CRC’s May update was “not accepted” due to failure to include all issues delaying the schedule (e. g. rework, precast quality issues, Non-Conformance Reports), failure to explain all delays in the schedule narrative and provide remedial actions, inaccurate depiction of actual progress, and delays to the SSCD caused by disputed fragnets. MWAA has again asked CRC to address and correct the issues causing the rejection of the schedule update and resubmit the May Monthly Schedule Update for MWAA’s review and approval.

**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 that the QC plans be submitted from the CRC subcontractors and vendors. CRC is submitting inspection test plans for MWAA review.

*During June 2017, CRC performed a surveillance of Jersey Precast, Concrete Safety Systems (a subsidiary of Jersey Precast) and Smith Midland (precast). The reports are pending.*

MWAA typically submits a rolling six month Audit Schedule at each monthly update meeting. The most recent QA Audit Schedule for July 2017 through December 2017 for Package A is shown below from the July 12, 2017 Update Meeting.

**DULLES CORRIDOR METRORAIL PROJECT  
Phase 2, Package A  
QA Audit and Surveillance Schedule  
June 2017 through December 2017**

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
<i>Rescheduled (TBD)</i>	A	Thompkins – American (hydraulic elevators)	N	CRC
7/18-19/17	A	Williams Steel Erection	N	CRC
7/19/17	A	CRC Construction Safety and Security Audit Plan	N	MWAA
8/15-16/17	A	Ansaldo – Train Control	N	CRC
8/16/17	A	CRC Cloud Plan	N	MWAA

Tentative Date	Audit (A) Surveillance (S)	Organization/Activity	Joint Audit/ Surveillance	Lead
9/14/17	A	CRC's Quality Management Plan (Preliminary Processes)	N	MWAA
10/12/17	A	CRC's Construction Quality Management Plan (Initial Processes)	N	MWAA
11/16/17	A	CRC's Construction Quality Management Plan (Follow-up Processes)	N	MWAA
12/4/17	A	CRC's Design Quality Management Plan (Review of RFIs)	N	MWAA

*During June 2017, surveillance was performed on Superior Steel Field Erection of Package B. The report is expected in July 2017. 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**  
*July 2017 through December 2017*

Tentative Date	Audit (A) Surveillance (S)	Organization/Activity	Joint Audit/ Surveillance	Lead
8/16/17	S	Hensel Phelps (MC Dean) – Caroline County, VA Electrical Fabrication	Y	MWAA/HP
10/19/17	S	Hensel Phelps – Vias/CMT (Special Trackwork)	Y	MWAA/HP
12/12/17	S	<i>Hensel Phelps QC Inspection Records</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 that the Accident/Injury Statistics be provided by the fifteenth of each month, ahead of each monthly progress meeting. As of *June 2017*, CRC has recorded *4,603,949* hours worked with *138* first-aid cases, *twenty* OSHA recordable cases of which *two* resulted in lost time, *113* incidents, *twenty-seven* utility hits, four environmental spills, *eighteen* vehicular accidents, seven property damage claims (>\$1500) and *six* lost time days. *Six first aid cases, five incidents,*



*three utility hits, one vehicular accident, one OSHA recordable case (Lost Time) and one recordable accident (Non-Lost Time) occurred during June 2017.*

*HPCC has recorded 741,473 hours worked with five OSHA recordable (non-lost time) cases, one OSHA Recordable (lost time) case with twenty-eight lost time days, seven first-aid cases, one vehicular accident and forty-eight incidents. There were four incident investigations and one first aid case with eight lost time days during June 2017.*

**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. WMATA expects the last Phase 2 rail cars to be delivered by October 31, 2017.

### **Project Risks**

The Project team submitted the RCMP Rev 2.0 along with FTA requested revisions on August 11, 2016. PMOC recommended that FTA accept the RCMP on September 6, 2016. FTA approved the RCMP dated August 11, 2016 on December 2, 2016. MWAA submitted an updated Risk Register on December 16, 2016 which was discussed with MWAA on January 11, 2017 and PMOC recommended that FTA accept it on February 10, 2017. On April 25, 2017, MWAA submitted an updated Contingency Phase Cost Reallocation to the FTA and PMOC recommended acceptance during the May 15, 2017 Quarterly Progress Review Meeting.

**Budget Risks:** MWAA has 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 was incurring a thirteen month delay, essentially all of the forecasted Project Schedule Contingency (14months) has been consumed.

## Action Items

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

PR	ITEM	IDENTIFICATION	NATURE of PROBLEM	D	A	I	COMMENTS	STATUS
3	2B	MWAA to update SSMP.	SSMP Revision 2 should be reviewed and updated.	Y	Y	N	MWAA submitted SSMP, Revision 3, to FTA on April 12, 2017 and PMOC recommended FTA approve the Plan on April 27, 2017. <i>PMOC submitted additional comments to FTA on June 1, 2017 adding FWSO to the SSMP. The FWSO issue has been resolved and MWAA awaits FTA's letter of approval.</i>	R

**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
DCR	Design Change Request
DEQ	Department of Environmental Quality
DHR	Department of Historical Resources
DIAAH	Dulles International Airport Access Highway
DIDB	Disparate Impact and Disproportionate Burden
DTP	Dulles Transit Partners, LLC
DVP	Dominion Virginia Power
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
IFP	Issued for Permit
IPP	Integrated Permit Package
LPA	Locally Preferred Alternative
MWAA	Metropolitan Washington Airports Authority
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
RFQI	Request for Qualifications Information
RFP	Request for Proposal
RBS	Revised Baseline Schedule
SCC	Standard Cost Category
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
TOC	Tri-state Oversight Committee
TIA	Time Impact Analysis
TIFIA	Transportation Infrastructure Finance and Innovation Act
USDOT	United States Department of Transportation
VDOT	Virginia Department of Transportation
VSMP	Virginia Stormwater Management Program
WFC	West Falls Church
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.

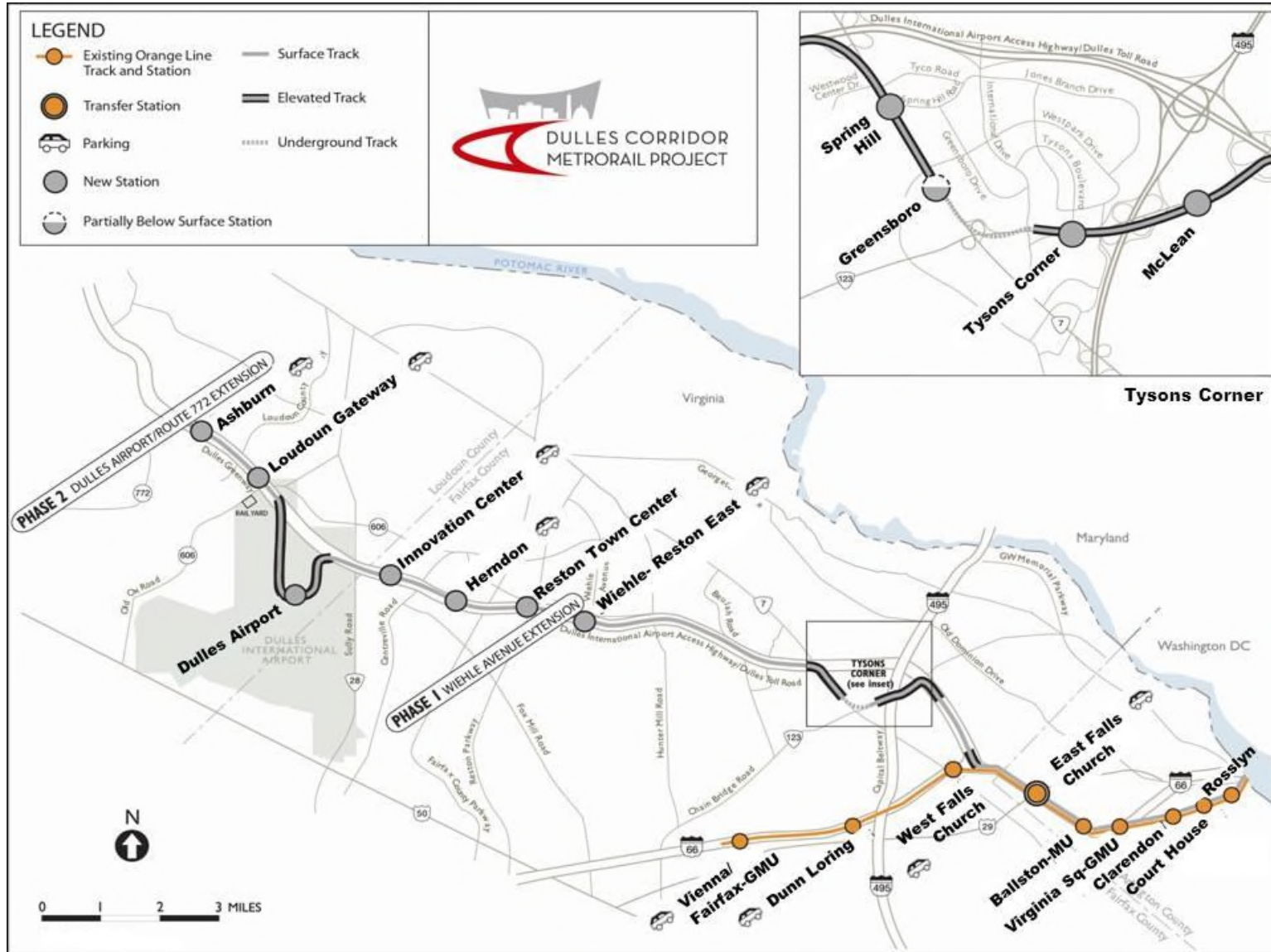
### Current Delivery Milestone Schedule

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
59%	Percent Work in Place Complete at the date of this report ( <i>earned value</i> )
64.4%*	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
\$1,287,348,070	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
54%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$378,191,721	Total project contingency remaining (allocated and unallocated contingency)

## APPENDIX C – PROJECT MAP



**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. <i>The issue regarding the FWSO has been resolved and MWAA awaits FTA’s letter of approval.</i>

<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 February 13, 2017.
Has the grantee submitted its safety certification plan to the oversight agency?	Y	
Has the grantee implemented security directives issued by the Department of Homeland Security, Transportation Security Administration?	Y	WMATA will be operator. TSA representatives participate in the monthly SCWG meetings.

<b>SSMP Monitoring</b>	<b>Y/N</b>	<b>Notes/Status</b>
Is the SSMP project-specific, clearly demonstrating the scope of safety and security activities for this project?	Y	MWAA submitted a revised SSMP on February 25, 2016. FTA accepted the Plan with comments on June 15, 2016. The 2017 update, submitted on April 12, 2017 and PMOC recommended FTA approval on April 27, 2017. PMOC provided additional comments on June 1, 2017, requesting the FWSO be added to the Plan.
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 (13 risk events) as of November 2016			
Risk ID	Event Description	(Proposed Primary) Risk Mitigation	Risk Rating
80.02.D.239	Package B Design delays thru June 1, 2016	1) Minimize any further delays working with WMATA. 2) Expedite AHJ reviews where possible 3) Evaluating delay ownership/responsibility 4) Engage 3rd party consultant to assist determination of extended costs 5) <i>Global Settlement 128 days. Risk is partially realized. Cost portion yet to be finalized.</i>	35
40.08.C.1	CRC's Extended Management Cost for Early Design Changes. 13 months of schedule extension has been settled in Change Order No. 66.	1) Ensure inclusion of known design changes into negotiations 2) Perform cost and schedule impact analysis prior to directing changes 3) Third party analyze CRC's proposal and assist project team with negotiations 4) <i>Risk realized. Cost yet to be negotiated</i>	25
80.03.C.1	Airports Authority's Extended Management Cost for Early Design Changes due to 13 months of schedule extension which was settled in Change Order No. 66. This cost includes Airports Authority, Project Management Support Services and Washington Metropolitan Area Transit Authority.	Proactively manage the staff to efficiently address and attend the project needs while minimizing cost. <i>Risk realized. Cost yet to be finalized.</i>	25
50.05.C.153 NEW*	Communications System Scope of Work – Fire Alarm and Intrusion Alarm systems separation.	<i>The designs for these changes have been finalized and the changes to construction have been reduced. The increased costs are mainly due to additional material and labor. Risk realized. Cost yet to be finalized.</i>	25
40.08.C.221	Coordination of Package B and Package A interface	1) Work with CRC to improve interfaces dates. 2) HP finishes per Contract schedule, demobilizes, reduces staff and then remobs for Pkg A interface testing 3) HP to provide temporary means to complete testing 4) Pkg B interface need dates are getting closer to Pkg A interfaces	25
80.03.C.2 NEW*	Request for Equitable Adjustment Part 2 (REA-2) (for changes included in CO-66 but were not finalized)	<i>The notice of change was for info only at this time and has been not submitted with an associated schedule in P6 native format for evaluation.</i> Project team is reviewing the submitted document. Will review details once the native schedule file is submitted.	21
80.03.C.3 NEW*	Revised Baseline Schedule version REA-X (for changes post CO-66)	Working to avoid further impacts, perceived or otherwise delay the schedule. Minimize directed changes and objective monitor CRC's performance to	21
80.02.D.240 NEW*	Package B Design delays beyond June 1, 2016	1) Spot mitigation of issues as arise 2) Expediting owner reviews, negotiating acceleration, coordinate with management.	21
50.05.C.150	Communications System Scope of Work - Changes to match Phase 1 and RFP requirements.	<i>The designs for these changes have been finalized and the changes to construction have been reduced. The increased costs are due mainly to additional material and labor. Risk realized. Cost yet to be finalized.</i>	20
80.08.C.196	WMATA does not complete testing, start-up or final acceptance in a timely manner.	Phase 1 Testing and Startup provided experience and lessons learned that improved both the Airports Authority and WMATA's processes, particularly in mutual understating and appreciation for timely communications and coordinated interactions. WMATA has larger staff in support of Phase 2 project. Any part of the corporate agreement, any major outstanding issues or disagreements are deferred to the executive committee to resolve.	16
50.05.C.151 NEW*	Communications System Scope of Work – PIDS	<i>The designs for these changes have been finalized and the changes to construction have been reduced. The increased costs are due to additional mounting equipment and the modified interface with the Metrorail PIDS system. Risk realized. Cost yet to be finalized.</i>	15
50.05.C.152 NEW*	Communications System Scope of Work – FIA/PAS Separation	<i>The designs for these changes have been finalized and the changes to construction have been reduced. The increased costs are due mainly to additional material and labor.</i>	15
20.01.C.1 NEW*	Air conditioning in elevator and escalator machine rooms & modifications to VT specs	1) Successfully negotiate costs related to Air Conditioning of the Machine Rooms (building size, ductwork, AHUs, louvers and dampers) 2) Reduce requested changes to specifications to essential elements	15

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

### **Vince Gallagher, PE, PLS, PP, Program Manager**

Mr. Vincent Gallagher is Hill’s Program Manager with responsibility for the FTA oversight program. Mr. Gallagher offers 35 years of engineering and construction management experience, including almost twenty years in the FTA’s PMO program, serving as a Program Manager and Task Order Manager.

### **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).

### **Randall Allen, PMP, Construction Management Manager**

Mr. Allen was assigned as the full time onsite primary PMOC for all activities involved in the progress of the Phase I work on the Dulles Corridor Metrorail Project. After serving an enlistment in the U.S. Marine Corps, Mr. Allen gained 33 years of progressively responsible positions managing WMATA’s Metrorail Construction Projects. He served ten years as Washington Metropolitan Area Transit Authority (WMATA’s) Communications Office Engineer and Assistant Resident Engineer. He served 12 years as WMATA’s Trackwork Resident Engineer and six years as WMATA’s Project Manager on the Metrorail extension to Largo and the Shady Grove Yard Expansion.

### **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, 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.

### **Stephen A. Malaszecki, Project Scheduling Manager**

Mr. Malaszecki has over 37 years of extensive experience in Project Controls, CPM Scheduling, and Construction Management of sophisticated construction projects throughout the nation. He brings a unique blend of specialized skills and knowledge to provide the expertise required to assist clients in managing their projects on time and within budget. Stephen has applied his expertise on projects ranging in value from under \$1 million to over \$1 billion. He has worked on design, engineering and construction projects in both the public and private sectors. His experience encompasses the successful completion of projects in every sector including: Transportation – Rail and Transit, Highways, Bridges, and Airports.

### **Wesley Albright, Construction Management Manager**

Mr. Albright has over 38 years of experience managing and performing track work construction and maintenance in the Railway industry as both a Consultant and Employee of the Washington Metropolitan Area Transit Authority (WMATA). He has had responsibility for management of capital and operational budgets, personnel, and handling of management and labor disputes. He has strong expertise

in track maintenance, track production, and track construction, with over 20 years of direct experience with track inspection and quality control for all of WMATA tracks and track structures.

While working for consultants on the new Silver Line for the Metropolitan Washington Airports Authority (MWAA), he served as liaison and coordinator for client and contractor, scheduling equipment and personnel support requirements, track access and third rail power outages. He was a quality assurance inspector of mechanical, electrical and plumbing work for the construction of a new, two-track, shop Annex and the construction of an acoustical sound reducing structure; construction of six yard storage tracks, the installation of five No. 8 standard and equilateral turnouts; and, systems work, including automatic train control, traction power and communication in the expansion of transit rail yard.