

**COMPREHENSIVE MONTHLY REPORT**

**September 2016**

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

Metropolitan Washington Airports Authority  
Washington, DC

October 26, 2016

**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.**

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**PMOC Lead:** [REDACTED]

**Length of Time PMOC Assigned to Project:** 3.0 years

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# TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
1. PROJECT DESCRIPTION .....	1
2. PROJECT STATUS SUMMARY.....	2
3. CORE ACCOUNTABILITY INFORMATION.....	4
4. MAJOR PROBLEMS/ISSUES .....	4
<b>MAIN REPORT .....</b>	<b>5</b>
1. GRANTEE’S CAPABILITIES AND APPROACH .....	5
a. <i>Technical Capacity and Capability</i> .....	5
b. <i>Project Controls</i> .....	6
2. PROJECT SCOPE .....	10
a. <i>National Environmental Policy Act (NEPA)</i> .....	10
b. <i>Third Party Agreements</i> .....	10
c. <i>Design Status</i> .....	11
d. <i>Bidding and Construction Status</i> .....	11
e. <i>Real Estate and Project Development</i> .....	20
f. <i>Utility Coordination</i> .....	23
g. <i>Vehicle Procurement</i> .....	23
3. PROJECT MANAGEMENT PLAN AND SUB-PLANS .....	23
4. PROJECT SCHEDULE.....	25
a. <i>Important Activities – 90-Day Look Ahead</i> .....	26
5. PROJECT COST .....	27
a. <i>Monthly Cost Report – August 2016</i> .....	29
b. <i>Funding Sources</i> .....	29
c. <i>TIFIA Funding Status</i> .....	30
6. PROJECT RISKS .....	30
7. ACTION ITEMS .....	34
<b>APPENDICES.....</b>	<b>35</b>
<i>APPENDIX A – LIST OF ACRONYMS</i> .....	36
<i>APPENDIX B – PROJECT OVERVIEW AND MAP</i> .....	38
<i>APPENDIX C – PROJECT MAP</i> .....	39
<i>APPENDIX D – MWAA SAFETY AND SECURITY CHECKLIST</i> .....	41
<i>APPENDIX E – PMOC TEAM PERFORMING THIS REVIEW</i> .....	47

## EXECUTIVE SUMMARY

The Project Management Oversight Contractor (PMOC) met with Metropolitan Washington Airports Authority (MWAA) on *October 5, 2016* to conduct the monthly progress meetings for work performed in *September 2016* 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**

MWAA, in cooperation with the Washington Metropolitan Area Transit Authority (WMATA), proposes to implement a 23.1-mile rapid transit system in the Dulles Corridor of Northern Virginia. The proposed corridor follows the alignment of the Dulles International Airport Access Highway (DIAAH), the Dulles Toll Road within Fairfax County, and the Dulles Greenway, a private toll road in Loudoun County. MWAA is implementing the LPA in two phases as described below.

Phase 1 of the Project (Initial Operating Segment), which went into revenue service on July 26, 2014, provided the construction of the initial 11.7 miles of the rail project from the existing Metrorail Orange Line just east of the West Falls Church (WFC) Station to a station constructed at Wiehle Avenue with a total project cost of \$3.142 billion.

Phase 2 of the Project 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. 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 August 31, 2016 continues to indicate the contractual SSCD of August 7, 2019. The Package A Contractor's latest schedule through August 2016, which was "not accepted" by MWAA indicates a forecasted SSCD of February 11, 2020, a total slippage of 188 calendar days. This is the same forecasted SSCD as the July schedule which was also "not accepted" by MWAA. MWAA has indicated that the Revenue Service Date (RSD) is anticipated to be August 20, 2020 which is based on CRC's unapproved schedule update. CRC submitted its proposed mitigation plans on September 27, 2016 which are under review.*

[REDACTED]

[REDACTED]

## **2. Project Status Summary**

- **Procurement Status** – Phase 2 is divided into several packages that were procured separately: Package A includes the final design and construction of 11.4 miles of the rail line, stations and systems elements; Package S (the Advanced Earthwork Contract) includes the removal and relocation of the Phase 1 soils stockpiled at the Maintenance Facility site associated with Package B; Package B includes the final design and construction of the WMATA Maintenance Facility at the northwest corner of the Dulles Airport property; and Parking Facilities (formerly Package C) includes the design and construction of the five parking facilities at the stations in Fairfax and Loudoun counties. The parking facilities are outside the scope of Phase 2. Package S was substantially completed on December 8, 2014 with the remaining punch list items completed on May 15, 2015. However, it was determined that 15% of the contract area contains soils with no organics and, hence, will not support soil stabilization growth. The contractor provided the necessary organic soil and reseeded the area in mid-November 2015. MWAA reported that the final change order closing out the contract was executed in February 2016.

**Design Progress** –The overall design of Package A was reported at 100% complete in April 2016 with final completion forecasted on October 14, 2016.

*Package B design remains at 97% complete. The review of the 100% Design has been completed and the comment resolution meetings were held during September 2016 and MWAA reported during the October 5, 2016 Update Meeting that the meetings were nearing completion.*

**Construction Progress** –*Package A construction is 30% completed. Construction of the aerial section through the Dulles International Airport with the installation of all 197 of the drilled shafts, pouring of 195 (99% of total) columns, pouring 178 pier caps (96% of total) and 157 deck spans have been poured (56% of the total) having been completed through the end of September 2016. Work continues modifying the Dulles International Airport Access Highway (DIAAH) and Dulles Toll Road (DTR) to enable the construction of the Innovation Center, Herndon and Reston Stations. The contractor continues directional boring for systems and utilities under the DTR and Greenway where required. Contractor continues to install ductbank and manholes for the 34.5 KV traction power feeders along the DIAAH near TPSS #12, #13, #14 and #15. Concrete plinth construction continues along the Autopilot aerial guideway. Package B construction activity began in July 2015 and during September 2016 earthwork operations continued with fill being placed in the southeast area of the site and the rock crushing operation has been moved to the west side of the site and continues. The installation of stormwater lines and ductbank continues. The contractor continues with the placing of concrete for the basement and hoist pits for the Service and Inspection Building. Excavation for the concrete work at the Maintenance of Way Building has begun. The construction progress is approximately 18% percent complete.*

- **Rail Car Procurement** – On August 15, 2012, MWAA authorized WMATA to amend their contract with Kawasaki to exercise the option for an additional sixty-four 7000 Series railcars for Phase 2. WMATA’s letter of August 30, 2012 to MWAA confirmed the amendment to the Kawasaki Contract for the Phase 2 railcars. The latest milestone schedule from Kawasaki dated August 1, 2016, forecasts the conditional acceptance of the last Phase 2 vehicle no later than December 28, 2017 which is a slippage of eight days from the previous month.

*Kawasaki's Progress Review Meeting Report for the month of September is not yet available. WMATA conditionally accepted sixteen railcars in August 2016. Sixteen railcars have been conditionally accepted for four consecutive months suggesting that Kawasaki has achieved their originally planned rate. WMATA reported that twenty railcars were conditionally accepted in September 2016, but cautioned that this rate might not be achievable on a consistent basis.*

**Phase 1 Closeout** – MWAA previously stated there is a \$76 million transfer from Finance Costs under-run to fund the increases in other items in the Project budget. The major portion of the increase is for the global settlement with Dulles Transit Partners (DTP) for the design-build contract at \$45.9 million. In addition, the increase includes closeout of WMATA open issues which include: ATC Loss of Speed Readout (LSRO) Study, Heat Tape Upgrades, Art-In-Transit, Traction Power Remote Terminal Units (RTU) and Remaining Punch List Items. MWAA submitted the updated LSRO Report to WMATA on April 11, 2016, and WMATA reported in their May 24, 2016 letter that the work is complete and this issue is closed. *Art in Transit has been completed with some minor work at the Greensboro Station that will be performed by WMATA when the artist provides the globe.* Traction Power RTU replacements have been completed. Installation of the Traction Power Network Cards is complete. *The Site Specific Work Plan (SSWP) for the heat tape testing was approved on September 7, 2016; however, the subcontractor who was to perform the work had allowed the Railway Worker Protection (RWP) badges to lapse. MWAA and WMATA worked together to set up a RWP training session resulting in only a one week slippage to the planned start date. This will result in the optimistic completion date of February 2017 unlikely.* In addition, there are remaining punch list items from VDOT and Fairfax County. Most of these items were expected to be completed by the end of 2016. *The silt removal and seeding at Pond #6 in Fairfax County was completed on September 22, 2016.* One of the major outstanding items was the establishment of the final VDOT Punch List, resolution of the curb cut ADA ramps issue and the resolution of the Old Meadow Road Realignment issue with VDOT. MWAA reports that it will realign Old Meadow Road which is under design and construction is *now* estimated to be completed in *April 2018*. The VDOT punch list which includes some 1600 items was submitted on March 30, 2016 and VDOT's cost proposal in the amount of \$36.8 million to perform the work was submitted on May 16, 2016. The proposal has been reviewed by MWAA which found both the scope of work and cost to be excessive. *MWAA and VDOT continue to work to resolve and achieve consensus with the (currently) disputed scope of items between the agencies and progress is being made.* Further, it is noted that the deficiencies of the largest quantity of items and their cost are the responsibility of the prime contractor, DTP, who has been put on notice and their response is pending. The closeout of the FFGA is expected to occur six to eight months following payment of final Project costs which is expected to extend until mid-2018.

### 3. Core Accountability Information

#### a. Cost

	Package A	Package B	Package S
Original Budget	\$1,177,777,000	\$249,280,530	\$20,000,000
Baseline Budget	\$1,177,777,000	\$252,989,000	\$5,950,297
Estimate at Completion	\$1,270,707,304	\$258,787,582	\$6,450,314
% Complete- Expenditures	45.49	22.25	10899.84

#### b. Schedule

	Package A	Package B	Package S
Original Substantial Completion Date	7/7/ 2018	8/17/2018	12/8/2014
Current Forecast Completion Date	2/11/2020	5/29/2019	12/1/2014(A)
% Time expended	52.05	52.08	100

#### c. Contingency

Original Total Project Contingency	\$551,451,179
Current Total Project Contingency	\$456,315,103

### 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 determined. MWAA has requested and obtained additional information regarding delay costs from CRC and expects to reach cost resolution during the fourth quarter of 2016; however, MWAA indicated that this is optimistic. MWAA has submitted their consultant's (Delta Consulting) evaluation of the claim to CRC and awaits their response.
3. WMATA had objected to the use of the prefabricated enclosures for the Tie Breaker Stations that provide access to the back of the switchgear via an external door. The resolution of this issue has taken over a year. This could have a negative impact on the Project's budget and schedule. WMATA received the October 15, 2015 Hazard Analysis from MWAA and WMATA's letter of February 3, 2016 concurred with the proposed mitigation concepts with eleven conditions. MWAA evaluated WMATA's conditions and responded by letter dated April 7, 2016 confirming their acceptance of the conditions. The conceptual design has been completed and submitted to WMATA for review. *WMATA accepted the conceptual design and CRC is developing the final enclosure design. The draft is under review with the formal submittal expected in November 2016.*
4. 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.

5. *While the delay to the Package A Contract could have a negative schedule impact on the Package B Contractor who will have to tie-in the Maintenance Facility lead and systems to the mainline, at this time, due to the Package B Contractor's own cumulative nine months of delays, the Package A Contractor dates to provide all utilities and systems interface work are ahead of the required dates for Package B.* MWAA continues to work with the contractors for Packages A and B to mitigate any impacts at the interface points.
6. 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 thus far been unsuccessful in reaching a mutually agreeable resolution. VDOT and MWAA continue to meet in the attempt to reach a mutually agreeable resolution.
7. *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 is acting as Director of Package A while the recruitment process continues.*

## MAIN REPORT

### 1. Grantee's Capabilities and Approach

#### a. Technical Capacity and Capability

FTA's letter of July 8, 2015 approved PMP Version 2.0 and requested that it be updated to reflect the recent organizational changes. 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 *September 2016*, *twenty-two* full time equivalents were working on Phase 1. *This is a reduction of four from the August 2016 figure.*

MWAA reported that the *actual* number of full-time equivalents for Phase 2 during *September 2016* is *1308* a decrease of *253* from the *August 2016 revised actuals* of *1561*. *The September 2016 numbers* are composed as follows: MWAA – 32, Virginia Department of Rail and Public Transportation (DRPT) – 1, Virginia Department of Transportation (VDOT) – 7, Washington Metropolitan Area Transit Authority (WMATA) – 29, Project Management Support Services (PMSS) – 120, Capital Rail Constructors (CRC), Package A – 917, and Hensel Phelps Construction Company (HPCC), Package B – 204.

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.

**b. Project Controls**

MWAA has developed project management procedures with regard to monitoring and controlling project scope, quality, schedule, cost, contingency management, and safety. FTA’s letter of July 8, 2015 approved PMP Version 2.0 and requested that it be updated to reflect the recent organizational changes. This revision was submitted on December 4, 2015 and FTA sent comments to MWAA on February 19, 2016 for incorporation into the next update of the PMP. 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 is to incorporate the comments and submit an updated PMP by October 31, 2016. 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 *September 30, 2016*. Dollar values are included for the latest assessed period.

AUGUST 2016 PMOC ASSESSMENT						
	DBE GOAL %	DBE CONTRACTS AWARDED (DBEC/TC)	NEW DBE AWARDS AUGUST 2016	DBE CONTRACTS AWARDED TOWARD GOAL	DBE GOAL ACHIEVED (DBE Pmts/TC)	DBE PAYMENTS AUGUST 2016
PreEng - PRELIMINARY ENGINEERING	0%	17.36%	\$0	N/A	17.36%	\$0
PMSS - RAIL OFFICE	25%	22.42%	\$16,981	89.69%	16.55%	\$4,249,630
PKG A - DESIGN BUILD CONTRACT	14%	13.48%	\$106,010	96.26%	3.59%	\$2,139,762
PKG B - RAIL YARD AND MAINTENANCE FACILITY	14%	9.85%	\$1,369,461	70.34%	1.19%	\$738,985
PKG S - SOL STOCKPILE RELOCATION	25%	37.53%	\$0	150.11%	21.49%	\$0
SI - SPECIAL INSPECTION SERVICES	15%	16.16%	\$194,897	107.75%	8.31%	\$12,711
ROW - REAL ESTATE ACQUISITION	25%	25.36%	\$0	101.44%	0.00%	\$0
<b>TOTALS</b>			<b>\$1,687,349</b>			<b>\$7,141,088</b>

- **Davis-Bacon Act Verification** – MWAA is reporting Davis-Bacon Act verification activities in the Monthly Progress Report. As of the *September 2016* MWAA Monthly Progress Report, DBA compliance monitoring is ongoing including the review of certified payroll reports and Prime Contractor requests for additional classifications and wage rates.
- **Title VI** – FTA stated that Fairfax and Loudoun Counties have to secure approved Title VI Plans because they will be recipients of TIFIA loan funds for the project.

Fairfax County: Fairfax County reported that the Fairfax County Board of Supervisors approved the Title VI Plan on July 9, 2014. Subsequently, the Fairfax County Board of Supervisors approved the Fairfax County Service Equity Analysis on July 29, 2014 and the Title VI Plan was submitted to FTA for review, prior to the August 1, 2014 expiration date of the interim plan. At the December 2014 meeting, Fairfax County reported that they had received FTA approval in November 2014.

Loudoun County: On January 16, 2014, the Loudoun Board of Supervisors approved adoption of the Title VI Plan. Loudoun County received FTA concurrence on the Title VI Plan on January 23, 2014 and Loudoun County is in the process of implementing its Plan. On March 10, 2014, the Loudoun Board of Supervisors held a Transit Summit to look at the future configuration of the entire bus system in Loudoun County. Any changes in service will be incorporated into the Title VI Plan. Loudoun County continues to implement their Title VI Plan.

During the July 9, 2014 meeting, Loudoun County reported that the existing operator, Veolia Transportation, won the contract for local bus service. The recommendation for award was approved, and the contract executed by the Loudoun County Board of Supervisors in July 16, 2014.

MWAA: MWAA submitted an updated Title VI program in October, 2014 and received an “In Review” letter on January 12, 2015. This letter outlined four items to be updated before submitting a revised program. The revised program was received in March 2015.

In October 2015, a Compliance Review was conducted for MWAA. The status was that of the four outstanding items addressed, three were satisfied in the March 2015 submission. The Limited English Proficient/Language Assistance Plan (LEP/LAP) portion remained outstanding. MWAA submitted the LEP/LAP to the FTA on April 5, 2016. FTA’s letter of April 25, 2016 accepted the LEP/LAP. MWAA’s next triennial Title VI Program update is due to the FTA on October 1, 2017.

- **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 *September 2016*, CRC has recorded 2,660,593 hours worked with *ninety-one* first-aid cases, thirteen OSHA recordable cases of which one resulted in lost time, *eighty-one* incidents, *nineteen* utility hits, three environmental spills, *eight* vehicular accidents, seven property damage claims (>\$1500) and four lost time days. *Eight first aid cases, three utility hits, one vehicular accident and five incidents occurred during September 2016.*

*HPCC has recorded 397,817 hours worked with two OSHA recordable (non-lost time) cases, two first-aid cases, and eighteen incidents. There was one incident investigation during September 2016.*

- **QA/QC** – 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 September 2016, MWAA conducted an audit of the CRC Cloud Plan and the CRC Instrumentation Monitoring Program.*

*MWAA typically submits a rolling six month Audit Schedule at each monthly update meeting. The most recent QA Audit Schedule for October 2016 through March 2017 for Package A is shown below from the October 5, 2016 Update Meeting.*

**DULLES CORRIDOR METRORAIL PROJECT**  
**Phase 2, Package A**  
**QA Audit and Surveillance 6 Month Schedule**  
*September 2016 through February 2017*

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
<i>Cancelled - TBD</i>	A	CRC Survey Audit	Y	MWAA
10/11-12/2016	A	Lyncole XIT Grounding	Y	MWAA
10/25-26/2016	A	Mass Electric	Y	CRC
11/8/2016	A	CRC Shop Drawing Procedures	Y	CRC
11/15-16-2016	A	CRC Construction Safety and Security Audit Plan	N	MWAA
11/29-30/2016	A	Ennis Electric	Y	MWAA
12/7/16	A	CRC Right of Way Acquisition	N	MWAA
12/13-14/2016	A	CRC Construction Quality Management Plan	Y	CRC
12/22/2016	A	CRC Safety and Security Certification Program	Y	MWAA
12/29/2016	A	Banker Steel	N	CRC
1/10/17	A	Rocla Concrete Ties	Y	CRC
1/24-25/17	A	CRC's MOT	Y	MWAA
1/31/17-2/1/17	A	CRC Environmental Plan	N	MWAA
2/7-8/17	A	CRC Quality Management Plan	Y	MWAA

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
2/21-22/17	A	JP and Concepts (Special Track Work)	N	CRC
3/7-8/17	A	<i>Powell Electric – Traction Power &amp; Tiebreaker Stations</i>	Y	CRC

*The most recent six month rolling QA Audit Schedule for Package B is shown below.*

**DULLES CORRIDOR METRORAIL PROJECT**  
**Phase 2, Package B**  
**QA Audit and Surveillance Schedule**  
*October 2016 through February 2017*

<b>Tentative Date</b>	<b>Audit (A) Surveillance (S)</b>	<b>Organization/Activity</b>	<b>Joint Audit/ Surveillance</b>	<b>Lead</b>
9/29/16	S	<i>HP (Trowbridge) – Reinforcing Steel Fabrication</i>	Y	MWAA/HP
10/26-27/16	A	HP – Construction Safety Program	N	MWAA
11/15-16/2016	A	HP – Environmental Management	N	MWAA
12/15/2016	S	HP (Shapiro & Duncan) – Mechanical & Plumbing Fabrication	Y	MWAA/HP
1/TBD/17	A	HP – (Shockey Precast Group) – Architectural & Structural Precasting	N	MWAA/HP
2/22/17	A	HP - <i>System Safety and Security</i>	JN	MWAA

**Community Outreach** – MWAA provided its Phase 2 Communications and Community Outreach calendar for *September 2016*. The outreach efforts continue with 109 outreach activities held during the month of *September 2016*: Including 23 business outreach efforts, three community outreach activities, 40 traffic and construction alerts, 20 intergovernmental activities, 12 media events, one educational outreach, two fairs/festivals, three door to door activities, one mailing. One newsletter, one WMATA coordination activity and two site tours. MWAA completed a mass mailing of rock removal fliers and spent three days of door-to-door outreach to businesses within a two mile radius of blasting activities at the Loudoun Gateway site.

Based on lessons learned from Phase 1, the community outreach team is meeting with the property owners, as well as their tenants, since the property owners do not always communicate with their tenants. The tenants are those usually most impacted by construction disruptions. MWAA is also notifying the public, elected officials and key stakeholders of lane closures related to the Project.

## **2. Project Scope**

Phase 2 of the Project will provide 11.4 route miles of new track from the interim terminus at Wiehle Avenue Station through 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). Phase 2 also includes a Maintenance Facility (maintenance and storage yard facility) at Dulles Airport, wayside facilities, including traction power substations, tiebreaker stations, and stormwater management ponds, along the alignment, five new Metrorail parking facilities at four stations to provide 8,900 parking spaces, and sixty-four new rail cars.

### **a. 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.

### **b. 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.

### c. Design Status

Preliminary Engineering is complete for Phase 2. 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 97% complete. Fairfax and Loudoun Counties are managing the final design of the parking facilities included in Parking Facilities (formerly Package C). The Counties confirmed their commitment to deliver those elements as a condition precedent to their TIFIA loans. *(See the Milestone Schedule on page 26 for the Parking Garages' design schedule.)*

### d. Bidding and Construction Status

- **New Mass Transit Line (Package A)**

Procurement: At the opening of proposals on April 19, 2013, CRC, a joint venture consisting of Clark Construction Group, LLC and Kiewit Infrastructure South Company had the lowest responsible and responsive bid of \$1,177,777,000. On May 14, 2013, MWAA formally awarded the Package A Contract to CRC. NTP was issued on July 8, 2013 with a contractual duration for Package A of 1,825 calendar days from NTP. Thus, the Scheduled Substantial Completion Date for Package A is July 7, 2018.

Design: CRC is in the *thirty-seventh* month of their contract and has completed design activities.

There was a design issue with regard to the access to the tie-breaker stations. CRC proposed a design that required access to the rear of the DC circuit breaker enclosure be gained from outside the building. Although this configuration was used in Phase 1 of the Project and is used by other transit properties, WMATA believes this configuration exposes WMATA employees to an increased risk of electrical shock or burns, and exposes the equipment to the intrusion of dirt, debris and precipitation when the rear door of the building is opened. WMATA formally notified MWAA that the proposed configuration is not acceptable. WMATA disapproved any submittals that incorporated

this tie-breaker configuration and requested that MWAA provide a hazard analysis. A Hazard Analysis dated October 15, 2015 was submitted to WMATA by MWAA. At the February 3, 2016 Update Meeting, WMATA reported that a letter dated February 3, 2016 to MWAA stated that the mitigation concepts were acceptable to WMATA, subject to eleven conditions. MWAA evaluated the eleven conditions and responded to WMATA by letter dated April 7, 2016 that they accepted WMATA's conditions and have directed the contractor to incorporate them in its design.

Commonwealth of Virginia's Stormwater Management Regulations: MWAA has also requested that CRC comply with the latest stormwater management regulations. MWAA explained that the changes to revised stormwater regulations require that instead of constructing water retention ponds, CRC will be required to construct a variety of water treatment facilities that focus on water quantity and treating water quality. These treatment facilities, or Best Management Practices (BMP), are designed to eliminate pollutants to the stormwater entering the Chesapeake Bay. MWAA stated that although the Virginia Stormwater Management Program (VSMP) Construction Permit allows CRC to be "grand-fathered" into the prior regulations, Virginia Department of Environmental Quality (DEQ) encouraged CRC to comply with the revised criteria to be current with the regulations. In addition, MWAA made a policy decision to implement the revisions to be compliant with the latest regulations.

Site-specific maintenance of the BMPs will be the responsibility of the facility owner. Maintenance at the Dulles Airport will be the responsibility of MWAA, along the Greenway will be the responsibility of TRIP II (Dulles Greenway) and the Maintenance Facility will be the responsibility of WMATA. MWAA added that WMATA is aware of the maintenance requirements once this extension to the existing Metrorail system is turned over to WMATA.

CRC has stated that the SWM Part II-B design is a change that would require increased design scope. MWAA reported that a level of effort agreement has been reached with CRC to resolve the additional design costs; however, discussions are still ongoing regarding construction and extended overhead costs. To date, change orders totaling \$9.232 million have been issued related to stormwater management studies and design changes. Change Order No. 66 has been issued related to Delay and Delay Related Costs of Early Design Changes granting CRC 396 days of excusable delay which extends the Scheduled Substantial Completion Date (SSCD) to August 7, 2019. CRC has submitted a Request for Change (RFC) in the amount of \$191.9 million associated with the costs related to the 396 day delay. This RFC was revised on April 1, 2016 to \$178.1 million. MWAA reported that they met with CRC on September 2, 2015 and discussed the contractor's ineligible costs associated with Change Order (CO) 066. MWAA has been meeting with the major subcontractors during the negotiation process. MWAA reported that they had received all the requested materials from CRC and that negotiations were expected to commence in mid-April 2016. The additional costs incurred by MWAA, PMSS and WMATA associated with the delay have been estimated to be \$43.04 million. Fairfax and Loudoun Counties will also incur additional cost due to the delay. MWAA's consultant, Delta Consultants, has reviewed CRC's claim and issued their report greatly reducing CRC's claim. MWAA has made the report available to CRC and CRC is in the process of reviewing the report and will prepare a response. MWAA originally expected

CRC's response by June 22, 2016, but CRC has indicated that they will not have their response ready until August 22, 2016. MWAA expects to reach agreement on the cost of CO 066 during the fourth quarter of 2016; *however, this is optimistic*. MWAA has paid CRC \$40 million (*via directive letters*) to date for extended overhead for this delay.

Permits: MWAA attained the Wetlands permit from the Army Corps of Engineers during preliminary engineering. CRC considered doing a re-delineation because they found some areas that were wet on Airport property had not been included in the initial delineation. After discussions with the Airport and DEQ, an accommodation was made that the permit will not be re-delineated, but a permit modification submitted to the Army Corps of Engineers and DEQ showing changed areas based on refinements for technical accuracy. The permit modification was submitted to the Army Corps of Engineers and DEQ on April 7, 2014. CRC continues to meet with the various permitting agencies as necessary.

Construction: As of *October 1, 2016*, MWAA reported that of the 197 pier structures, all of drilled shafts had been completed, *195 (99%)* of the pier columns had been cast, and *178 (96%)* of the pier caps had been cast, and *157 deck spans (56%)* had been poured in aerial guideway substructure Sections S3 (Dulles Airport) and S4. Crews continue to drill and set anchor bolts and bearings on the pier caps for girders on the guideway columns. Crews continue drilling Secant Piles for the Reston Land Bridge and continued pouring columns on the S-1 Guideway east of the future Dulles Station. Coastal Precast continues to cast girders for shipment to the site. Crews continue to erect girders through the Airport along Cargo Road. Aerial Deck Spans Inbound and Outbound continue to be poured north in the Yard leads and over Autopilot and Rudder Roads. Straddle Bent #YL2-4 form was stripped and set on Straddle Bent YL2-3 which will be poured in October 2016. Construction of track retaining walls and foundations continues in the DIAAH median. The contractor continues working on cast-in-place wall sections and slip forming wall sections in two lifts. 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 to make preparations for the protective slabs over the Fairfax Water line crossing west of the Reston Station. Realignment of the westbound Greenway continues with lane shifts and barrier wall installation in preparation for the construction of piers and abutments in the median. The contractor continues directional boring to install the required systems and utilities under the DTR and the DIAAH. The contractor continues drainage work and track wall construction in DIAAH median to close in the at-grade guideway in preparation for ballast and at-grade track work in the future. Jack and bore work continues in areas where conditions are permitting this type of excavation and drilling. Hand mining work continues in areas of dense rock for the installation of drainage, utilities and systems required for the stations and operating systems. The Contractor continues the relocation of the DTR south of the Herndon Station.

Century Link Communications lines are being relocated to allow the installation of the future pedestrian bridge piers on the north and south sides of the DIAAH/Toll Road. Traffic signals at Aviation Road are being relocated for future guideway clearance. Lighting and the electrical supply to the lights are being relocated in anticipation of the future road widening and facilities development. 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 sites at TPSS #12, #13 and #14 are being prepared for ground grids. The contractor continues to install 34.5kV ductbank along Rudder Road and Autopilot Road. The contractor continues to install ductbank and manholes for the 34.5 kV feed in the DIAAH median in advance of guideway structures and abutments. Work also continues on directional drilling of ductbank under Horsepen Lake for the 34.5kV service to the future Maintenance Yard.*

*Concrete placement for the station cast-in place support walls continues at Innovation Station. Precast erection, grouting and detailing continues at the Innovation Station. Masonry work, electrical rough-in and plumbing work also continues in the station. Pouring of concrete foundations, columns and walls continued at Herndon Station during September 2016 with continued erection of precast members. The contractor continues the placement of the concrete foundation and backfill at Reston Station. Station walls are being constructed at Dulles Station. Station columns and cross girders are also being cast. Demolition of the Walk Back Tunnel continues for the tie-in to the Dulles Station. Blasting has been completed and mass excavation for the Loudoun Gateway Station continues. Concrete plinth construction continues along the Autopilot aerial guideway. Cable trough is being installed along the at-grade guideway in the DIAAH median from Abutment A to the Horsepen Bridge and rail sections have been delivered in preparation for welding.*

#### Schedule:

MWAA has accepted-as-noted the draft Final Baseline Schedule, and CRC made some minor changes to the schedule. CRC resubmitted the Final Baseline Schedule on February 14, 2014 and MWAA “Accepted-as-Noted the schedule on February 25, 2014.

CRC submitted a revised final Proposed Rolling Baseline Schedule (PRBS) on May 4, 2015, which was “Accepted as Noted” by MWAA on May 12, 2015. The PRBS reflected progress through February 28, 2015 with an agreed revised Scheduled Substantial Completion Date (SSCD) of August 7, 2019 which incorporates the thirteen month time extension. *CRC’s August 2016 Monthly Schedule Update was submitted on September 9, 2016, with a forecasted SSCD of February 11, 2020, as did the July Schedule Update, which represents a total slippage of 188 calendar days to the contractual SSCD of August 7, 2019. The August 2016 Monthly Schedule Update submittal was “Not Accepted” by MWAA due to schedule inaccuracies in durations and scope reflection of the critical path activities.*

- **Dulles Maintenance Facility (Package B)**

Procurement: Package B includes the final design and construction of the WMATA Maintenance Facility and Storage Yard at the northwest corner of the Dulles Airport property. The yard storage tracks will have an initial storage capacity of 168 railcars, with the ability to expand to 228. The scope of Package B also includes the design and construction of at-grade rail tracks; facilities for railcar service and inspection; facilities for train dispatch, operation, and supervisory personnel facilities; facilities for police and security personnel; facilities for maintenance of way and materials warehouse; a yard

control tower; communications, traction power substations, and train control facilities and equipment; roadway construction and improvements.

MWAA stated that there were no major changes resulting from the WMATA review. The contract drawings went through two cycles of reviews by MWAA and WMATA, which included the specifications and the statement of work. MWAA sent a letter to WMATA confirming a budget for Package B of \$280 million, stating what scope will and will not be included in the base contract package. MWAA added that the procurement included options for the other scope items requested by WMATA but not in the base contract package.

Price proposals were received on June 27, 2014. MWAA Procurement performed a responsibility determination and the lowest qualified bidder was selected. Final contractor selection and Notice of Recommended Award was announced on July 2, 2014, to Hensel Phelps Construction Company (HPCC). HPCC signed the contract on July 29, 2014 and MWAA issued NTP on August 18, 2014. The Preconstruction meeting was also held on August 18, 2014.

The lowest qualified bid was \$252,989,000, which is under the Package B budget of \$280 million. The \$252,989,000 bid includes two options for the other scope items requested by WMATA but not in the base contract package: the Warehouse Building expansion and the Track S-5 Hoists. MWAA added that the SWM Part II-B regulations are included in the Package B Contract.

Substantial completion was scheduled for August 17, 2018.

Design: The Package B DB Contractor, HPCC, submitted the Design Management Plan and other required management plans in September 2014; MWAA “Accepted-as-Noted” the Design Management Plan and other required management plans. At the May 6, 2015 update meeting, MWAA reported that the HPCC 60% design submittal had been reviewed and was not accepted. A major issue is HPCC’s desire to use shallow pit lifts for the rail car shop hoists rather than the deep pit hoist configuration specified in the Project Technical Requirements. MWAA has directed HPCC to proceed with the deep pit configuration. The revised pit design is to be included in the 90% design submittal which is anticipated to be submitted in February 2016. In addition, WMATA does not believe that the sprinkler protection proposed for the Transportation/Police Building conforms to applicable code requirements. MWAA directed HPCC to fully sprinkler the building. The 90% Design submittal was submitted on February 9, 2016 and was returned to HPCC on March 16, 2016 with 2,246 comments. MWAA issued a Directive Letter to HPCC on March 25, 2016 associated with WMATA’s request for mimic board requirements. The Contractor’s initial conceptual design for the scaled down traction power sectionalization in the Yard was submitted in April and reviewed by MWAA and WMATA. The conceptual design was resolved and HP submitted the cost estimate for the sectionalization in June 2016. MWAA is preparing their position for negotiation. *The design of Package B is estimated to be 97%. The 100% design has been submitted and reviewed. The comments were submitted to HPCC on September 2, 2016 and comment resolution meetings were held during September 2016 and continue into early October 2016.* The Directive Letters covering yard lighting and traction power sectionalization have not yet been incorporated in the design.

Construction: *Construction activities are eighteen percent complete. During September 2016, HPCC continued with earthwork operations with fill being placed on the southeast area of the site. The rock crushing operation has been moved to the west side of the site and continues. The S&I Building (SIB) basement and hoist pit concrete continues to be placed. The contractor has also started the excavation for the concrete work on the Maintenance of Way Building (MWB). HPCC has nearly completed the Austin Sand Filters. The Package B construction continues with the focus on the installation of ductbank, storm sewers and water lines.*

Schedule: HPCC submitted its Final Baseline Schedule on January 28, 2015, and issued subsequent revisions on February 17 and February 24, 2015. MWAA “Accepted as Noted” the Final Baseline Schedule. This schedule is the basis for the Package B Monthly Updates and pay requests.

*MWAA received HPCC’s August 2016 monthly schedule update on September 13, 2016, forecasting a Substantial Completion Date of May 29, 2019, which represents 285 days of delay to the contractual SSCD of August 17, 2018 which is the same as the June Schedule Update. This schedule update was “Accepted as Noted” by MWAA.*

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

At present, Fairfax County and Loudoun County will design and construct the five required parking facilities. Loudoun County is in the procurement process and Fairfax County is in the design *and bid* process. Fairfax County has finalized the locations of the garages located at Herndon and Innovation Center Station.

Fairfax County: Fairfax County is currently responsible for two parking facilities: one at the Innovation Center Station and one at the Herndon Station. The final locations for the parking facilities have been determined and all Land Use approvals have been obtained from the Fairfax County Board of Supervisors. On July 30, 2013, Fairfax County approved a Real Estate Exchange Agreement for the site of the Innovation Center Station parking facility. The Agreement provides for the exchange of property and property acquisition necessary to implement a joint development plan. MWAA submitted the results of their Environmental Re-Evaluation for Locality Parking Garage Refinements for Herndon and Innovation Center to the FTA on June 8, 2015 and the relocations were approved on August 10, 2015.

Final design started in fall 2014. Project completion *remains* scheduled for May 31, 2019 for the Innovation Center Garage and *remains as* April 30, 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.

At the October 7, 2015 meeting, Fairfax County reported that the design of the Innovation Center Parking Facility was advancing with a change in elevation and the inclusion of snow melters on the top deck. The 100% Design for the Innovation Center Parking Facility is expected by October 31, 2016, *and Fairfax County stated at the*

*October 5, 2016 Monthly Update Meeting that they are on track for design completion by that date. The 100% design documents have been completed and the bid package is being prepared. Fairfax County expects that the bids will be received in March or April 2017. Site preparation and infrastructure construction work continue at the Innovation Center Garage. The 100% design and bid package for the Herndon Station Parking Facility has been completed. Fairfax County reported at the August 10, 2016 meeting that the site permit has been approved and the bids were submitted on August 9, 2016. The contract award is expected in October 2016.*

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

On January 16, 2014, the Loudoun Board of Supervisors voted in favor of the County taking responsibility for the funding and construction of the Route 606 and 772 North and South parking facilities. In addition, in the same motion the Board directed staff to pursue further evaluation of all four of the Public-Private Partnership (PPP) offers for each of the parking facilities, citing that all are in the range of general acceptance. Loudoun County reported that at the January 15, 2014, Loudoun Board of Supervisors meeting, the Board voted to finance and construct the Loudoun County garages separate from the Dulles Corridor Metrorail Project, subject to receiving TIFIA funds for their share of the Project. Subsequently, in accordance with the PPTA, on February 12, 2014 there was a public hearing on the four proposals that were posted on the Loudoun County website ([www.loudouncounty.gov/procurement](http://www.loudouncounty.gov/procurement)).

During the closed session on March 5, 2014, the Loudoun Board of Supervisors approved the Design-Build-Operate-Maintain and Finance (DBOM+F) method for the procurement of the parking facilities. They discussed and decided on the parameters for the Best and Final Offer (BAFO). The request for a BAFO was transmitted to all four of the bidders on April 11, 2014 and the BAFOs were received from all bidders on May 14, 2014. Loudoun County reviewed the BAFOs and issued a short list for each parking facility for negotiations.

*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 are in the process of reviewing it and providing comments.*

**Route 772 North (Ashburn North)** – The Interim Agreement with Comstock was signed on February 18, 2015. Loudoun County reported that the Final Comprehensive Agreement was reached on September 9, 2015. The completion of Final Design is expected by August 26, 2016 with the completion of construction anticipated by June 26, 2017. The site is expected to be ready for excavation in January 2016. MWAA submitted the results of their Environmental Re-Evaluation for Locality Parking Garage Refinements for the Route 772 North (Ashburn) to the FTA on June 8, 2015, and the relocation was approved by FTA on August 10, 2015. Loudoun County reported that Comstock is adhering to their Project Master Schedule and the design is 35% complete. Loudoun County's review of the site plan has identified a zoning issue related to the length of the building block which requires a sidewalk. Comstock will be applying for a

zoning modification to waive the need for the sidewalk. The modified site plan is in the process of being developed and must be reviewed and approved by the County. This will result in a delay to the completion of the garage. This will only shorten the time period for Comstock’s commercial use, but there will be no impact on the garage’s availability for the revenue operations date for Phase 2. Loudoun County submitted their review comments on the 75% design to Comstock on June 15, 2016 and Comstock’s 90% design is expected to be submitted during the last week in August 2016. *At the October 5, 2016 Update Meeting, Loudoun County reported that they had received the Permit Package on August 31, 2016 and the 90% Design has been completed.* Loudoun County provided the following updated Comstock schedule for the Ashburn North Garage at the *October 5, 2016 Update Meeting.*

<b>Milestone</b>	<b>Date</b>
<i>Garage Design</i>	<i>November 2015(A)</i>
<i>Zoning Approvals</i>	<i>December 2015(A)</i>
<i>Construction Drawings</i>	<i>August 2016</i>
<i>Site Planning</i>	<i>September 2016</i>
<i>Obtain Building Permits</i>	<i>November 2016</i>
<i>Obtain Construction Loan</i>	<i>December 2016</i>
<i>General Contractor Selection</i>	<i>December 2016</i>
<i>Garage Construction</i>	<i>January 2018</i>
<i>Operating &amp; Maintenance Plan Development</i>	<i>January 2018</i>
<i>Interim Garage Occupancy</i>	<i>November 2019</i>
<i>Open Metrorail Parking Operations</i>	<i>November 2019</i>

**Route 772 South (Ashburn South) and Route 606 (Loudoun Gateway)** – The recommended DBOM+F contractor, Nexus Properties, Inc., proposed that both of the facilities be constructed on the sites identified in preliminary engineering. After protracted negotiations with Nexus, Loudoun County Board of Supervisors voted to cease negotiations with Nexus at their May 16, 2016 meeting. Loudoun County is proceeding with their “self-perform” option. The following schedule of activities was presented by the Loudoun County representative at the June 8, 2016 Project Update Meeting for the design and construction of the Loudoun Gateway and Ashburn South Garages. Loudoun

County provided an updated schedule at the October 5, 2016 Monthly Update Meeting and noted that the Pre-Bid Meeting had been held on September 13, 2016. Loudoun County reported that since the Loudoun Gateway is on Airport Property, the County is working with MWAA's building specifications that require discussions on an exception by exception basis.

<b>Milestone Activities</b>	<b>Target Date</b>
<i>Advertise/Issue RFQ (Part 1)</i>	<i>September 2016 (A)</i>
<i>Issue RFP from Qualified Teams</i>	<i>October 2016</i>
<i>Completion of Design-Build Bridging Documents</i>	<i>November 2016</i>
<i>Award Design Build Contract</i>	<i>March 2017</i>
<i>Target Garages Construction Completion</i>	<i>June 2019</i>

Loudoun County will prepare documents for a concessionaire to operate and maintain the garages.

#### Other Phase 2 Contracts

- Structural Tests and Special Inspections

An RFP was issued December 27, 2013, for a contract to perform structural tests and special inspections on rail stations, guideways, bridges and substations, which are part of the Project. Proposals were received on January 30, 2014. The contract was approved by the MWAA Board of Directors on April 16, 2014, and was awarded to Professional Services Industries (PSI) on April 18, 2014. PSI continues to perform testing and inspections of the construction activities, which includes Package A and Package B.

- Building Code Plan Review and Inspection Services

An RFQI was issued on December 23, 2013, for a consulting firm to conduct building code plan review and inspection services for the Project. The firm will also conduct review of stormwater management plans, provide associated erosion and sediment control inspections, plan review and enforcement services, and provide general environmental services as assigned during construction of the Project. Qualifications were submitted on January 23, 2014, and the contract was approved by the Airports Authority Board of Directors on April 16, 2014. The contract was awarded to IBTS Government Solutions on May 29, 2014. Task Order 1 was issued with NTP on June 5, 2014. Task Orders 2-5 have been awarded. IBTS has been providing plan review services since June 5, 2014, and will begin inspection services for Erosion and Sediment Control, as well as Building Code Inspections, in September 2015.

- Environmental Professional Services

The contract for environmental professional services needed to support the completion of Environmental Due Diligence Reports (Environmental Screening

Assessments, Phase I Environmental Site Assessments, and Phase II Environmental Site Assessments) for real estate acquisition on the Project was awarded to Environmental Alliance, Inc. on March 25, 2014.

**e. Real Estate and Project Development**

MWAA resubmitted Revision 3 to the RAMP, including Procedure P2M-3.01, on August 6, 2014. The PMOC recommended that FTA accept this revision and the FTA letter accepting the RAMP was forwarded to MWAA on August 18, 2014.

MWAA reported that the letter submitted to FTA in 2007 requesting to raise the threshold values to \$100,000 and \$1,000,000 respectively was for the entire 23-mile corridor and not only Phase 1. In addition, FTA's approval letter October 5, 2007 did not preclude Phase 2 nor did it specify Phase 1. As a result, MWAA determined that the threshold increase applied to the entire corridor, and in response to FTA, MWAA submitted a letter requesting to reauthorize the threshold limits used for Phase 1 for Phase 2 by January 8, 2014. MWAA submitted a supplement to the letter, in accordance with the FTA Circular 5010.1D, to FTA on February 6, 2014. On July 3, 2014, FTA approved the increase for threshold limits for the Dulles Phase 2 Project.

Responsibility for Phase 2 right-of-way will be directly under MWAA and not the DB Contractor as in Phase 1. The exception to this is that CRC is responsible for utility relocation and property acquisitions outside of the parcels that MWAA has identified as part of the preliminary engineering plans. In conjunction with CRC, MWAA has identified the project parcels and broken them into priorities (1, 2A, and 2B) under the contract.

Priority 1 parcels were identified by MWAA during preliminary design as the primary parcels that would be needed by the Package A Contractor. MWAA has developed Property Identification Plans (PIP) for the Priority 1 parcels based on CRC's current design and CRC is responsible for verifying the PIPs are adequate to support construction. The Project team will be the negotiator and relocation manager for the Priority 1 parcels and MWAA has retained consultants for the appraisal and appraisal review work associated with the acquisition of the Priority 1 parcels.

*The status of the Property Acquisitions through September 2016 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 <sup>8</sup>	9	8	1	8	0	7	6
2A	18	17 <sup>9</sup>	12	0	12	0	10	8
2B	21	8 <sup>10</sup>	5	0	4	0	2	2
<b>Total<sup>11</sup></b>	48	34	25	1	24	0	19	16

### Right of Entry (ROE) Status:

- Full Access for Construction has been provided for Parcels 235 and 237.
- Limited ROE for construction provided for Parcels 255 and 236 in February 2016. Full ROE for construction was provided for Parcel 236 in April 2016. Limited ROE for construction was provided for Parcel 228 in June 2016.
- Full Access to Fairfax County-owned property was provided in 2013 for Parcels 213, 223, 232, and 234.
- 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 Priority 1 Parcels 207, 214, 220, 237, 262, 255, 253, and 254. One other appraisal placed on hold initially due to dedication revision (Parcel 258). Appraisal complete for Priority 2 Parcels 231, 238, 240, 275, 276, 256, 320, 264, 271, 251, 266, 261, 228, 249, 260, 224 and 259. Appraisal for the dedicated parcel, Parcel 236 to be prepared.

<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, and 260. Negotiations ongoing for Parcels 237, 271, 228, 249, and 260. Offer rescinded for Parcel 253 and not required for Parcel 236. Condemnation package prepared and filed for Parcels 207, 220, and 320 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, and 255 complete.

<sup>7</sup> Parcels 207 (COT), 214, 220 (COT), 240, 231, 264, 276, 275, 238, 262, 320 (COT), 254, 256, and 261. Parcel 253 offer rescinded; no further action required. Parcel 236 dedication completed in June 2016.

<sup>8</sup> Includes one parcel to be dedicated to Loudoun County (Parcel 258) for which a Proffer Condition Amendment by the County was completed in July 2014 that redefines the area to be dedicated. Appraisal will be conducted based on revised areas needed for Project shown on the revised PIP accepted in August 2016.

<sup>9</sup> Priority 2A PIP status: Parcels 240, 238, 231, 275, 276, 264, 320, 271, 256, 266, 251, 249, 265, 358, 236, 281, and 336 PIPs Accepted by MWAA. In July 2016, CRC resubmitted the Parcel 235 PIP, CRC is revising one other PIP previously reviewed by MWAA: Parcels 267, Parcel 236 has proceeded as a proffered dedication. Deed, Plat and PIP preparation were processed simultaneously and completed. Only value appraisal outstanding.

<sup>10</sup> Priority 2B PIP status: MWAA Accepted PIPs for Parcel 261, 228, 260, 259, 224, 257, 357, and 235. CRC is revising eight other PIPs previously returned: Parcels 225, 226, 227, 208, 209, 210, 211, and 212.

<sup>11</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.

MWAA has received Rights-of-Entry with the users at the Dulles Airport to accelerate the acquisition process. MWAA is working with the Real Estate Manager at the Dulles Airport to review leases and is using the lease provisions for the Rights of Entry. MWAA is also relocating tenants within the Dulles Airport to accommodate CRC's construction activities. In addition, to accommodate CRC's construction activities, MWAA has expedited obtaining access rights to some of the Dulles Airport properties.

Third-Party Appraisal Review Services Contract: An RFP for Phase 2 appraisal review services was issued on June 7, 2013 and an award issued to Appraisal Review Specialists, LLC, on October 10, 2013. The majority of the Priority 1 appraisals has been completed by the appraisal consultant, Parli Appraisal, Inc., and is with the review appraiser. MWAA added that the PMSS team would be the negotiator and relocation manager for the Priority 1 parcels. Because some of the properties are at the airport, MWAA is dealing with leaseholds as opposed to the property owners for the acquisition of airport parcels.

Third-Party Property Acquisition Consultant Contract: MWAA has also retained a property acquisition consultant for the remainder for the parcels (Priority 2 and 3) using VDOT's specifications. The RFP was issued on May 23, 2013, and the contract was awarded on August 26, 2013 to Stantec Consulting Services, Inc.

Archeological Investigation: At the June 5, 2014 meeting, MWAA reported that the archeological investigation in the area of the Yard Lead west of the guideway line will resume the week of June 9, 2014 and the remaining work should take approximately two weeks. The archeological investigation was reported as being completed during the July 9, 2014 meeting. Nothing of significance was found. MWAA understands that it has concurrence from SHPO not to perform the last step of the investigation, which was to be mechanical exploration, since they have found nothing of significance thus far. SHPO has issued their concurrence that the activity in that western area of the Yard Lead is subject to no further evaluation because it is wetland and due to the realignment of the guideway, no structures or track will be built in that area. A draft report was submitted by the archaeology team in November 2014 and comments were provided back for incorporation into a revised draft report which was submitted to SHPO in December. SHPO commented on security fencing drawings on roadway overpasses in mid-February. At the March 11, 2015 meeting, MWAA noted that they had responded to SHPO the previous week. At the April 8, 2015 meeting, MWAA reported that they had forwarded SHPO's comments to CRC for disposition. During the July 8, 2015 meeting, MWAA reported that the materials had been shipped to SHPO in June 2015.

Commonwealth of Virginia's Stormwater Management Regulations: MWAA reported no additional right-of-way should be needed because of revisions in regulations and, therefore, no new agreements are being contemplated at this time. MWAA added that at most, temporary construction easements might be needed. No new private ponds or shared use private ponds are anticipated at this time.

**f. Utility Coordination**

MWAA resubmitted the Permit Management Plan, Revision 1, on April 1, 2014 incorporating all previous FTA and PMOC comments. On August 8, 2014, FTA issued a letter approving the Phase 2 Permit Management Plan, Revision 1.

MWAA advised that if the counties build the parking facilities, the counties themselves would be the code officials and not the Department of General Services. In addition, the counties will be responsible for compliance with local requirements for stormwater design and other design requirements. The contract with CRC states that all utility relocations associated with Package A are the contractor's responsibility.

**g. Vehicle Procurement**

On August 15, 2012, MWAA authorized WMATA to amend their contract with Kawasaki to exercise the option for an additional sixty-four 7000 Series railcars for Phase 2. WMATA's letter of August 30, 2012 confirmed the executed amendment to the Kawasaki Contract. The MWAA budget including contingency, in year of expenditure dollars, for the Phase 2 railcars is \$213.383 million. The latest milestone schedule from Kawasaki dated June 1, 2016 shows final delivery for the last Phase 2 vehicles as December 20, 2017, which was the same as the April 2016 schedule. Kawasaki was six months behind in the delivery and conditional acceptance of the Base Contract railcars which are the 64 railcars for Phase 1 of the Dulles Project. The Base Contract 64 railcars were conditionally accepted on December 15, 2015. Kawasaki contends that they can make up the lost time during the production of the Option 4 300 railcars which precede the Dulles Phase 2 64 railcars (Option 1).

[REDACTED] In addition, the rate of Conditional Acceptance (CA) by WMATA dropped to eight railcars in January and only reached twelve railcars in February, below the planned CA rate of sixteen railcars per month. Only twelve railcars were conditionally accepted in April 2016 which was the same as the March 2016 rate. In August 2016, WMATA conditionally accepted sixteen railcars which was the planned rate of acceptance. This acceptance rate has now been met for four months through August 2016. *WMATA reported that twenty railcars were conditionally accepted during September 2016, but cautioned that this rate may not be sustainable.* Quality issues at Kawasaki's Lincoln, NE facility were negatively impacting the shipment of railcars to WMATA.

**3. Project Management Plan and Sub-plans**

MWAA has submitted the PMP and required sub-plans. Below is the status of each plan received by FTA through *September 30, 2016*.

MWAA submitted the Final PMP Version 2.0 on February 6, 2015. PMOC recommended that FTA accept the PMP Version 2.0, with comments, on March 27, 2015. PMOC's comments included the requirement that the PMP be updated early in the fourth quarter of 2015 due to the recent departures of several MWAA staff members and the planned reassignment of some duties. FTA approved PMP Version 2.0 and Project Management Procedures on July 8, 2015, with the comment that an updated PMP showing recent organizational changes and responsibilities be submitted. MWAA

submitted the revised PMP to the FTA on December 4, 2015 and the PMOC submitted its comments to FTA on January 14, 2016. FTA submitted the comments to MWAA on February 19, 2016. 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 is to incorporate the comments and submit an updated PMP by October 31, 2016.

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 1 dated February 28, 2015 to FTA and PMOC on March 16, 2015. PMOC completed its review and recommended acceptance with comments on May 5, 2015. FTA forwarded the PMOC's comments to MWAA on June 15, 2015 with the request that MWAA obtain WMATA's concurrence of the SSMP prior to formal acceptance by FTA. MWAA's email of August 12, 2015 indicated that WMATA had no comments and would not be providing concurrence. MWAA revised the SSMP and 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 Tri-State Oversight Committee (TOC) stated that they are revising the Safety and Security Oversight Management Plan (STOMP) for Phase 2 to clearly outline the lines of authority between the TOC, MWAA and WMATA. TOC issued a draft STOMP on October 6, 2015 which is under review. In a letter dated October 9, 2015, the U.S. Secretary of Transportation wrote to the Chairman of the National Transportation Safety Board (NTSB) and reported that the FTA would immediately assume the Tristate Oversight Committee's oversight authority and duties until the District of Columbia, Maryland and Virginia establish a fully functional and capable State Safety Oversight Agency (SSOA). It is not yet known how this transfer of duties will affect the DCMP. The most recent TOC/MWAA quarterly meeting was held on May 17, 2016. The August TOC/MWAA quarterly meeting was cancelled based on a request from TOC. The next scheduled meeting is November 15, 2016 at 11:30 AM.

MWAA submitted Revision 1c of the Phase 2 **Risk and Contingency Management Plan (RCMP)**, to the FTA on November 13, 2013 for review and approval and FTA approved that revision on February 4, 2014. MWAA incorporated suggested revisions into RCMP Revision 1d and resubmitted the RCMP to the FTA on June 20, 2014 for review. RCMP, Revision 1d, submitted on June 20, 2014 included the updated procedure P2M 5.07, Revision 1, Management of Project Contingency Procedure, with language confirming MWAA's commitment to secure funding for any "Betterment" and "Concurrent Non-Project Activity (CNPA)" related changes.

During the review of the RCMP Revision 1d, the PMOC noted that the Top Ten Risks list had been revised, ranking the change to the Stormwater Management Part-II B regulations as the top risk to the Phase 2 project. The PMOC questioned the

methodology behind the scoring for Risk Register and what assumptions were made in determining the scoring for the Top Ten Risks. The PMOC stated that it has reviewed the RCMP, Revision 1d and recommended that it be conditionally accepted by FTA. MWAA has submitted revisions to the Risk Register and Top Ten Risks as of December 2014. The first was on February 9, 2015 that PMOC has discussed with MWAA resulting in a resubmission with additional information provided on March 23, 2015. PMOC's observations on that submission were discussed with MWAA after the April 8, 2015 update meeting. MWAA was to provide additional information. On May 5, 2015, MWAA submitted a revised Risk Register and Top Ten Risks to FTA which the PMOC found were inconsistent with previous submissions. In discussions after the June 10, 2015, MWAA agreed to revisit the Risk Register scoring and meet with the PMOC after the July 8, 2015 Update Meeting. PMOC and FTA met with MWAA after the update meetings to discuss the updated Top Ten Risks and scoring submitted on July 7, 2015. PMOC provided suggestions to the scoring ranges which MWAA agreed to revise and re-score the Risks. MWAA submitted an updated Risk Register on August 11, 2015 which was reviewed by the PMOC and comments submitted to MWAA on September 29, 2015. PMOC and MWAA met after the October 7, 2015 Update Meeting to review MWAA's responses to the PMOC's comments. Based on that meeting, MWAA submitted their revised Risk Register and Top Ten Risks on October 20, 2015. PMOC has reviewed this submission and found it acceptable. MWAA submitted its revision to the RCMP incorporating the thirteen month schedule delay and other changes on March 25, 2016. PMOC's comments were sent to MWAA on April 4, 2016 and discussed after the Monthly Update Meetings on April 6, 2016. MWAA will revise the RCMP. MWAA submitted the revised 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.

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.

#### 4. 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 *September 1, 2016 Project Master Schedule* submitted on *October 4, 2016*, as provided by MWAA. *However, these dates are based on CRC's August 2016 Monthly Schedule Update which was not accepted by MWAA.* It should also be noted that the TIFIA Loan Agreement with MWAA specifies the Revenue Service Date. The Revenue Operations Date has been reported as 1Q2020 and MWAA is working closely with

WMATA to further refine this date. MWAA in its August 11, 2016 TIFIA Recovery Plan has provided a specific Revenue Service Date and has also included it in the most recent update of the Project Master Schedule.

<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	10/31/16
Loudoun County – Design of Parking Facilities Complete	11/4/16
Package A – Complete Design	06/22/17
Package A – Complete Elevated Guideway <i>Super Structure</i> Construction	8/9/17
Package A – Complete At-Grade Guideway Structure Construction	02/9/18
Package A – Station Build-out	04/17/19
Package A – Systems Installation	05/2/19
Fairfax County – Construction of Parking Facilities Complete	5/31/19
Loudoun County - Construction of Parking Facilities Complete	08/31/19
Package A – Contract Substantial Completion	08/7/2019
Begin Operations Readiness Testing ( <i>at Rail Yard</i> )	05/29/19
Package B – Contract Substantial Completion	08/17/2018
Complete WMATA Operations Readiness Testing	04/11/20
Project Final Acceptance	08/10/20
Complete WMATA Revenue Operations Acceptance Testing	08/10/20
Revenue Service Date	08/10/20*

\* As noted in this report, this Revenue Service Date is based on CRC's August Monthly Schedule Update which was not accepted by MWAA.

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

- MWAA to conclude negotiations with CRC on cost impacts of the delay due to SWM Part II-B and design changes at the end of 4Q 2016, [REDACTED]
- MWAA to revise their RCMP based upon the results of their negotiations with CRC for the time delay costs.
- Loudoun County to continue the procurement process for the Design-Build of the Loudoun Gateway and Ashburn South Parking Garages.

## 5. 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 August 2016 is shown below. As of August 2016, project expenditures total \$872,386,890. Based on the budget and expenditures, the total project completion is 38%. This percentage does not include finance charges and contingency.

### PROJECT COST SUMMARY BY SCC CODE – August 2016 Phase 2

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN AUGUST	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	\$ 10,337,359	\$ 76,746,589	\$ 202,896,464	\$ 3,770,464
20	Stations	\$ 228,424,057	\$ 227,697,000	\$ 4,314,799	\$ 36,547,303	\$ 214,291,664	\$ 7,417,393
30	Yards, Shops, Admin. Bldgs	\$ 229,857,097	\$ 213,730,843	\$ 4,412,024	\$ 29,595,098	\$ 218,780,501	\$ 5,049,658
40	Site Work and Utility Relocation	\$ 394,075,868	\$ 545,160,692	\$ 11,677,824	\$ 284,535,160	\$ 599,269,720	\$ 53,784,683
50	Systems	\$ 193,794,178	\$ 215,516,247	\$ 3,220,709	\$ 40,916,509	\$ 213,886,479	\$ 8,976,332
60	Right of Way Acquisition	\$ 58,523,267	\$ 58,600,000	\$ 6,700	\$ 6,245,631	\$ 58,305,000	\$ -
70	Vehicles	\$ 212,765,000	\$ 213,613,334	\$ -	\$ 39,832,723	\$ 213,613,334	\$ -
80	Professional Services	\$ 564,398,592	\$ 574,696,366	\$ 4,615,181	\$ 357,967,877	\$ 600,877,299	\$ 25,978,779
90	Contingency <sup>3</sup>	\$ 551,451,179	\$ 561,292,412	\$ -	\$ -	\$ 456,315,103	\$ (104,977,309)
<b>TOTAL PROJECT COST</b>		<b>\$ 2,778,235,564</b>	<b>\$ 2,778,235,564</b>	<b>\$ 38,584,597</b>	<b>\$ 872,386,890</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 match 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

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

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 August 2016, Contingency Drawdown Requests (CDR) totaling \$95,136,076 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 August 2016 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 – August 2016

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN AUGUST	EXPENDITURE TO DATE <sup>3</sup>	ESTIMATE AT COMPLETION <sup>4,5</sup>	CONTINGENCY TO DATE
10	Guideway and Track Elements	\$ 340,953,449	\$ 163,928,670	\$ 10,337,359	\$ 76,746,589	\$ 198,896,464	\$ 3,770,464
20	Stations	\$ 224,432,514	\$ 223,697,000	\$ 4,314,799	\$ 36,547,303	\$ 210,291,664	\$ 7,417,393
30	Yards, Shops, Admin. Bldgs	\$ 377,285	\$ -		\$ -	\$ -	\$ -
40	Site Work and Utility Relocation	\$ 352,759,752	\$ 509,201,330	\$ 10,642,713	\$ 272,228,856	\$ 561,284,248	\$ 51,758,573
50	Systems	\$ 172,044,132	\$ 188,997,000	\$ 3,220,709	\$ 40,916,509	\$ 187,367,232	\$ 8,976,332
60	Right of Way Acquisition	\$ -	\$ -		\$ -	\$ -	\$ -
70	Vehicles	\$ -	\$ -		\$ -	\$ -	\$ -
80	Professional Services	\$ 87,209,868	\$ 91,953,000	\$ 143,545	\$ 109,371,749	\$ 112,867,696	\$ 20,712,542
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 1,177,777,000</b>	<b>\$ 1,177,777,000</b>	<b>\$ 28,659,126</b>	<b>\$ 535,811,006</b>	<b>\$ 1,270,707,304</b>	<b>\$ 92,635,304</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

4 Estimate at Completion includes adjustments made in July 2015 by the Revised Baseline Schedule for Package A with a data date of March 1, 2015 and subsequent changes funded via contingency drawdown requests and budget transfer requests

5 Estimate at Completion does not include bettement

### Package B Cost by SCC – August 2016

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1,3</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN AUGUST	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	\$ 4,412,024	\$ 23,940,043	\$ 205,790,803	\$ 4,552,158
40	Site Work and Utility Relocation	\$ 25,772,661	\$ 23,296,613	\$ 304,000	\$ 8,707,479	\$ 23,339,006	\$ 42,393
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	\$ (67,545)	\$ 22,824,602	\$ 25,327,322	\$ 1,204,031
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 249,280,530</b>	<b>\$ 252,989,000</b>	<b>\$ 4,648,479</b>	<b>\$ 55,472,124</b>	<b>\$ 258,787,582</b>	<b>\$ 5,798,582</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 – August 2016

FTA SCC CODE	DESCRIPTION	ORIGINAL BUDGET <sup>1</sup>	BASELINE BUDGET <sup>2</sup>	EXPENDITURE IN AUGUST	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		\$ 5,655,055	\$ 5,664,787	\$ 497,500
40	Site Work and Utility Relocation	\$ 527,455	\$ 527,455		\$ 529,719	\$ 529,972	\$ 2,517
50	Systems	\$ -	\$ -			\$ -	
60	Right of Way Acquisition	\$ -	\$ -			\$ -	
70	Vehicles	\$ -	\$ -			\$ -	
80	Professional Services	\$ 255,555	\$ 255,555		\$ 255,539	\$ 255,555	
90	Contingency	\$ -	\$ -			\$ -	
<b>TOTALS</b>		<b>\$ 20,000,000</b>	<b>\$ 5,950,297</b>	<b>\$ -</b>	<b>\$ 6,440,314</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 August 2016, approved change orders totaled \$38,736,121 for Package A. There were no Package A change orders approved in September 2016. The change orders in process through September 2016 total \$13.06M and 61 Requests For Change (RFC) under evaluation that total approximately \$209.2M in Contractor's proposals for Package A. In addition, MWAA has approved 17 change orders for Package B that total \$0.9M, and change orders in process that total \$0.4M. This represents a total of \$262.3M or 46.7% of the total Project Contingency of \$561.29M at a point where overall Project completion is at 38%.*

## a. Monthly Cost Report – August 2016

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	\$ 535,811,006	\$ 1,270,707,304	
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	\$ 61,912,437	\$ 265,237,896	
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>\$ 597,723,444</b>	<b>\$ 1,555,945,200</b>	<b>38%</b>
<b>Right of Way</b>					
Parcels & Project Management	\$ 58,600,000	\$ 58,600,000	\$ 6,245,631	\$ 58,305,000	
<b>Right Of Way Total</b>	<b>\$ 58,600,000</b>	<b>\$ 58,600,000</b>	<b>\$ 6,245,631</b>	<b>\$ 58,305,000</b>	<b>11%</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	\$ -	\$ 9,620,781	
WMATA Project Management and Other Costs	\$ 90,205,767	\$ 89,835,737	\$ 3,096,584	\$ 89,835,737	
<b>WMATA Agreement Total</b>	<b>\$ 305,324,718</b>	<b>\$ 305,324,718</b>	<b>\$ 42,929,307</b>	<b>\$ 305,324,718</b>	<b>14%</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	\$ 32,445,153	\$ 65,421,913	
Project Management Support	\$ 140,000,000	\$ 140,000,000	\$ 86,803,595	\$ 140,560,000	
Other Costs <sup>1</sup>	\$ 116,182,137	\$ 116,682,137	\$ 32,973,705	\$ 121,363,630	
<b>Airports Authority Services Total</b>	<b>\$ 320,802,137</b>	<b>\$ 321,302,137</b>	<b>\$ 152,222,453</b>	<b>\$ 327,345,543</b>	<b>47%</b>
<b>Contingency</b>					
<b>Contingency Total</b>	<b>\$ 551,451,179</b>	<b>\$ 561,292,412</b>		<b>\$ 456,315,103</b>	
<b>TOTAL PROJECT COSTS</b>	<b>\$2,778,235,564</b>	<b>\$2,778,235,564</b>	<b>\$ 872,386,890</b>	<b>\$2,778,235,564</b>	<b>38%<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

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

## b. 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.

<b>Funding Source</b>	<b>Phase 2 Funding*</b>	<b>Percentage of Total</b>
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

### c. 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. To date, this represents the largest TIFIA assistance for a single project in the program's history.

Because of the Office of the Inspector General (OIG) audit of Phase 1, MWAA has taken steps to better manage the accounting for Phase 2. FTA performed an Agreed Upon Procedures (AUP) review with a Financial Management Oversight contractor in January 2015 following up on the findings from the OIG audit. Final reports were received from the FTA on September 9, 2015. MWAA's submitted their final responses to the FTA on September 29, 2015.

## 6. Project Risks

With the commitment from both Fairfax and Loudoun Counties to fund and procure the parking facilities independently, MWAA revised the RCMP and the PMOC provided comments to the proposed contingency drawdown on March 31, 2014. MWAA submitted the latest revision of the Phase 2 Risk and Contingency Management Plan (RCMP), Revision 1d, to the FTA on June 20, 2014, including MWAA's proposed Top Ten Risks to FTA for review and approval. The submission included updated procedure P2M 5.07, Revision 1, Management of Project Contingency Procedure, with language confirming MWAA's commitment to secure funding for any "Betterment" and "Concurrent Non-Project Activity (CNPA)" related changes. MWAA has identified four primary mitigation strategies; however, MWAA and the PMOC agree that the primary and secondary mitigation measures should be developed in more detail following the award of all the DB contracts. RCMP, Revision 1d, included the updated Top Ten Risks List, lowering the severity and hence the removal of risks associated with parking garages as the garages will be funded and managed by the counties and addition of three new risks. Also, included in the revised RCMP were updated contingency drawdown milestones.

- **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 schedule risk analysis shows that there is less than five percent chance that the Schedule Substantial Completion Date (SSCD) will 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, 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 (14 months) has been consumed. [REDACTED]

- **Cost and Schedule Trend Analysis:** *The overall Project Completion based on Cost is 38%. To date approximately 16.95% (\$95.14 M) of the Contingency has been utilized; however, the Stormwater Management and other early design changes may consume up to 50% of the Total Project Contingency. MWAA estimates that the owner and project partner’s soft costs associated with the thirteen month delay are \$43.04 million.* [REDACTED]

[REDACTED] The scheduled Revenue Service Date of January 2019 as presented in the TIFIA Agreement is not achievable. [REDACTED]

- **Top Ten Risks:** In its June 2014 RCMP, Revision 1d, MWAA provided a summary of the Top Ten Risks for review and approval. MWAA has moved the implementation of the Stormwater Management Regulations to the number one spot on the Top Ten Risks list. The PMOC questioned the methodology behind the scoring for Risk Register and what assumptions were made in determining the scoring for the Top Ten Risks. MWAA suggested that FTA perform Risk Assessment Workshop for the Phase 2 Project as was done for Phase 1. FTA will consider the suggestion and advise MWAA. MWAA held an internal Risk Workshop on December 12, 2014 which resulted in a change in nine of the Top Ten Risks. FTA and PMOC are reviewing the revised Risk Register and Top Ten Risks dated December 2014, which were submitted on May 5, 2015. The PMOC is concerned that the Top Ten Risks are constantly changing which indicates a lack of consistency in scoring. MWAA revised the Risk Register and submitted it to the PMOC on August 11, 2015 for discussion and review by PMOC. PMOC submitted comments on the revised Risk Register on September 29, 2015. MWAA and PMOC met after the October 7, 2015 Monthly Update Meetings to discuss the outstanding comments and MWAA’s responses. MWAA formally submitted the revised Risk Register and Top Ten Risks on October 20, 2015 and the PMOC found them acceptable. Below is MWAA’s Top Ten Risks list from RCMP, Revision 1d, submitted to FTA on June 20, 2014. The resubmitted RCMP included FTA-requested changes to the project management procedure P2M 5.07 Revision 01 (procedure for Management of Project Contingency), in which the Airports Authority committed to seek a formal commitment from the stakeholder requesting a Concurrent Non-Project Activity

(CNPA) or Betterment. This would therefore fully fund these items prior to issuing any direction to the Contractors for proceeding with the work.

The Project team conducted a Risk Workshop on December 12, 2014, to reevaluate the Phase 2 Risk Register. This included a collective reassessment of the ranking of approximately 100 risk items by discipline managers, and resulted in the addition of new risks. The revisions were sent to FTA in early February for review. In March 2015, FTA provided verbal comments on the submitted proposed Risk Register and the Top Ten Risks List. The Project team provided a formal response to FTA including an updated Risk Register and Top Ten Risks List in May 2015. FTA and the Project team met in June to discuss and address FTA comments. During this meeting, FTA requested that the risk ranking matrix be expanded to have seven rankings. The Project team updated the risk ranking matrix per FTA's request and discussed it with FTA during the meeting on July 8, 2015. During this meeting, FTA requested that the risk ranking matrix be reverted to five rankings. The Project team incorporated FTA's comments, updated the risk register with these new rankings, and submitted to FTA in August 2015. The Project team incorporated FTA's comments and, on October 30, 2015, transmitted the updated Risk Register with Top Ten Risks list to FTA for formal approval. These are the Top Ten Risks included in RCMP Revision 2 dated March 2016 to which PMOC has provided comments. MWAA submitted RCMP Revision 2 dated May 2016 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.

RCMP - Top Ten Risks as of April 2016			
Risk ID	Event Description	(Proposed Primary) Risk Mitigation	Risk Rating
40.03.C.1	Storm Water 2B - Construction	1) Benchmark the design with no further changes 2) Procure nutrient credits to secure permits and offset construction requirements 3) Recommend to the Contractor to economize on construction means and methods 4) <i>Reduce CRC's scope of work and competitively bid the remaining work.</i>	25
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) Ensuring inclusion of known design changes into negotiations 2) Performing cost and schedule impact analysis prior to directing changes 3) <i>Third party analyzing CRC's proposal and assisting project team with negotiations</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.	<i>Proactively manage the project staff and consultants to efficiently tailor staff to project needs.</i>	25
80.02.D.239 NEW*	Package B delays	1) <i>Minimize any further delays working with WMATA.</i> 2) <i>Expedite AHJ reviews</i> 3) <i>Evaluating delay ownership/responsibility</i> 4) <i>Engage 3rd party consultant to assist determination of extended costs</i>	20
30.05.C.166*	Contractor(s) encountering differing subsurface site conditions/unknown utilities.	<i>DB to undertake early and complete utility and geotechnical investigation, coupled with early design decisions on foundations and coordination with the Project Team. Mitigation measures are being incorporated into the schedule.</i>	20
40.02.C.2 20	Differing Site Conditions at Stations	1) Explore different drilling methods 2) Consider blasting, hand mining 3) Consolidating utilities to single tunnel	16
50.05.C.1 50	Communications System Scope of Work - Changes to match Phase 1 and RFP requirements.	1) Expeditiously processing and implementing the change, design, reviews and permits.	15
20.02.C.1 03	Potential impacts related to Dulles Airport Station and Walk-Back Tunnel construction.	DB to undertake early exploration and verification of existing conditions and provide, as required, alternative solutions. Project Team to allow maximum flexibility in design parameters for Dulles Airport Station to encourage DB to achieve optimum final design-construction solutions to lower cost & simplify construction and accommodate patron interface. <i>MWAA &amp; CRC have agreed to protect fiber in place and as additional mitigation CRC to provide secondary path. Physical interfaces now exposed at North and South sides. DB revising design on North side to adjust for as-built condition.</i>	15
30.05.C.236 NEW*	WMATA requested/imposed changes to Construction	<i>Work closely with WMATA to minimize last minute changes and control impacts to cost and schedule. Reject anything deemed preferential and not providing rationable benefit.</i>	15
80.08.C.1 96	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 WMATAS' 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.	12
40.02.C.9 8	Utility Companies involved in the utility relocation delay the contractor.	1) Ensure Contractor's prompt coordination with the utility companies to highlight work priorities 2) The Airports Authority facilitating ongoing awareness of project CPM and coordination with utility companies and project contractor.	12

\* Proposed NEW item and Top Ten Risk

## 7. 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	FTA to approve MWAA management plans	MWAA submitted the PMP, QPP, SSMP, RCMP, Permit Management Plan and RAMP.	Y	N	N	MWAA submitted the Final PMP Version 2.0 on February 9, 2015 that was approved with comments by the FTA on July 8, 2015. 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 is to incorporate the comments and submit an updated PMP by October 31, 2016.	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
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
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 AND MAP

**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.

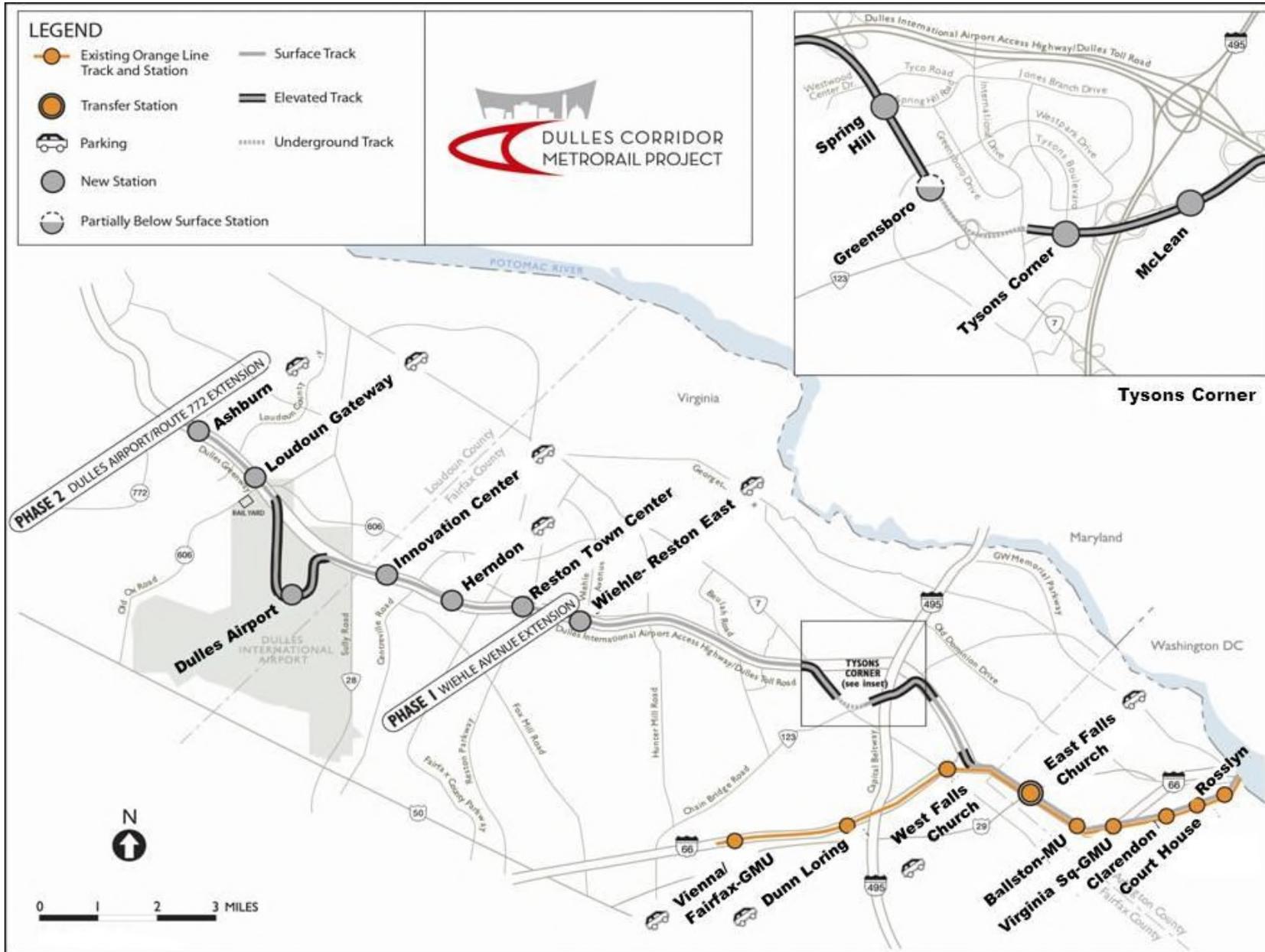
### Current Delivery Milestone Schedule

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
08/20/2014	MWAA TIFIA Loan Executed
5/8/15	Package S Completed
30%	Percent Work in Place Complete at the date of this report
52.8%*	Percent Project Schedule Complete at the date of this report *Based on new 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
\$872,386,890	Amount of expenditures at the date of this report from a total project budget of \$2,778,235,564
38%	Percent Complete expenditures at the date of this report. (This percentage does not include finance charges and contingency)
\$456,315,103	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 SSMP Rev. 0 dated July 2013 for review and approval in August 2013 in response to comments provided in May 2013. FTA approved the SSMP on November 15, 2013. MWAA submitted SSMP Rev.1 dated February 28, 2015 and PMOC recommended acceptance with comments on May 5, 2015. FTA approved the SSMP with comments on June 15, 2015. 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.

<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. ACMC'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 May 16, 2016.
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.

<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's SSMP, Revision 0, dated July 11, 2013 was approved by FTA on November 15, 2013. MWAA submitted SSMP Rev.1 dated February 28, 2015 and FTA accepted the SSMP with comments on June 15, 2015. MWAA submitted a revised SSMP on February 25, 2016. FTA accepted the Plan with comments on June 15, 2016.
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. HPCC's PHA is expected in the fourth Quarter of 2016. WMATA is responsible for TVA.
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	
Has the grantee verified construction specification conformance?	N	The construction specification conformance process is in its initial phases, 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 evaluate 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	



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