TAB 3
Capability of Airports Authority and Project Team

TAB 3A - Response to FTA PMOC Recommendations
TAB 3B - Project Team Integration and Capabilities
TAB 3C - Appendices

TAB 3A

RESPONSE TO FTA PMOC RECOMMENDATIONS

3a - Grantee's Technical Capacity and Capability

3b - Grantee's Readiness to Enter Final Design

Responses to PMOC Recommendations
On the
Grantee's Technical Capacity and Capability

In his letter of January 28 to Governor Tim Kaine, Federal Transit Administration's (FTA) Administrator James Simpson states:

> "In its January 2008 assessments of MWAA's Technical Capacity and Capability and Readiness to Advance into Final Design, the PMOC premised its recommendation on thirty-two separate and necessary actions MWAA should take in order to advance the project. FTA does not believe that these recommendations can be addressed in time to meet existing contractual commitments to keep the project on time and within budget."

The recommendations referenced are the 21 items on Technical Capacity and Capability communicated to MWAA in FTA's letter of November 6, 2008 and subsequent comments from the PMOC over the next two months. There were also 11 items that on Readiness.

As demonstrated in the following attachment, **MWAA has complied with all 21 of the PMOC's recommendations on Technical Capacity and Capability**. Full implementation is underway and is expected to be complete within 120 days. In fact, the only recommendations not complete are those that require that additional staff be hired by MWAA. Although the Project Management Support Services (PMSS) team had provided staff for the necessary positions, the PMOC has recommended that some of these positions be filled by MWAA employees as well and MWAA is in the process of filling all of the recommended positions. MWAA and PMSS staff have been assigned to cover the areas that the PMOC felt should have dedicated attention or that require special reporting relationships within the project team. Goals related to budget, schedule and scope control that already existed within the MWAA and PMSS staff are now fully defined in MWAA management procedures as well as the Cooperative Agreements and contracts. Reporting procedures have been more fully defined and are imbedded in the MWAA management procedures.

Evidence of MWAA's compliance with the PMOC's recommendations is provided in the PMOC's December, 2007 Monthly Monitoring Report forwarded by the FTA on January 16, 2008 which stated on page 7 "The PMOC concludes MWAA has addressed all of the comments transmitted by FTA via letter dated November 6, 2007." On page 14 and page 29 of the same report, the PMOC repeats the statement.

MWAA Responses to PMOC Comments - Grantee Technical Capacity

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
1	*Create an MWAA Project Controls/Risk Management Manager to be responsible for monitoring budget, schedule and contingency and providing regular reports to the Project Director. This full time MWAA position will provide interface between the Project Management (PMSS) controls team and the Project Director. Additionally, the position will have primary responsibility for managing and controlling cost and schedule contingency.*	Figure 3-4 Section 3.3.3 Appendix C Position created December 17, 2007; Documented in PMP since December 21, 2007.	The position of Manager of Risk Management/Project Controls is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**
2	*Create an MWAA Agency Design Coordination Manager position reporting directly to the Deputy Director Design to assist the Deputy Director Design in his assigned responsibilities and to assume primary responsibility for coordination/interface with all involved agencies and municipalities.*	Figure 3-4 Section 3.3.3 Appendix C Position originally created with the title of Senior Engineer and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The position of Senior Project Manager (changed from Senior Engineer per agreement with the PMOC), reporting to Deputy Director Design, is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
3	*Once construction begins in earnest, determine if an MWAA Senior Project Manager for Construction position reporting directly to the Deputy Director Construction is necessary to assist the Deputy Director Construction in his assigned responsibilities.*	Figure 3-4 Section 3.3.3 Appendix C Position originally created with the title of Senior Engineer and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The position of Senior Project Manager (changed from Senior Engineer per agreement with the PMOC), reporting to Deputy Director Construction, is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**
4	*Fill the Manager Project Administration position that is identified in PMP Revision 5 Final. In addition to responsibilities defined in the PMP, this position would assist the other deputy directors with invoice review and approval and financial reporting.*	Figure 3-4 Section 3.3.3 Appendix C Position created and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The position of Manager Project Administration is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
5	*Add a dotted line relationship between MWAA Project QA/QC and Safety Manager and Vice President of Engineering. This relationship will ensure that all QA/QC and Safety recommendations generated by the QA/QC & Safety Manager will be given appropriate consideration by the MWAA project management team*.	Figure 3-4 Section 3.3.3 Appendix C Per agreement with the PMOC, an indirect relationship was incorporated into the project November 6, 2007; Documented in PMP since December 12, 2007.	The relationship depicted earlier in the organization chart reflected what was stated in the text in Section 3.3.3 of the earlier PMP. It was actually portrayed as a dashed line at that time, but the line did not read well and all dashed lines in Figure 3-4 and Appendix C of the current PMP were changed to more distinct dotted lines. **MWAA has complied with the PMOC's recommendations.**
6	*Fill the two supervisor positions for QA/QC and Safety that report to the Project QA/QC and Safety Manager (per the PMP).*	Figure 3-4 Section 3.3.3 Appendix C Positions created and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The two supervisor positions for QA/QC and Safety that report to the Project QA/QC and Safety Manager are included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The positions' roles and responsibilities are described in Section 3.3.3 of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The January 16, 2008 PMP further clarifies that these positions will be filled by March 2008. MWAA is now advertising for, interviewing, and selecting qualified candidates with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
7	*Monitor Project Team performance particularly in area of design submittal review and supplement Team with additional staff as required.*	Section 3.3.3 This has always been a role that MWAA assumed as their responsibility as project sponsor. The plan for monitoring of design submittal review is addressed in all versions of the PMP for Final Design.	As described in Section 3.3.3 of the current PMP, the co-location of the integrated MWAA, PMSS, WMATA, VDOT and Fairfax County project team in the project office along with DTP in the same building provides an efficient environment for timely and comprehensive design reviews. The team includes staff with expertise in every technical discipline required on-site (or at the entity's home office in the case of specialized expertise that is only needed occasionally). The Project schedule reflects the anticipated reviews required based upon the CDRL. The appropriate staff is assigned based upon the CDRL and the notifications provided by DTP through their four week "look-aheads" submitted at the weekly progress meetings. The MWAA Deputy Director Design and the PMSS Design and Engineering Oversight Manager and the Systems Oversight Manager are specifically tasked with monitoring the performance of the Project Team's timely, thorough and accurate design review and for obtaining additional staff should the need arise. Design review by WMATA , VDOT, and Fairfax County staff is provided through collaborative "over-the-shoulder" reviews enabled by the collocated offices, as well as formal reviews established in the Cooperative Agreements. **MWAA has complied with the PMOC's recommendations**.

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
8	*Assign the WMATA Director of the Office of Major Capital Projects to the project on a full-time basis. The PMOC understands that this is scheduled to occur shortly.*	Comment received December 17, 2007	MWAA directed WMATA to assign Mr. John Thomas, WMATA's Director of the Office of Major Capital Projects, to the project on a full-time basis. WMATA is complying and Mr. Thomas is currently in the process of completing his transitioning from other project involvements. **MWAA has complied with the PMOC's recommendations.**
9	*Assign a DTP Contract Manager who has the autonomy to manage the prime contract and who reports directly to MWAA senior management. The main objectives of the contract manager are 1) to maintain awareness of the MWAA obligations in the DTP contract, and 2) to facilitate adherence to the MWAA contract obligations by the MWAA project management team.* *Develop a complementary "yellow line" prime contract mark-up and include appropriate actions/activities on the project schedule.*	Figure 3-4 Section 3.3.3 Appendix C Position created and incorporated into project September 2007; Documented in PMP since September 21, 2007. Expansion of the explanation of the project's treatment of the requested "yellow-line" prime contract mark-up	As per agreement with the PMOC, MWAA has identified this position as Contract Administration Officer for consistency within the MWAA organization, but the position's roles are as recommended by the PMOC. The position of Contract Administration Officer is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. This position reports to MWAA Senior Management as requested by the PMOC. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. MWAA has developed a position description for this position and is now advertising, interviewing, and selecting a qualified candidate with the appropriate credentials. Actions and activities contained in the "prime contract" have been incorporated into the overall project schedule. The executed design-build contract and all its

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
		(summarized in the MWAA response column adjacent) will be included in the next version of the PMP.	corresponding exhibits and appendices that contain contractually required actions, deliverables, and milestones are fully incorporated into the overall project schedule. These actions and activities are listed in the approved CDRL (Contract Deliverables Requirements List) which dictates the actual submittals that serve as the basis and structure of the master project schedule. **MWAA has complied with the PMOC's recommendations.**
10	*Assign an experienced manager solely to manage the WMATA work so that the status of WMATA work is known at all times and that WMATA is held to perform to the needs of the project. This can be a PMSS position reporting to the Deputy Director of Project Development or the Agency Design Coordination Manager.*	Section 3.3.3 Appendix C Assignment made November 2006; Documented in PMP since December 12, 2007.	The PMSS Systems Oversight Manager, Mr. Philip Castellana, is assigned the responsibility of providing the owner team oversight and reporting on all WMATA activities. Mr. Castellana's qualifications are included in Appendix C of the current PMP. Section 3.3.3 of the current PMP describes his role as well as the roles of the experts reporting to him. This position reports to the MWAA Deputy Director Design for design activities and the MWAA Deputy Director Construction for construction activities, as shown in Appendix C of the current PMP. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
11	*Assign a manager to the Right of Way and Rights of Entry requirements to ensure that all property rights and property acquisitions are obtained in accordance with the area need dates in the DTP contract. This can be a PMSS position reporting to the Deputy Director of Project Development.*	Section 3.3.3 Assignment made April 2007; Documented in PMP since December 21, 2007.	The PMSS Manager of Right-of-Way Acquisition, Ms. Pam Peckham, is assigned the responsibility for oversight and reporting on all Right of Way and Rights of Entry activities to ensure that all property rights and property acquisitions are obtained in accordance with the area need dates in the DTP contract. Ms. Peckham's qualifications are included in Appendix C of the current PMP. Section 3.3.3 of the current PMP describes her role. This position reports to the PMSS Planning Oversight Manager and the MWAA Deputy Director of Project Development, as shown in Appendix C of the current PMP. **MWAA has complied with the PMOC's recommendations.**
12	*Assign a manager responsible for the Regulatory Approval requirements to ensure that Regulatory Approvals are obtained in accordance with the schedule. This can be a PMSS position reporting to the Deputy Director Construction.*	Section 3.3.3 Appendix C Assignment made December 2007; Documented in PMP since December 21, 2007.	The PMSS Deputy Manager of Construction Oversight, Mr. John Kearney, is assigned the responsibility of managing regulatory approval requirements and permitting in accordance with the schedule. Mr. Kearney's qualifications are included in Appendix C of the current PMP. This position reports to the PMSS Manager of Construction Oversight and MWAA's Deputy Director Construction. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
13	*Assign a dedicated manager to the Utility work to control the scope and schedule to ensure that utility work is performed to the minimum necessary and in support of the need of construction work. The Utility Manager can be a PMSS position reporting to the Deputy Director Construction.*	Section 3.3.3 Appendix C Assignment made July 2007; Documented in PMP since December 12, 2007.	As described in Section 3.3.3 of the current PMP, the PMSS Deputy Manager of Construction Oversight, Mr. John Kearney, is assigned to control the scope and schedule of the design and construction of all utility relocation work and utility new service, ensuring that utility work is performed to the minimum necessary and in support of the need of construction work. Mr. Kearney's qualifications are included in Appendix C of the current PMP. This position reports to the PMSS Manager of Construction Oversight and MWAA's Deputy Director Construction. **MWAA has complied with the PMOC's recommendations.**
14	*Implement a project Financial Status Report, and conduct routine senior management / Board of Directors level reviews. Establish metrics (cost and schedule progress) and demand recovery plans.*	Section 2.7.1 DRPT and MWAA have submitted quarterly project Financial Status Reports to FTA in TEAM since 2004; Documented in PMP since December 21, 2007.	Section 2.7.1 of the current PMP describes MWAA's commitment to provide a quarterly project Financial Status Report to the FTA/PMOC. Current data and reporting tools used for project controls and for providing internal updates on progress of the project against cost and schedule are fully in place. A consolidated version and format can be made available to FTA/PMOC for their use and format changes can be incorporated as needed. MWAA currently provides quarterly Financial Status Reports to FTA via TEAM, monthly updates to the PMOC, and briefings on an as-needed basis to senior management. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
15	*Implement a monthly Progress Status Report for submission to the FTA prior to the regularly scheduled monthly meetings which includes invoicing and payments to date for all major contracts, tabulation of change orders, current contract amount and estimated cost to complete by contract, progress achieved versus progress scheduled and progress planned for next period.*	Section 2.4 MWAA committed to providing monthly progress information to FTA prior to September 2007, as stated in Section 2.5 of the September 21, 2007 PMP. This was further clarified in the January 16, 2008 PMP.	Current data and reporting tools used for project controls and for providing internal updates on progress of the project against cost and schedule are in place. As stated in Section 2.4 and 2.5 of the current PMP, a consolidated version and format will be made available to FTA/PMOC for their use prior to the regularly scheduled monthly meetings. **MWAA has complied with the PMOC's recommendations.**
16	*Establish a senior management contingency control process so that the project cannot use contingency without executive approval.*	Section 2.7 Appendix A Adopted into Project January 4, 2008; Documented in PMP since January 7, 2008.	In addition to the safeguards already existing in the Design-Build contract concerning change orders, Project Management Procedure PM-5.07, Management of Project Contingency, was developed to specifically address the use of contingency. The PMOC reviewed and commented on the Procedure, MWAA modified the procedure to reflect the PMOC recommendations and Procedure PM-5.07 has been approved and adopted into the Project. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
17	*Adopt a "Design to Budget" mentality on the project. This mentality is extremely important for the Subcontract Allowance Items in the DTP contract, but is equally applicable to the work being designed and performed by MWAA, WMATA, VDOT and any other supporting agencies. Charter those performing the design to meet the budget for the final product and not just for the design effort.*	Executive Summary Section 2.7 Incorporated into project since June 2004; Documented in PMP since December 21, 2007.	A "design to budget" mentality was incorporated into the PE scope in June 2004 as a contractual requirement in the Cooperative Agreement with DTP. It is the reason DRPT maintained a cost effective project at 50% PE by requiring the contractor to redesign $500 million out of the project to meet budget. MWAA is committed to managing to the targeted subcontract allowances and also to the budgets established for the partner agencies, including its own. This will continue not only through the design effort but through sub-contract awards, vendor selections, construction and ultimate project implementation. Section 2.7 of the current PMP describes MWAA's philosophy regarding budget adherence on the Project. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
18	*Adopt a "No Change" mentality for the project scope. Keep to the technical and scope commitments that have been made in the DTP contract and the Project Management Plan. This must apply to DTP, MWAA and WMATA.*	Executive Summary Section 10.3 Incorporated into project since June 2004; Documented in PMP since December 21, 2007.	A "no change" mentality was incorporated into the PE scope in June 2004 as a contractual requirement in the Cooperative Agreement with DTP. The contract provisions and agreements that MWAA has with DTP and the other project partners emphasize a burden of proof that will be enforced in order to severely limit the types of events or conditions eligible for a change. This applies to the Design-Build contract as well as the enforcement of betterments with project partners and third parties such as utilities. Section 10.3 of the current PMP describes MWAA's position on limiting scope changes to the Project. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
19	*Adopt a "Schedule Adherence" mentality on the project. Insist that DTP, MWAA, WMATA, and other supporting agencies adhere to the project schedule. Immediately notify those who do not adhere to the schedule.*	Executive Summary Section 2.6 Incorporated into project since June 2004; Documented in PMP since December 21, 2007.	A "schedule adherence" mentality was incorporated into the PE scope in June 2004 as a contractual requirement in the Cooperative Agreement with DTP. The Airport Authority incorporated several provisions in the Design-Build contract that require DTP to assume schedule responsibility and adhere to the adopted baseline schedule for the project. The monthly schedule review workshops and reconciliation will be viewed as a continuous effort to enforce adherence to the adopted schedule. Our project partners, including WMATA, have also pre-established interface points built into the master project schedule and codified in our Cooperative Agreements, that they will be held responsible for meeting in order to ensure overall implementation of the project. Section 2.6 of the current PMP describes MWAA's position on Project schedule adherence. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
20	*Establish a matrix of ownership of project elements within the MWAA project team, and assign budget/schedule to each element. Hold element owners accountable for budget/schedule variances and for recovering budget/schedule as needed.*	Sections 1.0, 2.0 and 3.0 Table 3-1 Incorporated into project December 17, 2007; Documented in PMP since December 21, 2007.	A responsibilities matrix is included as Table 3-1 of the current PMP. It identifies the roles that each of the key staff of MWAA and the PMSS play in addressing the elements identified in the PMP. In addition, MWAA project management procedures document the assignment of MWAA Responsible Managers and the corresponding PMSS support staff that have duties and responsibilities for specific areas of performance for the project. **MWAA has complied with the PMOC's recommendations.**
21	*Re-train / supplement / replace project staff when and if necessary to demonstrate the importance of executing the project strategy.*	Section 3.3.3 MWAA committed to obtaining and keeping the right staff as early as April 2006; This policy was documented in the PMP since December 12, 2007.	MWAA has long been dedicated to provide whatever resources for training and augmentation of project staff (both MWAA and PMSS) are needed to successfully manage the implementation of the project. Section 3.3.3 of the PMP includes a description of plans for re-training, supplementing and replacing of Airports Authority and PMSS staff. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
22	*It is the opinion of the PMOC that the MWAA project team would possess the technical capacity and capability to manage this project if the above recommendations* [comments 1 through 21] *are implemented within 120 days of receiving approval to enter final design.*	--	**MWAA has complied with all of the PMOC's recommendations.**

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Responses to PMOC Recommendations On the Grantee's Readiness to Enter Final Design

In his letter of January 28 to Governor Tim Kaine, Federal Transit Administration's (FTA) Administrator James Simpson states:

> "In its January 2008 assessments of MWAA's Technical Capacity and Capability and Readiness to Advance into Final Design, the PMOC premised its recommendation on thirty-two separate and necessary actions MWAA should take in order to advance the project. FTA does not believe that these recommendations can be addressed in time to meet existing contractual commitments to keep the project on time and within budget."

The recommendations referenced are the 11 items on Readiness to Enter Final Design communicated to MWAA in FTA's letter of November 6, 2008 and subsequent comments from the PMOC over the next two months. There were also 21 items that related to Technical Capacity and Capability.

As demonstrated in the following attachment, **MWAA has complied with all 11 of the PMOC's recommendations on Readiness**. Full implementation is underway and is expected to be complete within 120 days. In fact, the only recommendations not complete are those that require that additional staff be hired by MWAA. Although the Project Management Support Services (PMSS) team had provided staff for the necessary positions, the PMOC has recommended that some of these positions be filled by MWAA employees as well and MWAA is in the process of filling all of the recommended positions. MWAA and PMSS staff have been assigned to cover the areas that the PMOC felt should have dedicated attention or that require special reporting relationships within the project team. Goals related to budget, schedule and scope control that already existed within the MWAA and PMSS staff are now fully defined in MWAA management procedures as well as the Cooperative Agreements and contracts. Responses to all PMOC comments on the required Plans and Reports have been submitted. Negotiations with all affected entities over the cost-savings reductions are complete, including executed change orders to both the Firm Fixed Price and Allowances portions of the DTP contract. Reporting procedures have been more fully defined and are imbedded in the MWAA management procedures.

Evidence of MWAA's compliance with the PMOC's recommendations is provided in the PMOC's December, 2007 Monthly Monitoring Report forwarded by the FTA on January 16, 2008 which stated on page 7 "The PMOC concludes MWAA has addressed all of the comments transmitted by FTA via letter dated November 6, 2007." On page 14 and page 29 of the same report, the PMOC repeats the statement.

MWAA Responses to PMOC Comments - Grantee Readiness

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
1	*Create an MWAA Project Controls/Risk Management Manager to be responsible for monitoring budget, schedule and contingency and providing regular reports to the Project Director. This full time MWAA position will provide interface between the Project Management (PMSS) controls team and the Project Director. Additionally, the position will have primary responsibility for managing and controlling cost and schedule contingency.*	Figure 3-4 Section 3.3.3 Appendix C Position created December 17, 2007; Documented in PMP since December 21, 2007.	The position of Manager of Risk Management/Project Controls is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**
2	*Create an MWAA Agency Design Coordination Manager position reporting directly to the Deputy Director Design to assist the Deputy Director Design in his assigned responsibilities and to assume primary responsibility for coordination/interface with all involved agencies and municipalities.*	Figure 3-4 Section 3.3.3 Appendix C Position originally created with the title of Senior Engineer and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The position of Senior Project Manager (changed from Senior Engineer per agreement with the PMOC), reporting to Deputy Director Design, is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
3	*Fill the Manager Project Administration position that is identified in PMP Revision 5 Final. In addition to responsibilities defined in the PMP, this position would assist the other deputy directors with invoice review and approval and financial reporting.*	Figure 3-4 Section 3.3.3 Appendix C Position created and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The position of Manager Project Administration is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The position's roles and responsibilities are described in Section 3.3.3 of the current PMP. MWAA is now advertising for, interviewing, and selecting a qualified candidate with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**
4	*Fill the two supervisor positions for QA/QC and Safety that report to the Project QA/QC and Safety Manager (per the PMP).*	Figure 3-4 Section 3.3.3 Appendix C Positions created and incorporated into project September 2007; Documented in PMP since September 21, 2007.	The two supervisor positions for QA/QC and Safety that report to the Project QA/QC and Safety Manager are included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The positions' roles and responsibilities are described in Section 3.3.3 of the current PMP. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. The January 16, 2008 PMP further clarifies that these positions will be filled by March 2008. MWAA is now advertising for, interviewing, and selecting qualified candidates with the appropriate credentials. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
5	*Assign a DTP Contract Manager who has the autonomy to manage the prime contract and who reports directly to MWAA senior management. The main objectives of the contract manager are 1) to maintain awareness of the MWAA obligations in the DTP contract, and 2) to facilitate adherence to the MWAA contract obligations by the MWAA project management team.* *Develop a complementary "yellow line" prime contract mark-up and include appropriate actions/activities on the project schedule.*	Figure 3-4 Section 3.3.3 Appendix C Position created and incorporated into project September 2007; Documented in PMP since September 21, 2007. Expansion of the explanation of the project's treatment of the requested "yellow-line" prime contract mark-up (summarized in the MWAA response column adjacent) will be included in the next version of the PMP.	As agreed to by the PMOC, MWAA has identified this position as Contract Administration Officer for consistency within the MWAA organization. The position is included in MWAA's organization chart as shown in Figure 3-4 and Appendix C of the current PMP. The position's roles and responsibilities are as recommended by the PMOC and are described in Section 3.3.3 of the current PMP. This position reports to MWAA Senior Management as requested by the PMOC. As stated in the September 21, 2007 PMP, MWAA planned to fill these positions in 2008. MWAA has developed a position description for this position and is now advertising, interviewing, and selecting a qualified candidate with the appropriate credentials. Actions and activities contained in the "prime contract" have been incorporated into the overall project schedule. The executed design-build contract and all its corresponding exhibits and appendices that contain contractually required actions, deliverables, and milestones are fully incorporated into the overall project schedule. These actions and activities are listed in the approved CDRL (Contract Deliverables Requirements List) which dictates the actual submittals that serve as the basis and structure of the master project schedule. **MWAA has complied with the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
6	*Monitor Project Team performance particularly in area of design submittal review and supplement Team with additional staff as required.*	Section 3.3.3 This has always been a role that MWAA assumed as their responsibility as project sponsor. The plan for monitoring of design submittal review is addressed in all versions of the PMP for Final Design.	As described in Section 3.3.3 of the current PMP, the co-location of the integrated MWAA, PMSS, WMATA, VDOT and Fairfax County project team in the project office along with DTP in the same building provides an efficient environment for timely and comprehensive design reviews. The team includes staff with expertise in every technical discipline required on-site (or at the entity's home office in the case of specialized expertise that is only needed occasionally). The Project schedule reflects the anticipated reviews required based upon the CDRL. The appropriate staff is assigned based upon the CDRL and the notifications provided by DTP through their four week "look-aheads" submitted at the weekly progress meetings. The MWAA Deputy Director Design and the PMSS Design and Engineering Oversight Manager and the Systems Oversight Manager are specifically tasked with monitoring the performance of the Project Team's timely, thorough and accurate design review and for obtaining additional staff should the need arise. Design review by WMATA , VDOT, and Fairfax County staff is provided through collaborative "over-the-shoulder" reviews enabled by the collocated offices, as well as formal reviews established in the Cooperative Agreements. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
7	*Implement a project Financial Status Report, and conduct routine senior management / Board of Directors level reviews. Establish metrics (cost and schedule progress) and demand recovery plans.*	Section 2.7.1 DRPT and MWAA have submitted quarterly project Financial Status Reports to FTA in TEAM since 2004; Documented in PMP since December 21, 2007.	Section 2.7.1 of the current PMP describes MWAA's commitment to provide a quarterly project Financial Status report to the FTA/PMOC. Current data and reporting tools used for project controls and for providing internal updates on progress of the project against cost and schedule are fully in place. A consolidated version and format can be made available to FTA/PMOC for their use and format changes can be incorporated as needed. MWAA currently provides quarterly Financial Status Reports to FTA via TEAM, monthly updates to the PMOC, and briefings on an as-needed basis to senior management. **MWAA has complied with the PMOC's recommendations.**
8	*Implement a monthly Progress Status Report for submission to the FTA prior to the regularly scheduled monthly meetings which includes invoicing and payments to date for all major contracts, tabulation of change orders, current contract amount and estimated cost to complete by contract, progress achieved versus progress scheduled and progress planned for next period.*	Section 2.4 MWAA committed to providing monthly progress information to FTA prior to September 2007, as stated in Section 2.5 of the September 21, 2007 PMP. This was further clarified in the January 16, 2008 PMP.	Current data and reporting tools used for project controls and for providing internal updates on progress of the project against cost and schedule are in place. As stated in Section 2.4 and 2.5 of the current PMP, a consolidated version and format will be made available to FTA/PMOC for their use prior to the regularly scheduled monthly meetings. **MWAA has complied with the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
9	*Establish a senior management contingency control process so that the project cannot use contingency without executive approval.*	Section 2.7 Appendix A Adopted into project January 4, 2007; Documented in PMP since January 7, 2008.	In addition to the safeguards already existing in the Design-Build contract concerning change orders, Project Management Procedure PM 5.07, Management of Project Contingency, was developed to specifically address the use of contingency. The PMOC reviewed and commented on the Procedure, MWAA modified the procedure to reflect the PMOC recommendations and Procedure PM-5.07 has been approved and adopted into the Project. **MWAA has complied with the PMOC's recommendations.**
10	*Revise and resubmit all Plans and Reports that have been <u>conditionally</u> accepted by the FTA.*	Comment received November 28, 2007; Response matrices submitted December 21, 2007 per a verbal agreement with FTA.	All Plans and Reports requiring acceptance have been accepted by the FTA with the exception of the Utilities Report and the Permitting Plan. These were conditionally accepted and, per a verbal agreement with FTA, the PMOC comments were addressed in a response matrix format submitted to the FTA on December 21, 2007. As stated in the PMOC's Review of Grantee readiness to Enter Final Design, these responses are currently under review by the PMOC. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
11	*MWAA must satisfy the FTA's cost effectiveness criteria. To accomplish this MWAA must demonstrate to the satisfaction of the PMOC and the FTA that the proposed cost savings identified during the cost reduction workshop are realistic. Therefore, MWAA must finalize the scope of all reductions and complete negotiations with all affected entities, including both the Firm Fixed Price and Allowances portions of the DTP contract.*	Comment received October 4, 2007. Negotiations concluded in December 2007 and January 2008. Executed change orders delivered to FTA/PMOC January 28, 2008.	The cost-saving reductions were reviewed with FTA and PMOC staff on September 20, 2007 and MWAA adopted the PMOC recommended values in October 2007. The scopes of the reductions were finalized to support negotiation of the change orders. The change orders related to the reductions for both the Fixed Price and Allowance portions of the DTP contract were executed on January 28, 2008 and provided to FTA and the PMOC the same day. In the September 6, 2007 letter from WMATA's General Manager, Mr. John Catoe, to MWAA's Chief Executive Officer, Mr. James Bennett, WMATA accepted the cost-saving measures as mutually acceptable strategies. Fairfax County's acceptance of the cost-saving measures is evidenced by Exhibit A, Section 1.3.3 Phase 1 Concurrent Non-Project Activities to the 'Agreement to Fund the Capital Cost of Construction of the Metrorail in the Dulles Corridor', which Fairfax County signed on September 11, 2007. Other project participants, such as VDOT, have been provided detailed information regarding the scope of the cost reductions although the changes do not impact their facilities and their formal approvals are not required. Staff members from all affected entities have been and continue to be involved in review of and concurrence with design refinements that effectuate the cost-saving reductions. **MWAA has complied with the PMOC's recommendations.**

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Serial No.	PMOC Comment	Location in Current Project Management Plan (PMP) for Final Design (Version 5.0) *	MWAA Response
12	*It is the opinion of the PMOC that the MWAA project team would meet the readiness requirements for entering Final Design once the above recommendations* [comments 1 through 11] *are implemented within 120 days of receiving approval to enter final design.*	--	**MWAA has complied with all of the PMOC's recommendations.**

* Revisions of the "Final" PMP for Final Design (Version 5.0) were submitted either informally or formally on the following dates in response to comments received from the PMOC or FTA: September 21, 2007, December 12, 2007, December 21, 2007, January 7, 2008, and January 16, 2008. Comments received from the PMOC and FTA, both formally and informally, were adopted immediately as received and incorporated into the next submittal of the PMP.

TAB 3B

PROJECT TEAM INTEGRATION AND CAPABILITIES

INTEGRATION WITH WMATA and PROTECTION of WMATA INTERESTS

The Airports Authority and WMATA executed a Cooperative Agreement on September 14, 2007. A number of provisions were specifically incorporated in order to ensure WMATA's interests are protected throughout the design, construction, systems integration, systems acceptance and warranty phases of the project. This ensures that WMATA will be provided a fully functioning extension that can be accepted into the Adopted Regional System (ARS), and one that WMATA can maintain and operate in an efficient manner that satisfies all requirements for safety and security.

Provisions of the executed Cooperative Agreement ensure that:

- WMATA staff are fully integrated into our management organization.
- WMATA staff are provided every design submittal and are part of over-the-shoulder reviews for designs of their facilities.
- WMATA has approval rights throughout the design process for their facilities in terms of enforcing compliance of their design criteria.
- A well-established deviations process will put the burden on the designer to provide justification for any proposed deviations from WMATA design criteria.
- WMATA will be able to be witness inspections during construction of their facilities.
- That we have worked closely with WMATA to develop a comprehensive systems integration program to ensure the project is built to their standards and will successfully integrate with their system.
- That MWAA is delivering a system to WMATA that they will be able to operate and maintain that doesn't compromise safety and security and also doesn't increase their long-term life-cycle costs.
- That WMATA is protected through insurance provisions by any impacts from construction of this extension.

Provided as Appendix 3A are excerpts from the Cooperative Agreement that reinforce how WMATA is integrated into the project management organization and how WMATA's interests are protected through all phases of implementation of the project.

<u>Benefits to WMATA</u>

By the implementation of the Dulles Corridor Metrorail Project, additional benefits that will be provided to WMATA for the operation of the integration of the implemented system include:

- WMATA is provided the opportunity to add a significant Metrorail extension that will include new technology (particularly ATC and communications) that can be applied in the future to upgrade the current 106-mile system.
- WMATA receives engineering services to define, implement, and test these new technologies.
- MWAA has authorized WMATA to purchase 128 railcars for the Dulles Corridor Metrorail Project, which is in excess of those necessary for the Phase-1 operation and thus are available to enhance the current fleet for service on other lines.

The Dulles Corridor Metrorail Project offers the first opportunity in many years for WMATA to evaluate new technologies that can reduce operating costs and/or improve the reliability of the Metrorail system. Often, it is difficult for a transit agency to review and assess new design criteria and specifications while dealing with the day-to-day pressures of providing transit service. By fully embracing the requirement that all aspects of the Project be compatible with the existing Metrorail system and by providing additional engineering expertise to supplement that of WMATA, the Airports Authority is providing technical information that can be of benefit to WMATA for many other infrastructure renewal projects.

PMOC Review of IGA

FTA's PMOC provided a review of the Cooperative Agreement in its Grantee Readiness to Enter Final Design report dated January 14, 2008, specifically WMATA's roles, responsibilities, and rights as provided for within the Cooperative Agreement. The one action recommended by the PMOC concerning this Cooperative Agreement was:

"The PMOC recommends MWAA detail a plan on how this shop drawing review cycle will be managed in accordance with both the DTP contract and the Cooperative Agreement with WMATA."

This action is addressed in the MWAA project procedure PM-5.06-"Review of Contract Data Requirements List (CDRL)" dated 5/4/07, which is provided as Appendix 3B.

EXPERIENCE OF PROJECT TEAM WITH HEAVY RAIL CONSTRUCTION

AND DESIGN-BUILD CONTRACTS

The FTA Administrator states:

"MWAA is a first-time New Starts applicant that lacks experience with heavy rail construction and has limited experience with design-build contracts, raising serious concerns about its ability to control project costs and schedule."

First and foremost, MWAA is in the midst of one of the largest capital project programs in the Mid-Atlantic region, managing nearly $7.2 billion in ongoing design and construction at Reagan National and Dulles International Airports. Making use of consultants and contractors, MWAA has an extended workforce that has successfully managed numerous complex projects costing hundreds of millions of dollars in the limited workspace of two operating airports.

Secondly, MWAA is currently managing the construction of a significant rail project at Dulles International Airport, using a GEC to provide the rail project management experience and a Design-Build-Operate-Maintain (DBOM) contract for the rail portion of the project. A major focus of MWAA's capital program at Dulles International Airport is the construction of the initial portion of an underground automated people mover system (AeroTrain) to connect the midfield concourses with the Main Terminal. The total program cost for the initial phase of the AeroTrain, including tunnels, four stations, an offline maintenance and control facility, 29 vehicles, 5 miles of guideway and power systems is $1.3 billion.

As FTA is aware, a rail construction project is only partially specialized. Well over half of the cost of the Dulles Metrorail project is not rail related but goes instead for civil, structural and other work common to most large non-rail construction jobs. Based on MWAA's extensive experience managing large construction projects, the FTA's concerns have been limited to the belief that MWAA lacks experience with large heavy rail construction projects in particular. For the portion of the project where experience constructing a large heavy rail project is needed, MWAA hired a consulting firm whose staff has extensive experience managing and building large heavy rail projects including numerous Metrorail projects and other rail projects such as the $1.8 billion (1994 dollars) Kuala Lumpur Light Rail project. The Jacobs Carter Burgess team also has extensive experience managing contracts of all types, including Design-Build, and, along with MWAA, has successfully controlled project costs and schedule on many large projects, such as the $400 million Las Vegas Design-Build Monorail project that finished on-time and under budget.

Finally, MWAA is not a first-time applicant for federal funds and MWAA's ability to be a New Starts applicant has not changed since the FTA found that they have the legal, financial and technical capacity

to carry out the program, and certified MWAA as an eligible FTA grant recipient in November 2006. MWAA has extensive experience managing grant funds from FTA's sister agency FAA for large construction projects, having managed the use of over $1.5 billion in Passenger Facility Charge (PFC) funds and hundreds of millions in other types of FAA grants.

Duplicating its management approach that has successfully controlled project costs and schedule over MWAA's 20 year history of managing very large construction projects, MWAA has created a team controlled by the PMSS that will provide the necessary support services for the project under MWAA's management. The MWAA project staff are located in the same office as the PMSS team along with WMATA, the Fairfax County representative and the VDOT representative. As the ultimate owner and operator, WMATA's role as technical advisor is crucial to the project's success and their co-location in the project office along with WMATA's formally articulated roles established in the WMATA/MWAA Cooperative Agreement are designed to facilitate WMATA's full integration into the project through the phases of design and construction. Similarly, the roles of Fairfax County and VDOT are also clearly defined in their respective Cooperative Agreements with MWAA.

The Appendices 3D through 3H contain descriptions of the role, structure, staff and experience of each member of the project management team – MWAA, the PMSS team, WMATA, VDOT and Fairfax County.

MWAA Rail Experience - The APM at Washington Dulles International Airport Overview

MWAA is constructing a $1.3 Billion underground Automated People Mover (APM) system at Dulles International Airport. With complexities and challenges similar to modern heavy rail systems, the APM will provide trains every two minutes to transport passengers between the Main terminal and the airside facilities. The operating ssystem, consisting of vehicles, track, automatic train control, traction power, station platform doors, is being built through a DBOM contract between MWAA and Sumitomo. The construction of fixed facilities, including tunnels, stations, and the maintenance and storage building, is being designed, constructed, and integrated using a large, multi-organizational approach very similar to that being applied to the Dulles Corridor Metrorail Project.

Following is a paper describing MWAA's APM project.

Nearing Completion - The APM at

Washington Dulles International Airport

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ABSTRACT

Since its opening in 1962, Washington Dulles International Airport (IAD) has used a large fleet of mobile lounges to move passengers between the Terminal and aircraft, and in recent years, between the Terminal and midfield concourses. These lounges share the apron with aircraft, baggage tugs, and other apron vehicles. However, continued development of the airport to meet projections for both passenger and aircraft operations will exceed the capacity of this surface conveyance system. IAD has reached the point where an alternative passenger conveyance system is required.

In 2000, the Metropolitan Washington Airports Authority approved the Dulles Development (D2) program to provide IAD the facilities it would require to keep pace with the growth in air service and traveling demands of the Washington region. One of the key projects in the Dulles Development program is the planning, design, and construction activities for a new Automated People Mover (APM) system; also referred to as the "AeroTrain."

Scheduled to open in 2009, the AeroTrain subway system will take passengers between the Main Terminal and the midfield Concourses in a tunnel system free from all apron traffic. The Aero Train system is a fully automated transit system comparable in technology and complexity of construction to urban rapid transit systems.

The initial phase of the AeroTrain will include nearly 8 km (5 miles) of underground guideway, four stations, an offline maintenance facility positioned for future expansion, and a fleet of 29 cars.

This paper provides an overview of the AeroTrain and how it integrates with the airport-wide D2 program. The methods of procurement, division of work, master schedule, and construction progress will be discussed.

DULLES DEVELOPMENT PROGRAM

The Metropolitan Washington Airports Authority (MWAA) operates and maintains Ronald Reagan Washington National Airport (DCA) and Washington Dulles

International Airport (IAD). In early 2000 with IAD handling 20 million annual passengers, MWAA's Office of Engineering began the process of defining a major, 10-year/$3.4 billion, capital construction program for IAD. The program is called the "Dulles Development Program" or "D2 Program." A major focus of the D2 program is the construction of the initial portion of an underground automated people mover system (AeroTrain) to connect the midfield concourses with the Main Terminal. The AeroTrain will largely replace the existing mobile lounge system that operates on the apron. Aside from the age of the existing mobile lounge fleet - some vehicles date to the airport's opening in 1962 - the use of this surface conveyance system severely limits the overall expansion potential of the airport and provides lengthy travel times for passengers to reach their gates. The AeroTrain will alleviate these challenges. Beyond the D2 program, the master plan for IAD calls for the replacement of one of the existing concourses, the construction of two additional concourses, a second landside terminal on the south side of the terminal area, and other improvements. This would represent a significant expansion of the airport's capacity to efficiently process passengers and will take place over several decades. Ultimately, IAD will have the capacity to handle 60 million annual passengers. The AeroTrain is an essential element in realizing this growth potential.

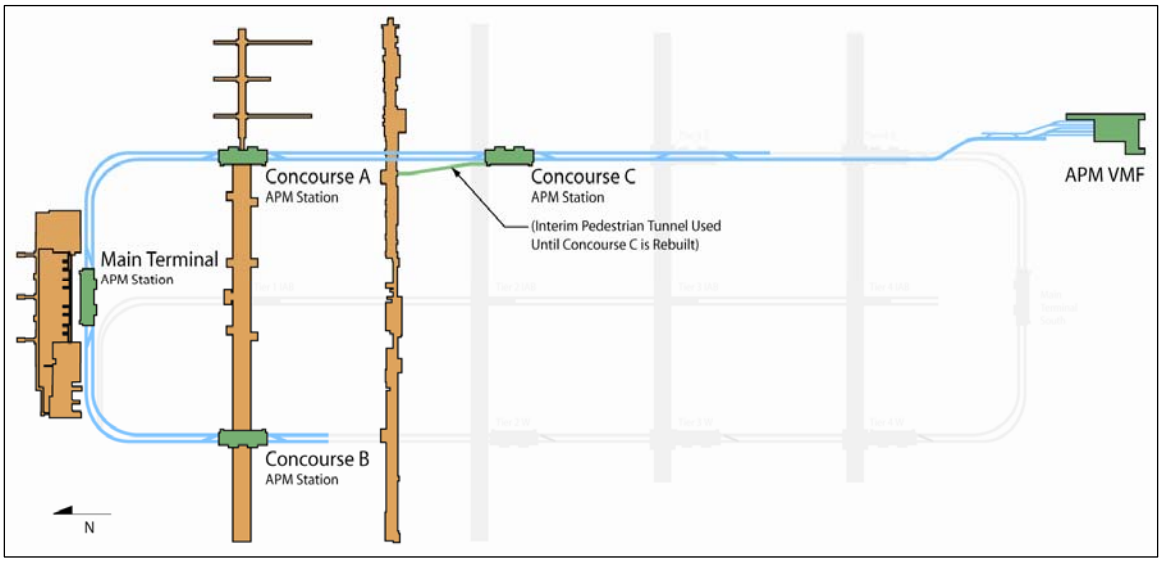
Mobile Lounges

THE AEROTRAIN

The initial phase of the AeroTrain will provide passenger service between four operational stations (Main Terminal and three concourse stations), the structural shell for a fourth concourse station, and a maintenance and control facility. The 8 km (5 miles) of guideway is configured in a "U" shaped dual-lane alignment serving all domestic passengers and departing international passengers. Crossovers provide for routine and failure management operations and pinched-loop operation with bidirectional trains crossing over before the end stations. The initial phase has 29 vehicles that operate in three-car trains at 115-second headways that provide a capacity of 6,755 passengers per hour per direction (pphpd). DC power is provided to the system from three traction power substations in a redundant configuration typical for rapid transit systems.

The total design and construction cost for the AeroTrain, including the stations, tunnels, maintenance and control facility, vehicles, guideway and power systems is $1.3 billion. Of that total, the program cost of the APM system elements such as the vehicles, train control, guideway surface, guidance and power rails, traction power systems, central

control facilities (a primary and alternate control room), 128 station platform doors, and fit-out of the maintenance and control facility is $193 million, or 16 percent. The fixed facility costs are by far the greater costs of the overall AeroTrain program.



AeroTrain Alignment and Stations (Initial Phase)

PROCUREMENT APPROACH

MWAA procured the fixed facility components of the AeroTrain using the traditional Design-Bid-Build approach that has been used successfully on prior capital construction programs at IAD. This procurement approach was also considered for the APM system of the AeroTrain. However, due to the proprietary nature of driverless transit systems, it was determined to procure the APM system using a Design Build Operate Maintain (DBOM) approach that included a five-year period of operation and maintenance. Design-Build and DBOM approaches have been used successfully on several airport and urban transit projects.

Given the size of the AeroTrain system and necessity to maintain airside operations, MWAA divided the program into the following major design and construction packages:

- APM Operating System;
- APM Tunnels;
- Main Terminal APM Station;
- Concourses A and B APM Stations;
- Concourse C APM Station; and,
- APM Vehicle Maintenance Facility.

MWAA's Office of Engineering advertised for a General Engineering Consultant (GEC) and APM Consultant to supplement its own staff in managing the D2 program and

AeroTrain project.

Parsons Management Consultants, a joint venture with Parsons Transportation Group, Parsons Brinkerhoff Construction Services, Daniel, Mann, Johnson & Mendenhall, and Delon Hampton & Associates, has been providing GEC and Program Management services to MWAA since 1989.

MWAA's Design department retained Lea+Elliott, Inc. as the APM Consultant in 2000. Initial work consisted of developing the overall APM system schedule from project definition through procurement, design and implementation; defining the division of work between the APM system and fixed facilities; developing the APM system procurement documents; and establishing the preliminary criteria to be followed in the initial design of the fixed facilities that interface with the APM system.

The design of the major fixed facilities (stations, tunnels and vehicle maintenance facility) started prior to the final selection of the APM system itself. In order for the fixed facility designs to progress, the various designers were given design criteria based on a combination of generic APM system parameters and representing the most restrictive train technologies possible. This allowed the designs for the fixed facilities to begin in 2000 and 2001 even though the final selection of the APM system was not until March 2003. In fact, the award of the first major construction contract was for the Main Terminal station in 2002. Design of the APM train system progressed from 2003 until 2005 while all of the construction of the fixed facilities was underway. When the APM construction started in 2006, it was necessary to adjust the APM construction phasing to match the progress on the fixed facilities and the availability of tunnel sections and equipment rooms in the stations and vehicle maintenance facility. Throughout the entire design and construction process, adjustments have been made to the phasing of individual contracts to maintain the overall schedule for the opening of the APM system in July 2009.

The attached exhibits shows the interrelationship of the major construction activities over the past 2 years.

APM System

Following a competitive procurement process, MWAA awarded Sumitomo Corporation of America (SCOA) the design and construction portion of the DBOM APM operating system contract in March. Other major members of the project team with SCOA include: Mitsubishi Heavy Industries, LTD. as the system integrator and vehicle manufacturer; Thales (formerly Alcatel Transport Automation Solutions) as the automatic train control supplier; and L.K. Comstock and Company Inc. as subsystem designers and site construction manager.

The APM system contracts include the design and manufacture or construction of 29 "Crystal Mover" vehicles, running and guidance surfaces, emergency walkways, automatic train control systems, wireway for communications, electrical power, traction control, and station platform doors and related communication equipment.

Crystal Mover APM Vehicle by MHI

Many of the Aero Train subsystems, including train control, traction power, propulsion, and communications, are the same as those used on modern urban transit systems. Other design features, such as automatic station doors and system-wide monitoring of equipment condition, exceed the feature usually found in rail transit systems.

APM Tunnels

In 1999, MWAA selected HNTB Corporation, in association with Lea+Elliott, Inc., to complete the planning of the D2 program, develop ridership models, and finalize the APM tunnel alignment. A few years later, MWAA selected HNTB Corporation, in association with Hatch Mott MacDonald, as the architects and engineers to produce the APM Tunnel construction documents.

Cut-and-Cover construction was selected for the tunnel segments that are adjacent to existing facilities and at the "green field" areas where access did not disrupt airfield operations. The rock excavation averaged a depth of 15 meters (50 ft). Steel rock bolts and shotcrete facing provide the excavation support to the in-situ materials. For tunnel sections under taxiways and concourses, the tunnels were mined using NATM or TBM methods. For the NATM method of construction, the tunnel was mined utilizing more conventional excavation equipment that dug through the tunnel face in one to two meter (3 to 5 ft) 'bites'. Shotcrete was immediately applied to the exposed tunnel walls to provide support. The TBM tunnel segments on the east side are seven meters (23 ft) in diameter and used two custom machines, known as moles, to bore through solid rock, utilizing multiple cutting wheels mounted into a face shield. Precast concrete wall lining segments were mechanically put into place by the mole as it continued to move forward and the tunnel invert was poured in a later step

The tunnel design was divided into two separate packages that were advertised in 2003:

- The East package for the APM tunnels extending east of the Main Terminal and south through the Concourse A and C stations, the future locations of Tiers 3 and 4, and to the APM Maintenance and Storage Facility.
- The West package for the APM tunnels extending west of the Main Terminal and south to the Concourse B station.

The tunnel packages also include ventilation, drainage, fire protection, security, and emergency communications designed to NFPA-130 and other prevailing codes.

MWAA awarded Atkinson/Clark/Shea, a Joint Venture, the East APM Tunnels construction contract in. The project includes 1730 meters (5,677 ft) of box tunnels constructed by traditional cut and cover techniques, 1320 meters (4,330 ft) of tunnels using the Tunnel Boring Machine (TBM) method, and 251 meters (825 ft) using the New Austrian Tunneling Method (NATM). Additional work includes 324 meters (1062 ft) of open-cut construction of the APM Station at Concourse A and a shell for a future APM station at location for Tier 3E.

MWAA awarded Clark/Shea the West APM Tunnels construction contract in 2004. The project includes 573 meters (1,881 ft) of tunnels constructed by NATM, 679 meters (2,229 ft) of box tunnels constructed by cut and cover techniques, and 183 meters (600 ft) of excavation for the Concourse B APM station.

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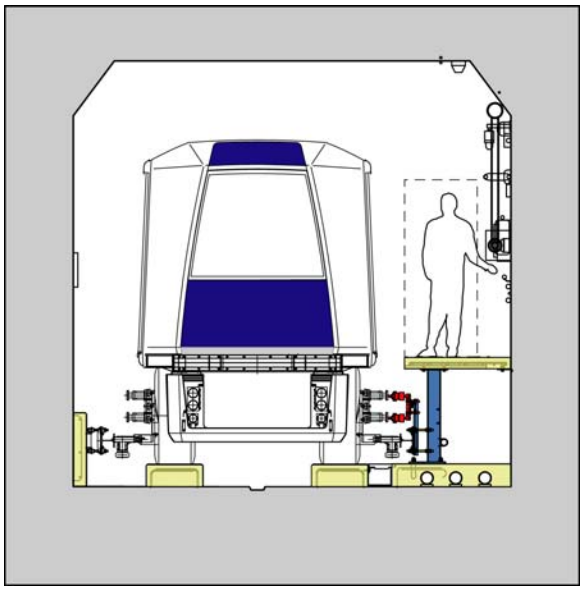
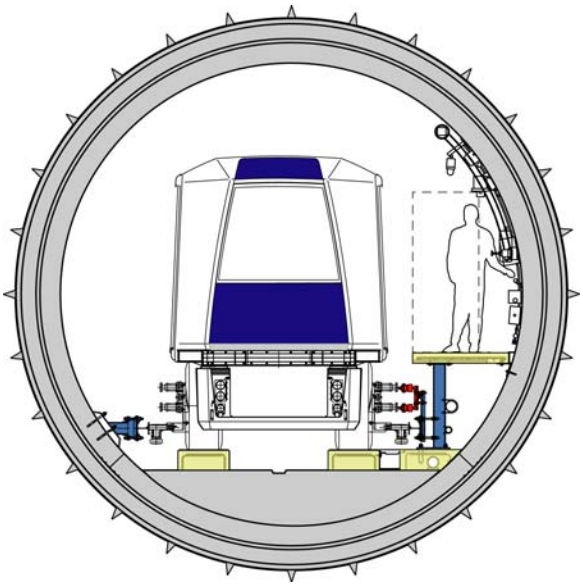


Cut-and-Cover APM Tunnel by HNTB
(APM Fitout by SCOA)



Mined APM Tunnel by HNTB
(APM Fitout by SCOA)

APM Stations

The initial phase of the APM system includes four stations: the Main Terminal Station designed by Skidmore, Owings & Merrill, the Concourses A and B stations designed by

Hellmuth, Obata, + Kassabaum, Inc., and the Concourse C station designed by Kohn Pedersen Fox Associates. The basic design for all the stations is a three platform (side-center-side) configuration where passengers enter the train from the center platform and exit the train to the side platform to avoid congestion at the doorways. The stations have platform-edge doors that operate in synchronization with vehicle doors. A glass enclosure around the train to eliminate passenger exposure to the guideway and provides a level of safety greater than that of most urban transit systems. While the finishes in each station vary, the passenger flows and locations of vertical circulation elements are similar.

Main Terminal APM Station

In 1989, MWAA selected Skidmore, Owings & Merrill (SOM) to design a series of projects to expand the Main Terminal. The last project included the Main Terminal APM Station, security mezzanine, and mobile lounge docks.

Main Terminal APM Station by SOM

The APM station is located on the airside of the existing Main Terminal. To maintain mobile lounge, baggage, and TSA screening operations, it was necessary to construct the APM station in several phases. The initial phase included the construction of temporary mobile lounge docks, holding area, and a connecting pedestrian walkway that are clear of the station construction activities. This allowed MWAA to remove mobile lounge operations from the west side of the Main Terminal so the western half of the APM station could be excavated and constructed in a subsequent phase. A parallel activity was the construction of a temporary TSA screening area (21 lanes) clear of station

construction activities. The new screening area opened in 2006 and enabled MWAA to start the remaining station excavation and construction on the east side of the Main Terminal. Permanent mobile lounge docks were constructed on the west and are now operational. MWAA awarded Turner Construction the Main Terminal APM station construction contract in 2002.

Concourses A and B APM Stations

In 2001, MWAA selected Hellmuth, Obata, + Kassabaum, Inc. (HOK) to design Concourses A and B APM Stations and the West Concourse B Terminal Expansion.

The Concourse A APM station is a center platform station designed to tie into the existing buildings (Concourses A and B) without significant disruption. Once complete, the station will allow mobile lounge service beneath the existing bridge connecting the two concourses. Construction of the station's side platforms are deferred until a later phase.

The construction of the Concourse A APM station was packaged with the East APM Tunnels and awarded to Atkinson/Clark/Shea, a Joint Venture in 2004. The factor behind this decision was the flanking TBM construction and the need to drive the TBM moles through the station.

The Concourse B APM Station includes the construction of a three-story concourse extension consisting of 12 additional gates (six for wide body aircraft), apron level support space, and a basement.

MWAA awarded a contract to Balfour Beatty for the construction of the Concourse B APM Station and 12-gate terminal expansion contract in September 2005. The work includes interfaces with NATM and cut-and-cover tunnels constructed by others as well as coordination with the installation of APM enclosures and the APM system contract.

Concourse A and B APM Stations by HOK

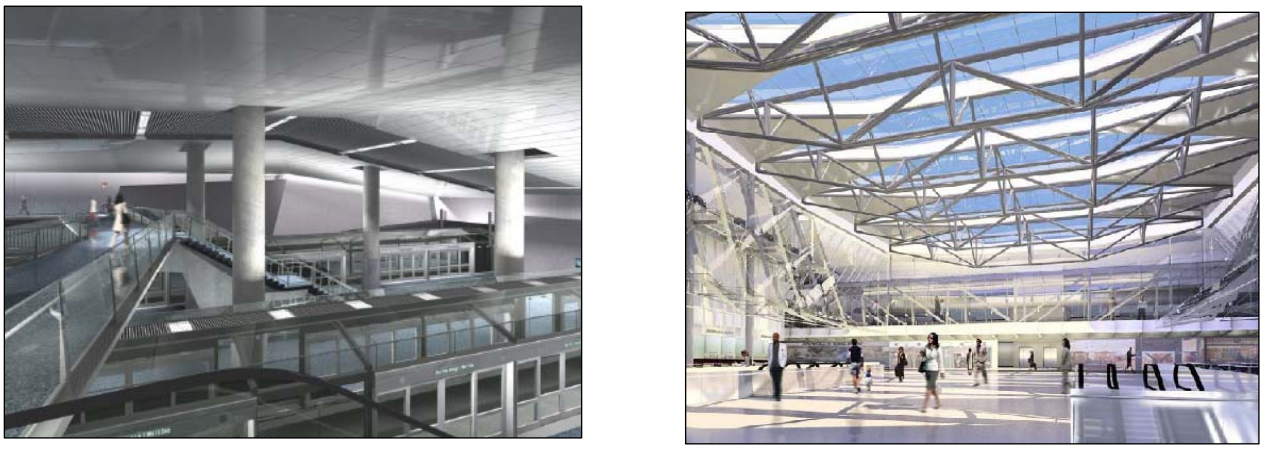
Concourse C APM Station

In 2001, MWAA selected Kohn Pedersen Fox Associates (KPF) to design the Tier 2 Midfield Concourse and the Concourse C APM station.

The new concourse will replace the existing Concourse C/D and will be a length of 1,230 meters (4,035 ft), have 44 domestic and international gates, and accommodate 22 wide body aircraft including the Airbus A380 and Boeing 747-800. The new concourse will be approximately twice the size of the existing concourse and offer additional space for concessions and other passenger amenities, airline clubs, a substantially larger Federal Inspection Service facility for process transferring Star Alliance international travelers.

Although the final design and construction of the concourse has been deferred until a later phase in the master plan, the APM station at the eastern quarter point is being built. This station will link passengers to Concourses A and B and the Main Terminal and serve as the APM system's eastern terminus. An interim pedestrian tunnel connects the station to the existing Concourse C and mobile lounges will continue to serve Concourse D and international arriving (destination) passengers and some international departures.

MWAA awarded Facchina Construction Company, Inc. the construction of the Concourse C APM station contract in 2002. The project includes construction and fitout of the APM station and an at-grade temporary central plant facility. The work includes interfaces with TBM and cut and cover tunnels constructed by others as well as coordination with the installation of APM Enclosures and the APM System Contract.

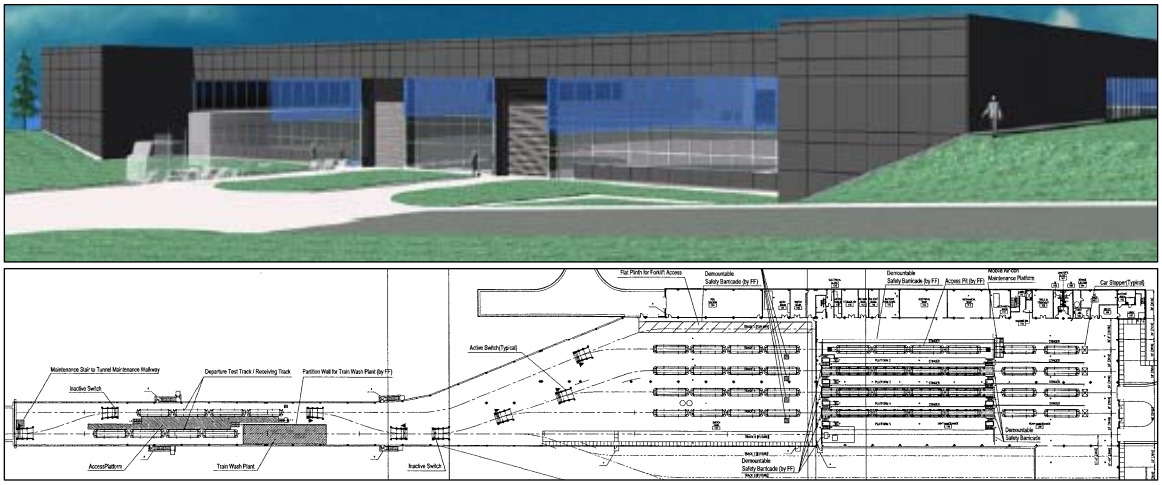


Concourse C APM Station by KPF

APM Vehicle Maintenance Facility

In 2001, MWAA selected HNTB Corporation to design the APM Vehicle Maintenance Facility (VMF). The at-grade VMF includes provisions for five tracks of light and heavy maintenance bays, switch yard, offices, departure test track, shops, storage, and the Central Control Facility for APM operations. Although designed to accommodate a system of 63 vehicles, the VMF may be expanded by four additional tracks of light and heavy maintenance bays in the future.

MWAA awarded Turner Construction for the construction of the APM Vehicle Maintenance Facility contract in July 2004.



APM Vehicle Maintenance Facility by HNTB

SCHEDULE

The attached schedule depicts the remaining fixed facility milestones and corresponding access to the APM system contractor. Continuous adjustments to the schedule are being made to ensure that both short - and long-term goals are achieved.

CONSTRUCTION PROGRESS

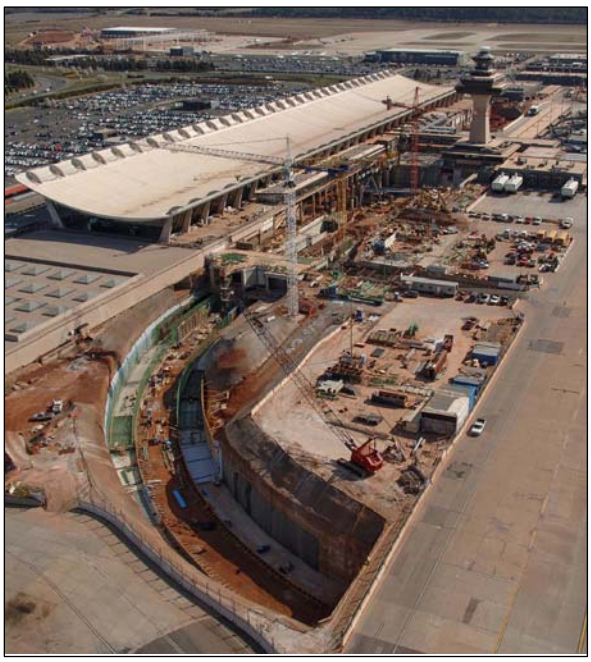
The majority of the civil work on the east tunnels is complete and has been turned over to the APM contractor who is currently installing the plinths and train control systems. Joint access continues with the tunnel and APM system contractors while tunnel MEP systems are installed. The civil work on the west tunnels is scheduled to be completed by early 2007 and will then be turned over to the APM contractor. The civil work for the majority of the station basement and platform elevations is complete with civil work continuing on the mezzanine elevation and above. The VMF is complete and has been turned over to the APM contactor whose fitout work is in progress.

SCOA completed the vehicle qualification testing in December 2006 and the first four vehicles are scheduled to arrive at IAD in April 2007. The balance of vehicles will be shipped in two batches by the end of 2007.

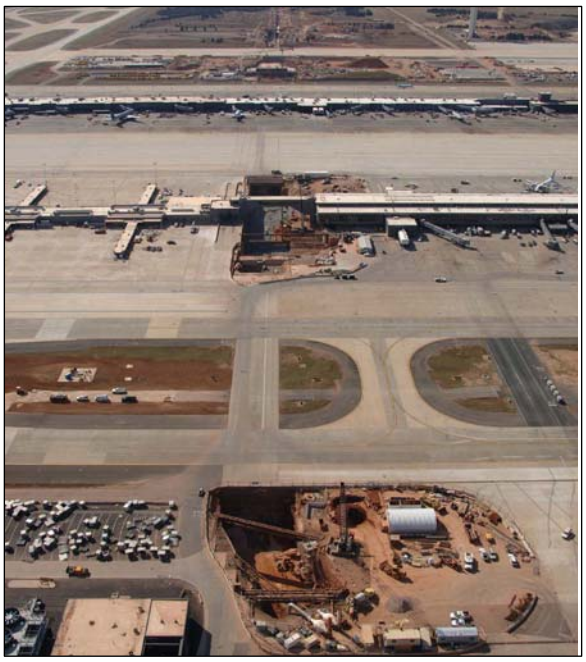
Capital construction programs the size of the AeroTrain, are not feasible without a significant amount of effort by all stakeholders. Contractor man-hours reported through 2006 are:

- APM System: 83,000 man-hours
- Main Terminal and Concourses B and C APM Stations: 2,400,000 man-hours
- East and West Tunnels and Concourse A APM Station: 2,100,000 man-hours

- Vehicle Maintenance Facility: 300,000 man-hours



Cut and Cover Tunnel and Main Terminal Station



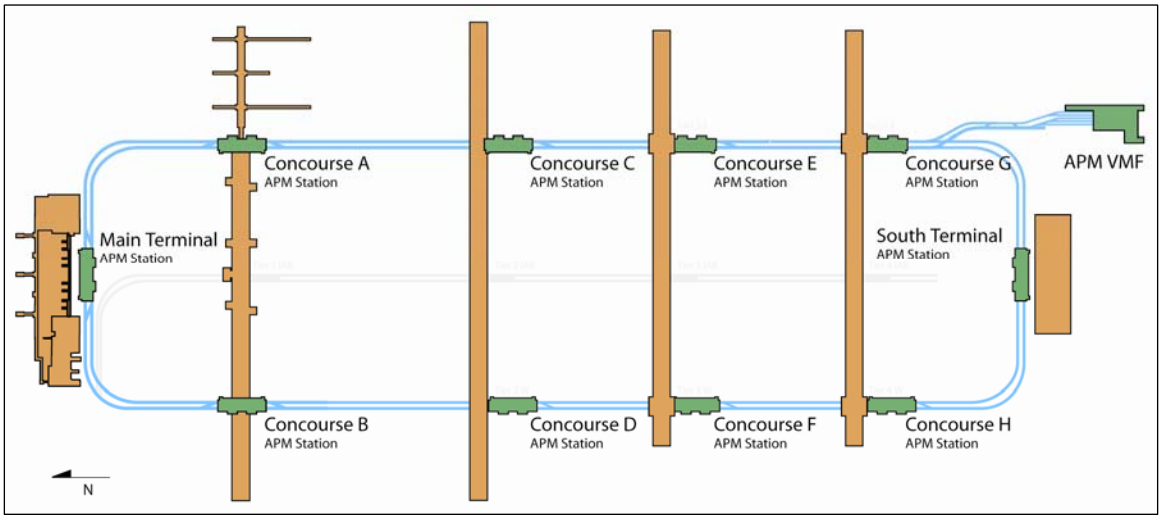
TBM Portals and Concourse A Station

BEYOND PHASE 1

Over its 45 year history, IAD has become one of the nation's largest airports. With this evolution, the airport has grown and expanded to meet the continuing demand for additional facilities.

MWAA has taken the necessary steps to maximize the future capacity of the AeroTrain system so it will not limit the physical potential of IAD and the economic potential of the community. While the initial phase of the AeroTrain system will provide the basic passenger conveyance system for the existing terminal and concourses, as future tiers are added and a second landside terminal is developed, the AeroTrain system will be expanded incrementally. The AeroTrain system is envisioned as ultimately having eight concourse stations, two landside terminal stations, 16 km (10 miles) of track, and 58 vehicles. The ultimate capacity of the system in a four-car train mode with 115 second headways is 8,950 pphpd.

Washington Dulles is in a constant state of evolution and improvement. The challenge for the Washington Metropolitan Airports Authority is to continue to keep pace with growth in air service and meet the future traveling needs of the Washington region. Planning, design, and construction of facilities at IAD has always been characterized by a philosophy of protecting for future activity levels that will be larger and different in nature than what is occurring today.



AeroTrain Alignment and Stations (Ultimate Phase)

Exhibit 1 – APM and Fixed Facility Integrated Schedule

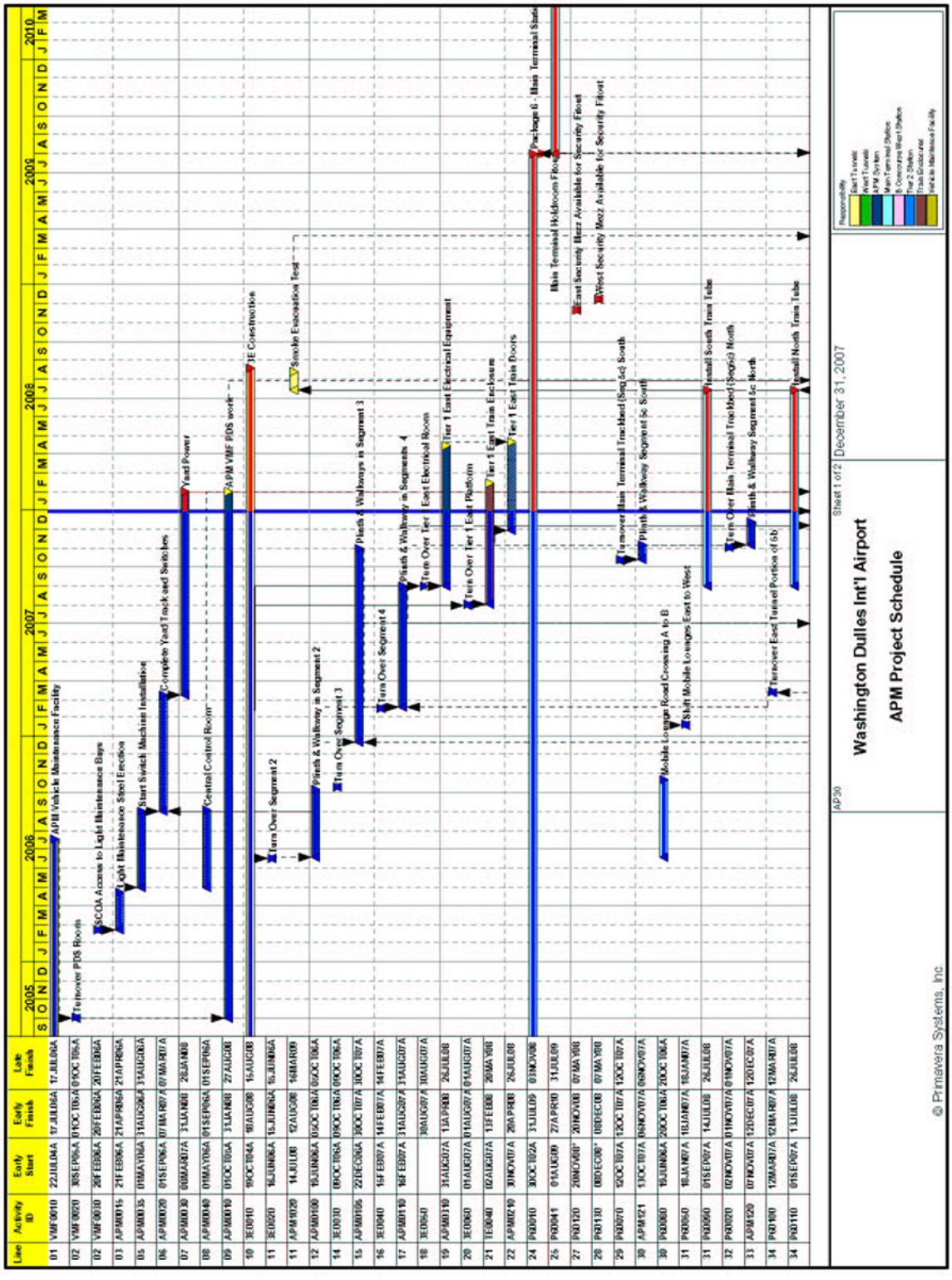


Exhibit 1 – APM and Fixed Facility Integrated Schedule

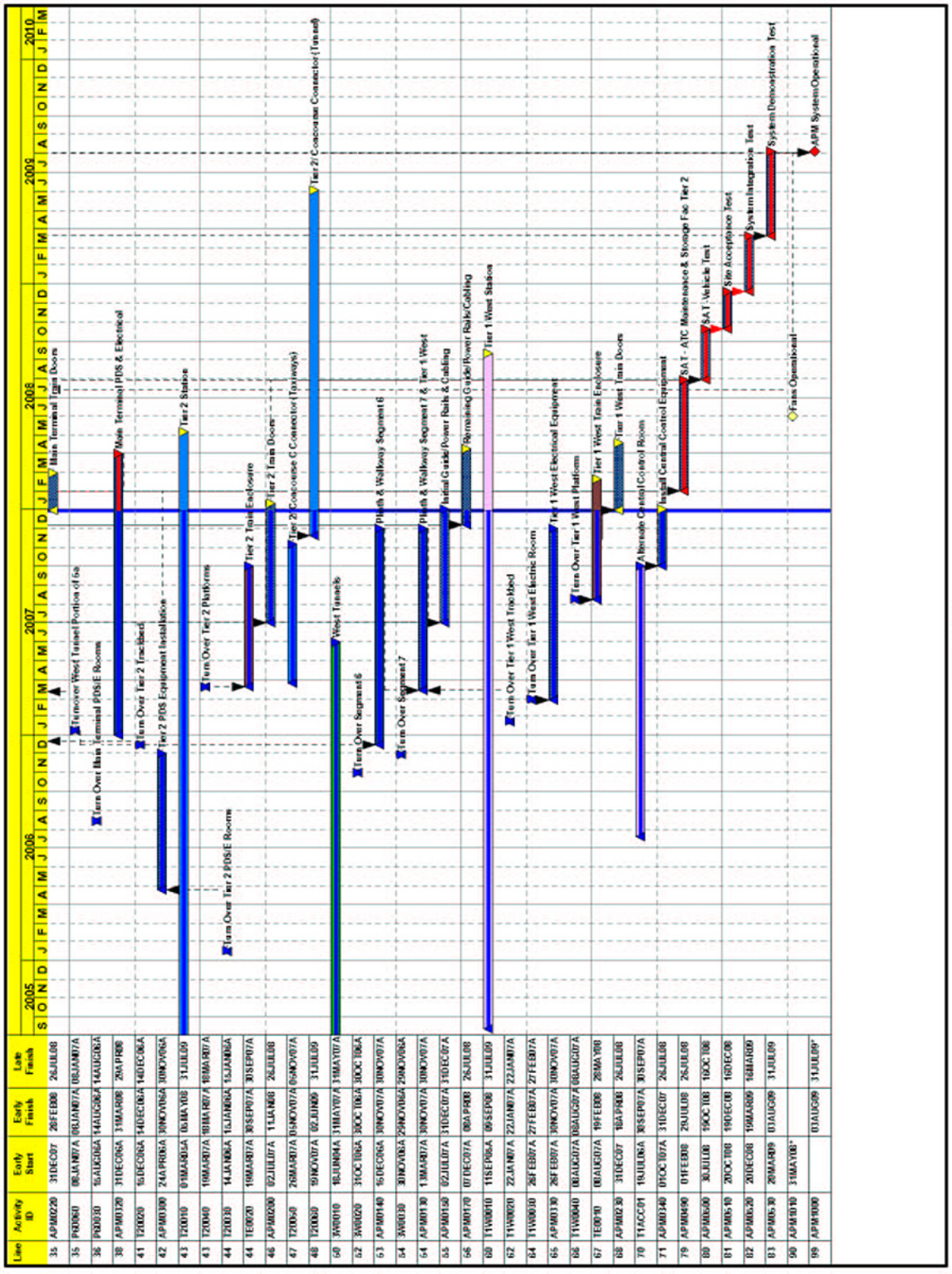


Exhibit 2 – Design/Construction Matrix

APM and Fixed Facility Design/Construction Matrix
($ millions)

Total Design $448 m / Total Constr. $1,043 m	SOM / $42 m	HOK / $20 m		KPF / $21 m		HNTB-HMM / $46 m			SCOA / $19 m			
	Main Terminal Station, Security Mezzanines and Enclosures	Concourse A Station	Concourse B Station	Concourse C Station	Concourse C Pedestrian Tunnel	Concourse Enclosures	East Tunnels	West Tunnels	Vehicle Maintenance Facility	MHI	Thales	Burns	
										Vehicles	Train Control	Guideway	Electric
Turner / $333 m	P						C	C	P	C			
ACS / $260 m	C	P				C	P		C	C			
CS / $75 m	C		C					P		C			
Balfor Beatty / $55 m			P			C		C		C			
Clark / $ 29 m				C	P								
Facchina / $109 m				P		C	C			C			
GW / $ 8 m		C	C	C		P				C			
SCOA / $174 m	C	C	C	C		C	C	C	C	P	C	C	C
MHI													
Thales									C	C	P		
LKC		C	C	C						C	C	P	P
RailWorks										C		C	
Powell										C			C

Legend: SOM - Skidmore, Owings & Merrill
HOK - Helmuth, Obata + Kassabaum
KPF - Kohn Pedersen Fox Associates
HNTB-HMM - HNTB and Hatch Mott MacDonald
SCOA - Sumitomo Corp. of America
MHI - Mitsubishi Heavy Industries
ACS - Atkinson/Clark/Shea Joint Venture
CS - Clark/Shea Joint Venture
GW - Grunley Walsh
LKC - L.K.Comstock

P = Primary design/construction responsibility

C = Coordination/integration responsibility

MULTI-ORGANIZATIONAL MANAGEMENT

From FTA's January 24, 2008, letter:
"The Project is dependent on many and complicated inter-organizational management arrangements for Project Design and implementation."

From FTA's January 28, 2008, letter:
"FTA's analysis of the Project's multi-organizational management structure and Design-Build contract -- both of which are not directly focused on in the PMOC's reviews -- highlight a number of organizational and management risks that threaten MWAA's ability to implement project scope, schedule, and budget."

MWAA has an outstanding record in working with multiple organizations in developing complex, large scope projects. During the past 10 years, MWAA has partnered with a wide range of external stakeholders with financial interests in its projects or who would become the ultimate user of these facilities. Airport projects costing over $3.5 billion during the past 10 years and additional projects budgeted at over $4 billion that are now in design or in the final stages of construction.

The Federal Aviation Administration (FAA) provides federal grants and authorizes collection of Passenger Facilities Charges (PFC) that are essential to project financing. FAA regulations require that the grantee comply with a large number of environmental and technical requirements related to each project. Stringent compliance with requirements regarding procurement procedures for design and construction services must also be met. Projects that are the recipient of this funding include runways and taxiways, terminal and concourse buildings, FAA Air Traffic Control Towers and utility systems.

Currently, a $1.3 billion subway train system, nearing completion, is partially funded by Passenger Facility Charges. Additionally, during 2007, the Department of Transportation awarded a $200 million grant for use in partially funding design and construction of the $327 million new parallel runway project (figure includes land purchase costs). To date MWAA is in full compliance with all provisions required by the FAA regarding use of these funds.

MWAA has also worked successfully with air carriers in developing airport facilities to meet public transportation needs while ensuring that critical operational requirements are met. A long term contractual agreement between MWAA and air carriers that use the airports requires continued coordination during project development and construction of projects. Facilities requirements, unique to major domestic and international carriers are incorporated into projects intended for air carrier occupancy and use. An engineer, representing airline interests, is assigned full time to facilitate inclusion of the air carrier's requirements into projects. Additionally, the MWAA engineering staff meets with air carrier technical representatives quarterly to review progress on critical projects and to address

issues needing resolution. This process has been successful in delivering facilities that meet the needs of all parties.

In constructing facilities MWAA must comply with operational and stringent security requirements mandated by the Department of Homeland Security. Specifically, MWAA designs and constructs facilities for use or regulated by the Transportation Security Administration, including passenger screening, baggage screening and airfield access. Over the last few years, requirements for making these facilities efficient and secure have grown at a fast pace. As requirements changed, MWAA worked successfully to incorporate these requirements into projects that are in design and construction, and to retrofit existing facilities to meet new requirements. Recently, this process worked well in meeting a requirement to modify the design of a new passenger screening area for the Dulles Airport Main Terminal subway train station. Additionally, MWAA is in the final stages of designing in-line baggage screening facilities for both airports. As designs progressed, the Transportation Security Agency decided to field newly developed technology for baggage screening equipment. Therefore, it was necessary to work closely with the agency in modifying the design to ensure the facility would accommodate the new equipment. Effective coordination allowed the design to proceed on schedule.

Another project MWAA is developing but that will be occupied and operated by another agency is the expanded International Arrivals Building. This facility is fully controlled by the Department of Homeland Security but is in need of a major expansion. MWAA worked closely with the department to incorporate its security requirements and efficient operations and successfully completed the design last December. Construction is scheduled to start in February 2008. Among the difficult issues needing resolution was a need to construct the $180 million addition while avoiding a reduction of facility capacity or disrupting ongoing operations. Effective collaboration successfully achieved these objectives.

The foregoing provides proof of MWAA's ability to efficiently manage the design and construction of complex and critical facilities that include numerous stakeholders and multiple agencies. Significantly, these projects continue to be completed on schedule and within approved budgets and with MWAA responsible for management oversight on work done by program management, engineering and construction consulting firms working for the Authority.

TAB 3C

LIST OF APPENDICES

3A - Excerpts from the Cooperative Agreement between Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority

3B - Project Management Procedure PM-5.06, Review of Contract Data Requirements List (CDRL) Items

3C - Full Cooperative Agreement between Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority

3D - Metropolitan Washington Airports Authority Role in the Project and Qualifications

3E - Project Management Support Services (PMSS) Consultants Role in the Project and Qualifications

3F - Washington Metropolitan Area Transit Authority Role in the Project and Qualifications

3G - Virginia Department of Transportation Role in the Project and Qualifications

3H - Fairfax County Role in the Project and Qualifications

3I - Metropolitan Washington Airports Authority, PMSS Team Responsibilities Matrix

APPENDIX 3A

Excerpts from the Cooperative Agreement

Between WMATA and MWAA

Appendix 3A

Excerpts from the Cooperative Agreement between the Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority for the Dulles Corridor Metrorail Project

- WMATA staff are fully integrated into our management organization.

  Reference WMATA/MWAA Cooperative Agreement

  Article 2, Section 1.A

  A. MWAA – WMATA Basic Roles. MWAA is the overall manager of the Dulles Corridor Metrorail Project. MWAA is also the grantee under the Full Funding Grant Agreement with the Federal Transit Administration. WMATA, as the intended owner and entity responsible for operating and maintaining the completed facilities at such time as the Project may be accepted into the ARS, will serve as a Technical Advisor to MWAA to assist with review and where specified herein, to approve the Design Build Contract work as more specifically set forth herein. MWAA will utilize WMATA to provide assistance on specialized technical matters relating to the integration of the Project into the existing WMATA system, with a particular focus on compliance with the WMATA design standards and criteria, standard operating procedures, and safety-security program plan in effect at the time of acceptance of 100% PE.

  Article 2, Section 1.C

  C. Project Office

  1. MWAA shall establish and maintain, or cause to be established and maintained, a Project office at a location in Northern Virginia and provide adequate office space for WMATA Project personnel necessary to perform the tasks provide in this Agreement. For space planning purposes, the parties estimate that WMATA will have at the maximum up to 19 people at the Project Office, principally in design, and up to 30 total on the Project. Space will be made available in field offices and trailers as appropriate. MWAA and WMATA recognize that WMATA staffing may fluctuate with the needs of the Project. All costs and expenses associated with leasing, buying, equipping, and maintaining the office, and providing for utilities hook-ups and utilities will be a Project cost and the responsibility of MWAA in accordance with Project funding agreements.

- WMATA staff are provided every design submittal and are part of over-the-shoulder reviews for designs of their facilities

Reference WMATA/MWAA Cooperative Agreement

Article 2, Section 1.

D. Dulles Corridor Metrorail Project Records

1. MWAA shall provide access to WMATA to review the Project records, including but not limited to, information on key DTP personnel, qualification of specialty design subcontractors, approved vendors, quality assurance plans and implementation, notice of non-compliant work and corrective actions, acceptance plans, procedures and test results, and other records relating to contract execution. MWAA shall develop and manage a document control system. Transfer of documents and logs into the WMATA preferred format, if different from the system selected MWAA, will be the responsibility of WMATA. Software licenses related to the selected document control systems will be obtained by MWAA and a limited number of licenses shall be provided to WMATA.

Article 2, Section 2, B

2. Technical Advisor Scope of Services during Final Design

(a) Review and provide comments on all Transit–Related Facility submittals required from the Design-Build Contractor under the Design-Build Contract. The submittals are listed in the Design-Build Contract, reference Division 1, Sections 01330 and 01331. The submittals will be made available to WMATA by MWAA or the Design-Build Contractor at MWAA's direction at a time that is closely contemporaneous to the time they are received by MWAA**.** WMATA's review comments on submittals shall be provided to MWAA within 21 days after WMATA's receipt of the design review documents and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. Transit-related submittals exclude documents pertaining to permits, schedules (except as noted Item 1 above), maintenance of traffic plans and project controls/contract compliance submittals. MWAA will obtain WMATA's acceptance of the final design submittals for compliance with WMATA's design criteria and standard drawings prior to MWAA's acceptance of each submittal or in the event of a dispute, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(b) Participate in Transit Related Facility design review meetings, coordination meetings, and workshops during Final Design. MWAA will distribute meeting minutes to WMATA of all such meetings. Respond to those action items assigned to WMATA by MWAA.

- WMATA has approval rights throughout the design process for their facilities in terms of enforcing compliance of their design criteria (unless it doesn't meet code!).

  Reference WMATA/MWAA Cooperative Agreement

  Article 2, Section 2.B.1

  (b) Continue to participate in the development of the Project by reviewing and providing comments on the compliance with WMATA Manual of Design Criteria (Release 6, dated November 2003) and WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations and WMATA requested changes that are approved for all transit related deliverables prepared by the Design-Build Contractor.

  Article 2, Section 2.B.3

  (c) Review and approve Transit-Related Facility submittals from the Design-Build Contractor. Review comments on submittals shall be provided to MWAA within 21 days after WMATA's receipt of the submittal and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. WMATA will have access to all construction submittals/shop drawings approved by the Design Build Contractor. MWAA will obtain WMATA's acceptance of Transit-Related Facility submittals for compliance with WMATA's design criteria and standard drawings prior to MWAA's acceptance of each submittal or in the event of a dispute resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

  Article 2, Section 2.B.4

  (g) Provide timely notification to MWAA of any testing issue that, if not resolved, could affect the acceptance of the Dulles Extension into the ARS.

  Article 2, Section 2, C.

  1. Approval of Final Design: WMATA will have accepted all final design submittals consistent with the provisions of Section 2(a) or, if the design submittal is in dispute, the matter has been resolved through the Expedited Disputes Procedure. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

- A well-established deviations process will put the burden on the designer to provide justification for any proposed deviations from WMATA design criteria.

  Reference WMATA/MWAA Cooperative Agreement

  Article 2, Section 2.C

  8. Approve all Deviations to WMATA Design Criteria. MWAA will not approve any deviations to WMATA Design Criteria without WMATA's prior written approval.

  Article 3,

  Section 2: Changes in WMATA Standards

  Changes to the WMATA standards and design criteria may be requested by the Design-Build Contractor, MWAA, or WMATA. WMATA shall determine, in its reasonable discretion, whether such changes are approved. If approved by WMATA, MWAA shall determine how such changes are implemented contractually and how the costs, if any, are borne by the Project. When changes are initiated by WMATA to WMATA standards and criteria during final design or construction, and such changes are primarily for reasons other than obsolescence, code compliance or safety, such changes shall be incorporated into the Project when there is a mutual agreement to do so by WMATA and MWAA, the change is evaluated against the conditions listed below and the findings are discussed between MWAA and WMATA, and a funding source has been identified, if appropriate, together with commitments as to the amount and as to when such funds will be available to MWAA. Consistent with the Comprehensive Agreement to Develop the Dulles Corridor Rapid Transit Project, WMATA will evaluate deviation requests to the WMATA Design Criteria and standards against these conditions:

  A. Will the requested Deviation be equivalent in safety with the relevant standards or plans and specifications?
  B. Is the requested Deviation recognized as good industry practice for comparable facilities?
  C. Will the requested Deviation cause a material increase in operating and life cycle costs for the completed Project?
  D. Is the requested Deviation reasonably likely to achieve the estimated capital cost savings?

- WMATA will be able to be witness inspections during construction of their facilities.

  Reference WMATA/MWAA Cooperative Agreement

  Article 2, Section 2 B.3

  (e) Participate with MWAA in its oversight of the Contractor's Quality Control/Assurance Program. Non-conformance tracking and management will be provided by MWAA. Review and assist MWAA in the resolution and final disposition of all transit related non-conformance items.

  Article 2, Section 2.B.4

  (c) Witness all integration and system performance demonstration testing relating to Transit Related Facilities and related equipment.

- That we have worked closely with WMATA to develop a comprehensive systems integration program to ensure the project is built to their standards and will successfully integrate with their system.

  Reference WMATA/MWAA Cooperative Agreement

  Recitals:

  K. WMATA will advise MWAA as necessary to ensure that the Project is constructed in accordance with the WMATA Manual of Design Criteria (Release 6, dated November 2003); WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations; WMATA requested changes that are approved by MWAA; applicable safety standards and operating requirements; and is fit for revenue service and acceptance into the ARS.

  Article 2, Section 2.B.2

  (d) Provide timely notification to MWAA of any design issue that, if not resolved, could affect the acceptance of the Dulles Extension into the ARS.

  Article 2, Section 3B3

  (f) Review, provide comments, and where acceptable approve test and inspection procedures submitted by the Design-Build Contractor for acceptance testing of all Transit Related Facilities. Review comments on test procedures shall be provided to MWAA within 21 days after receipt and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06.

  (g) Participate in witnessing the qualification and acceptance testing of the Transit Related Facilities and related equipment including qualification testing; factory

acceptance testing; PICO inspections and tests, integration tests and system performance tests.

(h) Review and approve the test results submitted by the Design-Build Contractor for acceptance tests of the Transit Related Facilities and related equipment. MWAA will obtain WMATA's concurrence on the acceptance test submittals to confirm that the test results demonstrate satisfactory performance for ultimate acceptance into the ARS or, in the event of a dispute over the test results, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove/retest the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

Article 2 Section 2.B.4

(b) WMATA shall review and comment on the Design-Build Contractor's System Integration Program Plan prior to the release of issued construction drawings for transit related facilities, specifications, test plans, procedures and testing reports. Review and provide comments on all test procedures submitted by the Design-Build Contractor for Integration and System Performance Demonstration Testing. Review comments on test procedures shall be provided to MWAA within 21 days after receipt by WMATA and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. MWAA will obtain WMATA's concurrence on acceptance of the System Integration Program Plan to confirm that the Plan adequately addresses WMATA's requirements or in the event of a dispute over the System Integration Program Plan, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(d) Review and provide comments on the acceptance test results submitted by the Design-Build Contractor for the Transit Related Facilities and related equipment for integration and system performance demonstration testing. Promptly notify MWAA of any discrepancies with the test results that should be resolved prior to acceptance of the test results. MWAA will obtain WMATA's concurrence on acceptance test result submittals to confirm that the test results presented demonstrate satisfactory performance for ultimate acceptance into the ARS or in the event of a dispute, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work, retest, and other related work as necessary and replacing that work in accordance with the dispute resolution.

- That MWAA is delivering a system to WMATA that they will be able to operate and maintain that doesn't compromise safety and security and also doesn't increase their long-term life-cycle costs

  Reference WMATA/MWAA Cooperative Agreement

  Article 2, Section 2.B.5

  (d) Assist MWAA with the administration of applicable warranties for 24 months after Substantial Completion unless another time is agreed to for specific warranties. Thereafter, MWAA will assign all warranties to WMATA, together with the relevant documentation and records, and, once accepted into the ARS, WMATA will be responsible for administration of the warranties at MWAA expense and MWAA will provide reasonable assistance when requested in enforcing warranties and providing documentation.

  Article 2, Section 2.C

  6. Subcontractor Selection. Participate in the technical evaluation and selection process for subcontracts subject to the Section 14.1.6 of the Design-Build Contact that relate to operations and safety, including Automatic Train, Traction, Fire & Intrusion Alarm Systems, Communications, and Track (rail, special track work, ties and track fasteners).

  Article 6

  <u>Condition 1. Escrow Fund for Latent Defects, Warranty Claims, and Indemnity Claims.</u>

  A. The parties recognize that, (i) under the Design-Build Contract, MWAA has agreed to limit the Design-Build Contractor's liability to five (5) years after Substantial Completion; (ii) the Design-Build Contract contemplates future work, known as "Allowances" for which the entirety of the WMATA standard warranty provisions are intended to be, but for commercial reasons may not be provided; and (iii) the Design-Build Contract further limits the Design-Build Contractor's liability for indemnity obligations under Section 26.2.4(b) of the Design-Build Contract. WMATA agrees that it is bound by the exclusions and limitations of the Design-Build Contract. Therefore, to mitigate WMATA's risks associated with these provisions MWAA will establish an escrow fund (Escrow) for the benefit of WMATA that is to be used exclusively (1) to pay the capital costs of correcting any latent defects discovered after the expiration of the five-year limitation on the Design-Build Contractor's liability, (2) to pay claims for work performed under any Allowances that would have been covered under WMATA's standard warranty, had it been provided as part of that contract, and (3) to pay claims for indemnity otherwise extinguished pursuant to Section 26.2.4(b) of the Design-Build Contract.

  B. MWAA shall create the Escrow and transfer, by one or more deposits, fifteen million dollars into the Escrow. MWAA shall fully fund the Escrow within thirty six months of transfer of the Toll Road to MWAA. All interest and other earnings in the Escrow

shall remain in the Escrow to be available to WMATA in the same manner as the principal, provided that the combined principal and interest in the fund shall not exceed 20 million dollars. Any amount in excess shall be MWAA's. The Escrow shall remain in place for 20 years after WMATA Acceptance of the Project into the ARS or until the funds therein are completely expended, which ever occurs first. After twenty (20) years from the date of WMATA Acceptance, MWAA may use all amounts in the Fund as it would use any other Toll Road revenues and no longer need hold any amounts in the Fund except those amounts as to which WMATA has asserted a Payment Claim, in accordance with the Instructions developed as provided in D below. At the termination of the twenty (20) year period, any funds remaining in the Escrow are to be returned to MWAA.

C. The creation of the Escrow is for the benefit of WMATA and in consideration of its future obligations as intended owner and operator of the Project. It is not a representation by MWAA that the Escrow is sufficient to satisfy any and all WMATA claims for latent defects, warranties, or indemnification obligations and it is not an acceptance of responsibility by MWAA for latent defects, warranties, or indemnification. MWAA shall have no obligation to WMATA for latent defects, warranties under this Agreement or the Design – Build Contract or for indemnities except as expressly agreed to in this Agreement. WMATA shall be entitled to draw on the Escrow for the purposes of this provision only. WMATA's claims are strictly against the Escrow; WMATA shall otherwise have no claims on MWAA funds or the funds of the Dulles Toll Road for correction of latent defects, warranty work, or indemnification obligations covered by this Escrow.

D. The Escrow fund is not intended to be an alternative to recovery from the Design-Build Contractor. It is to be available only after there is no other available remedy including project related insurance proceeds available to WMATA. Payment from the fund is to be in accordance with the detailed Escrow Instructions governing disbursements from the Fund attached hereto as Exhibit "5".

Article 6

Condition 10. Safety and Security.

The WMATA System Safety officer shall have completed its independent examination of the Design-Build Contractor's Safety Critical items list documentation and be ready to certify to the General Manager that the Project is ready for revenue service.

- That WMATA is protected through insurance provisions by any impacts from construction of this extension

  Reference WMATA/MWAA Cooperative Agreement

  Article 7

  Section 4: Indemnity, Additional Insurance. Neither MWAA nor the Design Build Contractor are providing any indemnity to WMATA and nothing herein is to be construed to create such an indemnity EXCEPT (i) to the extent that a specific indemnity may be provided in the Right of Entry, and (ii) WMATA shall be an Owner Indemnitee as that term is used in the Design-Build Contract subject to all of the terms and conditions of the Design-Build Contract. Further, WMATA shall be an additional named insured on policies of insurance for Commercial General Liability, Automobile Liability and Excess Liability at the coverage amounts. WMATA shall receive copies of the policies from the Design-Build Contractor's insurer(s) that certifies that WMATA is an additional named insured on these policies. These insurance policies or comparable replacements therefore shall be in place for the benefit of WMATA from Final Design Notice to Proceed through Substantial Completion. In addition, in accordance with the Design – Build contract this insurance shall apply during the performance of warranty work. The Design-Build Contractor shall also provide a special all risk property insurance policy in the amount of $ 25,000,000 per occurrence for the benefit of WMATA and MWAA to be effective during the period beginning after Substantial Completion and ending with WMATA Acceptance, provided said period shall not exceed one year. MWAA shall provide Railroad Protective Liability Coverage ($5,000,000 per occurrence, $10,000,000 in the aggregate) for this period that covers WMATA. Further, after Substantial Completion the Product and Completed Operations coverage of the Commercial General Liability insurance policy will be in effect for ten (10) years. The applicable insurance provisions of the Design - Build Contract are [Article …] These provisions may not be amended or altered in any way that affects the coverage of WMATA as provided herein without the express written approval of WMATA.

APPENDIX 3B

Project Management Procedure PM-5.06

Review of Contract Data Requirements List (CDRL) Items

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

DULLES CORRIDOR METRORAIL PROJECT MANAGEMENT PROCEDURE

TITLE: REVIEW OF CONTRACT DATA REQUIREMENTS LIST (CDRL) ITEMS 11111-000-GPP-GAMM-00025	PROCEDURE NUMBER: PM-5.06	
	REVISION: 0	DATE: 5/4/07
PREPARED BY:	APPROVED BY: RESPONSIBLE MANAGER	
APPROVED BY: PROJECT QA/QC MANAGER	APPROVED BY: PROJECT DIRECTOR	

1.0 PURPOSE

1.1 To define the process for the Metropolitan Washington Airports Authority (MWAA) reviews of CDRL items.

1.2 To define the process for the MWAA coordination of reviews of CDRL items that are conducted by external reviewing organizations including the Washington Metropolitan Area Transit Authority (WMATA), the Virginia Department of Transportation (VDOT), Fairfax County, and Loudoun County.

2.0 SCOPE

This procedure is applicable to MWAA personnel, including consultants, who coordinate and conduct reviews of CDRL items submitted by the Contractor for the Dulles Corridor Metrorail Project (Project).

3.0 REFERENCES

3.1 Design-Build Contract, Division 1, Section 01330, Contract Data Requirements List (CDRL) Information and Procedures

3.2 Design-Build Contract, Division 1, Section 01331, Revisions to WMATA Standard Technical Specifications

3.3 Project Management Procedure PM-1.02, Document Control

3.4 Project Management Procedure PM-1.07, Quality Records

4.0 DEFINITIONS

CDRL Items	Items that are required by Contract to be submitted by the Contractor to MWAA for review. These items may also be subject to review by other Project participants including WMATA, VDOT, Fairfax County, and Loudoun County. CDRL items may be individual documents (i.e. the Project Survey Plan) or a package of documents (i.e. drawings and specifications).
Accepted	CDRL items that have been reviewed by MWAA and appear to be in compliance with Contract requirements.
Accepted As Noted	CDRL items that have been reviewed by MWAA and appear to be in compliance with Contract requirements after revisions are made to areas noted in recognition of review comments.
Not Accepted	CDRL items that have been reviewed by MWAA and found to not be in compliance with Contract requirements. These items need to be revised and resubmitted for MWAA review.
Valid Comments	Comments related to CDRL items that document deviations from Contract requirements. Valid comments must cite the requirements violated and must be addressed and resolved by the Contractor.
Best Practice Comments	Comments related to CDRL items that are not deviations from Contract requirements but that may document an improvement or desired action. Best practice comments do not require resolution by the Contractor.

5.0 RESPONSIBILITIES

5.1 Project Director (PD)

The PD is responsible for:

- Assigning each CDRL item requiring review to an MWAA Responsible Manager
- Resolving disputes between MWAA, the Contractor, WMATA, VDOT, or Fairfax or Loudoun Counties regarding review comments or Contractor responses to review comments that cannot be resolved by the MWAA Project staff.

5.2 MWAA Responsible Managers (RMs)

RMs are responsible for:

- Reviewing the CDRL items submitted by the Contractor as assigned by the PD to ensure that the CDRL is complete and acceptable for further MWAA review
- Insuring that CDRL items are entered into the Project's document control system and submittal tracking system
- Identifying Lead Reviewers within their group for each assigned CDRL item
- Identifying MWAA CDRL item reviewers and external CDRL item reviewing organizations
- Resolving internal and external disputes that may arise during the review process that cannot be resolved by the Lead Reviewer. Disputes that the RM cannot resolve will be directed to the PD
- Concurring with the Lead Reviewers categorization of the CDRL item review results and transmitting these results to the Contractor.

RMs include the Deputy Director of Project Development, the Deputy Director of Design, the Deputy Director of Construction, the Manager of Project Finance, the Project QA/QC Manager, the Manager of Project Safety and Risk Management, and the Manager of Communications.

5.3 Lead Reviewers

Lead Reviewers are responsible for:

- Establishing and monitoring review schedules for internal and external reviewing organizations that allow consolidated comments to be returned to the Contractor in the allotted review time
- Transmitting CDRL items along with review instructions to internal reviewers and external reviewing organizations
- Collating review comments from external and internal reviewers
- Evaluating review results and categorizing the results as "accepted," "accepted as noted," or "not accepted" and transmitting the results to the RM for concurrence and transmittal to the Contractor
- Tracking and coordinating resolution of all comments with the Contractor and the comment originators.

- Tracking and coordinating resolution of all comments with the Contractor and the comment originators.

6.0 PROCEDURE

6.1 The CDRL review process is depicted in Attachment A. As early as possible after issuance of the Notice to Proceed with Final Design, the PD, working with the MWAA RMs, shall identify a Lead Reviewer for each CDRL item.

In addition, the PM, or his designee, will establish a review template for the documentation (in both hard copy and electronic form) of comments by CDRL reviewers that is acceptable to the Contractor. The format shall include provisions for the identification of the MWAA RM, the Lead Reviewer, the identification of each reviewer and review organization, the classification of each comment (i.e. valid or best practice), the Contract requirement violated, the Contractor's response to each comment, and the documentation of the resolution of each comment.

The CDRL review process will proceed as follows:

6.1.1 The Contractor shall submit the CDRL item in hard copy and electronic formats as specified in Division 1 Specification 01330, Section 1.06 using a transmittal form.

6.1.2 The applicable RM reviews the transmittal and the CDRL item to ensure that it complies with the requirements of Division 1 Specification 01330, Section 1.03. Transmittals not in compliance with specified requirements will be returned to the Contractor for correction at the discretion of the RM. MWAA reviewers and external reviewing organizations for each CDRL item are identified by the responsible PM.

The RM, with the assistance of the Lead Reviewer, shall track the status of each CDRL item throughout the review process. The status of reviews of CRDL items shall be made available to the Project Director and other cognizant MWAA personnel on a regular basis.

6.1.3 Upon acceptance of the CDRL item for review, the CDRL item is sent to the applicable Lead Reviewer to coordinate the review of the item by internal MWAA reviewers and external reviewing

organizations as applicable. The Lead Reviewer takes the following actions:

- Based upon the review time allocated by the Contract Data Requirements List for the item, establishes a review schedule that allows sufficient time to screen, collate, and evaluate review comments prior to transmittal to the Contractor for resolution
- Transmits the CDRL item in electronic format to internal reviewers and external reviewing organizations along with review instructions. The transmittal and review instructions shall include the following:
  - Identification of the CDRL item along with the schedule for conducting the review
  - Instructions for conducting the review. See Attachment B for instructions for MWAA reviewers and Attachment C for instructions to external reviewing organizations
  - The review template for documenting comments.

  A copy of the transmittals shall be sent to the RM to track the status of the CDRL item reviews.

6.1.4 Reviewers shall conduct and document the reviews in accordance with the applicable review instructions. Comments shall be classified by reviewers as either "valid" comments or "best practice" comments. Valid comments must reference the applicable requirements that are not being met. Other comments may be made but must be clearly identified as "best practice" comments. Comments may initially be transmitted to the Lead Reviewer electronically, but comments from external organizations shall be followed by a signed hard copy transmittal.

6.1.5 Upon receipt of the review comments from the internal reviewers and external reviewing organizations, the Lead Reviewer shall conduct the following:

- Collate the review comments, eliminating or grouping together duplicate comments to the extent possible

  Note: Instructions to external reviewing organizations request that comments from these organizations be collated and screened by these organizations prior to submittal to the Lead Reviewer

- Screen the comments to the extent possible to ensure that the comments are valid and properly classified and resolve any conflicting comments. Comments that are classified as valid comments but that do not reference or that incorrectly reference the Contract requirements that are violated will be corrected, eliminated, or re-categorized as "best practice" comments. The Lead Reviewer shall maintain a record of any valid comments that are eliminated or re-classified as best practice comments along with descriptions of the reason for elimination or re-classification. This record shall be made available to reviewers or reviewing organizations whose comments were eliminated or re-classified
- The collated comments are evaluated by the Lead Reviewer to determine if the submittal should be "accepted," "accepted as noted," or "not accepted." The Lead Reviewer should discuss the results of this evaluation with the applicable Responsible Manager prior to initiating the transmittal of the review results back to the Contractor. After agreement on the status of the submittal, the comments, along with the status of the submittal (accepted, accepted as noted, or not accepted), is electronically transmitted to the Responsible Manager for forwarding to the Contractor. The electronic transmittal to the Contractor shall be followed by a formal hard copy transmittal of the comments to the Contractor by the Responsible Manager.

6.1.6 Upon receipt of the comments, the Contractor is responsible for taking the following actions:

- Documenting the response to each "valid" comment in the electronic file of the comments and returning these responses, in both electronic and hard copy format, to the Lead Reviewer, and the RM. Responses to "best practice" comments may be made at the option of the Contractor
- For CDRL items that have been "accepted" by MWAA, the Contractor will issue the items for use with copies to MWAA. For CDRL items that are "in-progress" submittals (i.e. 60% design submittals), the Contractor will proceed with the development of the CDRL item
- For CDRL items that have been "accepted as noted," the Contractor will revise the CDRL items as necessary to resolve the comments and issue the items for use with copies to MWAA. For CDRL items that are "in-progress"

submittals, the Contractor will incorporate the comments and proceed with the development of the CDRL item

- For CDRL items that have been "not accepted," the Contractor will revise the CDRL items as noted in the response to the comments and re-submit the CDRL items for re-review as specified in Paragraph 6.1.1 above.

6.1.7 Upon receipt of the Contractor's responses to CDRL item reviews, the Lead Reviewer shall transmit the responses to the reviewers and external reviewing organizations for use in evaluating the responses and in conducting any further reviews that may be required.

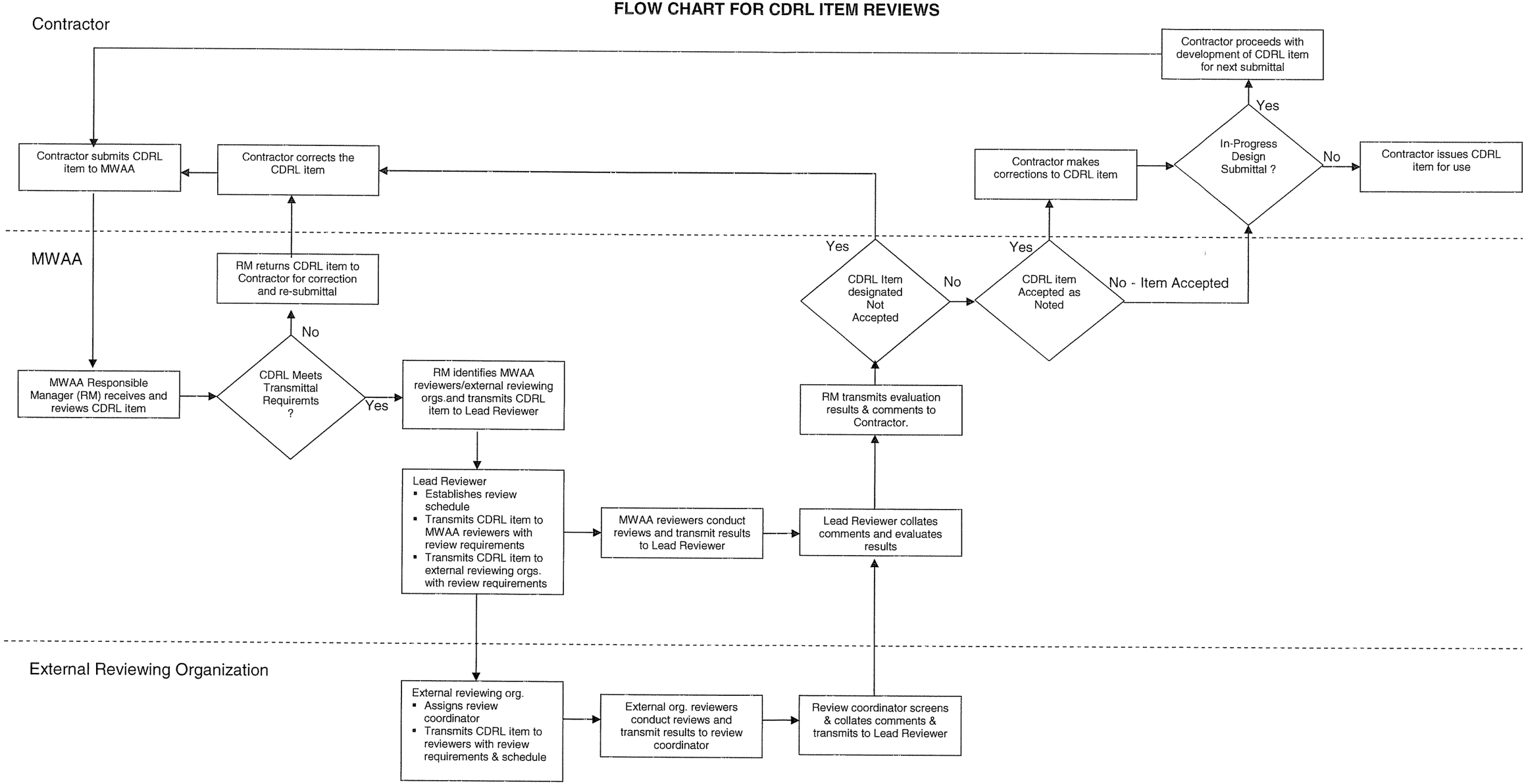
7.0 RECORDS

- Contract Data Requirements List – all revisions
- Lead Reviewer lists
- Contractor CDRL item submittals
- Lead Reviewer CDRL item transmittals to reviewers and external reviewing organizations
- CDRL item comments from external reviewing organizations transmitted to MWAA
- CDRL item comments from reviewers and external reviewing organizations transmitted to the Contractor by MWAA
- Records of valid comments eliminated or re-categorized by Lead Reviewers
- Contractor responses to CDRL item comments
- Lead Reviewer transmittals of Contractor responses to comments to reviewers and external reviewing organizations.

8.0 ATTACHMENTS

Attachment A - Flow Chart for CDRL Item Reviews
Attachment B - Instructions to MWAA Reviewers for Review of CDRL Items
Attachment C - Instructions to External Reviewing Organizations for Review of CDRL Items

FLOW CHART FOR CDRL ITEM REVIEWS



Instructions to MWAA Reviewers for Review of CDRL Items

1. CDRL reviewers should familiarize themselves with the requirements of the following documents:

   - Project Procedure PM-5.06, Review of Contract Data Requirements List (CDRL) Items
   - Specification Section 01330, Contract Data Requirements List (CDRL) Information and Procedures.

2. It is important that the reviews be conducted in the time frame specified by the Lead Reviewer in the review request that accompanies these instructions. The review schedule is based upon the review time specified by the Contract and the time needed by the Lead Reviewer to collate the comments from the persons and organizations reviewing the CDRL item.

3. Comments are to be electronically entered by the reviewer into the review template that accompanies the review request and these instructions.

4. Comments should be clear, concise, and professional and be restricted to issues that constitute deviations from Contract requirements. Contract requirements include the codes and standards, specifications, drawings, and other documents referenced in the Contract. Each Valid Comment must be accompanied by a reference to the requirement being violated. These comments should be classified by reviewers as Valid Comments (VC).

   Comments that do not constitute deviations from Contract requirements may be made but must be classified by reviewers as "Best Practice (BP) Comments (BP)." BP Comments may document an improvement, a desired action, editorial corrections, methods to save cost, etc.

5. Reviewers who have questions should not hesitate to contact the Lead Reviewer directly to discuss and resolve review issues.

6. Upon completion of the review, electronically transmit the comments back to the Lead Reviewer. The Lead Reviewer will collate the comments from all reviewers and external reviewing organizations. During this collating process, the Lead Reviewer will:

   - Screen the comments to ensure that comments are valid and properly categorized. Invalid comments or comments that do not identify the requirements violated will be eliminated or re-categorized as "Best Practice Comments." A record of comments that have been eliminated or re-categorized will be provided to the reviewers or external reviewing organizations by the Lead Reviewer

- Conflicting comments or comments that are in contradiction with each other will be discussed and reconciled with the appropriate parties
- Duplicate comments will be eliminated.

7. Contractor responses to CDRL item comments will be circulated by the Lead Reviewer to applicable reviewers and external reviewing organizations upon receipt.

Instructions to External Reviewing Organizations for Review of CDRL Items

External reviewing organizations are requested to assign a review coordinator to work with the MWAA Lead Reviewer during the review of CDRL items. This review coordinator is requested to provide the following instructions to reviewers within the external reviewing organization:

1. It is important that the reviews be conducted in the time frame specified by the MWAA Lead Reviewer in the review request that accompanies these instructions. The review schedule is based upon the review time specified by the Contract and the time needed by the MWAA Lead Reviewer to collate the comments from the persons and organizations reviewing the CDRL item.

2. Comments are to be electronically entered by the reviewer into the review template that accompanies the review request and these instructions.

3. Comments should be clear, concise, and professional and be restricted to issues that constitute deviations from Contract requirements. Contract requirements include the codes and standards, specifications, drawings, and other documents referenced in the Contract. Each Valid Comment must be accompanied by a reference to the requirement being violated. These comments should be classified by reviewers as "Valid Comments (VC)."

   Comments that do not constitute deviations from Contract requirements may be made but must be classified by reviewers as "Best Practice (BP) Comments." BP Comments may document an improvement, a desired action, editorial corrections, methods to save cost, etc.

4. Reviewers who have questions should not hesitate to contact the external reviewing organization's review coordinator with their questions. The review coordinator is encouraged to contact the MWAA Lead Reviewer directly to discuss and resolve any difficult or questionable review issues.

5. Upon completion of the review, reviewers should electronically transmit the comments back to the external organization's review coordinator. The review coordinator should screen the review comments to ensure they are valid and within scope. Duplicate comments should be eliminated. After screening, the review coordinator shall transmit the screened comments to the MWAA Lead Reviewer. This transmittal must be followed with a formal written transmittal of the comments.

6. Upon receipt of the comments from the external reviewing organization, the MWAA Lead Reviewer will collate the comments from all reviewers

and external reviewing organizations. During this collating process, the Lead Reviewer will:

- Screen the comments to ensure comments are valid and properly categorized. Invalid comments or comments that do not identify the requirements violated will be eliminated or re-categorized as "Best Practice Comments." A record of comments that have been eliminated or re-categorized will be provided to the reviewers or reviewing organizations by the Lead Reviewer
- Conflicting comments or comments that are in contradiction with each other will be discussed and reconciled with the appropriate parties
- Duplicate comments will be eliminated.

7. Contractor responses to CDRL item comments will be circulated by the Lead Reviewer to applicable reviewers and reviewing organizations upon receipt.

APPENDIX 3C

Cooperative Agreement

Between WMATA and MWAA

DATED: September 14, 2007

Cooperative Agreement

Between

The WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

and

The METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

For the

Dulles Corridor Metrorail Project

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WMATA / MWAA Cooperative Agreement
September 14, 2007

THIS AGREEMENT is made and entered into this _____ day of _____, 2007 by and between the METROPOLITAN WASHINGTON AIRPORTS AUTHORITY (MWAA), an interstate compact entity created by the Commonwealth of Virginia and the District of Columbia with the consent of the Congress, and WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY (WMATA), an interstate compact agency and a common agency and instrumentality of the District of Columbia, the Commonwealth of Virginia and the State of Maryland. Collectively MWAA and WMATA are the "Parties".

RECITALS:

A. The DEPARTMENT OF RAIL AND PUBLIC TRANSPORTATION (DRPT), an agency of the Commonwealth of Virginia, and WMATA entered into an Agreement dated April 28, 2000 under which WMATA assisted DRPT in the preparation of a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) for transit improvements in the Dulles Corridor.

B. On June 11, 2004, DRPT entered into a Comprehensive Agreement (CA) with Dulles Transit Partners, LLC (DTP) a Virginia Limited Liability Company under which DTP, ***inter alia***, agreed to perform the Preliminary Engineering (PE) and Development Work for Phase I of the Dulles Corridor Metrorail Project (the "Project").

C. DRPT and WMATA entered into a Second Agreement (Second Agreement) on April 22, 2004, to define the manner in which WMATA was to support DRPT through PE for Phase I and Phase II and to provide for reimbursement of WMATA for its costs associated with the technical management work for PE and related support activities by DRPT.

D. The WMATA Board of Directors (WMATA Board), as a part of the WMATA Compact Hearing and General Plans process, by Resolutions 2000-15, 2004-45, 2002-54, 2006-01, 2006-62, and 2007-04, ("WMATA Resolutions") amended WMATA's Adopted Regional System (ARS) so as to incorporate the proposed 23.1 mile Dulles Metrorail Extension, subject to fulfillment of eight (8) conditions precedent to the incorporation of the Dulles Metrorail Extension into the ARS. The condition precedents are:

1. Satisfactory completion of the Final Environmental Impact Statement;

2. Issuance of a Record of Decision by FTA;

3. WMATA Board approval of a final financial plan for the construction, acquisition and operation of the new facilities;

4. Execution of implementing financial commitments between DRPT and funding sources in the form of local funding agreements and the federal full funding grant agreement;

5. WMATA determination that the Project has been completed in accordance with the Final Environmental Impact Statement, the approved General Plans, all WMATA system requirements, and that the Project, as built and tested, is suitable for acceptance into the Adopted Regional System;

6. Conveyance to WMATA by DRPT of a property interest in the Project property adequate to assure WMATA of continuing control of the Project property throughout the useful life of the Project; and,

7. Any indemnification obligation from WMATA to Toll Road Investors Partnership II (TRIP II), MWAA, or any other entity associated with the Project is subject to Board approval, and any indemnification obligation provided by DRPT to TRIP II, or MWAA, or any other entity associated with the Project will be subject to a determination by WMATA that such indemnification does not create a liability or potential liability for WMATA; and

8. All land use and permitting approvals from any federal, state, or local regulatory agency shall be complete and final before WMATA's acceptance of the Project in the ARS, to ensure that jurisdictional stakeholders do not impose additional requirements upon transfer of interests to WMATA for operational purposes.

E. On December 29, 2006, MWAA and the Commonwealth of Virginia executed two agreements relating to the transfer of the Dulles Toll Road (hereinafter "DTR") to MWAA and rail construction in the Dulles Corridor. The first agreement establishes the conditions for the transfer of the DTR and associated facilities and funds to MWAA. The second agreement is in the form of a permit with a specific term that authorizes MWAA to operate and manage the DTR, and to receive and own the revenue of the DTR. As a condition of the permit MWAA is obligated, *inter alia,* to use

the DTR revenue to fund and to oversee the implementation of the Project in the corridor. MWAA is to assume the responsibility of the Sponsor of the Project for purposes of implementing the Project and for purposes of satisfying the requirements of the Federal Transit Administration for a Full Funding Grant Agreement for this Project. MWAA will also assume the responsibility for the DRPT under the CA. As part of interrelated agreements, MWAA has agreed to assume a major financing responsibility and to use the revenue from the DTR as security for the debt financing necessary to design and construct the Project. The assumption by MWAA of broad Project responsibility in the two agreements with the Commonwealth of Virginia resulted from MWAA's unique role in the Dulles Corridor and MWAA's experience with large project management, including the financing and engineering for large projects. MWAA's overall Project responsibility necessitates that it have managerial control over the Design-Build Contract that is anticipated for the construction of the Project

F. With the transfer of responsibility for the Project to MWAA, it is appropriate for MWAA and WMATA to specify WMATA's role, as intended owner and operator, during Final Design and construction of the Project.

G. MWAA and DTP have negotiated a Design Build Contract that provides for design and construction of Phase I of the Project as approved in the Record of Decision of the FTA issued on March 2, 2005 as amended on November 17, 2006, and the Record of Decision of the Federal Aviation Administration issued on July 12, 2005. MWAA will provide the day-to-day management of the Design Build Contract and has

represented to the Design Build Contractor that WMATA, as the intended owner and operator of the Project, will, provide technical assistance in the Project implementation and that MWAA intends to utilize WMATA as a Technical Advisor for the Design Build Contract as set forth herein. WMATA, as a Technical Advisor, will provide assistance to MWAA. WMATA is not a party to the Design Build Contract but is a third party beneficiary to the Design Build Contract as provided therein.

H. The Parties intend in this Agreement to specify the roles and responsibilities of WMATA with respect to the Project during the Design Build Contract for Phase I.

I. Pursuant to Resolution #99-63 adopted by the WMATA Board of Directors on October 28, 1999, WMATA is able to participate in reimbursable projects (Reimbursable Projects Policy) at the request of a WMATA Compact jurisdiction, here the Commonwealth of Virginia, provided that the funding for WMATA's services shall be established in advance based upon a budget submitted and approved for each quarter and that payments shall be made based upon invoices that reflect actual or projected levels of effort subject to adjustment to reflect actual costs expended.

J. MWAA and WMATA desire to enter into this Agreement under which WMATA will serve as a Technical Advisor to MWAA for design and construction and related support activities for Phase I of the Project as more specifically described herein, and to provide for MWAA's reimbursement to WMATA of WMATA's reasonable and allocable costs incurred in performing this function.

K. WMATA will advise MWAA as necessary to ensure that the Project is constructed in accordance with the WMATA Manual of Design Criteria (Release 6, dated November 2003); WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations; WMATA requested changes that are approved by MWAA; applicable safety standards and operating requirements; and is fit for revenue service and acceptance into the ARS.

L. In addition to its advisory role, WMATA will perform the ARS Acceptance Tasks. MWAA will reimburse WMATA for all reasonable and allocable costs incurred in performing the ARS Acceptance Tasks. This agreement identifies the actions and activities that have to occur before the WMATA Board of Directors will accept the Project into the ARS.

M. Additionally this agreement addresses the conditions under which work may be performed on the WMATA Existing System (WES). MWAA will be permitted to perform work on WMATA property after executing a Right of Entry Permit as attached hereto **as Exhibit 1.**

NOW, THEREFORE in consideration of the preceding and the agreements, terms, covenants and conditions set forth herein, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

ARTICLE 1 -- DEFINITIONS AND INTERPRETATIONS

Section 1: Definitions. The definitions and the recitals set forth herein above are incorporated by reference to the same extent and with the same force and effect as if

fully hereinafter set forth. The following are definitions of certain terms used in this Agreement:

A. "**Adopted Regional System Acceptance Tasks**" means those tasks to be performed by WMATA to meet the terms of the WMATA Board Resolutions and accept the Project into the ARS as identified on in Article 2, Section 2, C.

B. "**Agreement**" means this Cooperative Agreement between MWAA, as the successor to DRPT as the Project Sponsor, and WMATA.

C. "**Approved Deviations**" means the deviations listed on Exhibit 2.

D. "**Authorized Representative**" refers to a named position(s) for each party who has the delegated authority to act for that party in certain identified sections of this Agreement, and to receive official notices under this Agreement. Either party may name a new Authorized Representative by a written letter to the other party.

E. "**Business Day**" means any day other than a Saturday, Sunday or other day on which The New York Stock Exchange or banks are closed in New York, New York or Richmond, Virginia.

F. **"Comprehensive Agreement" (CA)** is the Comprehensive Agreement dated June 11, 2004, to develop the Dulles Corridor Rail Project as executed by DRPT, the PE and the proposed Design-Build Contractor, as modified and executed by MWAA and the proposed Design-Build Contractor.

G. **"Concurrent Non-project Activities"** means work, if any, that will not be included in the scope of Full Funding Grant Agreement with the Federal Transit Administration, but which shall be included in the Scope of the Design-Build Contract.

H. **"Days"** mean calendar days unless otherwise stated.

I. **"Design-Build Contract"** means the Design-Build Contract between MWAA and DTP as the Design-Build Contractor responsible for final design and construction services to complete Phase I of the Dulles Corridor Rail Project.

J. **"Design criteria and approved system-wide facility requirements"** means the WMATA Manual of Design Criteria (Release 6, dated November 2003) and WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations and WMATA requested changes that are approved by MWAA for use in the development of the PE for Phase I of the Dulles Corridor Rail Project.

K. **"DTP"** means Dulles Transit Partners LLC, a limited liability corporation, a signatory to the CA and contractor for Phase I Preliminary Engineering Work, the Development Work and the design build contract work.

L. **"Eligible Costs"** are defined as those costs allowed for reimbursement under Federal grants as specified in OMB Circular A-87 (as amended) including WMATA start up and utility costs.

M. **"Financial Records"** are defined as any and all original documents, which are used under OMB Circulars A-87 and A-133, as those documents may be amended from time to time (collectively, "federal guidelines"), both to support federal grant costs and to generate the invoices submitted by WMATA to either DRPT or MWAA. This includes all federal guideline documents submitted by WMATA staff, consultants, sub consultants, vendors, and suppliers working on the Project.

N. "**Latent Defect**" means a defect which could not have been discovered by observation or inspection made with ordinary care.

O. "**Operational Readiness Date (ORD)**" means a date three (3) months prior to WMATA's Acceptance Date. The period between ORD and WMATA Acceptance permits WMATA operations and maintenance personnel a period of time to simulate rail service and become familiar with the facilities and equipment before opening date.

P. "**Project**" means the Dulles Corridor Metrorail Project as approved by the Federal Transit Administration in its Record of Decision dated March 2005, as supplemented on November 17, 2006, as it may be supplemented or amended, and the Record of Decision of the Federal Aviation Administration dated July 2005, as it may be supplemented or amended.

Q. "**Project Schedule**" means the CPM schedule developed and maintained by MWAA representing the plan for the execution of the Project, initially dated March 25, 2007 the Initial Baseline Schedule and revised as set forth herein. The Project Schedule integrates project tasks for DTP, MWAA, WMATA, Fairfax County and other project participants.

R. "**Record Deliverables**," means the final, clean version of the drawings, technical reports, annotated specifications, calculations, shop drawings, system software, and other records created during the course of the Project that are complete in every detail in accordance with industry standards to correctly depict the as-constructed or as-installed condition of the Project.

S. "**Substantial Completion**" shall have the same meaning as in the Design-Build Contract.

T. "**Transit Related Facility**" shall mean any facility, structure, or element of work that WMATA will, as intended owner and operator, operate or maintain on the Project.

U. "**WMATA Acceptance**" shall mean the Project has achieved a level of completion that allows the WMATA Board to adopt the Project into the Regional Adopted System (ARS). As further provided in Article 2, Section 2 (c) below, WMATA Acceptance is to be preceded by:

1. The WMATA Safety Officer and General Manager shall have executed a Safety Certification in accordance with the WMATA Safety and Security Program Plan.
2. WMATA shall have successfully completed its Operational Readiness activities.
3. The conditions in all WMATA Resolutions governing the work for this Project have been met to the satisfaction of the Board and Opening Date has been approved.
4. All appropriate real property interests, Record Deliverables, spare parts, operation & training manuals, staff training, jurisdictional use and occupancy certificates, storm water management pond maintenance agreements and real property covenants, warranty documents and the like have been transferred to WMATA.

5. All punch list work has been completed with the revenue system limits, including elevators and escalators.

6. An Escrow Fund is established in accordance with Article 7, below.

Section 2: Interpretations. For the purposes of this Agreement, except as otherwise expressly provided or unless the context otherwise requires:

A. All references in this instrument to designated Articles, Sections, and other subdivisions are to the designated Articles, Sections and other subdivisions of this instrument as originally executed. The words "herein", "hereof", "hereunder"," herewith", and other words of similar import refer to this Agreement as a whole and not to any particular Article, Section or other subdivision hereof.

B. The terms defined in this Article have the meanings assigned to them in this Article and include the plural as well as the singular.

C. The headings and captions used in this Agreement are for convenience of reference only, shall not be deemed to be part of this Agreement for any other purpose, and shall not define or affect the meaning, scope or intent of the provisions hereof.

ARTICLE 2 -- DESIGN- BUILD CONSTRUCTION & DEVELOPMENT

Section 1: Project Roles.

A. MWAA – WMATA Basic Roles. MWAA is the overall manager of the Dulles Corridor Metrorail Project. MWAA is also the grantee under the Full Funding Grant Agreement with the Federal Transit Administration. WMATA, as the intended owner and entity responsible for operating and maintaining the completed facilities at such time as the Project may be accepted into the ARS, will serve as a Technical Advisor to MWAA to assist with review and where specified herein, to approve the Design Build Contract work as more specifically set forth herein. MWAA will utilize WMATA to provide assistance on specialized technical matters relating to the integration of the Project into the existing WMATA system, with a particular focus on compliance with the WMATA design standards and criteria, standard operating procedures, and safety-security program plan in effect at the time of acceptance of 100% PE.

B. Technical Communication Protocols and Contractual Authority

1. MWAA shall have sole managing and contractual authority for the Design Build Contract work to ensure the Design-Build Contractor's compliance with the Contract. MWAA shall give consideration to WMATA's advice. WMATA, as the intended owner and operator, will ultimately determine whether the Project is accepted into the ARS. The Design-Build Contractor

will interface with MWAA on a contractual basis and technical basis. MWAA may establish technical communication protocols that will involve direct technical interface and communication between the Design-Build Contractor and WMATA, other authorized technical representatives of MWAA and WMATA, and directly between MWAA and WMATA. WMATA will provide advice on technical matters including but not limited to WMATA's Manual of Design Criteria (Release 6, dated November 2003); WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations; and WMATA requested changes that are approved by MWAA. WMATA will also provide advice and ensure that the final design is consistent with the Phase 1 Preliminary Engineering 100% Design Submittal (dated February 28, 2006), including the agreed upon resolution of all WMATA review comments for all of the PE submittals as referenced in WMATA Letters dated April 12, 2006 and April 13, 2006 and the WMATA Manual of Design Criteria, Release 6, November 2003, with any WMATA Approved Deviations constitute the WMATA approved design. The Basis of Design Report includes additional design evolution on elements of the Project that had not been advanced to the 100% PE level of design. During Final Design, MWAA will ensure that the design for elements of the Project not **approved** prior to February 28, 2006 will be designed in accordance with WMATA's Design Criteria and Standard Drawings, as modified by Approved Deviations, and that all final designs for Transit Related Facilities will be provide to WMATA for review and approval.

2. Prior to entry on to WMATA property to perform work on the WES, MWAA shall execute a Right of Entry Agreement, [with the Design-Build Contractor executing the Acknowledgement. The Right of Entry Agreement as] attached hereto as Exhibit 1. Consistent with the terms of the Right of Entry Agreement, the Design-Build Contract Sections 01113A and 01140, and the limitations inherent in working on an operating system, WMATA will provide access to MWAA, the Design Build Contractor, its sub contractors and employees and consultants of MWAA on those portions of the WMATA system or property necessary to implement the Design-Build Contract work. As more fully set forth in the Right of Entry Agreement, the Design Build Contractor shall provide insurance coverage naming WMATA an additional named insured as specified therein prior to entry onto WMATA property. MWAA shall exercise its oversight responsibility in close coordination with WMATA to achieve consistency with WMATA operating, safety and security standards that are referenced in the Design-Build Contract and to avoid contract delays and changes. However, MWAA agrees and acknowledges that access to the WMATA system is subject to WMATA's on-going safety, security, and operational needs and that WMATA may limit or deny access to MWAA or, the Design-Build Contractor where WMATA, in its sole, but reasonable discretion, determines that access to the WES will impair revenue operation or interfere with WMATA's on-going safety, security, operational, and maintenance needs. WMATA will take reasonable measures to coordinate with

MWAA and the Design-Build Contractor to anticipate where and when access to the WES will impair WMATA's operations, operational safety or planned maintenance activities and where possible to mitigate that impairment without denying or unduly limiting access. Notwithstanding anything herein, WMATA shall have no liability to MWAA or the Design-Build Contractor for failing to provide access to the WMATA system.

C. Project Office

1. MWAA shall establish and maintain, or cause to be established and maintained, a Project office at a location in Northern Virginia and provide adequate office space for WMATA Project personnel necessary to perform the tasks provide in this Agreement. For space planning purposes, the parties estimate that WMATA will have at the maximum up to 19 people at the Project Office, principally in design, and up to 30 total on the Project. Space will be made available in field offices and trailers as appropriate. MWAA and WMATA recognize that WMATA staffing may fluctuate with the needs of the Project. All costs and expenses associated with leasing, buying, equipping, and maintaining the office, and providing for utilities hook-ups and utilities will be a Project cost and the responsibility of MWAA in accordance with Project funding agreements.

2. The project office will also be used to conduct Project team meetings, technical committee meetings, and any other meeting supporting the Project. The Project office will be established, equipped,

and maintained by MWAA for all Project staff, including, but not limited to, T-1 Line, computers, computer communication networks (internal and external), general office and specialty software, required building security items, telephones, facsimile machines, and office supplies necessary to fully support WMATA core project personnel in performing its technical advisory services. However, MWAA shall not be responsible for the provision of cell phones, personal or PDA devices, or motor vehicles to WMATA personnel but shall reimburse WMATA for the actual reasonable Project related cost incurred for these resources. Space in the field construction trailers will be provided by the Design-Build Contractor for use by at least one WMATA staff at each office trailer to use during construction to write reports, make phone calls, and seek shelter from the weather.

D. Dulles Corridor Metrorail Project Records

1. MWAA shall provide access to WMATA to review the Project records, including but not limited to, information on key DTP personnel, qualification of specialty design subcontractors, approved vendors, quality assurance plans and implementation, notice of non-compliant work and corrective actions, acceptance plans, procedures and test results, and other records relating to contract execution. MWAA shall develop and manage a document control system. Transfer of documents and logs into the WMATA preferred format, if different from the system selected by

MWAA, will be the responsibility of WMATA. Software licenses related to the selected document control systems will be obtained by MWAA and a limited number of licenses shall be provided to WMATA.

2. Information of a proprietary or confidential nature that is provided to WMATA by MWAA or the Design Build Contractor shall be retained in confidence and not released without the agreement of MWAA.

3. In addition, upon the transfer of any warranty to WMATA, MWAA shall provide all relevant documents and supporting data to WMATA for warranty administration.

Section 2: WMATA Scope.

For the Project, WMATA's scope is divided into three major categories:

A. CAPITAL EQUIPMENT DESIGN, PROCUREMENT INSTALLATION AND COMMISSIONING

B. TECHNICAL ADVISOR TO MWAA

C. INTENDED FUTURE OWNER AND OPERATOR

Each is described herein:

A. CAPITAL EQUIPMENT DESIGN, PROCUREMENT, INSTALLATION AND COMMISSIONING.

1. Subject to the timely funding by MWAA, WMATA shall design, procure, install and commission the following equipment, systems and hardware/ software:

(a) Railcars

WMATA shall manage and be responsible for the design, procurement, testing and commissioning of the railcars for the Project.

WMATA shall procure sixty-four railcars, unless WMATA agrees to a different number of railcars and the FTA approves a Fleet Management Plan with that lesser number of rail cars.

(b) Automatic Fare Collection (AFC) and Parking Revenue Control Equipment

WMATA shall complete the following tasks associated with the AFC equipment at the passenger stations and for the parking revenue control system equipment at the Wiehle Avenue Parking Garage.

(1) Provide MWAA with the technical information required for this equipment. Technical information includes dimensions, weights, environmental requirements, power requirements, control wiring requirements, and any other information necessary to coordinate the interface of the WMATA supplied equipment with the designs for the

Project's passenger stations and the Wiehle Ave. Parking Garage.

(2) Procure the AFC equipment for the passenger stations and the parking revenue control equipment for the Wiehle Ave. Parking Garage, and complete the installation of the equipment. MWAA will provide for the design and installation of the cable ducts and conduits identified by WMATA for the connection of the AFC equipment to the station operator's kiosk.

(3) Complete all commissioning and acceptance testing of the AFC and parking revenue control systems.

(c) Communications Backbone

WMATA shall procure, install and commission a sufficient number of optical fibers between WMATA's Operations and Control Center, which is currently located at the Jackson Graham Building and a meeting point facility located in the vicinity of the West Falls Church Station and Yard and the K-N junction that is technically satisfactory and mutually agreeable to WMATA and MWAA, and preferably outside of the existing ARS.

(d) Operations and Control Center Modifications

WMATA shall procure and install all database updates and all other hardware, firmware, software, workstations, consoles, computer

equipment, furniture, displays, etc. required at the Operations Control Center to accommodate the addition of the Project into the existing WMATA System. MWAA and WMATA will work jointly to provide the software interface data required by WMATA and the Design Build Contractor to update the Rail Operations Computer System (ROCS) or its successor system and other computer-based control systems on a timely basis. To assist in the coordination of these interfaces, design data for the OCC and related communications systems will be submitted by WMATA to MWAA for review and comment.

(e) West Falls Church Yard and Service/Inspection (S&I) Building

The West Falls Church Yard and S&I Building will be expanded as defined in the Design-Build Contract, to support this work. WMATA shall provide MWAA with the technical specifications for the truck and body hoists, bridge crane and turntables that will provided for this facility. This information will be provided as required to complete the design of the facility per the Final Baseline Schedule. WMATA will also be responsible for all temporary and permanent reconfigurations of the Perimeter Security System at the West Falls Church Yard.

(f) Signage and Graphics

WMATA shall design, fabricate and install in existing stations new signage, wayside graphics and maps to reflect new revenue line and stations in the Project.

(g) Arts-in-Transit

WMATA shall manage and coordinate the Arts-in-Transit program for Phase 1 and provide MWAA with interface information for the arts program in timely manner so as not to delay the completion of the designs for the Project's passenger stations.

(h) Non-Revenue Vehicles, Equipment and Furniture

WMATA shall manage the procurements for all non-revenue vehicles, equipment and furniture for the Project and schedule the delivery of the equipment to the Project to prior to Substantial Completion.

2. Funding for the acquisition and installation of the above listed equipment shall be provided in advance and in a timely manner and in accordance with the approved budget to ensure the provision of the above listed equipment, systems and hardware/software is coordinated with and accomplished in accordance with the Project's overall schedule and that the design interface information, equipment supply, equipment installation, hardware and software modifications at the Rail Operations Control Center (OCC) and commissioning of the WMATA supplied capital

equipment are coordinated with the Design-Build Contractor's work on the Project.

3. WMATA will prepare and submit for MWAA review and approval a Critical Path Method (CPM) schedule denoting the tasks, durations and inter-relationships for WMATA's scope of work on the Project. The approved schedule input from WMATA will be integrated into the overall Project Schedule by MWAA. WMATA will provide schedule updates no later than the last working day of each month with progress calculated through the 25th day of the month.

4. WMATA will develop a Bus and Rail Fleet Management Plan for submission to and review by the FTA during Final Design and explain the operating parameters used by WMATA to develop the Fleet Management Plan as it directly affects the design and costs of the Project.

5. Not less than twelve (12) months prior to the ORD, WMATA shall provide MWAA with a detailed budget for the equipment required to operate and maintain the Project commencing with opening day service, such as snow removal equipment. MWAA shall transfer to WMATA nine (9) months prior to ORD the funding necessary for WMATA to initiate procurement of all equipment required to operate and maintain the Project commencing with opening day service. Funding shall be based on WMATA's projected cost of these items under Project cost category for Force Account and Work Equipment. MWAA shall review and approve

the funding as part of the budget process or as an amendment to the budget.

B. TECHNICAL ADVISOR TO MWAA.

WMATA shall provide Technical Advisory Services to MWAA during the Project as described below:

1. Technical Advisory Scope of Services during the Pre-Final Design NTP Phase.

(a) Review and provide comments on the Contractor's Design-Build Baseline Schedule to ensure coordination with system acceptance and testing, WMATA-performed activities, and delivery of WMATA-supplied equipment, such as fare collection, railcars, fiber optics, ROCS upgrade, etc.

(b) Continue to participate in the development of the Project by reviewing and providing comments on the compliance with WMATA Manual of Design Criteria (Release 6, dated November 2003) and WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations and WMATA requested changes that are approved for all transit related deliverables prepared by the Design-Build Contractor.

(c) Review and process to resolution any outstanding Requests for Deviations resulting from the PE Phase of the Project based upon the criteria in Article 3, Section 3, Paragraph B and approve or

disapprove any new deviations that are identified or requested prior to Final Design based upon the criteria in Article 3, Section 3, Paragraph B.

(d) Review and provide comments on the preliminary and final Operating Financial Plan to enter Final Design and execute a Federal Full Funding Grant Agreement.

(e) Consistent with the Resolution(s), seek WMATA Board approvals necessary to support all FTA requirements.

2. Technical Advisor Scope of Services during Final Design

(a) Review and provide comments on all Transit–Related Facility submittals required from the Design-Build Contractor under the Design-Build Contract. The submittals are listed in the Design-Build Contract, reference Division 1, Sections 01330 and 01331. The submittals will be made available to WMATA by MWAA or the Design-Build Contractor at MWAA's direction at a time that is closely contemporaneous to the time they are received by MWAA. WMATA's review comments on submittals shall be provided to MWAA within 21 days after WMATA's receipt of the design review documents and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. Transit-related submittals exclude documents pertaining to permits,

schedules (except as noted Item 1 above), maintenance of traffic plans and project controls/contract compliance submittals. MWAA will obtain WMATA's acceptance of the final design submittals for compliance with WMATA's design criteria and standard drawings prior to MWAA's acceptance of each submittal or in the event of a dispute, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(b) Participate in Transit Related Facility design review meetings, coordination meetings, and workshops during Final Design. MWAA will distribute meeting minutes to WMATA of all such meetings. Respond to those action items assigned to WMATA by MWAA.

(c) Following the process developed during the PE Phase of the Project, reference Article 3, Section 3, Paragraph B below, review and resolve requests for changes to WMATA design criteria or standard drawings arising during Final Design.

(d) Provide timely notification to MWAA of any design issue that, if not resolved, could affect the acceptance of the Dulles Extension into the ARS.

(e) Coordinate through MWAA, the provision of all technical interface information for the WMATA provided equipment, systems and hardware/software as required by the Design-Builder Contractor to perform their design scope on the dates identified in the Design-Build Baseline Schedule.

(f) Per the Design-Build Contract, Division 1, Sections 01210 and 01820, review the Contractor's proposed listing for spare parts, special tools, test equipment, consumables and personnel training. Provide MWAA with WMATA's selections for both parts and training in the time frame defined in the Baseline Design-Build Schedule, but not less than 21 days after receipt by WMATA.

(g) Review and accept the Right-of-Way Plans confirming that the minimum Right-of-Way for transit operation and maintenance is being provided.

3. Technical Advisory Scope of Services during the Construction Phase.

(a) Participate in coordination, pre-activity and progress and schedule update meetings and receive meeting minutes of all such meetings. Respond to those items of action assigned to WMATA by MWAA.

(b) Following the process developed during the PE Phase of the Project, reference Article 3, Section 3, Paragraph B below, review

and resolve requests for changes to WMATA Design Criteria or standard drawings arising during the construction.

(c) Review and approve Transit-Related Facility submittals from the Design-Build Contractor. Review comments on submittals shall be provided to MWAA within 21 days after WMATA's receipt of the submittal and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. WMATA will have access to all construction submittals/shop drawings approved by the Design Build Contractor. MWAA will obtain WMATA's acceptance of Transit-Related Facility submittals for compliance with WMATA's design criteria and standard drawings prior to MWAA's acceptance of each submittal or in the event of a dispute resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(d) Provide timely notification to MWAA of any construction issue that, if not resolved, could affect the acceptance of the Dulles Extension into the ARS. WMATA staff will conduct periodic

quality audit inspections of major construction elements of work to ensure that all workmanship and materials comply with the approved final design and Issued for Construction drawings and technical specifications. Any such inspection by WMATA shall not relieve the Design-Build Contractor of the responsibility of providing quality measures to assure that the work strictly complies with the Design-Build Contract requirements. No inspection or test by WMATA shall be construed as constituting or implying acceptance.

(e) Participate with MWAA in its oversight of the Contractor's Quality Control/Assurance Program. Non-conformance tracking and management will be provided by MWAA. Review and assist MWAA in the resolution and final disposition of all transit related non-conformance items.

(f) Review, provide comments, and where acceptable approve test and inspection procedures submitted by the Design-Build Contractor for acceptance testing of all Transit Related Facilities. Review comments on test procedures shall be provided to MWAA within 21 days after receipt and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06.

(g) Participate in witnessing the qualification and acceptance testing of the Transit Related Facilities and related equipment including qualification testing; factory acceptance testing; PICO inspections and tests, integration tests and system performance tests.

(h) Review and approve the test results submitted by the Design-Build Contractor for acceptance tests of the Transit Related Facilities and related equipment. MWAA will obtain WMATA's concurrence on the acceptance test submittals to confirm that the test results demonstrate satisfactory performance for ultimate acceptance into the ARS or, in the event of a dispute over the test results, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove/retest the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(i) Review and approve the Site Specific Work Plans (SSWPs) submitted by the Design-Build Contractor for all work on WMATA property, including the Project Tie-In at the junction with the K Line and for the Project work at the West Falls Church Yard. If the SSWP is deficient as initially submitted, identify specific problems and required remedies so that a revised SSWP complies with

WMATA's requirements. Consistent with WMATA's operational safety and security requirements, provide reasonable access to these sites for the Design-Build Contractor to perform this work and provide all necessary escort and work zone protection in support of this work per existing WMATA policies and procedures. WMATA shall review and approve work and equipment proposed by the Design-Build Contractor for use on WMATA existing right-of-way to assure that the equipment meets WMATA's safety standards and will not foul or damage existing facilities or equipment belonging to WMATA. If the Design-Build Contractor is unable to supply equipment complying with WMATA safety standards, is using equipment that is not suitable for use within the WMATA operating envelope or otherwise needs to use a specialized piece of equipment which WMATA owns, WMATA will undertake to make its equipment available to MWAA on a reimbursable basis for the Design-Build contractor's use. Use of such work equipment is not included in the budget for this Agreement.

(j) When all prerequisites necessary to safely complete the Clearance Tests are satisfied per the MWAA/WMATA agreed upon Test Plan and Test Procedure, provide the Clearance Train and witness the Clearance Test required prior to Dynamic Testing.

Participate with MWAA in the inspection and resolution of any conflicts resulting from this test.

4. Integration Testing and System Performance Demonstration.

(a) Participate in coordination, progress and schedule update meetings. MWAA will distribute meeting minutes of all such meetings. Respond to those items of action assigned to WMATA by MWAA.

(b) WMATA shall review and comment on the Design-Build Contractor's System Integration Program Plan prior to the release of issued construction drawings for transit related facilities, specifications, test plans, procedures and testing reports. Review and provide comments on all test procedures submitted by the Design-Build Contractor for Integration and System Performance Demonstration Testing. Review comments on test procedures shall be provided to MWAA within 21 days after receipt by WMATA and will conform to the MWAA procedure for completing such reviews as defined in the most current revision of the Dulles Corridor Metrorail Project Management Procedure, No. PM-5.06. MWAA will obtain WMATA's concurrence on acceptance of the System Integration Program Plan to confirm that the Plan adequately addresses WMATA's requirements or in the event of a dispute over the System Integration Program Plan, resolve the

dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

(c) Witness all integration and system performance demonstration testing relating to Transit Related Facilities and related equipment.

(d) Review and provide comments on the acceptance test results submitted by the Design-Build Contractor for the Transit Related Facilities and related equipment for integration and system performance demonstration testing. Promptly notify MWAA of any discrepancies with the test results that should be resolved prior to acceptance of the test results. MWAA will obtain WMATA's concurrence on acceptance test result submittals to confirm that the test results presented demonstrate satisfactory performance for ultimate acceptance into the ARS or in the event of a dispute, resolve the dispute through the Expedited Disputes Procedures. If MWAA proceeds prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work, retest, and other related work as necessary and replacing that work in accordance with the dispute resolution.

(e) Following the process developed during the PE Phase of the Project, reference Article 3, Section 3, Paragraph B below, review and resolve requests for changes to the WMATA Design Criteria or standard drawings arising during the testing phase of the Project.

(f) When all pre-requisites for Dynamic Testing are completed and accepted, review and provide comments the Design-Build Contractor's request for Dynamic Testing Readiness Certification.

(g) Provide timely notification to MWAA of any testing issue that, if not resolved, could affect the acceptance of the Dulles Extension into the ARS.

(h) Manage the transport to the Project and the on-site utilization of WMATA railcars for Dynamic Testing and the Performance Demonstration Test by providing vehicles, operators, Operations Control Center (OCC) staff, and all other support staff. WMATA will perform a Daily Safety Test (DST) of each rail car prior to transporting the vehicle to the site for the Design-Build Contractor's Dynamic Testing. Within 72 hours of notification by MWAA of the need for safe braking tests, WMATA will modify the requested number of married pair vehicles to meet the Dynamic Test requirements in accordance with the approved safe brake test procedure. WMATA will not be responsible for the daily vehicles calibration, power inverters for

test equipment, test fixtures or circuit board modifications to extract vehicle data for Design-Build Contractor test equipment or similar needs to support dynamic testing and data gathering. WMATA agrees to provide the vehicles, operators and other necessary personnel, but only to the extent budgeted in the TAB. In the event that MWAA or the Design-Build Contractor require additional hours of testing not budgeted in the TAB, MWAA will be required to reimburse WMATA for those additional hours of railcar and personnel time and such additional hours shall not be subject to the overrun provisions in Article 4 below. MWAA shall provide advance notice to WMATA and comply with established WMATA procedures when requesting this support for the Project. WMATA shall make reasonable efforts to timely provide the rail cars, other equipment and personnel for the tests. MWAA agrees that the operation of WMATA's system shall take priority over providing railcars and operations personnel, and, in the event of a conflict between the tests and WMATA's operational requirements, if WMATA, in its reasonable discretion, determines that such railcars or personnel are required to support operation of the WMATA system, WMATA shall have the right to cancel, postpone, or reschedule the test without incurring liability

(i) Review and provide comments on the Contractor's System Safety and Security submittals.

(j) In cooperation with MWAA, review and provide comments on the Design-Build Contractor's Substantial Completion Certificate. Conduct joint inspection with the Design-Build Contractor, MWAA, and others as necessary to document punch list work that does not conform to the contract documents.

(k) Complete the designs, procurements, installations and commissioning of the fiber optic communications system and OCC updates to support the Project schedule.

(l) Manage the design, fabrication, installation and commissioning of AFC equipment and communications backbone.

5. Post Substantial Completion.

(a) Conduct the Operational Readiness Activities. MWAA will provide support to WMATA for the Operational Readiness Activities.

(b) If not completed prior to Substantial Completion, complete all testing and commissioning tasks for Project equipment provided by WMATA.

(c). In conjunction with WMATA's policies and procedures and the attached Right of Entry, provide access to the Design-Build Contractor for the purpose of completing punch list items warranty

work and conducting joint inspections with the Design-Build Contractor, MWAA, and others as necessary to document the completion of final punch list work and warranty work. MWAA agrees that the operation of WMATA's system shall take priority over the access by the Design-Build Contractor for punch list and warranty work, and in the event of a conflict between the warranty work and punch list work and WMATA's operational requirements, WMATA, in its reasonable discretion, shall have the right to complete the warranty work or punch list work at the expense of MWAA.

(d) Assist MWAA with the administration of applicable warranties for 24 months after Substantial Completion unless another time is agreed to for specific warranties. Thereafter, MWAA will assign all warranties to WMATA, together with the relevant documentation and records, and, once accepted into the ARS, WMATA will be responsible for administration of the warranties at MWAA expense and MWAA will provide reasonable assistance when requested in enforcing warranties and providing documentation.

C. INTENDED FUTURE OWNER AND OPERATOR

WMATA must perform certain tasks necessary for WMATA to accept the Project into the ARS (ARS Acceptance Tasks). These are:

1. Approval of Final Design: WMATA will have accepted all final design submittals consistent with the provisions of Section 2(a) or, if the design submittal is in dispute, the matter has been resolved through the Expedited Disputes Procedure. If MWAA proceeds with construction of disputed work prior to resolution of this dispute, MWAA assumes the risk of having to remove the disputed work and other related work as necessary and replacing that work in accordance with the dispute resolution.

2. Approve Dynamic Readiness Certificate. MWAA shall not issue a Certificate of Dynamic Readiness pursuant to Section 17.3 of the Design-Build Agreement, until such time, as WMATA, in its reasonable discretion, approves and signs the Dynamic Readiness Certificate.

3. Operational Readiness Testing. Determine whether the Project is ready for Operational Readiness Testing, conduct the Operational Readiness Testing, and determine the ORD.

4. Develop Punchlist: Jointly develop the punch list prior to MWAA issuing the Certificate of Substantial Completion pursuant to Section 17.4 of the Design Build Agreement.

5. SSWP. Approve all Site Specific Work Plans (SSWPs) for all work performed on WMATA property or within the existing WMATA System, including the Project tie-in at West Falls Church junction and the Project work to be performed in the West Falls Church Yard.

6. Subcontractor Selection. Participate in the technical evaluation and selection process for subcontracts subject to the Section 14.1.6 of the Design-Build Contact that relate to operations and safety, including Automatic Train, Traction, Fire & Intrusion Alarm Systems, Communications, and Track (rail, special track work, ties and track fasteners).

7. Right of Way Plans. Approve the Right-of-Way Plans prior to acquisition of the transit related property to ensure that there is a minimum Right-of-Way necessary for transit operation and maintenance.

8. Approve all Deviations to WMATA Design Criteria. MWAA will not approve any deviations to WMATA Design Criteria without WMATA's prior written approval.

9. Approve Non-conforming item. Approve final disposition of all Transit Related Facility items that are not in conformance with the contract or WMATA Design Standards.

10. Safety Certification. Prepare Safety Certification consistent with WMATA's System Security and Safety Certification process. **Exhibit "3".**

11. Complete ATC Room Certification. Prior to Substantial Completion, WMATA's Automatic Train Control Team shall witness tests performed by the Design Build Contractor regarding the Automatic Train Control (ATC) system. After Substantial Completion, WMATA's Automatic Train Control Certification Team shall independently validate and certify all vital train control logic as part of the WMATA Final Acceptance & Safety Certification Program. If there are any nonconforming work or punchlist items, they will be provided to MWAA for corrective action prior to WMATA's Final Acceptance.

12. WMATA Acceptance. Determine whether the system is ready for WMATA Acceptance and regardless of whether MWAA has issued a Certificate of Final Acceptance, determine whether all the conditions necessary for WMATA Acceptance as provided in Article 6 have been satisfied.

D. Art In Transit

1. To the extent that MWAA incorporates artwork into Phase 1 of the Project, the artwork will be selected pursuant to WMATA Art In Transit Program.

2. WMATA will manage the Art In Transit Program as part of Technical Advisor responsibilities.

ARTICLE 3 -- APPLICABLE STANDARDS.

Section 1: Final Design

WMATA Manual of Design Criteria (Release 6, dated November 2003) and WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations and WMATA requested changes that are approved by MWAA for use in the development of the PE for Phase I of the Dulles Corridor Rail Project shall be used for the Final Design in the Design Build Contract.

Section 2: Changes in WMATA Standards

Changes to the WMATA standards and design criteria may be requested by the Design-Build Contractor, MWAA, or WMATA. WMATA shall determine, in its reasonable discretion, whether such changes are approved. If approved by WMATA, MWAA shall determine how such changes are implemented contractually and how the costs, if any, are borne by the Project. When changes are initiated by WMATA to WMATA standards and criteria during final design or construction, and such changes are primarily for reasons other than obsolescence, code compliance or safety, such changes shall be incorporated into the Project when there is a mutual agreement to do so by WMATA and MWAA, the change is evaluated against the conditions listed below and the findings are discussed between MWAA and WMATA, and a funding source has been identified, if appropriate, together with commitments as to the amount and as to when such funds will be available to MWAA. Consistent with the Comprehensive Agreement to Develop the Dulles Corridor Rapid Transit Project, WMATA will evaluate

deviation requests to the WMATA Design Criteria and standards against these conditions:

A. Will the requested Deviation be equivalent in safety with the relevant standards or plans and specifications?

B. Is the requested Deviation recognized as good industry practice for comparable facilities?

C. Will the requested Deviation cause a material increase in operating and life cycle costs for the completed Project?

D. Is the requested Deviation reasonably likely to achieve the estimated capital cost savings?

Section 3: Order of Precedence

In the event of any ambiguity or conflicting interpretation of the applicable standards the following order of precedence shall determine the interpretation of this Agreement:

A. Applicable law or code prescribed by law

B. WMATA Manual of Design Criteria (Release 6, dated November 2003) and WMATA Standard Drawings (Release 5, dated August 2001), as modified by Approved Deviations and WMATA requested changes that are approved by MWAA for use in the development of the PE for Phase I of the Dulles Corridor Rail Project.

C. The work approved in the 100% PE, including Approved Deviations and unresolved review comments from the WMATA standards and criteria. (Exhibit "3"_)

D. Approved Final Design, including any approved deviations from the WMATA standards and criteria, and

E. WMATA standards and criteria.

ARTICLE 4 -- FUNDING

Section 1: Project Cost Responsibilities.

A. WMATA shall be responsible for adhering to a budget, the Technical Advisory Budget (TAB) approved by MWAA. MWAA shall be responsible for reimbursing WMATA on a cost reimbursable basis for Eligible Costs, and only Eligible Costs, expended by WMATA to perform the work identified in the TAB for providing technical advisory services for the Project as provided herein. The TAB may provide for a phased mobilization of WMATA staff.

B. The TAB and the estimated costs for procuring the capital equipment listed in Section 2(a) are attached hereto and comprise the following:

i. TAB and capital equipment budget based on Year of Expenditure (YOE) is attached hereto in Exhibit "4";

ii. The estimated TAB and capital equipment budget based upon 2006 dollars is attached hereto in Exhibit "4 ";

iii. The estimate of WMATA Staffing Levels for the Project is attached hereto in Exhibit "5 ";

iv. The estimated budget for Start-up and Oversight Project is attached hereto in Exhibit "6 "; and

C. MWAA shall also be responsible for reimbursing WMATA on a cost reimbursable basis for Eligible Costs, and only Eligible Costs, expended by WMATA to procure and install the capital equipment listed in Section 2 (a) and to perform the ARS Acceptance Tasks in Section 2 (c). WMATA shall advise MWAA of any overruns in the capital equipment budget, but MWAA shall reimburse WMATA for all Eligible Costs incurred by WMATA to procure the capital equipment listed in Article 2, Section 2 (a). The provisions of subsection D (2) below shall not apply to WMATA's purchase of capital equipment.

D. It is the intent of the Parties that MWAA will provide quarterly payments to WMATA in advance of the amounts projected to be required in the upcoming quarter as defined and set-out in the TAB and Capital Equipment Budget, for procuring the capital equipment and for performing the ARS Acceptance Tasks.

1. As part of the budget process, WMATA will provide MWAA with an estimate of the total WMATA costs for each calendar year beginning with the date of approval of initiating final design and ending upon WMATA Acceptance of the Project into the ARS. MWAA, however, shall only be responsible for payment of Eligible Costs actually incurred.

2. WMATA will monitor and document its costs and expenditures as part of the overall TAB. WMATA will provide MWAA, prior to the start of each budgetary period, an updated Funding Expenditure Projection Schedule, based upon the level of effort that WMATA anticipates for the period, including projected schedules for the funding obligations and projected expenditures for the upcoming period. If the budgeted

amount for the period that is ending was exceeded by 5% or more, WMATA shall provide an explanation of the overrun and propose a recovery plan to bring future overall expenditures in line with the budget, or explain why that is not feasible. MWAA shall, in not more than thirty (30) Days, approve the payment of the overrun, with or without a plan to bring future expenditures into conformity with the budget.

3. WMATA shall also provide to MWAA on the fifteenth (15) business day of every month, a summary of actual costs incurred through the end of the previous month compared to expected costs and/or budgeted costs. If staff and/or consultant/contractor costs being incurred by WMATA are such as to cause either WMATA or MWAA to project that WMATA'S TAB will be exceeded for the budgetary period, then WMATA and MWAA shall meet and confer as soon as practicable. In addition, WMATA shall notify MWAA of any use of any TAB contingency. After the projection of an overrun and after the meeting, MWAA shall, in not more than thirty (30) Days, either: i) approve an increased budget, with or without a plan for recovering the overrun amount, or ii) request WMATA to develop a mutually satisfactory revised budget and scope.

4. In any final accounting by the Parties, actual Eligible Costs shall be utilized. If there is a balance of MWAA funds on deposit at WMATA after the final accounting of actual costs properly charged to the Project, WMATA shall promptly return those funds to MWAA without demand. If actual costs properly charged to the Technical Advisor Budget exceed any balance of MWAA funds on deposit at WMATA, MWAA shall promptly reimburse WMATA for these costs. Any moneys to be reimbursed

or paid, in accordance with this subsection, shall be forwarded by the responsible party within thirty (30) days after the issuance of the joint final reconciliation.

Section 2: Funds Advancement.

MWAA agrees to advance funds in accordance with the schedule set out in the approved budget. WMATA will not incur costs or obligations for any work enumerated hereunder, unless adequate funds are available, and MWAA has obligated or will timely obligate the necessary funds. MWAA shall not be obligated to make available or timely obligate funds until WMATA has complied with all conditions contained in this agreement relating to funding including a satisfactory accounting for its expenditures in accordance with the TAB. Upon compliance with such conditions and the advancement of sufficient funds by MWAA, WMATA may incur costs or obligated funds in accordance with an approved budget. It is the intent of the Parties that these funds are to be used to cover WMATA staff costs and other expenses. The budget and revisions to the budget, if any, will include a schedule of periodic progress payments sufficient to fund the anticipated costs for the subsequent period.

A. WMATA shall submit periodic invoices to MWAA for the progress payments thirty (30) days in advance of the due dates set out in the budget. The schedule of progress payments may be revised from time to time by WMATA with written agreement from MWAA to reflect changes in costs and/or the rate of spending.

B. WMATA shall draw against those amounts advanced, and submit a monthly statement of actual costs to MWAA pursuant to Article 4, Section 1.D.3.

C. Suspension or termination of any part of this Agreement will not invalidate obligations properly incurred by WMATA prior to the date of suspension or termination to the extent the obligations are non-cancelable. This latter provision is to recognize that MWAA is responsible for properly incurred cost liabilities that have been incurred by WMATA as Technical Advisor, including, but not limited to, consultant/contractor contract close-out costs, and costs reasonably and properly incurred to finish or close out the Work in accordance with this Agreement. The obligation to reimburse WMATA for its Eligible Costs will survive the suspension or termination of the Project or of this Agreement.

D. WMATA will place the funds advanced under this Agreement by MWAA into an interest-earning account. Interest earnings will be credited to the budget to be used for authorized purposes. WMATA will provide an accounting of these earnings to MWAA along with the invoice specified in Article 4, Section 1.D.3

Section 3: Financial Records and Audits. WMATA shall retain Financial Records pertaining to its performance of this Agreement for three (3) years after completion or termination of this Agreement, and will have the right to recycle and destroy these records at that time after securing approval from MWAA. MWAA has the right to conduct on audit and WMATA shall permit MWAA, or its authorized agent(s), at MWAA's expense to conduct independent audits, make copies of pertinent records, documentation, invoices, and receipts relating to the performance of this Agreement during or at the conclusion of the Technical Advisory services. WMATA agrees,

following the completion of any MWAA audit report performed in compliance with OMB Circulars A-87 and A-133 (collectively "federal guidelines"), as those circulars are amended from time to time, and which audit is acceptable to the FTA and WMATA, that it will promptly credit or refund to MWAA any costs actually paid to WMATA and determined to be disallowed under those federal guidelines, from the WMATA Reimbursable Project Reserve Funds, as approved by the WMATA Board of Directors.

ARTICLE 5 – TIME IS OF THE ESSENCE

Section 1: WMATA Commitment.

WMATA agrees that time of performance related to its Technical Advisor role is essential for timely overall completion of the Dulles Corridor Metrorail Project and that a failure to timely perform its Technical Advisor duties that is not otherwise excusable and results in a material delay to the Critical Path may have serious financial repercussions upon MWAA and the Project. Therefore, WMATA is committed to timely review and responses on design submittals, test results, and other documentation.

Section 2: Exceptions.

Section 1 notwithstanding, WMATA shall have no obligation to (1) approve the Dynamic Readiness Certificate, (2) undertake Operational Readiness activity, (3)

Approve deviations to WMATA Design Criteria, or (4) provide railcars or operation personnel for testing if WMATA determines, in its reasonable discretion, that the work does not comply with WMATA's Design Criteria applicable to the Project, WMATA's operations, security, and safety standards or that the date and/or time proposed for testing interferes with operation of WMATA's existing system and MWAA acknowledges that it is at risk for delays and claims associated with approval of deviations to WMATA's Design Criteria and for claims by the Design Builder associated with Dynamic Readiness Testing where WMATA determines, in its reasonable discretion, that the Design-Build Contractor has not achieved Dynamic Readiness.

Section 3: Procedure.

_____WMATA shall provide reasonable documentation in support of any determination that the Project does not comply with WMATA's Design Criteria or standards in order for MWAA to correct the deficiency in the work. In and effort to mitigate costs associated with delays associated with approval of deviations to WMATA's Design Criteria, or relating to Readiness testing, MWAA and WMATA shall establish a request for resolution (RFR) mechanism to assure that the subject matter of the RFR is identified early and resolved expeditiously. The mechanism shall include, but not be limited to, a log that identifies the date of receipt of such a request, the projected time for completion, and the specific information that is needed for completion by the projected date. If the MWAA considers the response time by WMATA or request for supporting information is unreasonable in light of the potential delay costs of added project administration and management costs, MWAA and WMATA shall develop a mitigation

plan to resolve the matter. If the parties are unable to develop a mitigation plan, the parties shall declare the matter to be in dispute and proceed under the Expedited Procedures of Article 11.

Article 6 – CONDITIONS FOR WMATA ACCEPTANCE

Unless waived in writing by WMATA the following are the conditions precedent for WMATA Acceptance of the Project into the ARS:

Condition 1. Escrow Fund for Latent Defects, Warranty Claims, and Indemnity Claims.

A. The parties recognize that, (i) under the Design-Build Contract, MWAA has agreed to limit the Design-Build Contractor's liability to five (5) years after Substantial Completion; (ii) the Design-Build Contract contemplates future work, known as "Allowances" for which the entirety of the WMATA standard warranty provisions are intended to be, but for commercial reasons may not be provided; and (iii) the Design-Build Contract further limits the Design-Build Contractor's liability for indemnity obligations under Section 26.2.4(b) of the Design-Build Contract. WMATA agrees that it is bound by the exclusions and limitations of the Design-Build Contract. Therefore, to mitigate WMATA's risks associated with these provisions MWAA will establish an escrow fund (Escrow) for the benefit of WMATA that is to be used exclusively (1) to pay the capital costs of correcting any latent defects discovered after the expiration of the five-year limitation on the Design-Build Contractor's liability, (2) to pay claims for work

performed under any Allowances that would have been covered under WMATA's standard warranty, had it been provided as part of that contract, and (3) to pay claims for indemnity otherwise extinguished pursuant to Section 26.2.4(b) of the Design-Build Contract.

B. MWAA shall create the Escrow and transfer, by one or more deposits, fifteen million dollars into the Escrow. MWAA shall fully fund the Escrow within thirty six months of transfer of the Toll Road to MWAA. All interest and other earnings in the Escrow shall remain in the Escrow to be available to WMATA in the same manner as the principal, provided that the combined principal and interest in the fund shall not exceed 20 million dollars. Any amount in excess shall be MWAA's. The Escrow shall remain in place for 20 years after WMATA Acceptance of the Project into the ARS or until the funds therein are completely expended, which ever occurs first. After twenty (20) years from the date of WMATA Acceptance, MWAA may use all amounts in the Fund as it would use any other Toll Road revenues and no longer need hold any amounts in the Fund except those amounts as to which WMATA has asserted a Payment Claim, in accordance with the Instructions developed as provided in D below. At the termination of the twenty (20) year period, any funds remaining in the Escrow are to be returned to MWAA.

C. The creation of the Escrow is for the benefit of WMATA and in consideration of its future obligations as intended owner and operator of the Project. It is not a representation by MWAA that the Escrow is sufficient to satisfy any and all WMATA claims for latent defects, warranties, or indemnification obligations and it is not an

acceptance of responsibility by MWAA for latent defects, warranties, or indemnification. MWAA shall have no obligation to WMATA for latent defects, warranties under this Agreement or the Design – Build Contract or for indemnities except as expressly agreed to in this Agreement. WMATA shall be entitled to draw on the Escrow for the purposes of this provision only. WMATA's claims are strictly against the Escrow; WMATA shall otherwise have no claims on MWAA funds or the funds of the Dulles Toll Road for correction of latent defects, warranty work, or indemnification obligations covered by this Escrow.

D. The Escrow fund is not intended to be an alternative to recovery from the Design-Build Contractor. It is to be available only after there is no other available remedy including project related insurance proceeds available to WMATA. Payment from the fund is to be in accordance with the detailed Escrow Instructions governing disbursements from the Fund attached hereto as Exhibit "7".

Condition 2. Punchlist.

All punch list work shall be completed to WMATA's satisfaction within the limits of the revenue system unless completion of an item is waived by WMATA. The "revenue system" for this purpose is defined as the paid areas of the stations (areas of the station where patrons are permitted), the wayside areas of the revenue line including all shafts, ancillary and service rooms, West Falls Church Inspection & Service Buildings including yard and lead tracks, tie-breaker and traction power structures, station entry escalator and elevators, kiosk, fire protection systems and fencing outside the paid areas. MWAA shall have ninety (90) days after WMATA's Acceptance to complete all remaining punch

list items. If not completed within that time, WMATA has the right to complete the punchlist at the Project's expense.

Condition 3. Concurrent Non-Project Activities.

Concurrent Non-Project Activities, if any, have been completed.

Condition 4. Property Transfers.

MWAA shall have transferred, or caused to be transferred, to WMATA the appropriate property interests in the Right of Way approved by WMATA pursuant to Article 2, Section 2, and C.7 of this Agreement.

Condition 5. Spare Parts and Training

MWAA shall have provided to WMATA all specified spare parts and special tools necessary to accept the Project into the ARS, O & M manuals, and training as specified by WMATA. MWAA acknowledges that the current allowance amount of $5 million defined in the Design-Build Contract for spare parts and special tools and the 2,000 hours of training are estimates which are below the costs allocated to spare parts of previous WMATA extensions and will be adjusted based upon the needs of WMATA as required by this Project as the Project design is finalized and the special tools and spare parts are identified. The additional costs of any adjustments in spares/special tools and/or in training shall be the responsibility of MWAA.

Condition 6. Record Deliverables.

MWAA shall have provided WMATA with all Record Deliverables.

Condition 7. Assignment of Warranties.

MWAA has obtained warranties from the Design-Build Contractor and sub-contractors that comply with the WMATA's technical specifications as approved as part of the 100% PE, including any subcontractor warranties negotiated pursuant to Section 11.3.2 of the Design Build Contract.

MWAA has assigned all continuing warranties to WMATA and provided all documentation necessary to enforce the warranties. At the time of assignment, WMATA will have all rights that MWAA had under Article 11 of the Design-Build Contract June 19, 2007

Condition 8. Permits.

MWAA shall have obtained for WMATA all land use and permitting approvals from any federal, state or local regulatory agency necessary for WMATA operation and the maintenance of the Project.

Condition 9. Payments.

MWAA shall have paid all sums due and owing under this Agreement.

Condition 10. Safety and Security.

The WMATA System Safety officer shall have completed its independent examination of the Design-Build Contractor's Safety Critical items list documentation and be ready to certify to the General Manager that the Project is ready for revenue service.

Condition 11. Board Resolutions.

All conditions in WMATA Board Resolutions in effect on the date have been satisfied.

Condition 12. WMATA Workforce Rules.

WMATA has had sufficient MWAA notice and opportunity to complete its workforce assignments (pick)? To maintain and operator the Extension, which occurs annually in June and December.

Condition 13. Insurance.

WMATA has received the certificates of insurance in accordance with Article 8.

Condition 14. Storm Water Management Ponds.

WMATA will accept the maintenance responsibility for Storm Water Management Ponds located on WMATA property. Any Storm Water Management Ponds that are located on WMATA property and serve property other than WMATA property, WMATA may require a maintenance agreement with each property owner discharging storm water in the pond, including real property covenants to ensure payment of the maintenance costs. The responsibility for maintenance costs will be assessed based on the percent of water running from the property into the pond. WMATA will not be responsible for Storm Water Management Ponds not located on WMATA property.

ARTICLE 7 –INDEMNITY AND INSURANCE

The cost of additional insurance obtained as a result of the Project shall be an eligible Project cost included in the TAB.

Section 1: Property Insurance.

WMATA shall be responsible for insuring WMATA owned equipment and premises that it is furnishing or making available for the Project. MWAA and the Design Build Contractor shall be an additional named insured on policies for the insurance of the WMATA equipment and premises. Such insurance shall be in an amount equal to the full replacement value of the property. WMATA shall maintain such insurance on this property until the Phase I of the Dulles Corridor Metrorail Project is accepted into the ARS.

New Rolling Stock --Rail Cars. WMATA is purchasing 64 new rail cars as a part of Phase I of the Dulles Corridor Metrorail Project. At all times including the period prior to the completion of Phase 1 and prior to the acceptance of the Project into the ARS, WMATA shall bear the risk of loss for these cars. It is WMATA's responsibility to insure against loss or damage to these rail cars. Said insurance shall be in an amount equal to the full replacement value thereof. MWAA and the Design Build Contractor shall be named as additional insured parties Rolling Stock for Testing. At all times including the period prior to the completion of Phase 1 and prior to the WMATA acceptance of the Project, WMATA shall bear the risk of loss for rail cars used during testing and acceptance of the Project except where damage to the railcar is due to the fault or negligence of MWAA, its consultants, or the Design Build Contractor. It is WMATA's responsibility to insure against loss or damage to these rail cars and any railcars used on the Project. Said insurance shall be in an amount equal to the full replacement value thereof. MWAA and the Design Build Contractor shall be named as additional insured parties.

Section 2: Worker's Compensation.

WMATA shall, and shall require its contractors to, provide worker's compensation insurance as required by Virginia Statutory limits with an all states endorsement for its employees and workers that work on the Project.

Section 3: General Liability.

WMATA shall, or shall require its contractor to, provide and maintain liability insurance for property damage or loss and for death or bodily injury in an amount not less than $2 million per occurrence. The insurance shall apply to all claims arising out of the performance or non-performance by WMATA of its duties under this agreement. MWAA and the Design Build Contractor shall be named as additional insured parties. The insurance shall be maintained at least until the Project is completely accepted into the ARS. WMATA shall provide evidence of insurance in the form of certificates of insurance in a form acceptable to MWAA. The Parties agree to review the insurance coverage after [36 months] to determine if the coverage and the amounts are adequate for the Project.

Section 4: Indemnity, Additional Insurance. Neither MWAA nor the Design Build Contractor are providing any indemnity to WMATA and nothing herein is to be construed to create such an indemnity EXCEPT (i) to the extent that a specific indemnity may be provided in the Right of Entry, and (ii) WMATA shall be an Owner Indemnitee as that term is used in the Design-Build Contract subject to all of the terms and conditions of the Design-Build Contract. Further, WMATA shall be an additional named insured on policies of insurance for Commercial General Liability, Automobile

Liability and Excess Liability at the coverage amounts. WMATA shall receive copies of the policies from the Design-Build Contractor's insurer(s) that certifies that WMATA is an additional named insured on these policies. These insurance policies or comparable replacements therefore shall be in place for the benefit of WMATA from Final Design Notice to Proceed through Substantial Completion. In addition, in accordance with the Design – Build contract this insurance shall apply during the performance of warranty work. The Design-Build Contractor shall also provide a special all risk property insurance policy in the amount of $ 25,000,000 per occurrence for the benefit of WMATA and MWAA to be effective during the period beginning after Substantial Completion and ending with WMATA Acceptance, provided said period shall not exceed one year. MWAA shall provide Railroad Protective Liability Coverage ($5,000,000 per occurrence, $10,000,000 in the aggregate) for this period that covers WMATA. Further, after Substantial Completion the Product and Completed Operations coverage of the Commercial General Liability insurance policy will be in effect for ten (10) years. The applicable insurance provisions of the Design - Build Contract are [Article ...] These provisions may not be amended or altered in any way that affects the coverage of WMATA as provided herein without the express written approval of WMATA.

ARTICLE 8 -- REPRESENTATION

Each Party hereby represents to the other that it possesses full power and authority to execute, deliver and perform this Agreement and to carry out the transactions contemplated hereby. The execution, delivery, and performance of this

Agreement and the transactions contemplated hereby have been duly and validly authorized by all necessary action of MWAA and WMATA and constitutes valid and binding obligation of each. The execution and performance by each of the Parties of this Agreement do not and will not (a) violate any requirement of law or court order applicable to MWAA or WMATA or their ability to perform under this Agreement, (b) require consent, approval or authorization of, or notice to, or declaration, filing or registration with, any person or entity not already obtained or accomplished as of the effective date hereof, or (c) conflict with or will result in a default under or violation of the governing instruments of MWAA or WMATA or any other instrument or agreement to which WMATA or MWAA is a party.

ARTICLE 9 -- CANCELLATION

A. In the event that Design Build Contract does not proceed as contemplated herein, either because such contract is terminated, materially modified or otherwise not performed so that the WMATA services are not required, then MWAA may cancel this Agreement by providing express notice in writing to WMATA or the parties may take reasonable and appropriate steps to have this Agreement modified to conform to the changed Design Build Contract.

B. This Agreement will be considered cancelled on the date that is seven days after delivery by courier or overnight express of a Notice of Cancellation. Upon receipt, the parties will institute measures to minimize and eliminate the incurring of additional costs. Eligible Costs, including any and all costs incurred after the receipt of

notice, associated with cancelling the work hereunder shall be paid to WMATA. The amount outstanding, if any, shall be determined jointly by the Parties in a final accounting. The final accounting shall be concluded within twelve (12) months of cancellation, unless that time is extended by joint written agreement of the Parties. If the result of the joint final accounting for actual costs expended, including allowable and allocable cancellation costs, identifies a balance on hand, WMATA shall promptly return those funds to MWAA.

ARTICLE 10 -- DEFAULT

A. The following shall constitute an event of default by WMATA: The failure of WMATA to timely and satisfactorily perform the Technical Advisor tasks as set forth herein or any other material covenant, term or condition, not otherwise left to the reasonable discretion of WMATA, and the continued failure of WMATA to remedy such nonperformance within ten (10) days after receipt of written notice from MWAA. However, in the event of a Level 2, 3 or 4 Dispute over the alleged nonperformance, WMATA shall not be in default unless and until the dispute process is finally resolved in favor of MWAA with regard to the performance.

B. The following shall constitute an event of default by MWAA: (i) The failure of MWAA to pay to WMATA the sums due to WMATA for the timely performance of its obligation herein when said sums are due and owing and the continued failure of MWAA to remedy such nonpayment within ten (10) days after receipt of written notice from MWAA. (ii) MWAA's failure to construct the Concurrent Non-Project Activities as

provided in Article 9B, or (iii) MWAA's approval of a Deviation from the Design Criteria, issuance of a Dynamic Readiness Certificate, or approval of a punch list prior to Substantial Completion without WMATA's prior written approval and MWAA's failure to correct their action within 30 days, or, for actions that cannot be corrected within 30 days, commence to correct within 30 days, after notice from WMATA that the design deviation, issuance of the certificate or approval of the punch list was not approved. In the event of a Level 2, 3 or 4 Dispute over the payment MWAA shall not be in default unless and until the dispute process is finally resolved in favor of WMATA with regard to the payment. In that event MWAA shall make the payment due to WMATA within thirty days or within the time specified in the dispute resolution, whichever is later. Upon payment, the default will be deemed cured.

C. MWAA's sole and exclusive remedy against WMATA, whether arising in contract, tort (including negligence) or other legal theory shall be the right to terminate this Agreement for Default.

D. In the event of a MWAA breach for other than payment, WMATA shall have no obligation to accept the Project into the ARS until such time as MWAA cures the breach. For failure to construct the CNPAs, WMATA's remedy is as provided under Article 10; provided that WMATA shall have no obligation to accept the Project into the ARS until such time as the CNPA is constructed.

ARTICLE 11 – DISPUTES

Section 1: Dispute Resolution – Level 1

A. For disputes arising in design reviews: The respective MWAA and WMATA staffs shall make every effort to resolve design review comments that are in dispute at the conclusion of each design review conference. If the dispute is not resolved between the WMATA Project Manager for Engineering and its counterpart with MWAA within three work days, both parties shall immediately notify their respective Organization level Executives, i.e., the WMATA Project Executive for WMATA and MWAA Vice President of Engineering for MWAA, and provide them a written synopsis of the issue, including all pertinent data and references, applicable drawings and documents within two work days of the notification. The Organizational Executives shall make every effort to resolve the dispute within three days following receipt of the written information from their respective staffs. Upon resolution, the MWAA Project Executive will issue a jointly signed letter outlining their resolution and direction to the respective Project staffs. Should the Organization Executives be unable to resolve the issue within the time specified above, the matter shall be referred to the WMATA General Manger and MWAA CEO for resolution in accordance with Section 2.

B. Expedited Disputes Procedures. For all disputes arising under Article 2, Section 2 B 2(a) regarding final design submittals, under Article 2, Section 3 (c) regarding Transit Related Facilities submittals, Article 2, Section 3(h) regarding acceptance tests of Transit Related Facilities and related equipment, Section 4(b) regarding the System Integration Program Plan, Section 4 (d) regarding acceptance test results, and Article 5, Section 3, Time is of Essence, these procedures shall apply unless the Parties agree otherwise. The respective MWAA and WMATA staffs shall

make every effort to resolve the dispute. If the dispute is not resolved between the WMATA Project Manager for Engineering and its counterpart with MWAA within two working days, both parties shall immediately notify their respective Organization Level Executives, i.e., the WMATA Project Executive for WMATA and MWAA Vice President of Engineering for MWAA, and simultaneously provide them a synopsis of the issue, including pertinent data and references, applicable drawings and documents. The Organizational Level Executives shall make every effort to resolve the dispute within two days following receipt of the notice of the dispute from their respective staffs. Upon resolution, the MWAA Project Executive will issue a jointly signed letter outlining their resolution and direction to the respective Project staffs. Should the Organization Level Executives be unable to resolve the issue within the time specified above, the matter shall be immediately referred to the WMATA General Manger and MWAA CEO for resolution. In the event a dispute is not resolved between the Parties within seven (7) calendar days after submission to the General Manager and the President and CEO of MWAA, either party may proceed under Level 3 or 4.

C. For all other disputes between MWAA and WMATA arising out of this Agreement, either party to this Agreement shall through its Project Director provide the other party written notice of any dispute and/or default under this Agreement by identifying the Section, in dispute, and/or the necessary corrective action whenever it reasonably deems that the other party is in default. The notice shall specifically state the nature of the dispute and or default and shall provide the other party a reasonable period of time within which to respond or to correct the default, but in no event less than

ten (10) calendar days. Should the matter in dispute or any alleged default not be corrected to the satisfaction of the party giving notice thereof within ten (10) calendar days, either party may further, thereafter, invoke the dispute procedures,

D. Notwithstanding the foregoing, technical disputes over application of WMATA's design criteria, standards and specifications that were not identified in PE or were not discoverable by the exercise of reasonable engineering judgment during PE, shall be resolved by WMATA's Design Control Board. If the application of WMATA's design criteria, standards, and specifications are impossible or commercially impracticable, such disputes are not subject to this Article.

Section 2: Dispute Resolution or Default Resolution – Level 2. A dispute that is not resolved at Level 1 may be brought by either party within 5 business days to Level 2 where the President and CEO of MWAA and the General Manager of WMATA, or their designees, will be responsible for reviewing and resolving disputes and/or alleged defaults between MWAA and WMATA, related to this Agreement, that are not resolved in Level 1. Resolution will be signified by a decision agreed to by both the President and CEO of MWAA and the General Manager of WMATA. In the event a dispute cannot be resolved between the Parties pursuant to Levels 1 or 2, or twenty (20) calendar days after submission to the General Manager and the President and CEO of MWAA have passed and there is not a decision, either party may proceed under Level 3 or 4.

Section 3: Dispute Review Board – Level 3. Either party may give written notice to the other that it is bringing the matter before a Dispute Review Board (DRB) or other

mutually agreed upon neutral body. If not previously established, within seven (7) calendar days of the notice, the Parties' representatives will submit to each other the names of acceptable neutral candidates to serve on the Dispute Review Board. The Parties' representatives and the neutral third party will acknowledge in writing the date and agreement on the selection of a neutral board. The DRB, once established, may consider any materials or information it deems relevant and may request information of the Parties, their employees, agents, and consultant/contractors that have knowledge pertaining to the Project and the dispute. The Parties shall provide any of the requested materials and information in their custody or control to the Board. The Board shall provide its evaluative recommendation concerning the dispute or default within thirty (30) calendar days after its formal constitution, unless an extension of the time therefore is agreed upon in writing by designated representatives of both MWAA and WMATA. The recommendation of the neutral body is advisory, and is a tool for further guidance to assist in resolution by the Parties. The issued recommendation is not a binding resolution upon the Parties to this Agreement. The cost of the DRB shall be a project cost

Section 4: Court Jurisdiction – Level 4. The Parties are not obligated to pursue or to complete the Level 3 dispute or to use the DRB. In the event that the parties are not able to resolve the default or dispute after using the procedure set forth in Level 1 and 2, either party may commence a civil action to resolve the dispute in a court of competent jurisdiction in the Commonwealth of Virginia.

ARTICLE 12 -- NOTICES

Section 1: Written Notice. All notices hereunder shall be in writing and shall be deemed to have been sufficiently given or served for all purposes when presented personally, or sent by a courier service or a national overnight delivery service, such as the U.S. Postal Service Overnight Express Mail, to any party hereunder as follows:

If to MWAA:

Project Director
Project Office
1593 Spring Hill Road
Suite 300
Fairfax, VA 22182

With a copy to the General Counsel:

Metropolitan Washington Airports Authority
General Counsel's Office
1 Aviation Circle
Washington, D.C. 20001

If to WMATA:

General Manager
Washington Metropolitan Area Transit Authority
600 Fifth Street, N.W.
Washington, D.C. 20001

And it's Authorized Representative,

With a copy to:

General Counsel
Washington Metropolitan Area Transit Authority

Jackson Graham Building, Second Floor
600 Fifth Street, N.W.
Washington, D.C. 20001

ARTICLE 13 -- AMENDMENT AND ASSIGNMENT

Section 1: Amendment(s).

This Agreement may be amended in writing by agreement of the Parties.

Section 2: Assignment.

This Agreement is binding upon both MWAA and WMATA. The rights, duties, and obligations of either party with respect to the Project may not be assigned without the written consent of the other party. It is understood that WMATA may retain consultant/contractors to perform review and administrative work consistent with the approved Budget and this shall not constitute an assignment.

ARTICLE 14 – RIGHTS NON-EXCLUSIVE

Nothing herein shall be construed to grant an exclusive right to WMATA to provide Technical Advisory Services. MWAA reserves the right to obtain technical advice and services from third parties even if such advice or services pertains to the same or similar matter about which WMATA is advising MWAA or providing services.

MWAA shall not be in default or liable to WMATA in any way for seeking or using such advice or services.

ARTICLE 15– ENTIRE AGREEMENT

This Agreement constitutes the entire agreement between the Parties hereto with respect to the transactions contemplated herein, and, to the extent that any prior oral or written agreements, letters of intent, commitments or understandings between WMATA and DRPT with respect to the matters provided herein conflict with this Agreement such conflict shall be resolved in favor of both the express language and the intent of this Agreement.

ARTICLE 16 – CONSTRUCTION

Section 1.

This agreement is to be liberally construed to accomplish its intended purpose.

Section 2.

Each Party acknowledges that they participated equally in the negotiation and drafting of this Agreement and that, accordingly, and that a court construing this Agreement shall not construe it more strictly against one party or the other.

ARTICLE 17 – GOVERNING LAW

This Agreement and the rights and obligations of the Parties hereto, shall be governed by and construed under the laws of the Commonwealth of Virginia.

ARTICLE 18-- WAIVER

Neither the waiver by either of the Parties hereto of a breach or default of under any of the provisions of this Agreement, nor the failure of the parties, on one or more occasions, to enforce any of the provisions of this Agreement or to exercise any right or privilege hereunder shall thereafter be construed as a waiver of any subsequent breach of default of a similar nature.

ARTICLE 19 -- SEVERABILITY

If any provision or clause contained in this Agreement operates or would prospectively operate to invalidate this Agreement in whole or in part, then such provision or clause only shall be held ineffective, as though not contained herein, and the remainder of this Agreement shall remain operative and in full force and effect.

ARTICLE 20- COUNTERPARTS

This Agreement may be executed in two identical counterparts, and it shall not be necessary that the signatures of, or on behalf of, each party appear on each

counterpart, but it shall be sufficient for the signature of, or on behalf of, each party to appear on one of the counterparts. The counterparts shall collectively constitute a single agreement.

WITNESS:

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

By:
Print Name: John B. Catoe, Jr.
Title: General Manager

WITNESS:

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

_____

By:
Print Name: James E. Bennett
Title: President

counterpart, but it shall be sufficient for the signature of, or on behalf of, each party to appear on one of the counterparts. The counterparts shall collectively constitute a single agreement.

WITNESS:

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

_____

By:
Print Name: John B. Catoe, Jr.
Title: General Manager

WITNESS:

Edward Tajgen

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

By:
Print Name: James E. Bennett
Title: President

Exhibits

1. Right of Entry
2. Approved Deviations
    a. Preliminary Engineering Design Refinements
    b. Costs Savings Opportunities Dated September 6, 2007
3. Safety Certification
4. Technical Advisory Budget (TAB) in Year of Expenditure and '06 Dollars
5. Estimate of Staffing Levels for the Project
6. Estimates for Start-Up and Oversight
7. Escrow Instructions

RIGHT OF ENTRY

A Right of Entry agreement permitting the Metropolitan Washington Airports Authority and its contractor to enter upon the property of the Washington Metropolitan Area Transit Authority to implement the Dulles Corridor Rail Extension project will be executed by WMATA and MWAA prior to any work by MWAA or its contractor on WMATA property.

DULLES CORRIDOR METRORAIL PROJECT

Preliminary Engineering Design Refinements

Summary of Changes from the Final EIS/General Plans

ID	Design Refinement	Status
ALIGNMENT		
AL-1	Shift the Route 7 portion of the alignment and stations (Tysons Central 7 and Tysons West) from the south side (service road) to the median between Route 123 and the Dulles Toll Road.	Refinement proposed for acceptance.
AL-3	Lower the alignment approximately 10 feet between the Tysons East Station and Tysons Central 123 stations.	Refinement proposed for acceptance.
AL-4	Raise and shorten the Tysons tunnel segment and replace the underground Tysons Central 7 station with an at-grade station in the median of Route 7. West of the Tysons Central 7 station, replace underground alignment section with aerial alignment in the median of Route 7. Add tunnel ventilation structures near Tysons Central 7 station and Tysons Central 123.	Refinement proposed for acceptance.
AL-5	Adjust the alignment along the Dulles Connector Road and Dulles International Airport Access Highway to more closely follow the existing grade.	Refinement proposed for acceptance.
AL-6	Replace pocket track near the Tysons West station with double crossover in same location.	Refinement proposed for acceptance.
AL-7	Eliminate stormwater management pond on the north side of the Dulles International Airport Access Highway west of Hunter Mill Road.	Refinement proposed for rejection.
AL-8	Add new stormwater management pond near Chathams Ford Drive	Refinement proposed for acceptance.
GUIDEWAY		
GW-1	Utilize AASHTO Box Girders for the O1 alignment (except over traffic) and the Tysons East and Tysons West tangent alignments.	Refinement proposed for acceptance.
AT-GRADE		
AG-1	Reduce the height of retaining walls in association with alignment changes to more closely follow the existing grade.	Refinement proposed for acceptance.
TYSONS EAST STATION		
TE-1	Shift station platform 200 feet west to avoid stream impacts and to reduce height of structure supporting station.	Refinement proposed for acceptance.
TE-2	Redesigned station canopy with reduced coverage (300 feet long).	Refinement proposed for acceptance, assuming construction of foundations for future expansion of the canopy, high friction floors in stations, and heated subsurfaces in stations.

DULLES CORRIDOR METRORAIL PROJECT

Preliminary Engineering Design Refinements

Summary of Changes from the Final EIS/General Plans

ID	Design Refinement	Status
TE-3	Redesigned pedestrian bridge with reduced width (12 feet) and with mesh enclosure instead of glazing.	Refinement proposed for acceptance, assuming construction of high friction floors in stations and heated subsurfaces on bridges.
TE-4	Deletion of second elevator at south station entrance.	Refinement proposed for rejection.
TYSONS CENTRAL 123 STATION		
TC-1	Relocate mezzanine from elevated position above platform, to street-level location below the platform; pedestrian bridge decouple from mezzanine.	Refinement proposed for acceptance.
TC-2	Bus bays relocated from Route 123 to Tysons Boulevard	Refinement proposed for acceptance.
TC-3	Redesigned station canopy with reduced coverage (300 feet long).	Refinement proposed for acceptance, assuming construction of foundations for future expansion of the canopy, high friction floors in stations, and heated subsurfaces in stations.
TC-4	Redesigned pedestrian bridge with reduced width (12 feet) and with mesh enclosure instead of glazing.	Refinement proposed for acceptance, assuming construction of high friction floors in stations and heated subsurfaces on bridges.
TC-5	Deletion of second elevator at the pedestrian bridge south and north entrances.	Refinement proposed for rejection.
TC-6	Deletion of second escalator at the pedestrian bridge south and north entrances.	Refinement proposed for rejection.
(AL-6)	Relocate double crossover from Tysons Central 7 station to Tysons Central 123	Refinement proposed for acceptance.
TYSONS CENTRAL 7 STATION		
T7-1	Replace the underground Tysons Central 7 station with an at-grade station in the median of Route 7 (no change to station entrance locations)	Refinement proposed for acceptance.
T7-2	Replace underground pedestrian walkways with pedestrian bridges.	Refinement proposed for acceptance.
T7-3	Eliminate underground station ventilation equipment.	Refinement proposed for acceptance.

DULLES CORRIDOR METRORAIL PROJECT

Preliminary Engineering Design Refinements

Summary of Changes from the Final EIS/General Plans

ID	Design Refinement	Status
T7-4	Redesigned station canopy with reduced coverage (300 feet long).	Refinement proposed for acceptance, assuming construction of foundations for future expansion of the canopy, high friction floors in stations, and heated subsurfaces in stations.
T7-5	Redesigned pedestrian bridge with reduced width (12 feet) and with mesh enclosure instead of glazing.	Refinement proposed for acceptance, assuming construction of high friction floors in stations and heated subsurfaces on bridges.
T7-6	Delete second elevator at the south and north station entrances.	Refinement proposed for rejection.
T7-7	Delete second escalator at the south and north station entrances.	Refinement proposed for rejection.
TYSONS WEST STATION		
TW-1	Bus bays relocated from interior parcel to east side of Route 7 (kiss and ride lot location unchanged).	Refinement proposed for acceptance.
TW-2	Reduce length of pedestrian bridge connection to north side of Route 7	Refinement proposed for acceptance.
TW-3	Redesigned station canopy with reduced coverage (300 feet long).	Refinement proposed for acceptance, assuming construction of foundations for future expansion of the canopy, high friction floors in stations, and heated subsurfaces in stations.
TW-4	Redesigned pedestrian bridge with reduced width (12 feet) and with mesh enclosure instead of glazing.	Refinement proposed for acceptance, assuming construction of high friction floors in stations and heated subsurfaces on bridges.
TW-5	Deletion of second elevator at the south and north station entrances.	Refinement proposed for rejection.
WIEHLE AVENUE STATION		
WA-1	Rotate orientation of parking garage and north side bus bays.	Refinement proposed for acceptance.

DULLES CORRIDOR METRORAIL PROJECT

Preliminary Engineering Design Refinements

Summary of Changes from the Final EIS/General Plans

ID	Design Refinement	Status
WA-2	Redesigned station canopy with reduced coverage (300 feet long).	Refinement proposed for acceptance, assuming construction of foundations for future expansion of the canopy, high friction floors in stations, and heated subsurfaces in stations.
WA-3	Redesigned pedestrian bridge with reduced width (12 feet) and with mesh enclosure instead of glazing.	Refinement proposed for acceptance, assuming construction of high friction floors in stations and heated subsurfaces on bridges.
WA-4	Delete second elevator at the south and north station entrances.	Refinement proposed for rejection.
YARD & SHOP		
Y-1	Eliminate expansion of the existing shop building and associated roadway reconstruction, utility relocation, and systems.	Refinement proposed for rejection.
SYSTEMWIDE		
SY-1	Use trackside cable troughs instead of concrete ductbanks.	Refinement proposed for acceptance.
SY-2	Use future yard site (Y-15) on Dulles Airport property for storage/placement of excavated soil.	Refinement proposed for acceptance.
WEST FALLS CHURCH YARD		
WFC-1	Eliminate enlargement of the West Falls Church S&I Shop	Refinement proposed for rejection.
WFC-2	Construct a stormwater management pond at the West Falls Church Yard.	Refinement proposed for acceptance.

Exhibit 2b

DULLES CORRIDOR METRORAIL PROJECT
COSTS SAVINGS OPPORTUNITIES RELATED TO METRO ITEMS
SEPTEMBER 6, 2007

Redesign of improvements to West Falls Church Yard (A-1)	$23.0 million
Increase design headways for train control and traction power from 90 seconds to 135 seconds (D-2)	$17.2 million
Use prefabricated traction power substations and train control rooms (E-1 and E-2)	$12.6 million
Use microprocessor based train control design (E-3)	$3.2 million
Use a LAN/WAN TCP/IP communication system (E-4)	$1.7 million
Combined first phase and second phase rail car procurement (E-6)	$20.3 million
Separate non train control communication systems from the train control system (E-7)	$1.9 million
Reduce the quantity of maintenance vehicles and equipment (E-9)	$1.5 million
Implementation of revisions to features such as platform canopy redesign, use of precast concrete instead of build in place, handrail redesign and roofing revisions (E-14)	$13.9 million
Reduce the length of the platform canopies (E-15)	$7.3 million
TOTAL	**$102.6 million**

Note: dollar figures do not reflect any contingency adjustments

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Exhibit 3

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

SAFETY & SECURITY CERTIFICATION PROGRAM PLAN

August 2007

Document Revision Record

Revision Number	Sections/Pages Affected	Date Issued
REV. 0	-Initial Issue-	July 2003
REV. 1	Total Document Revision	August 2007

Concurrences and Approval

Gerald Francis — Date
Deputy General Manager &
Chief Operating Officer

Polly Hanson — Date
Assistant General Manager
System Safety, Security
& Emergency Management

Dave Kubicek — Date
Chief Mechanical Officer

Alexa Dupigny-Samuels — Date
(acting) Chief Safety Officer
System Safety & Risk Management

Milo Victoria — Date
Assistant General Manager, Bus

Dave Shaw — Date
(acting) Chief of Police

Phillip Wallace — Date
General Superintendent
Bus Maintenance and Engineering

Jack Requa — Date
Assistant General Manager
Operations Services

David Couch — Date
Managing Director
Engineering and Capital Projects

Paul Gilliam — Date
Director
Plant Maintenance

David Lacosse — Date
Director
Elevator & Escalator Maintenance

Colin Myers — Date
Chief Engineer

Approved:

John Catoe — Date
General Manager

PREFACE

System safety and security play important roles in achieving and maintaining the Washington Metropolitan Area Transit Authority (WMATA) mission to provide exceptional service in a safe and secure operating environment. WMATA has implemented a Safety and Security Certification Program to help in the achievement of this mission.

The goal of safety and security certification is to ensure that Metrorail extensions, new and rehabilitated facilities and vehicles; and new and rehabilitated Metrobus facilities and equipment are operationally safe and secure for customers, employees, and the general public. To this end, the Safety and Security Certification Program verifies, through a formal process, that safety and security requirements are incorporated into design, construction/ installation, procurement and testing activities; training programs; and operations and maintenance procedures.

This document identifies the management responsibilities and the technical process for the implementation of the Safety and Security Certification Program. Only with the effective coordination and a team approach can the Safety and Security Certification Program successfully fulfill its goals and objectives within WMATA.

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SECTION 1 INTRODUCTION

1.1 Authority

The Federal Transit Administration (FTA) regulation, 49 CFR Part 659 – Rail Fixed Guideway Systems, State Safety Oversight, requires rail safety oversight of the Metrorail system, a Washington Metropolitan Area Transit Authority (WMATA) rail fixed quideway system operating in the State of Maryland, Commonwealth of Virginia and the District of Columbia. The Tri-State Oversight Committee (TOC) is the organization responsible for promulgating System Safety Program Standards and Procedures for, and providing rail safety oversight of, the WMATA Metrorail system.

TOC requires WMATA to prepare a System Safety Program Plan (SSPP) conforming to standards as defined in the Tri-State Oversight Committee Procedures Manual for State Safety Oversight of the WMATA Metrorail System. The TOC Procedures Manual also requires the development and implementation of a Safety and Security Certification Program for the Metrorail system. Additionally, Section 3.3.5 of the WMATA SSPP establishes a Safety and Security Certification Program (SSCP) requirement not only for Metrorail facilities and equipment, but also for Metrobus and facilities and equipment. This document fulfills the TOC and WMATA SSPP requirement and establishes the process for verifying the incorporation of essential safety and security requirements into all new and rehabilitated WMATA alignments, facilities, and equipment

1.2 Background

The SSCP presents a comprehensive approach to ensuring the safety and security of future extensions, capital improvements, and the integration of new and rehabilitated facilities and equipment. The SSCP is modeled after the FTA Handbook for Transit Safety and Security Certification Handbook (Reference 1.9.5), tempered with the experience gathered from other transit safety and security certification programs and the unique requirements of WMATA and its tri-state operations.

The key documents that form the baseline for safety and security certification include the:

- WMATA System Safety Program Plan;
- WMATA Security and Emergency Preparedness Plan;
- WMATA design criteria manuals and directive drawings, which determine the safety and security requirements to be reflected in the contract specifications;

- Metrorail Safety Rules and Procedures Handbook (MSRPH) and other applicable WMATA operating rules and procedures;

- National Fire Protection Association (NFPA), American Railway Engineering and Maintenance of Way Association (AREMA), transit industry, and other applicable codes and standards; and

- Contractual documents and specifications, which define the safety and security features of facilities, systems, and equipment.

1.3 Purpose

The purpose of the Safety and Security Certification Program is to ensure that:

- Design and operating hazards and security vulnerabilities are identified, evaluated and properly controlled or mitigated, prior to the commencement of passenger service;

- All critical system elements are evaluated for compliance with the identified safety and security requirements during the design, construction/installation, testing, and start-up phases of a project; and

- WMATA bus and rail systems are operationally safe and secure for customers, employees, emergency personnel and the general public, prior to entering revenue service or use by WMATA personnel.

1.4 Goals and Objectives

WMATA will self-certify that system extensions and new and rehabilitated facilities, systems and equipment are as safe and secure as reasonably possible, within available resources, for use by passengers, employees, contractors, emergency responders, and the general public. For this reason, the goal of the SSCP is to achieve and demonstrate an acceptable level of risk through:

- Systematic approach to hazard and threat/vulnerability management;

- Compliance with safety and security codes, standards, and industry practices;

- Safety and security criteria adherence and specification compliance; and

- Design, construction/installation, testing, and start-up phase verification and review.

Specific program objectives that support the above goals include:

- Identified safety hazards are evaluated and resolved at the earliest phase of the project, as possible, with actions taken tracked and documented;
- Identified security issues are assessed and resolved at the earliest phase of project, as possible, with actions taken tracked and documented;
- Appropriate codes, guidelines and standards are reviewed and applied so as to provide a basis for safety and security considerations in the design criteria;
- Facilities, systems, and equipment are designed, constructed, built, inspected and tested in accordance with design criteria and specifications;
- Necessary changes are made to system safety plans, security plans, operating and maintenance plans and procedures, rulebook, and training programs;
- Personnel are trained and certified to operate and maintain the facilities, systems, and equipment; and
- Emergency response agencies are trained on the inherent hazards of WMATA operations and response to WMATA emergencies.

1.5 Scope

This Safety and Security Certification Program Plan is applicable to all new rail extensions, buses and rail rolling stock, systems, and facilities. Rehabilitated and modification projects are included in the certification program if it affects safety or security critical systems. The Safety and Security Certification Committee (SCRC) evaluates and determines the level of comprehensiveness for the rehabilitation and modification projects.

Major rail capital projects over $100 million and are funded by the FTA, require project-specific certification plans. FTA may also request a project-specific plan for other capital projects. The development of the project-specific plan will be based on this program plan.

The SSCP addresses three separate, but overlapping functional areas:

- System Safety and Security;
- Fire/Life Safety; and

- Occupational Safety.

The scope of the SSCP encompasses the equipment, operating and maintenance plans, facilities, and procedures for the following:

- System Elements - includes the passenger vehicles, third rail, train control system, voice & data communications, CCTV cameras and recorders, intrusion detection system, traction power substations, track, automatic fare collection equipment, supervisory control, fire protection and suppression systems, auxiliary vehicles and equipment, and buses.

- Fixed Facilities - includes rail stations, parking garages and parking lots, bus stops, pedestrian overpasses and bridges, rail and bus yards and shops, structures, and Central Control. Equipment installed in stations and shops (such as HVAC, escalators, elevators, and lighting) is considered part of the facility.

- Safety, Security, System Assurance, Operational, Maintenance Plans and Procedures - includes items such as Emergency Preparedness Plan, Snow Emergency Plan, Operations and Maintenance Training Programs, Employee Qualification, Emergency Responder Training, Rule Book, Standard Operating Procedures, and Operations Administrative Procedures.

1.6 Revisions

The SSCP is reviewed by the Department of System Safety and Risk Management (SSRM) at least biennially and amended or revised, as required, to reflect process changes as determined by audit activities. Proposed revisions are reviewed by members of the SCRC and submitted to the Standing Safety and Security Executive Committee (SSEC) for approval.

The SSCP is considered a controlled document. Each Plan copy is numbered and recipients are required to sign for the document, upon initial receipt and for Plan updates.

1.7 Reference Documents

The following documents were used either in the preparation of the SSCP, or are references for related information:

1.7.1 WMATA, System Safety Program Plan, Revision No. 13, April 28, 2006;
1.7.2 WMATA, Safety Rules and Procedures Manual, Procedure No. 2.2/0, System Safety Certification Program, June 1, 1997;

1.7.3 Tri-State Oversight Committee Procedures Manual for State Safety Oversight of the WMATA Metrorail System, February 2006;
1.7.4 49 CFR Part 659 Rail Fixed Guideway Systems, State Safety Oversight, Federal Transit Administration;
1.7.5 FTA Office of Safety & Security, Handbook for Transit Safety and Security Certification, November 2002;
1.7.6 Rail Safety Audit Program for the Development of a System Safety Program Plan, American Public Transit Association, August 1991;
1.7.7 Mil-Std-882D. Standard Practice for System Safety, U.S. Department of Defense, February 2000;
1.7.8 Mil-Std-882C. System Safety Program Requirements, U.S. Department of Defense, January 1993;
1.7.9 TFCRC, Hudson Bergen Light Rail Safety Certification Program, April 2001;
1.7.10 MetroLink Safety & Security Certification Program Plan, St. Clair County Extension. St. Louis MetroLink Rail System, December 2000;
1.7.11 State Safety Oversight of Fixed Guideway Systems. System Safety Program Standard. Maryland Department of Transportation, December 1999;
1.7.12 State Safety Oversight of Fixed Guideway Systems. System Safety Program Standard. New Jersey Department of Transportation, January 2000;
1.7.13 Baltimore Metro Safety & Security Certification Program Plan Section C, Mass Transit Administration of Maryland, December 31 1994 (Rev2);

1.8 Acronyms

Acronyms applicable to this Plan are presented herein.

AGM	Assistant General Manager
COG	Metropolitan Washington Council of Governments
ENCP	Engineering and Capital Projects
FTA	Federal Transit Administration
MTPD	Metro Transit Police Department
SSEM	Department of System Safety, Security, and Emergency Management
SSRM	System Safety and Risk Management
SSPP	System Safety Program Plan
SSCP	Safety & Security Certification Program
SSCPP	Safety & Security Certification Program Plan
SCRC	Safety and Security Certification Review Committee
SSEC	Standing Safety and Security Executive Committee
WMATA	Washington Metropolitan Area Transit Authority

SECTION 2 PROGRAM MANAGEMENT, ORGANIZATION, AND RESPONSIBILITIES

2.1 Organizational Management Structure

The WMATA SSCP is managed by a coordinated effort within the WMATA staff. Safety and Security Certification Program implementation is the responsibility of all project staff, including contractors. The SCRC oversees the effectiveness of the SSCP.

2.2 Organizational Responsibilities

2.2.1 Office of System Safety and Risk Management

The Office of System Safety and Risk Management (SSRM), an office in the Department of Safety, Security and Emergency Management (SSEM) is responsible for managing and monitoring implementation of the SSCP on a day-by-day basis, and for verifying completion of all tasks that address safety and security critical elements. Other responsibilities include:

- Reviewing and updating, as required, the Safety and Security Certification Program Plan;
- Chairing the SCRC;
- Identifying and defining the certifiable elements, items, and safety and security requirements;
- Developing the compliance checklists;
- Reviewing verification documentation for each certifiable element to ensure compliance with the identified safety and security requirements;
- Advising the SCRC of documentation discrepancies or completeness that require resolution;
- Determining the hazard severity, probability, and hazard risk index of identified hazards;
- Establishing a hazard/threat log to track all identified safety hazards and security vulnerabilities to resolution;
- Reporting progress of the Safety and Security Certification effort to the SCRC;
- Preparing for issuance Certificates of Compliance for each certifiable element and the system as a whole;
- Auditing the Safety and Security Certification process;
- Recommend revisions to the Safety and Security Certification Program;
- Providing a final Safety and Security Certification Report for each project that has undergone safety and security certification to the SCRC; and
- Transmitting a final Safety and Security Certification Report for each Metrorail project to TOC.

2.2.2 Metro Transit Police Department (MTPD)

The Metro Transit Police Department, a unit within the SSEM, works with project managers to ensure:

- Security requirements are incorporated in project contracts and specifications;
- Development of the security aspects in compliance checklists;
- Security verification documentation supports compliance with the security requirements; and
- An appropriate security risk index is assigned to an identified vulnerability, based on severity and probability.

2.2.3 Engineering and Capital Projects

Engineering and Capital Projects (ENCP) is a unit within the Department of Operations Services. Engineering and Capital Projects is responsible for the engineering and project management aspects of all non-rolling stock capital projects. However, track and elevator renewal projects are the responsibility of the Track and Structures System Maintenance and of Elevator and Escalator Maintenance, respectively. Engineering and Capital Projects staff are charged with the responsibility for implementing the SSCP for each project when safety and security certification is required. Additional safety and security program responsibilities include:

- Participation as active members of the SCRC;
- Assisting in the identification of safety and security certifiable elements, items and requirements;
- Assisting in the development of safety and security compliance checklists;
- Assurance that the project management organization (internal and consultants) incorporate safety and security requirements into the project design criteria and specifications;
- Assurance that project staff and/or the contractor(s) develops an adequate project document record keeping and submittal system to facilitate the verification process;
- Assurance that the contractor meets the identified safety and security specification requirements, under their control; and
- Assurance of the successful completion of all safety/security related specification and integration test program activities.

2.2.4 Office of the Chief Mechanical Officer

The Chief Mechanical Officer is responsible for the acquisition, engineering, design, and maintenance activities of all rolling stock. Other areas of responsibility include storeroom support, training, and quality departments. The Chief Mechanical Officer implements the Safety and Security Certification Plan related to rolling stock related projects subject to certification. The Office of the Chief Mechanical Officer project staff:

- Participates as active members of the SCRC;
- Assists in the identification of safety and security certifiable items and requirements;
- Assists in the development of safety and security compliance checklists;
- Assures that safety and security requirements are incorporated into the design criteria and specifications;
- Assures that staff and contractor(s) develop an adequate project document recordkeeping and submittal system to facilitate the verification process;
- Assures that the contractor meets the identified safety and security design and specification requirements; and
- Assures successful completion of all safety/security related specification and test activities.

2.2.5 Office of Bus Maintenance

The General Superintendent of Bus Maintenance is responsible for the acquisition, engineering, design, and maintenance activities of buses and motor vehicles, including training of maintenance staff. The General Superintendent of Bus Maintenance implements the Safety and Security Certification Plan related to transit bus related projects subject to certification. The Office of Bus Maintenance project staff:

- Participates as active members of the SCRC for transit bus related projects;
- Assists in the identification of safety and security certifiable items and requirements;
- Assists in the development of safety and security compliance checklists;
- Assures that safety and security requirements are incorporated into the design criteria and specifications;
- Assures that staff and contractor(s) develop an adequate project document recordkeeping and submittal system to facilitate the verification process;
- Assures that the contractor meets the identified safety and security design and specification requirements; and
- Assures successful completion of all safety/security related specification

and test activities.

2.2.6 Other WMATA Offices

The Office of System Safety and Risk Management, Office of Engineering, and Capital Projects, and Metro Transit Police are principally involved the safety and security certification process. However, the Office of Track and Structures System Maintenance (TSSM) is responsible for all track related renewal projects. Similarly, the Office of Elevator and Escalator Maintenance (ELES) has the responsibility for all elevator/escalator related renewal work that may be subject to the certification process.

Metrorail and Metrobus operations also support the certification process as it relates to the development of standard and emergency operating procedures and the training and qualification of operating staff.

2.2.7 Safety and Security Certification Review Committee (SCRC)

The Safety and Security Certification Review Committee (SCRC) was established as a subcommittee of the Standing Safety and Security Executive Committee (SSEC) under WMATA Policy/Instruction No.10/2/1. SCRC is responsible for overseeing SSCP implementation and for ensuring that certifiable levels of operational safety and security items (i.e. system, subsystem, and programs) are completed and verified prior to the start of new revenue service, or the placement of rehabilitated facilities and systems into service/use. The SCRC is accountable to the SSEC for the overall conduct and implementation of the SSCPP and approval of the certification documentation, in accordance with the WMATA SSCP. The SCRC is responsible for the following:

- Reviewing the Safety and Security Certification Program Plan to ensure it meets project safety and security requirements;
- At its discretion, establishing project specific working groups responsible for implementing the safety and security certification process;
- Ensuring the safety certification process begins in the planning and design phases and continues through the testing and start-up phases of the project;
- Ensuring certification checklists are prepared and completed in a timely manner;
- Resolving issues of verification documentation discrepancies and incompleteness (evidence of compliance with safety and security requirements);
- Approving mitigation/control measures for open issues, based on the recommendation of project staff, consultant/contractor, and SSRM. If

consensus cannot be reached, the issue is submitted to the SSEC for final resolution;

- Assigning responsibilities for implementation of mitigation/control measures for the open issue(s);
- Defining additional safety/security-related tests and analysis, as required;
- Determining whether to accept the existence of specific conditions or require corrective actions, including the specific method to mitigate control the conditions, based on recommendations;
- Evaluating proposed hazard/threat resolution methodologies and evidence of compliance to safety/security requirements;
- Providing recommendations to the SSEC regarding certification of projects; and
- Approving the final verification report for each project.

The Director of System Safety and Risk Management (SSRM) serves as chair of the SCRC and is responsible for preparing all committee materials, documents, agenda, and issuance of meeting minutes.

WMATA undertakes a wide variety of projects, using many construction management types. For example WMATA may select: a design-build contractor; a design-build-operate-maintain contractor; a systems contactor for rolling stock and other systems procurement; or, a facility constructed under the auspices of a political jurisdiction and then turned over to WMATA to operate and maintain. The SCRC membership may change to meet the special requirements of a particular project, such as adding the start-up manager during the testing phase. SCRC composition for the common construction approaches is depicted in the following matrix.

SCRC Membership	Type of Procurement Contract		
	Design-Build	Systems	Jurisdictional
Director - System Safety and Risk Management, Chair	X	X	X
Engineering and Capital Projects	X	X	X
Chief Mechanical Officer (rail vehicle procurement and maintenance)	-	Rail only	-
Metro Transit Police Deputy Chief	X	X	X
Rail Transportation	Rail only	Rail only	X
Bus Transportation	Bus only	Bus only	X
Rail Power and Way	Rail only	Rail only	Rail only
Plant Maintenance	X	X	X
Elevator and Escalator Maintenance	X	X	X
Bus Vehicle Maintenance (transit bus procurement and maintenance)	Bus only	Bus only	Bus only - TBD
Project Mgr., General Engineering Consultant*	X	X	X
Project Mgr., Contractor*	X	X	X

Figure 1 – Safety and Security Certification Participation by Department

* Observer

SCRC representative designees have the same decision-making authority as the primary representative.

As conditions require, subcommittees may be formed for specific purposes, using

special expertise to resolve a hazardous condition or vulnerability. Other WMATA staff may be requested to provide their expert input on specific agenda items. Personnel from the following organizations may also be requested to provide information, assistance, and advice:

- Local and State Police and Fire Departments;
- Engineering Design and Construction Consultants, to include resident engineers; and
- Metropolitan Washington Council of Governments (COG).

The SCRC meets at least monthly to assess the status of the certification effort of each project in the Safety and Security Certification Program. The SCRC may meet more frequently to resolve outstanding safety and security issues, as they arise, and to approve Certificates of Compliance, as they are completed, or less frequently if no committee business is pending.

SCRC actions are based on a consensus process involving all Committee members. In the event the SCRC is unsuccessful in resolving an issue, the Committee Chairperson summarizing the points of view prepares a written report. The report is submitted to the Standing Safety and Security Executive Committee for review and resolution. The final action taken will be noted in the SCRC minutes and the Open Items List.

2.2.8 Standing Safety and Security Executive Committee

The Standing Safety and Security Executive Committee is comprised of senior and executive management staff and oversees several safety subcommittees, of which the SCRC is one. The SSEC performs an executive management review of the Safety and Security Certification Program. The SSEC is also responsible for issuing the Project System Safety Certificate for each project, as recommended by the SCRC. The SSEC is also responsible for resolving issues that cannot be resolved by the SCRC.

2.2.9 Passenger Rail Safety Subcommittee

The Passenger Rail Safety Subcommittee reports to the Metropolitan Washington Council of Governments (COG) Fire Chiefs' Committee. It is a standing subcommittee whose purpose is to provide a liaison between WMATA and fire/rescue agencies. The Subcommittee is comprised of representatives from the six major fire jurisdictions and the Department of System Safety and Risk Management. The responsibilities of the Subcommittee are to:

- Provide recommendations on Metro-related fire emergency equipment;
- Develop, update and maintain emergency procedures affecting WMATA;
- Review and recommend fire/life safety criteria changes as necessary for equipment and facilities during the design phase;
- Review and revise as necessary, Policy Agreements;
- Advise the Fire Chiefs' Committee on safety problem areas; and
- Provide liaison for fire service training.

The Subcommittee is informed of proposed facilities and systems and of design changes that may affect rescue procedures and fire protection and life safety features, before they are implemented by WMATA. WMATA and COG staffs also provide technical and logistical support to the SCRC.

SECTION 3: SAFETY AND SECURITY CERTIFICATION PROCESS

3.1 Steps in the Safety and Security Certification Process

The Safety and Security Certification Process begins with system planning and design, and continues into the start of revenue service. **It is imperative that the Safety and Security Certification process is completed and all Category I and II hazards, associated with the use of a new or rehabilitated system or facility, are eliminated or effectively controlled prior to the start of in-service use. Certification of all non-operational certifiable elements for any new or rehabilitated rail line segment or rail related system or opening of a rail related facility must be fully completed prior to entering the pre-revenue demonstration phase of the project. The pre-revenue demonstration phase must be started a minimum of 30 days in advance of the anticipated opening date. This timeframe is required to allow the operating department and the Tri-State Oversight Committee (TOC) to conduct an operations readiness review of the system or facility being placed into service. When establishing an opening date for the rail line segment, system, passenger vehicle use, or facility, this timeframe must be considered. Non-rail related facilities or systems are not permitted to be placed into service prior to the issuance of the System Safety and Security Certificate.**

The steps required to attain System Safety and Security Certification are discussed in the subsequent sections:

- Step 1 Identify safety and security certifiable elements and items, and prepare the Certifiable Elements List and Certifiable Items List (CIL);

- Step 2 Develop safety and security design criteria;
- Step 3 Develop design criteria compliance checklist and review for compliance with design criteria;
- Step 4 Develop specification compliance checklist and review for compliance with construction specifications;
- Step 5 Manage Test Requirements and Conduct Tests;
- Step 6 Develop Operational Checklist and Verify Compliance with Operational Requirements;
- Step 7 Manage "Open Items" and Safety Critical Items List (SCIL);
- Step 8 Verify operational readiness;
- Step 9 Issue Certificates of Compliance;
- Step 10 Issue System Safety Certificate of Compliance; and
- Step 11 Issue Safety and Security Verification Report and Final Project Close-out.

The above listed steps are performed for new extensions, systems, rolling stock, and facilities. The certification process for rehabilitated and modified systems, rolling stock, and facilities is tailored to the scope of the project and its safety/security affect, if any, on the current operating environment, including the operational elements. (See Section 3.3) The matrix below (Figure 2) provides an overview of the certification steps and the WMATA departments involved.

Key Safety and Security Certification Steps	Design Review Phase					Construction / Test Phase					Pre-Revenue/Start-up Phase				
	ECP	CTR	TP	SAF	OPS	ECP	CTR	TP	SAF	OPS	ECP	CTR	TP	SAF	OPS
Identify Certifiable Elements & Items	S	(-)	S	P	S	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Develop Safety & Security Design Criteria & Specifications	P	S	S	S	S	P	S	S	S	S	N/A	N/A	N/A	N/A	N/A
Develop Design Criteria Compliance Checklists & Review for Compliance with Design Criteria	S	(-)	S	P	RC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A
Develop Construction Specification Compliance Checklist & Review for Compliance with Specifications	(-)	(-)	(-)	(-)	(-)	S	S	S	P	S	N/A	N/A	N/A	N/A	N/A
Manage Test Requirements & Conduct Tests	S	(-)	(-)	(-)	(-)	S	P	S	S	S	N/A	N/A	N/A	N/A	N/A
Develop Operational Compliance Checklist and Verify Compliance with Operational Requirements	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S	S	S	P	S
Manage "Open Items" in the SSC Program *	S	S	RC	P	S	S	S	RC	P	RC	S	S	S	P	S
Verify Operational Readiness	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S	P	S
Issue Element Certificate of Compliance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S	S	S	P(1)	S
Issue System Safety Certificate of Compliance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S	S	S	P(1)	S
Issue Safety & Security Verification Report & Final Project Closeout	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	S	S	S	P(1)	S

P = PRIME RESPONSIBILITY
S = SUPPORT RESPONSIBILITY
ECP = ENGINEERING and CAPITAL PROJECTS
CTR =CONSTRUCTION CONTRACTORS/CONSTRUCTION MANAGEMENT
TP = TRANSIT POLICE
SAF = SCRC, SSRM & THE SAFETY AND SECURITY CONSULTANT
OPS = OPERATIONS
(-) = NO RESPONSIBILITY
N/A = NOT IN THIS PHASE
RC = REVIEW & COMMENT
(1) = Prepared by SSRM, ISSUED BY SCRC
* = CONTINUES INTO REVENUE PHASE

Figure 2 - Safety and Security Certification Program Responsibilities Matrix

3.1.1 Step 1 - Identify Safety and Security Certifiable Elements and Prepare Certifiable Items List.

The certification process begins with the identification of individual elements that are critical to the safety and security of WMATA customers, employees, emergency responders, or general public. These are referred to as "Certifiable Elements". Certifiable elements are typically defined by contract and/or specifications. These elements are broken down into four major categories; facilities/equipment, systems, integrated test requirements, and operational requirements (passenger vehicles, passenger stations, maintenance facility, training, etc.) as shown in Figure 3. A log of the certifiable elements is maintained and is referred to as the Certifiable Elements List (CEL). Many of the major certifiable elements on the CEL are composed of numerous sub-elements (equipment and subsystems) that also require certification to complete the certification process of a major certifiable element. For example, each traction power substation requires individual certification and each is tracked as a sub-element of the major element "Traction Power". Similarly, each passenger vehicle in the fleet needs to be certified before the fleet as whole is certified.

The certifiable elements are composed of numerous items. These items make-up the whole of the major element and require safety or security verification before the major element is considered safe and secure for use. This is known as the Certifiable Items List (CIL). Specific certifiable items on the list are dependent on the project. For each of the certifiable items, the safety and security requirements are listed. The CIL and corresponding safety and security requirements are developed jointly by SSRM and ENCP and Chief Mechanical Officer (rolling stock only) staff.

The CEL and CIL may be modified by SCRC, as needed, in order to meet the Safety and Security Certification Program requirements.

Figure 4 illustrates the process for tracking the certifiable elements and when elements are identified during the design phase and tracked throughout the project and certification process.

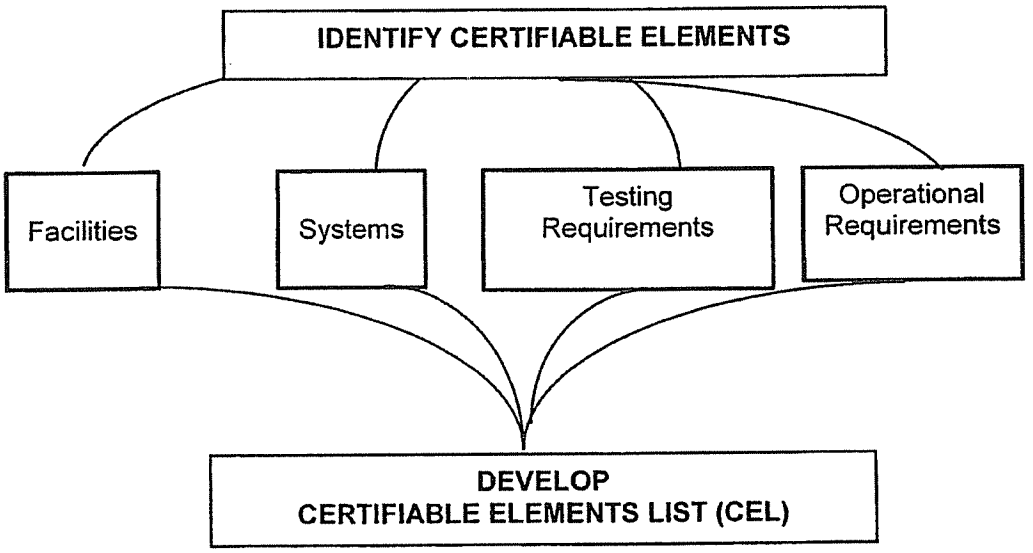


Figure 3 - Certifiable Elements List Development

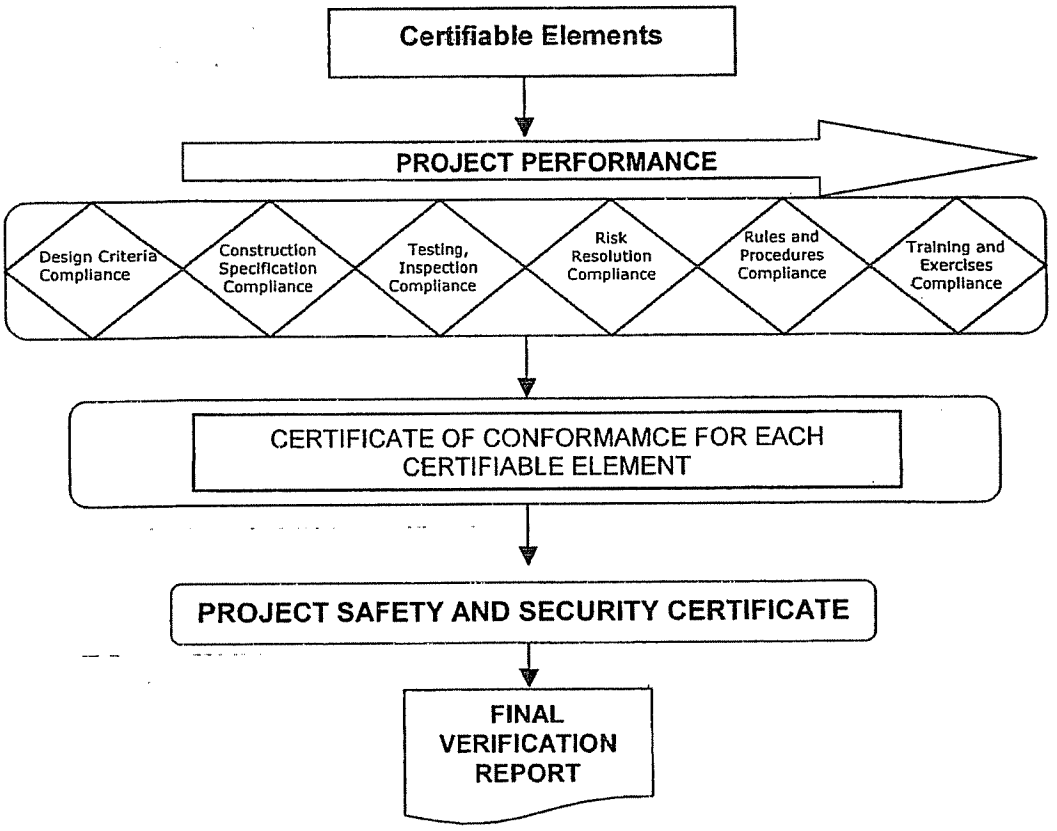


Figure 4 - Certifiable Elements and the Certification Process

3.1.2 Step 2 - Develop Safety and Security Design Criteria

Suitable guidelines and controls are needed to guide project designs so that the safety and security aspects of each certifiable item are addressed. These guidelines and controls form specific criteria that are used to govern project design. Safety and security design criteria are generated from:

- Technical specifications from previous contracts;
- Existing agency design and performance criteria;
- Transit agency "lessons learned" from operating experience;
- The results of the preliminary hazard analysis (PHA);
- The results of the threat and vulnerability assessment (TVA);
- Transit industry safety and security practice and reports; and
- Applicable safety and security codes, standards, and regulations defined by Federal, State, and local agencies and standards boards and organizations.

Architectural and engineering design criteria and standards for the design, construction, reconstruction, maintenance, and operation of the Metro Rail and Metro Bus systems are established, maintained, and promulgated by the WMATA Design Control Board (DCB). The DCB is comprised of senior level representatives from Engineering and Capital Projects, Operations, System Safety, and Metro Transit Police. The DCB updates the design criteria and standards, as warranted.

Safety and security requirements are included in the following WMATA documents: Manual of Design Criteria, Design Drawings, Standard Drawings and Technical Specifications. Additional requirements are included from applicable local and state codes, hazard and vulnerability assessments and industry standards. These criteria define how the certifiable items' safety and security aspects are addressed in the completed project and how their requirements become manifest in the final design drawings and specifications.

3.1.3 Step 3 – Develop Checklist and Review Compliance with Design Criteria

Safety and security are addressed during project design through the identification of safety and security design criteria for each certifiable element. Safety and security design criteria are intended to provide guidance to the project design team to support the definition of systems, sub-systems and components, the development of performance requirements, and the final specification of the engineered system (Figure 5). Whenever possible, reference to their identification and documentation are included in the procurement package for design services.

A compliance checklist (see Attachment 1) is used to verify that the safety and security-related criteria requirements are reflected in the contract design documents from the preliminary to final design review stage. The checklist documents that:

- Design documentation contains the safety and security-related requirements identified in the criteria;
- Designs meet safety code and regulatory compliance;
- Designs reflect transit industry safety and security standards and practices; and
- Safety and security-related design comments were addressed and successfully resolved.

To effectively manage the certification process, the criteria, code, and other requirements are integrated on a single Design/Construction/Test Compliance checklist. This approach enables the use of a single checklist; and maintains a safety/security requirements continuity link as the project moves from the design phase to the specification/construction/installation/test phase.

SSRM is responsible for the initial development of the checklist. The checklist is then sent forward to Engineering and Capital Projects staff or the Chief Mechanical Officer, for rolling stock related projects. Modifications affecting existing track and elevators and escalators, are sent to TSSM and ELES, respectively. The checklists are also sent to MTPD for security related systems. Project staff may recommend that:

- Items that are not certifiable be eliminated;
- Items that are not safety or security related be eliminated;
- Requirements considered to be safety or security critical are incorporated;
- Information to clarify the specific requirement and/or reference for an item be included; and
- Accepted industry practices be incorporated.

SSRM incorporates changes to the checklist, if any, and assigns it to the appropriate design team leader for completion. The design team leader is responsible for having the appropriate design team member affirm that the design conforms to the referenced, pre-established codes, standards, and criteria and that these have been properly incorporated into the specifications and drawings. The design team member completes the Design portion of the checklist by identifying the specification sections and drawings, and other verification documentation and by signature. As the checklists are completed, SSRM audits the documentation to ensure it supports the compliance with the criteria, codes, and standards. Any unresolved issues are tracked to resolution.

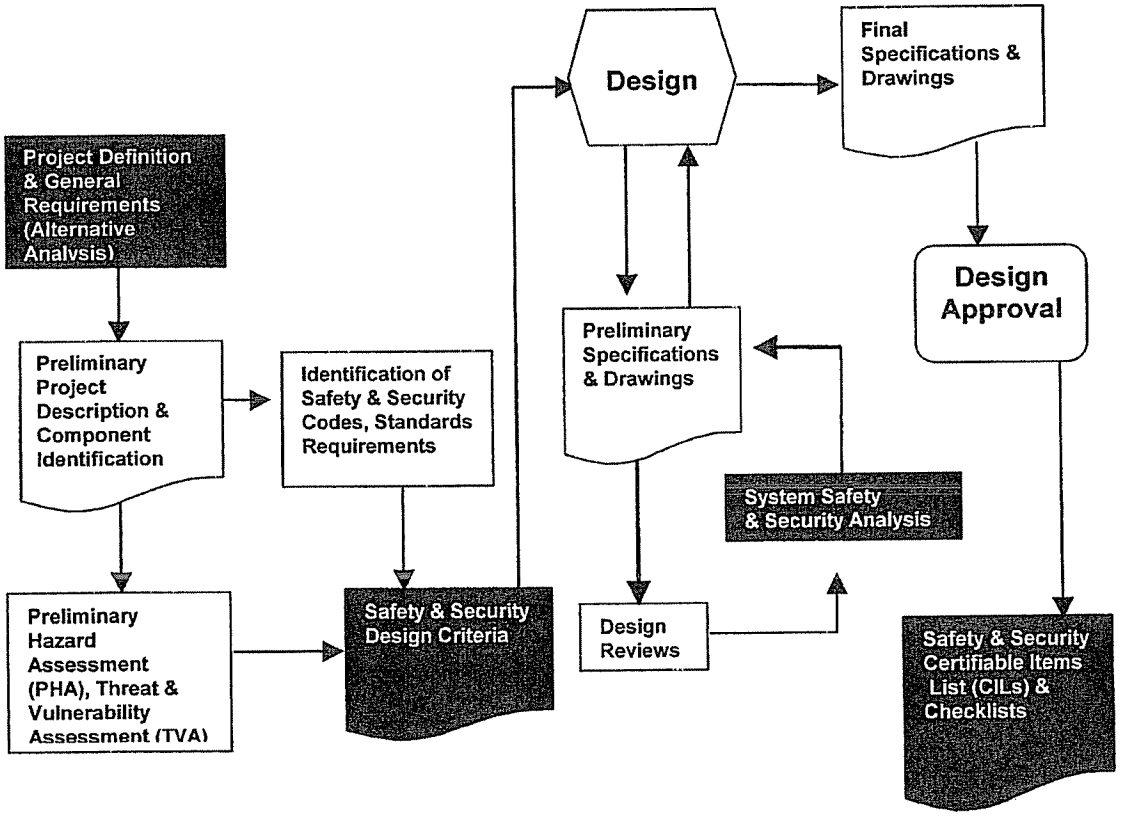


Figure 5 - Safety and Security Design Criteria and Project Specifications

3.1.4 Step 4 – Develop and Perform Technical Specification Compliance During Construction

Specification compliance is performed to establish a formal process to verify that all safety and security-related specification and contract document requirements are satisfied during the construction, installation, and testing phases of the project.

Many of the safety and security requirements in the specifications take the form of specific deliverables, such as manuals, hazard analyses, reports, approved contract submittals, factory test procedures and results, and inspection reports. However, other safety requirements may not take the form of specific contractor or in-house deliverable documents, but still require verification. Compliance with these types of safety and security-related requirements are subject to verification during audits, inspections and tests.

Prior to moving from the design phase to the construction phase, SSRM, in coordination with WMATA Project staff, develops the Construction and Test portions of the checklist within the Design/Construction/Test Compliance checklist (see Attachment 1). The safety and security requirements are derived from the contract documents, codes, and standards. Contractor and manufacturer conducted tests that verify safety or security functionality or performance requirement are included on the checklist. When consensus is reached on this section of the checklist, the checklist is given to WMATA Project staff for completion. The assigned Project Manager is responsible for completing the Construction/Test portion of the checklist.

As this section of the checklist is completed, Project staff prepares a binder that is used to assemble and organize the required verification documentation. Verification documentation includes:

- Inspection reports;
- Mill certificates;
- Photos;
- Visual inspection reports;
- Test reports; and
- Witnessing safety/security critical tests.

Drawings sets and other large volume documentation are only referenced.

A Visual Inspection Report (Attachment 2) may be used to verify safety and security requirements that cannot be verified with other documentation. The completed and signed Visual Inspection Report form, including comments to demonstrate compliance, is referenced on the Compliance Checklist and becomes part of the certification documentation.

Checklists are updated when subsequent approved engineering changes impact safety or security.

As certification activities advance, SSRM monitors progress on the various checklists. This step is to ensure that the documentation effort is keeping pace with the project schedule. Any items that are lagging in the certification documentation or experience problems achieving certification are tracked and discussed at the SCRC meetings for resolution.

After completing the Construction and Test portions of the checklist, the Project Manager submits the checklist to SSRM for review. SSRM audits the documentation to ensure that it supports the identified requirements. As a component of the audit

process, walk-through inspections of completed facilities, stations, vehicle rights-of-way, and vehicles are performed to determine that safety, security, and fire/life safety requirements have been incorporated into the construction/ installation of the project and that new, previously unidentified hazards are not present.

3.1.5 Step 5 - Conduct and Manage Test Requirements

3.1.5.1 General

During the construction and start-up phases, many contractual and integrated tests are conducted for the purpose of verifying proper operation of equipment being furnished and constructed for the project. These tests are reviewed for safety and security considerations and test procedures approved before any test results are considered as meeting the test requirements. The test results are then verified per the procedures. The test plan, procedures, and test results are part of the Safety and Security Certification documentation package and are subject to audit.

The need for additional tests may arise for various reasons throughout the project. SCRC reviews and determines the need and, if warranted, requests that the additional tests be conducted. The added tests are included in the Design/Construction/Test Compliance Checklist and their results documented.

SSRM and/or MTPD may observe safety/security critical tests, including but not limited to, first article inspections, mock-up reviews, qualification tests, performance tests, and acceptance tests. Testing of fire/life safety systems is coordinated with the jurisdictional fire marshal. Similarly TOC may wish to witness specific safety critical tests. Prior to or just after the start of each project, the Tri-State Oversight Committee will be requested to submit a list of those tests to WMATA. TOC will be provided a test schedule and notified of the tests with sufficient time to permit attendance.

3.1.5.2 Test Required by Technical Specifications

Contractor testing, as required by the contract technical specifications, verifies the functionality of the involved system or equipment. Contractor testing is subject to certification. Contractor testing is tracked and verified on the Design/Construction/Test Compliance checklist. Typical specification tests include qualification, manufacturing, performance, and acceptance tests such as sprinkler systems, alarms, emergency management panels, fire management panels, and camera systems.

3.1.5.3 Integrated Tests and Pre-Operational Testing

WMATA specified tests may include integrated and pre-operational demonstration tests. Many of these tests are incorporated in the contract documents. Others are not necessarily required by contract specifications, but are required as part of an overall Test Plan. These tests are developed to verify the compatibly and safety/security functionality of equipment and systems. Non-contractual integrated and pre-operational demonstration tests are entered on the Design/Construction/Test Compliance checklist for tracking purposes. The Project Manager is responsible for the development and implementation of the integrated and pre-operational test demonstration plans, including test procedures related to each test, and the logging of all test documentation. SSRM assists in the development and/or reviews the development of the test plans and procedures.

Prior to conducting an integrated test, a number of safety and security specification compliance requirements completed and/or issues resolved. Requirements and issues are dependent on the type and nature of the test. The Project Manager notifies SSRM of the intent to conduct an integrated test. SSRM, in collaboration with the Project Manager, determines the current level of verification for each element involved in the test. If the safety/security certification of the elements required for the test is not complete, SSRM issues a Temporary Use Notice (TUN), see Attachment 3. The TUN is forwarded to the engineer responsible for the particular element involved in the test. Only signatures for those elements that have not been issued a Certificate of Compliance are obtained. Any operation or test restriction is noted on the permit and the test procedure.

3.1.5.4 Temporary Use Notice – Other Uses

At times, it may be necessary to temporarily use a facility or system for purposes other than testing when it has not been certified. Such circumstances include, but are not limited to, the movement of a rail passenger car from one facility to another under its own power, or the use of a facility or system for training purposes. A Temporary Use Notice (TUN) must be issued for that facility or system prior to use:

- By WMATA staff;
- When the facility or system is under the control of the contractor/vendor and the facility/system is to be used by others; and
- On any portion of the current WMATA operating system.

The TUN is forwarded to each party involved in the temporary use, including the Project Manager and SSRM, for signature. All required signatures must be obtained prior to the facility or system being used. All restrictions noted on the TUN must be followed. The TUN expires upon completion of the task.

3.1.6 Step 6 – Develop Operational Checklist and Verify Compliance with Operational Requirements

The safety and security-related plans and procedures, including training programs, are certified to assure that the major operations, maintenance, security, and safety programs, procedures, and plans have been modified as necessary to meet the system safety and security program requirements, and are in place prior to revenue service. In addition, the personnel who operate, maintain, provide security, and respond to emergency situations must have an in-depth knowledge of these plans, procedures, and programs prior to beginning revenue service.

The Safety and Security Certification process provides verification that:

- Rules, procedures, and manuals meet code and regulatory requirements, if applicable;
- Operations, maintenance, and emergency rules, procedures, and plans have been developed, modified, reviewed, and implemented;
- Manuals, showing how to operate and maintain system equipment and facilities, have been developed, reviewed, approved, and accepted by the project team;
- Training programs have been developed and incorporate information regarding safety features of the system for normal, abnormal and emergency conditions;
- Training adequately addresses the operation and maintenance of safety and security critical systems and equipment;
- Safety/security related training for operations and maintenance personnel has been delivered, and successfully completed by all affected WMATA personnel; and
- Emergency training has been developed, performed, and completed by all personnel, including fire, police, and emergency medical services personnel.

Verification of these activities includes documentation of their completion and

signatures of the appropriate officials or employees responsible for them. Operating and maintenance procedures and plans are judged as meeting the verification requirements or are recommended for modification. SSRM collects and maintains the required documentation.

3.1.7 Step 7 - Manage Open Items List and Safety Critical Items List (SCIL)

During the completion of the Compliance Checklists, instances of non-compliance with a safety or security requirement are noted. If the issue cannot be resolved at the project staff level, they are forwarded to the SCRC for resolution. Open items may be resolved by any of the following actions:

- Correction;
- Mitigation through physical modification, revised specifications or revised operating procedure;
- Deferral of corrections, with operational or use restrictions imposed; and
- Retention, as is, with supporting rationale.

In those cases where it is impractical to resolve the open item by meeting the original requirement, the SCRC will develop an acceptable alternative, including placing the item into service as-is, and provide rationale for the alternative.

If an open item is classified as a Category I (Catastrophic) or a Category II (Serious) hazard, it is transferred to a Safety Critical Items List (SCIL), (see Attachment 4). This includes those Category I and II open items identified through analyses or field reporting. All items on the SCIL are tracked to closure. When it is determined that an open issue or exception cannot be resolved to meet the safety requirement for issuance of a System Safety and Security Certificate, the SCRC will determine an acceptable alternative, notify the Standing Safety Executive Committee Chair, and formally document the decision as part of the verification for the certifiable element. SSRM will coordinate the decision by issuing a document verifying closure or proposing an acceptable resolution for the exception. This process will ensure that the safety and security designed into the system are realized in the delivered, tested, and verified project.

3.1.8 Step 8 - Verify Operational Readiness

WMATA staff performs pre-revenue demonstration tests a minimum of 30 days prior to the revenue service start date to verify the functional capability and operational readiness of the system. The Tri-State Oversight Committee also reserves the right to conduct its own independent operational readiness review of a new line segment. During the pre-revenue phase of the system, the procedures and plans are tested for

effectiveness under simulated operating conditions for normal, abnormal, and emergency situations.

In addition, a final "walk-through inspection" of completed facilities and systems is performed.

3.1.8.1 Emergency Drills

Prior to start of revenue service, simulated emergency drills are performed at selected sites and coordinated by SSRM with OPER and MTPD and involved external emergency response agencies. The drills are certified to verify the adequacy of emergency response plans and procedures and assure that outside emergency response personnel are prepared to adequately respond to emergencies at WMATA. Emergency drills are developed and conducted to:

- Familiarize emergency responders with WMATA operations and inherent hazards;
- Familiarize and train response personnel in emergency procedures;
- Evaluate, and identify improvements to, response procedures before a real emergency occurs; and
- Maintain an adequate level of preparation for a possible emergency.

3.1.9 Step 9 – Review and Issue Safety and Security Certificates of Compliance

When a certifiable element or sub-element is ready for certification, a Certificate of Compliance is issued to document that all relevant safety and security requirements have been fulfilled. The following describes, in sequential order, the process for approving the Certificates of Compliance (Attachment 6).

Upon completion of the certification checklist for the certifiable element, the responsible project manager or engineer forwards the checklist, along with the supporting documentation to SSRM. The Director–SSRM initiates a review of the checklist for completeness and audits the supporting documentation. If the documentation adequately supports fulfillment of the safety and security requirements, the Director–SSRM prepares a certification package and forwards a recommendation regarding certification to the SCRC with restrictions, conditions, or approved temporary measures, as applicable.

The SCRC convenes to evaluate the evidence and resolves any exceptions to the requirements, open items or other issues related to issuance of the certificate. If the SCRC is satisfied that the requirements for the certifiable element or sub-element

have been fulfilled, the appropriate project and WMATA staff signs a Certificate of Compliance, along with any restrictions, exceptions, conditions, or approved temporary measures.

The original, signed Certificate of Compliance and verification package are logged and filed in the Certification file.

When removal of restrictions attached to a Certificate is appropriate, an addendum to the Certificate of Compliance is prepared. To become effective, the addendum is signed by the same levels of authority as that on the original Certificate.

3.1.10 Step 10 - Issue System Safety and Security Certificate

The System Safety and Security Certificate of Compliance (Attachment 7) provides formal notification that the applicable portion of the operating system is safe and secure for revenue service. Prior to complete integration into revenue service, the Director-SSRM prepares the final System Safety and Security Certificate of Compliance for the Project. The SCRC confirms the service readiness of the capital project for use in WMATA operations and/or revenue service, and the Certificate is distributed for signature. The original, signed copy is retained in the Certification file for the Project. Deferred work, approved temporary measures, and operational restrictions that remain in effect, if any, are highlighted under the "Restrictions" section of the certificate. The restrictions and approved temporary measures are tracked until finally resolved and approved by the SCRC.

The Safety and Security Certification process for all physical, non-operational elements of a rail extension or rail related system or facility must be completed and all Category I and Category II hazards eliminated or effectively controlled prior to the start of the pre-revenue demonstration phase of the Project. Additionally, the pre-revenue demonstration phase must begin at least 30 days prior to the start of revenue service in order to satisfactorily demonstrate operational readiness. When determining the revenue service/use start date for the new or rehabilitated line segment, system, or facility, sufficient time must be allocated in the project schedule for a readiness review by TOC and for the issuance of the System Safety and Security Certificate.

3.1.11 Step 11 - Issue Safety and Security Certification Verification Report

Within 30 days after the start of revenue service, SSRM prepares a Safety and Security Certification Verification Report for the Project. The report summarizes the safety and security certification effort and the readiness of the line segment, facility, or system to be placed into service; an annotated matrix of the Critical Items List

indicating the status (open/closed) of each item; Open Items List; and recommended actions and schedule for permanently closing out all open items, restrictions, and approved temporary measures. The report includes copies of the certification checklists, Certificates of Compliance for each certifiable element, and the System Safety and Security Certification document. A copy of the report for rail projects is submitted to the TOC.

3.1.11.1 Follow-up and Close-out

Typically there are contingencies in place when the system/facility enters into revenue service. The SCRC tracks these items and any others to closure, with the support of SSRM, ensuring the documentation is complete and accurate.

3.2 Design-Build Projects Safety and Security Certification Program Plans

The FTA funded design-build rail projects valued over $100 million require Project Specific Safety and Security Certification Plans. Other projects that contain safety/security critical elements may require a Project Specific SSCPP, as determined by the FTA or the Standing Safety and Security Executive Committee. Examples are infill rail stations, Metro Matters Yard facility projects, rail car rehabilitation projects, and bus procurements; The SSCPP is developed and executed by the design-build contractor, and reviewed and approved by SSRM in collaboration with the Project Manager. The design-build project safety and security certification plan is required to conform to the provisions contained in the FTA Handbook on Transit Safety and Security Certification guidelines, the requirements of 49 CFR Part 659 and the Tri-State Oversight Committee, and the WMATA Safety and Security Certification Program Plan. Additionally, the plan must delineate the roles and responsibilities of WMATA and the Design-Builder's project staff in the design-build certification program. SSRM is responsible for auditing the contractor program to ensure that it is being implemented in accordance with the approved plan and within the required timeframes.

SSRM collaborates with the appropriate Engineering and Capital Projects and MTPD project staff to identify those projects that require a project specific Safety and Security Certification Program Plan.

3.3 Rehabilitation and Modification System, Rolling Stock, and Facility Projects

Many facilities and systems, including rolling stock, require rehabilitation or modification due to their age and need for conformance with new requirements. These facilities and systems are subject to safety and security certification if the system or facility include safety or security critical elements and/or has a

safety/security impact on the current operating environment. However, certification is limited to the rehabilitated/modified sub-system itself and to all systems and operational elements affected by the rehabilitation/modification. For example, an upgrade of a traction power substation transformer may require upgrading the rectifier, size of the cabling, switchgear, protective breakers, and the cabling to the third rail. In addition to verifying that those subsystems comply with the safety related specification and test requirements, the certification process also includes assurance that drawings, manuals, and other safety critical maintenance documentation and maintenance procedures and training have been revised to reflect the upgrade. As a result, the verification steps involved for a particular project is dependent on the type of project and its affect on other systems/subsystems. Rehabilitation/modification projects fall into one of three project categories, as illustrated in Figure 6.

Project Categories		
Category 1	**Category 2**	**Category 3**
• **Automatic Train Control** • **Automatic Train Protection** • **Compressed Natural Gas Facilities and Systems** • **Rail Operations Control Systems** • **PROTECT Systems**	• **Traction Power Substation Equipment**	• **Communication Systems** • **Fire Protection Systems** • **Fire/Intrusion Alarm Systems** • **AC Power Switchgear** • **Traction Power Equipment** • **Emergency Ventilation Systems** • **Maintenance Facility Equipment**

Figure 6 – Typical Rehabilitation/Modification Projects Subject to Certification

The verification steps required for each of the project categories is as follows;

- Category 1 – Design, construction, testing, training and manual/procedures/drawing updates verification steps are required
- Category 2 – Specification, testing, training, and manual/procedures/drawing updates verification steps are required
- Category 3 – Testing, training, and manual/procedures/drawing updates verification steps only are required

Other projects, such as garage repair and Smart Trip Vending Machines are not subject to the certification process. However, projects not identified in Figure 6, may

be added; based on the scope and safety/security impact of the project, and on the recommendation of the SCRC to the SSEC. A list of those projects currently subject to safety and security certification is found in Attachment 8.

Upon completion of the work, a Certificate of Compliance – Rehabilitation/Modification Project (Attachment 5) is prepared and signed by all affected departments – SSRM, the Project Manager, and Operations.

3.3.1 Daily Certification to Ensure Operational Readiness for In-service Systems

Rehabilitation or modification work on safety critical rail operating systems, such as train control and track, may require the systems to be returned to revenue service at the end of the work shift or work period. To assure that the system may be returned for revenue service, a Site Specific Work Plan is developed to define the requirements for using the system in service. Prior to the start of the work, the Project Manager develops a Site Specific Work Plan in collaboration with SSRM, as described in OAP No. 200-33 – Site Specific Work Plan.

The daily testing plans and certifications are signed by the contractor employee performing the work, the Project Manager's designee, and SSRM. Daily testing and certifications are documented and maintained as part of the safety and security certification documentation.

SECTION 4: HAZARD MANAGEMENT

4.1 Safety Hazard Management Process

Hazard management is the formal process to systematically recognize, identify, evaluate, and resolve hazards associated with the design, construction, testing, start-up, and operation of the project for customers, employees, and the general public. Recognized hazards are identified and categorized as to their potential severity and probability of occurrence, and analyzed for potential impact. Those hazards are resolved by design, engineering control, procedure, warning device, or other method, so that they fall within the level of risk acceptable to WMATA management.

For capital projects, hazard management is most effective when applied during preliminary engineering and final design, but is used throughout each phase of a project, including start-up and operations. Hazard management is also used to evaluate the safety impacts of deviations from the baseline design, engineering/construction change orders and operational approved temporary

measures, and other modifications made during construction, testing, and project activation.

Figure 7 illustrates the process used for identifying, resolving, and tracking safety hazards throughout all phases of project development activity. A more detailed description of the hazard management process is found in the WMATA System Safety Program Plan.

4.2 Hazard Identification and Resolution

System hazards are identified through specific hazard analyses, audits, inspections, or reviews. A Preliminary Hazard Analysis (PHA) is performed during the preliminary and final engineering phases of the project to identify hazards and recommend possible countermeasures. The identified hazards are tracked to closure to ensure they have been adequately addressed through the safety certification process. SSRM is responsible for tracking all open items.

FTA has adapted category ratings for hazards. The most severe of these are:

- Category I (Catastrophic) – Defined as death or system loss; and
- Category II (Critical) – Defined as severe injury, severe occupational loss, or major system damage.

The goal of hazard management at WMATA is to verify that all identified Category I & II hazards are resolved or controlled to an acceptable level. The SCRC monitors the safety hazards from the identification stage to final resolution. The status of each Category I & II hazard are required to be resolved 30 days prior to the system, facility, or equipment is placed into service

Once the control measures are implemented, additional analyses may be required to ensure that the mitigation measures adopted to eliminate or minimize the risks are effective.

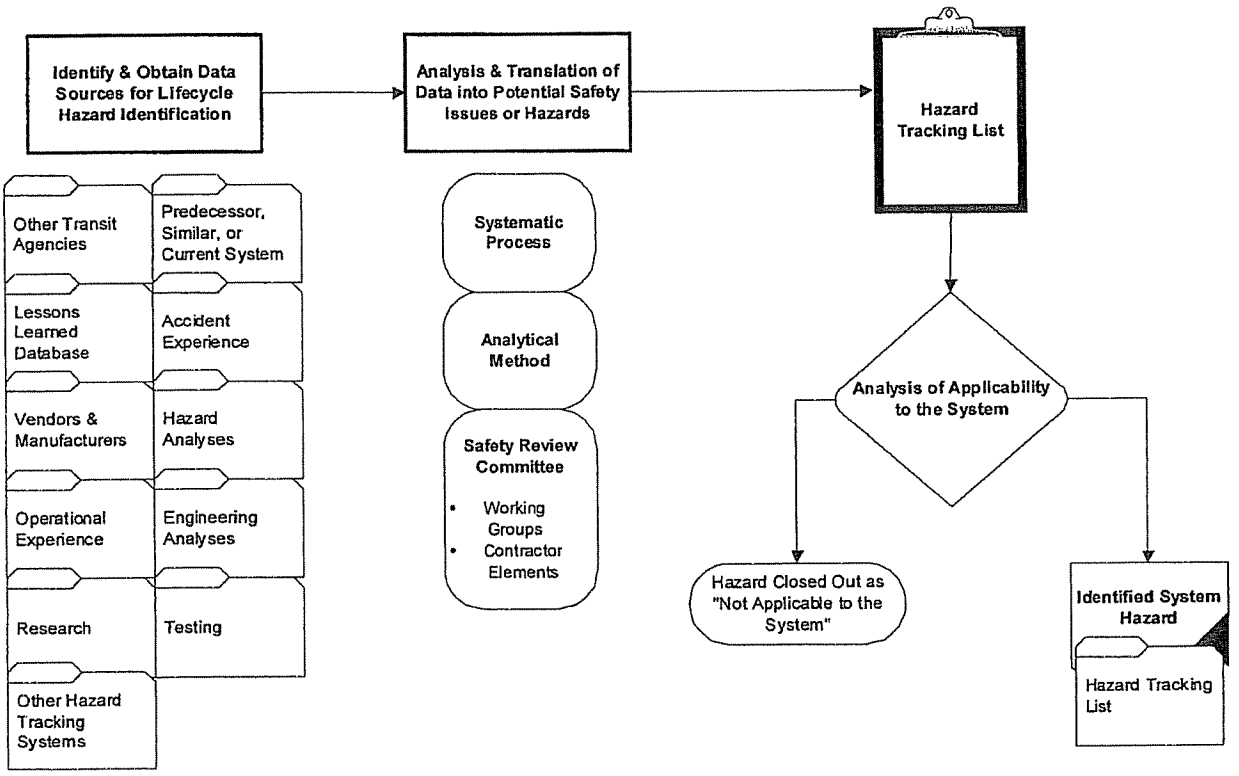


Figure 7 - Safety Hazard Identification and Risk Acceptance Process

SECTION 5 SECURITY RISK MANAGEMENT

5.1 Security Risk Assessment Process

Planning in advance of a terrorist act, potential criminal activity committed on transit property, or other security incident is essential in providing passengers and employees with a safe and secure environment. A security incident may result in serious injuries or death, destruction of property and facilities, and the inability to continue transit operations to the region. To evaluate the susceptibility to potential threats and identify design corrective actions that can reduce or mitigate the risk of serious consequences from a security incident, WMATA conducts a Security Risk Assessment during each phase of each rail extension. Security Risk Assessments are also conducted for other capital projects, as determined by the SCRC or the SSEC.

The Security Risk Assessment process consists of four activities:

- Identification of critical assets in the rail extension or other transit project;
- Analysis of the threats against the assets;
- Identification of vulnerabilities within the proposed system; and
- Summary analysis of security incident consequences.

The Security Risk Assessment identifies the likelihood of specific threats that may endanger WMATA assets (people and property), the potential vulnerabilities associated with the design of a particular project, and allows for mitigation efforts to be "designed into" the project in order to reduce the security risk and to minimize the consequences of the identified criminal and terrorism activities. It also identifies the security training needs of WMATA personnel and necessary security procedures. Security vulnerabilities identified in projects are managed in the certification process similarly to safety hazards, as discussed in Section 4.The Security Risk Assessment process is summarized in Figure 8.

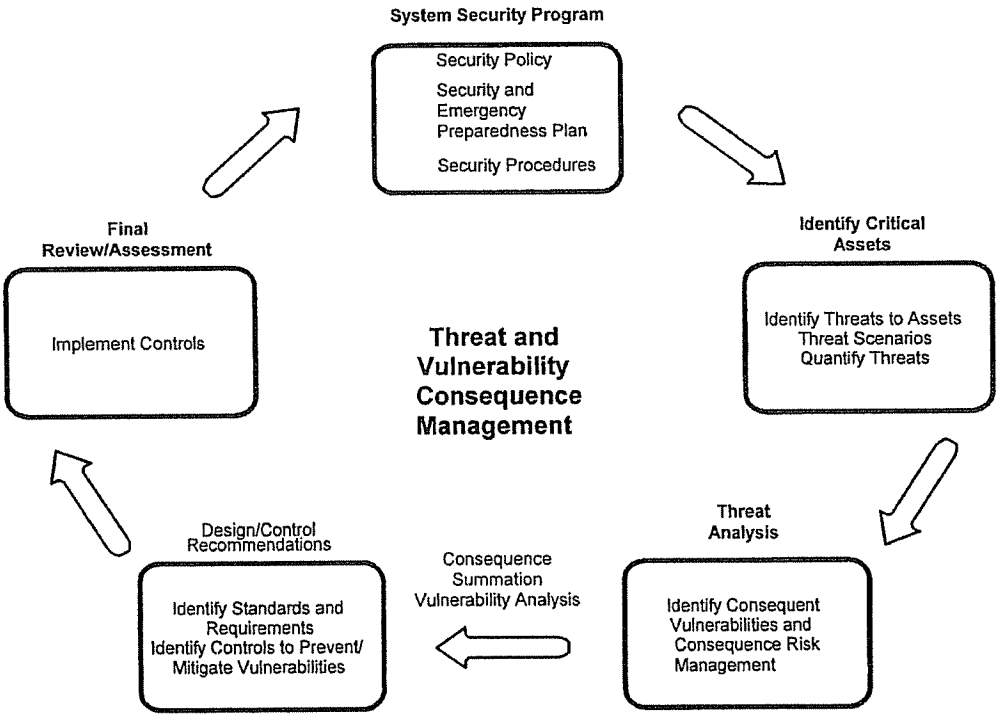


Figure 8 - Security Risk Assessment Process

5.1.1 Asset Identification

Assets are defined as people, information, and property. WMATA assets include:

- People - passengers, employees, visitors, contractors, vendors, community members, and others who come into contact with the transit system; and
- Property – fixed infrastructure and rolling stock.

The range of transit assets is presented in Figure 9.

Typical Transit Assets	
• Passenger Stations, Stops, and Shelters	• Alternative Fuel Storage Facilities
• Tenant Facilities in Passenger Stations	• Switches, Signals, and Interlockings
• Passenger Vehicles	• Grade Crossing & Automatic Warning Devices
• Structures (Underground, at-grade, & Elevated)	• Electrification Systems (3rd rail, overhead catenaries)
• Customer and Employee Parking Lots	• Revenue Collection Facilities
• Vehicle Control Systems	• Vehicle Storage Facilities
• Communication Systems	• Operation Control Centers
• Heavy Maintenance Facilities	• Wayside Support & Maintenance Facilities
• Service and Inspection Facilities	• Ancillary Facilities and Storage
• Maintenance Vehicles and Equipment	• Employee Parking Lots
• Back-up Power Systems	• Administrative Facilities
• Fuel Farms and Generators	• Transit Police/Security Facilities & Communications

Figure 9 - Typical Transit Assets

5.1.2 Asset Criticality Determination

Assets are prioritized in terms of criticality. Most weight is given to those assets that present the greatest threat to life safety or service disruption, if attacked. In making this determination, consideration is given to:

- Impact on passengers, employees, and first responder;
- Impact on transit operations;
- Economic value of the asset, including current and replacement value;
- Intrinsic value of the asset to a potential adversary; and
- Asset location to other critical assets.

5.1.3 Identification of Threats Against Critical Assets

A threat is any action with the potential to result in death, injury, destruction, interruption of operations, or denial of services. Transit agencies face security threats

from three primary classification of crime: crimes against persons, crimes against property, and other crimes committed on transit property. Other crimes committed on transit property generally are minor crimes that affect quality of life. They degrade the quality of transportation service and interfere with passengers' use of the transportation system. The majority of crimes committed do not pose a physical threat to passengers but may erode passengers' sense of security and make passengers feel intimidated. Figure 10 shows possible crimes that may be committed on transit property.

Crime Category	Crime Types within Category
Crimes Against Persons	Pick-pocketing, purse snatching, assault, rape, homicide, robbery, terrorism
Crimes Against Property	Arson, vandalism, graffiti, burglary, motor vehicle theft, theft from automobiles, sabotage, terrorism
Other Crimes Committed on Transit Property	Drug dealing, drinking, prostitution and sex offenses, disorderly conduct, aggressive panhandling, loitering, fare evasion, trespassing

Figure 10 – General Crime Categories

Metro Transit Police is the central point for the collection, reporting, and recordkeeping of security data and information involving the WMATA transit system. Analysis of the security data is conducted to identify criminal behavior patterns within the WMATA system. WMATA also receives security threat and crime intelligence through law enforcement sources in the Washington Metropolitan area, the National Joint Terrorism Taskforce (JTTF), Transportation Security Administration, and other intelligence sources. The threat analysis defines the level or degree of threats against WMATA.

5.1.4 Threat Scenarios

Threat scenarios are developed to identify and evaluate vulnerabilities that may make the asset susceptible to an attack. Scenario development also provides identification of impacts of threats on critical assets and promotes mitigation strategies and capability needs. The scenarios are intended to represent potential real-world events and, as such, have been derived primarily from WMATA and other operating systems' experiences and worldwide security incidents.

5.1.5 Vulnerabilities

Vulnerability is the susceptibility of the system to a particular type of security incident or event that can be taken advantage of to carry out a threat. Vulnerabilities may

surface as a result of the following:

- Impact on transit operations;
- Design and construction of the stations, guideway, wayside facilities, park and ride lots, aerial structures, tunnel infrastructure, operations and maintenance facility, and operations control center;
- Equipment and technology used;
- Operating procedures; and
- Policing and security practices.

A vulnerability analysis is used to identify specific weaknesses with respect to how the new facility or system may invite and permit a threat to be accomplished.

5.1.6 Security Incident Frequency

The likelihood of a security incident or event affecting a system or facility is categorized as follows:

A. High – Indicates that a **definite** threat exists against the asset and that the adversary has both the capability and intent to attack or commit a criminal act, and that the asset is targeted on a frequently recurring basis;

B. Frequent – Indicates that a **credible** threat exists against the asset based on knowledge of the adversary's capability and intent to attack or commit a criminal act against the asset, based on related incidents having taken place at similar assets or in similar situations;

C. Occasional – Indicates that there is a **possible** threat to the asset based on the adversary's desire to compromise similar assets;

D. Seldom – Indicates that there is a **low** threat against the asset and that few known adversaries would pose a threat to the asset; and

E. Never – Indicates **no credible** evidence of capability or intent and no history of actual or planned threats against the asset.

Figure 11 is used to identify security incident/event probability. The probability categories - Levels A, B, C, D, or E - are used in the Security Criticality Matrix (Figure 12).

Security Incident Probability Categories			
Description	**Level**	**Specific Individual Item**	**Fleet or Inventory**
High	**A**	Likely to Occur Frequently	Continuously Experienced
Frequent	**B**	Will Occur Several Times in Life of an Item	Will Occur Frequently
Occasional	**C**	Likely to Occur Sometime in Life of an Item	Will Occur Several Times
Seldom	**D**	Unlikely but Possible to Occur in the Life of an Item	Unlikely but can Reasonably be Expected to Occur
Never	**E**	So Unlikely, it can be Assumed Occurrence May not be experienced	Unlikely to Occur but Possible

Figure 11 – Security Event Probability Categories

5.1.7 Security Incident Severity

In addition to threats, the worst-case consequences of security incidents are evaluated. Severity is defined as the degree of injury or amount of damage that may be expected from a successful attack or criminal act against an asset. Examples of consequences include: injuries to the public or to transit personnel, loss of equipment causing financial losses, and disruption to transit operations. Severity categories are defined to provide a qualitative measure of the result of a security breach.

I. High – Loss of life and/or extensive damage requiring months to repair; very long term interruption.

II. Moderate – Serious injuries and/or significant damage requiring weeks to repair; long term interruption.

III. Low – Minor injuries and/or minor damage requiring 7 or less days to repair; short term interruption.

The threat severity categories are summarized in Figure 12.

Threat Severity Categories		
Category	**Severity**	**Characteristics**
1	High	Death or System Loss or Extensive Damage
2	Moderate	Severe Injury or Moderate System Damage
3	Low	Minor Injury or Minor System Damage

Figure 12 – Threat Severity Categories

5.1.8 Security Criticality Matrix

The severity of a threat and the likelihood of occurrence are combined into a risk level (criticality) matrix to show the consequences. The consequences are assessed both in terms of severity of impact and probability of occurrence for a given threat. The criticality matrix organizes the resulting consequences into categories of high, serious, and low. The matrix helps to prioritize consequences and to focus available resources on the most serious threats requiring resolution while effectively managing the available resources. Threats with vulnerabilities identified as high may require further investigation and indicate that the condition cannot remain as is but must be mitigated. A serious consequence in the matrix indicates that the countermeasure should be implemented, if at all possible, within fiscal constraints. A low consequence means that to accept the risk without providing any countermeasures. The matrix is illustrated in Figure 13.

Criticality Matrix

Frequency of Occurrence	Hazard Categories		
	I High	II Moderate	III Low
(A) High	H (IA)	H (IIA)	S (IIIA)
(B) Frequent	H (IB)	H (IIB)	S (IIIB)
(C) Occasional	H (IC)	S (IIC)	L (IIIC)
(D) Seldom	S (ID)	L (IID)	L (IIID)
(E) Never	S (IE)	L (IIE)	L (IIIE)

Hazard Risk Index		Risk Decision Criteria
IA, IB, IC, IIA, IIB	High (H)	Threat must be mitigated
ID, IE, IIC, IIIA, IIIB,	Serious (S)	Threat should be mitigated if possible within fiscal constraints
IID, IIE, IIIC, IIID, IIIE,	Low (L)	Threat is acceptable with review by management

Source: Federal Transit Administration *Public Transportation System Security and Emergency Preparedness Planning Guide*

Figure 13 – Criticality Matrix

SECTION 6 AUDITS

Each phase of the safety and security certification program, design through pre-revenue testing phase, is periodically audited to assure that the Safety and Security Certification Program is being properly implemented and effective. The audit is performed in accordance with the WMATA Internal Safety Audit Process (see Section 3.3.15 of the System Safety Program Plan).

Capital project elements to be audited include:

- Correction;
- Assurance that the Safety and Security Certificates of Compliance are supported by traceable documentation;
- Evidence that safety hazards and security vulnerabilities are tracked, analyzed and resolved in accordance with the WMATA System Safety Program Plan; and
- Overall assessment of the Safety and Security Certification Program.

The audit findings are included in the WMATA Annual Internal Safety Audit Report to TOC.

SECTION 7 DOCUMENTATION

7.1 Backup Documentation

Backup documentation is critical to the success of the Safety and Security Certification Program. Documentation provides a detailed audit trail of activities that demonstrate conformance with the safety and security for a project.

The documentation system promotes accountability, timeliness and accessibility. Accountability ensures that all certificates are completed accurately, signed by appropriate project staff, reviewed by the Safety and Security Certification Committee, and maintained in a secure manner. Timeliness ensures that each certifiable element is certified as safe and secure, prior to use. Accessibility allows quick verification that certificates are in place, and provides any other information required to support the certificates.

A master safety certification file resides within SSRM. The Project Safety and Security Certification file contains the following:

- Correction;
- Certifiable Elements and Items Lists;
- A summary sheet showing the certification status for the design, construction, testing, and pre-revenue phases of the project;
- Original copies of the completed checklists for each certifiable element;
- Support documentation that may not be contained within the project files, such as Visual Inspection Reports;
- Copies of test reports for safety critical systems;
- Copies of integration test reports;
- Original copies of the Temporary Use Notices;
- Original copies of the Certificates of Compliance for each certifiable element; and
- Original copy of the System Safety and Security Certificate for the project.

7.2 Configuration Control

During the life of a project, it is not unusual for design and/or construction changes to be made to the system elements being certified. The SCRC reviews these changes for impact to the certification effort. If the impact changes the safety or security requirement or the required documentation, the safety/security requirement is re-verified. The Project Manager is responsible for obtaining the supporting documentation required as a result of the changes.

SECTION 8 REPORTING REQUIREMENTS

8.1 Periodic Reporting

An important part of the safety certification process is briefing the SSEC of the safety and security certification program, including project certification effort status. Periodic reports are prepared by SSRM and submitted to the SSEC. The frequency of the reports is dependent on certification activity levels, but quarterly at a minimum. The reports advise SSEC of the:

- Safety and Security Program progress;
- Changes to Project Certifiable Items Lists, if any;
- Significant problems encountered in the certification effort;
- Safety and Security Certificates of Compliance completed during the reporting period;
- Safety and Security Certificates expected to be issued in the next reporting period; and
- Certification Program audit findings and recommendations for improvement, if any.

The SSRM also prepares project certification progress reports for TOC and FTA, as requested.

8.2 Final Safety and Security Certification Report

A final Safety and Security Certification Report is prepared for each Project falling under the Safety and Security Certification Program (see Section 3.1.10). Reports for rail projects are transmitted to the TOC.

ATTACHMENTS

ATTACHMENT 1

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

SAFETY/SECURITY CERTIFICATION PROGRAM

ɔject: rtifiable Element: vision: ecklist type: ıster: b:	**Design / Construction / Test Compliance Checklist**	SSRM Approval: Date: Page 1 of XX Engineering Approval: Date: Project Manager Approval: Date:

m ı.	Description	Design Criteria Specification Reference	Design Specification Reference			Construction Installation Verification			Test Verification			SSRM Verification			Commer s
			Doc Ref.	Verified By	Date	Doc Ref.	Verified By	Date	Doc Ref.	Verified By	Date	Status	Verified By	Date	

Certification Checklist Guide	
Project Certifiable	The Project for which the checklist was prepared.
Element Revision	The current revision number of the specific checklist.
Date	The date of issue for the checklist.
SSRM Approval	SSRM staff approving the checklist.
Engineering Approval	Engineering design staff approving the checklist (design criteria only).
Project Manager Approval	Signature of the appropriate managers indicating formal approval of the checklist completed with the specified element type, safety and security requirements, criteria and specification reference.
Item No. Description	Describes the safety or security requirements for the certifiable element as stated in the criteria, contract specification or as shown on the contract drawings.
DESIGN PHASE	
Doc Ref	Identifies the specification section, drawing number or document control center (DCC) file where the safety or security requirement has been incorporated.
Responsible Designer	The name of the design team member assigned the responsibility for the verification of the checklist and assuring the collection of necessary documentation, including: CDRL approvals, inspection reports, factory certifications, and so on.
Verified By / Date	Initials/name of the engineer who verified that the requirement has been incorporated in the contract documents, and the date.
CONSTRUCTION AND TEST PHASES	
Verified By	Name of individual who verified the test results, and/or that the requirement had been met.
Date	Date when verification or the test took place.
Doc Ref	Complete with the applicable Document Control Number and where located. The entry should identify which document control system is used if approval has been granted not to use WMATA's.
SSRM VERIFICATION	
Status	Completed by SSRM with one of the conditions listed at the bottom of the form: OPN, CLD, and CEX for each safety or security requirement. NA: Not applicable OPN: activity or issue is not completed, documentation not identified, or other situation prevents completing the item. CLD: activity has been completed and documentation is identified and formally filed. CEX: Activity where the safety or security requirement cannot be completely satisfied but it presents no potential for a catastrophic or critical (Category I or II) hazard and the SSEC has been formally advised. This designation would also be used in the case of an approved temporary measure.
Verified By	When each checklist page has been completed by the responsible engineer or project management staff, and the documentation has been verified, then the page will be signed and dated by SSRM. When the entire checklist is completed, the checklist package with the documentation will be transmitted to the Director, SSRM and the document control center.
Date	Date when the verification took place.

ATTACHMENT 2

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

VISUAL INSPECTION REPORT

Certifiable Element: _____

Sub-element: _____

Safety/Security Requirement Item No.: _____

Safety/Security Requirement:

Comments:
This is to certify that conformance with the specified requirement was verified by visual inspection.

_____ _____
WMATA Verification By Date

ATTACHMENT 3

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

TEMPORARY USE NOTICE

Permit No:

Certifiable Element/Sub-Elements:

Restrictions Noted:

Project Manager	**Date**	**Facility/System Engineer/Manager**	**Date**
Test Engineer (if applicable)	**Date**	**System Safety and Risk Management**	**Date**

TEMPORARY USE PERMIT EXPIRES UPON ISSUANCE OF CERTIFICATE OF CONFORMANCE

ATTACHMENT 4

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

SAFETY CRITICAL ITEMS LIST

Project:
Date:

Prepared By:

Certifiable Element:
Date:

Approved By:

Sub-Element:
Date:

Revision No:

Ref No.	Description	Potential Cause	Effect on System Subsystem	Effect on Other Systems Subsystems	Initial Risk Index	Control Measures	Residual Risk Index	Status

ATTACHENT 5

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

CERTIFIABLE ELEMENT CERTIFICATE OF COMPLIANCE REHABILITATION/MODIFICATION PROJECT

Certifiable Element/Sub-Element:

Restrictions Noted:

The Certifiable Element complies with all applicable safety and security requirements and may be placed into service.

Project Manager	**Date**	**Director – SSRM**	**Date**
AGM Rail/Bus Operations	**Date**	**Plant Maintenance**	**Date**

ATTACHMENT 6

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

CERTIFIABLE ELEMENT
CERTIFICATE OF COMPLIANCE

Certifiable Element/Sub-Element:

Restrictions Noted:

The Certifiable Element complies with all applicable safety and security requirements and may be used for passenger service.

Project Manager	Date	Facilities/Systems Chief Engineer	Date
AGM Rail/Bus Operations	Date	Director – SSRM	Date

ATTACHMENT 7

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY
SAFETY AND SECURITY CERTIFICATION PROGRAM

SYSTEM
CERTIFICATE OF COMPLIANCE

Restrictions Noted:

The System Certificate of Conformance signifies that all applicable safety and security requirements have been completed and the facility/system may be placed into service, with the noted restrictions.

WMATA Project Manager	Date	AGM – Operations Services	Date
Director - ENCP	Date	WMATA Plant Maintenance	Date
AGM Rail/Bus Operations	Date	AGM SSEC	Date
Metro Chief of Police	Date	Director – SSRM	Date

General Manager Date

ATTACHMENT 8

CURRENT REHABILITATION-MODIFICATION PROJECTS

CONTRACT	DESCRIPTION	SAFETY/SECURITY CRITICAL ELEMENT AND EFFECT ON SYSTEM	SAFETY/SECURITY CERTIFICATION STEPS			
			Step 3 Design	Step 4 Spec	Step 5 Testing	Step 6 Manuals/Training
CO4006	ROCS System Upgrade		X	X	X	X
FI4398	Replacement of AC Switchgear	Traction Power – Electrical Safety			X	X
FL0016	DC Traction Power Cable	Traction Power – Electrical Safety			X	
FM4202	Dry Standpipe Replacement	Facilities-Fire-Life Safety			X	X
FM8205	FIA System Replacement	Facilities-Fire-Life Safety			X	X
FN3004	West Falls Church Yard Processor (New microprocessor)	ATC – Operational Safety	X	X	X	X
FN3030	PROTECT	Security-Detect/Respond	X	X	X	X
FN 3038	Bus Vehicle In-Ground Lift Replacement	Facilities-Employee Safety			X	X
FN4049	Replace 6 GL-a Interlocking & NV Processors	ATC – Operational Safety	X	X	X	X
FN4143	Stinger	Facilities - Employee Safety			X	X

CONTRACT	DESCRIPTION	SAFETY/SECURITY CRITICAL ELEMENT AND EFFECT ON SYSTEM	SAFETY/SECURITY CERTIFICATION STEPS			
			Step 3 Design	Step 4 Spec	Step 5 Testing	Step 6 Manuals/Training
FN5015	Mainline Switch Machine (M3)	Track – Operational Safety				X
FN5044	Replacement for UPS/Battery Systems				X	X
FN5059	TPSS Equipment	Traction Power – Electrical Safety		X	X	X
FN5060	Replace MCC and Voltage Regulators	Electrical Safety			X	X
FN5068	Rehab Standpipe System	Facilities – Fire/Life Safety			X	X
FN5069	Rehab Station/Tunnel Ventilation	Facilities – Fire/Life Safety			X	X
FN5087	ATC Room Power Supplies				X	X
FN5088	TPSS Equipment Installation	Traction Power – Electrical Safety			X	X
FN5089	TPSS Equipment Installation	Traction Power – Electrical Safety			X	X
FN5074	Bladensburg Heavy Equipment/CNG	Facilities/Fire-Life Safety	X	X	X	X
FN7037	Rehab FIA System	Facilities – Fire/Life Safety			X	X

CONTRACT	DESCRIPTION	SAFETY/SECURITY CRITICAL ELEMENT AND EFFECT ON SYSTEM	SAFETY/SECURITY CERTIFICATION STEPS			
			Step 3 Design	Step 4 Spec	Step 5 Testing	Step 6 Manuals/Training
FO5131	Bus Vehicle In-Ground Lift Replacement	Facilities - Employee Safety			X	X
FO5143	Replacement of AF Track Circuit Systems	ATC – Operational Safety	X	X	X	X
FO5144	RTU Replacements (ATC System)	ATC – Operational Safety	X	X	X	X
FO5145	Public Address System and CCTV Replacement	Facilities – Security and Fire/Life Safety			X	X
FO5148	Replacement of Emergency Egress Hatches	Facilities – Fire/Life Safety			X	X
FO6026	ATC J-Relays (Door dwell and station stop)	ATC – Operational Safety	X	X	X	X
FRS259	Chemical Sensor	Security/Detect/Respond	X	X	X	X

Dulles Corridor Metrorail Project

May 29, 2007

WMATA-MWAA Agreement
Master Budget for WMATA Oversight and Support

Description	Total 4th Qtr 2006$	Total YOE$	Components
Rail Vehicles	158,047,000	189,490,000	**70.02 Heavy Rail Vehicles / 70.07 Spare Parts** - Procure/Commission 64 new Rail Vehicles
WMATA Oversight	24,211,000	26,498,000	**80.03 Project Management for Design and Construction** - WMATA Oversight and Technical Advisor - Staffing, Non-personnel, Consultant Support and Misc. Allowances
WMATA Force Account	11,564,000	13,777,000	**80.08 Start up** - WMATA Force Account - Labor and Equipment for Start Up Support
Communication Backbone	9,780,000	11,469,000	**50.05 Communications** - Fiber Optic System, Passenger Information Display System (PIDS), Local Area Network/Wide Area Network, Comprehensive Radio System, Telephone System Expansion, Smart Monitoring and Display System and Yard Security System Modification
Non - Revenue Vehicles, Equipment and Furniture	8,556,000	10,076,000	**30.05 Heavy Maint. Facility / 30.06 Yard and Yard Track / 70.05 Other / 70.06 Non-Revenue Vehicles** - Procure Non-Revenue Vehicles, Portable Yard and Shop Equipment and Station Furniture
ROCS Upgrade, ATC	7,364,000	8,607,000	**50.01 Train Control and Signals / 50.07 Central Control** - Rail Operations Control System Update (ROCS), OCC Modifications, Automatic Car Identification System and Destination Code Table Revisions
Automatic Fare Collection	7,142,000	8,482,000	**50.06 Fare Collection System and Equipment** - Provide/Install Automatic Fare Collection Equipment, Provide Install Smart Card Equipment for Parking Lots
System Graphics	2,298,000	2,730,000	**50.06 System Graphics** - Prepare System Maps, Customer Information, Schedules & Brochures and Perform System Signage Modifications
Arts in Transit	1,500,000	1,721,000	**20.01At Grade Stations / 20.02 Aerial Stations** - Purchase Artwork (does not include special accommodations to mount art included in the construction contract)
Total	**$230,462,000 Total 2006$**	**$272,850,000 Total YOE$**	

Washington Metropolitan Area Transit Authority
DULLES CORRIDOR METRORAIL PROJECT
WMATA FORCE ACCOUNT

		Pers Exp/yr	Pers Exp/mo	Non-pers/yr	Non-pers/mo	CY 2009	CY 2010	CY 2011	CY 2012	Total FTE or Car-Mo	Total Budget	Remarks ❶
Personnel Expenses												
LSBO							2.53	9.67	5.83	18.03		
	FTE Train Operator/Supervisor	$ 128,966	$ 10,747	$ 2,205	$ 184		$ 332,027	$ 1,267,986	$ 765,164		$ 2,365,177	For clearance car, rail polishing, Level B, C, F tests, and pre-revenue operations.
							0.06	0.13	0.06	0.25		
	FTE Train Operator/Super OT	$ 193,450	$ 16,121				$ 12,091	$ 24,181	$ 12,091		$ 48,362	Daily track inspection prior to train tests on OT basis.
						1.33	1.00	0.17		2.50		
	FTE Flagman	$ 128,966	$ 10,747			$ 171,955	$ 128,966	$ 21,494			$ 322,416	Direct const. traffic, monitor interference, maintain comm. at WFC Yard grade crossing & K line junction.
PLNT												
						0.02	0.25	0.25	0.15	0.67		
	FTE Mechanics	$ 128,966	$ 10,747	$ 2,205	$ 184	$ 2,733	$ 32,793	$ 32,793	$ 19,129		$ 87,448	Perform final acceptance of mech equip and ancillary buildings. Exercise all modes of operation.
TSSM							0.19	0.15	0.19	0.52		
	FTE Track Inspector OT	$ 193,450	$ 16,121	$ 2,205	$ 184		$ 36,685	$ 28,533	$ 36,685		$ 101,903	Inspection of tracks during WFC Yard trackwork and train tests on Dulles Line.
						0.02	0.06	0.13		0.21		
	FTE Struct Repairer OT	$ 193,450	$ 16,121	$ 2,205	$ 184	$ 4,076	$ 12,228	$ 24,457			$ 40,761	
						1.19	0.77	1.17	0.48	3.60		Escort to revenue equipment rooms. TCR certifications for Level F tests. Verify resolutions.
	FTE ATC Technician OT	$ 193,450	$ 16,121	$ 2,205	$ 184	$ 232,340	$ 150,817	$ 228,264	$ 93,751		$ 705,172	
						0.02	0.25	0.25	0.15	0.67		Assist programming trunk system & startup radio. Connect startup console to WMATA radio. Inspect tests.
	FTE COMM Technician OT	$ 193,450	$ 16,121	$ 2,205	$ 184	$ 4,076	$ 48,914	$ 48,914	$ 28,533		$ 130,436	
						0.44	1.02	1.17	0.48	3.10		Escort to service rooms & WFC Yard. Witness tests. Certify ETS/TEL. Red tag in pre-revenue operations.
	FTE POWER Technician OT	$ 193,450	$ 16,121	$ 2,205	$ 184	$ 85,599	$ 199,731	$ 228,264	$ 93,751		$ 607,345	
									0.33	0.33		Technicians to verify installation, testing, and commissioning of AFC/SMAD equipment.
	FTE AFC Technician OT	$ 193,450	$ 16,121	$ 2,205	$ 184				$ 65,218		$ 65,218	
									0.33	0.33		Technicians to verify the installation and commissioning of parking lot equipment.
	FTE Parking Eq. Tech OT	$ 193,450	$ 16,121	$ 2,205	$ 184				$ 65,218		$ 65,218	
ELES									0.67	0.67		
	FTE ELES Technician	$ 128,966	$ 10,747	$ 2,205	$ 184				$ 87,448		$ 87,448	Verify installation and tests prior to ORD.
OCCO							0.02	0.13	0.29	0.44		
	FTE Console Operator	$ 128,966	$ 10,747				$ 2,687	$ 16,121	$ 37,615		$ 56,423	Remote control & monitor in mech eq. test. Console operator in ATC tests and pre-revenue operations.
OPAS etc.									10.42	10.42		
	FTE Technician Training	$ 128,966	$ 10,747						$ 1,343,400		$ 1,343,400	Training of operation specialists.
Non-Personnel Expenses												
						$ 852,510	$ 608,935				$ 1,461,445	Busing between East Falls Church and West Falls Church stations for 5 weekends minimum.
	Bus Bridging								$ 1,223,259		$ 1,223,259	During pre-revenue operations.
	Station Electricity			$ 1,223,259								
									$ 605,150		$ 605,150	During pre-revenue operations.
	Propulsion Electricity			$ 605,150								
	# of Car-Months						16.25	24.00	99.50	139.75		Rail polishing, Level B, C tests, pre-revenue operations. Assume Level F (WTP 20.2, 20.3, 20.4) before ORD.
	Rail Car Expenses			$ 190,000	$ 15,833		$ 257,292	$ 380,000	$ 1,575,417		$ 2,212,708	
	# of P.M.-Months						0.50	2.00		2.50		Pull clearance car to verify dynamic outlines.
	Prime Mover Expenses			$ 147,600	$ 12,300		$ 6,150	$ 24,600			$ 30,750	
	# of Car-Months						0.25	1.00		1.25		For dynamic outlines.
	Clearance Car Expend.			$ 38,000	$ 3,167		$ 792	$ 3,167			$ 3,958	
						$ 1,353,289	$ 1,830,107	$ 2,328,773	$ 6,051,830		*$ 11,564,000*	
Dec 2006 Cost (July 03 Largo expenses escalated to Dec. 06)												

❶ *The remarks are not comprehensive. Refer to WMATA Duties for Dulles Project Start-up for details.*

	Esc rate to YOE: 3.5%	CY 2009	CY 2010	CY 2011	CY 2012		Total Budget	Remarks
Year of Expenditure Cost		$ 1,488,962	$ 2,097,579	$ 2,773,969	$ 7,416,595		*$ 13,777,105*	Dec. 2006 costs escalated to YOE.

EXHIBIT D

9/13/07

Washington Metropolitan Area Transit Authority
DULLES CORRIDOR METRORAIL PROJECT
BUDGET for PHASE 1
DESIGN-BUILD CONSTRUCTION and STARTUP OVERSIGHT

May 29, 2007

FY 2007 Dollars

PHASE 1 D-B CONSTRUCTION AND STARTUP	TOTAL Budget $	CY 2007 *	FTE's	CY 2008 *	FTE's	CY 2009 *	FTE's	CY 2010 *	FTE's	CY 2011 *	FTE's	CY 2012 *	FTE's	CY 2013 *	FTE's
Personnel															
Operations Services - Transit Oversight															
Dulles Core Staff															
Engineering & Review	$10,010,000	$953,333	6.67	$2,288,000	16.00	$2,288,000	16.00	$1,716,000	12.00	$1,573,000	11.00	$1,191,667	8.33	$0	0.00
Construction	$3,253,250	$297,917	2.08	$715,000	5.00	$858,000	6.00	$786,500	5.50	$357,500	2.50	$238,333	1.67	$0	0.00
Facility Startup & Testing	$2,015,000	$0	0.00	$0	0.00	$0	0.00	$650,000	5.00	$1,040,000	8.00	$325,000	2.50	$0	0.00
Admin Support	$1,654,167	$145,833	1.46	$350,000	3.50	$400,000	4.00	$300,000	3.00	$250,000	2.50	$208,333	2.08	$0	0.00
Dulles Core Subtotal	$16,932,417	$1,397,083	10.21	$3,353,000	24.50	$3,546,000	26.00	$3,452,500	25.50	$3,220,500	24.00	$1,963,333	14.58	$0	0.00
Other Operations Services Staff															
WES	$945,000	$75,000	0.63	$180,000	1.50	$180,000	1.50	$180,000	1.50	$180,000	1.50	$150,000	1.25	$0	0.00
Arts in Transit	$315,000	$25,000	0.21	$60,000	0.50	$60,000	0.50	$60,000	0.50	$60,000	0.50	$50,000	0.42	$0	0.00
Admin Support	$1,050,000	$83,333	0.83	$200,000	2.00	$200,000	2.00	$200,000	2.00	$200,000	2.00	$166,667	1.67	$0	0.00
Other Operations Services Subtotal	$2,310,000	$183,333	1.67	$440,000	4.00	$440,000	4.00	$440,000	4.00	$440,000	4.00	$366,667	3.33	$0	0.00
CEPM TOTAL	$19,242,417	$1,580,417	11.88	$3,793,000	28.50	$3,986,000	30.00	$3,892,500	29.50	$3,660,500	28.00	$2,330,000	17.92	$0	0.00
Other WMATA Direct	$2,215,417	$97,500	0.75	$455,000	3.50	$455,000	3.50	$455,000	3.50	$455,000	3.50	$297,917	2.29	$0	0.00
PA Indirect 2.7%	$636,499	$57,112		$122,235		$128,890		$127,315		$121,257		$79,691		$0	
Subtotal Personnel	$22,094,332	$1,735,029	12.63	$4,370,235	32.00	$4,569,890	33.50	$4,474,815	33.00	$4,236,757	31.50	$2,707,607	20.21	$0	0.00
Non-Personnel															
Dulles Core Staff	$203,189	$16,765		$40,236		$42,552		$41,430		$38,646		$23,560		$0	
Other Operations Services	$23,100	$1,833		$4,400		$4,400		$4,400		$4,400		$3,667		$0	
Other WMATA	$22,154	$975		$4,550		$4,550		$4,550		$4,550		$2,979		$0	
Subtotal Non-personnel	$248,443	$19,573		$49,186		$51,502		$50,380		$47,596		$30,206		$0	
Facilities															
Field Office (Startup)	$70,000	$0		$0		$0		$30,000		$40,000		$0		$0	
Furniture & Equipment	$0	$0		$0		$0		$0		$0		$0		$0	
WMATA LAN	$100,000	$50,000		$10,000		$10,000		$10,000		$10,000		$10,000		$0	
Computer Equipment	$0	$0		$0		$0		$0		$0		$0		$0	
Subtotal Facilities Cost	$170,000	$50,000		$10,000		$10,000		$40,000		$50,000		$10,000		$0	
Consultants															
WMATA Consultant Support	$1,350,000	$150,000		$200,000		$250,000		$250,000		$250,000		$250,000		$0	
Surveying Control	$0	$0		$0		$0		$0		$0		$0		$0	
Misc.	$0	$0		$0		$0		$0		$0		$0		$0	
Subtotal Consultants	$1,350,000	$150,000		$200,000		$250,000		$250,000		$250,000		$250,000		$0	
Misc. Allowance															
Vehicle Allowance	$288,800	$204,800	8.00	$10,400	8.00	$11,200	8.00	$17,600	8.00	$18,400	8.00	$26,400	8.00	$0	0.00
Communication Allowance	$22,500	$10,000		$2,500		$2,500		$2,500		$2,500		$2,500		$0	
Specialized Training	$36,448	$2,969		$7,125		$7,500		$7,375		$7,000		$4,479		$0	
General Contingency	$0	$0		$0		$0		$0		$0		$0		$0	
Subtotal Misc. Allowance	$347,748	$217,769		$20,025		$21,200		$27,475		$27,900		$33,379		$0	
Total WMATA Phase 1	$24,210,523	$2,172,371		$4,649,446		$4,902,592		$4,842,670		$4,612,253		$3,031,192		$0	
Escalated to YOE **	**$26,498,274**	$2,172,371		$4,812,176		$5,251,779		$5,369,165		$5,292,666		$3,600,117		$0	

Notes: * Base estimate prepared in CY 2007 dollar's
** YOE calculation is based on 3.5% per year escalation

Prep.: TPC 09/15/06
Rev. 7 05/29/07
MASTER BUDGET for WMATA OVERSIGHT and SUPPORT Rev 2A 05-29-07.xls

8/15/2007 – FINAL

Instructions Pursuant to Paragraph 7, Condition 1, Subparagraph D, of August 2007 Agreement Between the Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority for the Dulles Corridor Metrorail Project

These instructions ("Instructions") (1) provide greater specificity regarding the circumstances under which WMATA can recover from the Fund established under Paragraph 7, Condition 1, of the Agreement; and (2) provide procedures for making and opposing claims against the Fund and the resolution of disputes regarding such claims.

A. Disbursements from the Fund shall be governed by the Agreement and by these Instructions. In the event of any conflict, these Instructions shall have priority. Except as otherwise defined herein, words in these Instructions shall have the same definitions as in the Agreement.

B. The following procedures apply for WMATA to make a claim against the Fund:

1. Beginning on the date of WMATA Acceptance, and continuing until the expiration of twenty (20) years from that date, WMATA may make a claim for payment from the Fund for the "Covered Conditions" defined in paragraph D hereto ("Payment Claim") by its authorized representative providing a written notice to MWAA (using the procedures for written notice specified by Article 13 of the Agreement), with a copy to the Virginia Department of Transportation: (1) stating that WMATA is entitled to payment from the Fund of the amount specified in the Payment Claim, (2) including the rationale and support for WMATA's claim to entitlement, and (3) including the rationale and support for the amount claimed. MWAA shall take reasonable steps to analyze the Payment Claim to determine whether it is properly payable under these Instructions and shall have ninety (90) days after receipt of a Payment Claim to give notice in writing of its approval or objection ("Objection Notice") to WMATA. If MWAA fails to object to the Payment Claim by sending an Objection Notice within ninety (90) days after MWAA's receipt, then the Payment Claim shall be deemed to be denied.

2. Any portion of a Payment Claim as to which MWAA has made a timely Objection Notice or that is deemed to be denied under subparagraph B.1 of these Instructions shall be governed by subparagraphs B.3 through B.6 of these Instructions. In such case, MWAA shall not disburse any disputed amount from the Fund unless and until such time as MWAA receives (a) sufficient justification to conclude that the Payment Claim is properly payable, (b) an arbitration decision pursuant to the procedures at subparagraph B.5 that sufficiently persuades MWAA that the Payment Claim is properly payable, or (c) a Final Decision pursuant to the procedures at subparagraph B.6.

3. Within thirty (30) days of MWAA making its Objection Notice or the deemed denial of a Payment Claim, representatives of MWAA and WMATA shall meet at a mutually-agreeable location, or if the parties cannot agree to a location, initially at WMATA's

headquarters, and thereafter alternating between the parties' headquarters, with a representative from at least the project executive level of management and legal counsel, to negotiate in good faith to attempt to resolve the parties' dispute in a fair and reasonable manner.

4. If the parties do not resolve their dispute within sixty (60) days of MWAA making its Objection Notice or the Payment Claim having been deemed to have been denied, either party may demand non-binding arbitration, in which case the parties shall follow the procedures in subparagraph B.5.

5. If either party demands arbitration in accordance with subparagraph B.4, the parties shall conduct such non-binding arbitration in accordance with the following rules and procedures:

a. The arbitrator shall be a single arbitrator, regardless of the amount in dispute, and shall be selected as follows:

(i) the arbitrator shall be a retired Virginia circuit court judge or U.S. District Court judge who served in a district within Virginia;

(ii) the arbitrator shall have some experience with construction disputes;

(iii) if the parties cannot agree upon the arbitrator, then the arbitrator shall be one meeting the criteria of (i) and (ii) who is nominated and provided by the McCammon Group, or if the McCammon Group is unable to provide an arbitrator, by the American Arbitration Association.

b. The rules of the arbitration shall be as follows:

(i) the arbitrator shall, within 220 days after MWAA makes its Objection Notice or the Payment Claim is deemed to have been denied, provide an advisory opinion that simulates what the arbitrator believes the outcome would be if the matter were tried in a Virginia circuit court;

(ii) the procedures of the McCammon Group, or if the arbitrator is provided by the American Arbitration Association, the American Arbitration Association Construction Industry Arbitration Rules, effective as of the date of the Payment Claim, will serve as guidelines for procedures, to the extent the parties cannot agree, but with due regard to the expedited nature of the process, and with the arbitrator having the right to deviate from them.

(iii) each party shall cooperate reasonably in discovery, including production of documents and depositions reasonably necessary for the arbitrator to provide a well-informed advisory opinion.

6. If the parties have been unable to resolve the dispute within 240 days following MWAA making its Objection Notice or when the Payment Claim is deemed to have been denied, then either party may initiate litigation in accordance with Article 12, Section 4, of

the Agreement. A final order in such litigation, after all rights to appeal have been exhausted or the time limits to appeal have expired, shall be deemed to be a Final Decision.

C. The following substantive standards apply to the right of WMATA to obtain disbursements from the Fund for a Payment Claim:

1. The Payment Claim must be for one or more of the following four Covered Conditions: (a) "Covered Latent Defect", (b) "Covered Special Warranty Matter", (c) "Covered Indemnity Claim", or (d) "Covered Claim Costs", all as defined in these Instructions.

2. WMATA must show by a preponderance of the evidence that there is a Covered Condition or Covered Conditions and that the claimed Covered Condition or Covered Conditions have caused the damages or losses claimed in the amounts claimed.

3. WMATA must show by a preponderance of the evidence that the amounts claimed could not have been recovered from the Design-Build Contractor or from any Project Insurance despite reasonable diligence. Project Insurance shall mean insurance provided pursuant to Article 22 of the Design-Build Contract, insurance provided pursuant to Article 8 of the Agreement between MWAA and WMATA, and insurance provided pursuant to Paragraph 21 of the Right of Entry.

4. Disbursements from the Fund are only available for actual corrections to work or actual losses and not for claims of diminution in value.

5. No right of subrogation by insurers shall exist against the Fund.

6. Payment Claims are subject to WMATA's duties to mitigate damages and to avoid economic waste.

7. No Payment Claim shall be allowed for any amount of damage or loss caused by WMATA's negligent acts or omissions or failures to properly maintain or operate the system.

8. WMATA shall give written notice of its intention to make a Payment Claim within 90 days of when WMATA first knows of the facts giving rise to the Payment Claim; provided, however, that WMATA's failure to give written notice within this time limit shall not bar a Payment Claim unless MWAA shows that delay in giving MWAA notice of such claim has materially prejudiced MWAA in its ability to investigate, analyze or defend against such a claim.

D. The following definitions apply to these Instructions:

1. "Covered Claim Costs" mean reasonable, dispute-resolution expenses, including outside counsel fees, incurred by WMATA in arbitration or litigation pursuant to subparagraph B.5 or B.6 of these Instructions in which WMATA is the prevailing party.

2. "Covered Condition" means a "Covered Latent Defect," "Covered Special Warranty Matter," "Covered Indemnity Claim," or "Covered Claim Costs."

3. "Covered Latent Defect" means either (a) a failure of any part of the Project to conform to any of the requirements of the Design-Build Contract that (i) was unknown to WMATA at the time of WMATA Acceptance, (ii) was not reasonably discoverable prior to WMATA Acceptance, (iii) would have been the basis for recovery under the Design-Build Contract if WMATA had discovered the defect and made a claim regarding it before the expiration of the Design-Build Contractor's period of liability, (iv) was not discovered by WMATA before the Design-Build Contractor's period of liability expired; and (v) reasonably must be corrected in order to ensure the safe and efficient operation of the system; or (b) a failure of any part of the Project to conform to the "Design Criteria and approved system-wide facility requirements" that (i) was unknown to WMATA prior to WMATA Acceptance, (ii) WMATA could not reasonably have discovered during the preliminary engineering phase or design phase, including, without limitation, the final design process, (iii) is not an Approved Deviation, and (iv) must be corrected to ensure the safe and efficient operation of the system.

4. "Covered Special Warranty Matter" means a defect in work performed by the Design-Build Contractor as "Allowances" under the Design-Build Contract for which the applicable warranties listed in Schedule 1 hereto under Column C, entitled "WMATA Standard Technical Specification Warranty Requirement," have not been obtained, but that would otherwise have been covered had the warranty been obtained.

5. "Covered Indemnity Claim" means a claim by a third-person (other than a WMATA employee on duty) for personal injury or a claim by any third-person for damage to tangible property (a) for which, under Article 21 of the Design-Build Contract, WMATA would have been able to recover indemnity from the Design-Build Contractor, but for which Section 26.2.4 of the Design-Build Contract bars such recovery, but only to the extent that WMATA would have been able to make such recovery but for Section 26.2.4; or (b) due to any Covered Latent Defect under paragraph D.3(b) of these Instructions for which no recourse is available against the Design-Build Contractor.

6. "Fund" means the fund created pursuant to Paragraph 7, Condition 1, of the Agreement.

E. WMATA shall have no right to any disbursement from the Fund except for a Payment Claim for a Covered Condition that is asserted in accordance with paragraph B of these Instructions, that is allowable under the standards of paragraph C of these Instructions, and that is received by MWAA within twenty (20) years of WMATA Acceptance. After twenty (20) years from the date of WMATA Acceptance, MWAA may use all amounts in the Fund as it would use any other Toll Road revenues and no longer need hold any amounts in the Fund in trust except those amounts as to which WMATA has asserted a Payment Claim within that time period that has not been resolved.

F. In the event that WMATA prevails on a Payment Claim and obtains a Final Decision, MWAA shall, within fifteen (15) days thereafter, disburse from the Fund the amount awarded in the Final Decision to WMATA. WMATA shall provide a full and complete release of the Payment Claim to MWAA as a condition to receipt of the disbursement. The foregoing shall not limit WMATA's right to submit separately later a Payment Claim for Covered Claim Costs incurred to obtain the Final Decision for which payment is made.

G. The Fund provides WMATA's exclusive remedy as to MWAA for any Covered Condition, and MWAA shall have no liability for any Covered Condition beyond its duty to disburse amounts in the Fund pursuant to these Instructions. Nothing in the foregoing sentence is intended to benefit any third-party, including, but not limited to, the Design-Build Contractor or any provider of Project Insurance.

H. If either party takes a position with respect to a Payment Claim that is in bad faith, vexatious or lacking any substantial basis in fact or in law, then such party shall be liable to the other party for reasonable attorneys' fees and expenses incurred due to such position, and shall pay such liability from a source other than the Fund.

Schedule 1 to Instructions Pursuant to Paragraph 7, Condition 1, Subparagraph D of August 2007 Agreement Between the Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority for the Dulles Corridor Metrorail Project

A Specification Number	B Specification Title	C WMATA Standard Technical Specification Warranty Requirement	D Contract Warranty Requirement
07138	Tunnel Waterproofing (NATM Systems)	Final Work Completion Date + 2 years	Warranty requirements per Contract, Article 11.
07411	Sheet Metal Roofing Systems	Finish Warranty Period -- General Provisions + 19 years from date of substantial completion. Special Weather tight Warranty – General Provisions + 1 year from date of substantial completion.	Warranty period on materials, Contract Substantial Completion plus 20 years Warranty requirements per Contract, Article 11.
07515	Built-Up Roofing	General Provisions + 1 year	Warranty requirements per Contract, Article 11.
07553	Self-Adhering Modified Bituminous Membrane Roofing	15 years from date of substantial completion	Warranty period on materials, Contract Substantial Completion plus 15 years
08410	Aluminum Entrances and Storefronts	2 years from date of substantial completion.	Warranty requirements per Contract, Article 11.
08520	Aluminum Windows	2 years from date of substantial completion.	Warranty requirements per Contract, Article 11.

A Specification Number	B Specification Title	C WMATA Standard Technical Specification Warranty Requirement	D Contract Warranty Requirement
08625	Metal Framed Skylights	Design, material and construction – 10 years from date of skylight completion. Structural sealant - 10 years per sealant manufacturer's standard warranty.	Warranty period on materials, Contract Substantial Completion plus 10 years Warranty period on materials, Contract Substantial Completion plus 10 years.
08900	Aluminum Curtain Wall	2 years from date of substantial completion of the project however that the limited warranty shall begin in no event later than six months from date of shipment by Kawneer.	Warranty requirements per Contract, Article 11.
09340	Tile Pavers	1 year full replacement	Warranty requirements per Contract, Article 11.
10430	Specialty Signs	Non-reflective – General provisions + 4 years. Reflective – General provisions + 6 years	Warranty period on materials, Contract Substantial Completion plus 6 years. Warranty period on materials, Contract Substantial Completion plus 8 years.

A Specification Number	B Specification Title	C WMATA Standard Technical Specification Warranty Requirement	D Contract Warranty Requirement
10431	Site Pylon Signs	Non-reflective – General provisions + 4 years. Reflective – General provisions + 6 years	Warranty period on materials, Contract Substantial Completion plus 6 years. Warranty period on materials, Contract Substantial Completion plus 8 years.
14200	Hydraulic Elevators	2 years after final acceptance	Warranty requirements per Contract, Article 11.
14220	Hole less Hydraulic Elevators	2 years after final acceptance	Warranty requirements per Contract, Article 11.
14240	Traction Elevators	2 years after final acceptance	Warranty requirements per Contract, Article 11.
14300	Heavy-Duty Escalator	2 years after final acceptance	Warranty requirements per Contract, Article 11.
15445	Sewage Ejectors	2 years of operation or 30 months from date of shipment	Warranty requirements per Contract, Article 11.
16220	Emergency Standby Generator System	1 year	Warranty requirements per Contract, Article 11.
16260	UPS	Storage Batteries – General Provisions + 4 years Intended Operations – General Provisions + 19 years	Warranty period on materials, Contract Substantial Completion plus 6 years. Warranty requirements per Contract, Article 11.

A Specification Number	B Specification Title	C WMATA Standard Technical Specification Warranty Requirement	D Contract Warranty Requirement
16294	Contact Rail Heating System	Free of Defects in Materials & Workmanship – 2 years Latent Defects – 5 years	Warranty requirements per Contract, Article 11.
16525	Lighting Fixtures & Mounting Poles	Globes & Diffusers – 5 years Parking Structure Lighting Fixtures - 5 years	Warranty period on materials, Contract Substantial Completion plus 5 years. Warranty period on materials, Contract Substantial Completion plus 5 years.
16708	Correction of Communications System Deficiencies	Acceptance + 24 months	Warranty requirements per Contract, Article 11.
16728	Communications – Integrated Intercom System	Final Acceptance or Revenue Operations Date + 1 year	Warranty requirements per Contract, Article 11.
16998	Correction of ATC Deficiencies	Final Acceptance + 24 months	Warranty requirements per Contract, Article 11.

APPENDIX 3D

Metropolitan Washington Airports Authority

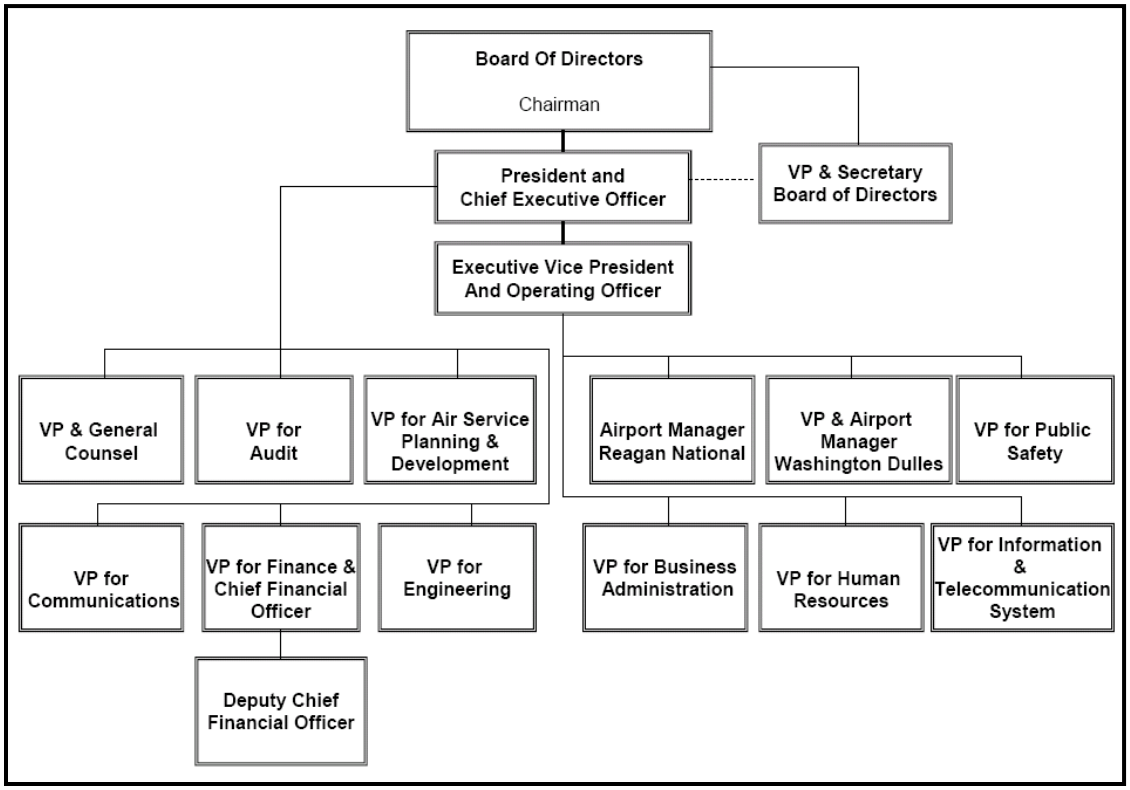
Role in the Project and Qualifications

Metropolitan Washington Airports Authority

The Metropolitan Washington Airports Authority (MWAA) operates Washington Dulles International Airport (Dulles Airport) and Ronald Reagan Washington National Airport (National Airport). MWAA currently leases Dulles Airport and the Dulles International Airport Access Highway (DIAAH) from the U.S. Government. In addition to operating Dulles and National Airports, MWAA is responsible for capital improvements at airports, the DIAAH, and the Dulles Connector Road.

MWAA's current organization consists of more than 1,000 employees in a structure that includes central administration, airports management and operations, and police and fire departments. The agency organization is shown in Figure 1.

Figure 1
MWAA - AGENCY ORGANIZATION



MWAA's Past Experience Managing Federal and Local Grants

MWAA is a current recipient of US Department of Transportation grants from FAA. Since its formation in 1987, MWAA has been awarded a total of approximately $330 million in grants from FAA, including $36.9 million as the first year's funding of a ten-year, $200 million award issued under FAA's Letter of Intent process. This amount would be significantly greater, except that MWAA has elected to receive Passenger Facility Charges (PFC) funding in the amount of $1.5 billion.

MWAA also manages other grants received from agencies within the US Department of Homeland Security and Justice for various security and public safety programs conducted on a stand-alone basis or in conjunction with local and federal law enforcement agencies. Grants are also received annually from the Commonwealth of Virginia Department of Aviation and are expended on projects in accordance with

the Commonwealth's Aviation Grant Program requirements. Taken together, expenditures under these non-FAA awards totaled approximately $3.9 million in fiscal year 2005.

In addition to grant programs, MWAA also manages a federally-regulated PFC program. This program allows airports to collect passenger fees and expend them on federally-approved passenger-specific projects. PFCs are remitted to MWAA directly from the airlines based on passenger enplanements, and collections and expenditures are reported to the FAA on a quarterly basis. The program began in 1994 and since that time MWAA has collected and managed $1.5 billion of these funds. As an FAA grantee, MWAA must meet financial capacity and capability standards established by the FAA. MWAA is in compliance with standards that would apply to both FAA and FTA grantees of capital construction projects. For example, MWAA is required to hire a firm of independent certified public accountants each year to conduct an audit of the financial statements of MWAA in accordance with auditing standards generally accepted in the United States of America and to meet the requirements of the Federal Single Audit Act of 1984 (pursuant to OMB Circular A-133).

Role in the Project

As the Project sponsor and grantee, MWAA will be the direct point of contact for FTA and the agency that is ultimately responsible for the success of the Dulles Corridor Metrorail Project. In Final Design, MWAA will be the federal grant applicant and recipient and have direct responsibility for the day-to-day management of the Design-Build Contract, the Final Design scope of work, the baseline schedule, the design and construction budget, and all other associated Project Management tasks. To assist in fulfilling its role, MWAA has entered into intergovernmental agreements with WMATA, DRPT, VDOT and Fairfax County. MWAA has also retained a Project Management Support Services (PMSS) consultant team.

MWAA holds bi-weekly Project Information Meetings (PIM) with all Project partners to provide updates, and address and prioritize important Project-related issues.

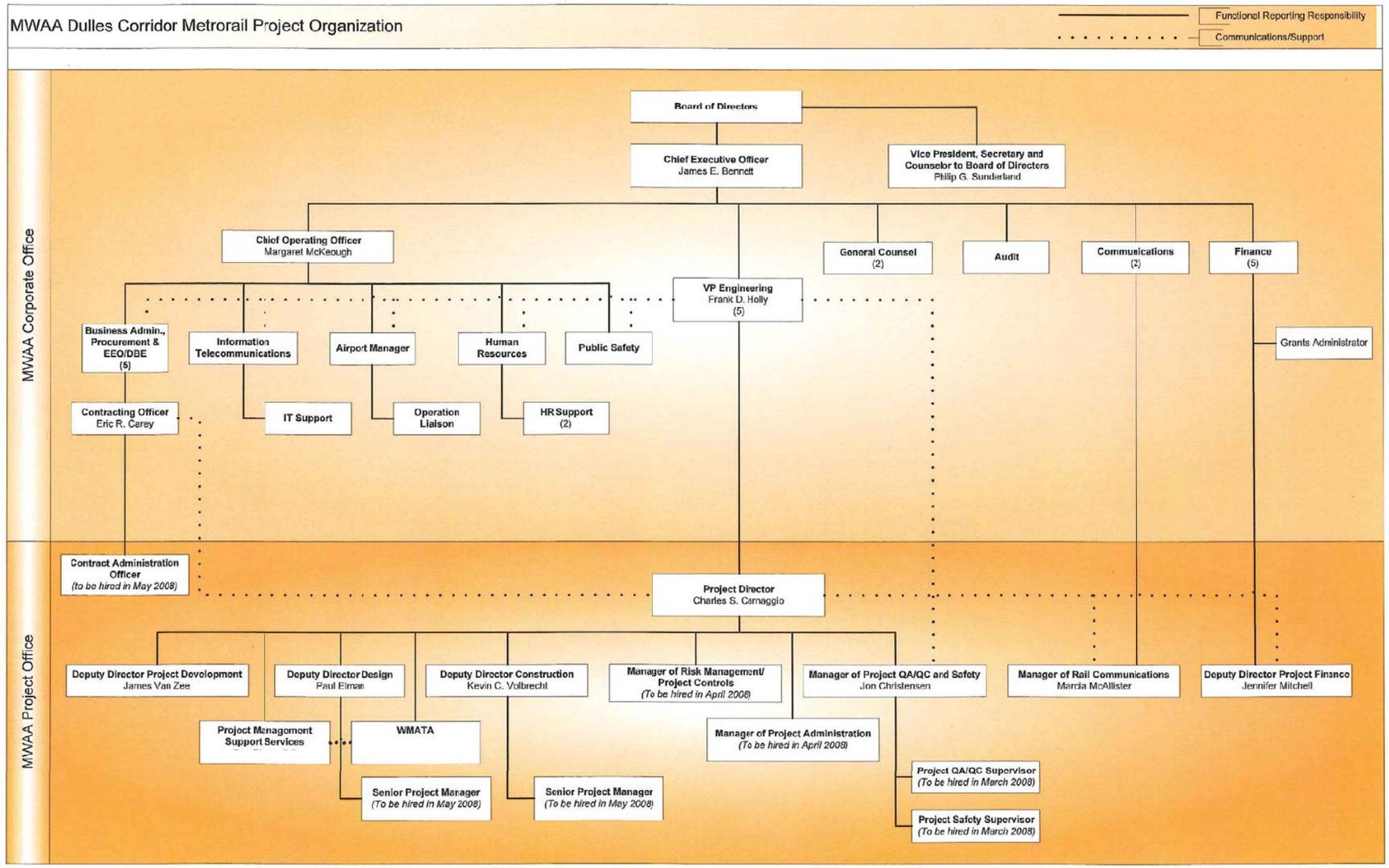
Project Management Organization

During Final Design and Construction of the Project, MWAA will provide expertise in numerous fields including engineering, construction, finance, legal issues, and communications, along with staff and consultant support, to ensure that all relevant issues are identified and addressed. MWAA will also provide property as well as a share of the non-federal funding for the development of the Project.

The MWAA Project Management Organization chart shown in Figure 2 depicts the key roles and relationships of MWAA staff, departments and their consultants working on the Project during Final Design and Construction. Through a combination of direct and indirect reporting arrangements, MWAA intends to take advantage of the depth of their existing organization and provide the skills necessary to successfully manage the Project.

On November 3, 2006, MWAA issued a Request for Qualifications to identify a firm to provide technical and program management support services, reporting directly to the Project Director. MWAA entered into a contract with Carter & Burgess, Inc., for Project Management Support Services (PMSS) on the Project. On behalf of MWAA, the PMSS will provide transit engineering and construction expertise as needed, augmenting MWAA's existing project management staff. The PMSS is flexibly tailored to meet changing demands as the Project proceeds from Final Design into Construction and start-up.

Figure 2
MWAA Dulles Corridor Project Management Organization



All of MWAA staff working from the Project Office will be working on the Project full-time. Those working from the corporate office will work on the Project as needed. The responsibilities of MWAA project management organization are described below.

Project Director

Responsibility for successful completion of the Metrorail Project lies with the Project Director. The Project Director's focus is to provide Project management direction, control, integration, and coordination functions to the interagency and interdisciplinary team managing the Metrorail Project. More specifically, the Project Director is responsible for the overall management and direction of the delivery of services and functions, such as engineering design and Project development, construction budget and schedule control, risk management, project contingency management and dispute resolution. Other duties of the Project Director include overall management of meeting FTA reporting requirements, environmental mitigation requirements, right of way acquisition, execution of intergovernmental agreements, grant administration, and managing and updating the PMP

.

The Project Director has assembled a team of experts on transit design, construction, and operations to complement existing Airports Authority staff to provide advice and counsel on complex issues and opportunities for increased safety, quality, efficiency and cost savings.

The Project Director serves as MWAA's Contracting Officer's Technical Representative (COTR) for the Design-Build Contract and will direct the activities of the Contract Administration Officer in any negotiations of changes to this contract and will coordinate with the Office of General Counsel and the Contracting Officer, as required.

The Project Director is directly supported by a team composed of the Deputy Director of Project Development, Deputy Director of Design, Deputy Director of Construction, Manager of Risk Management and Project Controls, Manager of Project Administration and Manager of Project Quality Assurance/Quality Control (QA/QC) and Safety. The PMSS reports directly to the Project Director. Reporting indirectly to the Project Director are the Manager of Communications, the Deputy Director of Project Finance and the Contracting Officer.

Deputy Director of Project Development

The Deputy Director of Project Development is responsible for overseeing all Project development activities related to the implementation of the Project, including FTA reporting requirements, environmental planning, mitigation monitoring, agency coordination, intergovernmental agreements, budget and schedule adherence and coordination with the regional transportation management efforts. Specific duties include:

- Managing mitigation compliance during design and construction
- Managing coordination with local, state, and federal agencies
- Managing the Project's Before and After Study
- Overseeing the development and execution of Project agreements
- Coordinating the Metrorail Project with the regional transportation management plan being implemented by VDOT and Fairfax County.
- Coordinating with other active VDOT and county projects to address any cumulative impacts and identified opportunities for coordinated closures, activities, and communication.
- Overseeing property acquisition activities as well as coordination with property owners, tenants, local jurisdictions, and various Commonwealth and federal agencies.
- Managing right-of-way acquisition.

Deputy Director of Design

The Deputy Director of Design will provide continuous administrative and management direction of Project design, including necessary reporting. Responsibilities include actions that:

- Provide, directly or by contract, adequate technical inspection and supervision by qualified professionals of all design work in progress.
- Oversee the management of design for both Project phases.
- Assure conformity to grant agreements, applicable statutes, codes, ordinances, and safety standards.
- Maintain the Project work schedule agreed to by FTA and MWAA and constantly monitor grant activities to assure that schedules are met and other performance goals are being achieved.
- Keep expenditures within the latest approved Project budget.
- Assure compliance with FTA requirements on the part of agencies, consultants, contractors, and subcontractors working under approved third party contracts or intergovernmental agreements.
- Account for Project property and maintain property inventory records that contain all of the elements required.
- Account for processing variances from WMATA, MWAA, and VDOT design criteria, monitoring safety compliance, environmental compliance, and Value Engineering.
- Oversee the successful implementation of the IGAs.

Deputy Director of Construction

The Deputy Director of Construction will provide continuous management and technical policy oversight of Project construction. The Deputy Director of Construction is responsible for oversight of all Project construction, technical inspection, budget adherence, schedule adherence, reporting, regulatory and FTA requirements compliance, and ensuring that MWAA and Project policies and systems are implemented. The Deputy Director of Construction is responsible for reviewing and approving environmental permit applications and other submissions for permits that are the responsibility of the owner as defined by the Design-Build Agreement. The Deputy Director of Construction is responsible for coordination of all construction related issues both within and outside the Project and will approve technical changes up to the amount delegated by the Contracting Officer and COTR. The Deputy Director of Construction works in close coordination with the QA/QC and Safety Manager to assure that Contract construction quality requirements and safety goals are achieved.

Deputy Director of Project Finance

The Deputy Director of Project Finance will primarily be responsible for developing the detailed financial plan for the Project and managing the Project's capital funding program. This position will prepare all financial documentation necessary to support negotiation and execution of an FFGA. The Deputy Director of Project Finance will coordinate extensively with other agencies to determine the preferred financing approach, manage capital funding for the Project during construction, and work with local funding partners on Project-related financial issues. This position is responsible for the day-to-day management of DTP's and WMATA's support for these activities, focusing on budget and schedule adherence. This position will report to MWAA's Vice President of Finance and will have an indirect reporting relationship to the Project Director. Specific duties include:

- Overseeing preparation of the Project's financial plan.
- Managing the Project's participation in the New Starts program, including the Annual Report on New Starts submittal.
- Developing and executing Project funding agreements.
- Coordinating with Project contracting officers to ensure changes in design and construction contracts are incorporated in Project cash flow requirements
- Coordinating with MWAA Financial Management Division on Project finance and accounting support.
- Coordinating with funding partners to identify funding requirements and support debt issuances, as needed.
- Managing the work of Airports Authority's financial advisor(s) and subcontractors needed to assist with the development of the financial plan.

- Manage capital funding sources to ensure funding matches construction draw-down schedule.
- Coordinating with funding partners and bond counsel to support development of conduit financing entity.
- Supporting MWAA Deputy CFO on the development of Toll Road operating agreements and/or toll rate setting to support Project funding requirements.
- Managing compliance with all applicable FTA regulations and requirements.
- Managing Final Design Grant Agreement compliance.

Manager of Risk Management/Project Controls *(To be hired in April 2008)*

Under direction from the Project Director, the Manager of Risk Management and Project Controls will utilize the best available technology in preparation of schedules and cost control methodologies for budget authorization and engineering purposes for all phases of development, permitting, design, engineering, procurement, and construction. This position will direct the work of the PMSS project controls team, including the monitoring of cost and schedule, and control of project documents. This position will be responsible for risk management on the Project, focusing primarily on controlling costs, maintaining schedule and managing project contingency. Specifically, the Manager of Risk Management and Project Controls will manage project contingency and event driven contingency, including identifying and quantifying costs to mitigate Project risks Project Controls provides the tools and systems necessary to effectively and proactively manage, control, and report on cost and schedule for concurrent projects throughout the organization

The Manager of Risk Management and Project Controls will direct the analysis on variances in cost and schedule performance against the plan, and communicate the reasons for the issuance of variance and proposed mitigation plans to the Project Director. This position will address FTA regulatory compliance issues.

Manager of Project Administration *(To be hired in April 2008)*

The Manager of Project Administration will be responsible for the overall project oversight administration, project finance and utility agreement contract administration, procurement of materials, equipment, and services in accordance with approved requisitions and specifications. This position is also responsible for issuing change notices and change orders, and daily operational control of all contractual issues pertaining to administration of contracts and subcontracts, subcontractor selection, and approvals. The Manager of Project Administration will be responsible for contracts administration and finance and accounting (including FTA grant administration). The Manager of Project Administration will also be responsible for the efficient management and operation of the project office, supporting the Project Director on staffing and personnel issues, and management of all project administrative issues. This position is also responsible for administrative interface between the Project office and MWAA headquarters' staff and will assist other managers with invoicing review and approval and financial reporting.

Manager of Project QA/QC and Safety

The Manager of Project QA/QC and Safety has the responsibility and authority to implement MWAA policies on quality assurance and on Project safety and security. To ensure the independence of these two important functions, the Project QA/QC and Safety Manager reports directly to the Project Director and has an indirect reporting relationship with MWAA's Vice President of Engineering. This position oversees the review and monitoring of DTP's QA/QC Plan and implementing procedures and DTP's System Safety/Security Certification Management program.

The Project QA/QC and Safety Manager has developed MWAA Quality Program Plan for the Project and MWAA Safety and Security Management Plan for the Project.

Project QA/QC Supervisor *(To be hired in March 2008)*

The Project QA/QC Supervisor will assist the Project QA/QC and Safety Manager in implementing and maintaining the Quality Program Plan and will review DTP's QA/QC Plan and implementing procedures.

In addition, oversight of the Project's quality program implementation will be performed in the form of audits, surveillances, and reviews as specified by the Quality Program Plan and Airports Authority Project Management Procedures.

Project Safety Supervisor *(To be hired in March 2008)*

The Project Safety Supervisor will assist the Project QA/QC and Safety Manager in implementing and maintaining the Safety and Security Management Plan and review DTP's System Safety/ Security Certification Management Plan, DTP's Environmental, Safety and Health Plan, and DTP's procedures related to system safety and security and construction safety. Oversight of the Project's system safety and security and construction safety programs will be performed in the form of audits, surveillance, and reviews as defined by the Safety and Security Management Plan and MWAA Project management procedures.

Contracting Officer

The Contracting Officer will be responsible for the full range of pre-award and post-award contracting functions for the Project's construction and architect/engineering (A/E) contracts including the review of solicitation packages, planning, soliciting, evaluating, awarding and administering moderate to large dollar value construction, A/E, consultant, supply and service contracts, and leasing and maintenance agreements. The Contracting Officer supervises a team of Airports Authority contract specialists and procurement technicians as well as contractor contract specialists. The Contracting Officer is the delegated contracting authority for an unlimited dollar amount. To maintain independence, the Contracting Officer will report to MWAA's Vice President of Business Administration, and will have an indirect reporting relationship with the Project Director.

This position is responsible for compliance with applicable FTA regulations, and monitoring adherence to Project budget and schedule.

Contract Administration Officer *(To be hired in May 2008)*

The Contract Administration Officer supports the Contracting Officer for the Design-Build Contract and the PMSS contract. The Contract Administration Officer will monitor compliance of all aspects of these contracts. The Contract Administration Officer will provide support on any negotiations of changes to these contracts and will coordinate with the Office of General Counsel and the Contracting Officer, as required and in compliance with the review procedures. This position reports to the Contracting Officer who will report to Airports Authority senior management directly, and will have an awareness of the obligations of MWAA in the Design-Build Contract and adherence to the contract by the contract team. This position will ensure that changes to the contract are incorporated according to MWAA's processes. This position provides support on compliance with applicable FTA regulations, and monitoring adherence to Project budget and schedule.

Manager of Rail Communications

The Manager of Rail Communications is responsible for implementing and managing the Project's communications, marketing and outreach plan developed by DTP. This includes establishing two-way communication with the media, public and business community, setting and ensuring a consistent message, and managing the Project communications and research efforts of DTP and other consultants and partners. The Manager of Rail Communications reports directly to MWAA's communications office and indirectly to the Project Director.

In strict coordination with MWAA's established policies and protocols, the Manager of Rail Communications will be responsible for:

- Coordination of the Project with operating businesses, residents, religious institutions, medical facilities, emergency response teams, and economic development interests along the alignment
- Management and implementation of the Arts-In-Transit program
- Provision of marketing support

- Conducting periodic public meetings and other events to keep the general public and commercial business interests appraised of the schedule and construction logistics as they affect the community as a whole or focused on specific areas immediately impacted by construction operations

Grants Administrator

The Grants Administrator will be responsible for administration and management of FTA grants in compliance with the grant agreements and applicable FTA circulars and regulations. Using the TEAM system to manage the grants after award, the Grants Administrator will request and withdraw federal cash only in amounts and at times as needed to make payments that are immediately due and payable. The Grants Administrator reports directly to MWAA's finance office and does not have a reporting relationship with the Project Director. The Grants Administrator will submit quarterly narrative/milestone and financial status reports in TEAM. The Grants Administrator reports to MWAA's Vice President of Finance.

Senior Project Manager - Design *(To be hired in May 2008)*

The Senior Project Manager for Design will provide support to the Deputy Director of Project Design. This position will primarily focus on coordination with all of the affected agencies and municipalities during Final Design to improve communication between the agencies and the Project and to coordinate activities by the Project and other local projects in order to take advantage of opportunities for joint mitigations and to avoid conflicts and schedule delays. The Senior Project Manager will manage the interactions with VDOT, DRPT, Fairfax County and the Commonwealth of Virginia to ensure that all interface work is performed to the necessary minimum and in accordance with the need dates of the Design-Build contract. This position also supports reporting, technical inspection, FTA requirement compliance, regulatory compliance, MWAA's Safety and Security Policy compliance, NEPA compliance, property inventory maintenance, execution and implementation of the IGAs, Final Design Grant Agreement compliance, schedule and budget adherence and variance processing.

Senior Project Manager – Construction *(To be determined in Summer 2008)*
This position is being considered for the construction phase of the Project. The Senior Project Manager would report to the Deputy Director for Construction. This position is expected to support the Deputy Director of Construction in all areas of responsibility. At a point closer to the initiation of construction, an evaluation will be made as to the need for this support position.

Human Resources Management
MWAA's Human Resources Department has been providing support to the Project and has directed the recruiting efforts for the Project since MWAA became the Project sponsor. MWAA's Human Resources Department will continue to provide support to MWAA Project staff and to the Project itself whenever there is a need to re-train, supplement or replace Airports Authority Project staff. This will be done in recognition of the importance of maintaining a Project team capable of efficiently managing the Project through its various stages despite any personnel changes that may occur over the lifetime of the project.

MWAA's Key Project Team Members

James E. Bennett – President and Chief Executive Officer
Mr. Bennett is responsible for planning and directing all programs and activities of MWAA, focusing on the future and the development of long-term business strategies. Mr. Bennett became the President and Chief Executive Officer of MWAA on May 3, 2003. Mr. Bennett had served as the Executive Vice President and Chief Operating Officer of the Authority since April 1996. He is a graduate of Auburn University (B.A., Aviation Management, 1978) and University of Michigan (M.P.A., 1986). He was the Assistant Aviation Director for the City of Phoenix Aviation Department from 1988 until joining MWAA staff. He holds the designation of Accredited Airport Executive from the AAAE. He currently serves on the Board of Airports Council International – North America, as former Chairman and Board member of the International Association of Airport Executives, board member of the Southeast Chapter of AAAE and

a member of the Policy Review Committee. He is former Chair of the Arlington Chamber of Commerce, a member of the Board of Loudoun County Economic Development Commission and a member of the Executive Committee of the Greater Washington Initiative. Mr. Bennett is working with the Dulles Corridor Advisory Committee, a joint initiative of MWAA and Fairfax and Loudoun counties, to facilitate the Metrorail Project. The committee provides advice on issues related to the management, improvement and expansion of the Dulles Corridor, as well as changes to tolls on the toll road to fund the roadway improvements and Metrorail extension in the corridor.

Edward Faggen – Vice President and General Counsel
Mr. Faggen is a graduate of Brooklyn College (B.A., Political Science, 1967) and Rutgers University School of Law (J.D., 1970), and began working for the Federal Aviation Administration (FAA) in 1970. He first served in the Airports Branch of the General Legal Services Division of the FAA, and then with its Environmental Law Staff. He was appointed Counsel to the FAA's Metropolitan Washington Airports organization in 1978. He has been the General Counsel of MWAA since it was formed in 1987. Mr. Faggen actively participated in the transfer of Ronald Reagan Washington National Airport and Washington Dulles International Airport from the federal government to MWAA. He has been Chairman of the Legal Committee of the North American region of the ACI-NA, and remains active in the committee.

Lynn Hampton – Vice President for Finance and Chief Financial Officer
Ms. Hampton is a graduate of the University of Louisville (B.S.C., Accounting, 1978, and M.B.A, 1983). She was Director of Finance for the City of Arlington, Texas from 1985 until her appointment to MWAA in January 1989. Ms. Hampton is a former member of the Municipal Securities Rulemaking Board. She is a Certified Public Accountant. Ms. Hampton is a past Chair of the Alexandria Chamber of Commerce and Chair of the ACI-World Economic Committee. She also is Chair of the Board of Directors of Vantage Trust Company and Secretary/Treasurer of the Board of Directors of Access Group, Inc. Ms. Hampton is working with DRPT Finance Manager Jennifer Mitchell to negotiate funding agreements with Fairfax and Loudoun counties and to develop a revised financial plan for the Metrorail Project.

Frank Holly – Vice President for Engineering
Mr. Holly is responsible for managing MWAA's Capital Construction Program for both Airports. A graduate of Hampton University (B.S., Architecture, 1960) and the University of Missouri-Rolla (M.S., Engineering Management, 1970), Mr. Holly was an active duty officer in the Army Corps of Engineers before retiring in the grade of Colonel in 1989. During his Army career, he was involved in managing large scale development programs in the U.S. and overseas. After military service, he became Deputy Commissioner of Aviation, Department of Aviation, Chicago, Illinois. In that position he was directly responsible for managing the engineering and maintenance functions at Chicago O'Hare International Airport. He joined the Authority in 1992, in his present position. MWAA's Capital Construction Program (CCP) was initiated in 1988 to provide for planning, designing and constructing certain facilities at National and Dulles airports. MWAA currently estimates the cost of the 2001-2011 CCP to be approximately $4.6 billion (in inflated dollars). The CCP includes an Automated People Mover train system that will move passengers between the main terminal and stations at concourses A, B and C at Dulles Airport. Mr. Holly is overseeing MWAA's plans to implement design and construction for the Metrorail Project.

Andrew Rountree - Deputy Chief Financial Officer and Transition Coordinator
Mr. Rountree is responsible for MWAA's budget, treasury services and debt management, and strategic analysis. Prior to joining MWAA's Office of Finance on October 11, 2005, Mr. Rountree was appointed as Director of Finance for the City of Richmond, Virginia, on November 27, 2001. While with the City of Richmond, he served as Acting Director of Finance from September 2000 to November 2001, and as Deputy Director of Finance from September 1998 to September 2000. During Mr. Rountree's tenure with the City, he managed the issuance of over one billion dollars in either General Obligation or Utility System Revenue Bonds, and assisted the City in achieving one General Obligation Bond rating upgrade, and two Revenue System Bond upgrades. Mr. Rountree holds a Bachelor of Science degree in economics, with a concentration in accounting, from Virginia Commonwealth University. He is a Certified Public Accountant and Certified Government Financial Manager. Mr. Rountree is a member of the Government Finance Officers Association, the American Institute of Certified Public Accountants and the Association of

Government Accountants. In relation to the Dulles Corridor transportation projects, Mr. Rountree is responsible for the oversight of the transition activities for MWAA for the toll road transfer of possession and control and the transition to the Metrorail Project design and construction. Mr. Rountree negotiated the terms and conditions of the *Master Transfer Agreement Relating to the Dulles Toll Road* and identified toll road operational strategies.

Charles S. Carnaggio, P.E. – Project Director
Mr. Carnaggio brings over 30 years of directly relevant experience developing, overseeing, planning, designing, and building major capital transit projects throughout the country. Mr. Carnaggio has transferred from DRPT to join MWAA. Prior to joining DRPT, Mr. Carnaggio was the Deputy Director of the Office of Engineering at FTA. As the Deputy Director of Engineering, Mr. Carnaggio was involved with the extension of Baltimore's heavy rail metro line to Johns Hopkins, and the extension of the light rail line to Hunt Valley, Maryland, which was successfully completed through a Design-Build delivery method. As the Deputy Administrator of the Maryland MTA, prior to joining FTA, Mr. Carnaggio was responsible for operation and planning of the entire multi-modal transit system including, heavy rail, light rail, bus, and paratransit. His transit experience covers nearly every active transit construction project in the country and he was responsible for developing many of the FTA programs and policies used to manage and evaluate transit New Starts projects. Mr. Carnaggio also brings expertise in transit operations, transit security, heavy civil construction, and large program management. He was the FTA sponsor of the Construction Roundtable and was instrumental in developing the FTA risk assessment process. With his unique perspective as both a grantee and federal regulator, Mr. Carnaggio has the skills and experience to direct the development of the Dulles extension from design through construction and into operations. Mr. Carnaggio is a registered professional engineer and holds a Masters degree in Business Administration from Loyola College and a B.S. in Civil Engineering from the Catholic University of America. In addition, he pursued graduate studies at the Naval Postgraduate School and the Federal Executive Institute.

Paul Elman, P.E. – Deputy Director of Engineering
Mr. Elman has over 20 years of experience managing all facets of transportation infrastructure engineering and design development. Mr. Elman has transferred from DRPT to join MWAA. Prior to joining DRPT, Mr. Elman spent 10 years as Senior Project Manager for the Parsons Corporation, managing rail and transportation infrastructure projects for such public sector clients as WMATA, MTA, VDOT, FHWA, Delaware DOT and SHA. With the Rail Transit Systems Division of Parsons, Mr. Elman served as lead firm representative with the Capital Transit Consultants consortium that performed all engineering consultant and design services for WMATA. In this capacity, Mr. Elman managed the preliminary engineering and advance design contract for the Largo Metrorail Extension and previously the General Engineering Consultant contract for WMATA. Prior to joining Parsons, Mr. Elman spent several years overseeing large-scale land development projects for private-sector clients in Northern Virginia and New Jersey. Mr. Elman is a registered professional engineer in four states, has a Masters degree in Engineering Administration from Virginia Tech and a B.S. degree in Civil Engineering from The George Washington University.

Kevin C. Volbrecht, P.E. - Deputy Director Construction
Mr. Volbrecht has over 25 years of construction management and engineering related experience in heavy and light rail transportation projects, transit station facilities including life safety and operational systems installations, building projects, highway projects, airport terminal renovation and expansion including U.S. Customs facilities and baggage handling systems. He has interfaced and coordinated with numerous jurisdictional agencies, contractors, and consultants. His duties have included pre-construction design reviews for constructability, functionality and cost effectiveness; on-site construction activities from groundbreaking to closeout; and project controls. Prior to joining MWAA, Mr. Volbrecht was with URS Corporation. Most recently he was the Deputy Project Manager on the final design contract for the 2.4 mile, $ 467 million extension for Miami Dade Transit (MDT) from the Earlington Heights Station to the new Miami Intermodal Center (MIC) Station. His duties involved assisting in completion of design documents, focusing on contract specifications, interface coordination between design disciplines and MDT operational staff and incorporation of design review comments on final design into the construction bid packages. He was also responsible for managing a number of sub consultants on the transit project.

Other transportation projects that Mr. Volbrecht has been involved with include resident Engineer for the Caltrain Double Track Construction project in Santa Clara County, California; Facility Manager for stations and parking garages on the Bay Area Rapid Transit District (BART) to San Francisco Airport extension; and Field Project Controls Engineer for the Tasman West Light Rail Extension in Mountain View, California. Mr. Volbrecht holds a bachelor's degree in civil engineering from University of Pacific, Stockton, California; and has professional engineer licenses in California and Florida.

James L. Van Zee – Deputy Director, Project Development
Mr. Van Zee has over 32 years of experience holding planning positions in and around the northern Virginia region and possesses a long history of involvement with the Dulles Rail extension. He has wide planning experience from both the public and private sector and has knowledge of the local northern Virginia institutions and players. For the past 11 years, he has served as Director, Regional Planning Services for the Northern Virginia Regional Commission (NVRC) and in a senior planning position with Fairfax County. In addition, he held the position of Chief of Current Planning/Zoning Administrator for Loudoun County from 1979 to 1981. In his role with the Commission, a regional planning agency made up of 14 counties, cities and towns, he served as co-staff of the Northern Virginia Transportation Authority; monitored transportation, land use, and telecommunications legislation in the Virginia General Assembly and analyzed its affects; served as chief of staff in preparing NVRC transportation/land use policy; managed the Alternative Transportation and Land Use Activities Study (ATLAS); reviewed the interrelationship between state and regional transportation policies/programs and local land use policies. He also was lead staff in the analysis of the Virginia Railway Express Commuter Rail Land Use Study, managed various other transportation studies and has been a senior associate for advisory services with the Urban Land Institute (ULI). Most recently, Mr. Van Zee advised ULI as a literature reviewer in their new publication "Developing Around Transit." Mr. Van Zee holds a bachelor's degree in Urban Studies from Virginia Commonwealth University, Richmond, VA; and a master's degree in Planning from University of Virginia, Charlottesville, VA

Jennifer Clinger Mitchell – Manager of Project Finance
Ms. Mitchell has 12 years experience in transportation finance, with a focus on revenue forecasting, financial planning, and economic impact analysis. Prior to joining MWAA, Ms. Mitchell was Manager of Project Finance for DRPT. Prior to that she worked as Senior Transportation Planner with DMJM+HARRIS, where she was part of the team conducting the alternatives analysis and environmental impact analysis for the Dulles Corridor Rapid Transit Project. She served as the Deputy Project Manager for the Final EIS, where she analyzed the land use and economic development impacts of the project on the surrounding jurisdictions as well as coordinated the financial plan for the project. Ms. Mitchell has held various consulting positions in transportation finance, planning, and economic impact analysis of transportation projects in the US, Europe and Latin America. Ms. Mitchell has project experience in the development of funding and implementation strategies for various transportation alternatives; toll revenue forecasting; identification of potential federal, state, and local funding sources; and analysis of the impacts of federal transportation policy on transportation investment projects. She is also experienced in the development and application of economic and financial analysis models. Ms. Mitchell holds a Bachelor in City Planning from the University of Virginia and a Master of Regional Planning with a concentration in Government and Infrastructure Finance from the University of North Carolina at Chapel Hill,

Jon Christensen – Manager of Quality Assurance/Quality Control and Safety
Mr. Christensen has over 35 years of engineering and management experience including over thirty years experience in quality assurance. Prior to joining MWAA, Mr. Christensen was Manager of Quality Assurance for DRPT. He has held management positions with the responsibility for development and implementation of quality assurance programs related to nuclear and fossil power stations, mining projects, and two major rail transit projects. He has eight years of rail transit experience and was most recently assigned to the Southern New Jersey Light Rail Transit System Project as the Quality Assurance Manager for NJ Transit's General Design Assistance Consultant. In this position he established NJ Transit's project QA program and procedures and conducted extensive overview of the project's design-build-operate-maintain (DBOM) contractor in the form of audits, surveillances and reviews. Prior to this assignment he served as the Quality Assurance Manager for the Siemens Transit Team (STT). STT was the DBOM contractor for the Tren Urbano Project in San Juan, Puerto Rico. Mr. Christensen also

developed the QA program and procedures for the project and was responsible for monitoring design and construction activities of STT and its subcontractors. Mr. Christensen holds a B.S. degree in Marine Engineering from the U.S. Merchant Marine Academy and was an ASQ Certified Quality Engineer.

Marcia McAllister – Manager of Rail Communications
Ms. McAllister has more than 35 years of experience in communications, journalism and transportation. Prior to joining MWAA, she was communications manager for the Dulles Corridor Metrorail Project within DRPT. She has covered the construction and expansions of Washington's Metrorail system and well as design and construction of the MARTA system in Atlanta for major daily newspapers. For the past 25 years she has made her home in the Dulles Corridor and has covered a wide range of transportation, land use and development and community issues for several local newspaper chains writing about land use and transportation in Fairfax, Loudoun and Prince William counties, the District of Columbia and suburban Maryland. Her career has also included communications work for the US Department's of Transportation and Justice and freelance work for some of the nation's most prominent newspapers, including the Washington Post. In different positions with Times Community Newspapers, a chain of 14 papers in Fairfax County, she has covered the Dulles project over the years and won multiple journalism awards, including a first place Virginia Press Association award for in-depth coverage of the Draft Environmental Impact Statement on the Dulles Metrorail project. Ms. McAllister holds a Bachelor of Arts degree in Journalism from Georgia State University in Atlanta and is a graduate of Leadership Atlanta.

Eric R. Carey – Contracts Manager and Contracting Officer
Mr. Carey is responsible for design and construction contract management for MWAA's Capital Construction Program for Washington Dulles International Airport. A graduate of the Rutgers University College of Engineering (1969), Mr. Carey accomplished graduate work at the Columbia University School of Architecture. He has also participated in continuing education at the George Washington University School of Law as well as the National Transit Institute. Mr. Carey was a design and construction project director, as well as a contracting officer (unlimited warrant) during a 31 year career with the US Department of Veterans Affairs Office of Facilities Management. He has been with MWAA since 2004. He has extensive experience with the Federal Acquisition Regulations as well as with the Authority's acquisition requirements. He is also familiar with the FTA's Best Practices Procurement policy. Mr. Carey is a Certified Construction Manager and is active in the Construction Management Association of America.

Joseph Licaros – Grant Administrator
Mr, Licaros will serve as the Airport Authority's Grant Administrator for the Dulles Corridor Metrorail Project. Before joining MWAA, Mr. Licaros was the Grants Administrator for Cornell University. He was employed as the Grants Administrator for George Washington University prior to taking up the position at Cornell University. In these positions, Mr. Licaros coordinated and tracked funding from multiple grants, maintained and reconciled all grant related accounts. Mr. Licaros is a graduate of Holy Angel University, Angeles City, Philippines. He will oversee MWAA's incorporation in FTA's TEAM system for managing FTA related federal grants. Assisting Mr. Licaros as a contract employee is Mr. Ronald Smith. Mr. Smith has over twenty years experience in government financial operations and grants management.

APPENDIX 3E

Project Management Support Services (PMSS) Consultants

Role in the Project and Qualifications

Project Management Support Services (PMSS) Consultants

MWAA entered into a contract with Carter & Burgess, Inc. (now Jacobs Carter Burgess, JCB), for Project Management Support Services (PMSS) on the Project. The PMSS team is organized as a simple Prime-Subconsultant arrangement. With JCB as the prime and Lea+Elliott (L+E), STV, and Hatch Mott MacDonald (HMM) as key subconsultants, the PMSS team also includes several specialty subconsultants with local experience to add to the team's local response capability and delivery. The PMSS team brings experienced professionals and a successful history of working with MWAA, FTA, and WMATA. The PMSS team has expanded its local and national resources for the Project with the recent merger of Jacobs Engineering and Carter & Burgess (now JCB).

The PMSS team provides MWAA with the depth and breadth of heavy rail design and construction expertise, and unique knowledge of the means and methods to successfully manage Design-Build projects. The knowledge is valuable in evaluating the Project's requirements and interpreting the specifications. The PMSS is flexibly tailored to meet changing demands as the Project proceeds from Final Design into Construction and start-up. The PMSS team comprised of leading program management firms- among the few that have the ability and capacity to provide comprehensive, time tested and innovative services on multibillion dollar transit projects.

The PMSS team has designed tunnels, aerial guideways, above ground and underground stations, rehabilitations to existing infrastructure, and parking structures for both Design-Build and Design-Bid-Build procurements. Team members have performed extensive inspections on the WMATA system, and are very familiar with WMATA design criteria, standard drawings, and specifications.

The PMSS team is recognized for their capabilities and experience in serving public agency clients on major complex program management and Design-Build delivery assignments. L+E, one of the PMSS team's key subconsultants, specializes in the planning, procurement, design, implementation, and rehabilitation of transportation systems. Since 1973, L+E has provided services on design-build projects to many large public transit authorities in the United States, including New York MTA, WMATA, Miami MDT, Chicago CTA, PATH, BART, and the FTA, as well as many airport authorities, including MWAA. L+E staff have significantly Design-Build experience working for transit authorities and suppliers of transit vehicles and systems, including high speed rail, rapid transit, commuter rail, light rail, advanced technology bus, automated people mover, and emerging technologies.

The Table1 below highlights the heavy rail and tunnel program management experience of the major PMSS team partners.

Table 1
PMSS Team Experience Highlights

Client	Program Management	Design/Design Support	Construction Management	Project Controls	Size of Project(s)	Comments: Heavy Rail, Light Rail , Tunnels, and Teaming Partner
Jacobs Carter Burgess						
Metropolitan Washington Airports Authority		•			$2.1 billion	•Heavy Rail •Tunnels • With L & E
Washington Metropolitan Area Transit Authority				•	Task Order	•Heavy Rail
New York Metropolitan Transportation Authority	•	•	•	•	$17 billion	•Heavy Rail •Tunnels • With L & E
Bay Area Rapid Transit District	•	•	•	•	$600 million	•Heavy Rail •Tunnels
Dallas Area Rapid Transit	•	•	•	•	$287 million	•Heavy Rail
Caltrain and San Mateo County Transit District	•	•	•	•	$4.7 million	•Heavy Rail
Federal Transit Administration	•	•	•	•	$2 billion	•Heavy Rail •Tunnels
Lea & Elliott, Inc. (L&E)						
Federal Transit Administration	•	•	•	•	$1.3 billion	•Heavy Rail •Tunnels
Metropolitan Washington Airports Authority	•	•	•	•	$1.2 billion	•Tunnels
Miami-Dade Transit		•			$260 million	•Heavy Rail
STV, Inc (STV)						
Virginia Department of Rail & Public Transportation	•	•		•	$4 billion	•Heavy Rail •Tunnels
New York Metropolitan Transportation Authority/LIRR		•	•	•	$5.6 billion	•Heavy Rail •Tunnels
Federal Transit Administration	•	•	•	•	$3.2 billion	•Heavy Rail •Tunnels
Hatch Mott MacDonald, LLC (HMM)						
Toronto Transit Commission	•	•	•	•	$2 billion	•Heavy Rail •Tunnels
Santa Clara Valley Transportation Authority	•	•	•	•	$4.2 billion	•Heavy Rail •Tunnels
Seattle Sound Transit	•	•	•	•	$4.9 million	•NATM Tunnels
Metropolitan Washington Airports Authority		•			$1.2 billion	•Bored & NATM Tunnels

New York Metropolitan Transportation Authority	•	•	•	•	$5.6 billion	•Heavy Rail •Tunnels
Jacobs Engineering						
San Francisco Municipal Railway			•	•	$500 million	•Light Rail
State of Minnesota - Department of Transportation	•		•	•	$700 million	•Light Rail •Tunnels
Port Authority of Allegheny County	•		•	•	$390 million	•Light Rail •Tunnels
San Deigo Metropolitan transit Development Board	•				$431 million	•Light Rail •Tunnels
Pasadena Metro Blue Line Construction Authority	•		•	•	$725 million	•Light Rail
CSX Rail Corridor	•	•	•	•	$240 million	•Heavy Rail
Washington Metropolitan Area Transit Authority		•		•	$290 million	•Heavy Rail •Tunnels
Hampton Roads Transit	•		•	•	$230 million	•Light Rail
Southeastern Pennsylvania Transportation Authority	•		•	•	$650 million	•Heavy Rail
Metropolitan Transit Authority (just starting)			•		$5 billion	•Heavy Rail

Role in the Project

The PMSS team augments and provides support to MWAA's organization. The PMSS team will provide program management, design support, and construction oversight services for the implementation of the Project, requiring considerable on-site representation. The PMSS team will report to the MWAA Project Director and will provide assistance to MWAA in a consultant role. The PMSS team possesses a full range of technical and managerial professional disciplines and capabilities associated with major facilities programs and have demonstrated its ability to successfully provide project management services on large transit projects.

Project Management Organization

The PMSS team will supplement and complement the MWAA staff by providing support services for the implementation of the Project. The PMSS team will provide support by staff that will be assigned to the Project full time as well as those brought in to work when they are needed either through separate sub-contracts or drawn from the staff of the firms currently participating in the PMSS team. The timing of their arrival will depend upon the demands of the Project as it progresses. Some will work at the Project office while others will complete their work remotely. All full-time positions needed at this point of the Project have been filled.

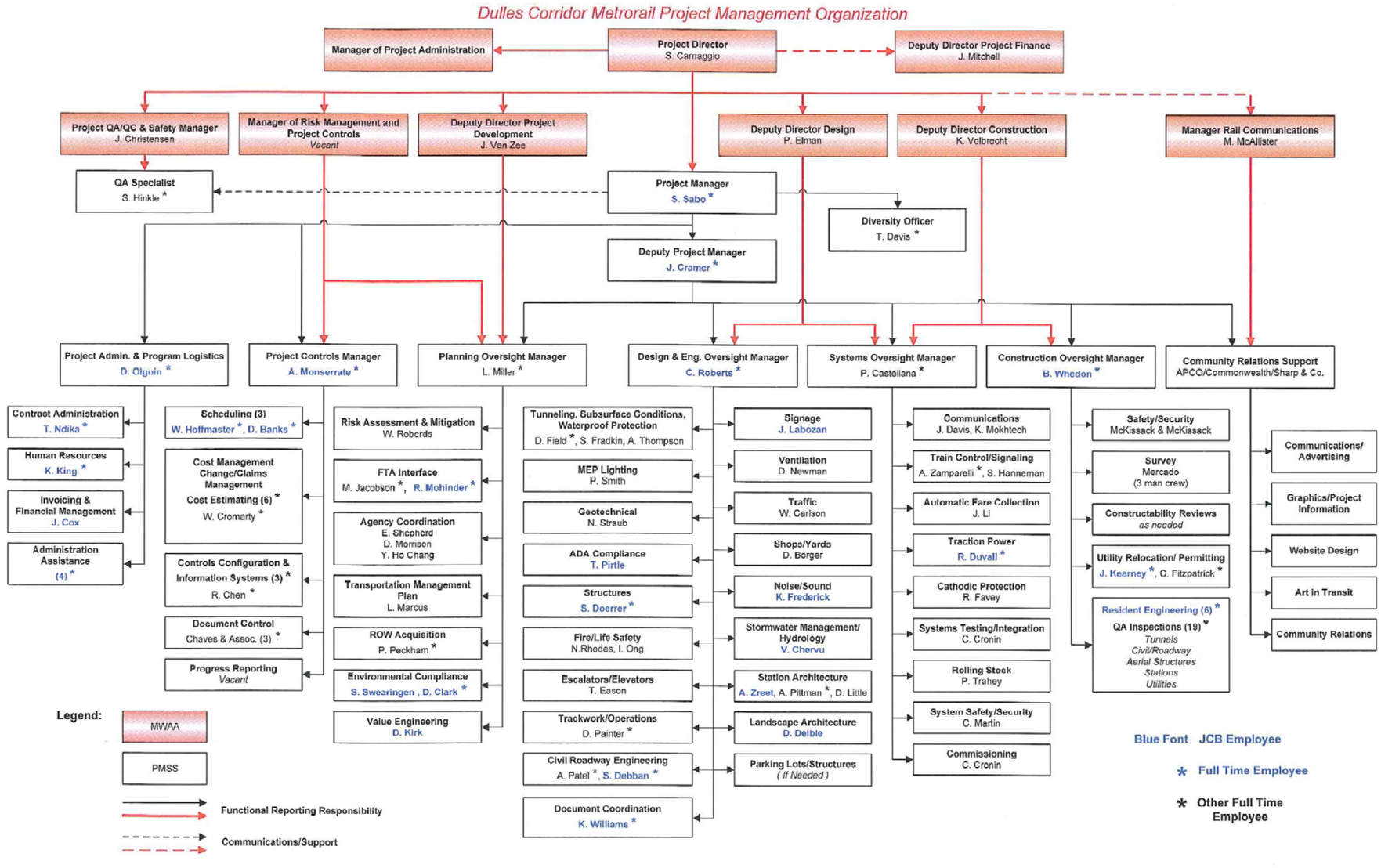
As of January 31, 2007, it is anticipated that the following PMSS positions will be working on the Project full-time during Final Design:

- Project Manager – S. Sabo
- Deputy Project Manager – J. Cramer

- QA Specialist – S. Hinkle
- Diversity Officer – T. Davis
- Project Administration and Program Logistics – D. Olguin
- Planning Oversight Manager – L. Miller
- Design and Engineering Oversight Manager – C. Roberts
- Systems Oversight Manager – P. Castellana
- Construction Oversight Manager – B. Whedon
- Project Controls Manager – A. Monserrate
- Contract Administration – T. Ndika
- Human Resources – K. King
- FTA Interface – M. Jacobson, R. Mohinder
- ROW Acquisition – P. Peckham
- Environmental Compliance – D. Clark
- Tunneling, Subsurface Conditions, Waterproof Protection – D. Field
- Structures – S. Doerrer
- Trackwork/Operations – D. Painter
- Civil Roadway Engineering – A. Patel, S. Debban
- Station Architecture – A. Pittman
- Train Control/Signaling – A. Zamparelli
- Traction Power – R. Duvall
- Safety/Security – McKissack and McKissack
- Utility Relocation/Permitting – J. Kearney, C. Fitzpatrick
- Resident Engineering /QA Inspections – To be hired when needed
- Scheduling – W. Hoffmaster, D. Banks
- Cost Management Change/Claims Management /Cost Estimating – W. Comarty, J. Sueck, P. Malla
- Controls Configuration and Information Systems – R. Chen
- Document Control – Chaves and Associates
- Administrative Support

The PMSS Organization chart shown in Figure 3 depicts the key roles and relationships of the PMSS staff.

Figure 3
PROJECT MANAGEMENT SUPPORT SERVICES ORGANIZATION



The PMSS team has established an on-site project specific recruiting department to fill or replace open vacancies with qualified individuals. The recruiting department will use internal and external resources as well as agency services when needed to fill these positions. Ongoing training is provided for all staff. This is accomplished by an on-line university training program provided through Carter Burgess. Employees are encouraged to participate in this on-line university as well as enroll in external training and certification classes as required and necessary for their position. The PMSS will supplement and complement the MWAA Office of Engineering staff by providing support services for the implementation of the Project in the following types of activities:

Project Management and Administration
Reporting to MWAA's Project Director, the PMSS team will provide the Project management staff to assist MWAA in overseeing all aspects of the Project's design, construction, testing, commissioning and acceptance into WMATA's Adopted Regional System (ARS). The PMSS team will assist MWAA in the interface with and oversight of the activities of DTP, WMATA, VDOT and Fairfax County and will include strict enforcement of the applicable contract or intergovernmental agreement. The PMSS Project Manager and staff will develop monitoring and reporting policies and procedures for the Project that are fully compliant with those required by the MWAA and the FTA. All PMSS activities will comply with issued and approved MWAA's Project procedures.

The PMSS team Project management staff will also assist MWAA in the full implementation of the quality assurance program developed by MWAA for the Project. The Project's quality assurance plans and procedures will be implemented within each of the functional areas of the PMSS organization.

The PMSS team will supply office support staff functions including accounting, human resources, contract management, and Project coordination for MWAA.

The PMSS team will also assist MWAA in addressing the contractual aspects of the Design-Build Contract; including invoicing, financial reporting and support. In addition, should MWAA require additional consulting or construction contracts with parties other than DTP, the PMSS staff will assist MWAA in procuring and managing those contracts.

To implement Project tasks t, the PMSS Team is organized along functional lines, with senior managers reporting directly to the PMSS Project Manager, as described in greater detail below. This organization allows for a direct one-to-one relationship with MWAA's Project management staff in the same functional roles and paralleling of DTP's staffing plan for the execution of the Project in accordance with the various and concurrent construction operations areas.

Project Controls and Information Technology Support
At the direction of MWAA's Manager of Risk Management/Project Controls, the PMSS team will provide the Project Controls and IT staff required for the Project. Project Control activities and tasks will include the creation and all updating of the Project Master Schedule that will integrate the activities of DTP, WMATA, VDOT, FTA, Fairfax County and other agencies and organizations whose actions affect the Project. The Project Controls group will also implement and manage the Project's document control and management information system; provide cost estimating services; prepare financial reports, as required by the MWAA and the FTA; and provide change order/claims management services for the Design-Build contract.

The group will be responsible for the design, installation and maintenance of the computer systems and Internet network within the Project Office and for assisting DTP in linking the systems with the field offices. They will also support and train users on hardware and software necessary to provide the above project management functions.

Planning Oversight

- As support to MWAA staff, the PMSS team will provide the following:
- Initial and continuing identification of Project risk through periodic assessments, management of risk containment, and the determination and implementation of risk mitigation measures.
- Assistance to MWAA relative to their management of Right-of-Way acquisitions and easements, and environmental assessments. The PMSS Manager of Right-of-Way Acquisition, Ms. Pam Peckham, will direct this support.
- Assistance to MWAA in interfacing with FTA.
- Assistance to MWAA in interface with DTP, VDOT and Fairfax County in support of VDOT's efforts to develop and implement a regional transportation management plan.
- Assistance to MWAA in the administration of the intergovernmental agreements.

Design and Engineering Oversight

DTP is responsible for preparing the Final Design and Construction documents for the civil, structural, architectural, MEP and systems design required for the Project. DTP is required to present the Project's designs as they are completed in formal design reviews. On behalf of MWAA, the PMSS team will lead the design review task by providing the necessary technical expertise to determine that completed designs are fully compliant with the requirements of the Contract which include WMATA's design criteria, and the standards and criteria of the other Project participants, e.g., VDOT, Fairfax County, etc., FTA requirements and industry "best practice". As completed and presented by DTP, the PMSS will make distribution of the design documents to all cognizant organizations, categorize and log all design review comments and track the comments through to resolution.

- Other tasks to be conducted by the PMSS on behalf of MWAA during the design phase of the Project include:
- Coordination of the interface designs between scope items being provided by DTP and those being provided by WMATA and others.
- Review and provide recommendations on any contractor proposed changes to the required design standards.
- Participate in the development of the technical specifications and in the selection of subcontractors for each of the Contract Allowance Items.
- Evaluate and provide recommendations on any "value engineering" proposals.
- Actively pursue modifications in design that could lead to significant cost savings and performance enhancements specifically for those components identified as allowances in the Design-Build Contract.
- Track the resolution of all comments issued during the permitting process and assure that these comments and corrections are incorporated by DTP into the issued-for-construction design documents.
- Provide timely responses to DTP's requests-for-information (RFIs) made to MWAA and reviewing RFIs between DTP and its subcontractors/suppliers.
- Review and recommend either approving or rejecting any of DTP's requests for substitutions or the use of "or equal" materials or equipment.
- Review and recommend acceptance of record documents prepared by DTP.
- Assistance to MWAA in interfacing with key Project participants/stakeholders including VDOT, DRPT, Fairfax County, and the Commonwealth of Virginia, to ensure that all interface work is performed to the necessary minimum and in accordance with the need dates of the Design-Build contract.

Construction Oversight
Commencing with the preparation of the Final Design documents and extending throughout the Construction phase of the Project, the PMSS team will, on behalf of MWAA, monitor all aspects of DTP's Construction program for the aerial guideway structures, tunnels, at-grade guideway sections, passenger stations, civil and roadway modifications and improvements, West Falls Church yard and shop expansions, and other elements of the Project.

PMSS participation in construction activities will include obtaining those permits that are the Airport Authority's responsibility and providing assistance in obtaining those permits that are DTP's responsibility and the review and acceptance on behalf of MWAA of DTP's Construction work plans and procedures to include quality assurance and control plans, maintenance of traffic plans, construction survey plans, construction safety and security plans, demolition plans and, as applicable for work on the ARS, DTP's site specific work plans. The PMSS will coordinate with DTP and the Project QA/QC and Safety Manager to identify construction hold and witness points and ensure the appropriate inspections and approvals are completed. The PMSS will also monitor DTP's full compliance with the applicable codes, all environmental requirements and any other conditions of the permitting agency.

In addition to the tasks summarized above, for portions of the work that are to be executed on a time and materials basis, e.g., utility relocations, the PMSS will review and approve on behalf of the MWAA all documentation of costs to include material invoices, labor hours/costs, equipment costs, etc. The MWAA's Deputy Manager of Construction Oversight, Mr. John Kearney, will be assigned to support MWAA's Construction Oversight Manager in the utility relocation work to control the budget, scope and schedule to ensure that utility work is performed to the minimum necessary and in support of the need of construction work. He also has been assigned the responsibility of managing regulatory approval requirements and permitting. (See Appendix C for a description of Mr. Kearney's professional experience)

On behalf of MWAA, the PMSS team will review and participate in the approval of construction submittals and RFIs, monitor DTP's timely completion of the Project's record documentation and be responsible for conducting joint inspections with DTP, WMATA, VDOT, and/or Fairfax County for the initial preparation of punchlists and in verifying the completion of all punchlist work.

Systems Oversight
The PMSS Systems Management group will assist MWAA in assessing contract compliance of all of the Project's system elements assigned to the Design-Build Contract, to include the train control system, traction power system and communications systems. Additionally, on behalf of MWAA, the PMSS Systems Management group will monitor the procurement and interface design for those system components being provided by WMATA. The MWAA's Systems Oversight Manager, Mr. Philip Castellana, will be assigned solely to the WMATA work so that WMATA status is known at all times and so that WMATA is held to perform to the needs of the project. He will be supported by a team that are each assigned a specific area of the WMATA work according to their area of expertise. These include the areas of communications, train control and signaling, automatic fare collection, traction power, cathodic protection, systems testing and integration, rolling stock, systems safety and security and commissioning.

The PMSS Systems Management group will lead the reviews of system performance requirements, design submittals prepared by DTP, and the resolution of all issues resulting from these reviews. The PMSS will also review and, on behalf of MWAA, accept other key contract submittals including the System Interface Plan, System Acceptance Plan, the procedures for and results of all post-installation, integration and performance demonstration tests, and monitor DTP's full compliance with the Project's Safety and Security Management Plan (SSMP) and System Safety/Security Certification Management Plan (SCMP).

The PMSS Systems Management group will function as the primary point for coordination and interface between the elements of the Project being supplied by DTP and those being provided by WMATA. This

coordination and interface responsibility will include monitoring the timeliness, accuracy and completeness of interface data between DTP and WMATA, monitoring WMATA's work plan and schedule for completing elements of their work, and participating in all commissioning activities at WMATA's Operational Control Center.

Comparable to the progress of civil/structural elements of the Project, the PMSS will, on behalf of the MWAA, review and participate in the approval of system submittals and RFIs, monitor DTP's timely completion of the Project's record documentation and be responsible for conducting joint inspections with DTP, WMATA, VDOT, and/or Fairfax County for the initial preparation of punchlists and in verifying the completion of all punchlist work.

Business Diversity Monitoring
The PMSS Team will support and monitor DTP's compliance with MWAA's Equal Employment Opportunity (EEO) and the Disadvantaged Business Enterprises (DBE) programs against the requirements of the Design-Build Contract.

Community Relations
The PMSS team will assist MWAA with the development and implementation of a community outreach program for the Project. Components of the community relations task include the maintenance of a Project internet site, participation in public meetings and other forums to keep the public informed of Project events and progress and coordination of the art-in-transit element of the Project.

Specialized Expertise
Specialty consultant support will be available to support MWAA as needed in the following areas:

- Expert review of specific structural, geotechnical and constructability issues.
- Technical issues related to design criteria, specifications and standards in several disciplines.
- Review of safety and security issues.
- Quality Assurance issues relative to Design-Build construction.
- System Testing and Integration Support

PMSS Consultants Key Project Team Members

John Fisher, PE- Project Principal
John Fisher has 36 years of experience in the planning, design, program, construction management, and construction of rail transit systems. He has a proven track record assembling and leading large diverse integrated teams on complex transit and transportation assignments. John has served as JCB Project Manager for FTA PMO assignments since 1998. His experience includes serving as Project Director for the $1.8 billion Kuala Lumpur LRT project in Malaysia while with Bechtel, and serving in various roles on the Washington DC Metro system. He is a nationally-recognized innovative thinker in FTA procurement strategies, delivery modes and risk assessment processes.

Steven Sabo – PMSS Project Manager
Mr. Sabo brings over 36 years of experience in construction; working for public sector owners, contractors and professional construction managers with direct responsibility for performance, schedule, quality and profit. He has experience in public transit, water/wastewater, airports, postal facilities, medical centers, universities, parking structures, historic renovations, industrial plants and high-rise building projects. Prior to joining Carter and Burgess, Mr. Sabo was the Assistant General Manager and Chief Engineer at Southeastern Pennsylvania Transportation Authority (SEPTA) in Philadelphia, PA, in charge of SEPTA's Capital Design and Construction Division. In this capacity he supervised 125+ in-house engineers and architects involved in SEPTA's continually renewing annual multi-billion dollar capital improvement and expansion program. Mr. Sabo is a registered professional engineer and holds a Bachelor's degree in Civil Engineering from the City College of New York, New York, NY. He leads the MWAA's consultant

team during this transition period in the planning, management and execution of the Dulles Corridor Metrorail Project.

Jim Cramer – PMSS Deputy Project Manager
Mr. Cramer has over 35 years of experience in the transit industry. His experience includes Project Manager responsibilities for the design, manufacture, delivery and commissioning of fully automated transit technologies for projects in Las Vegas, NV., Tampa, FL., and London, U.K.. Additionally, Mr. Cramer was the Systems Area/Start-Up Manager for Wilshire Corridor and North Hollywood extensions of the Los Angeles, Red Line and most recently served as the Project Manager for the Las Vegas Monorail Project in Las Vegas, NV. Over his career Mr. Cramer has worked on numerous Design-Build Contracts of similar scope to the Dulles Metrorail Project. For the PMSS Contract, Mr. Cramer will serve as the Deputy PMSS Project Manger reporting directly to Mr. Sabo. In this role he will assist Mr. Sabo in planning, management and execution of the Project.

Philip Castellana – PMSS Manager, Systems Oversight
Mr. Castellana has 32 years of experience in the transit industry, working for a public transit authority and Lea+Elliott. A mechanical engineer by training, Mr. Castellana has focused his career on the planning, design, procurement and delivery of vehicles and Design-Build procurements for public transit authorities, airports, Amtrak, freight railroads, and private sector owners. His experience encompasses all modes of transit from rail to bus transit and airport and urban automated people mover systems. More specifically, he leads the Lea+Elliott team during the review of contract provisions, including disputes resolution, preparation of procurement documents, and the development of transportation system operating plans. On the Dulles Metro project, he has played a key role in the contract documents for Final Design and Construction that will enable the MWAA to effectively manage the Design-Build contractor as well as addressing the requirements of WMATA, Fairfax County, VDOT, and other stakeholders. Mr. Castellana began his career at the Port Authority of Allegheny County in Pittsburgh where he spent 10 years as Staff Engineer, Chief Engineer for Equipment and Maintenance, and Manager of Rail and Support Vehicle Maintenance and Equipment Engineering. He received his Bachelor of Science in Mechanical Engineering from Carnegie-Mellon University.

Robert L. Whedon – PMSS Manager, Construction Oversight
Mr. Whedon has over 36 years of experience in the construction and construction management of major multi-disciplined infrastructure projects including hydroelectric and transit projects nationally and internationally. Mr. Whedon has been involved in the construction management of transit projects in Kuala Lumpur, Malaysia; Salt Lake City; Houston; Las Vegas; Los Angeles and Seattle. Most recently, Mr. Whedon completed the supervision of construction of a complicated 4.5-mile segment of the Central Link Project for Sound Transit in Seattle, WA. The construction scope included the relocation of all overhead utilities to newly constructed conduit ductbanks, relocation and reconstruction of all existing underground utilities, construction of new four lane PCC roadway and sidewalks, double track embedded track and three at grade stations. Prior to joining Carter & Burgess in 1998, Mr. Whedon was with Bechtel Corporation for 24 years where he was responsible for both direct hire and construction management projects including Design-Build programs similar in format to the Dulles extension. Mr. Whedon's last project with Bechtel was as the Area Manager for 21 kilometres of match cast box girder elevated guideway construction, 4 kilometres of at grade construction and 11 associated at grade and elevated stations. Mr. Whedon received a Bachelor of Science degree in Civil Engineering from Michigan State University.

John Kearney – PMSS Deputy Manager, Construction Oversight
Mr. Kearney has over 30 years experience in heavy civil construction and the transit industry. His experience includes Project Director, Project Manager and Construction Manager of Design-Build and Turnkey delivery of large transit systems, Airport facility expansions and multi-story/high-rise buildings. Transit related projects managed by Mr. Kearney include the Las Vegas Monorail in Las Vegas Nevada, the Jacksonville Skyway Express in Jacksonville Florida and the Senate Subway in Washington DC. Over the course of his career Mr. Kearney has worked on numerous Design-Build-Operate-Maintain Contracts requiring the development and implementation of Operations and Maintenance portions of

these projects giving him a big picture view on transit projects similar in scope to the Dulles Metrorail Project. For the PMSS contract, Mr. Kearney will report directly to the Manager of Construction Oversight, Mr. Robert Whedon. In this role he will assist Mr. Whedon in overseeing all construction and utility relocations on the Project.

Cliff Roberts, P.E. – PMSS Manager, Design and Engineering Oversight: Mr. Roberts has over 23 years of experience in the design, management and construction of multi-disciplined transportation infrastructure projects including transit, highway and rail facilities. A significant portion of this experience is with projects in Fairfax County or at Washington Dulles International Airport. He has participated in projects for a wide variety of agencies including the Metropolitan Washington MWAA, the Virginia Department of Transportation, the Washington Metropolitan Area Transit Authority and the Fairfax County Department of Public Works and Environmental Services. Mr. Roberts has participated in rail transit projects in Baltimore (Central Light Rail Line, Design-Build, Phase II), Washington DC, and Dallas, TX. He has had significant roles in two of the largest and most significant transportation projects in region; the I-95/I-395/I-495 Interchange in Springfield, VA ("the Mixing Bowl") and the fixed facility portion of the Automated People Mover (APM) system at Dulles Airport. The I-95/I-395/I-495 Interchange is a $750 million reconfiguration of an interchange serving two major interstate highways, one major arterial roadway and several minor roadways. It is comprised of over 45 bridges and 35 miles of new roadway alignment. The Dulles Airport APM system fixed facilities is part of a multi-billion dollar improvement to airside transportation. The fixed facilities include stations, a maintenance facility and tunnels for APM trains, baggage tugs and utilities. Tunnels were constructed under active taxilanes and taxiways using Tunnel Boring Machine (TBM), the New Austrian Tunneling Method (NATM) and cut-and-cover tunneling techniques. Prior to joining Carter and Burgess, Mr. Roberts was a Senior Project Manager for the HNTB Corporation in their Northern Virginia office where he managed the design efforts for numerous transportation projects including the two aforementioned projects. He is a licensed Professional Engineer in Virginia and Maryland and received a Bachelor of Engineering degree from the Stevens Institute of Technology.

Larry Miller, P.E. – PMSS Manager, Planning Oversight: Mr. Miller brings more than 25 years of experience with transportation planning, traffic engineering and transit projects. He has spent the last year working with the MWAA on their assumption of the Dulles Corridor Metrorail Project and is thoroughly familiar with the planning and project development issues. He has worked on a variety of projects in northern Virginia throughout his career with work including transit planning and operations, design of roadways and traffic control devices, traffic and ridership forecasting, traffic engineering and safety studies, environmental impact studies, alternatives analysis, and corridor studies. He was Project Manager on the multi-modal, multi-disciplinary Route 1 Corridor Study that developed short- and long-term plans for the 27-mile corridor in Fairfax and Prince William County, Virginia. The solutions included improvements to the transit, highway, and pedestrian facilities and services throughout the corridor and considered environmental and economic impacts and benefits. He has conducted numerous transit technology assessments that are part of Feasibility Studies and Alternatives Analyses such as the Honolulu High Capacity Transit Corridor project. He has prepared performance specifications for Design-Build contracts for a new automated transit system and an extension of an existing automated transit system at the Atlanta Hartsfield-Jackson International Airport so he is familiar with Design-Build project delivery strategy. Prior to joining Lea+Elliott, Mr. Miller spent 18 years with TransCore (formerly JHK & Associates) managing a variety of projects including the Route 1 Corridor Study mentioned above. He is a licensed Professional Engineer in Virginia, received his Bachelor of Civil Engineering Degree from Villanova University, and received his Master of Civil Engineering Degree (with a minor in City and Regional Planning) from North Carolina State University.

Pam Peckham, SR/WA, AICP - PMSS Manager, Right-of-Way Acquisition: Ms. Peckham has over 20 years of Right of Way experience including her work for Diversified Property Services (DPS) and WMATA, Ms. Peckham has served DPS clients as a Right of Way Agent in Montgomery County, Calvert County and Prince George's County. Ms. Peckham has held the position of Acquisition Manager for several telecommunications projects and Head of Private and Government Real Estate Acquisition for WMATA. She has extensive experience in negotiating agreements, and has reviewed appraisal

documents, offer packages, relocation benefits on various acquisition projects. Her work in Northern Virginia includes several WMATA projects for expansion of Metrorail parking on the orange line at West Falls Church and Vienna stations and the extension of the Metrorail blue line to Franconia/Springfield.

Anibal Monserrate – PMSS Manager, Project Controls: Mr. Monserrate has over 18 years of diversified professional experience in the project controls aspect of program and construction management. He has handled projects scheduling and cost controls for various project types and sizes ranging from small to mid-size and Mega-projects. His industry experience ranges from energy (co-generation), transportation (rail transit, airport), infrastructure (pharmaceutical plant) and communications projects. Mr. Monserrate is the PMSS Manager of Project Controls for the Dulles Corridor Metrorail project. He provides project controls oversight for the PMSS team. Prior to joining the Carter-Burgess team he was employed with KJM and Associates where he worked on the Capital Development Program for the Dallas/Forth worth International Airport valuing $ 2.6 million. In that position he coordinated a staff of 4 senior schedulers. Other relevant transportation projects that he has been involved with include the Amtrak High Speed Corridor Project at Rhode Island, Railtran Corridor Commuter Project valued at $184 million for the Fort Worth Transportation Authority, and Rio Piedras Tunnel Contract valued at $256 million for the $1.55 billion San Juan "Tren Urbano" Rail Transit Program. Mr. Monserrate holds a Bachelors of Science degree in Industrial Engineering form Polytechnic University of Puerto Rico (UPPR), San Juan.

Susan Hinkle – PMSS Manager, Quality Assurance: Susan Hinkle, Senior Quality Control Manager with STV Inc. possesses 18 years of hands-on and management experience in various sectors of the manufacturing, government contracting, and IT communities. Her experience includes Corporate Director of Quality, and Program Manager for several government projects to include DOT and NAVSEA. She is accomplished in several disciplines, systems and processes including but not limited to Business Development, 5S, 8D, SMT, PTH, welding, TQM, root cause analysis, project management, configuration management, corrective action, supplier quality engineering, metrics and data analysis, auditing, sampling plans, personnel security, TL 9000, Malcolm Baldridge, ISO 9001:2000, CMMI v1.2, IPC-A-610, API Q1, and ASME NQA-1. Ms. Hinkle has also authored the book "Take A Quality Ride – The Realities of Implementing a Quality Management System" in 2006 and has been profiled in ASQ's Six Sigma Forum. Ms. Hinkle received her MBA and BS in Political Science from Suffield University. She is a certified Project Management Professional (PMP), and possesses a SECRET clearance.

Troy Davis – PMSS Diversity Officer: Mr. Davis has over 17 years of experience in the field of Construction Management and DBE Program Management as Project Engineer, primarily on VDOT transportation projects. Mr. Davis past project experience included supervising project staff, performing inspection of all contractor activities related to the project, cost estimating, reviewing sub-contracting agreements, financial consultation, negotiating scope changes with contractor, documenting all pay quantities, keeping daily log of project activities, and assuring all inspection and testing was performed in strict compliance with VDOT standards and specifications. Prior to joining McKissack and McKissack, Mr. Davis provided direct construction management and engineering assistance to minority, disadvantaged and women-owned businesses; advised VDOT and FHWA on the status of DBE matters; and worked with VDOT to establish the overall annual goals for the DBE program as they relate to the Woodrow Wilson Bridge Project. Mr. Davis holds a Bachelor's degree in Public Administration from Virginia State University in Petersburg, Virginia. Mr. Davis will serve as the PMSS Diversity Officer for the Dulles Corridor Metrorail Project and report directly for Project Manager, Mr. Steven Sabo.

Warren Cromarty – PMSs Cost Control Manager
Mr. Cromarty has more than 37 years of experience providing cost estimating, cost engineering, risk management and other project controls services for industrial, commercial, government, and transportation projects across the nation. Prior to joining STV, Mr. Cromarty has held positions at all levels of the contracting structure including owner, general contractor and subcontractor and is familiar with those cost estimating, engineering and control processes and procedures that have been successful for each. Mr. Cromarty's also serves as the Vice President of Project Controls and Procurement at Pacific Gas & Electric Company. He was involved in the development, design, procurement,

construction, startup, and commissioning of a portfolio of generating plants and cogeneration facilities, valued at over $6 billion. In this position he was responsible for all aspects of corporate cost estimating, cost engineering and schedule controls. He also authored internal standards for estimating, cost engineering, project planning, scheduling, and specifications for these disciplines for use in contracting. Mr. Cromarty's professional experience also includes over 13 years of oversight, as owner, of Bechtel (Power) Corporation making him intimately familiar with the practices of this contractor. Mr. Cromarty has developed and administered cost estimating programs and cost engineering programs to establish, trends, forecasts, and report project costs to a high degree of accuracy and reliability. He has developed and administered successful change control programs that have reduced change order costs to owners by millions of dollars, and he has extensive experience in both the submission and defense of delay claims including forensic investigation of project events, schedule delay analysis and estimating cost entitlement. Mr. Cromarty has a predominance of experience in leading project controls and estimating efforts on project endeavors costing billions of dollars. Some have been under the auspices of government agencies. For example, Mr. Cromarty was the lead Project Controls manager on the Great Plains Coal Gassification Project, designed and built under the auspices of the Department of Energy. This $2.4 billion, first of its kind in the United States, project was completed on schedule and $125 million under budget.

PMSS Additional Resource Experts

Randy Pierce, PE
Randy Pierce has 20 years of experience in program management, design-build delivery, construction management, planning, and design on several of the nation's largest urban transit, highway, and infrastructure projects. Randy is an expert in capital program implementation and the application of program management techniques to control cost, schedule, and quality; and has served as project manager, project director and/or principal-in-charge of design, program oversight and construction management for several urban transit projects implemented by traditional, fast track, design-build and turnkey strategies including project manager for Denver's $1.75 billion multimodal design-build, TREX. He is a strong proponent of processes which bring construction realities into planning and design to improve quality, minimize costs and time, and significantly reduce changes and claims.

Gina McAfee, AICP
Gina McAfee has 27 years of experience in environmental planning for transit, highway, railroad and land development projects. She is an industry-recognized expert in public involvement and NEPA document preparation for DOT, FTA, and FHWA projects. She has worked for RTD since the late 1970's on numerous corridors including Southwest, Southeast, I-225, Colfax and US 36. She was the Project Manager for the Southeast Corridor MIS and the EIS Manager for the project. Additionally, she manages the environmental planning group for JCB's Denver office.

Joel Oppenheimer, PE
Joel Oppenheimer has 25 years of expertise in project planning and engineering, having served as the project manager on many significant Maryland Transit Administration (MTA) planning projects, railroad studies, and final design involving extensive planning, environmental, and engineering services. He has experience coordinating closely with the MTA and is consequently very familiar with their requirements. He has managed various studies and final design projects for the MTA, successfully meeting their goals. In addition, he has excellent project management techniques and is adept at performing public involvement. He serves as project manager for the WMATA Dulles Corridor Metrorail Link Extension GEC.

Peter Cipolla
Peter Cipolla has 30 years of public transit experience, and most recently was the CEO and General Manager of the Santa Clara Valley Transportation Authority. His distinguished 10 years with the VTA is highlighted by the organization's multi-billion dollar highway and transit capital program. His public-sector

experience overseeing the successful completion of the VTA's and other major transit capital programs, has given him a keen understanding of the needs of public agency clients and the complexities involved in delivering large multi-phased infrastructure projects. He served as APTA Chairman and he assumed the position immediately after 9/11. Among the highest priority tasks under his tenure was the initiation of the first Security Task Force which included key representatives from the transit industry and the Federal government. Because of the nature of the business, the Security Task Force had particular focus on heavy rail systems including WMATA.

Susan Sharp
Susan Sharp has 33 years of experience as an information specialist, and has focused on the transportation industry for the past 16 years. Her expertise is in public sector management and working with organizations on improving their stakeholder communication process. She previously worked for WMATA and developed their public outreach plans and campaigns for transit expansion and "Metro Matters." She also developed an outreach program for FTA's Livable Communities.

APPENDIX 3F

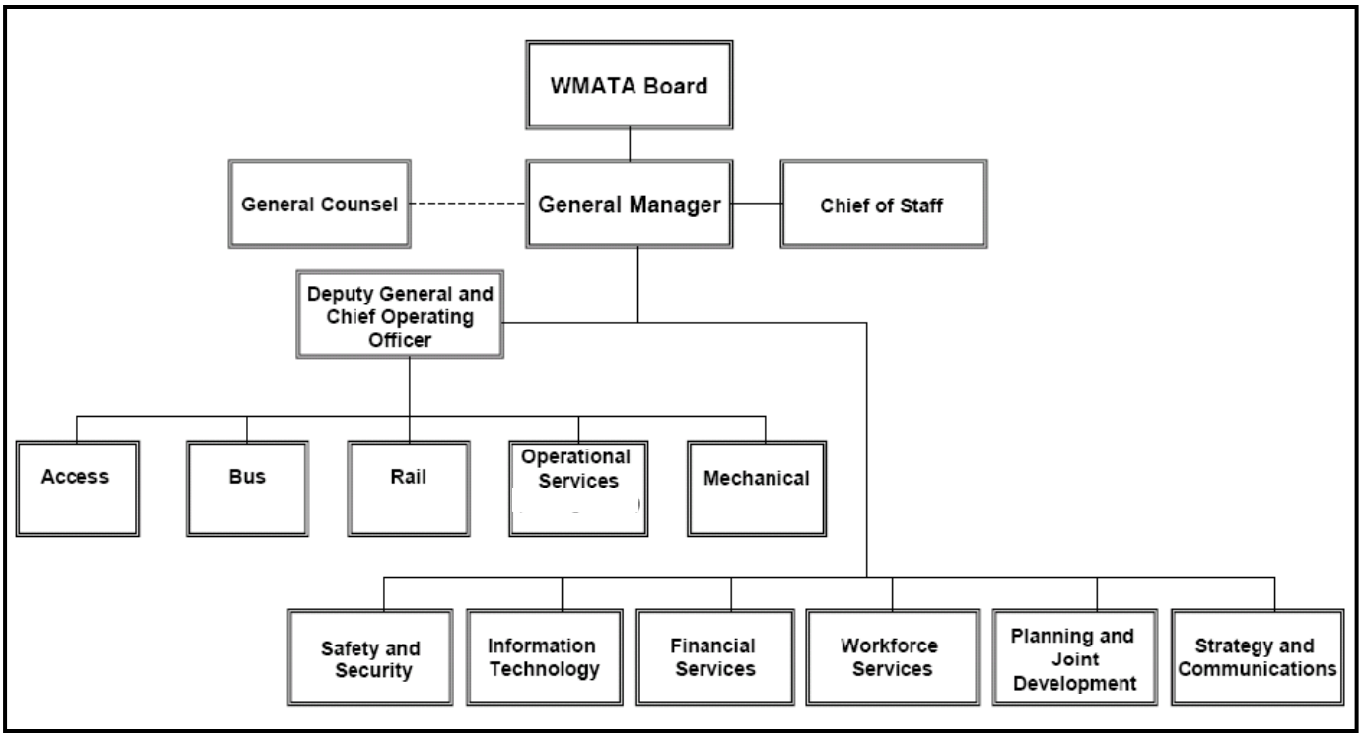
Washington Metropolitan Area Transit Authority

Role in the Project and Qualifications

Washington Metropolitan Area Transit Authority (WMATA)

WMATA is a government agency created under a compact agreement between state and local jurisdictions of Virginia, Maryland, and the District of Columbia. It is governed by a Board of six members and six alternative members appointed by the elected officials in the compact jurisdictions. The General Manager is hired by and reports to the Board. The WMATA agency organization chart is shown in Figure 4.

Figure 4
WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY - AGENCY ORGANIZATION



Role in the Project

MWAA has negotiated a Design-Build Contract with DTP that provides for design and construction of the Project. Under this agreement MWAA will serve as the Design-Build Program Manager and WMATA will be a technical advisor and the ultimate owner and operator of the Project. On September 14, 2007, MWAA and WMATA entered into a Cooperative Agreement that defines WMATA's role as Technical Advisor during Final Design and Construction and for related support activities for the Project. WMATA has appointed John Thomas, Director of the Office of Major Capital Projects, as the Project Executive who will provide formal communications from WMATA to MWAA.

The co-location of WMATA Project team members in the Project office along with MWAA, PMSS, and other Project partners assists in efficient execution of WMATA's roles and responsibilities as they apply to

the Project. Additionally, MWAA holds bi-weekly Project Information Meetings (PIM) with all Project partners to provide updates, and address and prioritize important Project-related issues.

Project Management Organization:

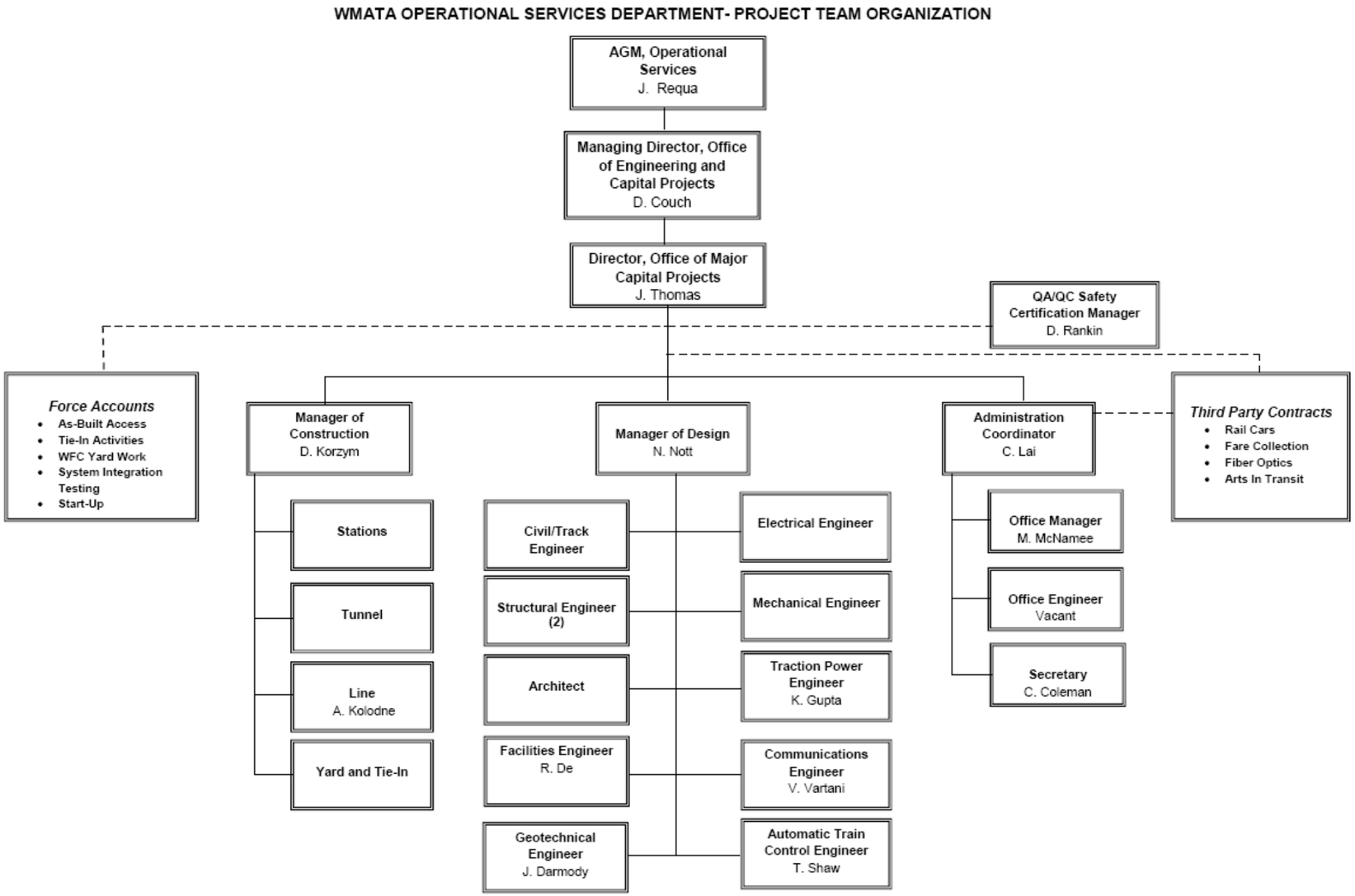
According to the cooperative agreement between MWAA and WMATA, WMATA's role has been defined as a Technical Advisor for the Project. Since it is intended that WMATA will be the ultimate owner and operator of the Project, WMATA will have roles and responsibilities through the Pre-Final Design, Final Design, Construction, Integration Testing and System Performance Demonstration, and Post Substantial Completion phases.

WMATA staff from a variety of disciplines will be assigned to the project as they are needed. This flexible approach allows WMATA staff to be assigned to work on the Project only when needed thereby conserving labor expenses and using the Project budget as efficiently as possible. The initial staffing plan, included as Exhibit 5 of the Cooperative Agreement, calls for 32 Full-Time Equivalents (FTEs) in 2008 based upon the Project schedule available at that time. Actual staffing may vary somewhat in response to schedule changes. At this time, WMATA does not anticipate the need to hire any additional staff for this Project.

For continuity, the management and administrative WMATA staff members will work on this Project full-time while others, primarily those dealing with strictly technical aspects; will work on the Project part-time, depending upon the specific demands of the Project. The technical mix of staff will vary as the Project progresses through design, construction, testing and certification. Also, depending on the Project demands and the specific needs of the required personnel, WMATA management will decide whether the staff will work from the Project office or from their WMATA offices. There are currently eighteen work spaces in the Project office dedicated for WMATA's use, with additional space available if needed. Lastly, in addition to the areas of responsibility identified on the organization chart, the WMATA staff will coordinate the activities of the force accounts and the third party contracts.

The WMATA staff performing work as MWAA's Technical Advisor on the Project come from the Operational Services Department. The organization of the WMATA Operational Services Project Team is depicted in Figure 5.

Figure 5
WMATA OPERATIONAL SERVICES DEPARTMENT - PROJECT TEAM ORGANIZATION



As of January 31, 2007, it is anticipated that the following positions will be full-time during Final Design:

- Director, Office of Major Capital Projects – J. Thomas
- Manager of Construction – D. Korzym
- Manager of Design – N. Nott
- Administration Coordinator – C. Lai
- QA/QC and Safety Certification Manager – D. Rankin
- Line Construction Manager – A. Kolodne
- Communications Engineer – V. Vartani
- ATC Engineer – T. Shaw
- Civil/Track Engineer – TBD
- Structural Engineer – TBD
- Architect – TBD
- Electrical Engineer – TBD
- Mechanical Engineer – TBD
- Traction Power Engineer – K. Gupta
- Facilities Engineer – R. De
- Office Manager – M. McNamee
- Administrative Assistant – C. Coleman

WMATA's Key Project Team Members:

David D. Couch - Managing Director, Office of Engineering and Capital Projects
Mr. Couch has over 30 years of experience in the management of transit construction of new metrorail systems, rail extensions, and rehabilitation of bus facility and rail system. His office is responsible for the management of capital projects, Metro Matters completion, and the Dulles Corridor Metrorail Project. Mr. Couch holds a Bachelor's degree from Syracuse University, a Master's degree from the University of Wisconsin, and is certified as a Project Management Professional and a Construction Manager.

John D. Thomas - Director, Office of Major Capital projects
Mr. Thomas joined WMATA in 1989 as an Assistant Office Engineer and has held several progressively responsible positions at WMATA during his 18 years of service. He is the lead person for WMATA on the Dulles Corridor Metrorail Project reports to David Couch. He is also charged with the completion of Metro Matters Yard projects, the Navy Yard Entrance Modification, the Fort Totten Police Substation, and the Huntington Parking Garage. Mr. Thomas holds a Bachelor's degree in Civil Engineering form Youngstown State University, a Master's degree in Business Administration from Mount Vernon College, and is a licensed Professional Engineer in the state of Maryland.

APPENDIX 3G

Virginia Department of Transportation

Role in the Project and Qualifications

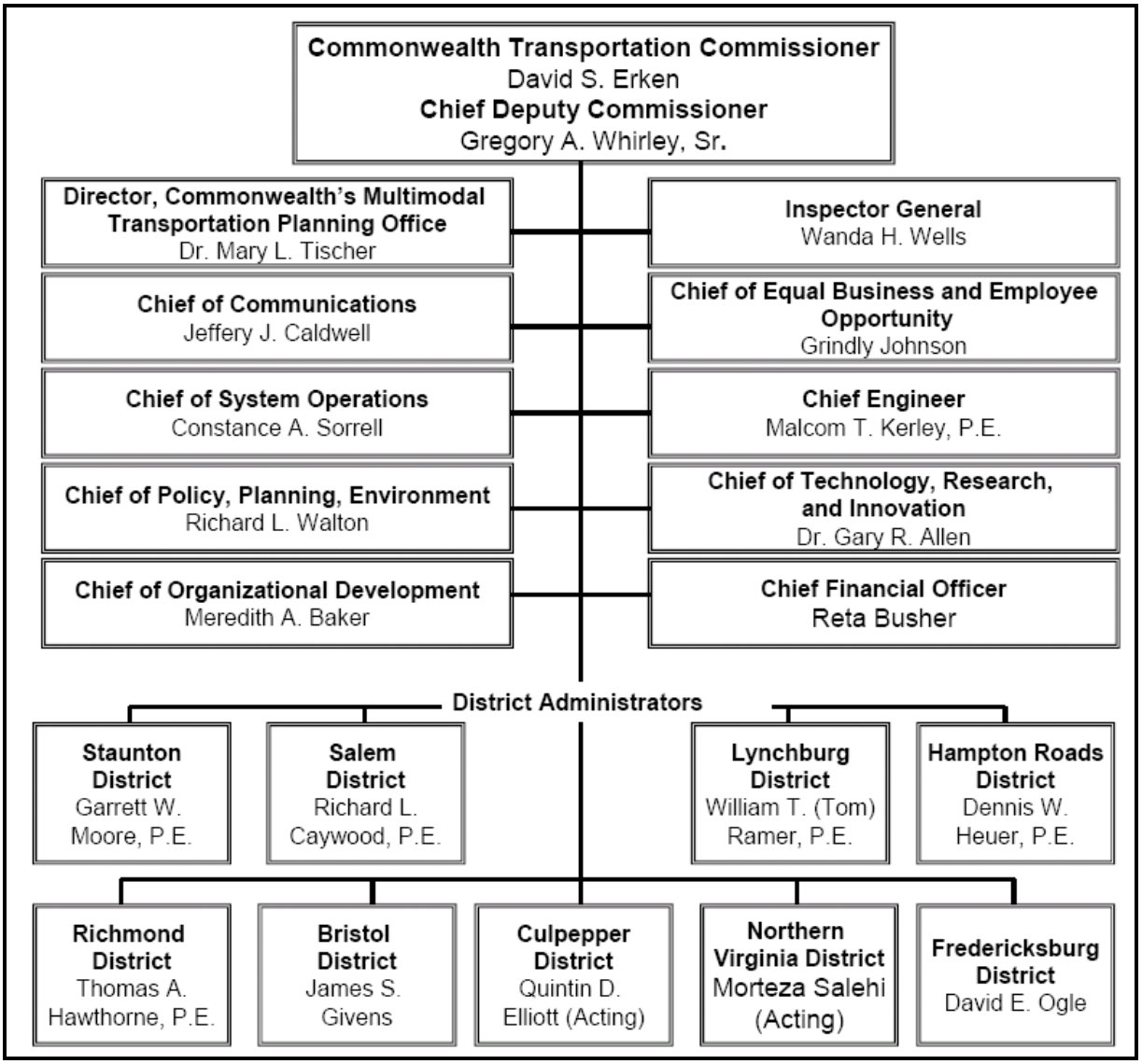
Virginia Department of Transportation (VDOT)

The Virginia Department of Transportation (VDOT) is responsible for building, maintaining and operating the state's roads, bridges and tunnels. And, through the Commonwealth Transportation Board, it provides funding for airports, seaports, rail and public transportation. The Commonwealth Transportation Board guides the department's work, much like a board of directors.

Virginia is divided into nine districts: Bristol, Culpeper, Fredericksburg, Hampton Roads, Lynchburg, Northern Virginia, Richmond, Salem, and Staunton. The Project falls within the Northern Virginia District.

The executive management of the VDOT organization is shown below in Figure 6, with Mr. Morteza Salehi in the role of Acting Administrator for the Northern Virginia District.

Figure 6
VIRGINIA DEPARTMENT OF TRANSPORTATION - AGENCY ORGANIZATION



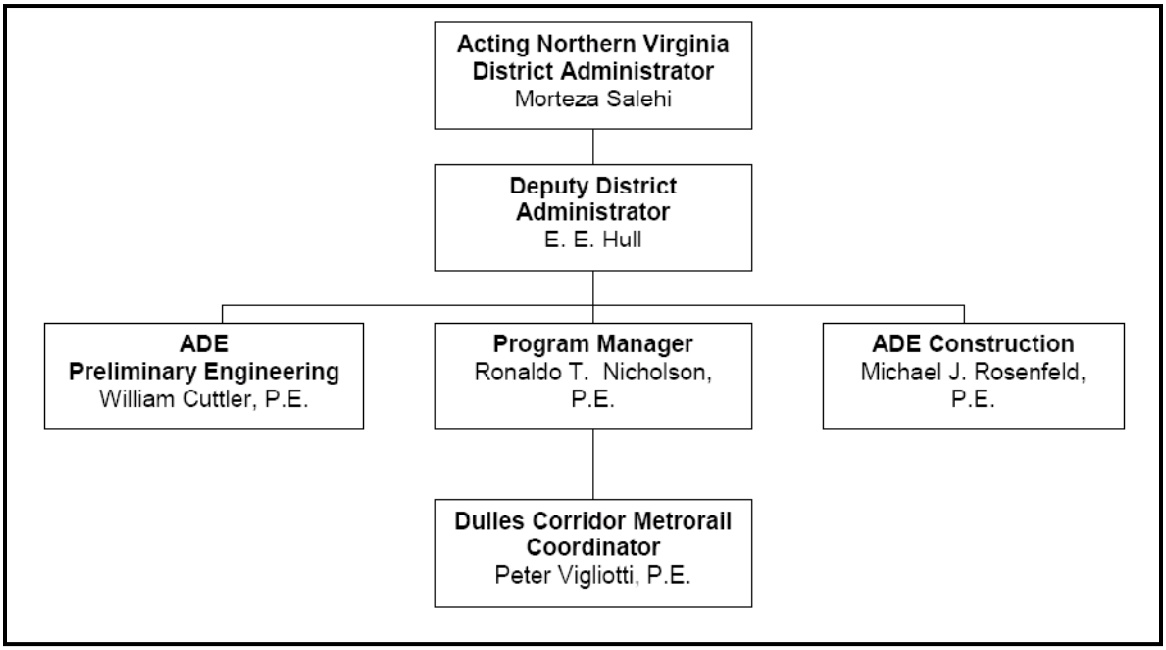
Role in the Project:

VDOT will provide technical support to the Airports Authority in the areas of right-of-way acquisition, roadway improvements, maintenance of traffic, ITS, and design and constructability reviews. In addition, much of the Project right-of-way in Tysons Corner (along routes 123 and 7) is part of the state highway system and easements will be provided to the Project by permit.

The co-location of VDOT's Project team members in the Project office along with MWAA, PMSS, and other Project partners assists in efficient execution of VDOT's roles and responsibilities as they apply to the Project. Additionally, MWAA holds bi-weekly Project Information Meetings (PIM) with all Project partners to provide updates, and address and prioritize important Project-related issues.

Figure 7 shows VDOT's Northern Virginia District reporting relationships as they pertain to the Project. Reporting to Mr. Salehi, Mr. Ronaldo T Nicholson is the Northern Virginia District Program Manager in charge of mega-projects. Currently, the Project is one of six of Northern Virginia's mega-projects.

Figure 7
VDOT NORTHERN VIRGINIA DISTRICT – PROJECT REPORTING STRUCTURE



Mr. Peter Vigliotti will function as the full-time VDOT Coordinator to the Project and will report to Mr. Nicholson. The VDOT Coordinator will be the contact point for all matters between VDOT and the Project. He will bring other VDOT employees, officials or officers into the Project as may be appropriate for specific issues or events and will be responsible for obtaining all Commonwealth approvals and permits necessary for the Project. VDOT will also provide support, advice and expertise for right of way acquisition and utility relocations. During construction VDOT will designate qualified inspection personnel to monitor and inspect its existing or future facilities during construction. These personnel will also review and audit inspection test results and other construction related documentation. The VDOT Coordinator will arrange to have local VDOT employees perform these tasks on an as needed basis.

Mr. Vigliotti will address and coordinate design and construction activities that impact VDOT's facilities during Final Design and Construction of the Metrorail extension to the Dulles Airport and points further west. Mr. Vigliotti also has VDOT permitting authority.

The VDOT Coordinator will be located in the Project office to facilitate direct involvement in Project activities but will report to the Northern Virginia District Administrator. Per the MWAA-VDOT Cooperative Agreement executed on September 11, 2007, the Project will reimburse VDOT for the Coordinator's salary and related expenses.

VDOT's Key Project Team Members:

Ronaldo T. Nicholson, P.E. - Program Manager, Northern Virginia District
Mr. Ronaldo "Nick" Nicholson is Northern Virginia District's Program Manager for Mega Projects. Mr. Nicholson served as the Assistant Resident Engineer for Construction and Preliminary Engineering in Fairfax County for VDOT. Before joining VDOT in 1993, he worked as a Senior Design Engineer with Fairfax County Department of Public Works, where he was the Project Manager for the Fairfax County Parkway from 1985 to 1993. Mr. Nicholson has received numerous awards in his 20+ year career. Most recently, the 2006 VDOT Commissioner's Award for Outstanding Achievement on the Woodrow Wilson Bridge Project; and the 2006 Virginia Governor's Award for Teamwork on the Woodrow Wilson Bridge Beltway Shift. Mr. Nicholson graduated with a Master of Science in Structural Engineering from George Washington University in Washington, DC. He received his Bachelor of Science degree in Civil Engineering from the University of Kansas. He is a registered Professional Engineer in Virginia, and currently serves as a member of Bridge and Structures Maintenance Committee of the Transportation Research Board.

Peter Vigliotti, P.E. - Dulles Corridor/Metrorail Coordinator
Mr. Vigliotti has over 16 years of public agency experience in the administration and management of heavy construction transportation projects. Prior to his assignment on the Dulles Corridor Metrorail Project, Mr. Vigliotti's role in VDOT was Area Construction Engineer for the construction of a new bridge over the Occoquan River in Northern Virginia. Mr. Vigliotti's previous experience includes two years of employment at the Oakland International Airport (Port of Oakland), as a Resident Engineer in the administration of various aviation construction projects and approximately 11 years of experience with the California Department of Transportation (Caltrans) as an Assistant Resident Engineer and Resident Engineer in the administration of various highway construction projects. Mr. Vigliotti's responsibility in these positions was to address engineering and constructability issues in an expeditious manner during project construction. Other responsibilities included monitoring the progress of work and the financial stability of the projects. Mr.Vigliotti's role as VDOT's Coordinator for the Dulles Corridor Metrorail Project is to address and coordinate design and construction activities that impact VDOT's facilities during construction of the Metro Rail's extension to the Dulles Airport and points further west. Mr. Vigliotti also has VDOT permitting authority and he will be located at the Airports Authority's Project office. Mr. Vigliotti holds a B.S. degree in Civil Engineering from the University of Rhode Island and is registered as a Professional Engineer in the Commonwealth of Virginia and the State of California.

APPENDIX 3H

Fairfax County

Role in the Project and Qualifications

Fairfax County, Commonwealth of Virginia

Role in the Project

Fairfax County is the local funding partner for the Project. Fairfax County will serve as a technical advisor in the areas of station access, land use coordination, and County permits and approvals.

The co-location of Fairfax County's Project Coordinator in the Project office along with MWAA, PMSS, and other Project partners assists in efficient execution of Fairfax County's roles and responsibilities as they apply to the Project. Additionally, MWAA holds bi-weekly Project Information Meetings (PIM) with all Project partners to provide updates, and address and prioritize important Project-related issues.

Fairfax County's Key Project Team Members

Richard F. Stevens - Project Manager, Dulles Corridor Metrorail Project
Mr. Stevens has over 30 years experience in the transit industry. As Fairfax County's Project Manager for the Project, he is responsible for coordinating activities within the county to ensure that the Project is implemented in a manner that meets county goals and objectives for land use, transportation and the environment. Mr. Stevens serves as a Project's liaison to the Airports Authority, the Project team and stakeholders. Prior to joining Fairfax County, Mr. Stevens was with WMATA for 23 years, serving most recently as its Director for Business Planning and Project Development. He worked on long range planning efforts for the Metrorail and Metrobus systems, prepared WMATA's "Transit Service Expansion Plan" and participated in the planning for Metrorail service in the Dulles corridor. Mr. Stevens' prior assignments were at the Federal Transit Administration and in private consulting. He has participated in numerous industry conferences and meetings and was a member of the Rail~Volution National Steering Committee. He holds a BS in Civil Engineering and an MS in Transportation and Urban Planning from the State University of New York at Buffalo.

APPENDIX 3I

Metropolitan Washington Airports Authority, PMSS Team
Responsibilities Matrix

MWAA, PMSS TEAM RESPONSIBILITIES MATRIX

			Design Management	Construction Management	Reporting	Technical Inspection	FTA Requirements Compliance (Beyond NEPA)	Regulatory Compliance	MWAA QA Policy & System Compliance	DTP QA/QC Plan and Procedures	MWAA Safety & Security Policy Compliance	DTP System Safety/Security Certification Management Program	Dispute Resolution	Contract Modifications Negotiations	NEPA Compliance (Mitigation Monitoring)	Environmental Planning	Property Inventory Maintenance	ROW Acquisition	IGA Execution & Implementation	Agency Coordination	Grant Administration	PMP Updates	TMP Coordination	Before and After Study	Owner Permits	Construction QA	Construction Safety	Capital Funding Program Management (FFGA)	Financial Plan Adherence; Monitor Cash Flow	New Starts Program Support	Contractor Invoices & Procedures Management	Office Administration	Contract Compliance	Arts in Transit Program Management	Communications Management	Marketing Management	Community Outreach Management	Final Design Grant Agreement Compliance	Schedule Adherence	Budget Adherence	Variance Processing	Utility Relocation Work	Project Controls	Start-Up Testing	Risk Management	Project Contigency Management	Administrative Interface between Project office and Airports Authority's headquarter staff
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Airports Authority	Project Director (S. Carnaggio)	1	X	X	X		X						X	X	X			X	X	X	X	X																	X	X					X	X	
	DD of Project Development (J. Van Zee)	2					X								X	X		X	X				X	X														X	X							
	DD of Design (P. Elman)	3	X		X	X	X	X			X				X		X		X	X																	X	X	X	X					
	DD of Construction (K. Volbrecht)	4		X	X	X	X	X	X		X														X	X	X											X	X		X					
	DD Project Finance (J. Mitchell)	5					X													X	X							X	X	X							X	X	X						
	Manager of QA/QC & Safety (J. Christensen)	6							X	X	X	X														X	X																			
	Manager of Project Administration	7																		X										X	X						X	X							X
	QA/QC Supervisor	8							X	X																X																				
	Safety Supervisor	9									X	X															X																			
	Contracting Officer (R. Carey)	10					X							X																		X						X	X						
	Contracting Administration Officer	11					X							X																		X						X	X						
	Manager of Risk Management/Project Controls	12			X		X	X					X	X															X									X	X	X		X		X	X	
	Manager, Rail Communications (M. McAllister)	13																															X	X	X	X									
	Senior Project Manager	14		X	X	X	X	X			X						X								X	X	X											X	X							
	Senior Project Manager	15			X	X	X	X			X				X		X		X	X																	X	X	X						
PMSS	Project Manager (S. Sabo)	16	X	X	X								X	X		X		X		X		X				X	X				X		X					X	X	X	X	X	X			
	QA Specialist (S. Hinkle)	17							X	X	X																																			
	Diversity Officer (T. Davis)	18																															X												
	Deputy Project Manager (J. Cramer)	19											X	X					X	X											X		X					X	X			X			
	Community Relations Support (Commonwealth Consultants/APCO/Sharp & Co.)	20																																X	X	X									
	Project Controls Manager (A. Monserrate)	21			X									X																	X							X	X	X		X		X	X	
	Planning Oversight Manager (L. Miller)	22					X	X							X	X	X	X			X	X	X	X				X	X	X							X	X	X						
	Design & Engineering Oversight Manager (C. Roberts)	23	X			X								X					X	X														X				X	X	X	X					
	Construction Oversight Manager (B. Whedon)	24		X										X											X	X													X	X		X		X		
	Construction Oversight Deputy Manager (J. Kearney)	25		X				X																	X	X													X	X		X				
	Systems Oversight Manager (P. Castellana)	26	X			X						X		X					X	X						X													X	X				X		
	Right-of-Way Acquisition Manager (P. Peckham)	27															X	X																					X	X						
	Project Administration & Program Logistics (D. Olguin)	28																													X															