



cutting through complexity

# Metropolitan Washington Airports Authority

## Dulles Corridor Metrorail Project – Phase 1

### *Performance Audit*

April 17, 2012

ADVISORY







**KPMG LLP**  
1676 International Drive  
McLean, VA 22102

April 17, 2012

Mr. Michael A. Curto  
Chairman of the Board  
Metropolitan Washington Airports Authority  
1 Aviation Circle  
Washington, DC 20001-6000

Dear Mr. Curto:

This report presents the results of KPMG LLP's (KPMG) work conducted to address the performance audit objectives relative to the Metropolitan Washington Airports Authority's ("the Airport's Authority") Dulles Corridor Metrorail Project (DCMP), Phase 1 ("Project"). KPMG's work was performed during the period of November 1, 2011 through April 17, 2012. Our results are as of April 17, 2012.

KPMG conducted this performance audit in accordance with *Government Auditing Standards* as issued by the Comptroller General of the United States. Those standards require that KPMG plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and recommendations based on the audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and recommendations based on the audit objectives.

The Airports Authority engaged KPMG in October 2011 to conduct a performance audit of the Project to assess whether current project management processes and tools are working as intended and to identify areas where improvement may produce measureable results. The key objectives of the performance audit were the following:

- Assessing the accuracy and reliability of the Project budget, schedule and cost reports;
- Assessing the effectiveness and efficiency of management controls over planning, organizing, directing, and controlling the design and construction of the Metrorail Project Phase 1;
- Assessing the Project team's ability to detect overcharges and other errors in the design-build contract invoices, and compliance with specific contract provisions of the design-build contract that enhance cost controls including change order pricing clauses, change order administration, definition of reimbursable costs and rights to audit records; and
- Assessing the reliability of reporting processes for safety controls.



Mr. Michael A. Curto

April 17, 2012

Page 2 of 2

Based on the performance audit procedures performed and the results obtained, we have met our audit objectives. We conclude that the current processes and controls implemented by the Airports Authority's Project Rail Office are working as intended to allow for effective management of the Project. The Project Rail Office has developed policies and procedures, controls, and tools for managing the Phase 1 Project that are considered appropriate for the size and complexity of the Project.

During the course of our performance audit, we noted findings and developed recommendations that are documented in this report including instances of noncompliance with existing processes, opportunities to further develop or strengthen controls and processes, strengthen contract terms and areas for improvement within the reporting processes. The findings identified during the course of our audit do not represent a significant risk to delivering the Project or indicate a lack of adequate oversight and controls on the Project. The findings, observations, and related recommendations should be viewed as opportunities to further develop or strengthen existing project management processes and controls.

This performance audit does not constitute an audit of financial statements in accordance with *Government Auditing Standards*. KPMG was not engaged to and did not render an opinion on the Airports Authority's internal controls over financial reporting or over financial management systems (for purposes of OMB's Circular No. A-127, *Financial Management Systems*, July 23, 1993, as revised). KPMG cautions that projecting the results of our evaluation to future periods is subject to the risk that Project controls may become inadequate due to changes in conditions or the deterioration of the Airports Authority's compliance with Project controls may deteriorate.

This report is intended solely for the information and use of the Airports Authority and management of the Auditee, and is not intended to be, and should not be, used by anyone other than these parties. This restriction is not intended to restrict distribution as required by law.

KPMG LLP



# TABLE OF CONTENTS

<b>1. Introduction</b>	<b>1</b>
<b>2. Background</b>	<b>3</b>
A. Project Background	3
B. Project Organization and Staffing	4
C. Project Status	5
<b>3. Objectives, Scope and Methodology</b>	<b>8</b>
<b>4. Accomplishments</b>	<b>11</b>
<b>5. Findings and Observations</b>	<b>14</b>
A. Project Strategy, Organization and Administration	14
B. Cost and Financial Management	15
C. Procurement	20
D. Project Controls and Risk Management	23
E. Scheduling	25
<b>6. Opportunities for Improvement</b>	<b>26</b>
<b>Appendix A: Summary of Findings and Recommendations</b>	
<b>Appendix B: List of Acronyms</b>	
<b>Appendix C: Management Response</b>	

## 1. Introduction

This report presents the results of KPMG LLP's ("KPMG") performance audit of the Metropolitan Washington Airports Authority's (the "Authority" or "Airports Authority") Dulles Corridor Metrorail Project, Phase 1 ("the Project"). We conducted this performance audit in accordance with the standards applicable to such audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. The standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and recommendations based on our audit objectives.

The Airports Authority is developing and managing the construction of a 23.1 mile extension to the Washington Metropolitan Area Transit Authority ("WMATA") Metrorail System from the existing East Falls Church Station to Dulles Airport and Loudoun County, Virginia. The extended system will be operated by WMATA upon completion and is being constructed in two major phases. Phase 1, known as the *Dulles Corridor Metrorail Project* ("DCMP"), is the initial 11.7 miles segment, which runs from the current Metrorail Orange Line near the West Falls Church Station to Wiehle Avenue in Reston, Virginia, providing direct service to Tyson's Corner, Virginia and Washington, DC. Phase 1 is currently under construction and is anticipated to be complete in August of 2013. Phase 2, the *Extension to Dulles Airport/Route 722*, is currently in the planning phase and extends from Wiehle Avenue to Ashburn, Virginia in eastern Loudoun County. The Airports Authority is working in cooperation with WMATA, the Virginia Department of Transportation ("VDOT"), the Virginia Department of Rail and Public Transportation ("VDRPT"), Fairfax County, Virginia ("Fairfax County") and Loudoun County, Virginia ("Loudoun County").

The Airports Authority engaged KPMG in October 2011 to conduct a performance audit of the Phase 1 Project ("Project") to assess whether current project management processes and tools are working as intended and to identify areas where improvement may produce measurable results. The performance audit was conducted during the period of November 1, 2011, through April 17, 2012. The key objectives of the performance audit were the following:

- Assessing the accuracy and reliability of the Project budget, schedule, and cost reports;
- Assessing the effectiveness and efficiency of management controls over planning, organizing, directing, and controlling the design and construction of the Metrorail Project Phase 1;



- Assessing the Project team's ability to detect overcharges and other errors in the design-build contract invoices, and compliance with specific contract provisions of the design-build contract that enhance cost controls including change order pricing clauses, change-order administration, definition of reimbursable costs and rights to audit records; and
- Assessing the reliability of reporting processes for safety controls.

Based on the performance audit procedures performed and the results obtained, we have met our audit objectives. We conclude that the current processes and controls implemented by the Airports Authority's Project Rail Office are working as intended to allow for effective management of the Project.

Our methodology for conducting this performance audit included the identification of issues and opportunities for improvement by performing an assessment of existing policies, procedures, processes, and controls; testing compliance with existing processes; conducting interviews with key stakeholders; and analysis of key Project information during the course of the audit. Our recommendations for improvement are directly linked to our analysis and include practical advice designed to increase the efficiency and effectiveness of existing processes while helping to respond to risks identified in the audit. Based on the work performed to meet the above stated objectives, we noted that, overall, the current processes and controls implemented by the Airports Authority's Project Rail Office are working as intended to allow for effective management of the Project. The Project Rail Office has developed policies and procedures, controls, and tools for managing the Phase 1 Project that are considered appropriate for the size and complexity of the Project.

During the course of our performance audit, we made observations, identified findings and developed recommendations that are documented in this report including instances of noncompliance with existing processes, opportunities to further develop or strengthen controls and processes, strengthen contract terms and areas for improvement within the reporting processes. The findings identified during the course of our audit do not represent a significant risk to delivering the Project or indicate a lack of adequate oversight and controls on the Project. The findings, observations, and related recommendations should be viewed as opportunities to further develop or strengthen existing project management processes and controls.

This performance audit does not constitute an audit of financial statements in accordance with *Government Auditing Standards*. KPMG was not engaged to, and did not render an opinion on the Auditee's internal controls. KPMG cautions that projecting the results of this performance audit to future periods is subject to the risk that Project controls may become inadequate due to changes in conditions or to the deterioration of the Airports Authority's compliance with Project controls.

## 2. Background

### A. Project Background

The Airports Authority in cooperation with WMATA proposed to implement a 23.1 mile Metrorail extension in the Dulles Corridor of Northern Virginia. Due to the length of the proposed route, the Project was divided into two phases. Phase 1 is an 11.7 miles long extension from the existing Orange Line, just east of the West Falls Church station, to a station to be constructed at Wiehle Avenue in the median of the Dulles International Airport Access Highway. Phase 2 is the extension to Dulles Airport and beyond to State Route 722 in Loudoun County.

The Airports Authority will also implement interrelated highway improvements to State Route 7 and Spring Hill Road concurrent with the Project construction in order to minimize traffic disruptions and inconvenience to property owners. The Interrelated Highway Improvements will also include roadway improvements along the Dulles International Airport Access Highway that will improve safety and access for airport users. The Interrelated Highway Improvements are locally funded and are not included in the Full Funding Grant Agreement's ("FFGA") baseline cost estimate.

The Project officially began on June 10, 2004 with FTA's approval of VDRPT's entry into Preliminary Engineering (PE). On December 29, 2006 the VDOT and the Airports Authority entered into a Master Transfer Agreement and the Dulles Road Permit and Operating Agreement. Pursuant to these agreements, VDOT agreed to provide the Airports Authority a permit to operate the Dulles Toll Road (DTR) and collect toll revenues in consideration of the Airports Authority's obligation to fund the Project.

On June 19, 2007, the Airports Authority executed a design-build contract ("Contract") for Phase 1 with Dulles Transit Partners ("DTP" or "Contractor"). The Contract price included allowances for certain subcontracts that were subject to future pricing. The Contract was amended in July 2008 to update the Project schedule and to include provisions designed to allocate Project risk between the Airports Authority and DTP. Under the amended Contract, DTP will contribute up to \$25 million towards the \$200 million Capital Reserve Account (CAPRA) required by the Federal Transit Administration (FTA) as a precondition to the FFGA.

In accordance with requirements of FTA's New Starts program, on May 12, 2008, the FTA approved the Airports Authority's request to begin Final Design and affirmed that the Project could proceed with property acquisition and utility relocation. On March 10, 2009, the U.S. Department of Transportation Secretary signed the FFGA and committed \$900 million of Project funding through 2016. The U.S. Department of Transportation's funding commitment allowed the Airports Authority to issue the full Notice to Proceed (NTP) for construction to DTP on March 11, 2009.



## B. Project Organization and Staffing

The Airports Authority established the Dulles Corridor Project Management Organization (the "Rail Office") to manage the Project. The Rail Office consists of Airports Authority personnel and staff from the prime consultant, Jacobs Engineering Group, Inc., and its sub-consultants, who provide technical and Project management support services. Personnel from the Airports Authority's home office oversee centralized functions such as accounting, Equal Opportunity Programs, and legal services. Project participants include the Airports Authority, WMATA, FTA, VDOT, VDRPT, DTP and Fairfax County. The Project participants and their responsibilities are described below as follows:

- **The Airports Authority – Project Sponsor and Grantee**

As the Project sponsor and grantee, the Airports Authority is the direct point of contact for the FTA and is the agency that is ultimately responsible for the success of the Project. The Airports Authority is the federal grant recipient and has direct responsibility for the day-to-day management of the design-build contract, the Final Design scope of work, the master Project schedule, the design and construction budget, and all other associated Project management processes and controls. WMATA, VDRPT, VDOT, and Fairfax County assist in the Airports Authority in fulfilling its role through Cooperative Agreements. As a recipient of federal transportation grants, the Airports Authority is subject to the oversight requirements of the FTA, particularly as they relate to budgeting, local share of funding or resources, contracting and procurement procedures, environmental protection, quality assurance and quality control, labor relations, Equal Employment Opportunity (EEO) requirements, Americans with Disabilities Act (ADA) requirements, ethics, documentation and record retention, accounting, and auditing.

- **WMATA – Technical Support and System Acceptance**

As the end user of the Project, WMATA was involved with the Project from the start of the Preliminary Engineering stage and will remain involved until completion of the Project, which includes, but is not limited to, Final Design, Construction, Safety Certification, and Pre-Revenue Start-Up. WMATA provides staff as technical support to the Project team and participates in design reviews, testing of facilities and systems, and start-up acceptance. WMATA manages the interface with the existing WMATA system in accordance with schedule requirements established in the master Project schedule. Once all of the construction, testing, and start-up-related activities are closed out, the Airports Authority will transfer the Project's line, facilities, and systems to WMATA for operation, maintenance, and ultimate ownership. In accordance with WMATA Compact procedures, upon completion of the Project's system safety and security certification process and



WMATA's acceptance of the Project into the Adopted Regional System (ARS), WMATA will operate and maintain the new rail line as an integrated element of the full Metrorail system.

- **Federal Transit Administration (FTA)**

FTA is providing funding totaling \$900 million through the New Starts program. The FTA provides federal funding oversight through its Project Management Oversight Consultant, Hill International, Inc. and conducts an ongoing assessment of Project status.

- **VDOT and VDRPT – Technical Support and Right of Way (ROW)**

VDOT provides technical support to the Project team in the areas of real estate acquisition, environmental reviews, roadway improvements, maintenance of traffic, Intelligent Transportation Systems, as well as design and constructability reviews. VDOT also provides coordination with other transportation projects near or adjacent to the Project including, for example, the Capital Beltway Express Lanes project in the Tyson's Corner area. In addition, much of the Project Right of Way (ROW) in Tyson's Corner (along State Routes 123 and 7) is part of the Virginia highway system, and requires easement agreements between the Airports Authority and VDOT. VDRPT provides technical support to the Project and assists in coordinating with other Commonwealth agencies as needed.

- **DTP – Design-Build Contractor**

DTP is the prime design-build Contractor performing the scope of services required for Final Design and Construction of the Project. Additionally, DTP provides selected support services to the Project team, including real estate acquisition support, community outreach, permitting, and technical coordination for utility relocations.

- **Fairfax County – Local Funding Partner**

Fairfax County serves as a technical advisor in the areas of station access, land use coordination, and county permits and approvals.

### C. Project Status

The Project has a total approved budget of \$3,265,679,863. This amount is a combination of the FFGA approved budget of \$3,142,471,634 and the interrelated highway activities budget of \$123,208,229. The Project's capital funding is summarized in Table 1.

Table 1: Summary of Sources of Capital Funding, January 31, 2012

Sources of Capital Funding	Total	Percent at Completion
<b>Federal Funds</b>		
Sec 5309 New Starts Federal Funds	\$900,000,000	28.64%
Sec 5307 Surface Transportation Program	75,000,000	2.39%
<b>Subtotal Federal Funds</b>	<b>\$975,000,000</b>	<b>31.03%</b>
<b>Local Funds</b>		
Commonwealth of Virginia (VTA 2000)	\$51,700,000	1.65%
Commonwealth of Virginia Transportation Bonds	125,000,000	3.98%
Fairfax County Funds	523,750,000	16.67%
Dulles Toll Road Revenues	1,467,021,634	46.68%
<b>Subtotal Local Funds</b>	<b>\$2,167,471,634</b>	<b>68.97%</b>
<b>Total FFGA Project Budget</b>	<b>\$3,142,471,634</b>	<b>100.00%</b>
Interrelated Highway Funds (Local Funds )	123,208,229	
<b>Total</b>	<b>\$3,265,679,863</b>	

As of March 7, 2012, the Monthly Progress Report through January 2012 reported the Project status as follows:

Design	99% complete
Utility relocation	99% complete
Design-build efforts	64% complete
Allowance Items:	
Designed and approved to be issued for bid	94% complete
Progressed through sub-contract award and NTP	86% complete
The Scheduled Substantial Completion Date (SSCD)	August 23, 2013
The Scheduled Project Revenue Operations Date (ROD)	December 27, 2013
The FFGA Revenue Operations Date (ROD)	December 1, 2014



The following table summarizes the Project budget as of January 31, 2012:

Table 2: Project Cost Summary by SCC Code, January 31, 2012

FTA SCC Code	Description	Current Budget	Expended to Date	Estimate at Completion
10	Guideway and Track Elements	\$ 653,434,350	\$ 515,944,483	\$ 653,434,350
20	Stations	307,849,928	131,397,454	307,849,928
30	West Falls Church Yard	41,527,907	6,662,292	41,337,876
40	Site Work and Utility Relocation	241,060,618	199,440,703	270,317,138
50	Systems	313,879,263	117,621,055	310,729,378
60	Right of Way Acquisition	67,631,026	60,051,443	65,011,618
70	Vehicles	211,629,775	33,803,886	210,926,012
80	Professional Services	717,483,957	626,879,951	772,870,177
90	Contingency Management Reserve	77,990,240	-	10,586
100	Finance Charge	509,984,571	65,799,308	509,984,571
<b>Subtotal<sup>A</sup></b>		<b>\$ 3,142,471,635</b>	<b>\$ 1,757,600,575</b>	<b>\$ 3,142,471,635</b>
<b>Interrelated Highway Improvements<sup>B</sup></b>		<b>123,208,229</b>	<b>78,705,520</b>	<b>123,208,229</b>
<b>Total</b>		<b>\$ 3,265,679,864</b>	<b>\$ 1,836,306,095</b>	<b>\$ 3,265,679,864</b>

**Source:** Table 6 – Project Cost Summary by SCC Code, January 31, 2012 from the Monthly Progress Report through January 2012

<sup>A</sup> – The subtotal includes the FFGA Approved Baseline Cost Estimate

<sup>B</sup> – The Interrelated Highway Improvements are funded locally and not included in the FFGA Baseline Cost Estimate.

### 3. Objectives, Scope and Methodology

In October 2011, the Airports Authority engaged KPMG to conduct a performance audit of the Project to assess whether current processes and tools are working as intended and identify areas where improvement may produce measurable results. The performance audit was conducted during the period of November 1, 2011 through April 17, 2012. Members of our engagement team included KPMG professionals and subcontractors, Spartan Solutions, LLC, and Talson Solutions, LLC. Our observations and recommendations are presented to facilitate discussion of management options. The key objectives of the performance audit were to perform the following:

- Assess the accuracy and reliability of the Project budget, schedule and cost reports;
- Assess the effectiveness and efficiency of management controls over planning, organizing, directing, and controlling the design and construction of the Metrorail Project Phase 1;
- Assess the Project team's ability to detect overcharges and other errors in design-build contract invoices, and compliance with specific contract provisions that enhance cost controls including change-order pricing clauses, change-order administration, definition of reimbursable costs and rights to audit records; and
- Assess the reliability of reporting processes for safety controls.

As part of our scope of work, we reviewed the following process areas and related internal controls:

- Project Strategy, Organization and Administration**, focusing on the Airports Authority's Project organizational structure, policies and procedures, compliance with existing procedures, Project management information systems, and document management.
- Cost and Financial Management**, focusing on cost reporting, Project cost and account coding structures, forecasting, contingency management, and the invoice review and approval process.
- Procurement Management and FTA Compliance**, with a focus on existing processes, strategy and planning, assessing compliance with the FFCA, and assessing FTA Compliance
- Project Controls and Risk Management**, with a focus on the reliability of safety controls and reporting, effectiveness of the risk management plan, and compliance with laws and regulations
- Schedule management**, with a focus on compliance with the design-build contract and FFCA requirements, scheduling systems and tools, schedule monitoring, and schedule reporting.

We conducted this performance audit in accordance with the standards applicable to such audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards



require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our methodology for conducting this performance audit included the identification of issues and opportunities for improvement by performing an assessment of existing policies, procedures, processes, and controls; testing compliance with existing processes; conducting interviews with key stakeholders; and analysis of key Project information during the course of the audit. Our recommendations for improvement are directly linked to our analysis and include practical advice designed to increase the efficiency and effectiveness of existing processes.

Details of our methodology and the audit steps we performed are identified below.

1. Conducted more than twenty-six interviews with Project management personnel and key stakeholders to gain an understanding of the key processes, controls, and risks within the Project
2. Assessed the organizational structure (functions and personnel) of the Project Rail Office
3. Reviewed and evaluated the Airports Authority's capital construction policies and procedures and performed a gap analysis against good management practices in the following Project controls areas:
  - Project Management
  - Cost and Financial Management
  - Procurement
  - Risk and Change Management
  - Safety Reporting
  - Document Control
  - Schedule Management
4. Assessed compliance with documented policies and procedures for the areas under review to ensure key controls are working as designed
5. Performed inquiries and assessed the reliability of the Project management information system and document management systems to assess the adequacy for managing the Project
6. Assessed Project reporting procedures and protocols and the Rail Office's compliance with same
7. Selected the financial reporting for one month and tested cost data integrity for the selected reporting period

8. Performed detailed testing on a sample of ten Contractor and nine Vendor invoices to confirm contract compliance and approval in accordance with documented policies and procedures
9. Assessed procurement and contract administration processes by testing a sample of seven contract awards for compliance with policies and procedures
10. Assessed standard contract forms with a focus on key financial terms and conditions, compensation strategy, and clarity of cost of work definitions
11. Assessed change management processes by reviewing existing policies and procedures and testing a sample of nine Contractor approved change orders and six Vendor amendments to determine whether the change orders and amendments complied with the respective contracts and whether changes included adequate supporting documentation and were approved in accordance with policies and procedures and contract terms
12. Assessed the reliability of safety control's reporting processes to ensure reporting on Project safety was up to date, accurate, and in compliance with documented processes
13. Assessed the effectiveness of the risk management plan and processes in place used to identify, quantify, mitigate, and monitor Project risks
14. Assessed the schedule management process to determine compliance with Contract terms and internal processes for monitoring and reporting on Project schedule



## 4. Accomplishments

Significant Rail Office accomplishments were identified through interviews with Project personnel as well as review and analysis of Project documents. These accomplishments, as described on the following pages, increase efficiency, reduce costs, and reduce risk exposure on the Project.

### ***Policies and Procedures***

The Rail Office developed a comprehensive set of management policies and procedures that document the roles and responsibilities of the key stakeholders, document key Project management processes and controls, and assist in monitoring compliance with policies, procedures, and applicable regulations. The Rail Office maintains a comprehensive set of policies and procedures to assist in managing key Project management processes. Formal policies and procedures that clearly define the Project scope, goals, risks, and challenges are a key control in ensuring the Project team is efficiently and effectively managing the Project. In accordance with FTA requirements, the Rail Office also developed a Project Management Plan describing how the Project will be managed, executed, monitored, and controlled. The Project Management Plan is updated by the Rail Office as procedures and management tools evolve during the course of the engagement.

### ***Contractor's Safety Program***

We identified leading practices related to the Contractor's safety program to enhance real time reporting and analysis of safety concerns and issues in the field. Key processes and benefits include the following items:

- Supervisors make daily observations, both positive and negative, on conditions or practices in the field. The observations are summarized in monthly metrics, using either an iPhone application or written reports, to identify leading and lagging indicators on the Project. A key benefit of the current process includes the Environmental Health and Safety (EH&S) team's ability to use real-time data to address safety concerns or issues in the field through trainings specific to the leading indicators derived from the data.
- For every incident, an Incident Investigation Report is completed to identify the causes of the event. The Incident Investigation Reports are summarized in a "lessons learned" document to help craft foremen and supervisors prevent future incidents on site.
- The Contractor has developed and actively updates a risk register of potential safety hazards identified on site. Each risk has a corresponding mitigation or avoidance plan to minimize the probability of occurrence. The register is periodically updated and managed by the EH&S team to reflect the current risks based on the stage of the Project. The safety risk register identifies potential safety threats on site and prepares the Project team and craft labor for occurrence. The

data collected in the register is used for lessons learned and incorporated into safety training delivered on site to increase awareness and promote a safe work environment

### ***Safety Reviews***

Every six months, the Airports Authority performs an assessment of the Contractor's safety program. The safety assessment report identifies gaps or weaknesses in the EH&S plan as well as provides recommendations for improvement. The Contractor is required to document its response to each issue in a letter to the Airports Authority. This process promotes continuous improvement of safety performance in the field throughout the Project life cycle.

### ***Environmental Compliance Tracking Database***

The Airports Authority uses a well organized and comprehensive DCMP Environmental Compliance Tracking Database for tracking Environmental Protection Agency Records of Decisions, permits, and logs of environmental issues. Documents pertaining to environmental regulatory compliance and mitigation plans are filed in the *LiveLink* document management system in an organized manner, including a detailed file breakdown structure. The current process effectively monitors the status of environmental compliance and assures that the required documentation supporting compliance is easily identified, tracked, and accessed.

### ***Lessons Learned Log***

A lessons learned log is a project management practice to capture opportunities for improvement on future projects based on the results of ongoing or completed projects. The Airports Authority's Project management and staff developed a lessons learned log for issues encountered during Phase 1 to capture opportunities for improvement going forward into Phase 2. Key examples of lessons learned identified by the Project management team include potential improvements to contract terms, management of allowances, design management, change management, and the invoice review and approval process that will be used to inform better decision making on work remaining on Phase 1 and further refine processes and contracts for implementation on Phase 2.

### ***Procurement Checklist***

The Contracting Officer developed an internal guidance checklist entitled *Procurement Support Documents to Be Provided with Procurement Request* which is used by Project Team staff to monitor and manage compliance with FTA requirements. The checklist clearly defines the required documentation for compliance with *FTA Circular 4221.1F*. The checklist aids Contracting Officers in maintaining all necessary documentation in the procurement file to confirm compliance with FTA requirements for third party contracting.



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***Certified Payroll Reconciliation Efforts***

To assess compliance with Davis-Bacon wage standards, the Rail Office performs detailed analyses of Project records reconciling site observation reports to certified vendor payrolls. Based on this process control, the Rail Office has addressed several Davis-Bacon wage standards issues to manage compliance with wage requirements.

## 5. Findings and Observations

The following findings, observations, and related recommendations, grouped by areas of review, were identified during the performance audit.

### A. Project Strategy, Organization and Administration

#### **A1. *There is an opportunity to improve the current document management system.***

The Rail Office currently uses *LiveLink*, an enterprise document management system, to manage all Project documentation. *LiveLink* is a web based electronic document management system that allows access, storage, and management of a large number of files. The Rail Office Project Management Procedure PM-1.02 entitled *Document Control* governs the key processes for managing Project documents and defines how Project information will be organized and controlled.

We found that the Project files in the electronic document management system are not organized in a structured way that allows users to easily search and retrieve Project files. Document categories are not used to enable users to search by document type. As an example, Project invoices are generally classified as letters in a general Project file. Leading practices for a document management system include clearly defined file hierarchical structure storage, versioning, metadata, security, indexing, and retrieval capabilities that are implemented from Project inception.

The processes used by the Rail Office and DTP require cover letters or transmittal letters for almost all documentation between the parties. During the course of our document review, we noted that almost all of the documents we attempted to locate in *LiveLink*, such as change orders, invoices, and other types of Project documents, were inappropriately classified and filed as *letters* because of the cover letter or transmittal letter attached to the documents. As a result, the Project team may experience difficulty in retrieving necessary Project documents to support Project management and negotiate changes or claims as may be required.

#### Recommendation:

*The Rail Office should implement its document management system from the beginning of large capital projects, including delineating a clearly defined file organization structure. Document control personnel should be trained to recognize the different categories of Project documents, categorize them correctly, and file them according to the system's file organization structure.*



## B. Cost and Financial Management

### ***B1. There is an opportunity to strengthen processes for Project contingency reporting.***

Through January 2012, Project financial reports included a Project estimate at completion that matched the Project budget and did not reflect the forecasted contingency requirements, primarily due to the Project Rail Office's ongoing efforts to implement cost mitigation techniques for potential budget overruns. The Monthly Progress Report and reporting to the Airports Authority's Board of Directors through January 2012 reported the Project Cost at \$3.265 billion, which was the approved Project budget at the time. While potential variances were communicated to key principals, including the Airports Authority's Board of Directors, the FTA, and the Project funding partners, the reported estimate at completion did not include potential variances of \$75 to \$150 million identified by the Rail Office in its internal monthly utilization forecast. According to this internal forecast, a potential cost variance was identified as early as July 2011, but this was not reported externally in the Project Cost estimate at completion until February 2012 to the Airports Authority's Board of Directors. The potential variance was reported to the Airports Authority's Board of Directors in August of 2011, discussed in detail with the Project principals as early as September 2011, and communicated to the FTA. The variances were not included in the estimate at completion until the Phase I funding partners, which are the Airports Authority, WMATA, VDOT and Fairfax County, agreed that identified potential cost mitigation measures would be unsuccessful. As of the date of this report, all funding partners have agreed on the presentation of the potential variances within the estimate at completion and the financial reporting will more accurately reflect the financial performance of the Project.

Leading practices for project financial reporting require timely reporting that reflects the current financial performance of the project. This includes forecasting of project contingency or reserves as they are identified through the related risk management process. The Rail Office does not have formal policies or procedures related to management of the contingency utilization forecast and reporting on identified potential cost overruns. As a result, Project reports may not reflect the most current forecasted costs at completion or funding requirements of the Project.

The FFGA requires the Rail Office to develop a Recovery Plan to address cost variances to the approved FFGA budget. If the FTA requires a Recovery Plan, failure to formally capture recovery efforts in such a Recovery Plan may lead to noncompliance with the FFGA requirements. As of April 2012, the Project Rail Office had not developed a formal Recovery Plan. In addition, the FTA may require Project changes to be funded from nonfederal funds, resulting in the Federal portion of the Project remaining within budget. If the Federal portion of the Project remains on budget, the FTA may not require a Recovery Plan. Although the Rail Office has undertaken numerous efforts to recover costs and mitigate cost impacts to date, the FTA has not required a formal Recovery Plan.

Recommendations:

- *The process for forecasting and reporting the estimate at completion should be clearly defined to allow for timely reporting of the forecasted costs at completion.*
- *The Rail Office should develop and implement formal policies and procedures governing forecasting and reporting for Project contingency and allowances.*
- *The Rail Office should develop a Recovery Plan to address cost overruns if required by FTA.*

***B2. There is not a formal process in place to reconcile financial reporting in the Monthly Progress Report to underlying support in the Project cost reporting system.***

The Rail Office prepares a Monthly Progress Report detailing the current status of the Project including coordination, safety, schedule, and financial information on a monthly basis. The source of the financial information is from the Rail Office's cost reporting system, *Prism*. Although the monthly cost reporting in the Monthly Progress Report is based on information directly from *Prism*, the financial information for change orders and allowances does not clearly link to the cost data in *Prism*. This is primarily due to coding costs differently in *Prism*, than is required for the Monthly Progress Report. As an example, *Prism* cost data is organized by Standard Cost Codes as required by FTA, while the Monthly Progress Report shows allowances by Allowance Item Number and changes by Change Order Number, neither of which are linked to the FTA Standard Cost Codes.

The Rail Office does not have a formal process that documents and reconciles how costs are extracted from the different costs centers in *Prism* and compiled into the allowance and change order tables in the Monthly Progress Report. Leading project management organizations establish formal documented reconciliation processes to help ensure Project cost reporting clearly reconciles to the underlying cost reporting system. The lack of a formal reconciliation process may result in inaccuracies in the financial status reported in the Monthly Progress Report and may not give a clear representation of the current cost performance of the Project.

Recommendation:

*The Rail Office should implement a formal reconciliation process to clearly define and document how Project costs are extracted from the different cost centers in Prism and compiled in the Monthly Progress Report.*



**B3. Areas of improvement exist in the Contractor invoice review and approval process.**

The Contractor invoice review and approval process is a key control for managing Project costs and ensuring compliance with the contract terms and conditions. The controls in place governing the Contractor invoice review and approval process are as follows:

- *Section 14.2.1* of the design-build contract specifies the content and supporting documentation to be included with design-build invoices.
- Project Management Procedure PM-5.05, Processing Design Build Contract Payments, defines the process and required approval signature for the design-build invoices.
- *Article 11* of the contract for utility relocation work specifies how utility relocation invoices should be calculated.

We noted the following issues when reviewing the Contractor's invoices:

- The design-build invoices did not state the maximum amount payable per the Maximum Payment Curve as required by Section 14.2.1 (a) of the design-build contract. The Project policies and procedures do not specify that invoices should be reviewed to ensure they do not exceed the Maximum Payment Curve. Failure to implement a formal process for assessing invoices against the Maximum Payment Curve may result in an overpayment to Contractor. However, we noted that for our selected sample of ten invoices tested, the invoiced amount did not exceed the Maximum Payment Curve.
- The indirect cost multiplier for overtime labor costs is not defined in the contract for utility relocation work. Although the multiplier was reviewed by the Rail Office and negotiated between the parties, the agreement was not formalized via a change order or contract amendment. A lack of a formal contract modification for negotiated contract terms may result in difficulty in enforcing agreed upon contract compensation terms, resulting in increased Project costs.
- For three of the ten Contractor invoices tested, not all of the required signatures were present on the Cover Sheet for Monthly Invoice Approval Recommendations. The required signatures were not obtained by the Contract Administration Officer as required by PM-5.05. Failure to obtain required approvals may result in Contractor invoices being paid that are incomplete or not in compliance with the terms of the contract.

Recommendations:

- *The Rail Office should require the Contractor to state the maximum amount payable per the Maximum Payment Curve on all design-build invoices, and revise existing policies and*

*procedures to ensure the invoice review process includes verification that the amount billed does not exceed the Maximum Payment Curve.*

- The Procurement Department and the Rail Office should execute a change order or contract amendment to the Contract for utility relocation work to define the indirect cost multiplier for overhead labor costs.*
- The Contract Administration Officer should ensure that all signatures are obtained on the "Cover Sheet for Monthly Invoice Approval Recommendations" prior to payment.*

**B4. Areas of improvement exist in the consultant invoice review and approval process.**

KPMG reviewed a total of nine invoices from three different Project consultants. For three of the three invoices reviewed for special inspection services by CTI Consultants, Inc., the invoice supporting documentation was incomplete. Missing documentation included timesheets and supporting documentation for vendor invoices. Project Management Procedure PM-5.09, *Processing Utility Relocation, Right of Way, Agencies and Other Contract Payments*, defines the process for review and approval of consultant invoices, which requires adequate supporting documentation supporting the amount billed prior to payment. Subsequent to our request for additional information regarding these vendor invoices, the missing documentation was obtained from the consultant to support the amounts billed. The responsible reviewer did not verify that all invoiced costs were supported prior to approving the invoice for payment. Failure to obtain complete documentation supporting a vendor invoices may result in an overpayment to a consultant or vendor performing services on the Project.

*Recommendations:*

*The Rail Office should ensure that responsible reviewers perform detailed reviews of invoices prior to payment, including verifying that all invoiced costs are supported by appropriate underlying documentation including timesheets, vendor invoices, and other supporting documentation.*

**B5. The Rail Office does not have approval authority for all Project costs.**

The Project management team should have full accountability and approval authority for all Project costs. The Rail Office is not involved in the review and approval process for Project costs incurred by other departments in the Airports Authority's home office. Examples of these costs include legal and consulting fees procured by the Airports Authority's home office. Costs are coded in the Airports Authority home office as Project costs without any review or approval by the Rail Office. After these costs are incurred and paid, invoice details for these costs are provided to the Rail Office upon request. There is no formal process in place to review and approve all Project



costs by the Rail Office. Under the current processes, there is a risk that unallowable costs may be charged to the Project, leading to cost overruns or noncompliance with the FFGA.

Recommendation:

*The Airports Authority's Management and the Rail Office should develop a formal process that involves the Rail Office in the review and approval of all costs charged to the Project by other Airports Authority departments, including those procured in the home office.*

**B6. The design-build contract does not clearly define the required Contractor's fee portion of additive change orders.**

As a condition of award, the FFGA required that the Airports Authority develop a Project Financial Plan and establish a Capital Reserve Account ("CAPRA") in the amount of \$200 million to assist in financing any Project cost overruns in excess of the baseline cost estimate or FFGA budget. The Project Financial Plan included a requirement that the Contractor contribute a portion of the \$200 million to the CAPRA. As a result, the Rail Office negotiated the addition of *Section 29.21.1* to the design-build contract that required DTP to make an initial contribution of \$15 million, and contribute fifty-percent of any fee earned on additive change orders issued after the effective date up to a maximum additional amount of \$5 million.

The design-build contract terms do not clearly define how fee should be calculated on additive change orders. On July 10, 2009, the Airports Authority and the Contractor executed a Minor Change Order (8-07-C004) to clarify that the "fee" referenced in *Section 29.21.1* of the Contract is interchangeable with "profit" as described in *Section 19.4.4, Pricing Requirement, of Article 19, Changes in the Work*. However, the markup specified in *Section 19.4.4* is a combined percentage for overhead and profit, and does not differentiate between the portion of the markup that is overhead, and the portion that is profit.

Although the Contractor and the Airports Authority have come to an informal agreement regarding the calculation of profit or fee to additive change orders, the agreement was not formalized in a contract amendment or change order. Failure to clearly define the Contractor's fee portion of additive change orders may result in disputes or difficulty in ensuring the Contractor makes the required contributions to the CAPRA, potentially resulting in increased funding needs to fully fund the Project.

Recommendation:

*The Rail Office should execute an amendment to the Contract to clearly define the fee portion for additive change orders.*

## C. Procurement

### ***C1. Recommendations in FTA's Procurement System Review (PSR) were not implemented on one contract procurement selected for testing.***

In January 2011, the FTA contracted with Calyptus Consulting Group to perform a Procurement Systems Review (PSR) of the procurement system used by the Airports Authority in the expenditure of grant funds. The final report, dated April 13, 2011, included twenty-eight findings of deficiency in FTA and Federal requirements. Based on the twenty-eight areas of deficiency identified in the PSR, the Airports Authority was provided with recommendations to improve the procurement system going forward to ensure compliance with FTA Circular 4220.1F and the Master Agreement.

We noted that the Airports Authority's procurement of Hunton & Williams LLP for legal services awarded October 5, 2011, is not compliant with the PSR requirements despite being conducted after the date of the PSR report. We noted that for the following exceptions the procurement was conducted outside of the Project Rail Office:

- The Contracting Officer did not document the rationale for the method of procurement and justification for the selection of the contract type in the contract file
- There is no documentation in the contract file that an evaluation committee evaluated the proposals
- There is no documentation in the contract file indicating that a cost/price analysis was performed

The Airports Authority does not have a formal process in place for ensuring that Project procurements conducted outside the Rail Office are compliant with FTA requirements. As a result, Project procurements conducted outside the Rail Office may not meet the requirements of FTA Circular 4220.1F and the Master Agreement.

#### Recommendation:

*The Airports Authority should ensure that Project specific procurements, including those conducted outside the Rail Office, are compliant with FTA requirements and address the recommendations of the PSR.*

### ***C2. Two solicitation and contract awards conducted outside of the Project Rail Office were not in compliance with the requirements of the Airports Authority's Procurement Manual.***

The Airports Authority's Contracting Manual includes policies and procedures governing the contract solicitation and award process throughout the Airports Authority. We reviewed seven vendor contracts and noted the following instances of noncompliance with the Contracting Manual:

- A hand signed solicitation offer and award form was not completed as required per Section 2.2.6 (2) of the Contracting Manual for the Hunton & Williams, LLP, Contract #8-11-B027



- The Contractor's acknowledgement of the RFP amendments was not submitted with the proposal as required per Section 2.2.6 (4) of the Contracting Manual for Wells Fargo Insurance Service, USA, INC, Contract #8-11-C007

In each instance noted above, the Contracting Officer did not conduct the procurements in accordance with the documented procedures in the Airports Authority's Contracting Manual. Failure to comply with documented procedures may result in RFP provisions or RFP amendments not being incorporated into the signed contract or difficulty in enforcing these provisions or amendment language.

Recommendation:

*The Airports Authority should ensure that all Contracting Officers conduct procurement activities in accordance with the requirements of the Contracting Manual.*

***C3. Five contract modifications were executed to one vendor to increase contract funding without budgets developed for the contracted scopes of work.***

Project teams should develop detailed scope and budgets for contracted scopes of work prior to contract award or execution of contract modifications. Five contract modifications were executed to increase funding for the Blanket Purchase Order for Capital Project Strategies, LLC Contract #8-07-B016, despite no associated change in the duration of the contract. In addition, there was no justification or supporting documentation showing how the amount of the increase was determined such as an independent cost estimate or price analysis.

The Airports Authority procedures require all scope changes include a formal budget; however, budgets were not prepared for the five contract modifications sampled. Failure to properly scope work and develop budgets may impact the accuracy of the overall Project budget, resulting in lack of funding if repeated modifications to increase the contract value are required.

Recommendation:

*The Airports Authority should implement a formal budgeting process for all contracts that include the preparation of an independent cost estimate prior to solicitation and award to help ensure that budgets are adequately developed for the scopes of work.*

***C4. Procurement files were incomplete for three of the seven contract files selected for testing***

The Airports Authority's Contracting Manual includes guidelines on the documentation the Contracting Officer is required to complete or the vendor is required to submit during the solicitation process. During our review of Project procurement files, we noted the following documents were not included in the respective contract files, although the Airports Authority was able to locate and provide them upon request:

- Board approval of contract award for Jacobs Carter & Burgess, Inc. Contract #8-07-C001
- Procurement Request for Qwest Government Solutions Contract #8-08-C037
- Procurement Request for Capital Project Strategies, LLC Contract #8-07-B016

The Contracting Officer did not ensure that all procurement documentation was maintained in a centralized procurement file in accordance with documented policies and procedures. As a result, documents may be missing or difficult to locate leading to difficulties in demonstrating a transparent and fair procurement process.

*Recommendation:*

*The Contracting Officer should ensure that procurement files are organized in a consistent manner and include all required documentation. This may include using a checklist or performing periodic reviews to ensure files are well organized and complete.*



## D. Project Controls and Risk Management

### ***D1. There are inconsistencies in Construction Safety Reporting.***

Section 8.0 of the Rail Office's Safety Security and Management Plan assigns the responsibility of construction safety to DTP. DTP has designated an Environmental Safety and Health (ES&H) Manager to implement the safety plan that is documented in DTP's Construction Safety, Health and Security Plan (ES&H Plan). Section 4.4 of DTP's ES&H Plan requires DTP to provide the Airports Authority with the Monthly Safety Report within 15 days after the end of each month. The Monthly Safety Report, as shown in Attachment 7 of the Construction Safety, Health and Security Plan, must include the statistics presented below in their monthly progress report to the FTA.

- |                            |                                    |
|----------------------------|------------------------------------|
| • Direct hire hours worked | • Lost time days                   |
| • Sub-tier hours worked    | • Property damage claims (>\$1500) |
| • First-aid cases          | • Incident investigation reports   |
| • Medical cases            | • Utility hits                     |
| • OSHA recordable cases    | • Vehicular accidents              |
| • Lost time cases          |                                    |

We reviewed four safety reports and found that each of the four selected safety reports provided by DTP to the Airports Authority did not incorporate changes made to DTP's safety statistics that occurred after the monthly summary reports were provided to the Airports Authority. Below are the inconsistencies identified in lost time reporting between DTP and the Airports Authority:

- A Lost Time Injury from September 2010 was initially reported as four Lost Days, which was revised by DTP to one.
- A Lost Time Injury from March of 2011 was initially reported as thirty Lost Days, and later revised to 180. This was not included in the subsequent DTP monthly reports for April – August 2011.
- A Lost Time Injury in June 2011 was reported as sixty-one Lost Days, which was revised to forty days.
- A Recordable Injury dating from an incident in July of 2011 was reclassified in October 2011 as a Lost Time Injury of twelve Days.

The Contractor's ES&H team did not communicate revisions or reclassifications of safety incidents to the Airports Authority. There is no policy or procedure in place to require the Contractor to report adjustments to the safety statistics. In addition, there were inconsistencies in reporting resulting from the Airports Authority's monthly report to the FTA, which included cumulative totals for safety statistics while the Contractor's monthly safety report to the Airports Authority did not include cumulative totals. As a result of the lack of a formal policy and

inconsistencies in the reporting, there is a risk that the Airports Authority's safety reporting to the FTA may be inaccurate.

Recommendations:

- *The Rail Office should implement a procedure requiring the Contractor to communicate revisions and reclassifications of safety statistics to the Rail Office and to include cumulative safety statistics in the Monthly Safety Report*
- *The Rail Office should perform a review of the Contractor's safety statistics in the next safety assessment to ensure the statistics reported to FTA are accurate and consistent with DTP's records.*

**D2. The Current Price Adjustments – Escalation (CPAE) Calculation is not clearly defined in the design-build contract.**

Exhibit 14.1.3 of the design-build Contract states that escalation adjustments "will be calculated on a quarterly fiscal basis (i.e. in March, June, September, and December of each year) and the percentage change (increase or decrease) between the base period index and the current period index for any given quarter shall be the average of the percent change for each of the three months represented in each quarter." Based on the contract language, it is unclear whether the materials and equipment eligible for escalation under the Contract should be escalated based on the date of purchase or based on the date of installation. In 2009, the Airports Authority and the Contractor arrived at an informal agreement that materials and equipment should be escalated based on the date of the Contractor's purchase order for the materials and equipment, and that the eligible quarter would be the fiscal quarter during which the purchase order is placed and would be valid through the term of the purchase order agreement. However, this agreement was not formalized as the Airports Authority did not execute a change order or contract amendment to incorporate the revised CPAE calculation into the Contract. This may lead to difficulty in enforcing the informal agreement and exposes the Airports Authority to potential claims by the Contractor for additional escalation costs, which may require additional Project funding.

Recommendation:

*The Rail Office should execute a contract amendment to clearly define the CPAE calculation as stated in the Contract Price Adjustments for Escalation Memorandum written by Project Controls, dated February 14, 2012.*



## E. Scheduling

### ***E1. Contract terms regarding schedule review and acceptance are not clearly defined in the Design-Build Contract.***

The Owner and Contractor responsibilities regarding schedule review and acceptance or approval are usually clearly defined in the Contract. The Design-Build Contract between the Airports Authority and the Contractor does not clearly define the Owner's role in the schedule review and approval process. Section 1.03B of Section 01322, Division 1 of the Design-Build Contract states that "Notwithstanding the fact that the Owner shall not have the right to approve Monthly Updated Schedules, Contractor and the Owner shall agree upon the following for each update: (a) modifications that affect durations, sequencing or logic of activities for which the Owner, Governmental Persons or other third parties are responsible; (b) actual starts and finishes of work accomplished; (c) significant changes in the critical path(s) of the Project; and (d) material deviations from the Technical Requirements of Part 3 hereof." The means and methods of construction are traditionally the Contractor's responsibility in the construction industry. Therefore, construction contracts generally require the Contractor develop and maintain the Project schedule. Approval of the Project schedule by the Owner transfers at least a portion of the Project risk from the Contractor to the Owner. While the Phase 1 Contract was drafted with language so the Airports Authority would review and agree, but not approve, the Contractor's schedule, the Contract terms were not drafted to clearly define the review and agreement process for the monthly schedule review. Failure to clearly define the monthly review and agreement activities for the Project schedule may result in differences of opinion between the Rail Office and the Contractor regarding schedule progress and the inability to resolve scheduling issues, which could potentially lead to Contractor claims on the Project.

#### Recommendation:

*Contractor and Owner roles and responsibilities regarding the schedule review and approval process should be clearly defined in the Phase 2 contract terms.*

## 6. Opportunities for Improvement

In our performance audit, we identified additional opportunities for improvement that are not classified as findings or pose significant risks to the Project. The information provided below is for consideration by the Airports Authority and the Rail Office as they further develop and refine contract templates and processes for Phase 2.

### **1. There is an opportunity to revise contract terms to reduce redundancy.**

Section VII-17 of the CTI Consultants, Inc. (CTI) agreement, requires the Contractor to provide proof of release of any claims, liens, and encumbrances against the Airports Authority with its invoices. The Rail Office does not require CTI to provide this documentation with its invoices. Instead, a final release is obtained once the work is complete. Although this contract clause is typically not required in consultant agreements, it was included in the CTI contract based on a standard Airports Authority contract template. This may result in unnecessary efforts to administer extraneous contract terms.

#### Recommendation:

*The Airports Authority should consider removing the requirement for consultants to "provide proof of release of any claims, liens and encumbrances against the Airports Authority" from the standard contract terms for future consultant contracts.*

### **2. There is an opportunity to more clearly define documentation requirements for FTA compliance.**

FTA Circular 4220.1F requires the Airports Authority to maintain and make available to FTA written records detailing the history of each procurement. While the Airports Authority's Contracting Manual (including the November 2011 working draft) includes guidance on complying with FTA requirements, it does not contain specific guidelines regarding the documentation required for compliance. As a result, Contracting Officers may not maintain all documentation necessary to demonstrate compliance with FTA compliance, which could lead to noncompliance with FTA's documentation requirements.

#### Recommendation:

*The Airports Authority should consider providing Contracting Officers with additional guidance regarding documentation required to demonstrate compliance with FTA requirements. This may include having an appropriate member of the Airports Authority's senior management direct all staff performing procurement activity related to the Project provide the documentation identified in the Contracting Officer's internal guidance document entitled "Procurement Support Documents to Be Provided with Procurement Request."*



## **Appendix A: Summary of Findings and Recommendations**

## Appendix A: Summary of Findings and Recommendations

Findings	Recommendations
Section 4A. Project Strategy, Organization and Administration	
A1. Document Management	
There is an opportunity to improve the current document management system.	<i>The Rail Office should implement its document management system from the beginning of large capital projects, including delineating a clearly defined file organization structure. Document control personnel should be trained to recognize the different categories of Project documents, categorize them correctly, and file them according to the system's file organization structure.</i>
Section 4B. Cost and Financial Management	
B1. Contingency Reporting	
<p>There is an opportunity to strengthen processes for Project contingency reporting.</p> <ul style="list-style-type: none"> <li>Through January 2012, Project financial reports included a Project estimate at completion that matched the Project budget and did not reflect the forecasted contingency requirements as they became known.</li> <li>The Rail Office does not have formal policies or procedures related to management of the contingency utilization forecast and reporting on the identified potential cost overruns.</li> <li>As of April 2012, the Project Rail Office did not develop a formal Recovery Plan.</li> </ul>	<ul style="list-style-type: none"> <li><i>The process for forecasting and reporting the estimate at completion should be clearly defined to allow for timely reporting of the forecasted costs at completion.</i></li> <li><i>The Rail Office should develop and implement formal policies and procedures governing forecasting and reporting for Project contingency and allowances.</i></li> <li><i>The Rail Office should develop a Recovery Plan to address cost overruns if required by FTA.</i></li> </ul>
B2. Project Cost Reporting	
There is not a formal process in place to reconcile financial reporting in the Monthly Progress Report to underlying support in the Project cost reporting system.	<i>The Rail Office should implement a formal reconciliation process to clearly define and document how Project costs are extracted from the different cost centers in Prism and compiled in the Monthly Progress Report.</i>



<b>B3. Contractor Invoicing</b>	
<p>Areas of improvement exist in the Contractor invoice review and approval process.</p> <ul style="list-style-type: none"> <li>The design-build invoices did not state the maximum amount payable per the Maximum Payment Curve as required by Section 14.2.1 (a) of the design-build contract.</li> <li>The indirect cost multiplier for overtime labor costs is not defined in the Contract for utility relocation work.</li> <li>For three of the ten Contractor invoices tested, not all of the required signatures were present on the Cover Sheet for Monthly Invoice Approval Recommendations.</li> </ul>	<ul style="list-style-type: none"> <li><i>The Rail Office should require the Contractor to state the maximum amount payable per the Maximum Payment Curve on all design-build invoices, and revise existing policies and procedures to ensure the invoice review process includes verification that the amount billed does not exceed the Maximum Payment Curve.</i></li> <li><i>The Procurement Department and the Rail Office should execute a change order or contract amendment to the Contract for utility relocation work to define the indirect cost multiplier for overhead labor costs.</i></li> <li><i>The Contract Administration Officer should ensure that all signatures are obtained on the "Cover Sheet for Monthly Invoice Approval Recommendations" prior to payment.</i></li> </ul>
<b>B4. Consultant Invoicing</b>	
<p>Areas of improvement exist in the consultant invoice review and approval process.</p>	<p><i>The Rail Office should ensure that responsible reviewers perform detailed reviews of invoices prior to payment, including verifying that all invoiced costs are supported by appropriate underlying documentation including timesheets, vendor invoices, and other supporting documentation.</i></p>
<b>B5. Cost Coding</b>	
<p>The Rail Office does not have approval authority for all Project costs.</p>	<p><i>The Airports Authority's Management and the Rail Office should develop a formal process that involves the Rail Office in the review and approval of all costs charged to the Project by other Airports Authority departments, including those procured in the home office.</i></p>
<b>B6. Design Build Contract Terms</b>	
<p>The design-build contract does not clearly define the required Contractor's fee portion of additive change orders.</p>	<p><i>The Rail Office should execute an amendment to the Contract to clearly define the fee portion for additive change orders.</i></p>
<b>Section 4C. Procurement</b>	
<b>C1. Implementation of Procurement System Review Findings</b>	
<p>Recommendations in FTA's Procurement System Review (PSR) were not implemented on one contract procurement selected for testing.</p>	<p><i>The Airports Authority should ensure that Project specific procurements, including those conducted outside the Rail Office, are compliant with FTA requirements and address the recommendations of the PSR.</i></p>

C2. Contract Award	
Two solicitation and contract awards conducted outside of the Project Rail Office were not in compliance with the requirements of the Airports Authority's Procurement Manual.	<i>The Airports Authority should ensure that all Contracting Officers conduct procurement activities in accordance with the requirements of the Contracting Manual.</i>
C3. Contract Modifications	
Five contract modifications were executed to one vendor to increase contract funding without budgets developed for the contracted scopes of work.	<i>The Airports Authority should implement a formal budgeting process for all contracts that include the preparation of an independent cost estimate prior to solicitation and award to help ensure that budgets are adequately developed for the scopes of work.</i>
C4. Contract Files	
Procurement files were incomplete for three of the seven contract files selected for testing.	<i>The Contracting Officer should ensure that procurement files are organized in a consistent manner and include all required documentation. This may include using a checklist or performing periodic reviews to ensure files are well organized and complete.</i>
Section 4D. Project Controls and Risk Management	
D1. Construction Safety Reporting	
There are inconsistencies in Construction Safety Reporting.	<ul style="list-style-type: none"> <li><i>The Rail Office should implement a procedure requiring the Contractor to communicate revisions and reclassifications of safety statistics to the Rail Office and to include cumulative safety statistics in the Monthly Safety Report</i></li> <li><i>The Rail Office should perform a review of the Contractor's safety statistics in the next safety assessment to ensure the statistics reported to FTA are accurate and consistent with DTP's records.</i></li> </ul>
D2. Current Price Adjustments – Escalation (CPAE) - Current Price Index Calculation	
The Current Price Adjustments – Escalation (CPAE) Calculation is not clearly defined in the design-build contract.	<i>The Rail Office should execute a contract amendment to clearly define the CPAE calculation as stated in the Contract Price Adjustments for Escalation Memorandum written by Project Controls, dated February 14, 2012.</i>
Section 4E. Scheduling	
E1. Contract Terms	
Contract terms regarding schedule review and acceptance are not clearly defined in the Design-Build Contract.	<i>Contractor and Owner roles and responsibilities regarding the schedule review and approval process should be clearly defined in the Phase 2 contract terms.</i>



## Appendix B: List of Acronyms

## Appendix B: List of Acronyms

Exhibit B provides a list of acronyms and definitions identified in this report.

Term	Definition
AICPA	American Institute of Certified Public Accountants
ADA	Americans with Disabilities Act
ARS	Adopted Regional System
CAPRA	Capital Reserve Account
CPAE	Current Price Adjustments - Escalation
CTI	CTI Consultants, Inc.
DCMP	Dulles Corridor Metrorail Project
DTP	Dulles Transit Partners, LLC
DTR	Dulles Toll Road
EEO	Equal Employment Opportunity
EHS	Environmental, Health and Safety
EIS	Environmental Impact Statement
FFGA	Full Funding Grant Agreement
FTA	Federal Transit Administration
MWAA	Metropolitan Washington Airports Authority
NTP	Notice to Proceed
PCAOB	Public Company Accounting Oversight Board
PE	Preliminary Engineering
PM	Project Management
PSR	Procurement Systems Review
RFP	Request for Proposal
ROD	Revenue Operations Date
ROW	Right of Way
SCC	Standard Classification Codes
SSCD	Schedule Substantial Completion Date
WMATA	Washington Metropolitan Area Transit Authority
VDOT	Virginia Department of Transportation
VDRPT	Virginia Department of Rail and Public Transportation



## Appendix C: Management Response

# METROPOLITAN WASHINGTON AIRPORTS AUTHORITY



April 30, 2012

Mr. Michael A. Curto  
Chairman  
Metropolitan Washington Airports Authority,  
Board of Directors  
1 Aviation Circle  
Washington, DC 20001

RE: KPMG Performance Audit dated April 17, 2012  
Dulles Corridor Metrorail Project, Phase 1

Dear Chairman Curto:

We are forwarding the management responses to the Performance Audit performed by KPMG in their report dated April 17, 2012. KPMG was tasked by the Metropolitan Washington Airports Authority (Airports Authority) Board of Directors (Board) in October, 2011 to assess whether current processes and tools are working as intended and to identify areas where improvement may produce measurable results on the Dulles Corridor Metrorail Project (Project). This extensive audit was performed over the course of four months from November 1, 2011 through February 22, 2012 with KPMG team members on site for the majority of the time. Subsequent follow-up sessions continued through the end of March, 2012.

The report states that KPMG found that the Airports Authority's Rail Project Office's current processes overall are working as intended to allow for effective management of the Project. Furthermore, KPMG determined that "The Project Office has developed a comprehensive set of policies and procedures, controls and tools for managing the Phase 1 Project that are considered appropriate for the size and complexity of the Project."

KPMG also found areas that could be improved and included a list of recommendations for the Airports Authority's action. That matrix of recommendations and management's responses are attached for the Board's review. Management has reviewed the report and finds the recommendations to be useful. All of the recommendations either have been or plan to be implemented into Phase 1 and Phase 2 of the Project.

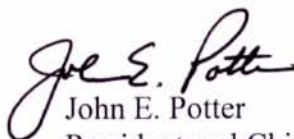
The Authority's management finds the KPMG Performance Audit to be fruitful and beneficial in its findings. It has also given management the confidence and re-assurance to



Mr. Michael A. Curto  
Metropolitan Washington Airports Authority  
Board of Directors  
Page 2

continue with the current Project Management structure in executing Phase 2 of the Dulles Corridor Metrorail Project.

Sincerely,

A handwritten signature in black ink, appearing to read "John E. Potter". The signature is fluid and cursive, with the first name "John" and last name "Potter" clearly distinguishable.

John E. Potter  
President and Chief Executive Officer

JEP:bb

Enclosure: Response Matrix to KPMG Performance Audit dated April 10, 2012

Finding Reference	Recommendation	Management Agrees	Status of Recommendation		Management Disagrees
			Implemented	Planned	
A1. Document Management	<i>The Rail Office should implement its document management system from the beginning of large capital projects, including delineating a clearly defined file organization structure. Document control personnel should be trained to recognize the different categories of Project documents, categorize them correctly, and file them according to the system's file organization structure.</i>	✓		✓	
B1. Contingency Reporting	• <i>The process for forecasting and reporting the estimate at completion should be clearly defined to allow for timely reporting of the forecasted costs at completion</i>	✓		✓	
	• <i>The Rail Office should develop and implement formal policies and procedures governing forecasting and reporting for Project contingency and allowances.</i>	✓		✓	
	• <i>The Rail Office should develop a Recovery Plan to address cost overruns if required by FTA.</i>	✓		✓	
B2. Project Cost Reporting	<i>The Rail Office should implement a formal reconciliation process to clearly define and document how Project costs are extracted from the different cost centers in Prism and compiled in the Monthly Progress Report.</i>	✓		✓	
B3. Contractor Invoicing	• <i>The Rail Office should require the Contractor to state the maximum amount payable per the Maximum Payment Curve on all design-build invoices, and revise existing policies and procedures to ensure the invoice review process includes verification that the amount billed does not exceed the Maximum Payment Curve.</i>	✓		✓	
	• <i>The Procurement Department and the Rail Office should execute a change order or contract amendment to the Contract for utility relocation work to define the indirect cost multiplier for overhead labor costs.</i>	✓		✓	
	• <i>The Contract Administration Officer should ensure that all signatures are obtained on the "Cover Sheet for Monthly Invoice Approval Recommendations".</i>	✓		✓	
B4. Consultant Invoicing	<i>The Rail Office should ensure that responsible reviewers perform detailed reviews of invoices prior to payment, including verifying that all invoiced costs are supported by appropriate underlying documentation including timesheets, vendor invoices, or other supporting documentation.</i>	✓	✓		



Finding Reference	Recommendation	Management Agrees	Status of Recommendation		Management Disagrees
			Implemented	Planned	
B5. Cost Coding	<i>The Airports Authority Management and the Rail Office should develop a formal process that involves the Rail Office in the review and approval of all costs charged to the Project by other Airports Authority departments, including those procured in the home office.</i>	✓		✓	
B6. Design Build Contract Terms	<i>The Rail Office should execute an amendment to the Contract to clearly define the fee portion for additive change orders.</i>	✓		✓	
C1. Implementation of Procurement System Review Findings	<i>The Airports Authority should ensure that Project specific procurements, including those conducted outside the Rail Office, are compliant with FTA requirements and address the recommendations of the PSR.</i>	✓		✓	
C2. Contract Award	<i>The Airports Authority should ensure that all Contracting Officers conduct procurement activities in accordance with the requirements of the Contracting Manual.</i>	✓	✓		
C3. Contract Modifications	<i>The Airports Authority should implement a formal budgeting process for all contracts that include an independent cost estimate prior to solicitation and award to help ensure that budgets are adequately developed for the scopes of work.</i>	✓		✓	
C4. Contract Files	<i>The Contracting Officer should ensure that procurement files are organized in a consistent manner and include all required documentation. This may include using a checklist or performing periodic reviews to ensure files are well organized and complete.</i>	✓	✓		
D1. Construction Safety Reporting	<ul style="list-style-type: none"> <li><i>The Rail Office should implement a procedure requiring the Contractor to communicate revisions or reclassifications to safety statistics to the Rail Office, and require that the Contractor include cumulative safety statistics in the Monthly Safety Report</i></li> </ul>	✓	✓		
	<ul style="list-style-type: none"> <li><i>The Rail Office should perform a review of the Contractor's safety statistics in the next safety audit to ensure the statistics reported to FTA are accurate and consistent with DTP's records.</i></li> </ul>	✓	✓		
D2. Current Price Adjustments – Escalation (CPAE) - Current Price Index Calculation	<i>The Rail Office should execute a contract amendment to clearly define the CPAE calculation as stated in the Contract Price Adjustments for Escalation Memorandum written by Project Controls, dated February 14, 2012.</i>	✓		✓	
E1. Schedule Contract Terms	<i>Contractor and Owner roles and responsibilities regarding the schedule review and approval process should be clearly defined in the Phase 2 contract terms.</i>	✓		✓	

