Office of Inspector General

Audit Report

DOT HAS OPPORTUNITIES TO ADDRESS KEY RISK AREAS FOR PHASE 2 OF THE DULLES CORRIDOR METRORAIL PROJECT UPON APPROVAL OF FEDERAL FINANCING

Department of Transportation

Report Number: MH-2013-054

March 20, 2013

Memorandum

U.S. Department of Transportation
Office of the Secretary of Transportation
Office of Inspector General

Subject: ACTION: DOT Has Opportunities To Address Key Risk Areas for Phase 2 of the Dulles Corridor Metrorail Project Upon Approval of Federal Financing
Report No. MH-2013-054

Date: March 20, 2013

From: Calvin L. Scovel III
Inspector General

Reply to Attn. of: J-1

To: Deputy Secretary

The Dulles Corridor Metrorail Project (Dulles project) will add 11 metro stations and 23.1 miles to the Washington Metropolitan Area Transit Authority's (WMATA) Metrorail system. The Metropolitan Washington Airports Authority (MWAA) is responsible for constructing both phases of the Dulles project and will turn over operation of the rail lines to WMATA once completed. Phase 1 has a total estimated cost of approximately $3.1 billion and is expected to start transporting passengers in 2014. Phase 2, which is not yet under construction, is estimated to cost $2.5 billion to $3.8 billion, with the majority of funding supported by revenues from the Dulles Toll Road. While Phase 1 received $900 million in Federal grant funds, there is no planned Federal grant funding for Phase 2. In response to stakeholder concerns about the cost, scope, and financing of Phase 2, Department of Transportation (DOT) Secretary Ray LaHood brokered a Memorandum of Agreement (MOA) in December 2011 between the Commonwealth of Virginia, Fairfax and Loudoun Counties, MWAA, WMATA, and DOT. The MOA called for reducing Phase 2 costs, providing a $30 million credit subsidy for Federal loans authorized by the Transportation Infrastructure Finance and Innovation Act (TIFIA), and establishing an oversight role for DOT's Federal Transit Administration (FTA).

Citing concerns about the oversight of the Dulles project and the reasonableness of funding assumptions for the Dulles Toll Road, Representatives Frank Wolf and Tom Latham requested that we conduct an audit of Phase 2 of the Dulles project. Accordingly, our objectives were to (1) determine whether DOT's proposed oversight role for Phase 2 adequately addresses key project risk areas—including cost, schedule, and financing—and (2) assess whether MWAA's Phase 2 project plans rely upon reasonable assumptions of revenue from the Dulles Toll Road.

To conduct our work, we interviewed officials at the Office of the Secretary of Transportation (OST), FTA, MWAA, and the TIFIA Joint Program Office (JPO) in the Federal Highway Administration's (FHWA) Innovative Program Delivery Office.[1] We reviewed laws, procedures, and guidance and collected information on potential TIFIA evaluation and oversight mechanisms. We also assessed the 2005, 2009, and 2012 Dulles Toll Road traffic and revenue studies as well as the value of time (VOT) estimates used in the 2009 and 2012 studies. We conducted this audit in accordance with generally accepted Government auditing standards. Exhibit A describes our scope and methodology and related work. Exhibit B identifies the organizations we visited or contacted.

RESULTS IN BRIEF

DOT has not fully developed an oversight strategy for Phase 2 of the Dulles project because the local funding partners[2]—MWAA and Fairfax and Loudoun Counties—have yet to receive approval of Federal credit assistance for the project. Until Federal credit assistance is approved, there are no obligated Federal dollars to oversee. FTA has taken some oversight actions, such as requesting a Phase 2 project management plan (PMP) from MWAA. However, according to FTA, it will not finalize an oversight strategy until there is clear support from all parties as to project structure and financing, including any Federal role. If the local funding partners are granted TIFIA credit assistance,[3] FTA and the TIFIA JPO would finalize an oversight approach. Until then, we cannot determine if DOT's oversight[4] of Phase 2 of the Dulles Project will be sufficient. To assist FTA as it finalizes an oversight strategy, our prior audits of major transportation projects are instructive and offer opportunities for DOT to consider leveraging existing oversight mechanisms to address key risk areas for Phase 2, including cost and schedule, project financing, and stakeholder agreements. For example, effective

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[1] The TIFIA JPO coordinates and manages day-to-day activities associated with implementing the program. In coordination with the Operating Administration, the TIFIA JPO is responsible for monitoring projects for compliance with credit agreement terms and conditions, and for changes in risk that may affect subsidy costs.

[2] MWAA and Fairfax and Loudoun Counties are local funding partners for Phase 2. The Commonwealth of Virginia is providing Phase 2 funding as well.

[3] The TIFIA program is governed by the Federal Credit Reform Act of 1990, which requires DOT to establish a capital reserve, or "subsidy amount," to cover expected credit losses before it can provide TIFIA credit assistance.

[4] DOT oversight refers to joint FTA and FHWA activity.

use of a financial management oversight contractor (FMOC), a key FTA oversight tool,[5] could help MWAA identify and mitigate financing risks.

Our assessment of Dulles Toll Road revenue estimates suggests that the assumptions MWAA used to arrive at the estimates are generally reasonable. Because MWAA's Phase 2 funding depends heavily on the revenue the toll road can produce and sustain, sound revenue forecasts are critical to the success of MWAA's funding plans. We focused on the following inputs to the toll revenue forecasts published in a March 2012 report commissioned by MWAA: (1) population and employment forecasts, (2) fuel price projections, and (3) VOT estimates. The population and employment forecasts and fuel price projection match those from reputable sources. For example, the baseline population and employment inputs used are those reported in the most recent U.S. Census. The method of generating VOT estimates deviates from typical practice by incorporating travelers' anti-toll sentiments and omitting consideration of travelers' preferences for public transit. However, the resulting VOT estimates are in line with those of prior analysis.

We are not making recommendations at this time because it is premature to do so until the project is approved for Federal credit assistance. However, several lessons learned from our past audits could be instructive as DOT finalizes its oversight strategy.

BACKGROUND

The Dulles project will add the new "Silver Line" to the WMATA Metrorail system, as shown in figure 1 on page 4. Construction for the Dulles project has been divided into two phases:

- The first phase (Phase 1) of the Dulles project runs from near the existing West Falls Church Metro station through the Tyson's Corner area to Wiehle Avenue in Reston, VA. Phase 1 is under construction with a current scheduled substantial completion date of August 30, 2013, and a projected revenue operations date of January 10, 2014.[6] FTA is responsible for oversight of Phase 1 because the project received a $900 million grant from FTA's New Starts program, including $77.3 million from American Recovery and Reinvestment Act funds.

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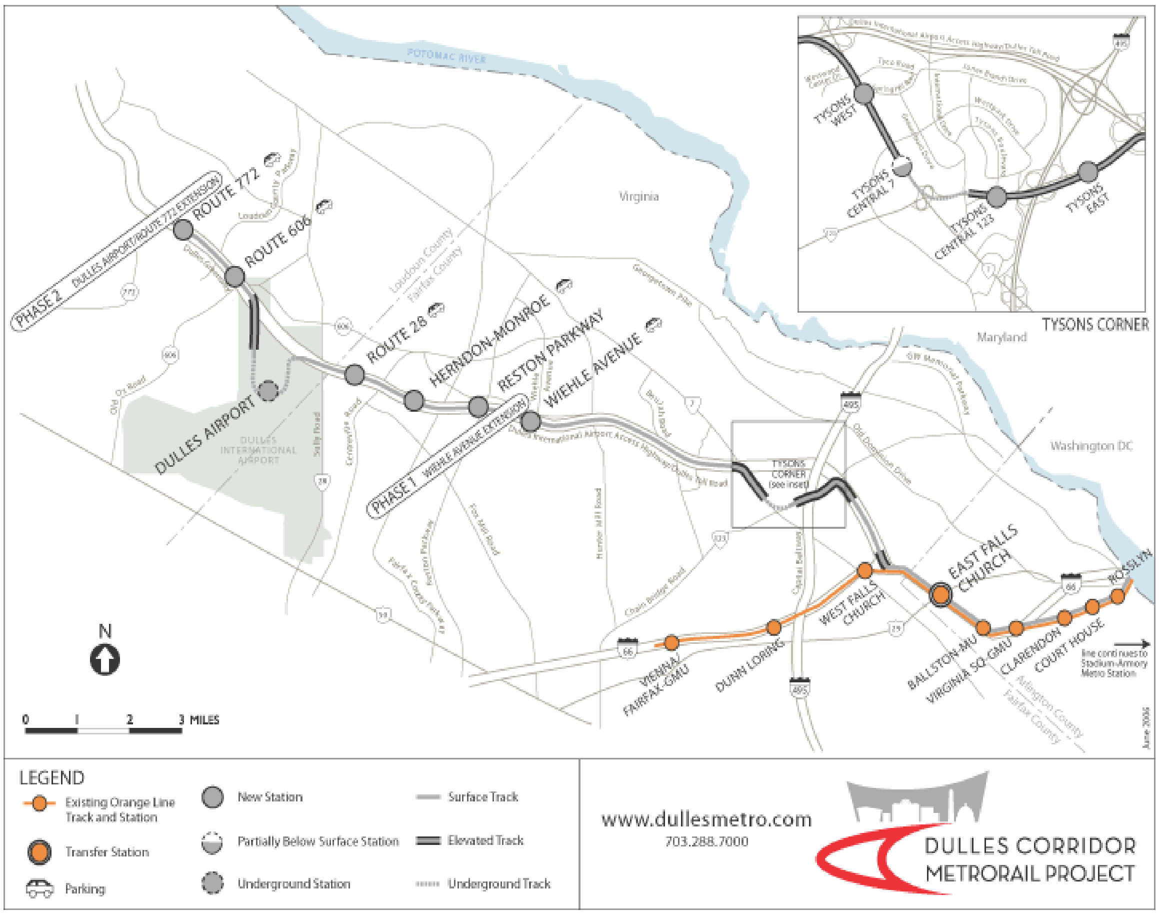
[5] FMOCs can evaluate the financial condition and financial capability of project sponsors and review and assess the sufficiency of their funding sources to meet future operating and maintenance costs in addition to the capital costs required to design and construct the project.

[6] Substantial completion occurs when project activities are accomplished and the project is ready for revenue operations. Revenue service occurs when a vehicle is available to the general public and there is an expectation of carrying passengers.

- The planned route for Phase 2 extends Metrorail another 11.4 miles from Reston to Washington Dulles International Airport and into Loudoun County. Preliminary engineering[7] was completed in March 2012, and the initial design-build contract for final design and construction is scheduled for award in May 2013.

Figure 1. Map of the Dulles Project, Phases 1 and 2



Source: Dulles Corridor Metrorail Project

Although the MOA was brokered in December 2011, it was not until July 2012 that all project funding partners agreed to commit funding to Phase 2. In March 2012, MWAA delivered preliminary engineering materials to Fairfax and Loudoun Counties, triggering a review period for the counties to decide whether they wanted to continue as project partners. The cost was estimated at approximately $2.7 billion, provided the counties secured financing for a Silver

[7] Preliminary engineering provides a basis to manage project implementation risks. It includes (1) identification of all environmental impacts, (2) design of all major or critical project elements, (3) completion of all cost estimating, (4) definition of procurement requirements and strategies to deliver project service, and (5) solidification of local funding commitments to the project.

Line station and five parking garages. On April 10, 2012, the Fairfax County Board of Supervisors reaffirmed its commitment to Phase 2, agreeing to fund 16.1 percent of the Phase 2 cost; the Loudoun County Board of Supervisors voted on July 3, 2012, to fund its 4.8 percent share of the Phase 2 cost.

Per the MOA, MWAA will assume a greater share of Phase 2 project costs than the counties. MWAA can potentially finance nearly two-thirds of the project with revenue from the Dulles Toll Road, which it operates following a 2006 transfer agreement from the Virginia State Department of Transportation.

Our two prior reviews of the Dulles project have identified both project risks and oversight concerns. In our July 2007 baseline report, we advised FTA to closely monitor MWAA's project management.[8] In our July 2012 report on FTA Phase 1 oversight, we found that more action was required to mitigate potential cost increases and depletion of the budget contingency.[9] Exhibit A provides additional details about these report findings.

DOT HAS NOT FULLY DEVELOPED AN OVERSIGHT STRATEGY BECAUSE LOCAL FUNDING PARTNERS HAVE YET TO RECEIVE APPROVAL OF FEDERAL CREDIT ASSISTANCE

As of September 2012, DOT has not fully developed an oversight strategy for Phase 2 because the local funding partners have not received approval of Federal credit assistance through TIFIA. Until DOT finalizes its oversight strategy upon approval of Federal credit assistance, we cannot determine if its oversight of Phase 2 will be sufficient. However, our prior audits on major transportation projects point to opportunities for DOT to leverage existing oversight mechanisms to address key risk areas for Phase 2.

FTA Has Not Yet Finalized a Formal Oversight Strategy

Although the MOA assigns FTA responsibility for providing Federal oversight of Phase 2 of the Dulles project, FTA will not finalize a formal oversight strategy until there is clear support from all parties as to project structure and financing, including any Federal role. However, FTA has taken some oversight actions to date. For example, FTA has requested a Phase 2 PMP from MWAA. In addition, FTA reported in 2012 that it assigned its project management oversight contractor

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[8] *Baseline Report on Major Project Monitoring of the Dulles Corridor Metrorail Project* (OIG Report Number MH-2007-060), July 27, 2007. OIG reports are available on our Web site: www.oig.dot.gov.

[9] *Actions Needed to Improve FTA's Oversight of the Dulles Corridor Metrorail Project's Phase 1* (OIG Report Number MH-2012-155), July 26, 2012.

(PMOC)[10] from Phase 1 to review the preliminary cost and schedule information for Phase 2. On March 1, 2013, FTA formally authorized the PMOC's involvement in Phase 2 oversight by issuing a task order to the PMOC.

Unlike Phase 2, Phase 1 is subject to specific oversight requirements because it relies on New Starts grant funding from FTA. For example, FTA must approve the advancement of a New Starts project to the next stage, as it proceeds from preliminary engineering through final design to the award of a full funding agreement and construction. During this process, FTA obtains input on a project's readiness for advancement from PMOC reviews, which can include evaluations of the project's cost, schedule, and PMP. Since New Starts funding is not planned for Phase 2, FTA informed us it has discussed providing a different level of Federal oversight for Phase 2 than provided in Phase 1. However, FTA has emphasized that its oversight of Phase 2 will be equally robust.

Phase 2 Local Funding Partners Have Yet To Secure TIFIA Credit Assistance, Which Will Impact the Development of DOT's Oversight Approach

Federal credit assistance for Phase 2 has not been finalized because MWAA and Fairfax and Loudoun Counties have not yet submitted formal applications for TIFIA credit assistance, a Federal credit program that the MOA committed to the local funding partners in December 2011. Specifically, the MOA states that DOT will provide Federal credit assistance to MWAA and Fairfax and Loudoun Counties for project components that meet TIFIA statutory and regulatory requirements.

The local funding partners have taken some initial steps to request TIFIA credit assistance. For example, on behalf of all of local funding partners, MWAA submitted a Letter of Interest in late December 2011 for a total of $1.95 billion in credit assistance, the initial step in the TIFIA application process.[11] In response to the Letter of Interest, DOT invited the local funding partners to submit application packages, the next step in the process.

However, local funding partners have not completed the remaining steps required to secure TIFIA credit assistance. Before submitting an application for TIFIA credit assistance, each applicant is required to provide DOT with written acknowledgment that it agrees to the financing structure proposed in each TIFIA

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[10] FTA uses PMOCs to oversee projects in accordance with FTA guidance and report regularly on needed corrective actions. PMOCs evaluate a grantee's cost estimates and technical and management capacity and later monitor implementation.

[11] In December 2011, the local funding partners pursued total TIFIA credit assistance in an aggregate amount up to the maximum of 33 percent of eligible project cost. Total eligible project cost at that date was $5.894 billion, which includes Phase 1 and Phase 2 of the Dulles Project.

application submitted. As of September 2012, MWAA and Fairfax and Loudoun Counties had not agreed to each others' proposed financing structures.

Upon DOT approval of TIFIA assistance, FTA would play an important role in overseeing the use of Federal credit assistance. According to the TIFIA JPO, it relies heavily on DOT Operating Administrations' institutional knowledge and expertise for oversight. Specifically, an Operating Administration takes the lead in managing project delivery risks. In the case of Phase 2, the TIFIA JPO would coordinate with FTA to establish an oversight team and help develop a Project Oversight and Monitoring Plan. This plan, which serves as a management tool for each project, would be tailored based on the project's risk profile and the Operating Administration's oversight requirements. However, FTA has not fully developed project oversight criteria since there are no obligated Federal dollars to oversee until project stakeholders are approved for TIFIA assistance.

DOT Has Opportunities To Consider Addressing Phase 2 Risks By Leveraging Existing Oversight Mechanisms

Because DOT will not finalize its oversight approach until project stakeholders are approved for Federal credit assistance, we cannot determine whether its oversight role will be sufficient to address concerns about cost, schedule, and financing issues. However, our prior audit work on other projects points to risk areas that DOT could consider as it finalizes its oversight strategy upon approval of Federal credit assistance. While we recognize that DOT intends to tailor its oversight approach for Phase 2 since there are no plans for the project to receive Federal grant funds, it could leverage existing oversight mechanisms to identify cost and schedule, project financing, and stakeholder agreement risks and ensure that MWAA develops mitigation strategies to address these risks.

DOT could help mitigate cost increases and schedule delays by encouraging the local funding partners to promptly address PMOC concerns and reach definitive agreement on project documents. Our prior work has shown that PMOCs can provide early warnings of cost and schedule problems, but it is important that FTA encourage grantees to take action before these risks affect project cost or schedule. For example, in our review of FTA's oversight of the $4.55 billion in Federal funds provided to the Lower Manhattan Recovery Projects, we found that grantees had not taken sufficient action to address major risks that FTA's PMOCs had identified in the prior 2 years, which increased the potential for more cost increases and schedule delays.[12] Should the PMOC identify Phase 2 cost and schedule risks, DOT may need to work with local funding partners to ensure that risk mitigation actions are implemented timely.

[12] *Baseline Report on the Lower Manhattan Recovery Projects* (OIG Report Number MH-2008-086), September 26, 2008.

The importance of obtaining definitive agreement on cost and schedule documents is illustrated by our May 2010 audit of FTA's oversight of the Access to the Region's Core (ARC) Project. In that audit, we determined that FTA did not have finalized project documents from New Jersey Transit (NJT)—such as the PMP, various sub-plans, and the master schedule—which described strategies for mitigating identified risks.[13] The PMP was of particular importance because it serves as a roadmap for project implementation. The lack of finalized documents could have hindered FTA's ability to oversee NJT's risk mitigation actions. FTA's request for a Phase 2 PMP is a valid initial step in mitigating project cost and schedule risks. However, FTA may also want to work proactively with MWAA to ensure the PMP is completed timely.

DOT could mitigate project financing risks by employing an FMOC. FMOCs can provide valuable input by reviewing capital and operating finance plans; analyzing budgets; determining if there are significant, unforeseen liabilities; and critiquing the reasonableness of financing assumptions. For example, we reported in 2002 that FTA's FMOC raised potential concerns regarding projected operating reserves for the Hiawatha Corridor Light Rail Transit Project, which prompted the grantee to take actions such as implementing a fare increase earlier than planned and providing a written commitment to aggressively monitor costs and revenues. In addition, an FMOC validated the sufficiency of project funding for the initial segment of the Seattle Central link Project after we raised concerns.[14]

While the MOA does not identify project financing in the scope of Federal oversight, Phase 2 project financing by MWAA and Fairfax and Loudoun Counties has generated significant public and stakeholder concern, especially as MWAA may finance nearly two-thirds of Phase 2 costs with revenue from the Dulles Toll Road. Effective use of an FMOC during the early stages of Phase 2 project development could support MWAA in identifying and mitigating project financing risks, determining the sufficiency of capital funding sources, and providing assurance to project stakeholders that sufficient funds are available to complete the project.

DOT could be proactive in addressing stakeholder agreements and responsibilities up front. DOT faces a significant challenge in ensuring that project stakeholders remain committed to the MOA and agree on specific project issues, such as the cost estimate, scheduled completion date, final design and alignment, and financing. One key area the MOA does not specifically address is the responsibility among project stakeholders for cost overruns, which could

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[13] *Actions Needed to Mitigate Risks Associated with the Access to the Region's Core Project* (OIG Report Number MH-2010-066), May 17, 2010.

[14] *Audit of the Seattle Central Link Light Rail Project's Initial Segment* (OIG Report Number MH-2003-046), July 7, 2003.

create disagreement if the project costs were to increase. In our prior work, we have seen insufficient coordination among key stakeholders, which impeded the progress of a project. For instance, based upon our review of the ARC project, we reported that the long-term availability of local funding was uncertain, and the project partners had not reached an agreement for cost overrun responsibility. Several months later, the Governor of New Jersey cited fiscal concerns and cancelled the ARC project before a final agreement for cost overruns could be reached. The July 2012 appointment of a DOT Accountability Officer to MWAA presents an opportunity for DOT to assist MWAA in overseeing stakeholder coordination and ensuring that all parties carry out the terms of the MOA.

ASSUMPTIONS USED IN MWAA'S ESTIMATION OF TOLL ROAD REVENUES APPEAR REASONABLE

Our assessment of Dulles Toll Road revenue estimates suggests that the assumptions MWAA used to arrive at the estimates are generally reasonable. Because MWAA's Phase 2 funding depends heavily on the revenue the toll road can produce and sustain, sound revenue forecasts are critical to the success of MWAA's funding plans. Our review focused on the inputs and assumptions used in forecasting toll receipts in a March 2012 report commissioned by MWAA.[15] MWAA's population and employment forecasts and gasoline price assumptions appear reasonable. While MWAA's method for estimating values of time (VOT) does not follow typical practice, the resulting assumptions also appear reasonable.

Population and Employment Forecasts and Fuel Price Projections Match Those Produced by Reputable Sources

Based on our review, the assumptions MWAA made in forecasting population and employment and in projecting fuel costs appear reasonable. Population and employment forecasts help estimate the number of travelers who will use the toll road, and higher population and employment forecasts support higher toll revenue projections. MWAA's baseline population and employment inputs match those reported in the most recent U.S. Census. In addition, MWAA appears to have applied a relatively conservative growth rate to this baseline to forecast future population and employment. Specifically, the growth rates applied to the baselines do not differ substantially from those published by the Metropolitan Washington Council of Governments. Previous estimates of population and employment growth rates for counties along the Dulles Toll Road have proven to be

[15] CDM Smith (under contract to MWAA), *The Comprehensive Traffic and Revenue Study 2012 Update Working Draft*, March 2012.

conservative, and the growth rates used in the analysis are lower for Dulles Toll Road counties than those produced by other sources.[16]

Fuel price projections also factor into forecasts of toll road use, as the number of travelers typically decreases when the costs of driving rise. An underestimation of fuel costs could result in an overestimation of the number of potential toll road travelers. MWAA's contractor assumed that gasoline prices would start at $3.59 a gallon in 2011 and grow at an assumed inflation rate of 2.5 percent per year. We consider these projections to be reasonable because they are similar to those used in the U.S. Energy Information Administration's Early 2012 Annual Energy Outlook Reference Case. The U.S. Energy Information Administration forecasts fuel prices under many different scenarios, and its Annual Energy Outlook Reference Case is in the center of these—that is, it is not the most conservative or the most radical prediction of fuel cost growth. The Reference Case presents a "business-as-usual estimate, given known technology, technological, market, and demographic trends."[17]

MWAA's Estimates for Travelers' Value of Time Were Derived Atypically but Appear Reasonable

Overall, the VOT estimates used in MWAA's analysis appear reasonable. However, some aspects of the methods used to develop them may affect their value. Travelers' VOT estimates are one of the most significant components of toll road revenue assumptions. VOT estimates help predict whether increased tolls will translate into increased revenue. The higher a traveler's VOT, the more the traveler is willing to pay to save time, and, therefore, the higher the toll the traveler would accept before seeking a more time-consuming alternative route to the toll road. The importance of VOT estimates is supported by sensitivity analyses conducted in a July 2009 Dulles Toll Road study, which determined that a 25-percent decrease in VOT estimates would have caused a 17-percent reduction in that study's annual toll revenue projections.[18] Overall, MWAA's VOT estimates are similar to the VOT estimates derived in an earlier Virginia DOT study, which strengthens their credibility.[19] However, two factors in MWAA's subcontractor's methodology raise questions about whether the most recent estimates represent a valid confirmation of the earlier study's results.

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[16] For example, both Woods & Poole and the Center for Regional Analysis at George Mason University predict higher growth rates for these counties.

[17] U.S. Energy Information Administration, *Annual Energy Outlook 2011*, March 2011.

[18] Wilbur Smith Associates (under contract to MWAA), *Comprehensive Traffic and Revenue Study Final Report*, July 2009. The 2012 study represents an update of this analysis and used the VOTs estimated in 2009.

[19] Wilbur Smith Associates (under contract to the Virginia Department of Transportation), *Dulles Toll Road Rate Adjustment Review*, February 8, 2005. VOT estimates in this report were prepared using a more standard methodology by a different subcontractor than prepared the VOT estimates for MWAA.

First, when calculating VOT estimates for the Dulles Toll Road, MWAA's subcontractor included a factor capturing travelers' protest sentiments against tolls and toll increases—a factor not typically considered in VOT estimation. In doing so, the subcontractor effectively siphoned off the impact of travelers who might not be willing to pay as much to use the toll road from the estimates of how much travelers would be willing to pay for time savings. This inflated the VOT estimates. According to the subcontractor, this factor was included in part to prevent the VOT estimates from being too low; however, the subcontractor could not indicate the magnitude of its impact.

Second, MWAA's VOT estimation did not consider travelers' preferences for public transit—a factor typically included in other VOT estimates in the industry. According to MWAA's subcontractor, this factor was excluded due to problems in the estimation process.[20] It is unclear what impact excluding this factor has had on MWAA's VOT estimates. However, the resulting VOT estimates are in line with those produced in earlier work conducted using a more standard methodology, leading us to conclude that they are reasonable.

CONCLUSION

By signing the December 2011 MOA, DOT recognized that it has a vested interest in ensuring that MWAA completes construction for both phases of the Dulles project and that the Metrorail system eventually reaches the federally owned Washington Dulles International Airport. FTA will play a key role in overseeing Phase 2, as it already does on Phase 1. While DOT's approach to overseeing Phase 2 will differ from Phase 1, it could leverage several of its existing oversight mechanisms to ensure that MWAA addresses cost, schedule, financing, and other significant risks that could impact the successful completion of Phase 2. Upon approval of Federal credit assistance, DOT could (1) work with the PMOC in a sustained capacity to proactively assess project cost and schedule risks, (2) work with project stakeholders to ensure timely risk mitigation actions, (3) ensure that all project documents are completed in a timely manner including the PMP, (4) enlist an FMOC to evaluate project financial risks, and (5) utilize the DOT Accountability Officer to address areas of potential stakeholder disagreements and ensure that all parties remain committed to the MOA's terms.

[20] The subcontractor stated that survey data on travelers' transportation preferences were unable to support the inclusion of a modal constant for transit preference in the VOT estimation process and also produce usable results.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

We provided FTA with a draft copy of this report on February 4, 2013, and received its response on March 13, 2013. FTA's response is included in its entirety in the appendix to this report. In its response, FTA reiterated its commitment to vigilant oversight and stated that it is working with MWAA to develop key oversight documents. We have not reviewed these oversight documents, which are currently in draft form.

ACTIONS REQUIRED

We made no recommendations in this report that require agency actions. However, the report presents several lessons learned from our past audits that could be instructive as DOT finalizes its oversight strategy.

We appreciate the courtesies and cooperation of DOT representatives during this audit. If you have any questions concerning this report, please call me at (202) 366–5630 or Anthony Zakel, Program Director, at (202) 366–0202.

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cc: DOT Audit Liaison (M-1)
FTA Audit Liaison (TBP-30)
FHWA Audit Liaison (HAIM-10)

EXHIBIT A. SCOPE AND METHODOLOGY AND RELATED WORK

We conducted this audit from March 2012 through February 2013, in accordance with generally accepted Government auditing standards. 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.

To address our first objective, we reviewed applicable laws, regulations, procedures, and guidance to identify criteria against which to evaluate FTA's oversight of Phase 2; and collected information on potential TIFIA evaluation and oversight mechanisms. We interviewed OST, FHWA, FTA, and MWAA officials to discuss the genesis of the Federal oversight role in the MOA and how it might develop as the project progresses. Our interviews also included the project's intended use of the TIFIA loan program, the only Federal assistance now proposed for the project. We reviewed the status and progress of the TIFIA application process, DOT project oversight requirements, and the process for disbursing TIFIA funds for eligible costs.

To address the second objective, we reviewed Dulles Toll Road traffic and revenue studies published in 2005, 2009, and 2012;[21] and documentation on the different versions of the Metropolitan Washington Council of Governments' travel demand model used in those studies. For comparison purposes, we reviewed multiple sources' population and employment forecasts for counties near the Dulles Toll Road, and Energy Information Administration gasoline price forecasts. We also interviewed and requested information from CDM Smith, the contractor who produced the Dulles Toll Road traffic and revenue studies, as well as University of Leeds Professor Mark Wardman, the subcontractor responsible for producing the value of time estimates used in the 2009 and 2012 studies. Our work on toll road revenue assumptions was based on a March 8, 2012, request from Representative Frank R. Wolf.

[21] Wilbur Smith Associates (under contract to the Virginia Department of Transportation), *Dulles Toll Road Rate Adjustment Review*, February 8, 2005; Wilbur Smith Associates (under contract to MWAA), *Comprehensive Traffic and Revenue Study Final Report*, July 2009; and CDM Smith (under contract to MWAA), *The Comprehensive Traffic and Revenue Study 2012 Update Working Draft*, March, 2012.

Related Work

On July 27, 2007, we issued report MH-2007-060, *Baseline Report on Major Project Monitoring of the Dulles Corridor Metrorail Project*, when FTA was considering whether to fund Phase 1 of the Dulles project. In this report, we identified key risk indicators, including MWAA's lack of experience in transit construction and complications related to the number of parties involved in the project, and emphasized the need for vigilant FTA oversight. By May 2008, FTA took sufficient actions to close all of our recommendations.

In October 2009, we followed up on the Dulles project with a management advisory requesting that FTA review the PMOC's performance, develop a plan outlining how sufficient testing of existing pier foundations would take place, and specify oversight enhancements. FTA responded in January 2010 that (1) the PMOC had requisite expertise; (2) it would require MWAA to develop a comprehensive testing plan involving all 11 foundations; (3) it would employ a full-time, on-site PMOC representative; and (4) MWAA's testing regime was adequate, subject to the fulfillment of certain conditions. Two key conditions were that MWAA would (1) hire an inspections contractor to oversee testing and (2) audit the design developed by its design-build contractor to ensure the testing results were incorporated into the final design documents. MWAA hired CTI Consultants to oversee testing and assist in MWAA's quality assurance review.

On July 26, 2012, we issued report MH-2012-155, *Actions Needed to Improve FTA's Oversight of the Dulles Corridor Metrorail Project's Phase 1*. We found that FTA implemented an oversight process for ensuring that MWAA tested the 30-year-old pier foundations. However, when we issued our draft report in February 2012, FTA had yet to take sufficient follow-up actions to resolve all the issues that emerged from the test results. Our review of the testing reports identified areas where FTA's initial review and MWAA's quality assurance review overlooked omissions in the testing and errors in the test results. While MWAA and its design-build contractor took actions to resolve these and other deficiencies we brought to their attention in 2011, our later review of testing documents found that FTA still had not resolved two key issues: (1) FTA did not fully address issues we identified with the foundations' ability to withstand lateral loads until June 2012, and (2) the testing process had not yet provided assurance that the structures will meet the service life specified in FTA guidance. Furthermore, as of February 2012, FTA had not taken sufficient action to mitigate potential cost increases or depletion of the budget contingency. In its response to our report, FTA agreed to direct additional testing to further ensure the 50-year service life for the structures and to take acceptable actions to address the key project issues we raised.

EXHIBIT B. ORGANIZATIONS VISITED OR CONTACTED

Office of the Secretary of Transportation

Federal Transit Administration

Federal Highway Administration

Metropolitan Washington Airports Authority

CDM Smith

University of Leeds - West Yorkshire, England

EXHIBIT C. MAJOR CONTRIBUTORS TO THIS REPORT

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APPENDIX. AGENCY COMMENTS

Memorandum

U.S. Department of Transportation

Federal Transit Administration

Subject: **INFORMATION:** Management Response to Office of Inspector General Draft Report on Oversight of Dulles Corridor Metrorail Project Phase 2

Date: March 5, 2013

From: Peter M. Rogoff
Administrator

Reply to Attn. of: Dominique Paukowits
(202) 366-5152

To: Calvin L. Scovel III
Inspector General

The Office of Inspector General (OIG) offers a snapshot of issues relating to Phase 2 of the Dulles project in its draft report, which we seek to supplement with the following information that brings matters relating to FTA oversight up to date. FTA has been providing effective and robust oversight of the Dulles Phase 2 project at an unprecedented level for a project not receiving FTA funding.

FTA Providing Proactive Oversight of Dulles Phase 2 Project

FTA committed to provide oversight of the project cost and schedule, and the Metropolitan Washington Airport Authority's (MWAA) implementation of its project management responsibilities as part of the December 2011 Dulles Corridor Metrorail Project Phase 2 Coordinating Committee Memorandum of Agreement (MOA). Subsequently the FTA Administrator and MWAA's Chief Executive Officer met to discuss roles and responsibilities related to oversight under the MOA.

During the project development phase, FTA has been reviewing the cost, scope and schedule based on MWAA's preliminary engineering plans and project cost estimates. Since the decision by the local funding partners to finance this project on July 3, 2012, FTA has had regular meetings with MWAA on project execution and the design/build procurement.

On November 27, 2012, FTA transmitted to MWAA an oversight plan for the project addressing project quality, schedule and cost. FTA's oversight plan sets out a process to monitor adherence to the project scope, schedule and budget through the final design and construction phases of the project. The plan specifies that FTA will provide oversight of compliance with Federal requirements including the environmental process and requirements specific to any Transportation Infrastructure Finance and Innovation Act (TIFIA) loan. Additionally, FTA will provide oversight of the project management plan, the safety and security management plan, and the risk and the contingency management plan.

Since FTA's oversight plan was issued, MWAA and FTA have continued to move forward. MWAA submitted its draft Project Management Plan (PMP) to FTA on December 7, 2012, its draft Quality Program Plan on December 12, 2012, and its Draft Risk and Contingency Management Plan on December 18, 2012. These documents have been reviewed by FTA and comments were provided to MWAA on January 22, 2013. In addition, meetings are scheduled in March with MWAA to further discuss the plans.

As the project proceeds, FTA will use the PMP as the basis against which to consider MWAA's project implementation progress and management. Although our oversight efforts are underway, specific elements of the oversight strategy may change based on funding mechanisms, assignment of responsibilities among participating entities, and the continued evolution of the project. FTA intends to provide vigilant oversight throughout the project.

We appreciate this opportunity to offer additional perspective on the OIG draft report. We also appreciate the courtesies of the OIG staff in conducting this review. Please contact Dominique Paukowits (202) 366-5152 with any questions or requests for additional assistance.