

**BASELINE REPORT ON
MAJOR PROJECT MONITORING OF THE
DULLES CORRIDOR METRORAIL
PROJECT**

Federal Transit Administration

Report Number: MH-2007-060

Date Issued: July 27, 2007




Memorandum

U.S. Department of
Transportation

Office of the Secretary
of Transportation
Office of Inspector General

Subject: **ACTION:** Baseline Report on the
Dulles Corridor Metrorail Project
Federal Transit Administration
Report Number: MH-2007-060

Date: July 27, 2007

From: Rebecca Anne Batts 
Acting Assistant Inspector General
for Surface and Maritime Programs

Reply to
Attn. of: JA-40

To: Federal Transit Administrator

We have completed our initial major project monitoring of the Dulles Corridor Metrorail Project in the Washington, D.C., metropolitan area. Our objectives were to (1) assess the status of the Dulles Project, including costs, funding, and schedule and (2) identify any potential risks that may adversely impact the project's completion. This report provides the results of our initial monitoring effort, alerts you to potential risk areas for the project, and underscores the need for the Federal Transit Administration (FTA) to provide vigilant oversight. The Department of Transportation (DOT) has a vested interest in the Dulles Project. Of particular interest to DOT is the large amount of Federal funding that could eventually be committed to the project and DOT's long-term lease agreement with the Metropolitan Washington Airports Authority (MWAA) to manage Dulles International Airport, Ronald Reagan Washington National Airport, and the surrounding Federal lands. Further, the Commonwealth of Virginia is planning to turn over project control to MWAA this year.

Because the project is at a critical decision point in FTA's New Starts process, now is the time to fully evaluate all potential risks and develop mitigation strategies. The New Starts process stands out among Federal transportation grant programs as an example of a systematic approach to evaluating projects for funding. The New Starts program relies on full funding grant agreements, which are long-term funding commitments that help meet the financial requirements of

large transit projects.¹ The Dulles Project sponsors have requested \$900 million in New Starts funding, which is under consideration by FTA.

Segmented into two phases, the main focus of our report is Phase I of the Dulles Project, because only this phase is being assessed for an FTA New Starts grant and few details are available regarding Phase II. Phase I would expand Metrorail to Reston, Virginia. Continuation of the Metrorail to Dulles International Airport would occur in Phase II. We conducted our work from June 2006 to July 2007 in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States. We will continue to monitor this project and report on its progress as events warrant. See Exhibit A for a fact sheet summarizing the status of the project. Our scope and methodology are discussed in Exhibit B.

BACKGROUND

The Dulles Corridor Metrorail Project proposes a 23.1-mile extension of Metrorail in the Commonwealth of Virginia, including 11 additional Metrorail stations. It would also add a new Metrorail line—the silver line—to the existing mass transit system operated by the Washington Metropolitan Area Transit Authority (WMATA). The Dulles Metrorail extension is almost entirely above ground. The project is segmented into two distinct phases, which are essentially separate transit projects. See Exhibit C for a map of the two phases.

- Phase I is the first 11.6-mile segment that would run from near the existing West Falls Church Metrorail Station and through the Tysons Corner area to Wiehle Avenue in Reston, Virginia. As currently envisioned, Phase I would run largely above ground with a short tunnel section under the Route 7 and Route 123 interchange.
- Phase II would continue Metrorail service through the Dulles International Airport to Loudoun County, Virginia.

Over the past year, the project has generated a great deal of attention and controversy. Most prominently, there have been debates over whether or not to proceed with the project's current design, which runs almost entirely above ground, or to substitute this design with a large tunnel through the Tysons Corner, Virginia, area. In May 2006, the Virginia Secretary of Transportation appointed a panel to review this issue under the auspices of the American Society of Civil Engineers. Although the panel reported that the tunnel was feasible and

¹ The purpose of the New Starts program is to provide Federal financial support for locally planned and operated public transit. Federal support is in the form of competitive, discretionary capital investment grants in local fixed guideway transit projects, such as commuter rail, light rail, heavy rail, bus rapid transit, trolleys, and ferries.

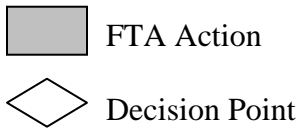
potentially cost-effective, the panel's report had qualifications and uncertainties. In September 2006, the Governor decided to retain the original design of the project, and project officials have proceeded accordingly since then. However, there is still strong pressure from the public, local government officials, and citizen groups to build a tunnel.

New Starts projects like Dulles must emerge from a regional, multimodal transportation planning process. The systems planning process begins with the identification of the transportation needs of a region. Federal financial support for the initial planning process is derived from various programs within the Federal Highway Administration and FTA. Once this planning has been done, the next step is the alternatives analysis, which evaluates corridor-level options, such as rail lines and highway expansions. This stage results in the selection of what is known as the locally preferred alternative—which then becomes the New Starts project FTA evaluates for funding. The project sponsor then submits to FTA a request for entry into preliminary engineering—where FTA begins its evaluation of the project, and approves it for entry into the New Starts funding pipeline.

From preliminary engineering the project may proceed through final design, award of a full funding agreement, and ultimately construction. At each of these stages, FTA evaluates the project for advancement into the next stage. Annual funding recommendations are made for projects that are in final design or construction as part of FTA's annual budget submission. However, a recommendation for funding does not guarantee that a full funding grant agreement will be executed. As required by law, FTA cannot execute a full funding grant agreement until it has given Congress 60 days to review the grant agreement and accompanying materials.² As of July 2007, *the Dulles Project is being considered for approval for entry into final design*. Figure 1 depicts the planning and project development process.

² OIG Testimony CC-2004-021, "The Rating and Evaluation of New Starts Transit Systems," April 28, 2004. OIG testimonies and reports can be accessed at our website: www.oig.dot.gov.

FIGURE 1. FTA NEW STARTS PLANNING AND PROJECT DEVELOPMENT PROCESS



Legend:

- FFGA – Full Funding Grant Agreement
- FONSI – Finding of No Significant Impact
- LPA – Locally Preferred Alternative
- MPO – Metropolitan Planning Organization
- NEPA – National Environmental Policy Act
- PE – Preliminary Engineering
- PMP – Project Management Plan
- ROW – Right-of-Way

Corridor Planning

- FTA review of alternatives at beginning of alternatives analysis

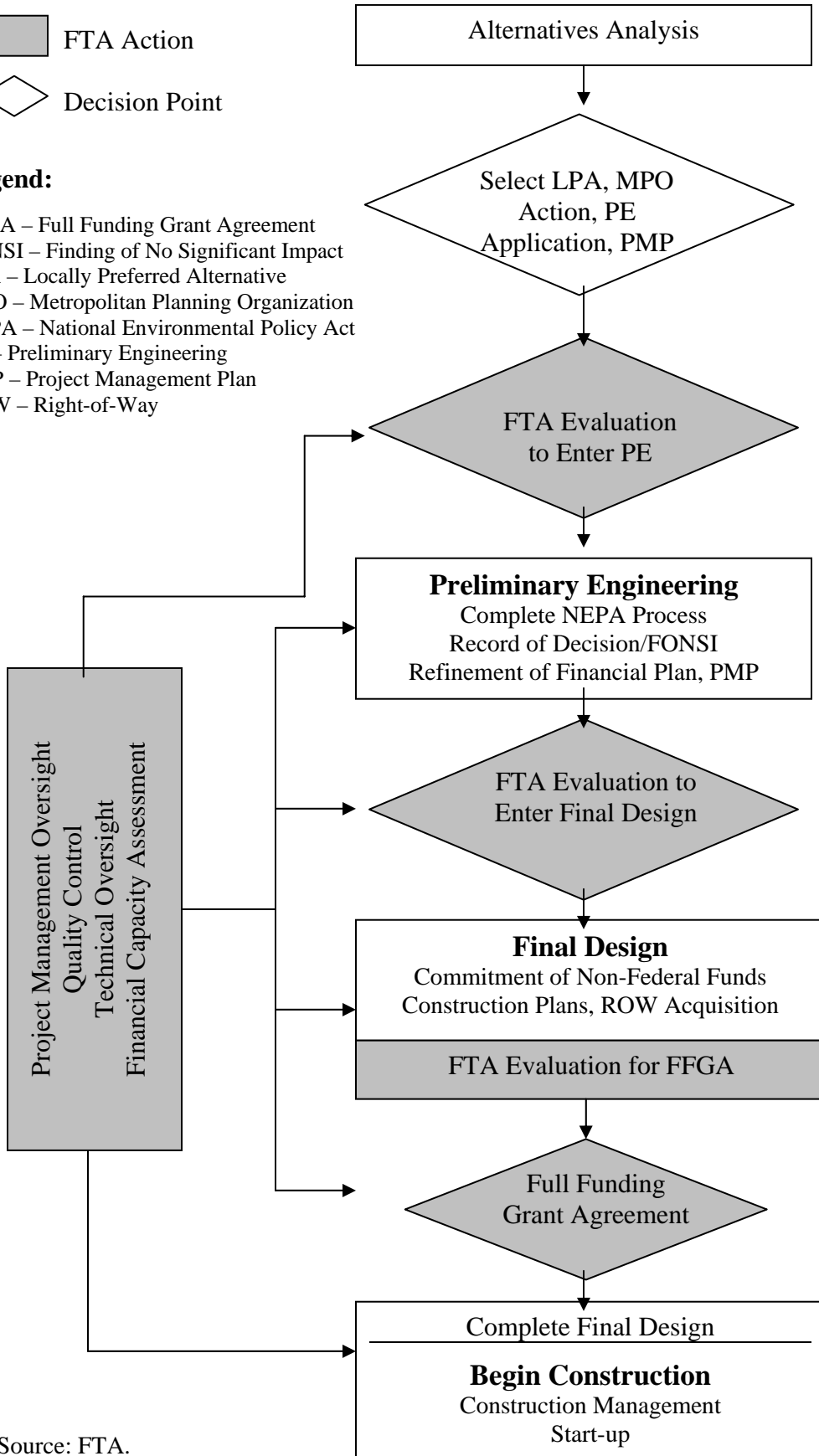
- FTA approves New Starts baseline alternative

Preliminary Engineering

Final Design

- Before and after data collection plan

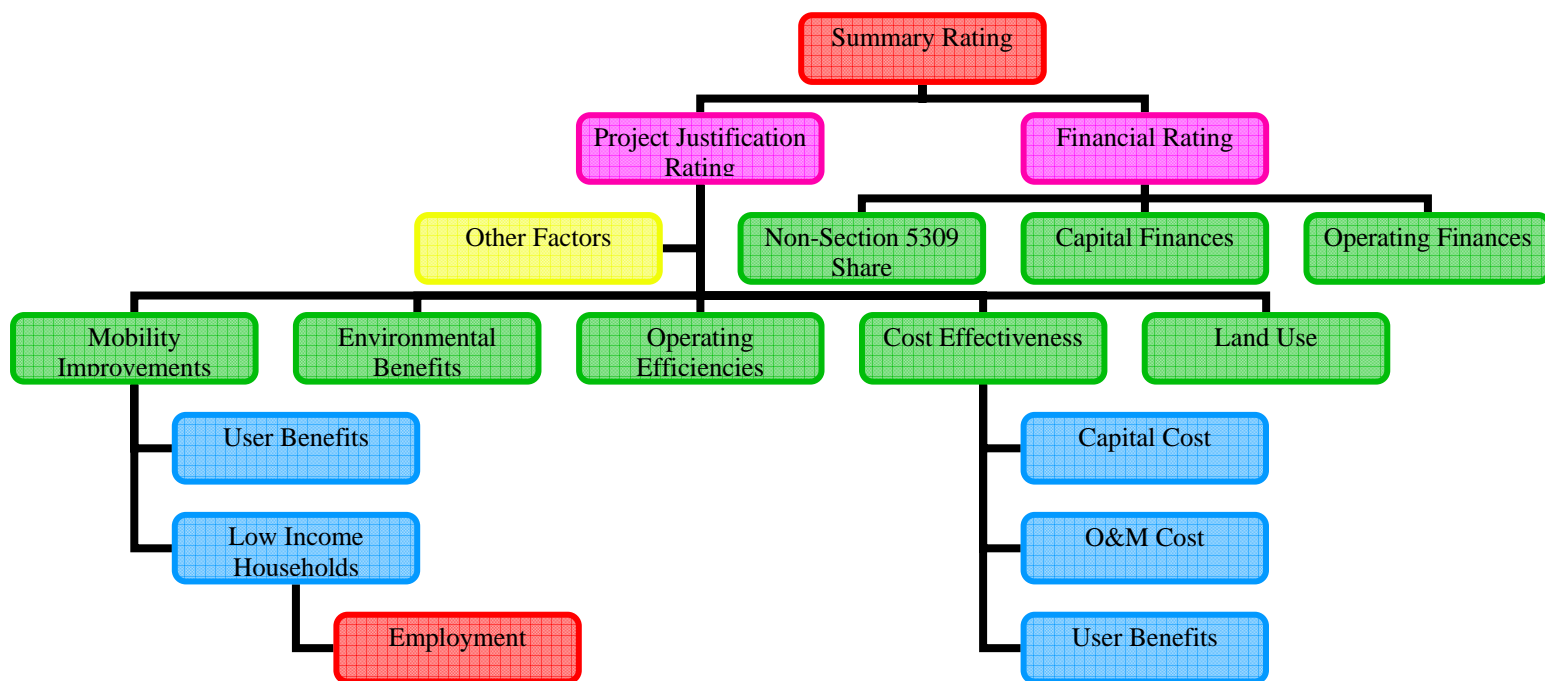
Construction



Source: FTA.

FTA evaluates proposed New Starts projects based on a set of financial and project justification ratings as shown in Figure 2. The ratings are measured on a scale of high, medium-high, medium, medium-low, or low. The individual ratings are combined and included in the summary financial and project justification ratings, based on weights assigned to each measure. By law, projects must receive an overall summary rating of at least medium to be recommended for funding. In addition, notwithstanding their overall project rating, FTA's policy is to generally not recommend for funding any project that does not receive a rating of at least medium for cost-effectiveness. Although Congress, in the 2005 Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), exempted the Dulles Project from this cost-effectiveness policy, the Dulles Project must still achieve a cost-effectiveness rating of at least medium-low to receive an overall rating of medium. *In its fiscal year 2008 New Starts Report to Congress, FTA assigned preliminary ratings to Dulles of medium-low for cost-effectiveness and a summary rating of medium.* Every year, FTA publishes this report, which includes preliminary ratings for pending projects. As of July 2007, FTA was assessing the cost-effectiveness of the project, among other things, to determine whether the project will be approved to enter final design.

Figure 2. The New Starts Evaluation and Rating Framework



Source: FTA.

RESULTS

FTA will be challenged by overseeing the complex Dulles Corridor Metrorail Project, which has a large potential Federal investment. Approximately \$1.5 billion of Federal monies could be committed to Phase I of the project—a \$900 million New Starts grant, a \$375 million DOT Transportation Infrastructure Finance and Innovation Act (TIFIA) loan, plus a \$200 million line of credit to be used if needed. We have identified some risk indicators that merit FTA’s close monitoring in light of this potentially large Federal investment. In some cases, we have observed similar risk indicators on other high-risk, federally-funded transportation projects as discussed below. We make recommendations at the end of this report.

The Dulles Project Has Already Experienced Significant Cost Growth and Schedule Slippages, Underscoring the Need for a Rigorous Assessment of the Project

Even at this early stage, Phase I of the Dulles Project has experienced substantial growth in estimated costs of approximately \$1 billion since 2004. The project has also had schedule slippages of about 4 years (as shown in Table 1). In past reviews of major projects, rapid cost growth and schedule slippages so early in the project were clear signs of risk. The reliability of the current cost estimate is unknown. FTA’s project management oversight consultant has identified problems with previous cost estimates.³

Table 1. Phase I History of Cost Increases and Schedule Delays

Date of Estimate	Estimated Project Cost	Estimated Project Completion Date
December 2004	\$1.52 billion	2009
April 2006	\$2.065 billion	2011
January 2007	\$2.31 billion	2012
March 2007	\$2.4 - 2.7 billion	2013

Current Cost Estimate. The current cost estimate of \$2.4 billion to \$2.7 billion reflects the results from design-build negotiations with Dulles Transit Partners, which were completed on March 30, 2007. This contract with Dulles Transit Partners has a firm-fixed price component of \$1.1 billion plus a \$500 million allowance for Dulles Transit Partners to engage subcontractors through competitive bidding. The rest of the cost estimate—referred to as agency costs—is not fixed or part of the contract with Dulles Transit Partners. The cost estimate was presented by project sponsors as a range because there is uncertainty as to the amount of these agency costs. Agency costs include project management, rail cars, start-up, and testing. According to

³ FTA has institutionalized the use of project management oversight consultants (PMOCs) and financial management oversight consultants (FMOCs) to oversee large transit projects and to report to its in-house staff on findings and needed corrective actions. They are third-party contractors who review FTA-funded projects in accordance with FTA guidance.

project sponsors, these agency costs could range from \$800 million to as much as \$1.1 billion. FTA and its project management oversight consultant are currently assessing the cost estimates as the project is being evaluated to enter final design. To its credit, FTA has recognized the risks and complexities of this project and has taken steps to rigorously assess the cost and schedule risks. FTA commissioned a review of the project's cost estimates in addition to the usual New Starts reviews. The firm conducting the review has not been involved in the project.

Cost-Effectiveness of the Project. Cost-effectiveness is one of several criteria that FTA uses to assess the merits of potential New Starts projects, such as Dulles, and make a decision as to whether to provide full funding. Earlier this year, the project was already near an unacceptable cost-effectiveness rating of low, when the cost estimate was much lower, \$2.065 billion. Now the cost estimate could be as much as \$2.7 billion. The project must achieve a final cost-effectiveness rating of at least medium-low or it will not be eligible for New Starts funding. Achieving this rating may prove difficult with the current cost increases.

Project's Design-Build Contract and Competition. One possible cause of the cost growth may be the timing of the contract award and the limited competition. Virginia entered into the first contractual arrangement with Dulles Transit Partners at the beginning of preliminary engineering in 2004, when there were still many unknowns about the project.

- Virginia awarded a contract for preliminary engineering with limited competition. In December 1998, Virginia received an unsolicited proposal and then solicited bids for the project, receiving only one additional proposal. Using its state public-private partnership authority, in June 2004, Virginia awarded a “comprehensive agreement” to Dulles Transit Partners, a joint venture of Bechtel Infrastructure, Inc. and Washington Group International. By the time the comprehensive agreement was executed, only the Dulles Transit Partners’ offer was available.
- The comprehensive agreement appears to allow advertising the eventual design-build contract (final design and construction) work to others, on a competitive basis, *only* upon failure to reach a final agreement with Dulles Transit Partners. Negotiations with Dulles Transit Partners were concluded on March 30, 2007, and Dulles Transit Partners was actually awarded the design-build contract in June 2007. Therefore, there was no competition for this stage of the project.
- The design-build contract with Dulles Transit Partners calls for an increase to the contract price for each day that the notice-to-proceed for commencement of final design is delayed past August 1, 2007. If this deadline is not met—and it appears unlikely that it will be—the effects on project costs could be significant.

FTA Needs Assurance That Sponsors Have Identified Sufficient Local Funding Sources, as Estimated Project Costs Have Increased Significantly

As estimated project costs for Phase I have increased by approximately \$1 billion since 2004, funding requirements have also grown. In particular, the potential Federal investment (grant, loan, and line of credit) is quite large. All funding sources are subject to review and approval by DOT, and approval of Federal funds is not necessarily a given. The remainder of the costs must be borne by the project sponsors.

Sources of Federal Investment. Because project officials have applied for funding to two DOT programs, the project will undergo two separate Federal financial reviews. It is imperative that these reviews be rigorous to ensure that project officials have demonstrated access to sufficient and reliable funds from other sources, such as Dulles Toll Road revenues, to complete the project if costs continue to escalate.

- The project's proposed New Starts grant, which would be fixed at \$900 million, would only cover about one-third of the new cost estimate for Phase I. Approval of New Starts requires FTA to review proposed sources of local capital funding. Additionally, FTA's financial management oversight consultant is scheduled to review the final financial plan before FTA allows the project to enter final design. As we have reported in the past, only the most promising New Starts projects should be selected for funding.⁴
- MWAA applied for a DOT TIFIA loan of \$375 million in January 2007, plus a \$200 million TIFIA line of credit to be used if needed. The loan would be secured by Dulles Toll Road revenues.⁵ The DOT TIFIA Credit Council must evaluate MWAA's application and must advise the Secretary of Transportation on whether or not to approve the application.⁶ An independent review by the TIFIA Credit Council is critical. FTA must closely coordinate with the TIFIA Credit Council and provide it with the information it needs to make a sound decision regarding the project's credit worthiness.

⁴ OIG Testimony CC-2004-021, "The Rating and Evaluation of New Starts Transit Systems," April 28, 2004.

⁵ TIFIA's implementation is the responsibility of the Secretary of Transportation. A seven-member TIFIA Credit Council, representing the budget, policy, counsel and intermodal offices within the Office of the Secretary and the Administrators of the FHWA, the FTA, and the Federal Railroad Administration, provides direction and makes recommendations to the Secretary regarding the selection of projects. Staff support is provided by the TIFIA Joint Program Office, which is administratively located in the FHWA.

⁶ TIFIA staff informed us that MWAA's application is permissible even though MWAA is not completely in charge of the project. However, they also told us the TIFIA loan would not be approved, nor funds released, until MWAA has been certified as the FTA grantee.

Sources of Local Funding. If approved, the Federal funding sources would only cover a portion of the project's costs. To get a sense of how MWAA intends to fund the project when it takes over, we reviewed a preliminary financial plan prepared in January 2007 (if the project is approved to enter final design, a formal financial plan would be prepared for FTA's review). Based on our review of this preliminary plan, we have made the following observations regarding the project's local funding sources.

- The preliminary financial plan was based on a lower cost estimate than the cost estimate announced in March 2007 (\$2.3 billion in January 2007, compared to as much as \$2.7 billion). As of July 2007, even more local funding would be needed.
- Of particular note is the project's heavy reliance on Dulles Toll Road revenues to cover the local share. According to the January 2007 preliminary plan, MWAA proposed to rely heavily on Dulles Toll Road revenues—in the amount of \$777.6 million, including paying back the TIFIA loan. Further, as part of the agreement to manage the Dulles Toll Road, MWAA also will have to fund improvements and repairs to the road. The project could be endangered if these revenues are not sufficient to cover project costs *and* maintain the road. Users of the Dulles Toll Road could be subjected to large toll increases in the future if higher project costs require more and more local funding. We are not aware of any legal or contractual limits on how high the tolls could be set, and the December 29, 2006 “Dulles Toll Road Permit and Operating Agreement” between MWAA and the Virginia Department of Transportation does not limit MWAA's authority to increase toll rates, although it requires some public hearings and consultations.
- Fairfax County's total contribution, which it expects to collect from business taxes in a special Dulles Rail Transportation Improvement District, decreased in the January 2007 preliminary plan from what was previously announced. Previously, the Fairfax County share included an additional \$182.7 million to be provided through debt or general fund revenues (on top of proceeds from the business tax district). This amount was no longer included in the January 2007 financial plan. Further increases in funding demands could once again put pressure on Fairfax County to commit funds beyond any proceeds from the business taxes.

Before awarding a full funding grant agreement, FTA should ensure that all local funding sources are secure and stable enough to cover any increased costs. On prior occasions, we recommended that FTA delay funding decisions until it could resolve significant questions regarding proposed funding sources, among other things. In a prior report on the Seattle Central Link Light Rail Project, we reported that FTA did not ensure that, as cost estimates increased dramatically, project sponsors had identified sufficient local funding sources to make up the difference and complete the

entire project.⁷ This project has since been put back on track, but some of the problems it encountered could have been avoided had a more rigorous review of the project been performed early on.

FTA Should Consider Reevaluating the Transportation System User Benefits With the Most Current Information Available

A key figure used to calculate the cost-effectiveness of a New Starts project is transportation user benefits, specifically, an estimated number of hours saved by weekday commuters in a future “forecast year” as a result of the project. According to FTA, in the case of the Dulles Project, this figure was calculated in 2004, at the time of approving the Dulles Project to enter preliminary engineering. Since then, FTA refined its method for determining this figure in a way that would now exclude certain user benefits that the Dulles Project included. FTA then made a decision not to retroactively reconsider user benefits figures for older projects such as Dulles, even though they have not been approved for full funding. Considering the heavy competition for New Starts funding, we believe it is important that funding decisions are made using the best and most current information available.

The New Starts process provides several points for FTA to review the merits of proposed projects for good reasons, and the Dulles Project is at a critical point (approval to enter final design). FTA’s policy, as stated in the fiscal year 2008 New Starts Report to Congress, is in agreement with this idea as indicated in the following: “FTA emphasizes that project evaluation and rating is an ongoing process. As proposed New Starts projects proceed through the project development process, information concerning costs, benefits, and impacts is refined and the ratings may be reassessed to reflect new information.”⁸

- FTA requires project sponsors to submit, in advance of the assessment of formal New Starts justification criteria, a series of reports and maps produced by a software tool called Summit. FTA makes this tool available to project sponsors, and the sponsors use data from their travel forecasting models as input to Summit to produce the required reports and maps. One output of Summit is a transportation user benefit figure—a key figure used in the calculation of cost-effectiveness.
- According to FTA officials, Summit was new when they approved the Dulles Project for entry into the preliminary engineering phase in 2004. However, FTA later gained a better understanding of Summit and realized that the transportation user benefit included travel hours saved during off-peak weekday hours by travelers who were not using any part of the Dulles Project extension, but only

⁷ OIG Report Number IN-2001-051, “Interim Report on Seattle Central Link Light Rail Project,” April 4, 2001.

⁸ Competition for New Starts funding is heavy. In February 2007, FTA reported that 10 projects were in the New Starts pipeline.

existing track between the East Falls Church and Stadium Armory stations. Such riders would save time with the addition of the new silver line trains, which would add to the number of trains during off-peak hours, thereby shortening wait times (train frequency during peak hours is expected to be the same with or without the Dulles Project).

- FTA officials then deliberated on whether these hours were legitimate transportation user benefits resulting from the project. They subsequently concluded that inclusion of such hours could be controversial and changed their policy to exclude such benefits on subsequent New Starts projects. However, they did not believe it was fair to go back and reconsider other projects that had already moved forward in the New Starts process on the basis of including these hours. Therefore, FTA decided to perform future calculations of transportation user benefits excluding hours saved by travelers using only existing portions of the system, but not to reevaluate older projects, such as Dulles.

FTA officials have pointed to the considerable expenditures on the Dulles Project thus far as a partial rationale for not revisiting the transportation user benefits at this time. Nonetheless, we believe that the significantly higher amount estimated to be spent if the Dulles Project goes forward is a more important consideration than the amount already spent. Accordingly, FTA should consider reevaluating the transportation user benefits for the Dulles Project in accordance with current FTA policy and use this updated figure to make any decisions regarding the project's New Starts funding.

FTA Must Closely Monitor the MWAA's Management of the Dulles Project During and After the Current Transition Period

The organizational structure of this project is already complex, considering the range of key Federal, state, local, and private sector players with a stake in the project, including FTA, the DOT TIFIA Credit Council, MWAA, the Virginia Department of Rail and Public Transportation, WMATA, Fairfax County, and Dulles Transit Partners. The ongoing transition of project control to MWAA only adds to the complexity, and MWAA will be challenged by managing this network of public and private organizations and their diverse interests.

FTA's vigilant oversight will help to mitigate several potential management-related and other risks posed by MWAA's takeover of the project. Specifically:

- FTA must be sure that the lines of authority and roles and responsibilities are clear during and after the transition period toward MWAA's takeover. It must also ensure that MWAA is fully staffed and has sufficient resources dedicated to oversight so that it is able to effectively manage the project.

- Because MWAA leases Dulles International Airport and the surrounding land from DOT—where much of Phase I would run—FTA should closely coordinate with other DOT offices as the transfer is reviewed to ensure that any arrangements MWAA enters into and any actions MWAA takes do not violate the lease terms. If the Dulles Project is approved for full funding, FTA will need to continue monitoring this situation throughout final design and construction.

The transition of project control to MWAA in particular poses a potential risk that warrants FTA's close oversight. The transition from the Virginia Department of Rail and Public Transportation to MWAA is ongoing and has been delayed since at least March 2007. Until the final transfer occurs, the two agencies will be sharing responsibilities, which could create risks regarding which entity has ultimate stewardship and oversight responsibility. Even after the transfer, such questions will still exist because of the project's complex organizational structure. For example, MWAA will be in charge of final design and construction of the project, but it will ultimately be owned and operated by WMATA.

In the past, we reported on projects that failed to implement an effective project management and oversight structure. For example, the Boston Central Artery/Tunnel (CA/T) Project, which experienced massive cost overruns and schedule delays, presents many lessons learned regarding the project sponsor's ineffective oversight. These lessons are relevant in light of the MWAA's lack of experience in managing a mass transit project. The Massachusetts Turnpike Authority (MTA), which similarly had little experience in managing an undertaking of the scope and magnitude of the CA/T Project, hired a joint venture of Bechtel/Parsons Brinckerhoff to provide preliminary designs, manage design consultants and construction contractors, track the Project's cost and schedule, advise MTA on Project decisions, and, in some instances, act as the MTA's representative. Eventually, MTA even combined some of its employees with Bechtel/Parsons employees in an integrated project organization. This was intended to make management more efficient, but it hindered MTA's ability to independently oversee Bechtel/Parsons Brinckerhoff because MTA and Bechtel/Parsons Brinckerhoff had effectively become partners in the project.⁹

MWAA has submitted to FTA for review a project management plan for the Dulles Project. A thorough project management plan and FTA's oversight to ensure that all parties are following the plan should help to ensure that problems similar to those encountered in the CA/T Project are avoided. However, there has already been some disruption in the Dulles Project. Specifically, last year Virginia officials told us that since the announcement of the upcoming transfer, the project had lost key staff members and Dulles Transit Partners had assigned 25 percent of its staff to other projects. Consequently, MWAA officials told us they have been covering temporary

⁹ OIG Testimony CC-2005-027, "Impact of Water Leaks on the Central Artery/Tunnel Project and Remaining Risks," April 22, 2005.

staffing shortfalls with consultants, and are planning to start staffing up in the near future. FTA should closely monitor the project's progress during this period of significant transition so that the project stays on track.

FTA Must Ensure That the Dulles Project's Contract and Related Agreements Sufficiently Protect WMATA From Undue Risk

The unique design-build contract for this project presents potential risks for the Federal Government, project sponsors, and the eventual owner-operator of the Metrorail expansion, WMATA. FTA has been reviewing the design-build contract and associated agreements as part of the New Starts process. To mitigate potential risks, this review should ensure that these documents sufficiently protect WMATA in particular.

WMATA was not a participant in the design-build contractual negotiations even though it will eventually be forced to deal with the consequences. MWAA and WMATA recently negotiated an agreement that is intended to offset the disadvantages of WMATA's lack of direct control over the project's construction. Before the project proceeds, FTA must ensure that this agreement contains sufficient protections for WMATA. If approved, FTA will also need to ensure that WMATA's interests are protected as the project is constructed.

Specifically, FTA should ensure that WMATA's interests are protected in three major areas.

- As the entity that is responsible to Metrorail users, WMATA must be assured that the construction of the project meets WMATA standards so that future operating and capital replacement costs are minimized. Specifically, WMATA should have assurance that the project is constructed in a way that includes certain items that WMATA has deemed necessary to the safe, efficient, and effective operation of Metrorail. For example, WMATA officials told us that they consider the heating of third rails as being essential to avoid interruptions of service in winter weather.
- WMATA must also have sufficient warranties against latent defects in the design or construction of the project that may not surface for years. This is particularly important, because WMATA will not directly oversee the work of contractors constructing the project—as it did with the recent Largo extension.
- MWAA as project sponsor—not WMATA as eventual owner-operator—will be the entity that has the authority to declare “substantial completion” of the Dulles Transit Partners contract.¹⁰ WMATA must have assurances that MWAA does not declare substantial completion on a product that does not meet WMATA's needs.

¹⁰ Per chapter 8 of FTA's “Best Practices Procurement Manual,” “Substantial completion is usually defined as the time when the construction site or the supplies delivered are capable of being used for their intended purposes.”

RECOMMENDATIONS

1. We recommend that the Federal Transit Administrator:
 - a. Conduct all of the reviews involved in the New Starts process per FTA regulations with extra vigilance and consider going beyond those reviews regarding the sufficiency of local funding sources, the contractual and associated arrangements that deal with WMATA, and MWAA's project management plan.
 - b. Consider reevaluating the transportation user benefits for the Dulles Project in accordance with current FTA policy and use this updated figure to make any decisions regarding New Starts funding for the project.
 - c. Closely coordinate with the TIFIA Credit Council to share information about the project.
2. We recommend that when reviewing the TIFIA loan application, the TIFIA Credit Council conduct an independent rigorous review of the Dulles Project that takes into account all of the unusual risks associated with the project.

AGENCY COMMENTS AND OFFICE OF INSPECTOR GENERAL RESPONSE

A draft of this report was provided to FTA for comment on July 20, 2007. On July 25, 2007, FTA provided us with its formal comments, which are contained in their entirety in the Appendix. FTA agreed with the information in the report and stated that it would respond to the specific recommendations within the next 30 days. In its July 25, 2007 comments, FTA did not indicate whether or not it concurred with the recommendations. Therefore, we request that FTA respond to the recommendations in its response to this final report.

ACTIONS REQUIRED

In accordance with Department of Transportation Order 8000.1C, we request that FTA provide us with responses to the recommendations within 30 calendar days from the date of this report. If you concur with the recommendations, please indicate the specific action taken or planned for each recommendation and the target date for completion. If you do not concur, please provide your rationale. You may provide alternative courses of action that you believe would resolve the issues presented in this report.

We appreciate the courtesies and cooperation of FTA representatives during this audit. If you have any questions concerning this report, please call me at (202) 366-5630 or Thomas Yatsco, Program Director, at (202) 366-1302.

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cc: Secretary of Transportation
Assistant Secretary for Transportation Policy
Assistant Secretary for Budget and Programs
Members, TIFIA Credit Council

EXHIBIT A. FACT SHEET ON THE STATUS OF THE DULLES CORRIDOR METRORAIL PROJECT

As part of our major project monitoring effort, we developed the following fact sheet that summarizes key points regarding the status of the Dulles Project.

PROJECT DESCRIPTION

- The entire Dulles Project proposes a 23.1-mile extension of Metrorail in the Commonwealth of Virginia, including 11 additional Metrorail stations. The project is segmented into two distinct phases. The bulk of this fact sheet deals with Phase I, which is currently in the New Starts pipeline and is being considered for approval for entry into final design.
- **Phase I:** The first 11.6-mile segment of new construction would originate at the existing orange line tracks between the East Falls Church and West Falls Church Stations and run through the Tysons Corner area to Wiehle Avenue in Reston.
- **Phase II:** The second 11.5-mile extension, from Wiehle Avenue west, through Dulles International Airport, and to Route 772 in Loudoun County, is designated as Phase II. Phase II is in the preliminary engineering phase and may not involve any Federal funding.
- **Vehicles:** Phase I includes the purchase of 64 new heavy rail cars.

See Exhibit C for a map of the project.

PROJECT TEAM

The current lead agency for construction is currently the Virginia Department of Rail and Public Transportation (DRPT). Technical support comes from the Washington Metropolitan Area Transit Authority (WMATA), which will ultimately own and operate the new Metrorail segments. The Metropolitan Washington Airports Authority (MWAA) is expected to become the lead agency for construction sometime in 2007, which will coincide with its takeover of the operations of the Dulles Toll Road. Dulles Transit Partners (DTP), LLC has served as the project's preliminary engineering contractor under the Virginia Public-Private Transportation Act and will now serve as the design-build contractor. DTP is owned by Bechtel Infrastructure, Inc. and Washington Group International.

PROJECT PARTNERS

In addition to the project team, project partners include Fairfax County, Loudoun County, the Virginia Department of Transportation (VDOT), the Town of Herndon, FTA, and the Federal Aviation Administration.

CONTROVERSY OVER PHASE I DESIGN

- In response to public input, in May 2006, the Virginia Secretary of Transportation established a tunnel review panel with the American Society of Civil Engineers to provide a recommendation on the option to route Phase I through a tunnel in most of the Tysons Corner area. A mostly aerial design with only a short tunnel had already been designated as the locally preferred alternative.

- In July 2006, the tunnel review panel reported that the difference in expected costs between the tunnel option, and the original elevated structure with a short tunnel, was only \$250 million. However, ASCE stated that the report was only the opinion of the panel members and that ASCE did not “certify, guarantee, nor warrant the work in this report.” Additionally, the panel did not attempt to quantify all potential cost impacts.
- On September 6, 2006, the Governor of Virginia decided against the tunnel alternative because too many unanswered questions remained about cost and schedule, and because he believed the potentially higher costs of a tunnel could have jeopardized the possibility of Federal funding.
- Despite continued efforts by some members of the public, the project has continued to proceed assuming the original design with only a short tunnel.

COST

- The final environmental impact statement (of December 2004) projected a Phase I of cost of \$1.521 billion. In August 2005, an independent cost estimate based on 50 percent preliminary engineering (PE) design set Phase I’s estimated cost at \$1.840 billion, a 20 percent increase over the previous projected cost. It was based on a more detailed design, a better understanding of the planned construction approach, and significant changes in right-of-way, materials, labor, and fuel costs.
- In October 2005, FTA’s project management oversight consultant (PMOC) performed an evaluation of the \$1.840 billion cost estimate and concluded that the contingency and inflation factors used in the estimate were insufficient.
- In April 2006, a general engineering consultant (GEC) prepared an independent cost estimate based on the true 100 percent Preliminary Engineering design and incorporating revised contingency and inflation factors as recommended by the PMOC. The GEC set Phase I’s estimated cost at \$2.065 billion. DRPT subsequently adopted a Phase I budget of \$2.065 billion.
- The PMOC found significant issues with the \$2.065 billion estimate in a review performed in September/October 2006. The PMOC concluded, “the escalation factor used was inadequate, the contingency was too low, and the project’s cost and schedule could be seriously impacted due to the many uncertainties identified as a result of the lack of design and/or missing scope in the 100% PE design.”
- Based on the March 2007 negotiation of the design-build contract with DTP, the cost estimate is presented as a range of \$2.4-2.7 billion because there is uncertainty as to how much the “agency costs,” which are outside of the DTP contract, will be. Agency costs include project management, rail cars, start-up, and testing. FTA is now evaluating this estimate.

FUNDING

- The sources of funding for Phase I were previously identified, but MWAA has renegotiated funding shares in connection with assuming the Commonwealth’s remaining financial share of the project.
- A new funding breakdown will not be available until after FTA finishes evaluating the cost estimate. However, the current plan is to build Phase I using \$900 million in Federal New Starts money, with the rest covered by Dulles Toll Road revenues, revenues from a Fairfax County special tax district, and a small amount from the Commonwealth of Virginia.
- MWAA has also applied for a DOT Transportation Infrastructure Finance and Innovation Act (TIFIA) loan of \$375 million, plus a \$200 million TIFIA line of credit to be used as needed. The loan is to be repaid from Dulles Toll Road revenue.

PROJECT IMPLEMENTATION SCHEDULE

- In addition to the Dulles Project sustaining substantial cost growth over the last few years, the schedule to complete construction and begin revenue service on Phase I has slipped from 2009 to 2013.
- Additional schedule slippages are probable, because at last report, the June 2007 dates listed below were annotated as “delayed,” and later dates were annotated as “at risk.”

Phase I Schedule

- Initiate Preliminary Engineering: June 10, 2004
- Complete Preliminary Engineering: April 2006
- Submit Request to Enter Final Design: April 28, 2006
- General Agreement on Transfer to MWAA: October 31, 2006
- Amended Record of Decision: November 17, 2006
- Toll Road Transfer and Permit Agreements: December 29, 2006
- Submit TIFIA Loan Application: January 16, 2007
- Final Negotiation of Design-Build Contract: March 2007
- Submit Full Funding Grant Agreement Application: June 2007¹
- Transfer of the Dulles Toll Road and Metrorail Project to MWAA: June 2007¹
- Final Design Approval: June 2007¹
- Execute Full Funding Grant Agreement: December 2007²
- Start Construction: December 2007²
- Complete Construction: September 2012²
- Start Pre-revenue Operations: December 2012²
- Revenue Service: March 2013²

¹Delayed, per May 2007 PMOC report.

²At risk, per May 2007 PMOC report.

EXHIBIT B. OBJECTIVES, SCOPE, AND METHODOLOGY

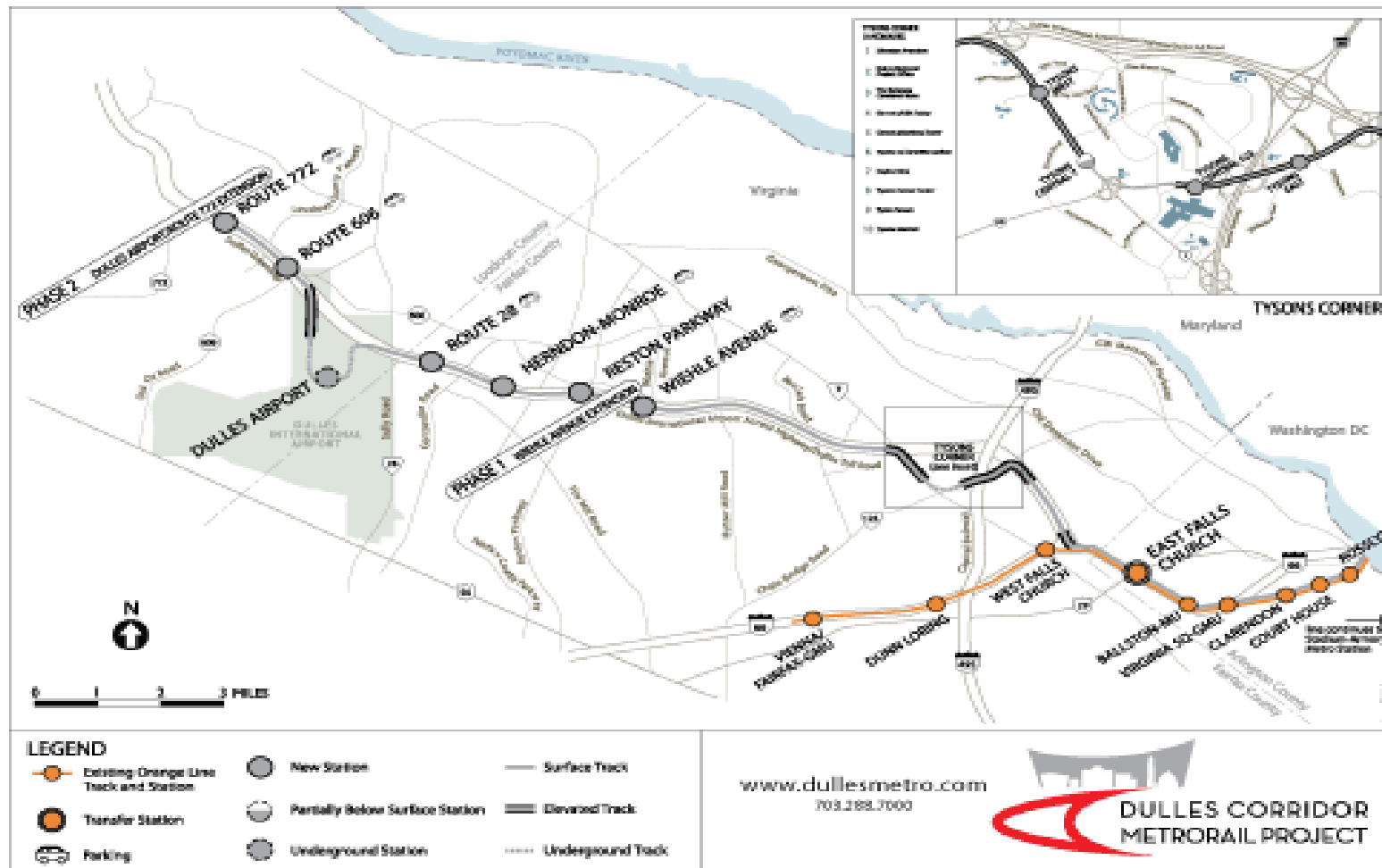
Our objectives were to identify potential risks that may prevent the Dulles Project from being completed on time and within budget. Specifically, our objectives were to (1) assess the status of the project, including costs, funding, and schedule and (2) identify any potential risks that may adversely impact its completion.

We began by reviewing and collecting relevant material from an earlier monitoring effort of the project. We then adapted project monitoring material that our office had developed over the last several years for other major projects, as needed to fit this particular project. Specifically, these materials consisted of data requests and questionnaires for cognizant DOT offices and for project personnel. We sent the adapted requests and questionnaires to FTA and to DRPT, and they provided us the requested data and responses to questions.

We evaluated the collected material, researched related material, and have regularly directed follow-up inquiries to FTA, DRPT, and MWAA as needed. We conducted meetings at FTA offices, the project office, MWAA, and WMATA. We have also kept ourselves updated on recent developments through project Internet sites, periodic project reports, news sources, and periodic inquiries to see whether events are progressing on schedule and whether new developments have occurred. Further, we assessed OIG's prior reports and testimony statement on major highway and transit projects for lessons learned and risk indicators.

We analyzed all the collected information to identify potential risk areas that we present in this report. Because this was a monitoring effort, we have not performed any detailed audit verification, but we did look for and resolve inconsistencies in the material presented. We conducted our major project monitoring work from June 2006 to July 2007 in accordance with Generally Accepted Government Auditing Standards as prescribed by the Comptroller General of the United States.

EXHIBIT C. MAP OF THE DULLES CORRIDOR METRORAIL PROJECT, PHASES I AND II



Source: Dulles Corridor Metrorail Project.

Exhibit C. Map of the Dulles Corridor Metrorail Project, Phases I and II

EXHIBIT D. MAJOR CONTRIBUTORS TO THIS REPORT**THE FOLLOWING INDIVIDUALS CONTRIBUTED TO THIS REPORT.**

<u>Name</u>	<u>Title</u>
Tom Yatsco	Program Director
Tyler Apffel	Project Manager
Frank Schutz	Senior Auditor
Tom Wise	Senior Auditor
Oleg Michalowskij	Senior Analyst
Thomas Lehrich	Chief Counsel
Seth Kaufman	Associate Counsel
Harriet Lambert	Writer-Editor

APPENDIX. MANAGEMENT COMMENTS

U.S. Department
of Transportation
**Federal Transit
Administration**

Administrator

1200 New Jersey Ave. S.E.
Washington, DC 20590

July 25, 2007

Brigadier General Calvin Scovel
Inspector General
Office of the Inspector General
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Brigadier General Scovel:

Thank you for the opportunity to review the Office of the Inspector General draft report "Baseline Report on the Dulles Corridor Metrorail Project" (Project No. 07M3007M000) dated July 20, 2007.

The Federal Transit Administration agrees with information contained in your report and will respond to your specific recommendations within the next 30 days. In the meantime, please do not hesitate to contact me directly at (202) 366-4040, if you have any questions or if you need any additional information regarding the Dulles Corridor Metrorail Project.

Thanks again for your time and interest in this project.

Sincerely,

A handwritten signature in blue ink that reads "James S. Simpson".

James S. Simpson